HZS C²BRNE DIARY
Dedicated to Global First Responders
November 2021
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To vaccinate or not to vaccinate? That is the question!

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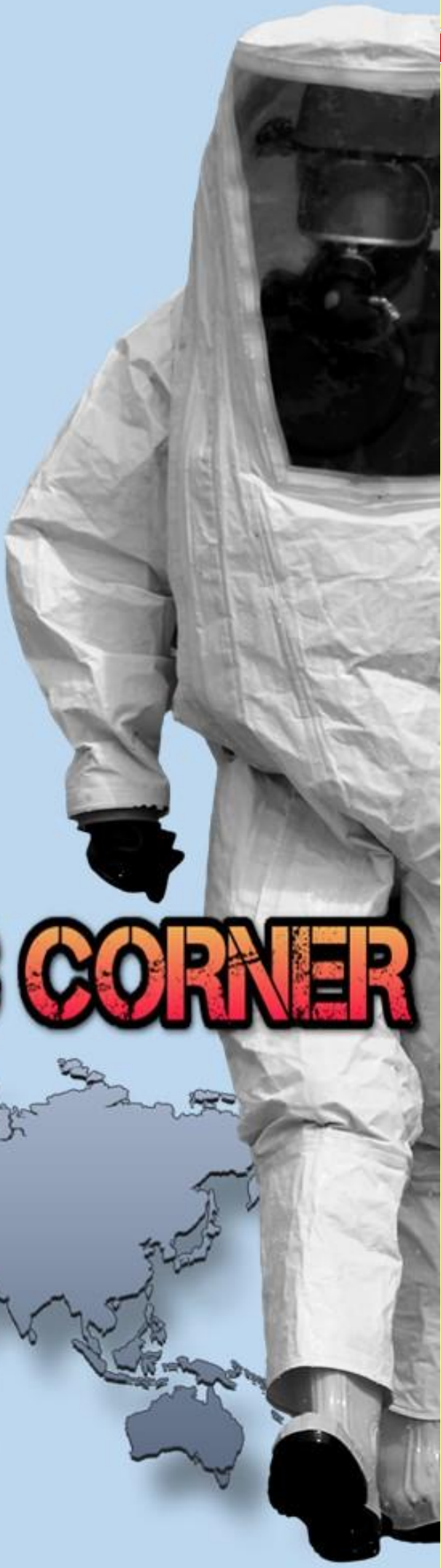


EDITOR'S CORNER

Editorial

Brig Gen (ret.) Ioannis Galatas, MD, MSc, MC (Army)

Editor-in-Chief
HZS C²BRNE Diary

Dear Colleagues,

The only thing that differentiated November from October 2021 was the explosive incident in Liverpool, UK. A reminder that terrorism is always here and that the unexpected always happens.

When comes to terrorism, this incident was another proof that terrorists adapt fast not only in the field operational environment but also in the social environment of the hosting countries. The suicide bomber converted to become a Christian to blur the authorities regarding his deradicalization but also to continue receiving the precious benefits that finance his cause. As a result, the UK upgraded its threat level to "severe'. What does this mean for the people? Nothing at all because nobody care to explain to people and businesses how to respond in case of a new terrorist attack (just call 999). Keeping the customers inside a restaurant or a bakery and locking the doors might save tens or hundreds of lives – if you do not panic and do it!

Pandemic continues to torture the planet that bases its defense on several vaccines and new generation drugs not available to all. The sick perception saying "what is not Western is no good" continues despite the effectiveness of certain Russian vaccines that both the WHO and EMA refuse or hesitate to evaluate. Public health comes second to profit and some say that vaccine manufacturers earn 1,000 USD per second. The ruthless war between those who have been vaccinated and those who have not continues and a global atypical racism is in progress. Authorities think that all those opposing vaccination are anti-vaxxers and retarded. The category "fear" is mentioned only by a few that maintain common sense – but these few are not decision-makers. They are people who understand that it is normal to be afraid of something that carries a confusing, constantly changing science and not enough testing to reassure people that it is safe. Of course, we all know that no drug is 100% safe but we can take life-saving precautions based on decades of research before a specific drug is available. A philosophical debate one might say but when something can change your life to the worst in a few hours then it is logical to be afraid of. Even if the pandemic is deadly.

What else? Ah! Poland is experiencing for the first time a situation that Greece, Italy, and Spain are experiencing for decades! And since Poland is closer to the hard-core of the EU, all-mighty European countries are worrying or pretending that they worry. Thousands of illegal immigrants gathered in Belarus "demand" entrance to Poland. "*We are angry,*" they say; "*open the gates*!" they say! And guess which country is behind this turmoil! Guess the origin of these illegal immigrants who use small children and pregnant women as shields while attacking border fences or throwing tear gases against border policemen. A copy and paste situation of what Greece experienced in 2020 at its land borders with Turkey.

In parallel, Turkish bullying in the SE Mediterranean Sea continues with war threats against Greece, France, USA, NATO, Egypt, Israel while certain EU member states (Spain: wishing to sell corvettes and an air carrier; Germany: selling advanced submarines) and the US (trying to override CAATSA allowing the purchase of 40 new F-16 Block 70 Viper plus 80 upgrade kits) prefer to make a business than to support peace in the area. At the same time, the US continues to stir up anti-Russian rhetoric by activating hypersonic nuclear missiles in Germany. In Greece, we say "*if you are away from the dance you can say many songs*!" As if their country is very far away from a retaliating swarm of nuclear missiles or Germany would last more than a week of a Russian full-scale attack. Could human stupidity be attributed to a virus?

In this *lovely* environment, First Responders will be those that will try to take the snake out of its hole – so be prepared, test your gear, update your plans and be ready for the unexpected – especially during December! Keep in mind that Bill Gates made some strange statements recently …

The Editor-in-Chief

Training program for security, safety managers for Qatar 2022 stadiums begins

Source: https://www.qatarliving.com/forum/qatar-2022/training-program-security-safety-managers-qatar-2022-stadiums-begins

Oct 20 – As the country moves closer to hosting the historic, the first course of the training program for security and safety managers of the stadiums kicked off yesterday.

As many as 28 managers and their assistants are taking the course, organized by the qualification and training unit of the Security and Safety Operations Committee for the 2022 World Cup Qatar (SSOC), in coordination with the Sports Facilities Security Department at the Supreme Committee for Delivery and Legacy (SC).

The course has been designed after thoroughly studying the needs of security and safety managers in the facilities of the World Cup stadiums, Abdullah Al Mohannadi, Director of the Facilities Security Department highlighted.

The first cycle of the program seeks to raise the efficiency and skills of managers of World Cup stadiums in accordance with international requirements for security operations, he added.

Head of the SSOC qualification and training unit, Lt. Colonel Fahd Saeed Al Subaie explained that the program is internationally accredited by FIFA and the British Institute of Leadership and Management (ILM).

The program incorporates the leadership and security standards in the UK and European Union, based on the principles of gold, silver and bronze leadership, which is applied in major sporting events, he mentioned.

There are two categories of the program, Al Subaie mentioned. The first is a seven-week training program for all managers and their assistants, while the second is a training program for managers only and grants the international diploma in the security and safety of sports fans (level four).

He added that the first category program, for all 28 managers and their assistants, consists of two parts. The first is a two-week part, which began today and will run until October 21, while the second is a five-week course and will be implemented in 2022.

He further highlighted that the training content in the course launched today covers the bronze and silver leadership program, which includes topics like: security leadership, risk management, security command structures, security and safety principles, human rights, field leadership, emergency handling, alternative plans, theories and practical applications.

The remaining five weeks of the program are scheduled to be held in 2022, where the third week in the program will focus on developing leadership skills.

The fourth week will cover the security sense and behavioral patterns of the fans, while the fifth week will tackle crowd management.

The training in the sixth week will be devoted to the major events management program, with the seventh week focusing on the final evaluation of the participants in the first category program through scenarios and practical exercises to determine their level of performance.

EDITOR'S COMMENT: I hope (but I am not sure) that asymmetric/CBRN threats have been included in the training curriculum.

Islamic State woman gets jail term in Germany for allowing Yazidi child to die

Source: https://www.wionews.com/world/islamic-state-woman-gets-jail-term-in-germany-for-allowing-yazidi-child-to-die-423944

Jennifer Wenisch hides her face in court Photograph:(Reuters)

Oct 25 – The Islamic State has reportedly carried out large scale atrocities against the Yazidi community including enslaving and illegally transporting thousands from Iraq.

A German court on Monday found a woman guilty of "crimes against humanity in the form of enslavement" for allowing a **Yazidi** girl to die of thirst.

Jennifer Wenisch, 30, was found guilty of letting a **five-year-old Yazidi girl** die and also for joining the **Islamic State** (IS) terrorist organisation.

The **German** woman was sentenced to 10 years in prison by the country's court.

Wenisch had reportedly joined the terrorist group in 2014 and had "enslaved" the Yazidi girl along with her husband who also belonged to the Islamic State.

The **Munich** court found the girl was chained in an open courtyard in the sun. The court charged Wenisch for abetting **murder** among other charges.

Federal prosecutor Claudia Gorf called the verdict "decisive" after the case was brought forward by the mother of the child.

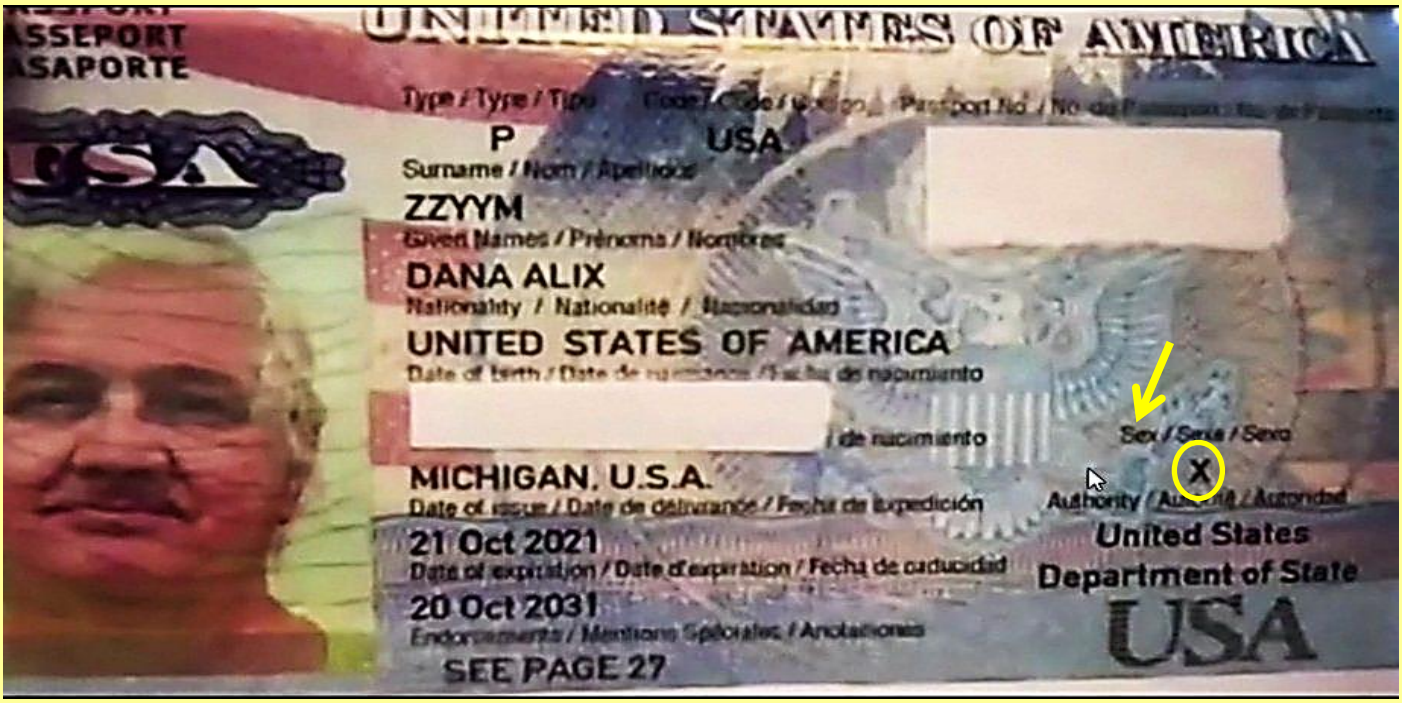
The Islamic State has reportedly carried out large scale atrocities against the Yazidi community including enslaving and illegally transporting thousands from **Iraq**. Wenisch reportedly moved around in IS-occupied **Fallujah** and Mosul. She was arrested in **Turkey** and extradited to Germany in 2018.

EDITOR'S COMMENT: Why allowing her to cover her face? Since when killers have rights? And only 10years in jail? That is 2 years per child's life! Is it "sales" period in Germany? I only hope to throw the key of her cell in the river or even better add another zero in her sentence.

Children as Young as 13 Helping Coordinate Terror Attacks Via the Internet

The Australian Federal Police have revealed that children as young as 13 years old have been caught planning catastrophic terror attacks via the internet. AFP Commissioner Reece Kershaw told a Senate estimates hearing on Monday that religiously motivated violent extremism coordinated online was Australia's biggest terrorism threat. "The AFP and our partners are protecting Australians from terrorism on a number of fronts, including the concerning trend of young children occupying the attention of law enforcement agencies," he said. "Children as young as 13 years old – not even old enough to get their learner's' driver's license – are planning and negotiating with others online to carry out catastrophic terror attacks. "Some of these youth feel isolated or do not feel like they belong, and so they retreat to the online world, looking to connect with someone, including RMVE (Religiously Motivated Violent Extremism) and IMVE (Ideologically motivated violent extremism) individuals." Mr. Kershaw warned that Covid-19 lockdowns had allowed online terrorism circles to expand their membership. "There have been some significant shifts, in the diversity and complexity of the environment since the pandemic started almost a year and a half ago," he said.

Progress . . . made in USA . . .



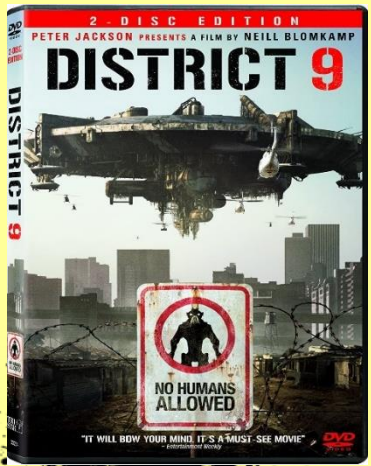
Space Aliens – Emergency Management Roles & Responsibilities

By Michael Prasad

DomPrem Journal | October 2021

Source: https://www.domesticpreparedness.com/journals/october-2021/

Planning for the emergency management needs of space aliens on Earth, in terms of their well-being before, during, and after disasters could be the plot of a science fiction movie script. The **movie District 9** has a similar premise: the aliens that arrived on Planet Earth were not warriors, but rather sentient beings totally reliant on help instead. The reality is there are beings like this in every community. They are called "children."



Michael Prasad is a Certified Emergency Manager and is the senior research analyst for Barton Dunant Emergency Management Consulting and a regional product and services representative for The Blue Cell. He is also a member of the International Association of Emergency Manager's Children and Disasters Caucus and the vice president for the IAEM-USA's Region 2. He holds a Bachelor of Business Administration degree from Ohio University and is a Master of Arts candidate in Emergency and Disaster Management from American Public University. Views expressed do not necessarily represent the official position of any of these organizations.

Russian character detector

Superpower Hybrid Warfare in Syria

Anthony N. Celso, PhD

Abstract: This article examines superpower hybrid warfare in four parts. First, it provides an overview of hybrid warfare and its tactical, if controversial, uses. Second, it analyses Russia's hybrid warfare in Ukraine. Third, it compares U.S. and Russian hybrid techniques in Syria. Finally, it assesses the conditions under which Syria could be a flashpoint for superpower conflict. The essay argues that American and Russian policy in Syria represents a unique case where military interventions attained objectives at a relatively low cost because determined local partners facilitated the realization of superpower goals.

Dr. Anthony N. Celso is a professor of security studies at Angelo State University in San Angelo, TX. He is the author of Al-Qaeda's Post-9/11 Devolution: The Failed Jihadist War against the Near and Far Enemy (2014) and The Islamic State: A Comparative History of Jihadist Warfare (2018).

SAVE AUSTALIAN WILD HORSES!

Guess which participating Air Force with F-16 Block 52 Advanced scored 17/19 during the Israeli Blue Flag 2021?

Almost 80 fighters from seven different countries flew at Israel's recent Blue Flag international training exercise at Ouvda Air Base. The third annual exercise, Israel's largest yet, is designed to simulate fighting with a coalition of forces that are critical to Israel, given the ongoing war in Syria and conflict throughout the Middle East. The U.S., Greece, Italy and Poland returned for this year's exercise, while France, Germany and India joined for the first time.

Head cap-inspired sports stadium designed to keep athletes from running hot

Source: https://newatlas.com/architecture/qatar-al-thumama-stadium/

Oct 29 – Resembling a huge head covering discarded in the Qatar desert, the recently completed Al Thumama Stadium has been inaugurated ready for the FIFA 2022 World Cup. The stadium's eye-catching design is inspired by the **gahfiya** (photo, right), a traditional woven headcap worn throughout the Middle East, and is designed to help keep spectators and athletes at a comfortable temperature.

The Al Thumama Stadium was designed by Qatar-based architect Ibrahim M Jaidah and is located near the country's capital, Doha. It has a spectator capacity of 40,000 and will host eight soccer matches, up to and including the quarter-finals of the competition.

In addition to the sporting facilities, it features a mosque, a boutique hotel, and retail areas. Once the tournament comes to a close, half the seats will be removed and it will be used for other sporting events. According to the architect, in a similar way to how the gahfiya protects people's heads from the Sun, the stadium will keep players and spectators cool, with help from a complex cooling system featuring water sprays, air-conditioning and fans.

"The players need cooler air than the spectators, as they are running around," says Dr. Saud Abdulaziz Abdul Ghani, who has been given the task of keeping everyone at a comfortable temperature. "Our challenge at each venue was to provide the correct technology and temperature for different areas of the stadium. At Al Thumama, **the cool air is closer to the spectators.** Here, we **cool the air under the seats and recycle and purify it inside the**

venue. Al Thumama also benefits from having a completely white exterior, thanks to its design replicating the gahfiya head cap, which reflects the Sun and helps to keep the stadium cool." Though there's nothing particularly "sustainable" about building huge stadiums in the desert, Al Thumama *does* have significant green design that reduces its carbon footprint. Grey water is reused to irrigate the vegetation and trees that cover most of the immediate area and the stadium is partly powered by a huge solar panel array installed nearby. A separate solar array powers the building's air-conditioning systems.

The Al Thumama Stadium is located near Qatar's capital Doha and has a spectator capacity of 40,000 (Supreme Committee for Delivery & Legacy)

Preparation for the FIFA 2022 World Cup has been a massive undertaking and has resulted in outstanding projects like the Diamond in the Desert and Zaha Hadid's Al Wakrah Stadium. However, the project has not been without controversy too and there have been widespread reports of worker deaths and poor conditions.

EDITOR'S COMMENT: The advanced complex cooling system adds another security worry to those responsible for the safety of both athletes and spectators. One can only imagine the hazardous/lethal materials that can be disseminated via this system and the havoc that might be ignited. Keep also in mind that we are in the midst of an airborne pandemic. Chance to happen? One in a billion! But there is always this "one"!

Abu Dhabi unveils plans to open first military university

Source: https://www.thenationalnews.com/uae/government/2021/11/01/abu-dhabi-unveils-plans-to-open-first-military-university/

Nov 01 – The UAE will open its first military university in January to train the next generation of armed forces officers.
Zayed Military University will prepare cadets with a combination of academic courses and military training.

It will be the first in the region to offer full undergraduate degrees to military students, officials said. Specialised colleges for the army, air force and navy exist elsewhere in the Gulf.

"But this is the first university where cadets can be trained in any military branch under one roof," Brig Gen Waleed Al Naqbi, deputy commandant of the university told *The National*.

Its first batch of 100 male Emirati high school pupils will enrol in January 2022. High school pupils can apply once they have completed their 16 months of national service.

A rigorous application procedure has been put in place and those who pass stringent health, physical, and educational standards will be considered.

Initially, only men will be accepted but there are plans to enrol women candidates in the near future.

The first class will study at a temporary facility in the Hamim Beach area on the outskirts of Abu Dhabi and will move to a permanent campus when it is ready. **Candidates will be trained for three years before deciding on specialisation courses to join a branch of the military.**

Those who complete the courses will graduate as officers with a bachelor of science, majoring in security studies and defence, Brig Gen Al Naqbi said.
"In the near future, we will be having more degrees in different specialities to fulfil the future market needs in the defence and security sector."
Officers and lecturers with military backgrounds are being recruited to teach.
“We look forward to seeing the first intake of UAE military cadets entering Zayed Military University,” said Mohammed Al Bawardi, Minister of State for Defence Affairs. “They will gain the necessary professional and academic experiences and refine their leadership skills.” Brig Gen Al Naqbi said the new university will “provide a superior level of military training”.
“The first batch of military cadets is preparing to enter history, as we are approaching the celebration of the 50th anniversary of the founding of the UAE and embarking on the journey of the next 50 years that will witness more achievements.
“There is no doubt that the challenges of the modern era require appropriate solutions, and this is exactly what we seek.
“With the establishment of Zayed Military University, there is no doubt that the graduates will be ready to serve their homeland.”
Zayed Military University has tied up with Rabdan Academy, a government-owned institution in Abu Dhabi that offers both academic and vocational education.

Human-Machine Teaming: A Vision of Future Law Enforcement

By Corey Fallon, Kris Cook and Grant Tietje
Source: https://www.domesticpreparedness.com/commentary/human-machine-teaming-a-vision-of-future-law-enforcement/

Nov 03 – Neither human nor robot, a digital police officer (D-PO) is a vision in machine teammates: an artificial intelligence-based partner that can be reached through multiple devices including the patrol car’s on-board computer and officers’ mobile devices. A D-PO has access to multiple data sources including live security camera feeds and criminal

databases as well as other D-POs assigned to officers. Scientists and engineers, like those at Pacific Northwest National Laboratory (PNNL), are working in the field of human-machine teaming to bridge the gap between today's tools and the machine teammates of the future.

Patrol Officer Miller and her reliable D-PO partner have worked together for five years. As they start their patrol, D-PO knows which neighborhoods the pair will patrol based on previous patrols and provides the officer with a situation report on these neighborhoods. Thirty minutes into the patrol, the dispatcher informs them of a reported robbery and provides a description of the suspect.

While Miller drives to the site of the robbery, D-PO monitors camera footage from an autonomous police drone circling the crime scene. Next, D-PO uses its deep learning image recognition to detect an individual matching the suspect's description. D-PO requests to take over driving so the officer can study the video footage of the possible suspect. The officer accepts as D-PO shares the video on the patrol car's display and explains the features that led to its high-confidence rating.

D-PO asks, "Do you want to attempt to apprehend this person?" Agreeing that the individual matches the suspect's description, Miller decides to pursue. D-PO quickly calculates the best route to reach the suspect and presents it to Miller for review. With patrol lights on, the team begins following the suggested route. Although D-PO could drive, they both know that Miller prefers controlling the wheel in times like this.

D-PO notifies dispatch of the plan and updates other D-POs in the area. Through a quick exchange, the D-POs identify which patrol cars are best positioned to provide backup and coordinate with their patrol officers to determine who will respond. Officer Smith approaches the scene from the southwest and will arrive in 10 minutes. As both officers approach the scene, their D-POs track the location and anticipated arrival time of both cars.

Talking as she would with a human partner, Miller asks, "What are my best options for apprehending this guy?" D-PO processes the question along with the context of the situation. D-PO quickly shares three options for apprehending the suspect, including a risk assessment for each one. Since the initial robbery report, headquarters has identified the suspect, his criminal history, and other related data, which are included in the risk assessment and displayed on the center console.

D-PO's brief auditory description is not enough for the officer to decide, so she needs her digital partner to take the wheel while she studies the various options. "Take over," she tells D-PO. From previous experience, D-PO knows what this simple command means. "I am

taking over driving," D-PO says to confirm that it understands and will act on the officer's directive. They then proceed to the scene.

The Essence of Human-Machine Teaming

The above scenario may sound like something from a science fiction novel depicting a distant future. However, many of the technological capabilities described are real. Even though these capabilities already exist, current technology does not behave as a machine *teammate* because the D-PO described is more than a collection of tools. Many existing tools have one or two of D-PO's capabilities, but this is not enough to function as a teammate. For example, autonomous systems like drones and self-driving cars are useful, but these systems on their own are not teammates. They require the user, or in this case an officer, to regularly monitor their activity to make sure they are functioning properly. Interactive search engines like Google and Alexa are useful, but they do not anticipate an officer's needs or take the initiative to help solve a problem the way a teammate would. Sensors and their associated alerts can help direct an officer to important information, but they do not help the officer determine how to act on the information they provide.

Many technological capabilities already exist, but a machine *teammate* is more than a collection of tools. Scientists and engineers are working to bridge the gap.

It is challenging for developers to integrate these complex capabilities in a way that can support humans as partners and teammates. As a result, much of today's interaction between humans and their tools (or "machines") places a burden on the human, who either directs the tool to perform tasks or closely monitors automated assistants to ensure accurate performance. Developers need a deeper and more nuanced understanding of the human-machine dynamic in order to build machines that can work toward larger goals and are capable of doing more than blindly executing tasks.

Machine teammates both enhance team performance and minimize the work required for the human to manage the machine. A good machine teammate has enough autonomy to both perform the job and stay connected with its human partner. Rather than blindly performing tasks, they learn from their human teammates and provide suggestions, support, and backup when their human partners need help. They work toward a larger team goal and support their human partners along the way.

The many D-PO capabilities on display in the example above paint a picture of a "gold standard" in machine teammate development and design in law enforcement. These capabilities can be organized into three broad categories that define a true teammate: a machine teammate should be able to observe, communicate, and act.

Observe

Unlike many current computers, machine teammates have an awareness and understanding of their environment and their fellow officers. These teammates have access to sensors and databases that monitor the environment and help them to adapt quickly when unexpected events arise. For example, in the above example, D-PO accessed video footage from a police drone to help identify the suspect and accessed the patrol car's onboard sensors to support navigation and driving when needed.

Perhaps just as important, machine teammates should be able to learn officers' preferences and patterns to predict what officers might need next. For example, the D-PO above anticipated what situation report its partner would need because it learned the patrol route over time. Additionally, D-PO was able to match patterns and recognize images, enabling it to identify the possible suspect in the drone footage.

Communicate

Rather than simply observing the environment and its partner, the machine teammate also makes recommendations and understands instructions. Designing for the ability to communicate naturally and in multiple ways with humans is an important aspect of human-machine teaming research.

Machine teammates conduct analyses and detect significant events in the environment. These teammates must be able to communicate their findings effectively and efficiently. Proper communication often involves navigating the tradeoff between providing enough information to help the officer appropriately trust the technology's guidance, and not providing so much information that it overloads the officer. Balancing this tradeoff can be challenging. A machine teammate that is sensitive to its human partner's current focus and workload may help the machine navigate the tradeoff. The machine teammate uses its understanding of the current situation to know when and how to interrupt the officer with its findings.

For example, when D-PO was presenting its three options for apprehending the suspect, it spoke the options to the officer while she was driving. Presenting more detailed information may have caused the officer to lose focus on driving. Recognizing that Miller may need to review a more detailed analysis, D-PO presented this information on the patrol car's center

console display for further review. This approach gave Miller the opportunity to study the options when she had time to focus on the analysis.
A good machine teammate understands the context of the current situation when receiving instructions and tasking from its human partner. For example, D-PO knew who Miller was referring to when she said, "this guy." The technology's ability to factor in context when processing human questions and directives makes communication easier for the human. In this scenario, Miller does not need to spend extra time and energy being detailed and precise in her instructions to D-PO. She can be vague and abstract, and the machine can still correctly interpret her requests.

Act

Good machine teammates are proactive. They take initiative to accomplish tasks and direct their human teammates' attention to new developments when necessary. Designing technology to support tasks without explicit guidance is another focus of human-machine teaming research.
Machine teammates do not always need explicit instructions to perform an action. Based on what they observed and learned, they can complete tasks in anticipation of what is needed without waiting for instructions. For example, the D-PO above coordinates with dispatch and with other officers' D-POs to arrange backup. D-PO also takes action by directing Miller's attention to new information, like alerting the officer to the possible suspect in the drone video footage. However, just like human teammates, machine teammates cannot anticipate their human partner's every move. Therefore, a machine teammate must be flexible and take direction from its human partner.
Although machines need to be able to act with some independence to be good teammates, in most environments the machine and the human should not be given equal decision-making authority. Especially in high-stakes environments like law enforcement, human officers should make the critical decisions. Great care must go into the amount of independence given to the machine teammate and what decisions it can make without approval from the human. For example, it is appropriate for a machine teammate to stop at a red light when given control of driving the squad car. Conversely, it would be inappropriate for this teammate to make the decision to pursue the potential robbery suspect.

Look to the Future

Some elements described in the example above are closer than others. For example:

- Having an automated assistant that could search databases, find and organize information is close to reality. Some projects today are already doing some of this work (like an advanced "Siri").
- Having an assistant take over the driving is a long way off. Unlike self-driving cars for ordinary highway driving (e.g., controlled conditions, well-marked lanes, not a lot of turns or sudden movements), self-driving police cars require a lot more sophistication (e.g., city streets with traffic and pedestrians, much more unpredictability, need to maneuver at higher speeds).

Machine learning/deep learning to monitor real-time drone feeds automatically is *not* a near-term capability. However, there are many intermediate approaches that are much more feasible in the short- to medium-term. For example, a machine could assist officers in the police station with reviewing drone footage. When officers spot the suspect, the assistant could communicate location information and recommended driving directions to the officer in the field. Despite technological advances in autonomous systems and artificial intelligence, there is still a gap between current technology and the ideal machine teammate. Laboratories like PNNL are working hard to bridge this gap and make teammates like D-PO a reality. For more information, contact nwrtc@pnnl.gov or visit the Northwest Regional Technology Center.

***Corey K. Fallon, Ph.D.**, is a cognitive scientist at Pacific Northwest National Laboratory (PNNL) with expertise in human factors, cognitive systems engineering, and experimental psychology. His current research focuses on how to transition machines from tools to teammates and assessing the risk of incorporating artificial intelligence to support human-machine teaming.*
***Kristin Cook** is a technical advisor, Visual Analytics, at PNNL. For over 20 years, she has been leading research and engineering projects to help people make sense of their data. Her current work focuses on the theoretical and practical challenges of creating human-machine teams.*
***Grant Tietje** is a recently retired project manager at PNNL. He is a former paramedic, police officer, and emergency manager. As a project manager at PNNL, he focuses on research and development of technology for first responders.*

Famine – 45 million people in 43 countries

USS Gerald R. Ford – cost: 13 billion USD

Royal Marines thrashed US Marines in training so badly they asked for a restart

Source: https://www.joe.co.uk/news/royal-marines-thrashed-us-marines-in-training-so-badly-they-asked-for-a-restart-297719

Nov 04 – **The Royal Marines forced US troops to surrender just days into a training exercise in California, forcing the American troops to ask for a "reset".**

According to the Ministry of Defence (MoD) the battle exercise was testing the deployment of the new Littoral Response Group (LRG) in a guerrilla war-fighting facility on the west coast of America against well-equipped US Marine Corps opponents.

The exercise was the culmination of two months training in the Mojave Desert.

However the US Marine Corps had to end up asking for a "reset" just half way through the exercise as the Green Berets of the Royal Marines dominated the battle, the *Telegraph* reports.

The LRG is one of two new Royal Navy task groups focused on commando forces that are able to respond to world events. One group will be based in Europe and another in Oman to focus on military threats east of the Suez Canal.

LRG South, the Oman-based group, were the ones taking part in the five-day exercise which was known as Green Dagger.

Green Dagger is attended by forces from a number of countries and is designed to test US Marine Corps units before they are deployed overseas.

In the weeks leading up to the operation, the LRG South trained with troops from the US, Canada, UAE and the Netherlands.

The commandos of the LRG proved far superior to the US marines at the Marine Corps Air Ground Combat Center in the Californian desert, a training ground roughly the size of Luxembourg.

At one point in the battle, which was focused on three urban sprawls purpose-built for military exercises, the Royal Marines' "kill board" - an intelligence assessment of the level of damage inflicted upon enemy equipment and units - had a tick against almost every American asset, indicating it had been deemed destroyed or rendered inoperable.

Lieutenant Colonel Andy Dow, commander of the British force, said: "Throughout this deployment our focus has been on integrating game-changing capabilities from across the commando force to deliver disproportionate effect in the face of a free-thinking peer adversary."
The Royal Marines' success was achieved by targeting the US headquarters and valuable equipment, paralysing counter-attacks from the Americans. **By the end of the exercise, the Royal Marines were in control of 65 per cent of the entire area, having started with less than 20 per cent.**

EDITOR'S COMMENT: Perhaps the British commandos have read the proceedings of the "Millenium Challenge 2002" exercise; US Marines did not! Therefore, history repeats itself!

By Anson, S., Bertel, D., Havârneanu G., and Petersen, L

Building on existing research, new insights have emerged during the pandemic that show the need to move away from top-down communication that treats the public as one homogenous group without accounting for their different needs. Crisis communication should account for the range of individuals that together constitute a diverse 'public' and consider the needs of different groups. Such groups may include but are not limited to: different socio-economic backgrounds, those living in rural vs urban areas, people living with disability, the elderly, clinically vulnerable people, ethnic minorities, the homeless and LGBTQIA+ people. Indeed, vulnerability is not static and who is considered 'vulnerable' in a crisis has been proven to be more than ever context dependent, with someone who is vulnerable in one crisis/context not being considered so in another. For instance, while often considered resilient, during COVID-19, school children have been identified as vulnerable, especially concerning access to education and social interaction vital to wellbeing. While COVID-19 brought these issues to the forefront, it is important to note that these same considerations apply to CBRNe incidents and other hazards. Therefore, policy must take into account psychological and social aspects of a crisis as well as the needs of various subgroups in society when communicating about hazards and protective measures. The following recommendations are based on research undertaken as part of the EU funded projects COVINFORM and PROACTIVE.

Introduction
Modern societies face a multitude of hazards and threats that when combined with particular conditions, result in a disaster. This year the European Commission has highlighted how COVID-19 is the largest crisis to hit Europe in recent years. During this same time, Europe has also witnessed extreme weather, droughts, wildfires, storms, extreme rainfall, floods, earthquakes, terrorist attacks and cyberattacks1. COVID-19 has also brought attention to biological threats which are part of a wider cluster of incidents: Chemical, Biological, Radiological, Nuclear and explosive (CBRNe). For example, bioterrorism is an important concern, as three terrorist plots involving hazardous materials were disrupted in Paris, Cologne and Sardinia in 20182. All of these disasters demonstrate the extent to which substantial health, societal and economic impacts are increasing. They also are a strong reminder that a lack of communication on the protective measures to take during a crisis can exacerbate existing and create new vulnerabilities.

▶▶ Click on the title icon for the full paper

Look who is talking . . .

The Telegraph

Warlords, no-go areas and Muslims roasted alive: the ugly truth about Greek liberation, 200 years on

In 1821, the inventors of democracy wrestled their freedom from the Turks – but did their brutal vengeance amount to ethnic cleansing?

British vulgarity supporting Turkish propaganda forgetting own India, Africa and Polynesia massacres.
Photo, right: An ISIS-style photograph of a British Marine holding the heads of a severed man and woman in Malaya

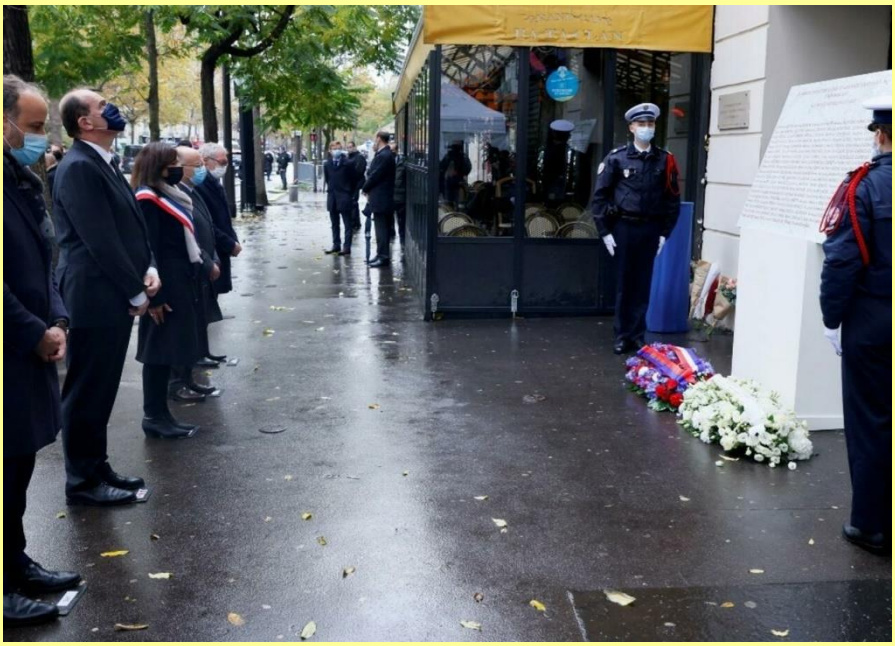
Hoplite (Οπλίτης in Greek – Soldier)

On the engine side it is equipped with a 6.7 liter engine. Power reaches 300 hp while torque reaches 1,100 Nm. The transmission is a six-speed automatic. In terms of performance… 0-80km / h is achieved in 20.4 seconds while the top speed reaches 120km / h. An important element is the autonomy that exceeds 700 kilometers with the capacity of the tank being 300 liters. **This multipurpose vehicle has full CBRN capabilities.**

39% of 18-24 year olds identify as LGBTQ in the U.S – a study by Arizona Christian University finds.

Source: https://za.opera.news/za/en/justice/ce556c17feab7754e1a07d23e9ea163a

France honours victims on sixth anniversary of terror attacks in Paris



French Prime Minister Jean Castex, Paris Mayor Anne Hidalgo, President of the association "13onze15, Fraternité et Vérité" Philippe Duperron and President of the French association Life for Paris Arthur Denouveaux take part in a ceremony to pay tribute to the victims of the November 13, 2015 attacks in Paris on November 13, 2021. © Thomas Samson, pool, Reuters

Nov 13 – France on Saturday marked the sixth anniversary of the night when Islamic State militants killed 130 people in coordinated strikes against a concert hall, bars, restaurants and a soccer stadium. Prime Minister Jean Castex and other government officials stood in silence to remember the victims of the attacks of November 13, 2015.

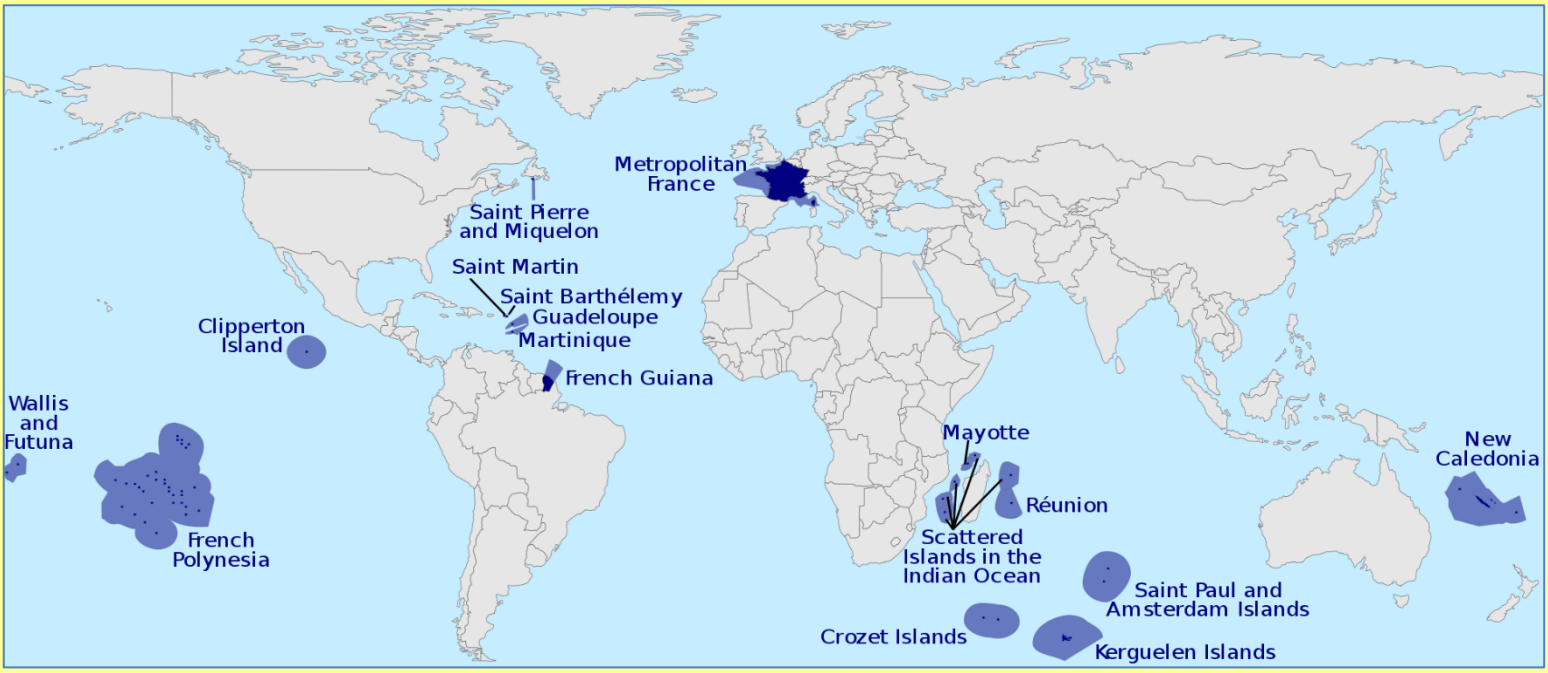
Is France a powerful country?

Source: https://www.quora.com/Is-France-a-powerful-country

YES. Here are 4 reasons why France is a powerful country.

Military

France is in fact a superpower…technically speaking. It is one of three countries (the other two being USA and Great Britain) that **can "project power on a global scale"** meaning it can launch a military campaign anywhere on the planet in any continent or seas. Like Great Britain, being a former colonial power, France still has an impressive portfolio of overseas territories all around the world enabling the country to carry out sustained campaigns far from its shores.
This is the territorial map of France.



As you can see, France has territories in some very remote parts of the world such as in the South Pacific, South Indian Ocean, off the western coast of Mexico. And looking at how many islands it owns it's no surprise **France has the largest EEZ (Exclusive Economic Zone) in the world.**
It is also one of the handful countries that has **nuclear weapons** and **ICBM** capability. And unlike Britain, France has actual control over deployment of its nukes.

International Politics

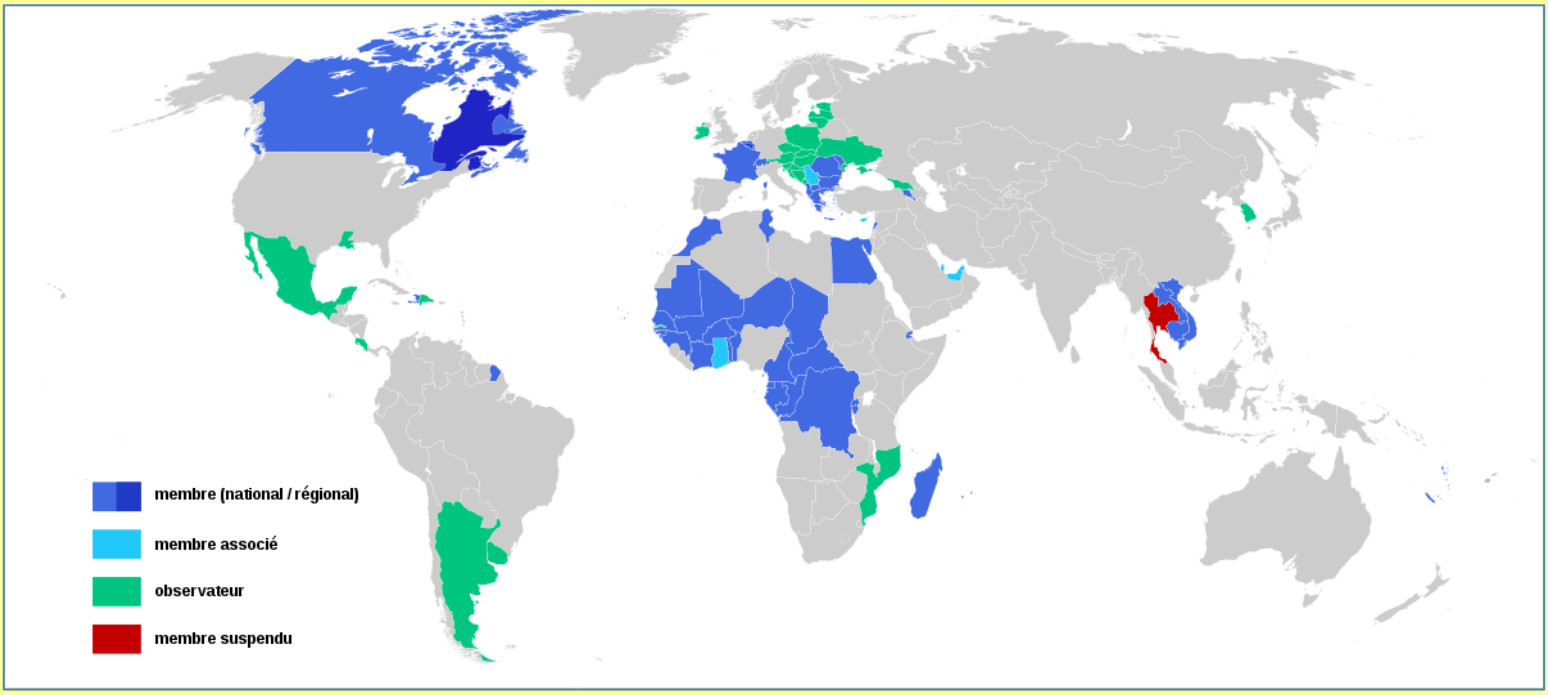
France is one of the **5 permanent members of the United Nations Security Council**. That means it is on equal footing as the USA, Great Britain, Russia and China when it comes to international power plays.
On top of that France also has formidable influence and leverage over its former colonies in Africa. Many of these countries use the **West African CFA Franc** currency which is pegged to the Euro and held in reserve in the French Central Bank. France also regularly conducts military campaigns in northern Africa to aggressively protect its interests.

European Union

It is no secret that France is a major player in the EU. You can even say it is the **de facto leader of EU** now that Merkel is gone. Due to the sheer control and influence France has over the EU, it can implement its will more or less. Remember
EU as a whole has the **second largest GDP in the world at $17 trillion**. With size comes significant leverage when it comes to international diplomacy, trade, sanctions, etc.

The future of the EU is a bit uncertain. But, it looks like they are going the federation route full steam ahead with ever closer integration and a **EU army**. This will shift the power balance more towards France than Germany. As France is the one with the overwhelming military and diplomatic edge.
Also don't forget, there are still some countries in eastern Europe such as the Balkans and Ukraine that can potentially join the EU in the future, making the bloc even bigger and stronger. Economically, EU dwarfs Russia which I believe will also join the EU eventually in the distant future after Putin is long gone. EU is an ideology. Like communism it is very difficult kill off an ideology.

Soft Power
In terms of soft power France punches above its weight. Although not as substantial as the UK or the USA these days. It is still a world leader in the fashion and luxury market. People from all over the world have a romantic view of France. This certainly helps in boosting its soft power, especially among females.
And remember, **France is the the most visited country in the world** with around 90 million visitors per year.
French is an **official language in 29 countries** around the world with around 270 million speakers. Most of these speakers are in Africa and given Africa's explosive population growth this number will only increase over time. Even still, Macron's government is actively promoting French language in Africa.



So, based on these facts it's fair to say France is an extremely powerful country.

EDITOR'S COMMENT: If you are looking for a website with answers to interesting questions, try Quora. A sample of questions: Can five F-22 raptors take down 800 WW2 era Luftwaffe fighters? Can the tank T-54/T-55 destroy any modern western tank, such as M1 Abrams and Challenger 2? What was Japan's biggest mistake during WW2? Why do US aircraft carriers have two runways? If you fire an RPG-7 projectile with the safety "cap" still screwed onto the tip, would the projectile still explode on impact? Does the IDF of Israel stand a chance in a battle against Iran? Enjoy!

3-day Watan security exercise to start on November 15

Source: https://www.qatarliving.com/forum/news/3-day-watan-security-exercise-start-november-15

Nov 15 - Taking place under the patronage of His Excellency the Prime Minister and Minister of Interior Sheikh Khalid bin Khalifa bin Abdulaziz al-Thani, it has been announced that the 3-day 'Watan' joint exercise will start on November 15, 2021.

Organized to confirm the security readiness of the State to host the most important event in the world, the 2022 World Cup, the exercise will be conducted with the participation of all military, civil, organizational, and service authorities in the country, each according to its competence along with 14 brotherly and friendly countries.

The announcement was made during a press conference held by the organizing authorities of the exercise at the Officers Club of the General Directorate of Civil Defence on November 13.

Lt. Col. Mubarak Sherida Al Kaabi, commander of the exercise, spoke during the conference and stated that the exercise aims to enhance the roles of the concerned authorities while carrying out their regular tasks and the additional tasks to them during the World Cup, measure the speed of response to emergency situations, and to activate the command-and-control mechanism and joint cooperation between military and civil authorities in order to achieve integration in their roles and implementation of the required tasks.

Al Kaabi explained that the security exercise is the largest of its kind in terms of the number of participating authorities internally and externally, in addition to the development of its events to combine the security, military, organizational, and service aspects.

Jassem Abdulaziz Al Jassim, Executive Vice President of Operations for the FIFA World Cup Qatar 2022, noted that the Watan exercise simulates the effectiveness of coordination between the concerned authorities to ensure the organization of a successful championship, pointing out that the Watan exercise includes a set of field and desk exercises to simulate some of the scenarios that may occur during the organization of the tournament.

The exercise sites include multiple sites in the country, including the competitive facilities for the championship and non-competitive facilities and a number of public vital and tourist facilities in both land and sea areas.

The authorities organizing the exercise are keen to implement the exercise with high accuracy and professionalism without compromising the normal daily life of citizens and residents, and the concerned authorities in the State will evaluate the outcomes of the exercise to identify the positives to strengthen them and the negatives, if any, and work to address them.

EDITOR'S COMMENT: Most probably there is no CBRN scenario included in the exercise. When there is one, organizers advertise it for many reasons. Same organizers tend to forget that the unexpected always happens! By the way, will Turkish security/police forces participate in the exercise?

US calls Russian anti-satellite missile test 'irresponsible, destructive'

Source: https://www.presstv.ir/Detail/2021/11/16/670714/US-calls-Russian-anti-satellite-missile-test-%E2%80%98destructive%E2%80%99

Nov 16 – The United States has called a Russian anti-satellite missile test "irresponsible" and "destructive" claiming that it caused a debris field in space that forced astronauts aboard the International Space Station (ISS) to temporarily seek shelter.
US State Department spokesperson Ned Price told reporters on Monday that Russia had "recklessly conducted a destructive satellite test of a direct ascent anti-satellite missile against one of its own satellites."
She said the test "has so far generated over 1,500 pieces of trackable, orbital debris and hundreds of thousands of pieces of smaller orbital debris that now threaten the interests of all nations."
US Space Command earlier on Monday said a "debris-generating event" happened in space but did not mention Russia.
"We are actively working to characterize the debris field and will continue to ensure all space-faring nations have the information necessary to maneuver satellites if impacted," the command said in a statement.
Price warned the test "will significantly increase the risk to astronauts and cosmonauts on the International Space Station, as well as to other human spaceflight activities."
"Russia's dangerous and irresponsible behavior jeopardizes the long-term sustainability of our outer space and clearly demonstrates that Russia's claims of opposing the weaponization of space are disingenuous and hypocritical," Price said.
"The United States will work with our allies and partners to respond to Russia's irresponsible act," the spokesperson added.

Russia dismisses US concerns of space debris

Russia on Tuesday rejected US accusations that its missile test that struck a defunct space satellite potentially put astronauts aboard the ISS at risk. The Russian Ministry of Defense confirmed that it had "successfully conducted a test" to hit an old Russian satellite launched into orbit by the Soviet Union in 1982, according to reports.
Russia's defense ministry dismissed US concerns, and said Washington "knows for certain that the resulting fragments, in terms of test time and orbital parameters, did not and will not pose a threat to orbital stations, spacecraft and space activities."
In reference to the debris, Roscosmos, Russia's state-run space corporation, said on Monday, "The orbit of the object … has moved away from the [International Space Station] orbit. The station is in the green zone."
Meanwhile, Pentagon spokesperson John Kirby lamented that Russia failed to warn the US of the test ahead of time. "This was an irresponsible act," he said.
"We watch closely the kinds of capabilities that Russia seems to want to develop which could pose a threat not just to our national security interests but the security interests of other spacefaring nations," Kirby said. "And again, we've been very clear, we would like to see norms for space so that it can be used responsibly by all spacefaring nations."
The US claims come as both Russia and China Russia have expressed concerns about the growing militarization of space by the United States and its allies, warning that such hostile measures should be counterbalanced.
Former US President Donald Trump had taken a keen interest in space, announcing the establishment of a new Space Force branch of the military, despite opposition from the Pentagon. **The US claims that both China and Russia have been seeking to militarize space.** The US Defense Intelligence Agency described the two countries as the "real threats" to "US capabilities" in outer space. Analysts say the US exaggerates the space military capabilities of Russia and China as a pretext to accelerate its own plans to prepare for space warfare. This is while Washington is a member of the Outer Space Treaty, which prohibits the deployment of weapons of mass destruction in space and only allows for the use of the moon and other celestial bodies for peaceful purposes.

EDITOR'S COMMENT: They worried about the ISS or because Russians did it first?

Ghost Guns': Firearm Kits Bought Online Fuel Epidemic of Violence

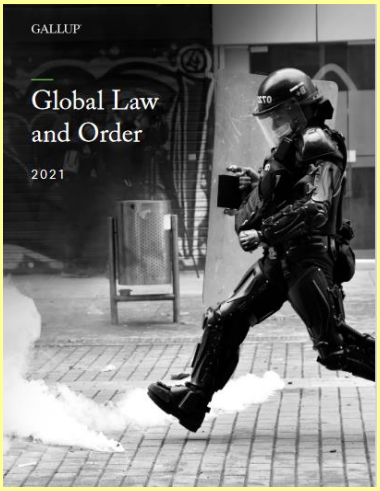
By Glenn Thrush (*New York Times*)

The untraceable weapons, assembled from parts, can be ordered with a click by children, gang members and felons. They are increasingly the lethal weapon of easy access around the U.S., but especially California.

UAE named world's safest country to walk at night in new global index

The Emirates also named second behind Norway in Gallup's Law and Order index

Source: https://www.thenationalnews.com/uae/government/2021/11/17/uae-named-worlds-safest-country-to-walk-at-night-in-new-global-index/



Nov 18 – People feel safer while walking at night in the UAE than anywhere else in the world, an international survey has found.

According to Gallup's Global *Law and Order 2021* report, the Emirates scored 95 per cent when it came to feeling safe about walking alone at night.

Norway was second on the index, with 93 per cent.

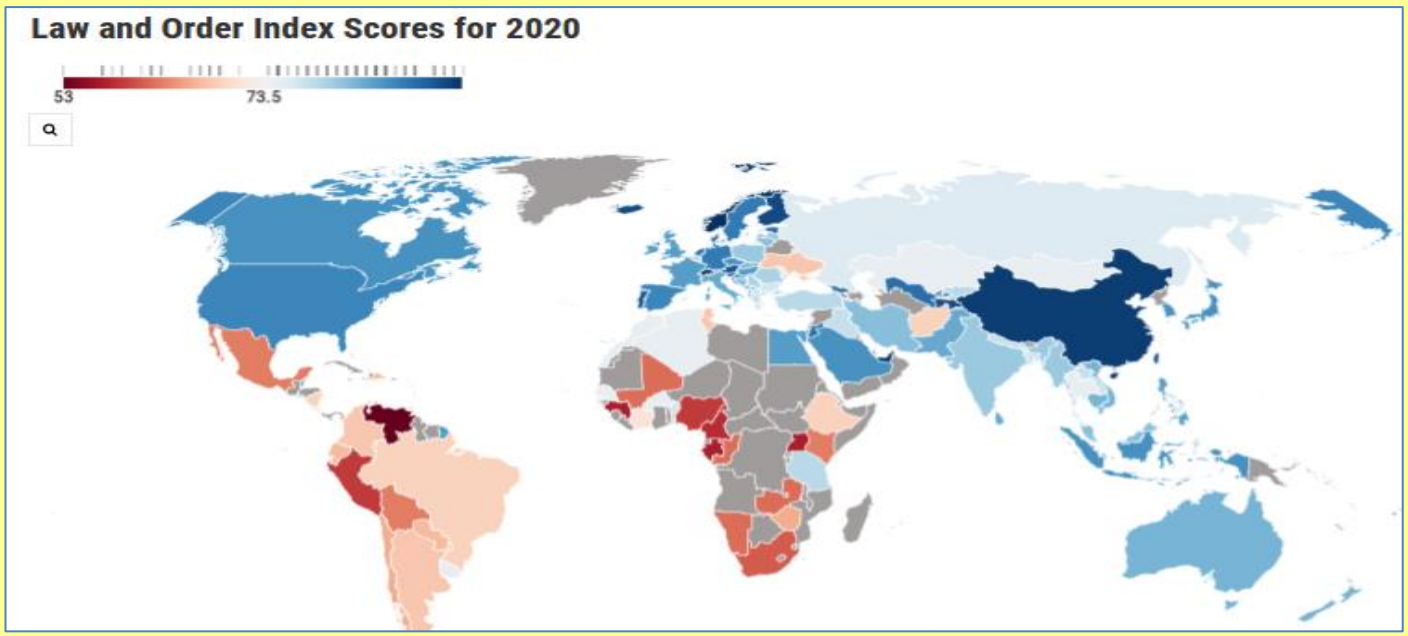
In the highest law and order index, the Emirates came second with a score of 93 points. Norway was ranked as the top country with 94 points.

"If a woman wanders alone at any hour of the day or night without fear, know that she is in the Emirates," tweeted Sheikh Mohammed bin Rashid, Vice President and Ruler of Dubai.

Gallup's latest survey was based on people's perceptions of their own security and trust in the rule of law.

The responses were collected throughout the first full year of the pandemic and through the first half of the second.

Top five countries with highest law and order index scores	Bottom five countries with the lowest law and order index scores	Top five countries where people feel safest walking alone	Bottom five countries where people do not feel safe walking alone
1. Norway 94%	1. Namibia 62%	1. UAE 95%	1. Brazil 45%
2. UAE 93%	2. Mali 62%	2. Norway 93%	2. Domin Republic 45%
3. China 93%	3. Rep of Congo 62%	3. China 91%	3. Uganda 45%
4. Switzerland 93%	4. Zambia 62%	4. Slovenia 91%	4. Cameroon 43%
5. Finland 92%	5. S Africa 61%	5. Taiwan 89%	5. Mexico 42%



In October, Georgetown University released its Women, Peace and Security Index and ranked the UAE the safest country for women to walk at night. The index showed 98.5 percent of women said they felt safe while walking alone in their neighborhoods at night. Singapore came second at 96.9 percent. Earlier this year, a separate survey by Numbeo named Abu Dhabi as the safest city in the world, with Dubai and Sharjah also in the top 10.

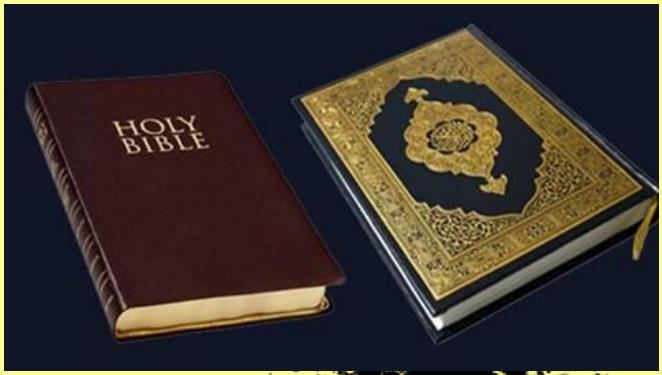
Bad humor propaganda

According to Greek mythology, the Aegean Sea name comes from Aegeas, King of Athens and father of Theseus. Legend says that Aegeas fell into the sea from Cape Sounio seeing black sails on the ship carrying his son Theseus from Minoan Crete. He had gone there to kill the Minotaur, to whom the Athenians were obliged to send young men and women for sacrifice. Theseus succeeded, but when he returned, he forgot to put on white sails (a sign that things had gone well), with the result that his father, out of grief and despair, fell into the sea and committed suicide.

What Is Islam's Relationship to Christianity? Theological Analysis of the Bible and the Quran

By Mark Durie

Source: https://www.meforum.org/62784/what-is-islams-relationship-to-christianity



Nov 2021 – The Quran is a book of the utmost importance and influence in the world today. It is the foundational text of Islam, and through the Islamic sharia it shapes legal systems, politics, ethics, cultures, and worship for a quarter of the world's population.

The intriguing Quran

There are many things about the Quran that are hard to understand and can seem puzzling. It is not an easy read. However, for Christians perhaps the most intriguing thing about the Quran is its many allusions to biblical stories and characters. Although Islam has offered a most effective challenge to Christianity during the past

1,400 years, conquering and then Islamizing four of the five patriarchates in the Pentarchy of late antiquity—Alexandria, Jerusalem, Antioch, and Constantinople—the text of the Quran draws heavily upon the Bible. The two most frequently named figures in the Quran are Moses (136 times) and Abraham (69 times). Jesus is mentioned by name six times as frequently as Muhammad.

One of the striking things about the Bible-in-the-Quran is the puzzling combination of knowledge and the lack of it. For example, although it contains hundreds of references to biblical figures and events, the Quran seems to consider Mary the mother of Jesus (Miriam in Hebrew) to be the same person as Miriam the sister of Moses and Aaron. In a surah (chapter) of the Quran called "The Family of Imran" (Biblical Amram of Exod 6:20) there is an account of the birth of Mary to the "wife of Amram," after which she is brought up by Zakariah, the father of John the Baptist (Surah 3:35–37). Then again, in Surah 19:28, Mary is called the "sister of Aaron."[1] These observations give rise to the question: "How can the Quran know so much about the Bible, while at the same time, not know that a thousand years separated the family of Amram from the family of Jesus of Nazareth?"

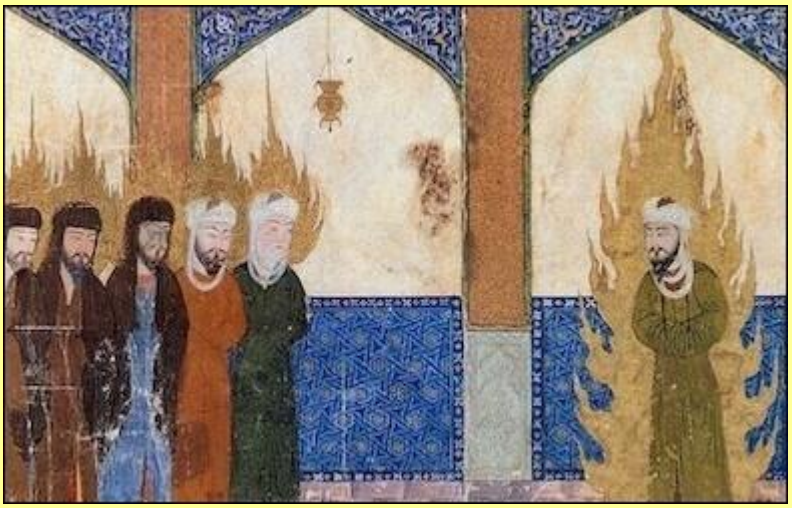
This is by no means the only inconsistency between the Bible and the Quran. Some others are the appearance of a Haman, a name familiar from the book of Esther, in the court of Pharoah at the time of Moses (Surah 28:6); the participation of a "Samaritan" in the golden calf episode from Exodus 32 (Surah 20:85, 87, 95); and a reference to Saul choosing his warriors based on whether they scooped water with their hands or drank by lapping with their mouths (Sura 2:249), which surely goes back to the story of Gideon in Judges 7.

I do not mention these mismatches between the Quran and the Bible for apologetic or polemical purposes, but simply to underscore this important question: "What is so much of the Bible doing in the Quran?"

A "Christian heresy"?

Down the centuries, a repeated Christian response to the rich and peculiar vein of biblical materials which runs through the Quran has been to conclude that Islam arose from what was originally some kind of sectarian Christianity. Thus John of Damascus, writing a century after Muhammad, claimed that Muhammad, "after conversing with an Arian monk concerning the Old and New Testament, fabricated his own heresy."[2] Other luminaries who have held a similar view have included Thomas Aquinas, Nicholas of Cusa, and Martin Luther, some claiming Arian influence, others Nestorian. Until modern times this perspective has been so prevalent that it could be considered the conventional Christian explanation for the biblical materials found in the Quran.

This framing of Islam as a Christian heresy has stimulated two opposite impulses. One is to correct what are taken to be "errors." This was the approach of John of Damascus. A contrasting response has been what Bishop Kenneth Cragg has called a process of *retrieval*.[3] Cragg's idea of retrieval was that Christians ought to undo or reverse the divergence from the gospel, by removing the veil which obscures the true Christ within Islam. This approach seeks to affirm what is true in the Quran by unveiling it. Some authors—and Cragg is an example—have argued that the veil is only in place because of Christian failure, because "Islam developed in an environment of imperfect Christianity."[4] Thus, for Cragg, the retrieval is also a "restitution."[5]



A medieval Persian manuscript shows Muhammad leading Abraham, Moses and Jesus in prayer

An alternative thesis

But what if both "correction" and "retrieval" are misguided? What if the whole idea of Islam arising from Christian roots is a derogatory error? Is it possible that neither the correction approach nor the retrieval approach is valid?

In my book, *The Qur'an and Its Biblical Reflexes*,[6] I explored an alternative thesis, that there is a deep theological disconnect between the Bible and the Quran, too deep to sustain the view that Islam arose out of Christianity or Judaism in any meaningful sense. Yes, the Quran incorporates biblical (and extra-biblical) Christian and Jewish materials, but it repurposes them to serve a radically different theological agenda: the Quran marches to the beat of its own theological drum. I concluded that the sheer volume of biblical reflexes in the Quran is not actually evidence of a deeper "family-tree" affinity between Islam and Christianity.

In one example, the Quran refers repeatedly to Jesus (Isa), and even calls him the Messiah (*al-Masih*), but this is a Christ without a Christology, for there is no explanation of what a Messiah might be. The sound shape of the messianic title has been carried over into the Quran, but nothing of its meaning.

The theological difference between the Bible and the Quran runs deeper than superficial similarities might first suggest. For example, the Quran lacks a covenantal theology to frame a saving relationship between human beings and Allah. A careful linguistic analysis of the quranic Arabic words *mithaq* and *ahd*, sometimes translated as "covenant," reveals that in the Quran God does not enter into reciprocal binding obligations with people; such relationships only exist between human beings. Putative quranic "covenants" between God and people in the Quran are actually obligations imposed by God upon his human slaves.

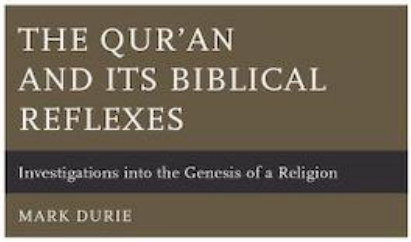
To be sure, the Quran borrows materials prodigiously from Christian and Jewish sources, but not for forming its theology. For example, the idea of warring in the name of God was current among Christians at the time of the Quran, which picked up and incorporated ideas and practices from contemporary Christianity,[7] but the Quran does this without drawing upon biblical theologies of warfare. Instead, it creatively develops its own war theology, fitting what is taken from contemporary Christian practices into a framework of pre-Islamic Arab raiding culture.[8]

At first sight monotheism is a theological idea the Bible and the Quran have in common, but first appearances can be deceptive. In the Torah the call to monotheism is about exclusive covenantal loyalty to Yahweh: "You shall have no other gods before me" (Deut 5:7). However, the Quran's idea of God's oneness is grounded in Arabic ideas of client-protégé relationships and, negatively, in the assertion that no idea of propriety partnership (*shirk*) can be applied to God. These metaphors owe little if anything to the Bible, but are grounded in the values of Arab culture, for example the insight that it is disastrous for a slave to be owned by two masters (Sura 39:29).

The list of key biblical theological concepts that were not taken up into quranic theology includes the idea of the presence of God, the concept of holiness, and the idea that sin is a breach of relationship that can be repaired through atonement.

If not a family tree, then what?

Many Christians assume that Islam developed out of Judaism and Christianity. This is itself a manifestation of the conventional "Christian heresy" view of Islam. Behind this, a "family tree" model assumed, in which the root is Judaism. This branches out into Christianity, and then later Islam branches off. My research suggests that this way of thinking is a false lead, which pays too much attention to superficial similarities and not enough to theology.



I wrote in *The Qur'an and its Biblical Reflexes* that "a challenge of modeling the relationship of Islam to Judaism and Christianity is to be able to refer to a conceptual framework for the genesis of a faith that can accommodate a pattern of extensive influences combined with evidences of significant disconnections, which is what we know to be the case with the Quran."[9] If Islam and Christianity are not in some kind of kinship relationship, how then are we to conceptualize a connection which resulted in a very large volume of biblical content being absorbed into the Quran? If not a family tree, then what?

In *The Qur'an and its Biblical Reflexes* I drew on two metaphors. One is a building metaphor. Islam's relationship to Christianity is not like that of a church which has been transformed into mosque, like the Hagia Sophia in Istanbul. Rather it is more like a church has been demolished, and its materials have been repurposed for the construction of a mosque, rather like the pillars in the mosque at Qairawan in Tunisia, which were repurposed from earlier churches, long since demolished.[10]

The other metaphor I drew on was linguistic hybridization. Some languages are formed by combining materials from a *superstrate* language and a *substrate* language (or languages). An example is Haitian Creole, for which the superstrate was French, and the substrate West African languages. The result is that Haitian Creole's words are largely French, but its grammar, morphology, and phonology—its heart—is pure West African.

I proposed that the Quran was produced by a process of hybridization, in which Christian and Jewish influences provided the superstrate, while pre-Islamic Arab language and culture provided the substrate, including much of the theology.

Concluding reflections

The observation that the Quran does not have a "family tree" relationship with Judaism and Christianity should not in any way be considered pejorative. If the Quran "is neither a text

subsidiary to the Bible, nor is it to be attached to a genetic family tree alongside it,"[11] then Christians can be liberated from thinking of Islam as some kind of Christian heresy, and begin to understand it for what it actually is, and not what at first sight it might appear to be to Christians.

The perspective offered here, if valid, could have profound implications for coexistence between the two faiths, including for interfaith dialogue. It also has implications for mission. It means that both missionaries and dialogue partners can set aside the tasks of "correction" or "retrieval," for these two opposite approaches are really but two sides of the "heresy" coin.

My findings offer an invitation to Christians to ponder the similarities and (deep) differences between Islam and the two biblical faiths, Judaism and Christianity, with fresh eyes.

Mark Durie *is a Fellow at the Middle East Forum, founding director of the Institute for Spiritual Awareness, and a senior research fellow of the Arthur Jeffery Centre for the Study of Islam at the Melbourne School of Theology.*

Sex, Geopolitics and the Maternal Bond: Taliban Violence, Their Devalued Females and the Tragedy of the *Bachi Bazis*

By Nancy Hartevelt Kobrin, Ph.D

We call upon all Member States to strongly commit to ensure that women have a seat at every table, that they are heard and that they can contribute to find solutions and prevent conflict. Only then, can we have a peaceful and equal society.

We are committed to taking into account the experiences of women and girls, both living in conflict zones but also in peace and stability, and to always include a gender perspective, recognizing the unique impact different situations may have on women and girls."

Ambassador Yusuf Abdulkarim Bucheeri of Bahrain[1]

Introduction

This essay offers a novel analysis showing why it is so complicated to speak about the empowerment of women without acknowledging the role of the unconscious in the family dynamics concerning the maternal bond. The Taliban and all the other jihadi groups, be they Al Qaeda or the Islamic State – Khorasan, share in the abuse of the female and by extension the child. By taking a look at one problem with regard to Afghanistan, namely the *bachi bazis,* (lit. boy-play) the dancing boys, the abused raped boys, a better understanding of the fragile mental instability of all involved will be brought into focus. It is strongly emphasized here that the mother is not to be blamed because she was once a chronically abused little female who became a mother at all too young an age.

Shaming and the soul murder of a child

Afghanistan is a shame honor society composed of its diverse cultures and the dominant Islamic religion. It is not within the scope of this essay to review the terrain of the different shame honor codes such as the Pashtunwali. A shame honor culture is "a nice way" to cover up psychologically damaging shaming practices that constitute soul murder of children.[2] The emotion of shaming is used to manipulate and control the other. Shaming also involves at times acting out violently through use of physical force and bullying. Islam can be considered a shame honor religion because of Sura 4 on wife beating and Sura 9 on *qital* or the blow to the back of the neck because these chapters set forth violent images of bonding by perpetrator to victim through beating and killing which are shaming strategies to instill terror. Where there is physical contact, there is "bonding."

The entire shame honor enterprise is undergirded by the devalued female. Hitting is a violent form of bonding; it enacts a fusional state with the other. Fusion means two people become one physically, even if momentarily as well as in fantasy. Rape is also a

[1] Lazar Berman, "Abraham Accords partners issue joint UN human rights statement on women, peace," https://www.timesofisrael.com/abraham-accords-partners-issue-joint-un-human-rights-statement-on-women-peace/, (Accessed on 22 September 2021)

[2] Leonard Shengold. *Soul Murder: The Effects of Childhood Abuse and Deprivation*. (New York: Ballantine Books, 1991).

violent bonding. Pederasty is another form of violent bonding.[3] Culture and religion fit like hand in glove in terms of control over the female and her body in Afghanistan.
A brief review of different types of bonding is warranted.

Maternal bonding
Maternal bonding may also be referred to as maternal attachment in the context of this essay. Social bonding and its traumatic bonding are intimately related to and arise out of the first bonding experience in life with the mother according to Dutton.[4] The mother is the first cultural interpreter for the baby. The psychoanalyst John Bowlby was the first to theorize about the mother-infant bonding experience in his 1958 essay "The nature of the child's tie to his mother."[5] Maternal attachment may be defined as:

a biologically-driven construct, inherent within humans and other primates, designed to preserve the species through nurturing and protective behaviors (Bowlby 1982/1969; Bowlby 1978).[6]

Human or social bonding
Often human bonding is referred to as social bonding which means bonds formed outside of the family unit. It is defined as:

the process of development of a close interpersonal relationship between two or more people. It most commonly takes place between family members or friends, but can also develop among groups, such as sporting teams and whenever people spend time together. Bonding is a mutual, interactive process, and is different from simple liking. It is the process of nurturing social connection. Bonding typically refers to the process of attachment that develops between romantic or platonic partners, close friends, or parents and children. This bond is characterised by emotions such as affection and trust. Any two people who spend time together may form a bond. Male bonding refers to the establishment of relationships between men through shared activities. The term female bonding refers to the formation of close personal relationships between women. Cross-sex friendships refers to personal relationships between men and women.[7]

Traumatic bonding
Another key aspect of bonding pertinent to this discussion concerns traumatic bonding where attachment has become destructive:

are emotional bonds with an individual (and sometimes, with a group) that arise from a recurring, cyclical pattern of abuse perpetuated by intermittent reinforcement through rewards and punishments. The process of forming trauma bonds is referred to as trauma bonding or traumatic bonding. A trauma bond usually involves a victim and a perpetrator in a uni-directional relationship wherein the victim forms an emotional bond with the perpetrator. This can also be conceptualized as a dominated-dominator or an abused-abuser dynamic. Two main factors are involved in the establishment of a trauma bond: a power imbalance and intermittent reinforcement of good and bad treatment, or reward and punishment. Trauma bonding can occur in the realms of romantic relationships, parent-child relationships, incestuous relationships, cults, hostage situations, sex trafficking (especially that of minors), ortours of duty among military personnel.

Trauma bonds are based on terror, domination, and unpredictability. As a trauma bond between an abuser and a victim strengthens and deepens, it leads to conflicting feelings of alarm, numbness, and grief, that show up in a cyclical pattern. More often than not, victims in trauma bonds do not have agency and autonomy, and don't have an individual sense of self either. Their self-image is a derivative and an internalization of the abuser's conceptualization of them.

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[3] Cf. entries on the maternal fusion, maternal cameo and the maternal drama of terrorism, in Nancy Hartevelt Kobrin. *The Jihadi Dictionary: The Essential Intel Tool for Military, Law Enforcement, Government and the Concerned Public*. (Mamaroneck, NJ: MultiEducator Press, 2016), pp. 98, 151,153.
[4] Donald D. Dutton. 2007. *The Abusive Personality*. New York: Guilford Press.
[5] John Bowlby, The nature of the child's tie to his mother. (Accessed on 26 September 2021). http://www.psychology.sunysb.edu/attachment/online/nature%20of%20the%20childs%20tie%20bowlby.pdf
[6] Jeanne L. Alhusen, PhD, CRNP, Matthew J. Hayat, PhD,[2]and Deborah Gross, DNSc, RN, FAAN, A longitudinal study of maternal attachment and infant developmental outcomes, https://www.ncbi.nlm.nih.gov/pmc/articles/PMC3796052/, (Accessed on 26 September 2021).
[7] Entry "human bonding," in *Wikipedia*, https://en.wikipedia.org/wiki/Human_bonding, (Accessed on 26 September 2021).

Traumatic bonding occurs in domestic violence. It also has an intimate connection to the psychodynamics of the Islamic suicide attack which embodies the unconscious template of murder-suicide. It has been noted that often the first contact with law enforcement for the jihadis is a domestic violence call.[8] Domestic violence calls are considered the most dangerous among law enforcement. Police officers in domestic violence units always go in pairs to the home in order to intervene, never alone because it is that fraught with difficulties at risk of death.

The family as a microcosm of society

Halim Barakat, the Egyptian sociologist, wrote that the family is a microcosm of society.[9] Barakat meant that if there is violence within the family, there will be violence and instability in the political world of the state. D. W. Winnicott, the psychoanalyst and one of the founders of the field of Object Relations, liked to say that "home is where we start from."[10] A secure maternal bond provides trust and stability in human relations.

This brings to the discussion the unconscious idea of the Islamic *Ummah* because the word itself retains a tie to *Umm*, "mother" and where it has come to signify the Muslim "nation." It is both local i.e. Afghanistan and also linked globally. The word "glocal" can be used to emphasize this duality and interconnectedness. Similarly, it is a kin to the etymology for the Western concept of "nation" which is intimately linked to being 'born,' *natus*, i.e. from the mother's body. The maternal looms large in the Afghan psyche and yet the female is not only devalued but persecuted by the Taliban.

The elephant in the room of geopolitics

Generally, the female does not hold political power, especially throughout the *Ummah*. The safety of the female and the guaranteeing of her human rights have become of the utmost concern since the US withdrawal from Afghanistan as articulated by the initial quote addressing this essay. This is because of the devastatingly poor track record of the Taliban with regard to its females which is one of suppression and the infliction of violence. Indeed, the bonding between the Taliban as perpetrator and its victims the female fits with the above cited definition of traumatic bonding. The need to empower women is a clear indicator that the female holds an inferior position within its group dynamics. The supreme paradox is that as mother, she builds the brain of the baby *in utero* to age three in which the brain quadruples in size. She is like the computer company Intel producing "computer chips" for the brain. Trauma and stress hormones have a known negative impact on infants. In psychology it is recognized that the personality of child is well formulated by age three. The Taub Center for Social Policy Studies in Israel notes that it is much more difficult to change the course of development after early childhood when there has been trauma and social inequities.[11] Meanwhile the Taliban are unaware that they are essentially shooting themselves in the foot by abusing their own females.

A WhatsApp, an editorial, and an outreach email

The backstory for this essay was precipitated by three communications: a WhatsApp from Pakistan, a recent editorial in *The Economist* and an outreach email. First came the WhatsApp from a Pashtun colleague at Kohat University, Pakistan and an outreach email from the managing editor of the well-known German women's magazine EMMA followed.

The WhatsApp from Pakistan August 18, 2021

Written in response to The Taliban spokesperson who did not realize that he was being interviewed by the Israeli TV[12]

[9:43 pm, 18/08/2021] +92 333 0607086: Watch out! This morning he was claiming he had not talked to any Jewish media person. In some of their views and mannerisms they are as good as *deranged, rude children* [emphasis added].

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[8] See for example Nancy Hartevelt Kobrin. *The Banality of Suicide Bombing: The Naked Truth about the Islamic Suicide Attack*. (Dulles, VA: Potomac, 2010).

[9] Halim Barakat, *The Arab World: Society, Culture and State,* (Berkeley, CA: University of California Press, 1993), p. 118.

[10] D. W. Winnicott. *Home is Where We Start from: Essay by a Psychoanalyst*. (New York: W. W. Norton & Company, 1990).

[11] Data Point. "Israel 2040" – Early Childhood. The Taub Center for Social Policy Studies in Israel, https://www.taubcenter.org.il/en/podcast/israel-2040-early-childhood/, (Accessed on 25 September 2021).

[12] TOI staff and Agencies, Last Afghan Jew will be safe, Taliban spokesman (unwittingly) tells Israeli TV, 17 August 2021, https://www.timesofisrael.com/last-jew-in-afghanistan-will-be-safe-taliban-official-tells-israeli-news/, (Accessed on 17 August 2021).

[9:44 pm, 18/08/2021] +92 333 0607086: Right now, they are trying, in their own clumsy way, to charm the world. The problem is that they are *very-very unpredictable* [emphasis added]. [13]

Interestingly this colleague who is Pashtun characterized the Taliban as "very very unpredictable." In psychoanalytic parlance such unpredictability relates back to psychological instability in self-states or what is known as poor object constancy:

In object relations theory, the ***ability of an infant to maintain an attachment that is relatively independent of gratification or frustration****, based on a cognitive capacity to conceive of a mother who exists when she is out of sight and who has positive attributes when she is unsatisfying.*

Poor object constancy means that it was difficult for the infant to feel that it can trust as well as having a feeling of security. This is considered all the more difficult to establish for the infant in an environment where the female is constantly threatened and abused. Her distress is unconsciously communicated to the baby, yielding the inability to feel secure and to be able to understand one's emotional life. Poor object constancy is routinely encountered in borderline psychopathology as well as sociopathic and psychopathic personality disorders.

While Afghans may claim that children are jewels of the family, they do not hesitate to mistreat them because they are mistreating their mothers. Children are psychologically fused to their mothers. To hit a mother, it is perceived by the child as if he or she is being beaten and often the child is, in fact, is also being physically abused. With poor object constancy people are merely objects to one another, not persons with needs causing a cognitive deficit. Empathy is lacking. Needs are considered toxic in shame honor cultures.[14] One of the most salient examples is the tragedy of the *bachi bazis* to be discussed below.

***The Economist*'s editorial - "Why nations that fail women fail: And why foreign policy should pay more heed to half of humanity"** [15]

The editorial focuses on the troubling state of affair in Afghanistan for women under the Taliban. The only allusion to Islam which is found is in the naming of the Islamic State of Khorasan. The word "*ummah*" is not mentioned. This lack shows that the concept of sex is understood in a superficial way concerning geopolitics where the Taliban establishes once again a harsh interpretation of sharia law.

The editorial argues very simply that one must utilize the lens of sex in order to gain an accurate perspective because it provides access to half of its members. The editorial lists a series of improvements that Afghan women have experienced during the twenty-year period while the United States was in Afghanistan and also notes a major problem – "Societies based on *male bonding* [emphasis added] tend to subjugate women." This is a direct reference to the Taliban. However, an editorial is too short a piece of writing to permit delving deeper into the unconscious heart of the matter, namely how antiquated beliefs of the *ummah*'s shame honor regulation of the female devastatingly impacts on early childhood development of both the little girl and little boy beginning with maternal bonding *in utero* and postpartum. A. Poinelli (2015) has created an entire subfield within maternal attachment focusing on *in utero* studies of the fetus.[16]

The Economist's editorial does not allude to unconscious behavior nor the fact that the 95% of thinking resides outside of conscious awareness. Abuse has a devastating impact on social bonding. Unconscious behavior is predicated on a rich fantasy life of a panoply of emotions. Moreover, there is an intimate relationship between fantasy life and political ideology. Political ideologies are emotionally lived ideas. They do not arise out of thin air, *de novo*. Violent political ideologies arise out of early fantasy life, a panoply of negative emotions due to unmet needs.

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[13] Personal communication by WhatsApp from Fawad Javaid, Kohat University, Pakistan, 18 August 2021.

[14] It should come as no surprise that such abundance of unmet needs causes a reservoir of rage – unconscious as well as conscious. Cf. Nancy Hartevelt Kobrin, "The violent brutality of growing up in a shame honor culture predicated on the destruction of the mother and her maternal bond," *Mentalities Journal*, Vol. 33 No. 1, 2019, http://www.mentalitiesjournal.com/wp-content/uploads/2019/11/The-Violent-Brutality-of-Growing-Up-in-A-Shame-Honor-Culture.pdf, (Accessed on 26 September 2021).

[15] Editors, "Why Nations that Fail Women Fail: And why foreign policy should pay more heed to half of humanity," *The Economist,* 11 September 2021, https://www.economist.com/leaders/2021/09/11/why-nations-that-fail-women-fail, (Accessed on 24 September 2021).

[16] Alessandra Pionelli, *From Fetus to Child: An Observational and Psychoanalytic Study*, (New York: Routledge, 2015).

Ideologies merely package the affective experience of shaming. In the case of violent extreme political ideologies such as those embraced by the Taliban, they signal a culturally shared emotional environment in which there has been rampant abuse; needs have not been met early on, a panoply of negative affects meaning that they have developed from childhood a devastating overwhelming set of negative emotions. [17] They have not experienced a secure attachment nor can they trust. In shame honor environments one cannot get his or her needs met because needs are considered toxic. This toxicity is projected into the Other in order to cleanse and purify themselves of their toxic feelings. From *The Jihadi Dictionary*:

A culture of shame–honor involves "a cultural standard in an area, country, or ethnic people wherein brutality is recommended as the favored response to an affront or other menace to one's dignity or reputation."[18]

The "Unseverable" Maternal Bond

Further complicating the picture there exists a social albeit unconscious prohibition against a child separating from his or her mother psychologically. The Iraqi pediatric psychiatrist Sami Tamimi has explicitly written about this in his *Pathological Child Psychiatry and the Medicalization of Childhood* in which he calls the bond between mother and child as "unseverable."[19] What exactly does this mean? What are its ramifications? It means that the child is not permitted to go through an individuation-separation stage of development which is so characteristic of Western culture. Pervasive shaming is used as a tool to keep the child bound to the mother who as a little devalued abused girl had no power. Thus, when she gives birth to the male baby, he not only becomes her alleged "honor," he is her tool of power. The maternal tie is too tight as the male baby is misused as a narcissistic object. Narcissism has a very aggressive dark side and it should not be underestimated as to its destructive nature. Such an unconscious under current that gets played about between mother and male infant results in projection and massive blaming of the Other. In the West this is known colloquially as the shame-blame-game.

The outreach email from EMMA – the German women's magazine and the *bachi bazis*

This leads into the email from the managing editor at EMMA who had found an essay written in 2015 entitled "The Sadomasochism of the jihadi death cult."[20] The question asked was: Is there a relationship between the abuse of the *bachi bazis* and the violence of the Taliban? As early as 1997 the Tunisian sociologist Abdelwahhab Bouhdiba in his

[17] Personal communication by email 31 August 2021, from Paul Holinger, author of *What Babies Say Before They Can Talk: The Nine Signals Infants Use to Express Their Feelings*, (New York: Touchstone, 2003), "the vicissitudes of early development, especially attachment, or, better, the preponderance of negative affects in early development."
Affect is perhaps the more modern way of speaking about emotions and subjective experiences. A theory of affect was introduced by Silvan Tomkins as early as 1962 in *Affect Imagery Consciousness: The Negative Emotions Anger and Fear* (New York, NY: Springer Publishing Company, 1991). It is important to note the emphasis on imagery as it is now known that 94% of communication is nonverbal and hence linked to imagery. This is vital for an understanding of terrorism and its psychological warfare. Tomkins emphasized the biological aspect of emotion and sketched out how it is hard-wired with the interplay of genetics. It is a complicated terrain but potentially worthy of exploration for understanding the long-term impact of shaming environments. I prefer the word "terror" over "fear" as it seems to be more severe and related to maternal terrors. Moreover, it is a way to emphasis the tie to political terrorism.

[18] Cf. the entry Culture of Shame – Honor, *The Jihadi Dictionary*, p. 63 which quotes the definition of Webster's Dictionary on this subject.

[19] Sami Timimi, *Pathological Child Psychiatry and the Medicalization of Childhood*, (New York: Routledge, 2002), p. 22.

[20] Personal communication by email 5 September 2021. Cf. Nancy Hartevelt Kobrin, "The sadomasochism of the jihadi death cult," *Tablet Magazine*, https://www.tabletmag.com/sections/israel-middle-east/articles/sadomasochism-islamist-death-cult, (Accessed on 24 September 2021).

Sexuality in Islam had already answered this question with regard to male violence when unconsciously understood in light of male sexuality and the maternal bond. [21]

Because the male baby is a narcissistic object of the mother whereby he has been essentially emasculated, this leads to violent fantasies that in turn become concretized and acted out later in life, targeting the female as a displaced object of his maternal rage. Jihadis bond violently to the female as an unconscious strategy in order to destroy their maternal bond, in order to "set themselves" free from the maternal "oppression." Bouhdiba recalls the famous story in *One Thousand and One Arabian Nights* in which a boy must kill off his mother in the narrative in order to destroy the maternal bond.[22]

The "imprisoned" Afghan mother remains powerless in being able to protect her children, including the *Bachi Bazis*.

When one beats up and imprisons the female by cloaking them in a shroud and forcing them to stay at home without the opportunity to become educated or to work, such terror causes intergenerational transmission of that trauma. Stress hormones and abuse greatly impact on the development of the child. He has learned to bond violently – having been hit himself by his father and having witnessed the terrifying helplessness of his mother upon whom he depends.

Being devalued as a little female is not just a label. It means something much more insidious – namely the day in and out of shaming used as a control tool in order to get the child to submit -- the chronic unspoken bullying, manipulating, being under surveillance of the brother, being nothing more than an object to be controlled. The oppression is always present and relentless. The little girl grows up under the death threat of the honor killing. Unconsciously it may be surmised that she is aware that something unjust has been foisted upon her. She might not be able to put it into words nor describe her emotional view of what it is like to live under patriarchy or in this specific case of the Taliban, but she knows at a deep unconscious level that something is drastically wrong with the picture. She has imbibed the undercurrent of chronic unconscious and conscious male as well as female rage. She lives in a reverse world, the crazy-making world of fanatics, a bit like the Pixar movie "Inside Out" but only much worse and life-threatening. What is good is bad and what is bad is good.

Jihadis constitute a hyper shame honor culture arising out of the *ummah*'s shaming structures. Jihadis are the tip of the spear because they share a particularly unique sexual intimacy as being the off-spring of members of the *ummah*.[23] They are also the hyper carriers of the *ummah*'s disavowed aggression and rage. They provide perfect cover for the global *ummah* to claim that they have nothing to do with them. This is passive aggressive behavior in one of its most clever unconscious forms. If one is psychologically forbidden from separating from one's mother, one does not develop the cognitive capacity to be able to see the proverbial forest from the trees. Moreover, one does not develop a sense of empathy for others because the child has only known treatment as an object. Separation and individuation are a vital stage of child development where one learns that one can go out into the world and return home safely and confidently. Western fairy tales speak to this mastery of obstacles such as Little Red Riding Hood and Hansel and Gretel.[24] This is not the case in Afghanistan because the veneration of martyrdom such as suicide bombing, teaches a child the exact reverse -- that to go out into the world, one blows himself up and dies.

On account of the *bachi bazis* the managing editor at EMMA wrote wondering if the Taliban's violence was the upshot of raping little boys. They are known as the thirteenth man who are routinely raped and held hostage as sex slaves. EMMA's editors had found an article that this analyst had written in 2015 in *Tablet* entitled "Sadomasochism and the Jihadi Death Cult."[25] Quoting from *The Jihadi Dictionary*:

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[21] Abdelwahab Bouhdiba. *Sexuality in Islam*. Translated by Alan Sheridan. London: Saqi Books, 1998.

[22] Ibid., p. 64.

[23] For western converts to Islam who radicalize, they often come from homes in which there was either a highly patriarchal rigid environment or an absent father which is also found in the *ummah*'s adherence to polygyny. cf. N. Kobrin, 2007, Political Serial Killing by Proxy: Christian Ganczarski the chief perpetrator, Nizar Nawar his proxy and the Djerba Synagogue Bombing: http://www.anilaggrawal.com/ij/vol_008_no_002/papers/paper001.html, (Accessed on 24 September 2021).

[24] See for example, E. Heineman. *Witches: A Psychoanalytic Exploration of the Killing of Women*. (London: Free Association Books, 2000); also, E. Welldon. *Madonna and Whore: The Idealization and Denigration of Motherhood*. (London: Karnac, 1988) and S. Cashdan. *The Witch Must Die: The Hidden Meaning of Fairy Tales*. (New York: Basic Books, 2000).

[25] Nancy Hartevelt Kobrin, The sadomasochism of the jihadi death cult, *Tablet*, 10 February 2015, https://www.tabletmag.com/sections/israel-middle-east/articles/sadomasochism-islamist-death-cult, (Accessed on 25 September 2021).

Pederasty is a routine, culturally condoned practice and behavior among jihadis. It is a violent fusion with and abuse of the boy. A good example is the Taliban's Bachi Bazi boys, who are used as sex slaves. . . "Anal rape also fits with Arab and Muslim cultures. In Afghanistan there is the 'thirteenth man,' a young boy called the Bachi Bazi whom the male group routinely rapes. If, as a child therapist, you saw a young child in play therapy take a toy car and repeatedly ram the car into the back of a toy truck like a suicide car bomber, you would wonder if the child had been anally raped. This is the nonverbal, symbolic language of terrorism. Terrorists have no boundaries. They form a malignant twinship with you, and project their terrors into you, and in turn victimize you. Sexual abuse, to the best of my knowledge, has not really been adequately factored into explaining the Islamic suicide terrorism. . . . the quality and quantity of the rage speaks to that kind of abuse.

Terrorism is about shame, not honor. Anal rape is a subject that counterterrorist experts, the majority of whom are male, are extremely uncomfortable talking about. If anything, they make jokes about it. To be a male and be raped is the ultimate sign of submission, of being made into the female through this violent act. Perhaps it is the ultimate shame. Anal rape occurs frequently in Arab Muslim cultures and in Afghanistan and Pakistan as well. The sense of physical and psychological submission cannot be dissociated from the visual concept of submission in Islam, as concretely made evident by its prostration in prayer. Indeed, in reviewing El Feki's Sex and the Citadel, Maslin quotes an Egyptian woman cited in the book as saying: 'Men in Egypt and the Gulf, they always want to have sex in the wrong place,' and she was not referring to geography but to anal intercourse. They also wash their face with their hands as if to remove the stain of impurity.[26]

EMMA was right to ponder what the relationship is between political violence and child sexual abuse. While it is not the sole factor for precipitating Afghan violence it is an aspect and also part of what is intergenerationally transmitted from rapper to rapee turned rapper and/or murderer in the form of jihadi, and so on and so forth. It is not within the scope of this essay to delve into the subject of genetics and epigenetics, though there is no doubt that there is such an interplay between nature and nurture which should not be discounted.

The institution of the *bachi bazi* is only one cultural child rearing practices which is hard for Westerns to comprehend. This was seen with the travesty of the US stance on the *bachi bazis* which US soldiers found devastating. They were told not to intervene in the cultural practice and hence they became unwitting participant observers and its sadomasochism.[27] This alleged "neutrality" on the part of the US Army reveals western disavowal of its own occurrence of child sexual abuse. The vulnerability of the child stirs up deep unconscious feelings in adults of their own vulnerability.

The illusion of the heroic mother and when she dies

By way of conclusion this discussion turns to the subject of the death of the heroic mother. What happens when she dies? What happens with this "unseverable" maternal bond? While the heroic mother has been writ larger than life, this is merely an overcompensation for the abuse of the female. The heroic mother is a psychological defense against male dependency on the female. Moreover, it functions as a counterphobic response against male terror of the female body. For how could such a devalued female be so powerful as to give birth to a male baby? All one has to do is to watch Arab Netflix be it Lebanese, Egyptian, Kuwaiti or even Turkish telenovelas to see how the mother is venerated to the point that it leads to the male feeling emasculated and resorting to violence to not only show his manhood but to carry out his ascribed social role as eldest brother tasked with monitoring family honor. Should family honor i.e. the vagina be tainted he must *willfully* spill blood in order to cleanse family honor and the female must be murdered. The Netflix series *Al Hayba* is one such good example.[28] The cultural strategy not only allows for *the unconscious* killing off of the mother but it also promotes hatred of the Other due to psychological splitting and projection. The Other is not just the

[26] *The Jihadi Dictionary*, p. 186.

[27] Joseph Goldstein, "US Soldiers told to ignore sexual abuse of boys by Afghan allies," *The New York Times*, 21 September 2015, https://www.nytimes.com/2015/09/21/world/asia/us-soldiers-told-to-ignore-afghan-allies-abuse-of-boys.html, (Accessed on 28 September 2021).

[28] *Al Hayba*, https://en.wikipedia.org/wiki/Al_Hayba, (Accessed on 25 September 2021).

devalued female but the Other is feminized such as little helpless boys called *bachi bazis* and/or the subjected protected class of the *dhimmis* i.e. Jews, Christians, Hindus etc. and most especially homosexuals.[29]
The heroic mother's death yields a rage that exceeds murder itself similar to that of a serial killer who mutilates his victim's body through the production of body parts, be it amputation, enucleation of the eye, beheadings etc. The list is endless. Khashoggi's mutilation comes to mind. Yet it is known from criminology's serial killers that body parts have a particular unconscious meaning, namely they are the psychic representation of the mother's body before the baby learns that the mother is separate from him or herself. The baby knows the mother in parts, the breast, the mouth, the eyes etc. In serial killing it is known that the serial killer has a very disturbed relationship with its mother.[30] The Taliban wants to reinstitute amputations and beheadings.[31] They have already started to execute by hanging in stadiums as well.[32]
Because the jihadi has lived parasitically or symbiotically fused to his mother, when she dies he becomes unhinged.[33] Four examples are given from the glocal *Ummah*, while these jihadis are not from Afghanistan per se, if one were to do a forensics of the death of the heroic Afghan mother, it can be surmised that it would be quite similar. Often her death is cited as the *raison d'être*, the psychological rationale for revenge. The examples are Zakaria Zubeidi, Muhammad Bouyeri, Shamil Basayev and Abu Musab Zarqawi.

Zakaria Zubeidi – Israel's Most Wanted, Gilboa Prison Escape August 2021
Turning to the recent prison escapee Zakaria Zubeidi, Israel's most wanted for the first weeks of September and a former poster boy for Palestinian theater, he traced his murderous rage to the death of his mother. As tragic as any death is, this is a common occurrence in the *Ummah*'s world where a jihadi suddenly goes "amok" on a killing spree, allegedly to cleanse family honor but his hidden unconscious agenda is that he feels totally undone by her death as she was his air-supply. The rage is not of this time and not of this place. It is projected on to the unwitting victims. His claim to cleanse family honor is a cultural rationalization for his unconscious deficit. Zubeidi justified the Netanya Park Hotel Passover Massacre suicide bombing in which 30 were killed and 140 injured on 27 March 2002 which is considered the worst suicide bombing during the Second Intifada as pay back for the death of his mother.[34]

Muhammad Bouyeri – Theo Van Gogh's Murderer
Bouyeri had lost his mother several months prior to his attack. Van Gogh was nearly beheaded on 2 November 2004. Bouyeri's sister traced back the murder to the death of their mother.

It was reported that Bouyeri had become a born-again Muslim fanatic after his mother's death. Obviously he had problems concerning his mother that preceded his brutal butchering of Theo Van Gogh. Bouyeri felt bitter and abandoned by her when she died. He acted out his murderous rage for her on van Gogh. Bouyeri also hated van Gogh for making a scathing movie entitled

[29] For a further discussion concerning the feminization of the Other, see for example, the entry Dhimmi, *The Jihadi Dictionary*, p. 78-79.
[30] Cf. Nancy Hartevelt Kobrin, "Chapter 7 A Political Serial Killing by Proxy," *The Banality of Suicide Bombing*, (Virginia: Potomac, 2010), pp. 93-98.
[31] Taliban Plans Return Of Executions And Amputations As Punishment—Though Possibly Not In Public—Cofounder Says, *Forbes*, 23 September 2021, https://www.forbes.com/sites/teakvetenadze/2021/09/23/taliban-plans-return-of-executions-and-amputations-as-punishment-though-possibly-not-in-public-co-founder-says/?sh=20e4ed54241d, (Accessed on 26 September 2021).
[32] Taliban hang body in public; signal return to past tactics, Associated Press News, 25 September 2021, https://apnews.com/article/afghanistan-taliban-c328e5e060d5fe7dfdc1f348b7dce10a (A accessed on 29 September 2021); see also the past practice in Sanjeev Miglani, Taliban executions still haunt Afghan soccer field, *Reuters,* 13 September 2008, https://www.reuters.com/article/us-afghan-stadium-idUSSP12564220080913, (Accessed on 29 2021) nor should the brutal executions of women by stoning and firing squad, cf. Staff ABC News, Who Was the Afghan Mom Executed by Taliban?, *ABC News*, 6 January 2006, https://abcnews.go.com/GMA/story?id=125721&page=1, (Accessed on 29 September 2021.)
[33] Female jihadis have merely internalized male rage of the female as self-hatred, especially with regard to the Islamic female suicide bomber cf. *The Jihadi Dictionary*, pp. 135, 210 and 230.
[34] Entry Zakaria Zubeidi, Wikipedia, https://en.wikipedia.org/wiki/Zakaria_Zubeidi, (Accessed on 20 September 2021).

Submission, which was critical of Islam's treatment of women and unconsciously reminded Bouyeri of his own pathological dependency on his ummi (mommy).[35]

Shamil Basayev – The Chechen jihadi leader who attacked a *maternity* [emphasis added] hospital
The unconscious choice for place of attack resonates as a thinly veiled revenge for his mother's death:

Interestingly enough, the counterterrorist expert on Chechnya, A. Dolnik, cited this incident of loss in passing, noting that other counterterrorists had thought that this may have been the tripwire for Basayev, who then unleashed his reign of terror — engaging in hostage taking. murder, and suicide bombings as revenge. Basayev seized the Budennovsk Maternity Hospital, the Moscow Theatre and then a school in Beslan.

However, the counterterrorist experts seem to minimize the ramifications of maternal loss on the undoing of the terrorist psyche. When we later examine Basayev's terror attacks and their link to the repudiated mother, we find his behavior is consummately concrete. While counterterrorist experts often point to the strategic choice of the target, it is not mutually exclusive that there is an unconscious choice deriving from unresolved conflicts in early childhood that actually drives the conscious strategic choice. Indeed, this synergistic dimension of doubly induced volcanic rage blinds us from seeing the earlier unconscious driver of maternal loss. We are sucked into the psychotic world of the terrorist and remain in denial because it is just too terrifying to think that the problem lies buried in early childhood development, embedded in the family.

What has also been overlooked is the intervening, underlying cultural practices of hostage taking—ranging from bride stealing to clan hostage taking for revenge. This is yet another link in the imagery of fusion. Taking a hostage is an attempt to re-fuse with the mother in a shame–honor culture where one is not permitted to separate from her. Hostage taking is a fusion that harkens back to the maternal fusion, the first fusion in life.[36]

Often counter terrorist experts will superficially acknowledge that such an attack on a maternity hospital or a school such as the tragedy of Beslan shows the depravity of the jihadis. Such passing comments are revealing for they show the uneasiness of experts who lack training in early childhood development and they tend to slide into providing superficial rationalizations for jihadi behavior. The anecdotes also reveal the experts' own anxieties concerning such penetrating deep terrors for they function as a release valve for their own anxieties.

Abu Musab Zarqawi and his rampage of beheadings
Zarqawi provides the consummate paradigm for beheadings which are fully embraced by the Taliban. He grew up with the terror of death as he lived across the street from a graveyard. He launched his beheading rampage the day after he finished morning his mother's death. It was known that he wrote to her constantly while in prison. He was described as having a violent temper and that he constantly provoked fights. His mother had been disappointed in him because he did not receive his high school diploma. A good example of being shamed. She was terminally ill while he was in prison and he essentially wrote "love" letters to her decorated with flowers.[37]
These four brief examples serve to encapsulate the suffocating maternal bond which has been described above and which is understood at an unconscious level. The mother's death serves as a tripwire for jihadi rage. It is such concrete behavior that it is actually terrifying to contemplate this unconscious level. After all everybody (emphasis added) has a mother and everybody harbors his or her own maternal terrors about losing their mother. The unconscious anxiety runs so deep that denial rules.

Conclusion
By examining the intimate relation of the maternal bond in light of sex and geopolitics at this unconscious level while also recalling that 95% of thinking resides outside of conscious awareness, a better understanding of the impact of shaming on social bonding answers the question why sex has been overlooked in geopolitics because it is too anxiety provoking leading to denial and

[35] *The Banality of Suicide Terrorism*, p. 15.

[36] Nancy Hartevelt Kobrin, *The Maternal Drama of the Chechen Jihadi*, (Mamaroneck, NJ: MultiEducator Press, 2014), p. 34.
[37] Ibid, p. 131.

discriminatory practices. Shaming is pervasive and its violent sense of humiliation. In the Talmud Baba Metzia 58b it is written: "To shame someone in public it is *as if* [emphasis added] you have shed blood." The profound awareness is that shaming has the universal potential to be linked to blood violence. Violence is violence it does not care how we humans categorize it and label it be it political, national or within the intimate realm of the home. To spill blood is the ultimate force of shaming. Indeed, the greatest enemy is shame. The Taliban, Al Qaeda in Afghanistan and the Islamic State-Khorasan are all ultimately doomed to fail because of the way in which they have learned to bond to others. Their violent behavior is understandable and transparent in light of unconscious behavior. Their bonding is destructive. In contrast, the twenty-year span in which the Afghan devalued female experienced human rights gave her a taste of freedom. Once that has been experienced there is no turning back. Change will come through Afghan women.

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Turkey's test of civilization

By Taner Akçam

Source: https://ahvalnews.com/hagia-sophia/turkeys-test-civilization#

July 13 – Basically, the whole Hagia Sophia affair can be summed up with the phrases "improper" or "a shame". But I think that the audience whom I am addressing do not possesses the cultural delicacy to find these words meaningful. For their sakes, it would better to formulate it in a frank manner that they could more easily understand: the deed that is being performed in regard to Hagia Sophia is a clear show of barbarism.

It is a declaration of a "Turkish lack of culture and destructiveness" to the entire world. And the pairing of President and AK Party leader Recep Tayyip Erdoğan with MHP leader Devlet Bahçeli is the political alliance through which this lack of culture and destructiveness has been made manifest.

"But, why?" you may ask.

Because with this step it's being said to the world that "Even though we live in the 21st century, our mentality is still that of 1453. Even now, in the 21st century, we are utterly unconcerned with preserving the cultural heritage of humanity. Among us, there's no sense of a greater cultural inheritance beyond that which was left to us; we have nothing to contribute to humanity's cultural treasures. We are unable to create any new cultural value ourselves. We seize the cultural treasures of humanity, we break them and/or we destroy them."

This is what's being done. Here, now, in the 21st century, the Hagia Sophia, one of the most significant monuments of human culture will again be "conquered" and turned into a mosque, just like in 1453.

What's being performed here is an act of cultural vandalism.

One wonders: will this partnership of Erdoğan and Bahçeli understand the reasons that world opinion once held such an utterly negative image of Turkey and the Turks?

The famous 19th century Russian thinker Nikolai Danilevski once divided human societies into "civilization creators" and "civilization destroyers". He listed the ten greatest unique civilizations in chronological order: Egyptian, Chinese, Ancient Semitic (Assyrian, Babylon, Phonoecia, Chaldea), Indian, Persian, Grecian, Roman, neo-Semitic (Arab), and Germano-

Roman (European) and had the following to say about them: "[B]eside these positive... civilizations there have also periodically appeared in the ages of humanity certain transitory actors like the Huns, Mongols, and Turks, whose candles have suddenly flared up and gone out, passing quickly into history. After completing their task of destruction, of assisting in the deaths of moribund civilizations and scattering their remains, they return to their previous insignificance and disappear. We may call them the negative actors of history."
Not only among the intellectuals, but throughout the West there has been no end of things said about the cultural vandalism of the Turks.
"In the Balkan Peninsula, with his every step, the Turk has trampled underfoot the products of thousands of years of culture."
"Where ever the Turk sees a tree, he cuts it down"; "The Turks have obliterated cultures at every turn and have not preserved those things of which they have taken possession. They were not a people of culture in a sense whatsoever and have failed to build one on the cultural foundations that they have occupied."
"The places where the Ottoman has set his foot have not flourished", the places where the Turk has stepped "have withered and died." "The Ottoman rulers have done nothing with the places they have conquered other than to raze and destroy, to blight."
Some sources even mention that the cruelty and mercilessness of the Turks was not only toward foreigners. Turkish rulers "would cruelly strangle and kill their own people if they felt even the slightest trace of suspicion."[*]
If we were to repeat these utterances today, would Erdoğan and Bahçeli be able to reasonably object?
Just look at the state to which they have brought the country. Almost everyone who has attempted to speak out against the powers that be has been intimidated and suppressed, they've been jailed and imprisoned, and none of it has shown any sign of letting up.
There is no one left who hasn't been cowed into silence, who hasn't been crushed by the oppressive weight of the state. The cultural heritage that exists on these lands, and beyond that, nature itself, have both been dealt their share of this destruction.
The things that have been done—that are still being done, are the product of nothing less than the unrestrained exercise of power; of a ravenous appetite for destruction.
Indeed, the Erdoğan-Bahçeli partnership is only the most recent manifestation of a barbarism and tradition of destruction whose roots run deep in these lands.
The geography of Anatolia today is one of destruction, of ruin; it is filled with thousands of churches and other holy places being used as stables or warehouses.
The Erdoğan-Bahçeli partnership (and we can just as easily add Patriotic Party (VP) head Doğu Perinçek) represents this tradition of destruction that has razed Anatolia, that has not only deported and liquidated whole peoples, but also destroyed their cultural heritage and attempted to erase all trace of them.
Today, Turkish vandalism, Turkish destructiveness holds the reins of power as the Erdoğan-Bahçeli-Perinçek coalition.
Every Turk must therefore understand that opposing this axis is, at its core, the waging of a war for civilization.
The regime's imprisonment of the wealthy philanthropist Osman Kavala, who as the founder of the Foundation for Anatolian Culture desires to preserve the cultural heritage and civilization of these lands, is perhaps the most poignant example of the struggle.
What is at stake here is nothing less than whether Turkey will stand the test of civilization.
In the end, civilization will triumph; but those who oppose it may not...

[*] The statements regarding Turks in the text are taken from the works Doğan Avcıoğlu, Türklerin Tarihi, Volume I, and Onur Bilge Kula, Alman Kültüründe Türk İmgesi III.

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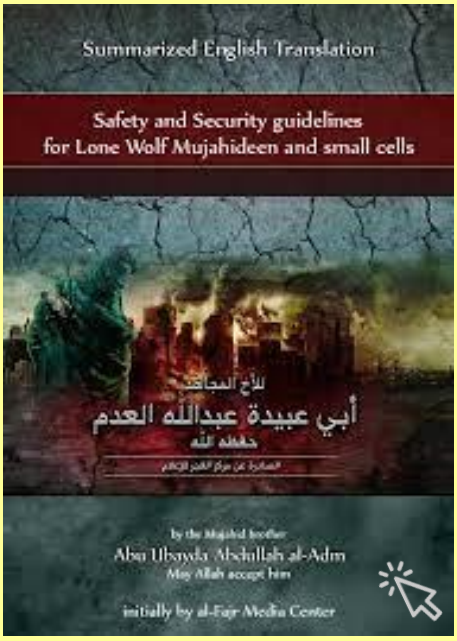
IS manual for lone-wolf militants: Trim beard, pretend to be Christian

Source: https://www.hindustantimes.com/india/is-manual-for-lone-wolf-militants-trim-beard-pretend-to-be-christian/story-N1I1ohyvOUCnoFpKLm0pmK.html

Jan 2016 – An Islamic State manual has emerged online in which the outfit advises would-be jihadis from the West to trim their beards and wear western-style clothes to avoid being identified by security services while plotting terror attacks.

The **58-page English-language manual titled 'Safety and Security Guidelines for Lone Wolf Mujahideen',** advises lone terrorists hoping to launch an attack to trim their beards, wear aftershave and even pretend being Christian in a bid to avoid being detected by security services.



The document says: "No doubt that today, in the era of lone wolves, brothers in the West need to know some important things about safety in order to ensure success in their operations.

"We thought a lot of non-Arabic speaking brothers would find it interesting and may apply it in their blessed operations. If you can avoid having a beard, wearing qamis (kurta), using miswak (traditional toothbrush) and having a booklet of dhikr (Islamic worship) with you, it's better.

"**It is permissible for you to wear a necklace showing a Christian cross.** As you know, Christians - or even atheist Westerners with Christian background - wear crosses on their necklaces. "But do not wear a cross necklace if you have a Muslim name on your passport, as that may look strange." The advisory goes on: "If you want to use perfume, don't use the oily, non-alcoholic perfume that Muslims use, instead use generic alcoholic perfume as everyone does, and if you are a man, use perfume for men." The booklet includes suggestions for where to stash fake passports and to use nightclubs with loud music as the best place to "secretly discuss the details of an operation". The booklet, believed to be created by an ISIS instructor, is being shared on social media.

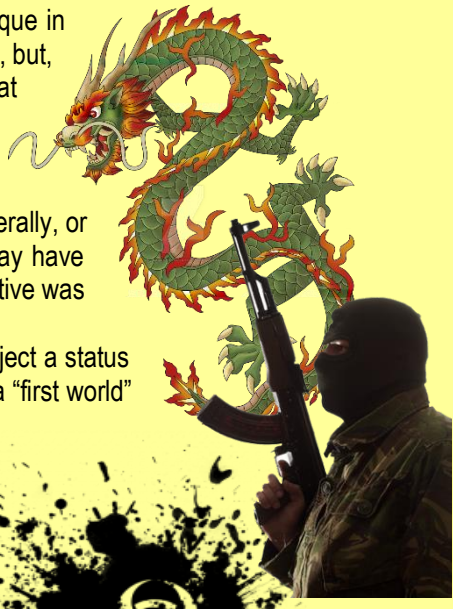
EDITOR'S COMMENT: Although this is an old post, it is always up to date as we are approaching Christmas-time. In addition, the manual has been updated in certain parts – i.e., encryption, etc.

▶▶ **Read also:** https://www.meforum.org/62794/fake-muslim-conversion-to-christianity

How China Became Jihadis' New Target

By Raffaello Panducci

Source: https://foreignpolicy.com/2021/11/22/china-jihadi-islamist-terrorism-taliban-uyghurs-afghanistan-militant-groups/



Nov 22 – In early October, an Islamic State-Khorasan bomber killed nearly 50 people at a mosque in Kunduz, Afghanistan. That the militant group claimed responsibility for the attack wasn't surprising, but, in a worrying new twist for Beijing, it also decided to link the massacre to China: The group said that the bomber was Uyghur and that the attack was aimed at punishing the Taliban for their close cooperation with China despite its actions against Uyghurs in Xinjiang.

China was long seen as a secondary target by international terrorist organizations. Groups like al Qaeda and the Islamic State were so focused on targeting the United States, the West more generally, or their local adversaries that they rarely raised their weapons toward China, even though they may have wanted to due to, for example, China's mistreatment of Uyghur Muslims. But in Kunduz, this narrative was brought brutally to a close. China can now consider itself a clear target.

China's history with violent Islamist groups is complicated. For a long time, Beijing's ability to project a status as a "developing world" power meant it could hide to some degree behind a veneer of not being a "first world" former colonial power that antagonized the world's downtrodden. Before 9/11, al Qaeda theorists went so far as to speak of Beijing as a possible partner. According to their logic, China was against the United States, al Qaeda's sworn enemy, and therefore the old "my enemy's enemy is my friend" trope might apply.

There's very little evidence that happened. The tolerance China appeared to show in the late 1990s toward al Qaeda figures who occasionally used Chinese territory for transit and support operations was more likely due to ignorance than to plotting. By 2004, this dynamic had changed, and Chinese intelligence was willing to work with Western services to hand over suspected terrorists who passed through China's airports.

During the first Taliban-led government in the 1990s, Chinese officials were hesitant but willing interlocutors with Mullah Mohammad Omar's regime. China was never a full-throated Taliban supporter but instead preferred to find ways of working with the group in the background. This mostly took the form of China providing limited investment and support that was encouraged by Pakistan, with the expectation that the Taliban would restrain the Uyghur groups that had established themselves in Afghanistan under Mullah Omar's protection from attacking China. Beijing didn't seem to be very concerned about what the Taliban's larger goals were, as long as Afghanistan's leaders acted on this key request. Still, there is little evidence that Beijing linked this domestic problem to a broader international terrorist threat.

With the U.S.-led invasion of Afghanistan, and later Iraq, the problem of international terrorism took off globally, with groups targeting an expanding range of countries. Yet China's successful push to get some of its own domestic Uyghur groups added to the United Nations and U.S. roster of terrorist organizations did not bring the country much international jihadi attention. Meanwhile, in the years immediately after 9/11, China became wary of the Taliban. A Uyghur group reportedly fought alongside the Taliban for years, as a video by al Qaeda leader Ayman al-Zawahiri highlighted in 2016 and as U.S. intelligence information from Guantánamo Bay indicated earlier.

As the 2010s went on, more Chinese citizens started to be harmed in terrorist incidents around the globe, but, for the most part, these seemed incidental—a case of being at the wrong place at the wrong time. Al Qaeda and then Islamic State leaders released some statements that threatened Beijing for its treatment of Uyghurs—and indeed Muslims more generally—but for the most part, they were limited and didn't lead to any major push to target China.

Now, it's undeniable that China is being targeted, especially as its footprint in Afghanistan grows. Beijing has long skirted around formal engagement in Afghanistan, and while it continues to do this to some degree, it has also been the most willing of the major powers in the region to engage with the Taliban directly. The Islamic State-Khorasan clearly sees the Taliban bowing to Beijing as a weak point to capitalize on, and the group's message is clear: It is offering itself as a home to Uyghurs who are unhappy with the Taliban regime, as well as others in Afghanistan appalled at China's treatment of Muslim minorities.

The new Taliban government has publicly stated its desire to work with the Chinese government—something Beijing has made clear is conditional on action against Uyghur militants. Taliban leaders are especially keen to attract Chinese investment and economic partnerships. In late October, Chinese Foreign Minister Wang Yi met with the group's leaders in Doha, Qatar. Taliban Foreign Minister-designate Amir Khan Muttaqi presented Wang with a box of Afghan pine nuts, reflecting one of the many goods Afghanistan is hoping to export to the Chinese market. Wang, meanwhile, focused on the need for stable government in Afghanistan and appealed to the Taliban once again to sever their links with Uyghur militants.

But the degree to which the Taliban are able—or want—to entirely sever this Uyghur connection is an open question. Over the past few months, the group has said that they would not let their territory be used by militants to launch attacks abroad and that Uyghur militants had left the country. Yet while rumors circulate of anti-Uyghur action behind the scenes—and of the Taliban moving Uyghurs within Afghanistan away from China's borders—Beijing is not entirely convinced. After the meeting in Doha, the Chinese foreign ministry wrote that Wang had expressed that China "hopes and believes" that the Taliban "will make a clean break with the ETIM" (the "East Turkestan Islamic Movement," the name China uses to describe militant Uyghur networks), suggesting that the group hasn't yet fulfilled Beijing's desires.

Beijing likely knows that this is a dangerous development—especially in a region where it is facing greater threats.

It is this dynamic that the Islamic State-Khorasan capitalized on when it used a suicide bomber in the Kunduz attack with the battlefield name Muhammad al-Uighuri. In the message released by the Islamic State's media channels claiming the attack, the group linked the attacker directly to the Taliban and China's cooperation, stating, "the attacker was one of the Uyghur Muslims the Taliban has promised to deport in response to demands from China and its [China's] policy against Muslims there."

The message has many layers. First, it is a signal to the Taliban highlighting their inability to protect minorities in the country they now purport to control. Second, it is a message to China, attacking Beijing for its policies in Xinjiang and linking those to the group's interests. Third, it is a message to other Uyghurs who feel abandoned or threatened by the Taliban and may be seeking to join other groups that will advance their interests. Finally, it is a message to the world, showing that the Islamic State-Khorasan is a capable organization that's continuing the Islamic State traditions on the battlefield and speaking up for oppressed Muslims. These messages will resonate with potential supporters around the world.

Publicly, China was circumspect in its response, which decried the loss of life. No official comment was made about the attacker's identity, though a Chinese academic published an opinion piece in the state-owned *Global Times* accusing the Associated Press of fabricating the narrative of the attacker being Uyghur. He instead advanced Taliban narratives that Uyghurs who had been fighting with the Taliban in Afghanistan had left the country and praised the Taliban's control and cooperation with China.

But Beijing likely knows that this is a dangerous development—especially in a region where it is facing greater threats. There have been new reports of a growing Chinese security presence in Tajikistan aimed at strengthening its ability to address potential threats from Afghanistan. A growing range of militant groups in Pakistan are targeting Chinese interests there, with attacks in Dasu and Karachi coming from local Baluchi and Sindhi separatists. China's embassy in Bishkek, Kyrgyzstan, was struck in 2016, as was its consulate in Karachi in 2018, an attack that killed four people (and three attackers). Local protest movements, militant groups, and politicians are all looking at China as an adversary. Until now, however, most of the attacks were conducted by local separatist movements. The addition of the Islamic State-Khorasan to the roster finally brings the country firmly into jihadis' crosshairs.

The problem for China is that it is ill prepared to handle such threats. Its military may be large and well equipped, but it has little experience countering militant organizations and often relies on other countries to do so for it. Yet, as Beijing is increasingly discovering in Pakistan—one of its more reliable allies—this is difficult to guarantee. Taliban leadership may project great strength and hubris, but they will face the same difficulties as others in the region in quelling militant groups in their territory, and they may find it difficult to entirely protect China from determined terrorist organizations.

In a sense, Beijing is stuck. China is Afghanistan's most powerful and influential neighbor, which partly explains the growing attention toward its role in the country. Beijing is increasingly seen as the Taliban's great supporter on the international stage. In assuming this role, China runs the risk of being seen as filing the vacuum the United States left in Afghanistan—something Beijing is keen to avoid. The reality, however, is that it is already getting sucked in. The Islamic State-Khorasan's attack in Kunduz merely highlighted how far down this path Beijing has already gone.

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From Nice in 2016 to Wisconsin in 2021: How ramming vehicles into crowds has become a deadly terror tactic

Source: https://www.firstpost.com/world/from-nice-in-2016-to-wisconsin-in-2021-how-ramming-vehicles-into-crowds-has-become-a-deadly-terror-tactic-10155121.html

Nov 22 – The use of a vehicle as a weapon in a terrorist attack is not new. Recent incidents carried out with intention of mass murder -- whether motivated by any agenda or not -- demonstrate that the use of vehicles as a weapon continues to be of interest.

This is primarily because attacks of this nature require minimal capability, but can have a devastating impact in crowded places with low levels of visible security. Because it is so basic that a lone ranger attack can also deal maximum damage, it allows perpetrators to go under the radar of security agencies, who usually keep vigilance on online chatter about criminal ideations and on purchase and sale of weapons and explosives.

There are also recorded instances of terrorist groups encouraging their recruits to use vehicle ramming attacks to cause maximum damage with minimum investment.

Al Qaeda's Yemeni branch encouraged its Western recruits to use trucks as weapons. A 2010 webzine article, "The Ultimate Mowing Machine," called for deploying a pickup truck as a "mowing machine, not to mow grass but mow down the enemies of Allah, as per *CNN*. In September 2014, Islamic State spokesman Abu Mohammad al-Adnani called for lone wolf attacks using improvised weaponry, "If you are not able to find an IED or a bullet, then single out the disbelieving American, Frenchman or any of their allies. Smash his head with a rock or slaughter him with a knife or run him over with your car or throw him down from a high place or choke him or poison him." What happened in Wisconsin, Waukesha was a horrid reminder that this primal and old, yet effective technique still attracts individuals driven to mass murder. Here is a look back at the past when vehicle ramming attacks caused destruction and damage.

2021 Wisconsin Christmas Parade: 5 dead 40 injured

A joyous scene of marching bands and children dancing in Santa hats and waving pompoms turned deadly in an instant, as an SUV sped through barricades and into a Christmas parade in suburban Milwaukee, killing at least five people and injuring more than 40 others.

One video showed a woman screaming, “Oh my God!” repeatedly as a group of young dancers was struck Sunday. A father talked of going “from one crumpled body to the other” in search of his daughter. Members of a “Dancing Grannies” club were among those hit.

A “person of interest” was in custody, Waukesha Police Chief Dan Thompson said, but he gave no details about the person or any possible motive. The investigation was ongoing, with assistance from the Wisconsin Department of Justice. The horror was recorded by the city’s livestream and onlookers' cellphones.

2017 UK, London and Westminster attacks:

On 3 June 2017, a terrorist vehicle-ramming and stabbing took place in London, England. A van was deliberately driven into pedestrians on London Bridge, and then crashed on the south bank of the River Thames. Its three occupants then ran to the nearby Borough Market area and began stabbing people in and around restaurants and pubs.[8] They were shot dead by City of London Police officers, and were found to be wearing fake explosive vests.

Eight people were killed and 48 were injured, including members of the public and four unarmed police officers who attempted to stop the assailants. British authorities described the perpetrators as "radical Islamic terrorists".

Earlier in March, a man drove an SUV into a crowd on the sidewalk along the Westminster Bridge in London, killing at least four. After ramming the car into a barrier outside the House of Parliament, the driver exited the vehicle and stabbed a police officer to death. The attacker was eventually gunned down by a police officer. The assailant, Khalid Masood, 52, of West Midlands, reportedly had a criminal record and was radicalised by Islamic State recruiters.

2017 Manhattan New York: 8 dead, 11 hurt

In October 2017, an Islamic State-inspired individual used a commercial-grade rental truck to attack pedestrians on a busy bicycle path near lower Manhattan, New York City, killing 8 and injuring more than 11 others. A pellet gun and a paintball gun were recovered from the scene.

The 29-yr-old man driving in a Home Depot rental truck, hopped a curb at West Houston Street and drove south on the bike path on the west side of West Side Highway in lower Manhattan for several blocks, officials said. After crashing the truck into a school bus, the suspect left the vehicle while displaying imitation firearms and was shot in the abdomen by a police officer, according to the NYPD. The perpetrator was a Uzbeik national inspired by Islamic State.

2017 Sweden, Stockholm: Five dead, dozens injured

Eyewitnesses said a beer truck was hijacked as it made a delivery nearby and then barrelled at a high speed into a crowd along Drottninggatan, one of the city's major pedestrian thoroughfares, before crashing into a department store on 8 April 2017.

The suspect, a 39-year-old from the central Asian republic of Uzbekistan, has admitted to carrying out a "terrorist crime," his lawyer said. This is how an eye-witness described it to *CNN:* "It was like he was driving through paper. It's like it was nothing. I can't even believe how a person could do such a thing. And then he just kept on going. I was in shock."

Carl Bildt, a former prime minister, wrote on Twitter: "Steal a lorry or a car and then drive it into a crowd. That seems to be the latest terrorist method. Berlin. London. Now Stockholm."

2017 Spain, Barcelona & Cambrils twin attacks: 14 killed over 100 injured

At least 14 people are killed and about 100 were injured on 17 August after a van plowed through a crowd of people in a popular tourist district in Barcelona, Spain. IS media wing, Amaq, issues a statement claiming responsibility, saying that the attackers are "soldiers of the Islamic State." On August 18, in Cambrils, a coastal city around 100 kilometers from Barcelona, five attackers drive an Audi A3 into several pedestrians, killing one. The attackers are shot and killed by police. A house explosion on 16 August, in Alcanar, south of Barcelona, is also believed to be connected to the attacks.

2016 Germany, Berlin: 12 dead, many injured

A Tunisian man drove a tractor-trailer into a Christmas market in Berlin, killing 12 people. In the wake of the attack, authorities conduct a manhunt for Anis Amri, 24, throughout Europe. He is shot and killed by police in Milan, Italy, four days after the attack. Hours after Amri's death, IS released a video of him pledging allegiance to the terrorist group.

The 24-year-old Tunisian national, a small-scale drug vendor and rejected asylum-seeker was known to police and had been monitored by authorities.

2016 France, Nice: 86 dead, hundreds injured

In one of the deadliest attacks of these kinds, on the evening of 14 July 2016, a 19-tonne cargo truck was deliberately driven into crowds of people celebrating Bastille Day on the Promenade des Anglais in Nice, France, resulting in the deaths of 86 people and the injury of 458 others. The driver was Mohamed Lahouaiej-Bouhlel, a Tunisian living in France.[5][6] The attack ended following an exchange of gunfire, during which Lahouaiej-Bouhlel was shot and killed by police.

The Islamic State claimed responsibility for the attack, saying Lahouaiej-Bouhlel answered its "calls to target citizens of coalition nations that fight the Islamic State". His father, however, claimed he was suffering from a mental illness.

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HOTZONE SOLUTIONS GROUP

C²BRNE DIARY

CHEM NEWS

2021 Siena International Photo Awards winner

Source: https://www.diyphotography.net/2021-siena-international-photo-awards-winner-is-the-most-moving-photo-ive-seen-this-year/

Oct 22 – Siena International Photo Awards (SIPA) never fails to take us for a ride on an emotional rollercoaster. The contest has announced this year's winners, and it's done it again. The entire selection is, once again, nothing short of amazing. But the photo of the year is the most moving image I've seen lately.

© Mehmet Aslan/Siena International Photo Awards

The 2021 overall winner of SIPA is Mehmet Aslan, a photographer and a veterinarian from Turkey. The image that brought him this prestigious award is titled ***Hardship of Life,*** depicting Munzir and his little boy Mustafa.

"Munzir lost his right leg when a bomb was dropped as he walked through a bazaar in Idlib, Syria," the photographer explains. His son Mustafa was born without lower or upper limbs due to tetra-amelia.

This congenital disorder was caused by the medications his mother Zeynep had to take after inhaling **nerve gas** released during the war in Syria.

"Mustafa will need special electronic prostheses in the future which, unfortunately, are not yet available in Turkey."

EDITOR'S COMMENT: Tetra-amelia syndrome is a very rare disorder characterized by the absence of all four limbs. ("Tetra" is the Greek word for "four," and "amelia" refers to the failure of an arm or leg to develop before birth.) This syndrome can also cause severe malformations of other parts of the body, including the face and head, heart, nervous system, skeleton, and genitalia. The lungs are underdeveloped in many cases, which makes breathing difficult or impossible. Because children with tetra-amelia

syndrome have such serious medical problems, most are stillborn or die shortly after birth. Researchers have found a mutation in the *WNT3* gene in people with tetra-amelia syndrome from one large family. This gene is part of a family of WNT genes that play critical roles in development before birth. The protein produced from the *WNT3* gene is involved in the formation of the limbs and other body systems during embryonic development. Mutations in the *WNT3* gene prevent cells from producing functional WNT3 protein, which disrupts normal limb formation and leads to the other serious birth defects associated with tetra-amelia syndrome. In other affected families, the cause of tetra-amelia syndrome has not been determined. Researchers believe that unidentified mutations in *WNT3* or other genes involved in limb development are probably responsible for the disorder in these cases. In most of the families reported so far, tetra-amelia syndrome appears to have an autosomal recessive pattern of inheritance. Autosomal recessive inheritance means both copies of the gene in each cell have mutations. The parents of an individual with tetra-amelia syndrome each carry one copy of the mutated gene, but do not show signs and symptoms of the condition. There is no doubt about the tragedy underneath this photograph. But due to the nature of the child's disease, he would have it even without exposure to sarin. Drugs like atropine or pralidoxime are not expected to cause such anomalies in a pregnant woman exposed to nerve agents especially if exposure took place very close to labor.

Future CBRNe Threats in the Balkans

By Maj. Georgios Gkanalas

NCT Magazine | October 2021

Source: https://nct-magazine.com/nct-magazine-october/regional-threats-the-future-cbrne-threats-in-the-balkans/

The region in the Southeastern corner of Europe often comes up suddenly and loudly in news headlines. The area is rightfully called «Europe's Powder Keg» due to its political and geostrategic instability and vulnerability. Even though many of the Balkan countries are very fond of the European Union, some destabilizing factors appeared, especially after the war in Yugoslavia and during recent years. Hastily solved regional problems produced some serious lurking concussions on the political stability and peace of the region. A confident assessment can be made that, in the upcoming years, at least one major conflict will take place, with unpredictable consequences on the affected countries.

Major Gkanalas *is active-duty EOD/IEDD/CBRNe SME, serving in Hellenic Air Force (HAF) for the last 30 years. He graduated from HAF's NCO Academy in 1992 as a General Armorer and he volunteered to attend HAF's EOD School in 1997 and ever since has entered the EOD Community. He worked as an Ordnance loader and Weapons Maintainer on F-4E aircraft and F-16C/D Blk 52+Adv. At the time being he's the EOD Head of 116Combat Wing as well as the Ammunition – Explosives QA Officer of the Air Base. He graduated from US NAVSCOLEOD, Eglin AFB, FL in 2009 and he has participated in many training and operational missions (USA, Israel, Thailand, UK, Slovakia, etc,). Major Gkanalas is a frequent participant in various related webinars, conventions, and expos and he has extensive experience as a trainer and speaker.*

EDITOR'S COMMENT: The main problem that is not mentioned herein is the fact that almost all Balkan countries except Greece have been somehow involved with chemical weapons in the past (Albania[38], former Yugoslavia[39], Bulgaria[40], Romania[41]). It is not difficult to produce chemical weapons using modern chemical industries especially if you have the recipe from the past. In addition, I have the feeling that one of these countries might still have some barrels of chemical weapons stored somewhere; just in case.

[38] https://www.opcw.org/media-centre/news/2007/07/albania-first-country-destroy-all-its-chemical-weapons
[39] https://nuke.fas.org/guide/serbia/cw/index.html
[40] https://military.wikia.org/wiki/Bulgaria_and_weapons_of_mass_destruction
[41] https://www.globalsecurity.org/wmd/world/romania/index.html

Eleven NATO Allies Launch Multinational Projects to Boost CBRN Defense

Source: https://www.hstoday.us/subject-matter-areas/wmd/eleven-nato-allies-launch-multinational-projects-to-boost-cbrn-defense/

Oct 26 – The Ministers of Defence from 11 NATO Allies launched three multinational High Visibility Projects to provide CBRN protection equipment, develop and procure CBRN detection and identification systems, as well as potentially establish a network of CBRN defence facilities. The letters of intent launching these initiatives were signed in the margins of the NATO Defence Ministers' meeting on 21 October 2021. The CBRN Protection Equipment project aims to establish a framework for the provision of individual protective equipment and collective protection systems. Participants will be able to equip their forces with state of the art, standardized protection gear in a cost effective manner. Ten Allies take part in this initiative: Albania, Belgium, Greece, Hungary, Italy, Latvia, the Netherlands, Spain, the United Kingdom and the United States. The CBRN Detection and Identification project will launch individual multinational activities for the development and procurement of advanced CBRN detection and identification systems. This will increase Allies' ability to detect CBRN agents in a fast and effective way. Nine Allies are joining forces in this effort: Albania, Belgium, Greece, Italy, Latvia, the Netherlands, Poland, the United Kingdom, and the United States. The third project is called Network of CBRN Defence Facilities. The nine participants will work to establish a framework allowing them to share and make use of national CBRN defence facilities, like training sites and biological laboratories, to complement each other's capabilities. This arrangement will improve participants' preparedness for future CBRN contingencies. **The participating Allies are Belgium, Greece, Italy, Latvia, the Netherlands, Poland, Spain, the United Kingdom, and the United States.** The projects are part of a growing portfolio of NATO supported multinational High Visibility Projects in response to key capability challenges for the Alliance.

Medical Aspects of Chemical Weapons Victims of Iran

By Ali Karami

Source: https://www.academia.edu/12119117/Medical_Aspects_of_Chemical_Weapons_Victims_of_Iran

During the eight-year war between Iran and Iraq (1980-1988), Iraqi forces employed chemical weapons extensively against Iranian targets, including both military personnel and civilians in border towns and villages. The agents used by the Iraqis fell into two major categories based on chemical composition and casualty-producing effects. The most frequently used

compounds were organophosphate neurotoxins, known as nerve agent Tabun and Sarin; mustard gas was also used extensively.

Dr Ali Karami *is Associate Professor of Molecular Biology and Biotechnology @ Baqyiatallah University of Medical Science, Iran.*

Pentagon Reexamining How It Addresses Chem-Bio Threats

By Yasmin Tadjdeh (Senior Editor, National Defense Magazine)
Source: https://www.nationaldefensemagazine.org/articles/2021/10/27/pentagon-reexamining-how-it-addresses-chem-bio-threats

Oct 27 — The ongoing COVID-19 pandemic — which has killed more than 700,000 Americans — quickly and ferociously brought home the dangers and perils posed by biological threats and has prompted the Defense Department to bolster its ability to combat them in the future.

While not new — history books remind readers of the Plague and Spanish influenza — bio threats, along with chemical, radiological and nuclear hazards, have been thrust into the spotlight due to the crisis.

To address these evolving perils, the Pentagon is revamping how it tackles CBRN defense and is working to inject new technologies — such as artificial intelligence and machine learning — into its portfolio. Officials hope the move will put the United States in a better position should the unthinkable happen — again.

Those working in the CBRN field find themselves in a unique time, said Army Col. Chris Hoffman, principal director in the office of the deputy assistant secretary of defense for chemical and biological defense.

"We've seen smaller pieces of this in 2001 in the wake of the anthrax mailings and in 2014 and 2015 with the Ebola outbreak in West Africa," he said in August during the National Defense Industrial Association's Chemical, Biological, Radiological and Nuclear Defense Conference and Exhibition in Baltimore. "However, we've never found ourselves with the audience that we currently have."

"We're seizing that opportunity," he added.

Officials must execute necessary changes to honor the hundreds of thousands of Americans who have died of COVID-19, he said. "We can honor that sacrifice and that loss by ensuring that their descendants don't suffer the same fate," he said.

The pandemic has revealed gaps in the nation's information-sharing processes when it comes to biodefense, Hoffman said.

"We've got lots of information, but … we don't necessarily have all the nodes connected well," he said. "That network and backbone is not quite there yet."

The Pentagon is working with its international and interagency partners to improve its integrated early warning systems to close that gap, he noted.

In that same vein, it is also working more closely with the intelligence community. Much of the information about CBRN threats has traditionally been held at a high classification level, which is not accessible to some relevant parties, Hoffman added.

"We've been working very hard with our intelligence partners to … digest that and operationalize it so that we've got clear assessments that we can share with our service and combatant command partners," he said.

The Pentagon is also shaking up how it acquires chem-bio defense equipment, said Brandi Vann, deputy assistant secretary of defense for chemical and biological defense programs.

"The administration has directed us to do a number of things, including relooking at our legacy processes, our legacy systems and really reinvesting our focus and our funding into capabilities for the future," she said.

There are new opportunities to leverage emerging technologies such as AI and quantum computing, Vann said.

"These are buzzwords we've heard before, but as we start enveloping these into the CBRN community, … this begins to transform how we think about CBRN defense," she said.
Dr. Jason Roos, joint program executive officer for chemical, biological, radiological and nuclear defense, said there is a need for autonomy, AI, machine learning and robotics for integrated early warning. "I believe there is space in our industry where we can apply AI and ML," he said.
However, transforming CBRN technology will require the Pentagon to transition away from its traditional methods of requirements development, R&D investment and acquisition, Vann said.
"Bluntly, we need to not only embrace industry, but we need to start thinking like you," she told conference attendees.
The Defense Department needs to leverage commercial technology so it can remain more competitive against the nation's adversaries, Vann said.
Decades ago, the government drove much of the innovation in the United States, but that paradigm has shifted, Hoffman said. "We don't have the investment capital in our government R&D to drive all the innovation that's necessary."
While defense only makes up a small portion of the market for commercial products, Hoffman encouraged industry to partner with the Pentagon on CBRN technologies and noted that they are inherently dual use.
"We've got efforts trying to figure out how to decontaminate transportation vehicles," he said. "It absolutely has applications to the transportation sector."
Technology used to decontaminate Defense Department facilities can also be applied to the medical sector and hospitals, he noted.
As the CBRN community continues to work with industry, it is embracing new contracting methods, Roos said. "There is certainly a better way for us to be able to work with you and engage with you," he told the crowd.
Roos touted a new contracting tool called commercial solutions opening, which facilitates the acquisition of commercial-off-the-shelf technology.
"You can rapidly go out and get COTS capability or modify COTS capability," he said. "We've been leveraging that tool very much in the context of COVID."
The Pentagon wants to modernize its CBRN equipment and is looking at an array of new technologies, including threat-agnostic sensing capabilities and wearables.
Soldier-worn devices show great promise for the future, Roos said. "We can understand the health of the warfighter, hopefully, even before symptoms" appear.
His office is also examining medical countermeasure capabilities to take advantage of existing drugs and therapeutics that could apply to military missions.
Meanwhile, retired Army Brig. Gen. William King, chair of NDIA's CBRN division, said the United States must be prepared for a wide range of chem-bio threats in the future, regardless of how or where they arise. This includes both naturally occurring infectious disease outbreaks and the accidental or deliberate release of biological threat agents.
"The COVID-19 pandemic has demonstrated that biological threats do not respect national borders, treaties or social/economic status," he said in prepared remarks for the conference. "An infectious disease threat anywhere is a threat everywhere."
The pandemic has illustrated the danger that pathogens pose to economic growth, social programs, political stability and global security, he noted.
"While emerging technologies — biotechnologies, in particular — provide unbelievable potential for our economy and global health, they also pose a significant challenge," King added. "Like gene editing and synthetic biology, emerging biotechnologies could reduce the barrier to biological weapon development as they become more readily accessible by the general public."
For example, technologies such as 3D printing could enable lower cost manufacturing of complex equipment necessary to creating biological agents, he noted.
"The inherently dual-use nature of biological and some pharmaceutical chemical capabilities make countering the proliferation of these novel threat-related technologies, materiel and expertise even more challenging," he said.
Facing new and emerging threats, officials are working to revamp a number of strategies — including the National Defense Strategy and the counter-WMD strategy — during the pandemic, Vann said.
"All of these are actually converging at the same time," she said. "There is actually a really interesting, really nice cross-department initiative now to cross walk and cross talk all of these types of issues."
The U.S. government is also working on updating its National Biodefense Strategy, which was last released in 2018, said Chris Hassell, former deputy assistant secretary of defense for chemical and biological defense, who is now a senior science advisor for the Department of Health and Human Services. The effort — which is being led by the National Security Council — emphasizes both manmade threats and naturally occurring hazards, he said.

"COVID still remains a tragedy, … but we can't lose the fact that it's an opportunity," he said. "It's an opportunity to exercise that National Biodefense Strategy, and to see what did we get right and what do we need to change?" The strategy is currently in the process of being updated with lessons learned from the pandemic, he said. Meanwhile, earlier this year the Army released its own biological defense strategy. Biodefense must be broadly integrated and routinely applied throughout the service to fight and win in future battlefields, the document said. "The COVID-19 pandemic has exposed shortfalls in Army biological defense planning, preparation and material capabilities," it said. "It has become clear: the Army's ability to deploy, fight and win the nation's wars is at risk as long as the Army cannot sufficiently gain and maintain situational awareness, protect its people, mitigate impact, project force and maneuver freely within a biological hazard or threat environment." Maj. Gen. Bradley Gericke, director of strategy, plans and policy within the office of the deputy chief of staff for the Army, said the service's strategy is the first of its kind. "Everybody has watched the damage and disarray that COVID has inflicted upon states and … armed forces around the world," he said. If a bad actor is seeking to disrupt international order and does not mind indiscriminate harm to various populations, then a biological weapon becomes an attractive choice whether it is through the manipulation of a naturally occurring pathogen or something made in a lab, Gericke said. The service has an "urgent problem that is going to require a combination of unit design, it's going to require technical expertise, and it's going to require different kinds of training and readiness than we've experienced to date," he said. Contagious, endemic and emerging diseases present a challenge that is qualitatively different from biological warfare yet one that can be commensurate in impact, Gericke said. "We are not ready today, and we've got a lot of work to do to make ourselves ready." For example, Gericke said the Army needs to conduct credible, large-scale wargames to simulate biological incidents and threats. "There are gaps in our understanding of future warfighting that I think we need to pursue," he said.

RISK AND RESILIENCE REPORT

Strategic Foresight Knowledge, Tools, and Methods for the Future Commissioned by the Federal Commission for Nuclear, Biological and Chemical Protection and the Federal Office for Civil Protection Zürich

September 2021, Center for Security Studies (CSS), ETH Zürich

By Kevin Kohler

Source: https://css.ethz.ch/content/dam/ethz/special-interest/gess/cis/center-for-securities-studies/pdfs/RR-Reports-2021-StrategicForesight.pdf

The COVID-19 pandemic abruptly changed the lives of almost everyone on the planet, causing more than four million recorded deaths (Ritchie et al., 2021), changing the way we travel, work, and socialize, as well as reducing the global economic output by trillions of dollars. It has highlighted the importance of monitoring and addressing low probability, high impact risks and reinforced the willingness to "think about the unthinkable" (Kahn, 1962; Chief of the Swiss Armed Forces Thomas Süssli in Thränert and Wenger, 2020). This report has been commissioned by the Federal Commission for Nuclear, Biological and Chemical Protection (ComNBC) and the Federal Office for Civil Protection (FOCP). It reviews methods in strategic foresight that can help organizations deal with and reduce uncertainty. The report uses several examples from the Chemical, Biological, Radiological, and Nuclear (CBRN) domains and discusses some caveats, such as information hazards that are particularly relevant to this context. However, the overview it provides can be useful across a wide range of strategic decision-making processes.

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DARPA Project WMD Threat Sensors Integrated, Tested in Police Vehicles

Source: https://www.hstoday.us/industry/emerging-innovation/darpa-project-wmd-threat-sensors-integrated-tested-in-police-vehicles/

Nov 01 – The Defense Advanced Research Projects Agency's (DARPA) SIGMA+ program, in collaboration with the Indianapolis Metropolitan Police Department (IMPD), recently concluded a three-month-long pilot study with new sensors intended to support early detection and interdictions of weapons of mass destruction (WMD) threats. The pilot involved integrating highly sensitive chemical, biological, radiological/nuclear, and explosive (CBRNE) sensors into several IMPD vehicles and

gathering real-world environmental background data over a large part of the Indianapolis metropolitan region, building on a smaller event conducted in Indianapolis in August 2020.

SIGMA+ sensors detecting the entire spectrum of weapons of mass destruction (WMD) threats slide into the back of a police vehicle with additional space on the racks for regular police cargo. (DARPA)

During the pilot study, two week-long exercises took place that supplemented the August 2020 event. The environmental data collected during the exercise are being used to map the naturally occurring chemical and biological backgrounds found in the Indianapolis urban area that result from businesses, industries, and environmental patterns. The data, in turn, are supporting the development of both sensors and algorithms that minimize false positives and maximize detections of anomalies that may be associated with threat activities. During the Indianapolis pilot study, nuisance alarms were able to be suppressed by 75%.

In addition to characterizing the urban chemical background, the research team generated controlled releases of benign chemicals such as ethanol to challenge the mobile sensors. These releases were intended to simulate production of threat materials such as home-made explosives, narcotics, or other chemical hazards. SIGMA+ has developed a unique chemical referee system that integrates a laboratory-grade instrument into a mobile platform to provide real-time, ground-truth interpretation of the local chemical background. "The Indianapolis pilot study and field testing marked the first time we were able to demonstrate the integration of cutting-edge SIGMA+ sensor technology across the entire CBRNE threat space into a law-enforcement (LE) vehicle," said Mark Wrobel, SIGMA+ program manager in DARPA's Defense Sciences Office. "This included air sampling, power, and the user interface that provides the vehicle operator real-time analysis of potential threats via a tablet. The ultimate goal is to outfit a citywide fleet of LE or other public service vehicles to enable a continuously refreshed mobile network that can detect WMD threats with low false-alarm rates across a city or region." DARPA also worked with IMPD to understand how SIGMA+ advanced sensor systems could support broader law enforcement mission needs, including holding several workshops with IMPD stakeholders. The workshops addressed current sensor and analytics capabilities and how these capabilities could address mission areas such as detecting narcotics manufacturing. "Having the ability to use this technology, at the local level, is a giant leap forward in making sure our communities are safer from all of the potential CBRNE threat vectors," said Sgt. Robert Brown, counter-weapons of mass destruction (WMD/CBRNE) program manager in the Homeland Security Bureau of the Indianapolis Metropolitan Police Department. "We hope to be able to successfully predict, detect, locate, and interdict these threats before a WMD attack can be carried out." Next steps for the SIGMA+ program include testing in other metropolitan regions and developing operational procedures to integrate sensors into real-world use. SIGMA+ algorithm and sensor developers will continue to refine software and hardware to further drive down nuisance alarms caused by the complex chemical, biological, and radiological background signatures of urban environments.

The 'Echo Chamber' of Syrian Chemical Weapons Conspiracy Theorists

By Brian Whitaker

Source: https://newlinesmag.com/argument/the-echo-chamber-of-syrian-chemical-weapons-conspiracy-theorists/

Nov 04 – Hundreds of people died — many of them in their sleep — when rockets laden with the nerve agent sarin struck Ghouta, a rebel-held area on the outskirts of the Syrian capital early one morning in August 2013. It was the deadliest chemical attack anywhere in the world since the 1980s.

Considering that Ghouta was under fire from the Assad regime's forces at the time, that the casualties were on the rebels' side and that the regime had previously admitted possessing

chemical weapons, there was one obvious suspect. The regime, however, insisted it was not responsible.
Russia, as its chief ally, weighed in with vigorous support and so too did a number of small groups and individuals in the West — apparently sincere people who convinced themselves that one of the Middle East's most oppressive regimes was the innocent victim of a plot to discredit it. Among them were an assortment of university professors, retired spies, "independent" journalists, "anti-imperialists" and more than a few habitual conspiracy theorists.
Under international pressure following the Ghouta attack, Syria joined the Chemical Weapons Convention, but that did not put an end to chemical attacks. During the next few years dozens more were reported, mostly involving chlorine but sometimes sarin. The deniers, eager to blame someone other than the Assad regime, claimed rebels were faking the attacks in an effort to falsely incriminate the regime and thus create a pretext for full-scale military intervention by Western powers.
The claims were not supported by credible evidence, but the deniers pointed to confirmed examples from the past where deception had been used in warfare. One that resonated particularly with the public was the way false claims about weapons of mass destruction in Iraq had been used to build public support for the U.S.-led invasion that toppled Saddam Hussein in 2003.

A mother and father weep over their child's body who was killed in a suspected chemical weapons attack on the Damascus suburb of Ghouta, on August 21, 2013 / NurPhoto / Corbis via Getty Images

Constantly citing the deception over Iraq, the deniers suggested the reports of chemical attacks in Syria were a similar deception, for similar purposes. It was an argument that could be made to sound plausible, and the deniers exploited it relentlessly. Paradoxically, the people most likely to be fooled by it were those most anxious not to be fooled. Their resentment at the known deception over Iraq made them less willing to doubt claims of deception in Syria.
While insisting that the chemical attacks were faked, the regime and its defenders offered no credible explanation as to how the fakery might have been organized or how rebel fighters might have acquired the necessary sarin. In an interview with Fox News, Syrian President

Bashar al-Assad made the absurd claim that "anyone can make sarin in his house" while also suggesting rebels could have obtained it from a foreign government.

The reality, though, was that laboratory tests on samples from the scene of attacks linked them to the regime's own stockpile. There is more than one way to make sarin, and clues to the production process can be found by testing it for impurities. These impurities are residues from the chemical reactions that take place when making it, and different formulas result in different sets of impurities.

The first distinctive marker chemical to be identified was hexamine. Mainly for safety reasons Syria's sarin was stored as two separate components — methylphosphonyl difluoride (known as DF) and isopropanol — which were mixed in the presence of hexamine shortly before use. Hexamine was added to make the sarin less corrosive and reduce the risk of damage to munitions. It wasn't the only chemical that could be used for this purpose, but as far as could be discovered, Syria's choice of hexamine was unique.

Investigators from the Organisation for the Prohibition of Chemical Weapons (OPCW), the global chemical weapons watchdog, had also obtained samples of the DF component from the regime's stockpile, and this led to the discovery of three more marker chemicals: phosphorus hexafluoride, isopropyl phosphate and isopropyl phosphorofluoridate. The investigators described these as "a strong indicator" that the sarin used in the 2017 attack on Khan Sheikhoun, as well as in other incidents, contained DF produced by the Syrian government.

There was thus no realistic possibility that Syrian rebels could have obtained sarin with the requisite chemical profile from abroad, and in the unlikely event that they were capable of making it in large quantities themselves, they would still have had to know the government's formula in order to replicate its impurities. According to the investigators it was also unlikely that rebels could have followed the government's formula without using "a chemical-plant-type production method" because it included hydrogen fluoride (HF). "HF is a very aggressive and dangerous gas and therefore is difficult to handle," the investigators noted. "The use of HF indicates a high degree of competence and sophistication."

Given this, the only credible explanation was that the sarin used in attacks had come from the government's stockpile and had been used by government forces. The possibility that rebels might have seized some of it was emphatically ruled out by Syrian government officials, who insisted stockpiles had remained under their control at all times — none of their sarin had been lost or stolen. That wasn't the only problem with the "stolen sarin" theory. Since the Syrian government's sarin was not kept in ready-made form, rebels would have needed to steal its separate components for subsequent mixing. They also would have needed suitable munitions along with specialized equipment for filling them — plus a lot of expertise in handling the dangerous chemicals.

During the United Nations' Ghouta investigation, Åke Sellström, the chief inspector, had pressed Syrian officials to elaborate on their claims of sarin in rebel hands but was struck by their failure to come up with any coherent explanation. Interviewed in 2014, he said: "Several times I asked the government: Can you explain — if this was the opposition — how did they get hold of the chemical weapons? They have quite poor theories. … To me it is strange. If they really want to blame the opposition, they should have a good story as to how they got hold of the munitions, and they didn't take the chance to deliver that story."

Use of sarin is relatively easy to prove by analysis of environmental and biological samples, but most of the chemical attacks reported in Syria were believed to involve chlorine — which is much more difficult to confirm after the event through laboratory testing. Chlorine is a very common element, so the problem was how to distinguish between chlorine released in a chemical attack and chlorine that is present in the environment. Other evidence, such as witness statements, the symptoms of victims and the remains of munitions, could point to chlorine use, but laboratory tests couldn't confirm it with the same degree of certainty as sarin use — and this left plenty of scope for deniers to challenge the findings of OPCW investigators. In particular, the deniers focused on an incident in Douma in 2018 where dozens of people were said to have died in a chlorine attack.

Even without the scientific evidence compiled by U.N. and OPCW investigators, there were reasons for not taking the denials from Assad's defenders seriously. One was that the deniers themselves lacked credibility. Many of the individuals involved had a history of promoting conspiracy theories and fringe beliefs relating to other issues. Russia's use of its own propaganda organs to provide a platform for their claims didn't help their credibility either. Furthermore, the idea that rebels were faking chemical attacks to give Western powers a long-desired pretext for full-scale intervention in Syria simply didn't ring true: Presidents Barack Obama and Donald Trump were both visibly reluctant to become deeply involved.

Although Western mainstream media reported the denials by Syrian and Russian officials as part of their news coverage (usually without comment), they generally paid no attention to the claims of activist groups in the West — thus prompting talk on social media about a conspiracy of silence. In response to the lack of mainstream interest, the activists turned to a loose network of "alternative" websites — sites that promoted fringe views on a variety of issues, with distrust of Western governments as the unifying theme. Though working independently, they often collaborated by reposting each other's articles and tended to draw on the same pool of writers.

This was sometimes referred to as a media ecosystem, though "echo system" was probably a better description. Using multiple channels to disseminate false or unverified claims also

helped to make them seem more believable: It not only broadened the potential audience but also created an impression that the claims had a substantial body of support. Research has shown that the more often information is repeated the more likely people are to believe it — even if it is demonstrably false. According to one study, "as false claims are repeated, they become more familiar and thus may come to seem more true to people." Twitter was an essential tool to keep the echo system alive and echoing, and repetition was key there too. Claims that had been long since debunked were constantly revived on Twitter and recycled regardless.

The echo system's most celebrated figure was Vanessa Beeley, a British woman who, according to biographical notes on her website, had worked "predominantly in the engineering and plastics recycling sector" before transforming into a "writer, photographer, peace activist and investigative journalist." Her initial interest in the Middle East was Palestine, but in 2016 she made her first trip to Syria with a delegation from the U.S. Peace Council. During their visit the group met with al-Assad for two hours and posed for a photograph with him. Beeley, who was seen standing next to the Syrian president, later described it as her proudest moment.

She had clearly made a favorable impression in Damascus because the following month she was granted a visa for a second visit, this time lasting three weeks. Its main purpose, she wrote, was for research "into the multi million NATO and Gulf State funded, terrorist-linked White Helmets" (the civil defense organization that operated in rebel-held areas).

Before long, Beeley's writing had turned her into a social media celebrity. To her admirers on Twitter, she was almost a goddess and criticizing her work was nothing less than blasphemy. She was on the ground in Syria "putting the truth out there," they said. She was a brilliant reporter and a "real journalist." She deserved a Pulitzer and possibly a Nobel Peace Prize too.

The truth, though, was that her reports from Syria were misleading and often demonstrably wrong. While refusing to believe evidence that the regime was using chemical weapons, she readily accepted claims that rebels were doing so.

In 2018 she described visiting a rebel "chemical weapons facility" in the company of government forces who had captured it. Her article included photos of what she claimed were "chemical weapon ingredients" — though it was clear that she had no idea what most of them were. "Some of the bags containing the chemical ingredients were still booby trapped and therefore it was not possible to pick them up to show the labels more clearly," she wrote. "It was also very dark, but I did my best to photograph everything I saw there. … One of the bags contained the chemical compound RDX." Based on what Beeley saw, it was hard to imagine how this could be justifiably described as a "chemical weapons facility." The only "chemical" she seemed sure of was RDX, which had nothing to do with chemical weapons: It was a common type of explosive.

A closer look at Beeley's journalistic activities gives a snapshot of the echo system in operation. For a time, she was associate editor at 21st Century Wire, a website that promoted familiar conspiracy theories about George Soros, 9/11 and chemtrails (among other things) and published 47 items under her name. Her most often used outlet, though, was Global Research — a Canadian website that published 90 of her items. Founded in 2001, Global Research had first attracted attention by claiming the CIA was behind the events of 9/11, and information warfare specialists at NATO's StratCom later identified the website as "a key accelerant" in circulating false stories that happened to fit narratives being pushed by Russia and Syria. In the view of StratCom's researchers, it was part of a network that sought to improve the Google ranking of these stories through reposting and thus "create the illusion of multisource verification."

Other outlets for Beeley's work included The Alt World, Arrêt sur Info (Switzerland), Australian National Review, BS News, The Corbett Report, Crescent International, Dissident Voice, Nexus Newsfeed, Ron Paul Institute, UK Column, Unlimited Hangout, Veterans Today and Zero Hedge.

Beeley was also listed as having contributed 44 items (on her own or jointly with others) for the American Herald Tribune, a website that sounded like a mainstream news organization but wasn't. Items with Beeley's name on them included "White Helmets Use Covid-19 Crisis to Further US Coalition Regime Change Agenda in Syria," "Did Paedophile Jeffrey Epstein Work for Mossad?" and "Macron Adopts Totalitarian State Practices to Suppress Dissent." The actual articles can no longer be read, however. The American Herald Tribune was shut down in November 2020 when the U.S. Department of Justice seized its internet domain name, along with 26 others, on the grounds that it was a front for Iran's Revolutionary Guards.

Some of the American Herald Tribune's articles did survive in other parts of the echo system. Seventeen of them had been cross-posted on the website of Mint Press News, which had similar sharing arrangements with several other "partner" websites including Project Censored, Free Speech TV, Media Roots, Shadow Proof, The Grayzone, Truthout, Common Dreams and Antiwar.com.

Based in Minnesota, Mint Press was established in 2012, ostensibly as a commercial venture employing six full-time staff. According to its editor, Mnar Muhawesh, the initial investment had come from "retired businesspeople," though she declined to name them. The only time Mint Press made much impact (though for the wrong reasons) was in 2013, a few days after the sarin attack on Ghouta, when it reported claims from anonymous sources in Syria suggesting that Prince Bandar bin Sultan, then the Saudi intelligence chief, had provided rebel fighters with chemical weapons but neglected to tell the rebels what they were

or how to use them. As a result, according to the sources, the rebels had handled the weapons "improperly," accidentally causing mass deaths.

The story appeared to be based on rumors circulating in Damascus at the time, and there was no real evidence to support it. Saudi Arabia was not known to have chemical weapons, and the idea that it would supply them to rebels without instructions for use was highly implausible. Nevertheless, Russian Foreign Minister Sergei Lavrov cited the story as evidence that the U.N.'s investigators in Ghouta had not done a thorough job.

Mint Press's initially generous funding appears to have shrunk considerably shortly afterward. Its office closed in 2014 and from then on, the only way of contacting it was through a mailbox address or email. It encouraged regular donations from the public via Patreon and had occasional crowdfunding appeals. One of them, in 2018, had a target of $26,000 and was oversubscribed by $15,000.

Despite the fiasco of its Ghouta story, Mint Press won the "Serena Shim Award for Uncompromised Integrity in Journalism" — the echo system's own version of the Pulitzers. Vanessa Beeley was another of its laureates. Named in memory of a Lebanese American journalist who died in a car crash while working for Iran's Press TV, the award, according to its stated purpose, was to honor non-mainstream journalists who "tell challenging truths in difficult times" and provide them with financial support to "continue their work in an environment that penalises them for their clarity of vision and willingness to expose the powerful."

The award's website gave no details of the nomination process, who the judges were or how "uncompromised integrity" was assessed. The selection criteria became more apparent, however, from a look at the list of previous winners, of whom there were more than 40. Some were advocates for conspiracy theories, while numerous others were prominent defenders of the Assad regime. Besides Mint Press, websites listed among the award winners included Consortium News, which disputed the claim that the Assad regime used chemical weapons, and The Grayzone, which accused OPCW investigators of a cover-up. Individual recipients included Caitlin Johnstone, an Australian blogger who supported "false flag" theories about the chemical attacks, historian/journalist Gareth Porter, who was a board member of Consortium News, plus three of The Grayzone's staff — Max Blumenthal, Ben Norton and Aaron Maté. One odd inclusion in the list of winners was Peter Ford, a former British ambassador to Syria who wasn't really a journalist but had written a few articles and given interviews. More notably, he was a director of the British Syrian Society — headed by Fawaz Akhras, al-Assad's father-in-law.

The Serena Shim awards came with a cash prize. The amount was not normally disclosed, though one winner revealed she had been given $5,000. If that were repeated for all recipients, it would mean the organizers had handed out $200,000 by the end of 2020.

The ultimate source of the prize money was a mystery, and no one admitted to organizing the awards but there were clear links to an obscure organization based in California: the Association for Investment in Popular Action Committees (AIPAC). Its name was designed to taunt Israel's supporters by having the same initials as a much more prominent organization — the American Israel Public Affairs Committee.

The president of this less-known "AIPAC" was Kamal Obeid, a structural engineer and an active supporter of Architects and Engineers for 9/11 Truth, which claims the World Trade Center collapsed in a "controlled explosion." The secretary and treasurer of "AIPAC" was Paul Larudee, proprietor of a piano-tuning business in California and a long-standing campaigner on Palestine. Larudee had also appeared numerous times on Iran's PressTV, and in 2014 he traveled to Syria with a delegation of "independent" observers for the presidential election. They described it as "the legitimate, democratic expression of the Syrian people" — even though it was generally seen as a sham.

"AIPAC" is registered in the U.S. as a tax-exempt nonprofit organization and provides "fiscal sponsorship" for at least six activist groups. It has an Employer Identification Number issued by the U.S. tax authorities that is used for fundraising by all the groups under its tax umbrella, and each year "AIPAC" submits a combined return to the Internal Revenue Service on their behalf. Four of the sponsored groups are connected with Palestine. The other two are the Serena Shim awards and the Syria Solidarity Movement, a pro-Assad group. In 2017, on behalf of the Syria Solidarity Movement, "AIPAC" paid Ohio politician Dennis Kucinich $20,000 to attend a pro-Assad conference in Britain and give a speech there.

Public records show that funding from donors channeled through "AIPAC" averaged $165,000 a year from 2012 to the end of 2018. The sources of funding are not identified by name, and since the published accounts give combined figures for all groups under the "AIPAC" umbrella, it is not possible to see how much income or expenditure relates to any particular one. However, in 2018, according to the most recent annual return available, "AIPAC" disbursed just under $72,000 in the form of grants — more than half of which went to three recipients listed among winners of the Serena Shim award: $10,000 to Mint Press, $10,000 to Gareth Porter and $20,000 to Max Blumenthal.

The effects of all the award-winning misinformation circulated through the echo system are difficult to measure. Despite the noise generated online, it made little or no impact on mainstream debate about Syria. Defending the Assad regime in this way had far-reaching

implications, however, because to believe the claims of deception, it's also necessary to believe that international investigators from the U.N. and the OPCW, along with Western governments' intelligence agencies and almost all of the mainstream media, had not only got it wrong but were also deliberately concealing the truth.

One result of that was a secondary conspiracy theory about the OPCW and a concerted effort by the deniers, supported by Russia at an international level, to discredit it as a reliable institution.

In 2018, Western powers accused Syrian forces of a chemical attack in Douma and responded by bombing several sites that they said were linked to chemical weapons activity. The OPCW's Fact-Finding Mission (FFM) later found "reasonable grounds" for believing a toxic chemical had been used as a weapon in Douma and the chemical in question was likely to have been molecular chlorine. The deniers, as usual, maintained it was a faked attack by rebels. Their campaign was given a boost by the emergence of two former OPCW staff — both of whom had been involved in the Douma investigation — complaining about the way it had been conducted. One of them was said to be in possession of internal emails, text messages and "suppressed draft reports" showing the FFM's findings about Douma had been manipulated to reach a "pre-ordained" conclusion — thus providing retrospective justification for the Western airstrikes. When eventually released by WikiLeaks, the documents failed to match up to their advance publicity. By that stage, however, the online echo system was already treating the OPCW "scandal" as established fact.

For Syria and Russia, these attempts to undermine the organization's credibility served a useful purpose in hampering efforts to hold Syria accountable. Russia had its own interests in that area too, since it was widely believed to have used a Novichok nerve agent against Sergei and Yulia Skripal in 2018 and, later, to attack the Russian opposition figure Alexey Navalny.

Without some form of accountability, the international norm against chemical weapons, painstakingly established over more than 20 years, would be placed in jeopardy. However, the FFM had a limited brief: Its role was to investigate reported attacks and ascertain whether toxic chemicals had been used as a weapon, but its remit did not extend to attributing blame. For a while, that task had been assigned to the Joint Investigative Mechanism, a body set up by the U.N. Security Council, but Russia put a stop to its activities after it issued a report blaming the Assad regime for a sarin attack on Khan Sheikhoun in 2017.

In response to that, and in the face of opposition from Russia and Syria, the OPCW's governing body, the Conference of the States Parties, had voted to establish the Investigation and Identification Team, an alternative attribution body that was just starting work when the rumpus of Douma broke out — with deniers citing the alleged scandal over Douma as evidence that the OPCW was unfit to be entrusted with assigning blame.

The political battles unleashed at the OPCW look set to continue, but the most damaging effects of the denial campaign are likely to be felt closer to home. Its claims of fakery and mass deception provide a gateway for the unwary into a world of "post-truth" politics. The real issue here is not so much the denial of chemical attacks as the way it serves as a vehicle for normalizing conspiracy theories under the guise of critical thinking. Admirable though it is to view news reports and government statements with caution and scrutinize the evidence, the denial campaign was something else, encouraging people to reject information at will simply because it didn't fit their view of how the world works. The online echo system played a central role in this, purportedly compensating for the deficiencies of mainstream media while applying editorial standards that were generally lower or nonexistent.

Denying chemical attacks thus became one building block in the construction of a counterfactual community where beliefs and assumptions took precedence over evidence and facts. This attitude to information is fundamental to all conspiracy theories, and it was no coincidence that among believers in the Syrian rebels' fakery there were plenty who disputed the "official" version of the 9/11 attacks on New York and Washington and later when the coronavirus pandemic broke out, could be found on social media denouncing lockdowns, face masks and vaccines as a plot to impose control over people's behavior.

***Brian Whitaker** is a former Middle East editor of The Guardian newspaper and author of a new e-book, "Denying the Obvious: Chemical Weapons and the Information War Over Syria".*

US concerned about China's interest in toxins that can be used for chemical weapons

By Sanjeev Sharma

Source: https://www.socialnews.xyz/2021/11/04/us-concerned-about-chinas-interest-in-toxins-which-can-be-used-for-chemical-weapons/

Nov 04 – The United States is concerned about the People's Republic of China (PRC's) interest in pharmaceutical-based agents (PBAs) and toxins because these agents have utility for chemical weapons applications.

Further, based on available information, the United States cannot certify that China has met its obligations under the Chemical Weapons Convention (CWC) due to concerns regarding the PRC's research of pharmaceutical-based agents (PBAs) and toxins with potential dual use applications.
The United States has compliance concerns with respect to PRC military medical institutions' toxin research and development because of the dual-use applications and their potential as a biological threat.
The PRC has engaged in biological activities with potential dual-use applications, which raise concerns regarding its compliance with the Biological and Toxins Weapons Convention (BWC) and the Chemical Weapons Convention (CWC), a report by the US Defence Department said.
Studies conducted at PRC military medical institutions discussed identifying, testing, and characterizing diverse families of potent toxins with dual-use applications.
Scientists at a PRC military institute have expressed interest in military applications of PBAs and are engaged in research involving the synthesis, characterization, and testing of PBAs with potential dual-use applications. In addition, available information on studies conducted at PRC military medical institutions indicates that researchers identify, test, and characterize diverse families of potent toxins-which raises questions about the intended purposes of the work conducted by the researchers.
Based on available information, the United States cannot certify that the PRC has met its obligations under the Chemical Weapons Convention (CWC) due to concerns regarding the PRC's research of pharmaceutical-based agents (PBAs) and toxins with potential dual-use applications.
The PRC has engaged in biological activities with dual-use applications, which raise concerns regarding its compliance with Article I of the Biological and Toxins Weapons Convention (BWC), to which the PRC became a party in 1984. According to the US Department of State's April 2021 report "2021 Adherence to and Compliance With Arms Control, Non-proliferation, and Disarmament Agreements and Commitments," available information shows the PRC engaged in activities that raise concerns about its obligations under Article I of the BWC, which requires States Party "never in any circumstances to develop, produce, stockpile, or otherwise acquire or retain... microbial or other biological agents, or toxins whatever their origin or method of production, of types and in quantities that have no justification for prophylactic, protective, or other peaceful purposes," as well as "weapons, equipment or means of delivery designed to use such agents or toxins for hostile purposes or in armed conflict."
In addition, the US does not have sufficient information to determine whether the PRC eliminated its assessed historical biological warfare (BW) program, as required under Article II of the Convention.
The United States assesses that the PRC possessed an offensive biological warfare program from the 1950s to at least the late 1980s. Although the PRC has submitted BWC Confidence Building Measures (CBMs) each year since 1989, the PRC's CBM reporting has never otherwise disclosed it ever pursued an offensive BW program, and the PRC has never acknowledged publicly or in diplomatic channels its past offensive program.
As part of its historical BW program, the PRC had probably weaponized ricin, botulinum toxins, and the causative agents of anthrax, cholera, plague, and tularemia.
The PRC continues to develop its biotechnology infrastructure and pursue scientific cooperation with countries of concern. Available information on studies conducted at PRC military medical institutions has included information that discusses identifying, testing, and characterizing diverse families of potent toxins with dual-use applications.

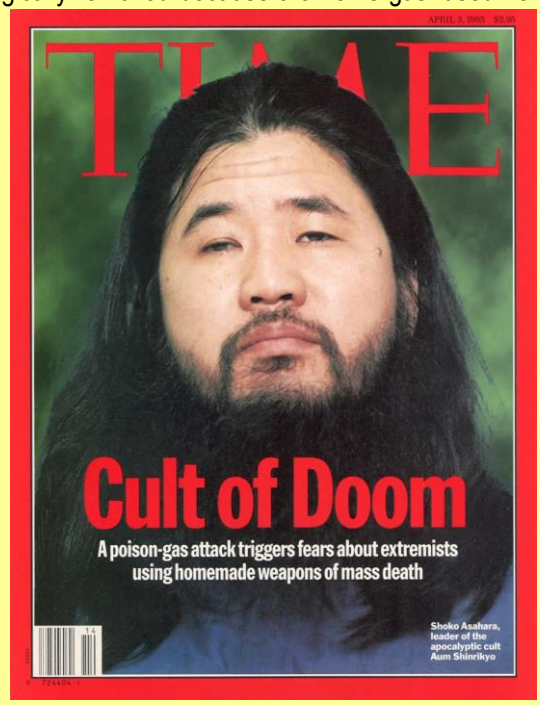
EDITOR'S COMMENT: "*There is a question if the PRC eliminated its historical biological warfare program*". Are we sure that the US eliminated their own BWA program? Or Russia? Destroying chemical or biological weapons of the past does not mean that the related knowledge and know-how are destroyed as well. If you make it once with technological capabilities of the past it is for sure you can make it again and faster with the current production capabilities. An article that has been written by a high-rank (? LG) Indian who likes the US and dislikes China is not always to the point.

The enduring power of Japan's doomsday cults

By Philip Patrick
Source: https://www.spectator.co.uk/article/the-enduring-power-of-japans-doomsday-cults

Nov 06 – It is now 26 years since the doomsday cult known as Aum Shinrikyo ('supreme truth') carried out the worst domestic terrorist attack in Japanese history. Led by their leader Shoko Asahara, Aum released sarin gas on to the Tokyo subway, killing 13 and injuring 6,000. It remains the only time a weapon of mass destruction has been deployed by a private

organisation. The details were sickening: one woman had to have her eyes surgically removed because the nerve gas fused her contact lenses on to them.



Despite Asahara's execution in 2018, the death cult has (somehow) survived, **changing its name to Aleph** and spawning two splinter groups. Aleph is small but appears to be in rude health, with 1,650 members, considerable cash reserves and several properties. It reportedly attracts hundreds of recruits, mostly young men, every year.

Last week, Aleph was suspended as an organisation after refusing to hand over information about its assets to the Public Security Intelligence Agency. The order bans it from using its own facilities, recruiting new members, obtaining land and buildings and receiving donations, for six months.

It's unclear how similar Aleph is to Aum. But it is staggering to many here in Japan that an offshoot of a murderous doomsday cult is still in business, and even growing. The cults are something of a diagnostic tool for the health of Japanese society: their existence proves that Japan's problems aren't being remedied by traditional institutions.

Understanding the complex yet enduring appeal of cults in Japan requires historical background. When emperor worship came to an abrupt halt at the end of the second world war, it created a vacuum into which came the first significant wave of new religious groups. Religious organisations were given tax exemptions which, in a time of great financial hardship, also made them attractive.

A second wave of religious cults arrived in the 'bubble' era of the 1970s and 1980s. Easy money and a dizzying pace of change upset the natural order. Society drifted towards amorality and decadence. The lonely, disorientated out-of-towners who had been lured to the big city by the booming economy were easy targets. Gurus offered them a sense of belonging and spiritual succour. This was the fertile ground within which Aum grew.

Aum's appeal was more specialised than other cults. It recruited from the elite: Tokyo university graduates, lawyers, doctors and businessmen, who, perhaps burdened by the guilt of their success in life, were persuaded to hand over wealth to a charismatic messiah offering salvation from an imminent apocalypse. The leader was an obvious fraud. Asahara began his career peddling a snake oil known as Almighty Medicine (in fact just tangerine peel in alcohol) for $7,000 a shot to the terminally ill. George Orwell, who said that 'some ideas are so stupid that only intellectuals believe them', might have recognised the dynamic.

Many heavyweight Japanese writers, from Haruki Murakami to Kenzaburo Oe, have focused on the phenomenon of Japan's cults. The disturbing conclusion is that people joined Aum to reject a 'system' in which everyone has a clearly defined but severely limited role. In *The Origins of Totalitarianism*, Hannah Arendt wrote that fascism succeeded because it 'so terrifyingly took care of [the 20th century's] problems'. The same could be said for Japan's cults, which still offer an immediate answer to the bewildering consequences of modernity.

Today, there are as many as 2,000 cults operating in Japan. Most are linked in some way to the traditional Buddhist and Shinto faiths, whose teachings are so vague that they are infinitely accommodating. The majority are harmless, and some are not really cults at all but fronts for criminal activity. Others are tax dodges.

The most significant is **Soka Gakkai**, a Buddhist religious movement based on the teachings of the 13th-century Japanese priest Nichiren. Supporters would recoil at the suggestion that they are members of a cult, but many Japanese people feel distinctly uneasy with the influence the group now wields. Soka Gakkai is deeply embedded in Japanese society: its political party, Komeito, is a junior partner in the current government. Many Japanese see Soka Gakkai as a radical movement deserving of suspicion.

Japan has had three prime ministers in the past two years. Meanwhile debt continues to rise, the birth rate continues to fall, and technology promises emotional surrogacy. Cultish groups like Aleph aren't followed by the majority, but yet they still occupy a significant place in Japanese society. This week's stabbing and arson attack on the subway by a lone assailant dressed as the Joker from *Batman* was a traumatic reminder for many of the horrors of the Aum attack and yet another symptom of the sclerosis that has left many in Japan feeling adrift.

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Catch the ChemBio SCENT! Help the MOD and DOD screen and analyse hazardous ChemBio materials with novel technologies

Source: https://www.gov.uk/government/news/catch-the-chembio-scent-help-the-mod-and-dod-screen-and-analyse-hazardous-chembio-materials-with-novel-technologies

Nov 03 – Detecting the production and use of hazardous chemical and biological (ChemBio) materials is an enduring challenge in the defence and security community. From sample collection and storage to rapid screening and identification of hazardous materials of interest – new safe and efficient approaches are required to meet various technology challenges during this process.
To help address challenges in the successful identification of ChemBio materials and to bring perpetrators to justice, DASA is pleased to launch a new Themed Competition called Catch the ChemBio SCENT. This competition is jointly funded by the UK Ministry of Defence (MOD) and the US Department of Defense (DOD) via the Irregular Warfare Technical Support Directorate (IWTSD).

How much funding is available?
Up to £1 million is available for Phase 1 of the competition, with a maximum of £100K for each funded proposal. The closing date for proposals is on 17 January 2021.
Have an innovation? Read the full competition document and submit a proposal

What does SCENT stand for? Screening, Collecting and Exploiting Novel Technologies
The production and use of ChemBio materials is a breach of the Chemical Weapons Convention and Biological and Toxin Weapons Convention. When under investigation, samples may need to be recovered from environments with extreme climatic conditions and also dense urban areas.
It is vital that samples submitted to laboratories for investigation maintain physical integrity and stability during transportation to ensure high-quality analysis is undertaken, in a safe, controlled manner.
The challenges outlined in this competition seek to address either the screening, collection or forensic exploitation of samples suspected of containing hazardous ChemBio materials.

Key challenges the Catch the ChemBio SCENT! competition seeks to address
Challenge 1: Screening technologies for rapidly detecting or identifying the presence or class of hazardous ChemBio materials in a sample
Current screening technologies can identify known ChemBio Hazards. However, screening for a wider range of materials is restricted because of the limitations of handheld or field based screening technologies.
The goal of this challenge is to enable the rapid classification of "unknown" hazardous materials in either a field or a laboratory context.
Challenge 2: Sampling collection systems that maintain the integrity and viability of hazardous samples
Current collection technologies can sample materials from surfaces, but do not protect and stabilise the sampled materials for storage and transportation without cold chain support.
The goal of this challenge is to retrieve samples from an operational setting with a technology that preserves the properties of the sample.
Challenge 3: Analytical approaches to improve the forensic exploitation and the attribution of ChemBio materials
Current forensic exploitation technologies are in their infancy in ChemBio attribution and often require data intensive approaches taking weeks or months to undertake.
The goal of this challenge is to maximise the information and breadth of approaches that can be used in order to analyse a sample.
Read the full competition document to find out more about the challenge areas

Have a novel idea that enhances our ability to screen and analyse ChemBio materials?
Get in touch with your local Innovation Partner to discuss your idea by submitting a brief Innovation Outline.
Or ***click here to submit a proposal***
Up to £1 million is available for Phase 1 of the competition, with a maximum of £100K for each funded proposal. The closing date for proposals is on 17 January 2021.

Long Ignored: The Use of Chemical and Biological Weapons Against Insurgents

By Glenn Cross

Source: https://warontherocks.com/2017/08/long-ignored-the-use-of-chemical-and-biological-weapons-against-insurgents/

A conventional shibboleth is that chemical and biological agents have no place in modern conflicts. In this view, chemical and biological agents are not useful because they are inhumane, uncontrollable, ineffective, or obsolete in the face of modern conventional weapons. These arguments were put forth when the U.S. decided to ban biological weapons, and later applied to chemical weapons. However, a review of chemical and biological weapons use since the end of World War I puts the lie to many of these claims. Chemical and biological agents possess significant utility in modern counterinsurgency campaigns, as Rhodesia and Syria have demonstrated. (One disclaimer is apropos at this point: This argument does not justify or condone the use of chemical or biological agents in any form or at any time unless legally sanctioned by the relevant international agreements.)

Throughout history, chemical and biological agents have demonstrated effectiveness against ill-equipped, ill-prepared, or poorly trained adversaries, especially insurgents. Examples of the use of these weapons against insurgents include Spain (Rif war, 1921-1927), Italy (1935-1936), Egypt (1963-1967), Rhodesia (mid-late 1970s), South Africa (1980s), Libya (1987), Iraq (1988), and Syria (2013-ongoing). And while the Spanish, Italian, Egyptian and Libyan uses are examples of the use of chemical weapons in inter-state conflict, most of the cases involve colonial governments using the weapons against native insurrections. The Rhodesian example illustrates a regime's largely internal use of chemical and biological agents against insurgents. These are clear parallels between this example and Syria's well-publicized use of chlorine and sarin against civilians, which has been ongoing since 2013.

As Chris Quillen points out, Arab nations used chemical weapons after conventional forces proved ineffective in the wake of prolonged conflict that strained economies, weakened international standing, and threatened vital assets. Quillen argues that chemical agents were used as a weapon of last resort and that therefore, these cases demonstrate the strength of the norms and taboos prohibiting the use of these weapons.

But a counterargument is that international norms are weakened with each consecutive use and the absence of an effective response. Richard Russell asserted in a 2005 article that "Nation-states are likely to learn from Saddam [Hussein] that chemical weapons are useful for waging war against nation-states ill-prepared to fight on a chemical battlefield as well as against internal insurgents and rebellious civilians."

The conclusion from these examples is that regimes *in extremis* — when the battle is for their very survival — seem to have little compunction about resorting to chemical and biological weapons use. The much-heralded international norms and conventions prohibiting and condemning chemical and biological development and use go out the window when a regime's survival is at stake. In academic and policy circles, the norms against chemical and biological development and use seem almost sacrosanct, inviolable. The Rhodesian case dispels the myth and offers a more nuanced understanding of the role the norms play and the circumstances in which those norms are abandoned. When regimes are fighting for survival and perceive that chemical or biological agents can help defeat an insurgency, the use of these weapons becomes more attractive despite the existence of norms. The examples of Rhodesia and Syria show that the international community must be united and demonstrate the requisite political will to enforce norms if the use of chemical and biological weapons is to be prevented.

The Rhodesian Case Study

The Rhodesian example is likely the only example of biological weapons use by a nation since the end of World War II. The case allows us to examine the rationale behind a decision not only to develop, but also to use, biological weapons agents. Rhodesia also sheds light on other post-World War II chemical weapons cases, such as Iraq's, particularly against its Kurdish population, and Syria's, against insurgents in its civil war.

The lesson of Rhodesia and Syria is that regimes are much more likely to use these unconventional agents against internal opposition (i.e., insurgents and rebellious populations) than against foreign state adversaries. The Rhodesian case demonstrates how a small, internationally isolated regime can develop effective chemical and biological agents undetected and use those agents with lethal effect against both internal and external guerrilla threats.

Rhodesia covertly established a rudimentary, small-scale chemical and biological program using readily available materials, equipment, and techniques. Starting in 1965, Rhodesia faced international sanctions and a blockade of supplies entering the country through Mozambique's port of Beira. Salisbury depended on Portugal (until the 1974 coup) and South Africa for foreign support (which became increasingly sporadic after 1975). The loss of Portuguese support and the unpredictability of

South African assistance led Rhodesia to turn to chemical and biological weapons as self-help.
Rhodesian decision-makers adopted an unconventional response to the growing imbalance that favored the far more numerous insurgents. After the collapse of Portuguese colonial power in Mozambique — along with the dramatic increase in guerrilla recruitments and the escalating violence — people within the security structure realized the counterinsurgency could not be won solely through the conventional military.
With scant material resources, the project employed relative novices in basic facilities to produce significant amounts of lethal material in a short period of time. The Rhodesian effort also shows that states, groups, or individuals lacking funds or sophisticated equipment can easily use toxic agricultural and industrial chemicals as chemical weapons agents. By minimizing reliance on foreign suppliers and limiting personnel to a small, tightly knit group, nations and non-state actors can reduce the likelihood of discovery by foreign intelligence services.
If the Rhodesian sources are credible, their chemical and biological effort at times inflicted more guerrilla casualties than the conventional military operations did. This comparative success was largely due to guerrilla hit-and-run tactics that emphasized avoiding contact with Rhodesian forces in favor of attacking softer civilian targets. In other words, where the Rhodesian military struggled to locate and engage an elusive foe, the chemical and biological effort sought to kill the guerrillas in their camps and bases, and among their village supporters. These attributes made chemical and biological warfare well-suited to counterinsurgency when the regime's aim was survival.
The lessons of the Rhodesian chemical and biological program and its legacy are more relevant today than is commonly realized. Outside the international system — and already under crushing sanctions — Rhodesia had very little to lose in adopting chemical and biological agents. International opprobrium would have had little effect on Rhodesian decision-making. Second, little global attention was focused on events inside Rhodesia. What little attention Rhodesia did get myopically monitored Soviet and Chinese support for the insurgent parties, who were widely seen as Marxist proxies. The covert nature of the Rhodesian program compounded the lack of attention. Western diplomatic, intelligence, and journalistic channels did not report the Rhodesian production and use of chemical and biological agents, despite ineffective insurgent efforts to raise awareness of the issue.
International norms against chemical and biological weapons had no impact on Rhodesia's decision to use these agents. Although the regime was aware of treaty obligations, no evidence exists to suggest that Rhodesian authorities even debated the reaction of the international community when they established their chemical and biological weapons effort. As a footnote, the British government deposited a reservation to the Biological Weapons and Toxins Convention in March 1975 stating that the U.K. could not be held liable for any breach of the convention that might occur in Rhodesia while the colony remained beyond British control. The Soviet Union promptly protested the British reservation. Clearly, authorities in London wanted to avoid blame for any Rhodesian violations of the Biological Weapons and Toxins Convention, while Moscow sought to hold the U.K. culpable for acts by the rebellious Rhodesians. In either case, the outlaw Rhodesians actually involved in biological weapons use were beyond the pale of international obligation. The Rhodesians believed using these agents against the counterinsurgency was necessary to preserve their regime and way of life regardless of international law.

The Syrian Example

Like the Iraqi chemical weapons program, Syria's interest in chemical weapons began after the Egyptian use in Yemen in the 1960s. However, Damascus did not adopt a full-fledged chemical weapons program until its military inferiority was unmasked by the 1982 Israeli invasion of Lebanon. The sense of inferiority — and the perceived unwillingness of Arab neighbors to rise to Syria's aid — resulted in Damascus' adoption of chemical weapons by the mid-1980s. Chemical weapons were the most expedient means of protecting the Assad regime from catastrophic defeat at Israeli hands. Similarly, the Rhodesian chemical and biological effort began out of an increasing awareness of the deteriorating security situation in the face of international isolation.
Even though Damascus's interest in chemical weapons first arose in an international/regional context focused on deterring Israel, the utility of the weapons for the Syrian regime has been, like Rhodesia, in countering its internal insurgency. The Syrian attack on Khan Sheikhoun demonstrates the utility of chemical weapons in the counterinsurgency. According to the declassified assessment by the U.S. intelligence community, released on April 11, 2017:
The Syrian regime maintains the capability and intent to use chemical weapons against the opposition to prevent the loss of territory deemed critical to its survival. We assess that Damascus launched this chemical attack in response to an opposition offensive in northern Hamah Province that threatened key infrastructure.
On the same day, a senior U.S. official elaborated on the threat posed by the rebel offensive in Hamah. The official stated:
The regime we think calculated that with its manpower spread quite thin, trying to support both defensive operations and consolidation operations in Aleppo and along that north-south

spine of western Syria, and also trying to support operations which required it to send manpower and resources east toward Palmyra, we believe that the regime probably calculated at that point that chemical weapons were necessary in order to try to make up for the manpower deficiency.
These assessments clearly illustrate that Damascus resorted to the use of chemical weapons to compensate for inadequate conventional military resources as it sought to counter an imminent threat to a key population center and a vital air base. The U.S. intelligence assessment even emphasized these regime assets as "critical to its survival."

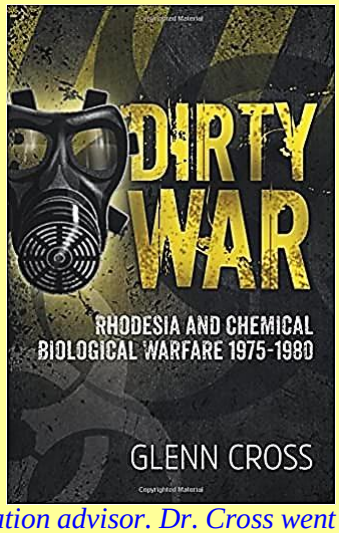
Effective Constraints on Chemical And Biological Use

Although a prevailing assumption has held that chemical and biological weapons will not be used because of a combination of ineffectiveness, international norms, and international agreements, Rhodesia and Syria show that this perspective doesn't tell the full story. Deterrence (i.e., the credible threat of military action) likely is the only effective means of preventing the use of these weapons. International agreements and prohibitive international norms or taboos are largely ineffective unless the political will exists to punish the transgressor. Prohibitions against chemical and biological weapons are enshrined in international agreements, most notably the Biological Weapons and Toxins Convention and the Chemical Weapons Convention. Yet these agreements have been ineffective in constraining the production and use of these agents.
The political will for action in the international community has also long been severely lacking — witness the inaction after the gassing in Halabja and President Obama's "red line" in Syria. After the Obama administration ultimately decided against striking Syria in 2013, the Kerry-Lavrov agreement resulted in Damascus' accession to the Chemical Weapon Convention and its surrender of declared chemical weapons stocks for destruction. Yet as later events demonstrated, Syria retained chemical weapons materials and remained willing to use them against civilians, making the ultimate value of the Kerry-Lavrov agreement questionable.
Despite the conventions, several state parties to these agreements likely have chemical and/or biological weapons programs. A number of states have maintained biological weapons programs in contravention to the Biological Weapons Convention, as demonstrated by the well-known example of Yeltsin's termination of the Soviet program in 1992. Another party to the convention, South Africa, developed and used biological weapons agents for over a decade after ratifying the agreement. Although the Chemical Weapons Convention now has been in force for 20 years, several signatories likely still possess chemical weapons. According to a June 2017 fact sheet assembled by the Arms Control Association, convention signatories thought to possibly retain covert chemical agents or munitions include China, Iran, Israel, North Korea, Russia, and Syria.
The apparent lack of international political will to confront the use of chemical and biological weapons should be evidence that the norms and taboos against the production, possession, and use of these weapons have eroded. Those norms and taboos represent the prevailing international consensus — embodied in international agreements — that underpins the political will to action. Norms represent a consensus defining appropriate and inappropriate conduct by nation-states under anarchic conditions. Norms are not universal nor are they immutable.
Taboos, on the other hand, are prohibitions on conduct considered so morally repugnant and reprehensible so as to be universally condemned. Following the experiences of World War I, chemical and biological weapons became taboo. But even so, World War II saw a massive increase in the number of national chemical and biological programs. Arguably, Allied and Axis powers were deterred from using these weapons by fear of retaliation from the opposing side.
Yet the Axis powers used chemical and biological agents on an enormous scale against vulnerable populations. Japanese units using weapons developed by Unit 731 wrought untold destruction on Chinese military units and civilian communities. For his part, Adolf Hitler may have prohibited use of chemical and biological agents against Allied forces, yet he was not dissuaded from using poison gas (Zyklon B) against millions of civilians. In neither of these instances was the taboo effective. The effect of deterrence and the relevance of international norms in preventing chemical and biological weapons use is arguably lessened when a nation-state is facing an ill-prepared or vulnerable population. The Arab, Rhodesian, and South African cases all bear this out.
Syria's recent use of chemical weapons likely has diminished effectiveness of the chemical and biological prohibitions, as have previous uses (i.e., Egypt, Libya, and Iraq). The international community's failure to act more decisively may embolden other marginal nations to explore chemical and biological adoption and use to counter threats to their internal security.
Although the U.S. cruise missile strike on April 6, 2017, against Syria's Shayrat airfield signalled Washington's resolve to punish Damascus for future chemical weapons use, the political impact (and legality) of the U.S. strike remains debatable, especially given allegations of continued Syrian use. According to an article in the German paper *Die Welt* in July 2017, "Western intelligence agencies confirmed to *Die Welt* that Syria's government continues to use poison gas against its own population. Apparently, the regime understands the latest signals from the U.S. as an encouragement." As of early June 2017, the U.S. government itself warned of a possibly imminent Syria chemical weapons attack, further

suggesting the attack on Shayrat failed to sufficiently punish the Assad regime. One reason the U.S. strike may not have prevented further use is that it came from the U.S. alone. Unilateral action against the transgressor demonstrated the weakness of the norm in that the international community lacked the political will to act. The absence of political will is highlighted by Russia's repeated vetoes of U.N. resolutions condemning Syria for its chemical weapons use. Furthermore, a member of the U.N.'s war crimes commission, Carla Del Ponte, resigned in early August 2017, saying, "The Assad government has perpetrated horrible crimes against humanity and used chemical weapons…I am quitting this commission, which is not backed by any political will. I have no power as long as the [U.N.] Security Council does nothing. There is no justice for Syria."

The Bottom Line

Despite the international moratorium on chemical weapons use in interstate conflict, these agents are effective in suppressing internal violence. Chemical and biological weapons' lack of utility against well-prepared, well-equipped adversaries deters their use against modern militaries, yet historically the weapons have been effective against the unprepared or vulnerable. The post-World War II examples of chemical weapons use show that their greatest utility is in intrastate counterinsurgency operations and in attacks on ill-prepared and poorly equipped or trained adversaries. This perceived advantage is likely the greatest obstacle to the elimination of these arms from national arsenals. As demonstrated in Rhodesia, Iraq, and Syria, the norm against chemical and biological weapons use is weakest in low-intensity counterinsurgencies involving rogue or pariah regimes, and when poisons and toxins are used in special operations and assassinations (examples include Chile under Pinochet, South Africa, and Russia). The Rhodesian and Syrian cases clearly show the relative inability of international norms to prevent the use of chemical and biological weapons in these cases. For norms to be truly effective, there must be unanimity among nations about enforcing the prohibitions. As we've seen in Syria, such consensus is elusive, and the international community has failed to act. As a consequence, the world faces a sad, but inevitable conclusion. The Syrian regime is unlikely to ever face justice for its use of chemical weapons.



Glenn Cross *is the author of the recent book, "Dirty War: Rhodesia and Chemical, Biological Warfare." He has served for 29 years in the Intelligence Community as a CIA analyst, manager of biological weapons analysts in the FBI, and in the ODNI as the deputy NIO for WMD, responsible for IC's biological weapons analysis from 2008 to 2010. Dr. Cross holds an AB from Columbia University, an MA from King's College, London in War Studies, a second MA (with distinction) from George Mason University, and a PhD from George Mason's Graduate School of Science in Biodefense, where the former deputy head of the Soviet biological weapons program, Ken Alibek, was his dissertation advisor. Dr. Cross went on to do a postdoctoral fellowship at Georgetown University Medical School developing means for attributing biological weapons attacks. Views and opinions expressed here are solely those of the author and do not represent the positions or policies of the US government.*

Mass casualty DECON

By Kevin Cresswell

CBNW Magazine | 2021/02

Source: https://cbnw.co.uk/magazine/2021-2/

Kevin Cresswell *is a former law enforcement officer and military officer. He holds dual nationality from UK and US and operates a defense and security consultancy in Los Angeles, CA.*

TridentOne: Trusted Mass Decontamination

Source: http://tridentone.com/

During a HazMat incident, First Responders need decontamination equipment they can trust for top performance in the most critical situations. At Hydro-Therm, Inc., we are proud to have earned that trust with the unrivaled water deployment capabilities of the *TridentOne* mass decontamination shower system. Developed from a foundational analysis of first

responders' frontline experiences and industry best-practices, *TridentOne* provides a turnkey solution that helps achieve successful mass decontamination for the greatest majority of people, with the greatest efficacy and efficiency.

What *TridentOne* Does

TridentOne is a turnkey, large capacity water deployment system that quickly and easily delivers a low pressure, high volume water shower to the greatest majority of people possible during a hazmat incident.

What *TridentOne* Does Differently

The *TridentOne's* patented, telescoping arms create a wall of water unmatched by anything seen in the hazmat industry today. These mass decon giants dramatically increase the shower area, enabling Emergency Preparedness and Response teams to achieve successful mass decontamination for the majority of people, while reducing the risk of harm and possible contamination to the first responder. The

are included with ALL Hydro-Therm, Inc. kits.

TridentOne will connect to ANY 2.5" discharge via the 45° or 90° coupling included in the *TridentOne* Kit, making this device a must- have for any First Responder or Emergency Management trailer.

Technical Specifications

The *TridentOne* is constructed from 6061 aluminum with a heat treatment designation of T-6. The *TridentOne,* and all of its parts, are machined to precision by a team of qualified technicians dedicated to perfection. Each and every *TridentOne* that leaves our manufacturing facility is tested for defects, assuring our clientele the best product available. Standard equipment on the *TridentOne* is the three -150 GPM nozzles and the swivel female 2 1/2" (NHT) to rigid female 2 1/2" (NHT) couplings. The telescoping arms can be easily removed for scheduled maintenance and inspection. One extra full set of seals

Exercises in Lebanon

By Andrea Dangelo and Lt Col Andrea Gloria

Source: https://cbnw.co.uk/exercises-in-lebanon/

Aug 10 – Lebanon has increased its activities in CBRN risk mitigation in response to the rising risk of CBRN events and smuggling of hazardous products through Lebanese territory. In November 2013 the country's Prime Minister created the CBRN National Team to reinforce the operational capabilities of first responders

Concrete threats to Lebanon's safety, security and national stability include the unintentional release of hazardous chemical products from Lebanese facilities in densely populated areas; use of CWAs by terrorist organisations within Lebanon and in neighbouring Syria; the risk of infectious disease outbreaks worsened by the growing populations of refugees living in poor conditions and crossing borders without proper medical examinations, and a possible radiological release or nuclear accident in neighbouring countries.

The chemical attacks in Ghouta, Syria in 2013 heightened awareness of the Lebanese authorities of the increasing CBRN risk in the region, calling for a stronger response capacity

by national institutions. Subsequently, in 2016 the European Union Joint Research Centre (EU JRC) supported Lebanese Authorities in drafting the National CBRN Action Plan delineating risk factors, setting a framework, and establishing a baseline for interagency cooperation for CBRN events.

Scenario 1: Set-up of decon by Lebanese Civil Defence and Beirut firefighters after an accidental release of TICs (Port of Beirut).

EU Technical Assistance project In September 2018, the EU launched the EU Technical Assistance on CBRN Risks Mitigation in Lebanon – a €3.5 million comprehensive programme for specialised equipment provision, technical assistance, and training. This brings together Lebanese Armed Forces, internal security forces, civil defence, Beirut firefighters, the Lebanese Red Cross and the Office of the Prime Minister to increase their preparedness and enhance their technical capabilities for a prompt, coordinated and effective CBRN response.

Only a month later an ISIS terrorist was arrested while attempting to poison a military water tank with chemical products. This event stressed even more the need for Lebanon to increase its preventive and response capabilities.

The three-year EU Technical Assistance (TA) project has been implemented by the consulting firm Business & Strategy Europe (B&S Europe) in partnership with the Security and Freedom in Europe Foundation (SAFE), the Italian Ministry of Defence, and the French Ministry of Foreign Affairs.

Italy and France signed an agreement with the EU to provide CBRN technical expertise deploying on-duty CBRN officers and mobile expert teams to conduct CBRN training and exercises to achieve tangible operational results, while reinforcing sustainable ties between Lebanon and EU Member States in this sensitive area of work. Within this framework, the project provided highlevel training, peer-to-peer mentoring and coaching alongside provision of specialised equipment.

Training plan

The project's complex training plan used an incremental approach and increasingly complex model. The more the project progressed, the more the beneficiaries were engaged in difficult and intricate activities. Several advanced modules centred on specific aspects of CBRN defence have been designed including highly arduous and selective train-the-trainer

modules that allowed the formation of certified CBRN instructors, creating a strong and self-sustainable CBRN training capacity among Lebanese first responders.
The training plan was tailored to the roles of each participating institution involved in the National CBRN Action Plan and Disaster Management Plan. The parallel delivery of highly specialised CBRN equipment represents another additional factor of success that increased the first responders' CBRN operational capability.

CBRN scenario training
Following the 4 August 2020 blast at the port of Beirut, the worsening Covid-19 outbreak in Lebanon, and to continue training – the Project Team adapted the training plan by introducing e-learning modules. Active virtual sessions are led by highly qualified experts delivering theoretical lessons on CBRN and practical guidance on use of the provided technical equipment.
In the final phase the TA Team created and organised a complex five-week interagency training based on several simulated full-scale CBRN scenarios in the Beirut Port, Karantina, Rayak and Aramoun, involving 400 first responders.
The scenarios included:

- TIC accidental releases in urban areas
- Discovery of a clandestine laboratory producing illicit drugs and CWAs
- Explosion of a chemical IED in a clandestine warehouse
- Sabotage of a chemical facility and hostage-taking A RDD found during an inspection at a checkpoint
- A terrorist attack using a vehicle-borne IED against a truck transporting chemical substances.

These final training activities were designed to build capability to conduct, contribute and support CBRN interagency missions, cooperate in management of a CBRN event, strengthen the Commandand- Control structure (C2), validate coordinating measures, and activate the National Coordination Room during disasters for additional support with national resources.

The exercises
As in real-life events, several players simulated civilian casualties. Various vehicles were involved, and additional unexpected conditions made management of the situations even more difficult – to challenge and stress the C2 structure and the decision-making process.
In each scenario, an Incident Command Post and Incident Commander were identified in the units depending on the situation, location, magnitude and participating agencies – to guarantee full synchronisation on the scene for prompt life-saving response.
During the trainings the Lebanese agencies demonstrated a high level of commitment and competence, showing a commendable and professional performance.
The EU-funded Technical Assistance on CBRN Risks Mitigation in Lebanon project is an example of successful public-private cooperation between specialist entities and practitioners from EU Member States. This highly technical and operational project highlighted the efforts of the EU to strengthen Lebanon's security institutions' resilience facing CBRN threats – while reinforcing their roles as key drivers of stability, safety, and national cohesion.
1 Warning & Reporting sessions to (a) develop an interagency Warning and Reporting structure and related standardised messages for early warning (b) predict hazard areas, and (c) establish an interagency information exchange mechanism institutionalising practices and ensuring multilateral sharing and coordination to assess the impact of CBRN incidents using timely, accurate and evaluated CBRN information
2 Collective Exercises based on five complex scenarios to plan activities and event management – to instruct staff of several institutions to strengthen their C2 structure and plan, and manage and conduct joint operations reinforcing the collaboration between military and civilian actors in accordance with national response plans
3 Table-Top Exercises (TTXs) at staff level to organise and simulate activation of the National Coordination Room during the two most complex scenarios – to coordinate delivery of additional assistance of national assets to support ground operations
4 Standard Operating Procedures (SOPs) development workshops and After-Action Reviews (AARs) at the end of each practical activity – a participatory approach with agency representatives to refine coordinating measures and applied procedures, analyse resultant critical aspects, and identify best practices and lessons learned.
The contents of this article are the sole responsibility of B&S Europe and do not necessarily reflect the views of the EU.

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management and supervision of complex projects, he has led over 50 technical assistance projects funded by the EU and other international donors.
***Lt Col Andrea Gloria** is CBRN Key Expert Military Component, Technical Assistance on CBRN Risks Mitigation in Lebanon. His previous assignments include duties within the Italian Army, the NATO School Oberammergau as Department Director/CBRN Instructor, and the 7th CBRN defence Regiment as Company Commander, Training Officer and Battalion Commander. He has been involved in the design and support of international CBRN exercises and military operations in Iraq, Kosovo, Lebanon, and Afghanistan.*

EDITOR'S COMMENT: I was also involved in this project as a senior CBRN evaluator on behalf of *B&S Europe* to record the needs of the Lebanese CBRN response system as described above, the storage conditions for the specialized equipment to be delivered, the doctrines and SOPs to be initiated and other important parameters of the CBRN defense. Unfortunately, the mega blast in the Port of Beirut canceled the follow-up on this project but I am sure that the one-site personnel of the European mission took care of it. The Lebanese military and civilian sectors have received lots of training and equipment donations. Now it is important to make their own way of response based on skills and peculiarities of the operational environment in the country. The pandemic might be a burden but if they stopped training and acclimatize with the equipment they will return to Point Zero.

This 'Tree of Death' Is So Toxic, You Can't Even Stand Under It When It Rains

Source: https://www.sciencealert.com/this-tree-of-death-is-so-toxic-you-can-t-even-stand-under-it-when-it-rains

Nov 10 – In 1999, radiologist Nicola Strickland went on a holiday to the Caribbean island of Tobago, a tropical paradise complete with idyllic, deserted beaches.
On her first morning there, she went foraging for shells and corals in the white sand, but the holiday quickly took a turn for the worse. Scattered amongst the coconuts and mangoes on the beach, Strickland and her friend found some sweet-smelling green fruit that looked much like small crabapples.
Both foolishly decided to take a bite. Within moments the pleasantly sweet flavor was overwhelmed by a peppery, burning feeling and an excruciating tightness in the throat that gradually got so bad, the women could barely swallow.

The fruit in question belonged to the manchineel tree (*Hippomane mancinella*), sometimes referred to as 'beach apple' or 'poison guava'. It's native to the tropical parts of southern North America, as well as Central America, the Caribbean, and parts of northern South America.

The plant bears another name in Spanish, *arbol de la muerte*, which literally means "tree of death". According to the Guinness World Records, the manchineel tree is in fact the most dangerous tree in the world.

As explained by the Florida Institute of Food and Agricultural Sciences, all parts of manchineel are extremely poisonous, and "interaction with and ingestion of any part of this tree may be lethal".

Manchineel belongs to the large and diverse *Euphorbia* genus, which also contains the decorative Christmas poinsettia. The tree produces a thick, milky sap, which oozes out of everything – the bark, the leaves, and even the fruit – and can cause severe, burn-like blisters if it comes into contact with skin.

That's because the sap contains a range of toxins; it's thought that the most serious reactions come from phorbol, an organic compound that belongs to the diterpene family of esters.

Because phorbol is highly water-soluble, you don't even want to be standing under a manchineel when it's raining – the raindrops carrying the diluted sap can still severely burn your skin.
Because of these horrifying properties, in some parts of the tree's natural range they are painted with a red cross, a red ring of paint, or even paired with explicit warning signs.
You'd think humans could just remove the trees, but they actually play a valuable role in their local ecosystems – as a large shrub, the manchineel grows into dense thickets that provide excellent windbreaking, and a protection against coastal erosion on Central American beaches.
There have been reports of severe cases of eye inflammation and even temporary blindness caused by the smoke of burning manchineel wood – not to mention the effects of inhaling the stuff.
However, Caribbean carpenters have been using manchineel wood in furniture for centuries, after carefully cutting it and drying in the sun to neutralize the poisonous sap.
"The real death threat comes from eating its small round fruit," Ella Davies writes for the BBC. "Ingesting the fruit can prove fatal when severe vomiting and diarrhea dehydrate the body to the point of no return."
Fortunately, Strickland and her friend lived to tell the tale, because they only ate a tiny amount of death apple. In 2000, Strickland published a letter in *The British Medical Journal*, describing her symptoms in detail.
It took over eight hours for their pain to slowly subside, as they carefully sipped pina coladas and milk. The toxin went on to drain into the lymph nodes on their necks, providing further agony.
"Recounting our experience to the locals elicited frank horror and incredulity, such was the fruit's poisonous reputation," Strickland wrote. "We found our experience frightening."

CBRNE Attacks at Sea: Time to Revisit the Maritime SAR International

By Ashley Moore
Source: https://www.domesticpreparedness.com/resilience/cbrne-attacks-at-sea--time-to-revisit-the-maritime-sar-international/

"The issue is how seriously … governments take the threat of maritime terrorism. … We cannot continue to hope for the best and ignore the lessons."

Cited in a 4 February 2003 Straits Times editorial on "Security At Sea."

2005 – Security at sea is just one of many preparedness-and-response policy issues facing the international maritime community. It is widely recognized that, in today's maritime environment, a terrorist attack at sea involving chemical, biological, radiological, nuclear, and/or high-yield-explosion (CBRNE) weapons or devices would strike a devastating blow

to global economic stability. What is often ignored, though, is that for at least the past several years Al Qaeda has been increasingly active in the maritime environment and is still enhancing its capabilities.
NATO's search for the Al Qaeda fleet, which includes a number of "phantom" vessels posing as legitimate ships and roaming the ocean freely, has been a difficult one. In the more than three years since the terrorist attacks of 11 September 2001, NATO officials have boarded and searched only about 200 of the approximately 16,000 commercial vessels operating in international waters. Meanwhile, the front line of the war on terrorism has become ever more violent, unpredictable, and unwavering.
Following are a few examples, of many that might be cited, that illustrate Al Qaeda's flexible arming capabilities and determination to succeed as a maritime threat:

- **Yemen-Limburg, October 2002:** Twelve crew members were injured when an explosives-laden boat rammed the Limburg as it prepared to enter the port of Ash-Shir off Yemen's southeastern coast. A Bulgarian crewmember's dead body, covered in oil, washed ashore a few days later.
- **Rota, Spain, May 2005:** The Spanish newspaper ABC reported that a French Al Qaeda cell was "preparing to unleash an unspecified chemical agent" against a U.S. naval base in Rota. One of those said to be implicated in the plan was Algerian Said Arif – who, ABC reported, also was affiliated with Jordanian Abu Musab al-Zarqawi, one of the alleged masterminds behind the continuing insurgency in Iraq.
- **Jordan, June 2005:** Jordanian state television aired a video of four men admitting they were part of an Al Qaeda plot to attack the U.S. embassy, as well as Jordanian intelligence services and other targets, in Jordan. They planned, the report continued, to use a combination of conventional and chemical weapons powerful enough to kill 80,000 people and severely injure another 160,000. One of the alleged conspirators, Azmi Al-Jayousi, said that he was acting on the orders of Abu-Musab al-Zarqawi.

The obvious progression of al-Zarqawi's asymmetric warfare and toxic industrial chemicals/materials (TIC/TIM) weapons planning and operational capabilities is both understated and disturbing. If he and/or others were ordered to initiate attacks at or from the sea, the world's maritime stakeholders might well find themselves almost totally unprepared to protect themselves. Current international strategies, policies, and capabilities for mass-rescue operations (MROs) in the post-CBRNE maritime environment do not adequately address the harsh realities responders will undoubtedly face. A review of current national and international search-and-rescue (SAR) strategies and policies suggests that many if not all maritime nations, although acknowledging the risks involved, have reluctantly accepted the harsh reality that maritime CBRNE attacks may well result in the loss of perhaps thousands of lives.

From Halifax to LNGs and the IAMSAR

As the nations involved in the global war on terrorism become increasingly aware of the maritime threat environment, their citizens are becoming correspondingly concerned about piracy, Al Qaeda rogue ships, the waterborne shipments of hazardous materials, and other terrorism-related threats. In a 1978 book – " Time Bomb: LNG, The Truth About Our Newest And Most Dangerous Energy Source," by Peter van der Linde and Naomi A. Hintze – the co-authors stated that in certain situations the consequences of a single inadvertent rupture of a liquefied natural gas (LNG) tanker would create a catastrophic explosion. In certain circumstances, in fact, an LNG blast could match the physical destructive power of a nuclear detonation (but without the thermal pulse, neutrons, x- and gamma-rays, radiation, and other by-products of nuclear explosions).
Probably the closest example of this type of catastrophe is the 6 December 1917 harbor explosion in Halifax, Nova Scotia, that devastated that Canadian port when two ships – one carrying 5,000 tons of high explosives – collided, creating the largest man-made explosion prior to the beginning of the atomic age. The explosion that resulted virtually wiped out the suburb of Richmond, killing almost 2,000 people, injuring 9,000 more, and destroying 3,000 buildings. An additional 2,000 people were missing, and the short- and long-term economic damages were astronomical.
Although terrifying to contemplate, the low-probability/high-consequence effects of a CBRNE attack may not represent the most significant terrorist threats to some IMO (International Maritime Organization) states that are signatories to the International Aeronautical and Maritime Search and Rescue (IAMSAR) agreement. Judging from a review of updates and amendments to the agreement, terrorist attacks, including attacks using CBRNE weapons or devices on maritime targets, seem to have ranked low on the scale of probability. Nonetheless, even in today's post-9/11 world, the lack of maritime CBRNE preparedness poses potentially enormous consequences, both politically and economically, to the entire global economy.
A recent edition of the IAMSAR agreement, which is jointly published by the IMO and the International Civil Aviation Organization (ICAO), instructs participants on how to mount a large and rapid response – which would be critical in preventing a large-scale loss of lives at sea – in the event of a terrorist CBRNE attack against maritime targets. However, an effective response involves many factors that must be in place prior to the attack(s): advance

planning, for example; viable alerting and communication systems; safety clothing and equipment – e.g., certified CBRNE personal protective equipment, detection systems, and decontamination facilities and equipment; and an effective transition plan.

Needed: Collective International Action

The timeliness of the response is particularly critical, because there almost surely will be only a small window of opportunity – known to first responders as the "Golden Hour" – to save lives after a physical trauma. Some experts believe, in fact, that a victim must receive assistance within two hours of his or her injury – but, according to some Government Accountability Office (GAO) reports, the reality is that simply responding to the scene may take as much as four hours. What this means, therefore, is that, by the time a first-responder team reaches the victims who were most critically injured in a CBRNE attack, they may well have succumbed to a combination of traumas, including miosis, salivation, lachrymation, muscular twitching and fasciculation, diarrhea, convulsions, coma, and/or respiratory failure.

For practical purposes, any effective preparedness and response plan for dealing with terrorism incidents at sea – particularly incidents involving CBRNE attacks in international waters – must be based on the premise that collective international action will be required – and will be available when needed.

Fortunately, some mass-rescue operations are anticipated in a number of NATO Standardization Agreements (STANAGs), which encompass a set of processes, procedures, terms, and conditions on which the alliance's member countries have reached prior agreement. Unfortunately, however, current STANAGs do not specify the SAR capabilities and/or equipment required for either aviation or surface assets that might be called out to participate in a mass-rescue operation at sea.

Outdated Plans to Meet a Growing Threat

That is only the tip of the iceberg, though. The fact is that most if not all current maritime SAR plans and agreements: (1) are a decade or more outdated; (2) were originally developed to prevent and/or mitigate the consequences of maritime accidents or natural disasters; and (3) do not address the truly catastrophic effects of a CBRNE terrorist attack in or near a port or on the open sea.

Major Irvin Lim Fang Jau of the Singapore Armed Forces commented on this collective international problem three years ago in a prescient article he wrote for The Pointer (Journal of the Singapore Armed Forces, Vol. 28, No. 3): "The maritime terrorist threat is a hydra that continues to pose a clear, present danger to world commerce and, ultimately, the very well-being of nations.

"The war on global terrorism," he continued, "against newly regenerated Al-Qaeda elements and their shadowy associates is far from over, and we have not yet seen the turning of the tide."

Today, Al Qaeda insurgents are proving on an almost daily basis – both on the evening news and on the e-Qaeda online training website – that additional attacks are possible, almost anywhere in the world, at any time. As last week's missile attacks against U.S. Navy ships in Jordan demonstrated, those attacks could easily be carried out by Al Qaeda sleeper cells operating in or close to the maritime environment. For that and many other reasons it seems obvious that all international participants in current IAMSAR agreements must give much higher priority to the development, promulgation, and implementation of updated and more effective policies and plans for dealing with terrorist incidents involving CBRNE weapons or devices in the maritime environment.

The benefits of including CBRNe simulation in Combined Arms Training

By Steven Pike

Source: https://www.argonelectronics.com/blog/the-benefits-of-including-cbrne-simulation-in-combined-arms-training

Nov 12 – Modern warfare involving the infantry has shifted towards artillery and CBRN. The following 100 years of conflict will likely see weapons of mass destruction (WMD) playing centre stage. Military units must continue adapting to this threat and train for CBRN usage in a wide range of military operations.

At the turn of the century, CBRN training frequently involved belatedly reacting to chemical or radiological events rather than proactively facing threats. However, today, in any conflict, many militaries across the globe have the capability to employ multiple mission variables—including CBRN—to achieve their goals, which could include isolating specific units, occupying key territory, and introducing an element of complexity to the battlefield.

A CBRN event is intended to create an advantage by challenging and significantly degrading the opposing military's capability to react. Combined Arms Training exercises that include a CBRN component attempt to prepare soldiers for a chemical or radiological event and minimise any impact or tactical advantage that could be gained by opponents as a result.

Combined Arms Training

Combined Arms Training (or collective training as it is sometimes referred to) is an approach to warfare that integrates different branches of the military; the objective is for each discipline to support and complement the other.

Locations of Russian Military Exercises – August 9 to September 15, 2021

This approach to warfare influences how the military prepares itself to engage an enemy in Large Scale and Urban Combat Operations, and both offensive and defensive training involves identifying and validating gaps, requirements and confirming operational readiness.

A recent training exercise carried out by the Russian military is an excellent example of how the armed forces can take a combined arms approach. The exercise was said to contain tactical tasks between motorised rifle, tank, artillery battalions, and attached specialised units. The attached specialised units included chemical, biological, radiological, and nuclear defence (CBRN), engineering, and electronic warfare units. It is clear from this action that the Russian military takes CBRN very seriously and sees the value of incorporating a CBRN element into a combined arms training exercise.

Incorporating CBRN into Combined Arms Training Exercises

It is widely accepted that Combined Arms training is very important. Lieutenant General Rick Burr, Chief of the Australian Army, told The Cove, an online professional development network for the Australian Army, that:

"The demands of current and future battlefields, emerging technology, changing demographics, and the need to maintain a competitive advantage...have driven the Combined Arms Training Centre (CATC) to examine new ways of training the Army."

However, including a CBRN component as part of the training exercise is not a widespread practice—and neither is it particularly popular. Consequently, Combined Arms training exercises often do not extend beyond soldiers practising donning their respirators, which of course omits the use of important Detection, Identification and Monitoring (DIM) equipment.

Dr Mudit Sharma Sharma, public health expert and former Commanding Officer at the Indian Air Force Institute of NBC Protection, says that conventional warfare is not likely in modern times; therefore, "the likelihood of use of non-conventional weapons becomes a practical reality". Therefore, not practising for an event in which 'non-conventional' weapons are used as part of a Combined Arms training exercise is likely to be missing out on a central component of modern warfare.

Simulation training offers repeatability, controllability, the possibility for evaluation, and the chance to reduce costs. It is arguably the most effective and efficient way to train soldiers for a CBRN event.

Simulating a CBRN event in a Combined Arms training exercise

In a bid to address the challenges of providing realistic and safe CBRN training exercises, Argon Electronics collaborated with Swedish military defence solutions provider Saab AB. The two companies produced a concept demonstrator of Argons' wide-area instrumented training system, the PlumeSIM Live CBRN training system, integrated with SAABs' high-fidelity laser-based Gamer system. The result is a versatile integrated training tool that can incorporate the CBRN element into any combined arms training exercise.

This footage shows an approaching enemy Land Rover, which has been weaponised with a chemical weapon (simulated by the plume release located on top of the engine). The vehicle is then fired upon and immobilised by the soldiers. The Gamer system activates PlumeSIM, and, consequently, the soldier's chemical detectors (Smiths Detection M4JCADs / LCD3.2e simulators) are activated. Aware of the threat, the soldiers don their respirators, preventing casualties.

This training exercise is an example of how the enhanced PlumeSIM interface provides CBRN instructors with the ability to devise highly realistic, flexible, and efficient exercise scenarios. Trainees reactions can be monitored and procedures improved to ameliorate responses. Additionally, the simulator offers a powerful After Action Review (AAR), which can be used to give trainees post-exercise feedback.

Exercise controllers can manage the precise nature of plumes or hotspots, they can stipulate the environmental conditions in which the exercise take place, and they can predetermine specific release characteristics such as duration and persistence.

Most importantly, the use of the Argon PlumeSIM and SAAB Gamer system presents zero safety risk to personnel, environment, or infrastructure.

Further possibilities for the PlumeSIM
The technology supports both portable and vehicle-based instruments (including reconnaissance vehicles and robots). Although the footage only showed usage with a chemical weapon, it can also be used in conjunction with a diverse range of radiological materials.

Getting in touch with Argon Electronics
If you require any additional information about integrating simulation-based technologies into a Combined Arms training exercise, please feel free to contact us. We would be delighted to advise you and provide you with a demonstration of how our systems work.

EDITOR'S COMMENT: To be honest, I do not like the response of the soldiers (in the video) the moment the yellowish smoke was released from the vehicle. The proper response is to run as hell backward (opposite to wind direction) while holding their breath; put their gas masks available or at hand; re-approach the incident site and inspect the vehicle, use chemical detectors, collect samples, etc. You know what they say about not doing things right during exercises and drills …

C'est la vie!

You are a CBRN First Responder: You have to be a policeman or a fireman or an ambulance officer; you have to be a detective, an athlete, a physician, a medic, a chemist, a nuclear scientist, an arms/explosives expert, a fortune teller, a life saver!

Karim Benzema, 33 yo: Is a man who kicks a ball (football player).

Saudi Arabia contributes €50,000 to future OPCW Centre for Chemistry and Technology

Source: https://saudigazette.com.sa/article/613777

Nov 19 – Saudi Arabia has contributed €50,000 to a special Trust Fund of the Organisation for the Prohibition of Chemical Weapons (OPCW) to support the construction and operation of a new facility, the OPCW Centre for Chemistry and Technology ("ChemTech Centre"). The contributions were formalised on Thursday during a ceremony between the Permanent Representative of the Kingdom of Saudi Arabia to the OPCW, Ambassador Ziad M.D. Al Atiyah, and the Director-General of the OPCW, Fernando Arias.
Ambassador Al Atiyah stated: "The Kingdom of Saudi Arabia is delighted to contribute €50,000 to the new OPCW Centre for Chemistry and Technology. The Kingdom has always been proactive in contributing to any effort that would enhance international cooperation." "This contribution is a symbol of the Kingdom's consistent policy and desire to strengthen cooperation as part of the efforts to prohibit chemical weapons and weapons of mass destruction and prevent their proliferation, and to enhance international peace and security, in compliance with the Chemical Weapons Convention."

Permanent Representative of Saudi Arabia to the OPCW, Ambassador Ziad M.D. Al Atiyah, and the Director-General of the OPCW, Mr Fernando Arias. (OPCW)

"In this context, the new Centre for Chemistry and Technology, whose first pillar was recently celebrated, will constitute a turning point in the course of the Organisation's work, and it will be a key bridge to achieve aspirations, especially in technology transfer and technical assistance to the States Parties, and a beacon of science and knowledge in the field of chemistry."
The Director-General expressed: "The Government of Saudi Arabia has my sincere gratitude for its contribution which brings us closer to realising this important project. The new Centre will strengthen the OPCW's scientific and technological capability and allow us to meet with confidence 21st century chemical disarmament challenges." Director-General Arias additionally expressed his gratitude to the OPCW States Parties and other donors who supported the project and encouraged continued participation in this important initiative. He further emphasised the important role the new ChemTech Centre will play in strengthening the OPCW's ability to address chemical weapon threats and enhance capacity building activities to the benefit of all 193 OPCW Member States. The ChemTech Centre Trust Fund remains open for further contributions. Additional funds will provide extra assurances for the successful completion of the project and for international cooperation projects to be carried out at the Centre once the building is operational.

Most of air quality monitoring stations at World Cup venues complete

Source: https://thepeninsulaqatar.com/article/20/11/2021/most-of-air-quality-monitoring-stations-at-world-cup-venues-complete

Nov 20 – Most of the air quality monitoring stations which are being installed at FIFA World Cup Qatar 2022 venues have been completed and the work is underway on the remaining stations.
"The installation of a station at **Al Janoub Stadium** has been completed. The works are going on at **Al Thumama Stadium** and **Al Bayt Stadium** and soon all will be completed," said Abdullah Ali Al Khulaifi, Head of Air Quality Department at the Monitoring Department and Environmental Laboratory at the Ministry of Environment and Climate Change.

Al Janoub Stadium (top) | Al Bayt Stadium (left)

Speaking to *The Peninsula*, Al Khulaifi said that these stations will monitor air quality in **4km ambit surrounding the stadiums** during FIFA World Cup Qatar 2022 and beyond.

An air quality monitoring station has been installed at MIA which will cover Ras Abu Aboud Stadium.

Al Khulaifi added that the number of air quality monitoring stations in the country will increase to **50 before the end of 2022**. "We have special standards for the installation of these stations therefore the installation is subject to the standards of the Ministry in order to give a correct reading. There are specific standards for monitoring and evaluating air quality," he said.

He also said that an integrated national plan is being implemented to monitor air quality by **measuring the concentration of pollutants in the surrounding air, identifying the causes of pollutants,** and working on developing plans to avoid increase of the substances.

According to Qatar National Environment and Climate Change Strategy, the State of Qatar is committed to enhancing ambient and indoor air quality in line with the latest scientific development. All monitoring stations will be linked to form a national network to provide real time reliable data. Air quality data and modeling will be the basis for decision making to improve indoor and ambient air quality.

EDITOR'S COMMENT: I was wondering if these stations are able to identify CWAs, TICs and radiation debris as well – just in case.

2021-2022 CBRNe-related conferences

NCT Virtual Hub - Mine Action and EOD: The Way Ahead

TBD, Online

NCT Virtual Hub - Future Trends in CBRN Decon

TBD, Online

CBRNE Summit Europe

30 Nov-02 December 2021, Brno, Czech Republic

https://intelligence-sec.com/events/cbrne-summit-europe-2021/

CBRNe Summit Europe is returning to Brno, Czechia for our 7th annual event. Many major cities across Europe have faced critical incidents over the past few years. With terrorism threat levels high across Europe and the increased use of chemical agents being used by terrorist organizations this is a key event to attend. During our international event you will hear perspectives from military and civil officials who deal with CBRNe incidents. Many governments across the region have realized the importance of CBRNe capabilities and preparedness and budgets have been increased to deal with the new type of threats faced to civilians. CBRNe Summit Europe will focus on a number of key topics across the whole CBRNe domain such as CBRNe capabilities of military and civil agencies, first responder techniques, asymmetrical threats, medical countermeasures to chem-bio threats, decontamination developments and techniques, countering IED's, CBRNe threat intelligence, CBRNe forensics and many more.

To be part of the largest gathering of CBRNe professionals in Europe please contact us via email at **events@intelligence-sec.com** or by phone +44 (0)1582 346 706.

Qatar Health 2022

08-12 February 2022

https://www.hamad.qa/EN/All-Events/Qatar-Health-2022/Pages/default.aspx

Qatar Health 2022 is a collaborative effort between Hamad Medical Corporation and the Ministry of Public Health in preparation for the FIFA World Cup 2022. It will be virtually hosted in Qatar from 8 to 12 February 2022. The conference will build on the previous success of QH2020 and QH2021 by continuing to provide state-of-the-art learning from experts in the fields of disaster medicine, infectious disease and trauma surgery for healthcare professionals and students from different backgrounds and countries. It will maintain a focus on providing quality care during mass gatherings with the inclusion of recent developments and best practice in pandemic mitigation. It shall also provide opportunities in professional development for a wide variety of healthcare providers from a diverse set of disciplines and practice. Qatar

Health 2022 will offer a 3-day program, with multiple full and half-day tracks, preceded by a 2-day of pre-conference workshops and symposia. The main tracks will be as follows:

- Multidisciplinary collaboration in preparation for the 2022 World Cup
- Best practice and lessons learned from sports mass gatherings
- Healthcare preparations for the 2022 World Cup

Conference Objectives

1. To provide the participant with updates on the latest developments, recent evidence, and best practice in the multidisciplinary approaches to the preparations for WC2022.
2. To provide the participant with updates on the latest developments, recent evidence, and best practice in the fields of disaster medicine, infectious disease and trauma surgery in the context of mass gatherings.
3. To recognize, celebrate and showcase the lesson learned from the successful conduct of large-scale sporting events in the pandemic setting, in Qatar and globally.
4. To provide the participant with professional education activities to enhance their knowledge of the latest initiatives and programs from the MoPH, PHCC, SCDL and other stakeholders in FIFA2022.

Qatar Health 2022 program

The tracks shall have a mix of direct lectures, panel discussions and pro-con debates, and interaction with the participants will be strongly encouraged. Experts from the national, regional and international health sector, the World Health Organization and other international organizations involved in mass gatherings as well as sports organizations, academic institutions, healthcare leaders, disaster response managers, global experts and government bodies, will be sharing best practice and lessons learned. Delegates will be able to share experiences, learnings, and best practices as well as advances in mass gathering preparedness and planning as we prepare for the FIFA World Cup in Qatar in 2022.

Track 1: Multidisciplinary collaboration in preparation for the 2022 World Cup: Focus on the best practice and lessons learned from experts in multidisciplinary preparations for large-scale sporting events, from Qatar and worldwide. Invited speakers will share their experience and best practice in air, sea and land transportation, hospitality and tourism, security, cybersecurity, environmental sustainability, and communications, all in the context of preparing for the 2022 World Cup.

Track 2: Best practice and lessons learned from sports mass gatherings: Focus on the best practice and lessons learned from the organization, planning and implementation of sporting and mass gathering events from Qatar and worldwide. Invited speakers will share their experience and best practice as they resumed sporting and mass gatherings in the various disciplines of football, basketball, baseball, cycling, tennis, Formula 1 racing, golf, the Olympics and others.

Track 3: Healthcare System Preparations for 2022 World Cup: Focus on the best practice and lessons learned from the Healthcare System organization, planning and implementation of the 2022 World Cup. Invited speakers will share their experience and best practice in 1) Systems Preparation issues like staffing, recruitment, credentialing, temporary infrastructure development, supplies and logistics 2) COVID-related issues like Testing, Contact Tracing, Quarantine, Isolation, Vaccination, Treatment, Staffing, Logistics, Infrastructure and 3) Trauma System Preparations.

►► To view the full program and to register, visit **http://hamad.qa/QatarHealth2021**

NCT Middle East 2022

February 7-8, 2022 | Abu Dhabi

https://nct-events.com/event/nct-mena-2022

NCT Middle East taking place in Abu Dhabi will welcome the highest decision makers from the national CBRNe, C-IED, EOD Community, again providing a networking and knowledge exchange platform for local & federal first responders, as well as industry leaders in the fields of CBRNe, C-IED and EOD. Over the duration of three days, **NCT Middle East** will feature a **Conference**, **Exhibition, PRO-Trainings** and multiple **Networking Opportunities**.

Collaboration between the public and the private sectors as well as the use of the newest technologies are key factors capable of countering CBRNe threats. In the MENA-region as well as in many other countries, it is of significant importance to adopt a multi-level and interdisciplinary approach in order to face the complexity of the challenges CBRNe threats can pose.

NCT South-America

22-24 March 2022 | Forte de Copacabana, Brazil
https://nct-events.com/event/nct-south-america-2022

NCT South America hosted in official partnership with the **Brazilian Army** at the **Forte de Copacabana, in Rio de Janeiro** will welcome the highest decision-makers from the Brazilian and South American CBRNe, C-IED, EOD Community, again providing a networking and knowledge exchange platform for local & federal first responders, as well as industry leaders in the fields of CBRNe, C-IED, and EOD. For three days, **NCT South-America** will feature a **Conference**, **Exhibition, Pro-Trainings, a Live Demonstration of Brazilian CBRN Defense Capabilities,** and multiple **Networking Opportunities**.

THE OFFICIAL EVENT LANGUAGE IS SPANISH.

Collaboration between the public and the private sectors as well as the use of the newest technologies are key factors capable of countering CBRNe threats. In Brazil as well as in many other countries, it is of significant importance to adopt a multi-level and interdisciplinary approach to face the complexity of the challenges CBRNe threats can pose.

NCT Europe 2022

31 May - 2 June 2022 | Germany
https://nct-events.com/event/nct-europe-2022

NCT Europe 2022 taking place in Germany will welcome the highest decision makers from the national CBRNe, C-IED, EOD Community, again providing a networking and knowledge exchange platform for local & federal first responders, as well as industry leaders in the fields of CBRNe, C-IED and EOD. Over the duration of three days, **NCT Europe** will feature a **Conference**, **Exhibition, Pro-Trainings,** and multiple **Networking Opportunities**.
Collaboration between the public and the private sectors as well as the use of the newest technologies are key factors capable of countering CBRNe threats. In the USA, as well as in many other countries, it is of significant importance to adopt a multi-level and interdisciplinary approach in order to face the complexity of the challenges CBRNe threats can pose.

NCT CBRNe Pavilion @ Eurosatory 2022

13-17 June 2022 | France
https://nct-events.com/event/nct-cbrne-pavilion-eurosatory-2022

For its first edition, the NCT CBRNe Pavilion will gather the global CBRNe community under one flag at the leading defense and security exhibition worldwide: Eurosatory 2022.
During five days, you will have the opportunity to meet with leading companies in the field and discover their latest innovations. Daily **workshops and conference sessions** will tackle the trendiest topics in the field, creating a unique platform to exchange on best practices and lessons learned. Operators will also have the chance to join in the **NCT PRO Experience** for mock CBRNe scenario trainings led by expert instructors, while **Live Demonstrations** will showcase European CBRNe capabilities.

NCT PRO Challenge Europe 2022

Connecting the European C-IED, EOD, and CBRNe Community
September 2022
https://nct-events.com/event/nct-explosive-europe-2022

NCT PRO Challenge Europe 2022 taking place in **Croatia** will welcome European teams of C-IED, EOD, and CBRNe responders for three days of scenario-driven training sessions in a realistic environment. The industry will have to support the training by providing equipment to be used during the training sessions. The NCT PRO Challenge Europe will provide a networking and training platform for local & federal first responders, as well as industry leaders in the fields of C-IED, EOD, Special Operations, and CBRNe.
Collaboration between the public and the private sectors as well as the use of the newest technologies are key factors in countering IED/EOD and CBRNe threats. In Europe, as well as in many other countries, it is of significant importance to adopt a multi-level and interdisciplinary approach to face the complexity of the challenges IED/EOD and CBRNe threats can pose.

NCT APAC 2022

세계 최고의 화생방핵폭발물(CBRNe), 사제폭발물대응(C-IED), 폭발물처리(EOD) & 지뢰제거 학술회의
October 2022, Seoul, Korea
https://nct-events.com/event/nct-cbrne-asia-2021

NCT APAC is coming to Seoul, the Republic of Korea, for its third edition in the peninsula, organized in official partnership with the Korean Society of Chemical, Biological and Radiological Defense (KSCBRD). The event will kick start with a live capability demonstration led by the ROK Army CBRN Defense Command and will be followed by an international conference and industry exhibition in the field of CBRNe.
In these challenging times marked by the COVID-19 pandemic, it is essential to share experiences and best practices. The Republic of Korea has successfully led the fight against the virus and serves as an example for other nations in the containment of the virus. Being faced with the concrete threat of CBRNe weapons by its North Korean neighbor, the country is the regional leader in CBRNe defense.
At **NCT APAC 2022** military, civil, and industry stakeholders operating in the field of CBRNe, C-IED, EOD, and demining from all over Asia, the USA, and Europe will have the chance to gather in a three days event featuring a live capability demonstration, a conference stream and an industry exhibition showcasing the newest solutions to counter the threat of CBRNe, IEDs and mines.

CBRNe Summit Asia 2022

04-05 April 2022
Bangkok, Thailand
https://intelligence-sec.com/events/cbrne-summit-asia-2022/

We are pleased to announce our next edition of our CBRNe Summit Asia conference & exhibition which will take place in Bangkok, Thailand on the 4th – 5th April 2022. The world has been hit hard over the last two years by the COVID pandemic and many Asian nations have been well prepared to deal with this new pandemic we have all been living in.
Infectious diseases have been a common occurrence in South-East Asia with many outbreaks that have been fought against by national public health agencies. Our CBRNe Summit Asia 2022 show will look at how different Asian nations have coped with the recent pandemic and will analyse their current pandemic preparedness and CBRNe capabilities.
As well as looking at pandemic preparedness our event will also look at how Asian nations train emergency services, law enforcement and the military to prepare for a CBRNe incident and a natural disaster. By attending our international show, it will allow you to hear insightful presentations from leading government and military officials discussing many issues such as medical countermeasures, CBRNe response and techniques, cooperation in dealing with CBRNe incidents, pandemic preparedness, lessons learnt and much more.

To be part of our international CBRNe Summit Asia conference & exhibition either as a speaker, sponsor, exhibitor or delegate please contact us either by telephone +44 (0)1582 346 706 or email events@intelligence-sec.com

CBRNe Protection Symposium

20 - 22 Sep 2022
MalmoMassan, Malmö, Sweden
FOI Swedish Defence Research Agency
https://10times.com/cbrne-protection-symposium

The CBRNe Protection symposium is aimed at engaged professionals within the CBRNe-protection field. As the world is constantly changing, this symposium is changing too. The CBRNe Protection Symposium, formerly known as the CBW Protection Symposium, has now grown to include the areas of protection against radiological, nuclear, and explosive warfare agents along with the former chemical and biological warfare agents. An exhibition of CBRNe protection equipment will be arranged in connection with the symposium, where the industry will show its latest products. The exhibition will offer a good opportunity for the symposium participants to make themselves acquainted with commercially available state-of-the-art equipment related to CBRNe protection. The program will include keynote lectures by distinguished speakers, three parallel thematic sessions throughout the symposium, as well as poster presentations. By gathering friends, colleagues and stakeholders, this symposium will constitute a great platform for scientific discussions and technical demonstrations within the entire field of CBRNe.

Thematic sessions

- Emerging threats and risks
- Detection, Identification and Monitoring
- Forensic analysis of CBRNe events
- Physical protection
- Decontamination
- Medical management
- History of CBRNe events
- Hazard management
- Health risk assessment
- Operational training & Case studies
- Commercial developing technologies

Formations CBRN pour urgentistes 2022

Belgium
International CBRNE Institute

Dates:
CBRN niveau 2 : les 17 et 31 janvier 2022
CBRN niveau 3: les 14, 15 et 16 février 2022

https://fnib.be/wp-content/uploads/FORMATIONS-CBRN-POUR-URGENTISTES-2022-1-Pub.pdf


ICI
International
CBRNE
INSTITUTE
CBRNE-Terrorism Newsletter
W
M
O
D
HOTZONE
SOLUTIONS
GROUP
C2BRNE
DIARY
BIO NEWS

There Is at Least One Type of Virus We Should Be Very Thankful For

By Ivan Erill

Source: https://www.sciencealert.com/there-is-at-least-one-type-of-virus-we-should-be-very-thankful-for-bacteriophages

(Nanoclustering/SciencePhotoLibrary/Getty Images)

Oct 24 – Viruses have a bad reputation. They are responsible for the COVID-19 pandemic and a long list of maladies that have plagued humanity since time immemorial. Is there anything to celebrate about them?

Many biologists like me believe there is, at least for one specific type of virus – namely, bacteriophages, or viruses that infect bacteria. When the DNA of these viruses is captured by a cell, it may contain instructions that enable that cell to perform new tricks.

The mighty power of bacterial viruses

Bacteriophages, or phages for short, keep bacterial populations in check, both on land and at sea. They kill up to 40 percent of the oceans' bacteria every day, helping control bacterial blooms and redistribution of organic matter.

Their ability to selectively kill bacteria also has medical doctors excited. Natural and engineered phages have been successfully used to treat bacterial infections that do not respond to antibiotics. This process, known as phage therapy, could help fight antibiotic resistance.

Recent research points to another important function of phages: They may be nature's ultimate genetic tinkerers, crafting novel genes that cells can retool to gain new functions.

Phages are the most abundant life form on the planet, with a nonillion – that's a 1 with 31 zeroes after it – of them floating around the world at any moment.

Like all viruses, phages also have high replication and mutation rates, meaning they form many variants with different characteristics each time they reproduce.

Most phages have a rigid shell called a capsid that is filled with their genetic material. In many cases, the shell has more space than the phage needs to store the DNA essential for its replication.

This means that phages have room to carry extra genetic baggage: genes that are not actually necessary for the phage's survival that it can modify at will.

How bacteria retooled a viral switch

To see how this plays out, let's take a deeper look at the phage life cycle.

Phages come in two main flavors: temperate and virulent. Virulent phages, like many other viruses, operate on an invade-replicate-kill program. They enter the cell, hijack its components, make copies of themselves, and burst out.

Temperate phages, on the other hand, play the long game. They fuse their DNA with the cell's and may lay dormant for years until something triggers their activation. Then they revert to virulent behavior: replicate and burst out.

Many temperate phages use DNA damage as their trigger. It's sort of a "Houston, we have a problem" signal.

If the cell's DNA is being damaged, that means the DNA of the resident phage is likely to go next, so the phage wisely decides to jump ship. The genes that direct phages to replicate and burst out are turned off unless DNA damage is detected.
Bacteria have retooled the mechanisms controlling that life cycle to generate a complex genetic system that my collaborators and I have been studying for over two decades.
Bacterial cells are also interested in knowing if their DNA is getting busted. If it is, they activate a set of genes that attempt to repair the DNA. This is known as the bacterial SOS response because, if it fails, the cell is toast.
Bacteria orchestrate the SOS response using a switch-like protein that responds to DNA damage: It turns on if there is damage and stays off if there isn't.
Perhaps not surprisingly, bacterial and phage switches are evolutionarily related. This prompts the question: Who invented the switch, bacteria or viruses?
Our previous research and work by other researchers indicate that phages got there first.
In our recent report, we discovered that the SOS response of *Bacteroidetes*, a group of bacteria that comprise up to a half of the bacteria living in your gut, is under control of a phage switch that was retooled to implement the bacteria's own complex genetic programs. This suggests that bacterial SOS switches are in fact phage switches that got retooled eons ago.
It's not just bacterial switches that appear to be phage inventions.
Beautiful detective work has shown that a bacterial gene needed for cell division also arose through "domestication" of a phage toxin gene.
And many bacterial attack systems, such as toxins and the genetic guns used to inject them into cells, as well as the camouflage they use to evade the immune system, are known or suspected to have phage origins.

The upside of viruses

OK, you may think, phages are great, but the viruses that infect us are certainly not cool.
Yet there is mounting evidence that the viruses that infect plants and animals are also a major source of genetic innovation in these organisms.
Domesticated viral genes have been shown, for instance, to play a key role in the evolution of mammalian placentas and in keeping human skin moist.
Recent evidence suggests that even the nucleus of a cell, which houses DNA, could have also been a viral invention.
Researchers have also speculated that the ancestors of today's viruses may have pioneered the use of DNA as the primary molecule for life. Not a small feat.
So while you may be used to thinking of viruses as the quintessential villains, they are arguably nature's powerhouses for genetic innovation. Humans are likely here today because of them.

***Ivan Erill** is Associate Professor of Biological Sciences @ University of Maryland, Baltimore County.*

What Makes People Hesitate to Get Vaccinated? Psychologists Break It Down

By Ross Menzies and Rachel Menzies
Source: https://www.sciencealert.com/what-is-driving-vaccine-hesitancy-amid-a-global-pandemic-psychologists-break-it-down

Oct 23 – Vaccines save lives, and have been doing so since the development of the smallpox vaccine more than 200 years ago.
However, for vaccines to keep entire communities safe they need to be taken up by very large proportions of the population. Only then can the vaccinated offer protection to the unvaccinated, known as "herd immunity".
Unfortunately, too often this doesn't occur. Hesitancy around the measles vaccine, for example, contributed to a 30 percent increase in cases globally in 2019.
So, why does vaccine hesitancy occur? There are many reasons, and these will differ between people.

But, as clinical psychologists who study anxiety and avoidance, we think one big factor is fear – specifically the fear of death, and how we manage that fear.

Vaccination rates increasing, but fear still out there

According to the World Health Organization, vaccine hesitancy is one of the 10 leading threats to global health.

In the case of COVID, refusing or delaying vaccination has been a significant problem, with anti-vax and freedom marches dominating news cycles over recent months.
In Australia, the issue of vaccine hesitancy remains significant, despite some reports to the contrary.
Vaccine rates are on track to reach 85 percent or even more than 90 percent in many parts of the country. And last month, a Sydney Morning Herald survey showed only 9 percent of adults indicated they were unlikely to get vaccinated.
The article also claimed "vaccine fears have plunged to a record low".
However, while the data were real, in our view, the interpretation of them was flawed.
Fear hasn't substantially diminished. Instead, mandatory vaccination of certain groups in the community, and significant disadvantages for those who refuse to be vaccinated, is driving increases in vaccination uptake.
In several Australian states, mandatory vaccinations are in place for many professions, including quarantine workers, health workers, teachers, construction workers, aged-care workers, and other groups. When you need to work to put food on the table, the decision to stay unvaccinated can become an impossible one.
What's more, politicians have foreshadowed various freedoms for the vaccinated. For example, the freedoms currently afforded to fully vaccinated Sydneysiders, but not the unvaccinated, include: visitors to your home and access to gyms, pools, retail stores, hairdressers, nail salons, pubs, zoos, cinemas, theatres, museums, and galleries.
If people weren't vaccine-hesitant, mandatory vaccinations and incentives wouldn't be necessary. A substantial portion of the community don't want to be vaccinated and would choose not to be vaccinated, if it wasn't for the strong arm of government.

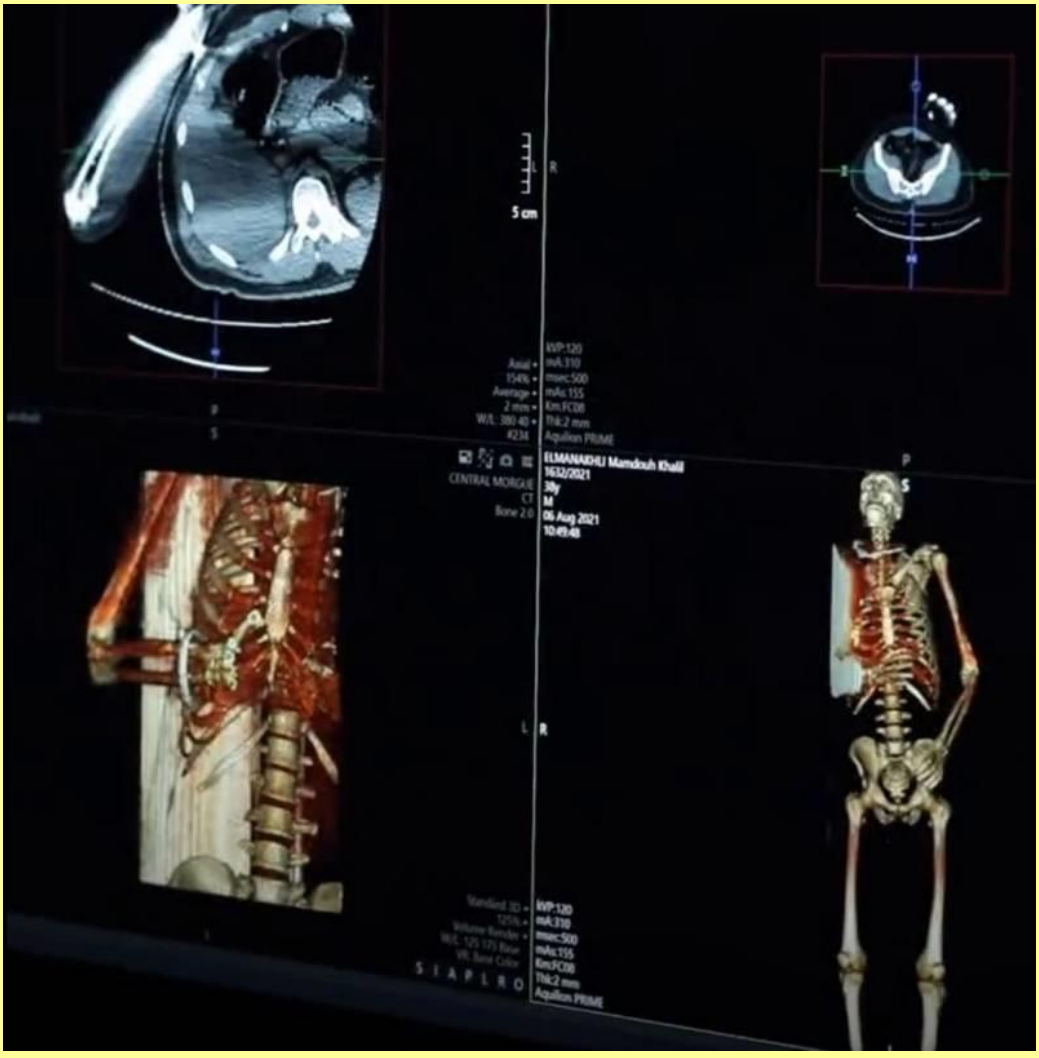
So why do people delay or refuse to get vaccinated?
The WHO lists complacency among the leading reasons for vaccine hesitancy.
But how can this be the case? After all, COVID has already killed nearly five million people globally and infected over 240 million.
In the face of these numbers, how could anyone remain complacent? Why do we see unmasked protesters, apparently oblivious to the threat?
The psychological theory that best explains these behaviors is "terror management theory". According to this theory, humans are unable to face the stark reality of death, and often engage in various forms of denial.
We see ourselves as grander than the animals, immune to many of their problems, and destined for immortality with our gods.
As one group of researchers put it, humans could not function with equanimity if they believed that they were not inherently more significant and enduring than apes, lizards, or lima beans.
Hundreds of studies in social psychology laboratories have shown that subtle reminders of death (known as "death primes") lead participants to vigorously defend their religious and cultural beliefs and their freedoms.
When reminded of death, participants even show aggression towards those with different political or religious ideologies. We cling to our "rightness" and "specialness", to help assuage our terror of death.
In the process, we may defy the warnings of modern medicine, convinced of our own superiority.
Researchers at the University of Chicago Divinity School reported half of their participants, all of whom indicated some religious affiliation, agreed with the statement "God will protect me from being infected".
To cope with our dread of death, we delude ourselves into thinking we are invincible: Death might happen to other people, but not to *me*.
This effect will be magnified even further if the social groups to which we belong also endorse similar views. Reminders of death lead people to fiercely defend the values and beliefs of their group. In the context of COVID, this means we may become more individualistic, more distrustful of science or government, or more trusting in our god's ability to protect us, if these attitudes are valued and shared by our culture or subgroup. Living in the times of COVID has made us all participants in a social psychology experiment. Daily death counts and case numbers are regular reminders of death that have produced all the behaviors we see in the laboratory. These include denial of risk and aggression against those who are different from us. For example, the racism against people of Asian appearance when the pandemic began.
Early deaths associated with the vaccines themselves became another "death prime" that drove additional caution and avoidance.
Vaccine hesitancy will remain an urgent problem globally while we refuse to see ourselves for who we really are.
As COVID continues to mutate, the speedy uptake of vaccines may remain a pressing issue over coming years.
Vaccine hesitancy will continue to kill tens of thousands globally until its roots are fully understood and confronted.

Ross G. Menzies, *Professor, Graduate School of Health, University of Technology Sydney.*
Rachel E. Menzies*, Postdoctoral research fellow, University of Sydney.*

EDITOR'S COMMENT: Fear of death. Well, there is another alternative. Someone has heart disease. He/she takes certain medications. He/she is expected to live some good years. Hear problem might kill him/her one day. This is acceptable as acceptable death can be. On the other side, he/she gets a jab today. He/she dies two days after vaccination. This is not fair to his/her mind although he/she recognizes and accepts the value of vaccinations. But vaccination goes along with uncertainty about their way of action, the ingredients, the adverse reactions, the constant change of directions of use, the doubt that all the millions of people "protected" was not due to the vaccines but because the virus is not as hazardous as it is presented by experts, so-called experts and the mass media (at least compared with the annual deaths caused by flu; deaths that were not so "famous" in the past decades despite their big number). It is natural to fear death. It is natural not going ask for it. We are only humans!

Abu Dhabi morgue to use virtual autopsies to protect staff against infectious diseases

Source: https://www.thenationalnews.com/uae/science/2021/10/25/abu-dhabi-morgue-to-use-virtual-autopsies-to-protect-staff-against-infectious-diseases/



The virtual autopsy technology, also known as post-mortem imaging, will protect morgue staff from infectious diseases. Courtesy: Abu Dhabi Government Media Office

Oct 25 – Virtual autopsies will soon be used to investigate causes of death at Abu Dhabi Central Morgue.

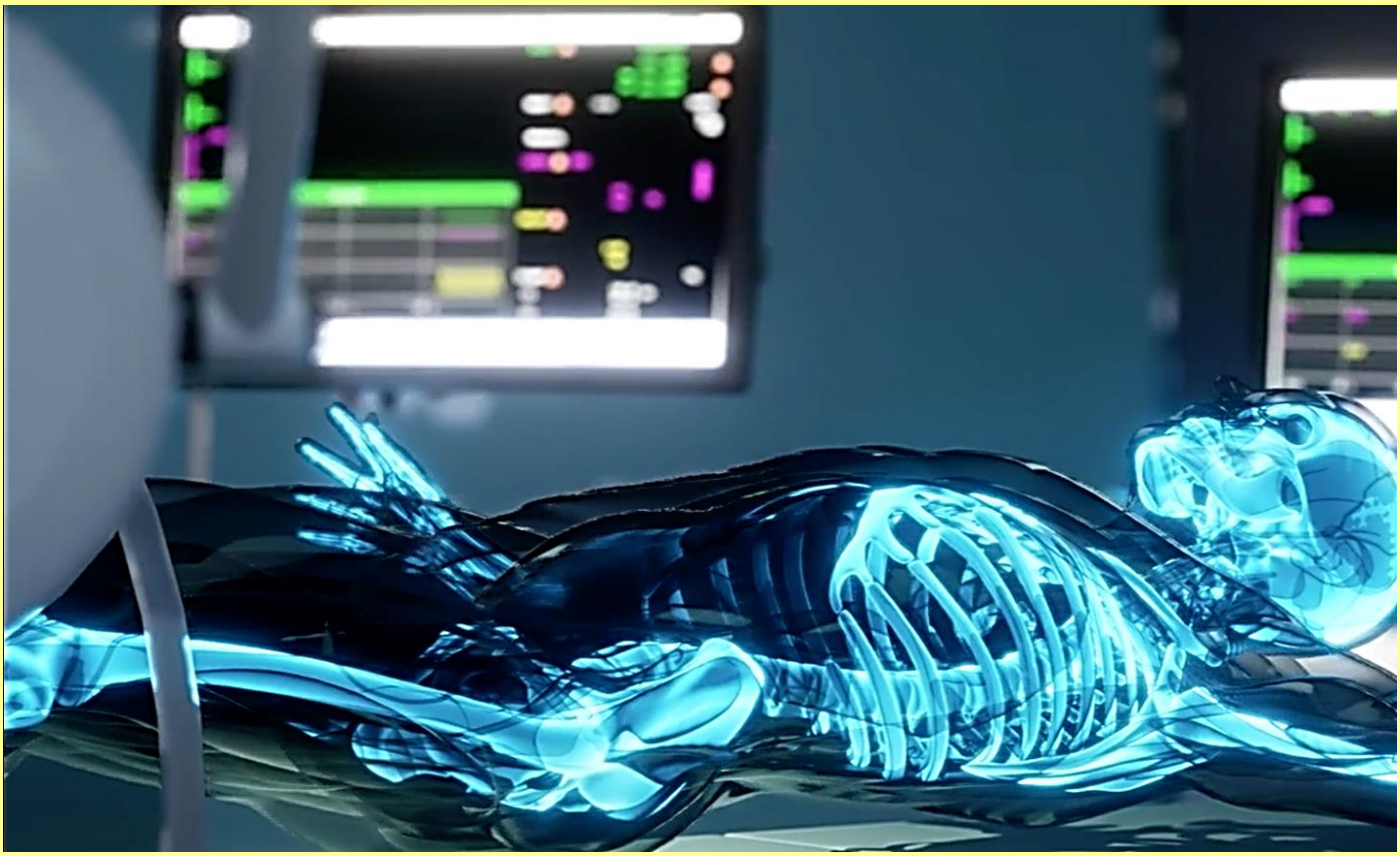
Medical examiners will use this new technique for a number of purposes – most importantly to limit morgue staff's exposure to infectious diseases, said officials from Department of Health – Abu Dhabi.

"Virtual autopsy has modernised the medical investigation of bodies while ensuring the health and safety of medical staff and contacts of the deceased maintaining respect and privacy towards the bodies of deceased individuals," said Dr Nayef Hasan Aljanaahi, the first licensed consultant in forensic radiology for the DoH.

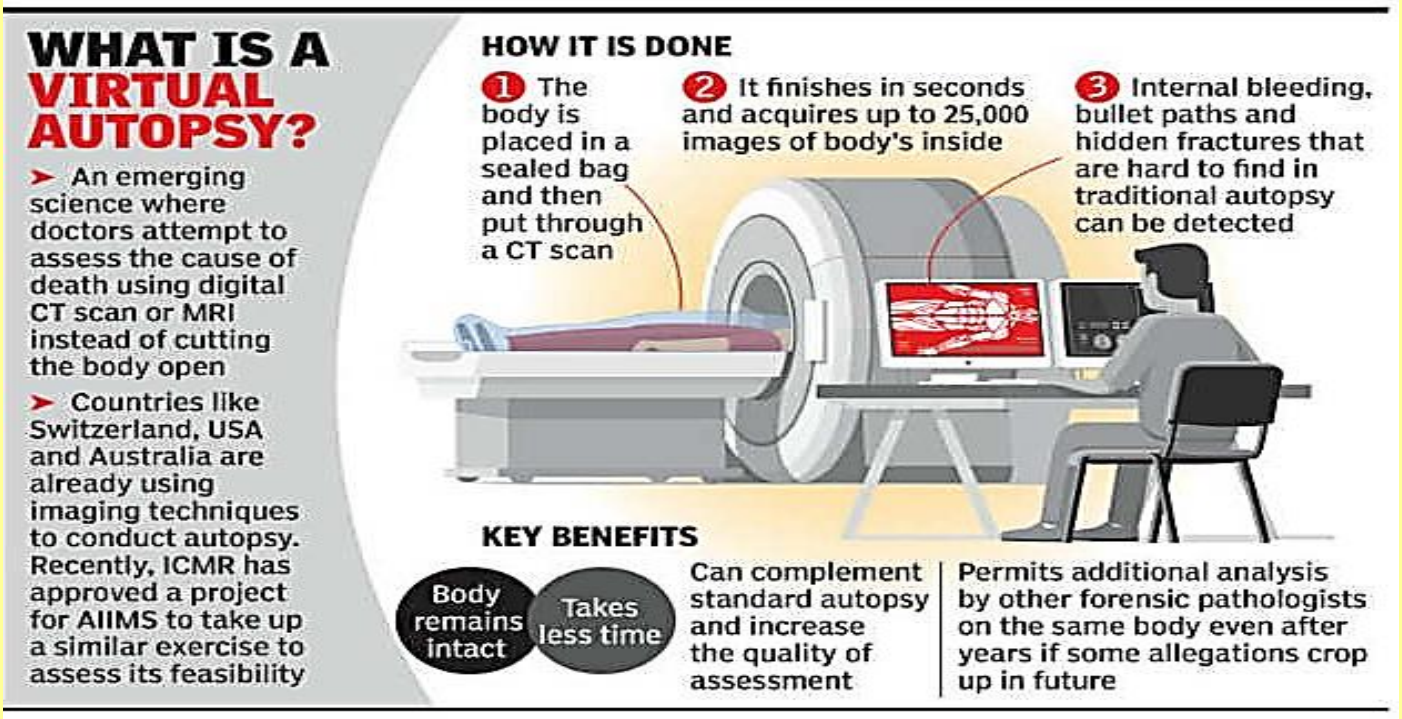
The technique can specifically help identify damage to lung tissue and show signs of any previous respiratory distress that would indicated a Covid-19 infection.

This would allow examiners to alert recent close contacts of the deceased that they may have contracted the virus.

The UAE is among a group of countries that adopted the virtual autopsy technique, along with the US, UK, Canada, Germany, Australia and Japan.



During a virtual autopsy, the body undergoes a CT scan while in a cadaver bag and no physical post mortem is carried out. The



procedure takes up to 30 minutes.
The technology was introduced in 2020 in Abu Dhabi and has assisted in the investigations of more than 700 legal cases. It can be used to detect evidence of physical violence.

More-effective vaccination tech is built around a barbecue lighter

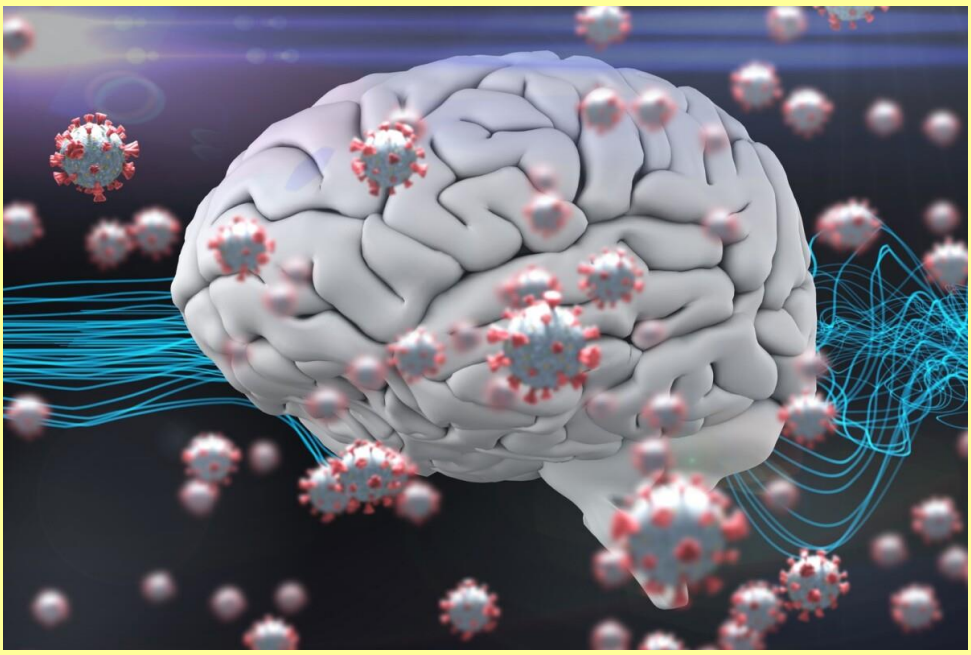
Although electroporation technology is very effective at delivering DNA-based vaccines, the required equipment is bulky, complex, and expensive. Now, however, scientists have shown that a converted barbecue lighter is capable of doing the job. **Read more**

Study reveals how COVID-19 can directly damage brain cells

Source: https://newatlas.com/health-wellbeing/coronavirus-damage-blood-brain-barrier-cells-cognitive-long-covid/

Oct 24 – New research published in the journal *Nature Neuroscience* is the first to demonstrate how the SARS-CoV-2 virus can directly damage cells in the brain. An international group of scientists found vascular cells that comprise the blood-brain barrier can be destroyed by the virus and this may lead to the neurological symptoms, both short and long-term, commonly reported from COVID-19.

The effects of SARS-CoV-2 on the brain are still emerging as researchers race to understand the full impact of this novel coronavirus on the human body. Cognitive problems such as brain fog are commonly reported in those experiencing long-term, lingering COVID-19 symptoms, and brain tissue studies from deceased patients have detected molecular markers of inflammation, indicating the virus can affect the brain. However, it is still unclear whether the SARS-CoV-2 virus enters the brain and directly causes damage, or if neurological symptoms are generated by systemic immune responses to the virus triggering some kind of neuroinflammation.



A strong study earlier this year led by neuroscientists from Yale University certainly demonstrated how the virus *could* directly infect brain cells, but there are ongoing debates over whether this actually happens in real-world infections. Beyond studying brain tissue from deceased COVID-19 patients it is difficult to find out if the virus is explicitly infecting cells in the brain.

This new study focused on a particular type of brain cell known as cerebral vascular endothelial cells. These cells are an essential component of the blood-brain barrier – the protective wall that helps keep foreign or toxic molecules out of the brain.

In order to investigate the effect of SARS-CoV-2 on these endothelial cells the researchers first looked at brain tissue from patients who died of COVID-19. Jan Wenzel, a neuroscientist working on the project, says increased numbers of dead cells were found in COVID-19 patients, compared to a well-matched control.

“Having clinical data in mind that hints at microvascular changes in COVID-19 patients, we started to look into the microvasculature of brain samples in deceased COVID-19 patients,” Wenzel explains on Twitter. “We found an increased amount of dead capillaries, so-called string vessels.”

Moving to cell and animal experiments the researchers then demonstrated exactly how the SARS-CoV-2 virus could kill these endothelial cells. And it is hypothesized that the consequence of this damage is decreased blood flow to brain regions, leading to cognitive problems or heightened risk of neurodegenerative disease.

"… we think, that the direct infection of brain endothelial cells by SARS-CoV-2 leads to the expression of its main protease which cleaves NEMO, an essential protein necessary for the survival of brain endothelial cells," Wenzel says. "Our finding might explain at least partially neurological symptoms that not only appear during the acute but also long-term phase of COVID-19 including the increased risk for getting stroke or epileptic seizures and long COVID."
The study does optimistically indicate this damage could be reversible, and mouse models demonstrate possible ways to inhibit this damaging interaction between the virus and endothelial cells. Wenzel also speculates vaccination could reduce the damage the virus causes to the blood-brain barrier.
"As far as we know vaccination protects against the vascular damage since the immune system acts against the virus in our blood, from where endothelial cells are infected," says Wenzel.
While this research is robust and thorough, it is by no means a definitive answer to what effects SARS-CoV-2 has on the human brain. It is difficult to confidently conclude these signs of brain damage seen in the deceased brain tissue samples were caused by the virus, or know the long-term effects of this damage.
Several researchers have recently warned there could be increases in rates of neurological diseases such as Parkinson's in the future due to the long-term effects of COVID-19. Australian researcher Zoe Hyde, who did not work on this new study, says these findings affirm the potential of COVID-19 to cause damage to the brain, and that this plausibly could lead to greater rates of dementia in the future.
"COVID-19 can cause brain damage," Hyde recently stated on Twitter. "I wouldn't be surprised if we see an increased number of adults developing vascular dementia in the years ahead."
Other researchers are more cautious about inferring long-term neurological problems from this particular study. Geriatrician Kate Gregorevic argues the new findings offer no insight into whether a mild case of COVID-19 affects a person's future dementia risk.
"The study referenced describes a series of brain autopsies done on people who died of COVID, often of hypoxia, for most after weeks on a ventilator," Gregorevic points out. "It cannot be extrapolated to people with mild COVID."
Vincent Prevot, a co-author on the new study, is also a little more circumspect, saying there are plenty of unanswered questions raised by these findings. He suggests it is important to be aware of the potential effect of SARS-CoV-2 on the brain and monitor patients over the years to come.
"This awareness of the severity of SARS-CoV-2 infection and its impacts on proper brain function is vital to enable the best possible management of infected patients in the years to come," says Prevot.

▶▶ **The new study was published in the journal** *Nature Neuroscience*.

CNN Investigation: Tens of millions of filthy, used medical gloves imported into the US

By Scott McLean, Florence Davey-Attlee, Kocha Olarn and Tim Lister (CNN)
Source: https://edition.cnn.com/2021/10/24/health/medical-gloves-us-thailand-investigation-cmd-intl/index.html

Oct 25 – Trash bags stuffed full of used medical gloves, some visibly soiled, some even blood-stained, litter the floor of a warehouse on the outskirts of Bangkok.
Nearby is a plastic bowl, filled with blue dye and a few gloves. Thai officials say migrant laborers had been trying to make the gloves look new again, when Thai health authorities raided the facility in December.
There are many more warehouses just like it still in operation today in Thailand -- trying to cash in on the demand for medical-grade nitrile gloves, which exploded with the coronavirus pandemic. And they're boxing up millions of these sub-standard gloves for export to the United States, and countries around the world amid a global shortage that will take years to ease.
A months-long CNN investigation has found that tens of millions of counterfeit and second-hand nitrile gloves have reached the United States, according to import records and distributors who bought the gloves -- and that's just the tip of the iceberg. Criminal investigations are underway by the authorities in the US and Thailand.
Experts describe an industry riddled with fraud, with one of them -- Douglas Stein -- telling CNN that nitrile gloves are the "most dangerous commodity on Earth right now."
"There's an enormous amount of bad product coming in," Stein says, "an endless stream of filthy, second-hand and substandard gloves coming into the US of which federal authorities, it seems, are only now beginning to understand the enormous scale."

Yet, despite the potential risk to frontline healthcare workers and patients, US authorities have struggled to get a handle on the illicit trade -- in part because import regulations for protective medical equipment were temporarily suspended at the height of the pandemic -- and remain suspended today.

Piles of dirty, suspected second-hand nitrile gloves were found in a raid on a warehouse in Bangkok, December 2020. The Thai FDA said fraudulent companies package gloves like these for resale around the world.

In February and March this year one US company warned two federal agencies -- Customs and Border Protection and the Food and Drug Administration -- that it had received shipments filled with substandard and visibly soiled gloves from one company in Thailand. And yet the Thai company managed to ship tens of millions more gloves in the following months, some arriving as recently as July. The FDA told CNN it could not comment on individual cases but said it has taken "a number of steps to find and stop those selling unapproved products by leveraging our experience investigating, examining and reviewing medical products, both at the border and within domestic commerce."

A surge in demand

In early 2020, demand for personal protective equipment (PPE) shot through the roof as the coronavirus pandemic took hold around the world. And prices for nitrile gloves stayed high. Medical grade nitrile gloves are commonly used by doctors and healthcare professionals in patient examinations. The FDA bans powdered latex from being used in healthcare, while lower-quality vinyl gloves are more common in industrial settings and food handling.

The gloves, produced almost entirely in south and east Asia, rely on a finite supply of natural rubber, highly-specialized factories and niche manufacturing expertise. Ramping up supply couldn't happen quickly and production from trusted, established brands was spoken for years in advance.

Governments and hospital systems scrambled to get what they needed -- and dozens of shady companies looking to turn a quick profit saw an opportunity.

Late last year Tarek Kirschen, a Miami-based businessman, ordered about $2 million of gloves from a Thai-based company called Paddy the Room, which he then sold to a US distributor.

"We start getting phone calls from clients completely upset, and you know, yelling and screaming at us saying, 'Hey, you screwed us,'" he recalls.

Kirschen got to see the product for himself when a second container arrived in Miami.

"These were reused gloves. They were washed, recycled," he told CNN. "Some of them were dirty. Some of them had bloodstains. Some of them had markers on them with dates from two years ago... I couldn't believe my eyes."

Nitrile gloves shipped to the US by Thai company Paddy the Room Trading Company. These examples, seen by CNN, show clear signs of previous use -- hand-writing in pen and other soiling.

Kirschen says he refunded the money to his customers, put the gloves in a landfill and alerted the FDA in February 2021.
He says none of the gloves he ordered were used in medical settings, but a CNN analysis of import records show that other US distributors acquired nearly 200 million gloves from Paddy the Room during the pandemic.
It's unclear what happened to those gloves after they entered the country.
CNN attempted to reach all of the importers. The vast majority did not respond but two did say the shipments were substandard and the gloves weren't even nitrile. One company, Uweport, told CNN they were unable to re-sell them to medical companies, as planned. Instead, they were sold at a lower price to distributors that supply American food processing plants, hotels and restaurants.
The other company, US Liberty LLC had a very similar experience with Paddy the Room. It says it was also bilked by a different Vietnemese company which sent them "gloves with holes, with stains, ripped, and in different shades and colours," company President Firas Jarrar told CNN.
Stein, who has been buying PPE from Asia for decades, has been tracking the countless frauds and scams across Southeast Asia since the pandemic began.
"It's ridiculously nefarious at every link in the chain," he told CNN.
Stein, who has built up a following of buyers and sellers on LinkedIn, often finds himself counseling people who lost millions of dollars to nitrile glove fraud and trying to talk people out of signing deals that are clearly too good to be true. He says the discounts on offer are often impossibly steep.
Louis Ziskin is one US entrepreneur who was tempted to buy. "We saw dollar signs. We also saw we had legitimate medical customers who were literally begging for this stuff," he told CNN.
His company, AirQueen, went ahead with a $2.7 million order from Paddy the Room, via a third party also based in Asia. All paid 100% up front.
Ziskin is an ex-convict who spent more than a decade behind bars after he was caught smuggling the drug ecstasy into the US in 2000.

But in the last decade he's become a successful tech entrepreneur, whose business has even been profiled in Forbes magazine.
But then he stepped into the murky world of nitrile gloves.
An independent inspection carried out at a Los Angeles warehouse and verified by CNN confirmed that most of the gloves he bought were not nitrile, but lower-grade latex or vinyl, and many were very obviously soiled and second-hand.
Ziskin says there was no way he could pass them off to hospitals in good conscience.
"It's a total safety issue... to me the fact that these companies were never blacklisted is shocking," he told CNN.
Perhaps that is because the scam is an elaborate one. Paddy the Room sent Ziskin pristine independent inspection reports purporting to show the gloves in the shipment were high quality. The documents though, were fake. The inspection company whose report had been falsified confirmed to CNN that the reports were forgeries.
Like Kirschen, Ziskin raised the alarm with US authorities shortly after he received his shipment of bad gloves early this year, contacting both the FDA and the CBP. Yet, import records showed the warnings seemed to make no difference. Since Ziskin's written warning to the CBP in February, 28 containers totaling more than 80 million gloves shipped by Paddy the Room entered the US.
The flow of sub-standard gloves into the US was also made easier by the FDA's temporary suspension of import regulations.
"There was just no other answer. There was no way to meet the demand," explained Stein. "But that opened the floodgates for all the nefarious behavior."
In a statement, the FDA told CNN that companies were only allowed to import under the relaxed rules "as long as the gloves conform to the consensus standards and labeling cited in the guidance and where the gloves do not create an undue risk."
But few physical checks are made on gloves or any other items arriving into American ports, and any medical gloves that were fraudulent or even contaminated would likely not be discovered until they arrived at their destination.
In August, the FDA did finally send out an alert to all its port staff that shipments from Paddy the Room should be subject to detention without physical examination.
That was five months after Kirschen and Ziskin raised the alarm.
The FDA would not comment on its investigation into Paddy the Room, but Department of Homeland Security (DHS) officials confirmed there is an ongoing criminal investigation into the company.
The CBP told CNN it had seized some 40 million counterfeit face masks and hundreds of thousands of other PPE items. It says it has seized some shipments of gloves, but it has not tracked the volume of seizures.
CNN asked the DHS if the system had failed given the number of second-hand gloves making it into the American supply chain.
"I don't know that that's the right way to phrase the question," said DHS Special Agent with Homeland Security Investigations Mike Rose. "I think all of us would love to get to a point that not a single counterfeit dangerous good entered the US -- and I think we're working towards that."
Last spring, at the outset of the pandemic, the DHS launched what it called Operation Stolen Promise to crack down specifically on counterfeit PPE, which Rose says has now made more than 2,000 seizures of Covid-related treatments and PPE.
"I think DHS has been a model around the world for how best to coordinate efforts among different agencies to really stop the import, the transactions and all the other surrounding criminal activity around Covid," Rose said.

Bangkok raids

The Thai FDA has struggled to keep up with the fraudulent trade in nitrile gloves.
When its agents first raided Paddy the Room last December, they found piles of garbage bags filled with loose gloves -- of different colors, materials and quality. Workers at the warehouse were stuffing the old gloves into new, counterfeit Sri Trang boxes branded SriTrang -- a well-known and legitimate gloves producer in Thailand. SriTrang told CNN it does not do business with Paddy the Room.
Ziskin ended up with thousands of boxes of those counterfeit SriTrang gloves -- most bearing the company logo in Thai.
According to Doug Stein, the PPE expert, gloves shipped to the US would never be put in boxes labeled in a foreign language. That alone should have set off alarm bells, he said.
The Thai FDA arrested the owner of the warehouse but was unable to bring charges against the tenant -- a Hong Kong resident, according to the Thai FDA.
But the raid didn't close down Paddy the Room. The Deputy Secretary-General of the Thai FDA Supattra Boonserm told CNN that months later her agency raided a similar facility.
"They just moved to another location, to another warehouse," she said. "And why is that? Because the demand for gloves is still high. There are still customers waiting out there," she told CNN.

Paddy the Room and its partner company have not responded to CNN's requests for comment.
The Thai FDA says it has carried out at least 10 raids in recent months and seized substandard and used gloves being repackaged into counterfeit nitrile boxes. Some raids find workers scrubbing used gloves by hand in wash bowls and dyeing them with food coloring.

A raid on a warehouse used by Paddy the Room Trading Company in Bangkok, Thailand in December 2020. Deputy Secretary-General of the Thai FDA Supattra Boonserm and members of the Royal Thai Police seized counterfeit nitrile gloves. The Thai FDA says SkyMed, the brand whose logo is on the boxes of gloves, is "for sure fake."

"It may be too slow to dry them hanging up, so they would put them into a dryer, literally a laundry dryer," Boonserm explained. She suspects many used gloves are collected from China or Indonesia and shipped to Thailand to be washed, dried and re-packed.
"In simple terms, it's fraud," Boonserm says.
"Under this outbreak situation, the demand is enormous both from hospitals and the general public. The volume of illegal gloves we have found is enormous."
Doug Stein says given the scale of the illicit trade, he thinks it likely that some gloves have ended up in a medical setting. But it's unclear if any of these fraudulent, re-used gloves have harmed any US health-care worker or patient.
Boonserm says her agency thinks there is a network of corrupt individuals and companies in Thailand working together to make a profit from the global clamor for nitrile gloves. One of those companies is SkyMed, a brand run by a former Thai military officer. Boxes bearing the SkyMed label were found in the raid of Paddy the Room in December.
"SkyMed, is for sure fake," Boonserm says.
According to Boonserm, the company has an import license to bring in medical gloves made in Vietnam, but records show SkyMed has never imported medical gloves to Thailand, nor does the company manufacture its own gloves.
SkyMed did not respond to repeated requests for comment for this story.
The extent of fraud in the medical glove industry has driven many international buyers to drastic measures to recoup their money.
Louis Ziskin decided to go to Thailand in an effort to recover his company's lost $2.7 million, but things quickly went wrong.
Ziskin and several others were arrested and charged with assault and kidnapping after a confrontation in a Bangkok restaurant.
Ziskin says he wasn't there and strenuously denied the charges.

"I'm going to see this through to the very end," he vowed. "Am I going to get my money back for the company? Most likely not. Are we bringing light to this to where hopefully, the United States can get up off the bench and stop it? Yeah. If that's what justice is, then that's what my hope is."
After Thai police missed their deadline to submit evidence in the case, Ziskin was allowed to leave Thailand and flew home to Los Angeles. Thai police tell CNN the investigation is not closed.
Others connected to the incident are still facing trial in Thailand. All have denied the charges against them.
On July 27, the US Department of Homeland Security (DHS) cleared out Ziskin's LA warehouse, seizing 70,000 boxes as evidence in their investigation into Paddy the Room, about five months after he first blew the whistle.
The great unknown is how many million more sub-standard nitrile gloves may be stacked in warehouses at US ports.
Doug Stein believes the fraud may amount to billions of dollars. "It just became this dark, dark underground," he says, "where fear meets greed."

EDITOR'S COMMENT: This story reminds me of a similar international fraud during the initial era of the HIV pandemic when millions of defective condoms were purchased and distributed especially in African countries. High demand; urgent delivery; big profits!

Many Russians won't get vaccinated against COVID-19. A dog catcher explains why

By Xenia Cherkaev
Source: https://thebulletin.org/2021/10/many-russians-wont-get-vaccinated-against-covid-19-a-dog-catcher-explains-why/

Oct 22 – A riddle from Russia: In a country where so many people have lost friends or family members to COVID-19, why is the pandemic taken so lightly? Sports festivals and international dog shows went ahead this summer as planned while crematoria overflowed with dead bodies. Masks are typically seen as an annoying formality, and people do not seem shocked by discrepant death counts. Between one state agency and another, death tallies diverge by over 200,000. How big a problem is the pandemic in Russia? In an important sense, we just don't know.
What we do know is that the country is heading into a fourth wave of COVID-19, and while case numbers are rising, vaccination numbers are not. In 2020, Russia touted Sputnik V as the world's "first authorized COVID-19 vaccine" and launched an effective export campaign: international vaccine sales garnered over $700 million in the first eight months of 2021. But inside the country itself, only about 30 percent of the population is fully vaccinated, and most people don't want to be. The Levada Center, an independent polling agency, repeatedly finds that over half of the people they survey claim not to be afraid of contracting COVID-19. Denis Volkov, Levada's director explains: "[E]ven though people are concerned, and even though they see their friends and relatives dying around them, many are still not ready to be vaccinated because they do not believe the authorities."
To confront this deep well of anti-vaccine attitudes, authorities have tried car raffles, cash prizes, and local vaccine mandates. But they face an uphill battle in a country where people tend to view laws in terms of whose special interests they serve. They'll face Sergey Selivanov, for one.
I met Sergey this past August, in Ryazan—a regional capital of about 500,000 known for its military-technical institutions, a three-hour drive from Moscow. He's a dog catcher; I'm a legal anthropologist studying the regulation of stray cats and dogs. My research isn't specifically related to the pandemic, but it has led me to see how people work in systems of governance that they themselves find dangerously irrational. And for many people in Russia today, such irrationality extends to the official policies implemented to curb the spread of COVID-19. As Sergey and I drove around his city, I heard in his position echoes of a political sentiment I had heard throughout Russia over the previous months. He told me that he and his wife had both had COVID-19, and that it made them both horrendously sick. But he also told me that he's against the vaccines: He doubts their effectiveness, doubts their safety, and he doubts that the government's vaccination campaign is driven by good intentions.
Sergey's doubt touches on news stories and social media rumors, and it grounds on his lack of faith in the fairness and trustworthiness of Russian state governance. "When someone's trying to organize a political meeting," he said, "suddenly there's COVID. But when they want to hold celebratory parades—no COVID?" Vaccine hesitancy in Russia today is often traced to a total distrust of the state—and such distrust is not wholly unfounded. Sergey and I discussed the massive public festivals St. Petersburg hosted this summer as the delta strain raged, we discussed how his local clinic diagnosed his tell-tale COVID symptoms as "acute bronchitis." We both agree that official statistics cannot be trusted. The sentiment is

common in Russia these days, shared by biologists, demographers, journalists, doctors, even by St. Petersburg's ombudsman for human rights. Not only do two state agencies publish radically different numbers, but independent analysis gives reason to doubt them both. A similar statistical murkiness and lack of transparency has delayed Sputnik V's emergency-use approval by the World Health Organization, even as reputable studies have shown the vaccine to be effective and safe.

I am vaccinated with Sputnik. I have a high antibody count, and I haven't been sick. Sergey is not vaccinated, and does not plan to be. He is resolutely opposed. If he were to be subject to a vaccine mandate, he told me, he might go to court. But while the question of COVID-19 vaccines often splits people into irreconcilable camps —pro and anti—I don't think Sergey crazy for doubting. From where he stands, the vaccine is not a question of collective immunity but of legal pressure. And Sergey knows firsthand that laws today often make for unsafe and unhealthy worlds.

As a dog catcher, Sergey works within the limits of a law whose logic he himself knows to be terrible. Adopted in 2018, this Federal Law N498 is the focal point of my study, the reason that I came to Ryazan. It decrees stray dogs and cats "ownerless" animals and forbids euthanizing them. It mandates instead that such animals be caught, castrated, and released back to the streets, or else kept kenneled at the expense of regional budgets until they die of natural causes. But *Canis lupus familiaris* is a pack-hunting predator. Free-roaming dogs destroy private property, kill family pets, spread diseases, and terrorize and attack people. To protect themselves and their communities, people in turn often brutalize street-dogs. Sergey has a dog at work that he and his colleagues are trying to figure out what to do with: They went out on call to catch her and met neighbors who swore that they'd kill her if they saw her again near their building. "She's a nice dog," Sergey explained, "but she eats cats." Sergey feels bad for the dog, for the neighborhood cats and their owners, for the whole situation. But by law, his firm must release the dog back to the place where they caught her—and laws are to be reckoned with, even when they are irrational.

Sergey Selivanov. Photo courtesy of author.

As we drove, Sergey and I discussed heinous cases from many Russian regions: little children mauled to death; senior citizens dismembered and partially eaten near their own houses; grown men and women attacked, mutilated, killed. We discuss how President Vladimir Putin has claimed street dogs to be an "inalienable part of the ecological system of cities," and how the state's started giving out medals "for valor" to people who've saved their fellow citizens from packs of dogs. A retired military dog handler, Sergey is well informed of the zoonotic danger dogs pose, especially in spreading *echinococcosis* and rabies. He has two dogs at home. Every year, he vaccinates and deworms them and marks their vet-passports accordingly. But legally "ownerless" dogs only get one shot of the rabies vaccine before he sets them free; he couldn't revaccinate them if he wanted. Per Federal Law N498, it is illegal to recapture a dog that's been tagged. And perhaps "setting them free" isn't the best way to put it: These dogs sometimes chase his car for blocks when he leaves them. So he feels bad for them too. It'd be better to put them down, he reasons—if not for this stupid law that forbids euthanasia.

For many people in Russia today, the law is a web of regulations in which they seek loopholes to safeguard themselves and their social collectives from truly terrible outcomes. Some people, like Sergey, see the irrationality of this web in regulations pertaining to animal management. Others see it in other spheres. People complain about having been coerced into voting at work. They laugh at the State Duma—also known as the "the rabid printer"—for the quality and quantity of new laws it adopts. Some people are outraged by new laws branding politically dissident citizens and independent media organizations "foreign agents." Some are demoralized by tax and investment incentives that let corporations sell the country's natural resources for private profit, while small Russian towns scrape by on Soviet-era infrastructure. Some are incensed

by the zoning regulations and governance schemes that allow trout fisheries to pollute their waterways, landfills to be built near their towns, and their forests to be stripped of their timber. In every such case, the law is seen as something with practical force but little moral standing: not an embodiment of the commonweal, and often a threat to community interests.

Legal systems generate a certain mystical power, that, when it works, makes people believe that the rules governing our social worlds are not only compulsory but also reasonable, even righteous. But this aura of righteousness must be a quality of the legal system itself, it does not stick to particular regulations in a patchwork fashion. Facing a fourth wave of infections, top state officials have once again called for people to be vaccinated as quickly as possible. But their electorate does not believe them. For people like Sergey, there is nothing inherently reasonable about the policies through which his country is governed. So when the state speaks of vaccinations, Sergey thinks of the practical force of the law: He thinks of which regulations might force him to be vaccinated, by whose will, for whose interest, and to what personal consequence. Widespread mistrust in the government's motives, communications, and laws extends even to policies and regulations that are perfectly sensible: People prefer to take their chances with COVID-19 instead of accepting a state-backed vaccine because they do not believe that their country is reasonably or fairly governed. And this is something that neither the bait of car raffles nor the threat of vaccine mandates will fix.

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How much less likely are you to spread covid-19 if you're vaccinated?

Source: https://www.newscientist.com/article/2294250-how-much-less-likely-are-you-to-spread-covid-19-if-youre-vaccinated/

Oct 23 – People who are fully vaccinated against covid-19 are far less likely to infect others, despite the arrival of the delta variant, several studies show. The findings refute the idea, which has become common in some circles, that vaccines no longer do much to prevent the spread of the coronavirus.

"They absolutely do reduce transmission," says Christopher Byron Brooke at the University of Illinois at Urbana-Champaign. "Vaccinated people do transmit the virus in some cases, but the data are super crystal-clear that the risk of transmission for a vaccinated individual is much, much lower than for an unvaccinated individual."

A recent study found that vaccinated people infected with the delta variant are 63 per cent less likely to infect people who are unvaccinated.

This is only slightly lower than with the alpha variant, says Brechje de Gier at the National Institute for Public Health and the Environment in the Netherlands, who led the study. Her team had previously found that vaccinated people infected with alpha were 73 per cent less likely to infect unvaccinated people.

What is important to realise, de Gier says, is that the full effect of vaccines on reducing transmission is even higher than 63 per cent, because most vaccinated people don't become infected in the first place.

De Gier and her team used data from the Netherlands' contact tracing system to work out the so-called secondary attack rate – the proportion of contacts infected by positive cases. They then worked out how much this was reduced by vaccination, adjusting for factors such as age.

De Gier says they cannot calculate the full reduction in transmission due to vaccination, because they don't know exactly how much vaccination reduces the risk of infection. But even assuming vaccination only halves the risk of infection, this would still imply that vaccines reduce transmission by more than 80 per cent overall.

Others have worked out the full effect. Earlier this year, Ottavia Prunas at Yale University applied two different models to data from Israel, where the Pfizer vaccine was used. Her team's conclusion was that the overall vaccine effectiveness against transmission was 89 per cent.

However, the data used only went up to 24 March, before delta became dominant. The team is now using more recent data to work out the impact of delta, says Prunas.

The idea that vaccines are no longer that effective against transmission may derive from news reports in July claiming that vaccinated people who become infected "can carry as

much virus as others". Even if this were true, however, vaccines would still greatly reduce transmission by reducing infections in the first place.

In fact, the study that sparked the news reports didn't measure the number of viruses in someone directly but relied on so-called Ct scores, a measure of viral RNA. However, this RNA can derive from viruses destroyed by the immune system. "You can measure the RNA but it's rendered useless," says Timothy Peto at the University of Oxford.

There are now several lines of evidence that Ct scores aren't a good measure of the amount of virus someone has. Firstly, the fact that infected vaccinated people are much less likely to infect others. Peto has done a similar study to de Gier using contact tracing data from England and gotten similar results.

Secondly, Peto's team specifically showed that there is little connection between Ct scores and infectiousness. "It appeared people who were positive after vaccination had the same viral load as the unvaccinated. We thought they were just as infectious. But it turns out you are less infectious," says Peto. "That's quite important. People were over-pessimistic."

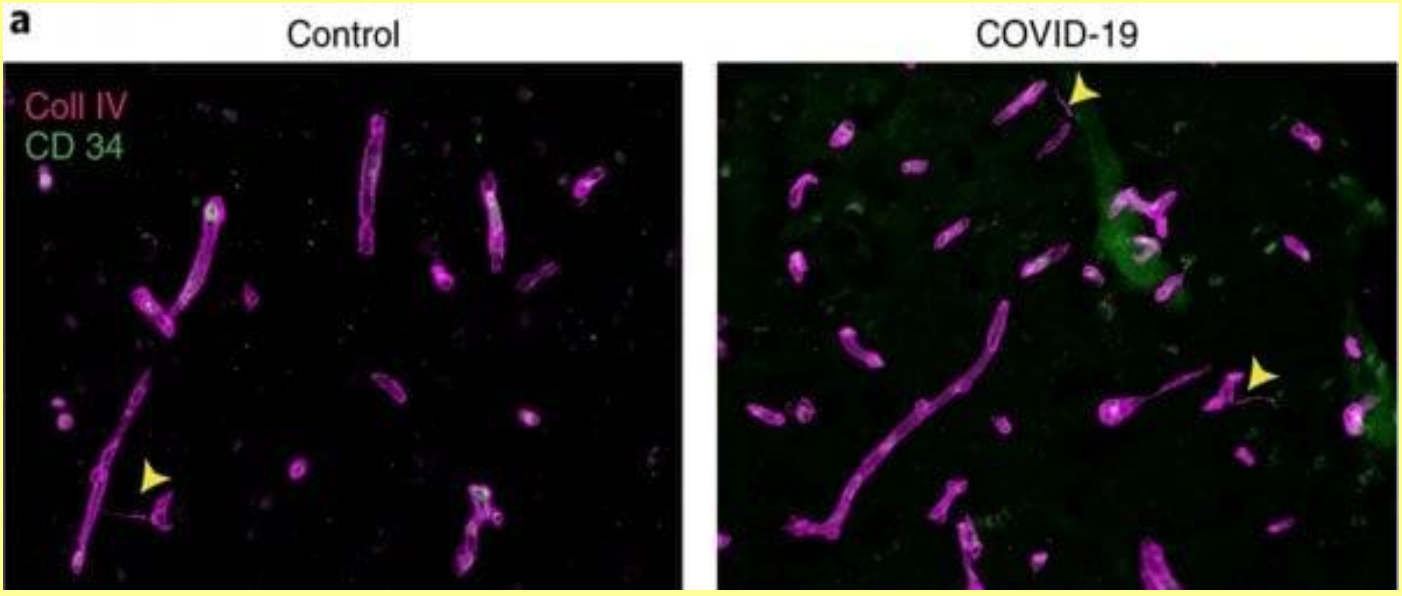
Yet another line of evidence comes from a study by Brooke. His team took samples from 23 people every day after they first tested positive until the infection cleared and performed tests, including trying to infect cells in a dish with the samples.

With five out of the six fully vaccinated people, none of the samples were infectious, unlike most from unvaccinated people. The study shows that vaccinated people shed fewer viruses and also stop shedding sooner than unvaccinated people, says Brooke.

The one bit of bad news is that Peto's study shows that the protection a vaccine provides against an infected person infecting others does wane over time, by around a quarter over the three months after a second vaccine dose. "This has made me a believer in boosters," he says. "They ought to get on with it, given that we are in the middle of a major outbreak [in the UK]."

COVID-19 Can Damage Blood Vessels in The Brain, Causing Neurological Symptoms

Source: https://www.sciencealert.com/study-finds-covid-19-can-damage-specific-brain-cells



In the brains of SARS-CoV-2-infected patients, empty basement membrane tubes, also known as string vessels (arrowheads), were increased in the frontal cortex (Wenzel et al., Nature Neuroscience, 2021)

Oct 24 – A new study has found that COVID-19 can cause damage to blood vessels in the brain, damaging cognitive function.

The study, conducted by scientists from Germany, France, and Spain, reveals that COVID-19 can kill brain cells known as endothelial cells.

Studies have previously found that up to 84 percent of COVID-19 patients suffer from neurological symptoms, anosmia (loss of sense of taste or smell), epileptic seizures, strokes, loss of consciousness, and confusion, and this may be an explanation as to why.

Insider's Yelena Dzhanova previously covered how patients of COVID-19 suffer memory loss, even months after contracting the virus.

The study was conducted by scanning the brains of people who had died from COVID-19.
The results of the research showed string vessels, a dead cell that cannot allow blood to flow, and is a sign of cognitive impairment, and has a number of medical risks, including micro strokes.
There is hope, however, that this new facet of COVID-19 may be reversible.
"We have seen that in hamsters, who develop very minor forms of COVID-19, the phenomenon is apparently reversible, so we can hope that it could also be reversible in humans," a co-author of the paper, Vincent Prévot, from the Inserm research center in Lille, told RFI news.

Discovery Points to a Crucial Role Red Blood Cells Play in Our Immune Systems

Source: https://www.sciencealert.com/red-blood-cells-play-a-much-greater-role-in-our-immune-system-than-we-thought

(Science Photo Library, Steve Gschmeissner/Brand X Pictures/Getty Images)

Oct 24 – The job description for a red blood cell isn't considered to be overly complicated. Pick up oxygen, drop off oxygen. Wash, rinse, repeat. But when it comes to protecting the body against infection, it's their white cell sisters that we've been giving all the credit to.
However, a new study led by researchers from the University of Pennsylvania in the US has confirmed red blood cells also play a critical role in inflammation, one that could make a life-or-death difference.
As far back as the middle of last century scientists had their suspicions that red cells played some kind of role in keeping invaders at bay. By the 1990s, researchers were uncovering receptors on red blood cells that responded to inflammatory messenger chemicals called cytokines.
It all pointed to something afoot. Meanwhile, there was also the inexplicable loss of blood cells – anemia – that often comes with sepsis.
"Acute inflammatory anemia is often seen early after an infection such as parasitic infections that cause malaria," says pulmonologist Nilam Mangalmurti, the senior author on the recent investigation.
"For a long time we haven't known why people, when they are critically ill from sepsis, trauma, COVID-19, a bacterial infection, or parasite infection, develop an acute anemia."
Just a few years ago Mangalmurti and her team showed how red blood cells could scavenge the free-floating scraps of mitochondrial DNA that spilled from injured tissues, triggering a response that helps regulate inflammatory responses in the lungs.
But missing pieces of the puzzle remained. How does a fragment of DNA from our own body turn an oxygen-carrying cell into an infection-fighting machine? And why do they disappear?
A major key could be found in the protein that grabs onto the DNA. Called toll-like receptors (TLR), they're normally found on sentinels like the microbe-munching macrophages, where they respond to the short sequences as a sign that the body is under invasion.

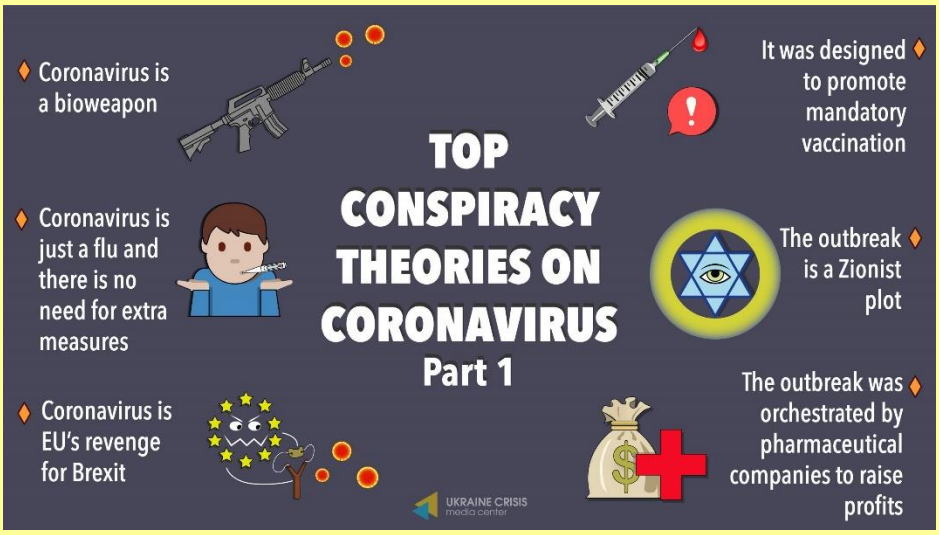
Initial tests on human and chimpanzee blood confirmed they also existed on red blood cells. Thanks to their recent analysis of blood samples taken from sepsis and COVID-19 patients, the researchers now know that the number of receptors, specifically TLR9, increases during infections.
The TLR9 receptor readily mops up the released pieces of DNA, some of which contain sequences that bear an uncanny resemblance to those in many virus and bacterial segments of nucleic acid.
Under carefully managed laboratory conditions, these DNA-triggered red blood cells looked shockingly abnormal: Their typically concave 'donut' shape was warped.
This change in morphology is a check-box for sepsis, so seeing it so obvious under these lab conditions was a clear sign that the team was on the right path.
In no time, the malformed red blood cells began to disappear, swallowed up by macrophages. The engulfing in turn set off a chain reaction of inflammatory messengers that would effectively sound the alarm for the immune system to act in haste.
Tests carried out on mice infected with parasites backed up what they were seeing outside of the body. Sure enough, mitochondrial DNA was elevated on the mice's red cells, compared with those from non-infected animals.
Triggering inflammation in parts of the body that otherwise aren't in any danger of infection can be bad news, especially in people with autoimmune disorders. So finding ways to prevent red blood cells from overreacting to the presence of free-floating mitochondrial DNA would be immensely helpful.
It would also save lives for those at risk of acute anemia.
"Right now when patients in the ICU [intensive care unit] become anemic, which is almost all of our critically ill patients, the standard is to give them blood transfusions, which has long been known to be accompanied by a host of issues including acute lung injury and increased risk of death," says Mangalmurti.
"Now that we know more about the mechanism of anemia, it allows us to look at new therapies for treating acute inflammatory anemia without transfusions, such as blocking TLR9 on the red blood cells."

▶▶ **This research was published in** *Science Translational Medicine*.

People Who Believe COVID Conspiracies More Likely to Test Positive, Study Confirms

Source: https://www.sciencealert.com/people-who-believe-covid-conspiracies-are-more-likely-to-test-positive-study-shows

Oct 25 – From early on in the pandemic, conspiracy theories about COVID-19 have spread like wildfire, disseminating vast amounts of misinformation about the virus and vaccines, and tragically costing lives.
Now, a new study highlights some of the personal dangers of COVID conspiracy theories – showing how such beliefs can affect and predict people's behavior, potentially giving them greater exposure to the threat of infection, and more besides.
"Even if a conspiracy theory is extremely implausible according to logic or scientific evidence, if it seems real to a perceiver, it has a genuine impact on attitudes, emotions, and behavior," researchers explain in a new paper, led by first author and social psychologist Jan-Willem van Prooijen from Vrije Universiteit Amsterdam in the Netherlands.
This phenomenon – that conspiracy theories are consequential in the lives of true believers – has been demonstrated in many studies, showing that the way people think affects their behavior in various ways.
The link is alive and well in the age of the coronavirus, too, with research showing that COVID-19 conspiracy theories are tied to attitudes that might compromise public health, such as less support for physical distancing and restrictive measures, and less intention to get vaccinated.
Nonetheless, it's still not fully clear from existing research how belief in COVID-19 conspiracy theories relates to people's health and wellbeing in the context of the pandemic.
To explore this, van Prooijen and fellow researchers surveyed 5,745 participants in a panel weighted to provide a large, nationally representative sample of the Dutch population.
Early in the pandemic (April 2020), the cohort was asked a number of questions measuring their level of belief in COVID-19 conspiracy theories – including whether they thought the coronavirus was a bioweapon engineered by scientists, a conspiracy to take away citizens' rights, or a cover-up for the impending global economic crash.



Several months later, the same group was surveyed again, this time answering questions about whether they'd ever been tested for the virus, whether that test was positive or negative, and whether they'd ever breached COVID-19 regulations, among many others.

The results showed that belief in COVID-19 conspiracy theories prospectively predicted a decreased likelihood of getting tested for the virus – which the researchers had expected, given those participants were expected to feel less threatened by the virus overall (given their views on it).

However, the results also showed that the conspiracy theorist participants were more likely to have tested positive for the virus if they had undertaken a COVID-19 test, as compared to participants who didn't hold such beliefs.

Again, this outcome had been hypothesized by the researchers, on the basis that conspiracy theorists might be at greater risk of infection due to their beliefs about the virus, while simultaneously less likely to get asymptomatic testing.

Not all of the researchers' hypotheses were borne out by the data, but many were – including that people believing COVID-19 conspiracies were more likely to have received too many visitors in their home during COVID restrictions, and likelier to have visited overcrowded parties, bars, or restaurants.

In addition, conspiratorial thinkers were more likely to have lost employment and income during the pandemic, and the data suggested they were also more likely to experience social rejection, perhaps due to their views.

"Intolerance of conspiracy believers is consistent with the notion that publicly endorsing conspiracy beliefs is stigmatizing and can decrease people's social support network," the researchers write.

There are limits to what conclusions we can draw from this study, however. The researchers emphasize that their experiment can't show causality (about things like COVID-19 results, employment prospects, and people's social circles), as other, unmeasured factors could ultimately be responsible for the results seen in the data.

It's also worth noting that even though this is a large survey, it's still only a snapshot in time, and only of participants in the Netherlands – and amongst the cohort, those who expressed COVID-19 conspiracy beliefs were relatively few.

Still, despite those limitations, the researchers suggest there's still clearly something going on here – a phenomenon that suggests belief in COVID-19 conspiracies might ultimately pose a serious, even dangerous disadvantage to the individual.

"Believing conspiracy theories early in the pandemic predicts a range of health and well-being outcomes eight months later," the team writes.

"Conspiracy beliefs predict how well people cope with the challenges of a global pandemic, and therefore has substantial implications for private and public health, as well as perceivers' economic and social well-being."

▶▶ The findings are reported in *Psychological Medicine*.

COMMERCIAL NAME

Lavgevrio | Paxlovid

EFFECTIVENESS

Reduces the possibility for hospitalization or death

50% | 85%

PATIENTS

CONFIRMED COVID-19
with mild or medium severity symptoms
that might progress to severe

WHEN

WITHIN 5 DAYS
From the beginning of symptoms

DOSAGE

morning 4
night 4

morning 3
night 3
(+antiviral ritonavir)

DURATION OF TREATMENT

5 days

MECHANISM OF ACTION

Cause errors in the genetic code of coronavirus

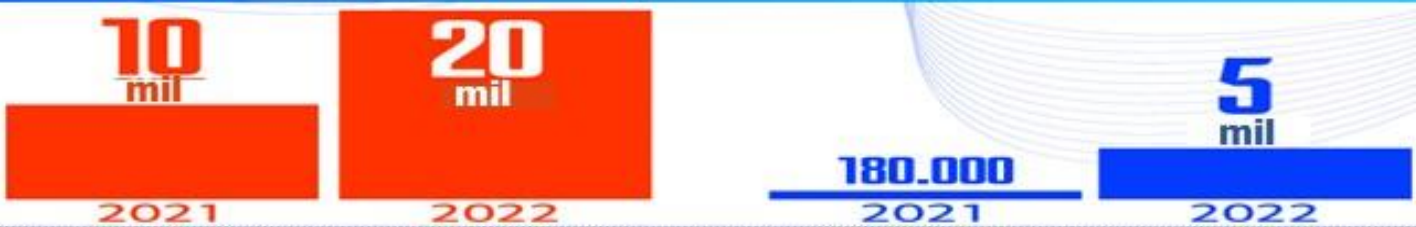
Blocks an enzyme necessary to virus to multiply

COST

700–1000 $

700 $
for a 5-days treatment

PRODUCTION

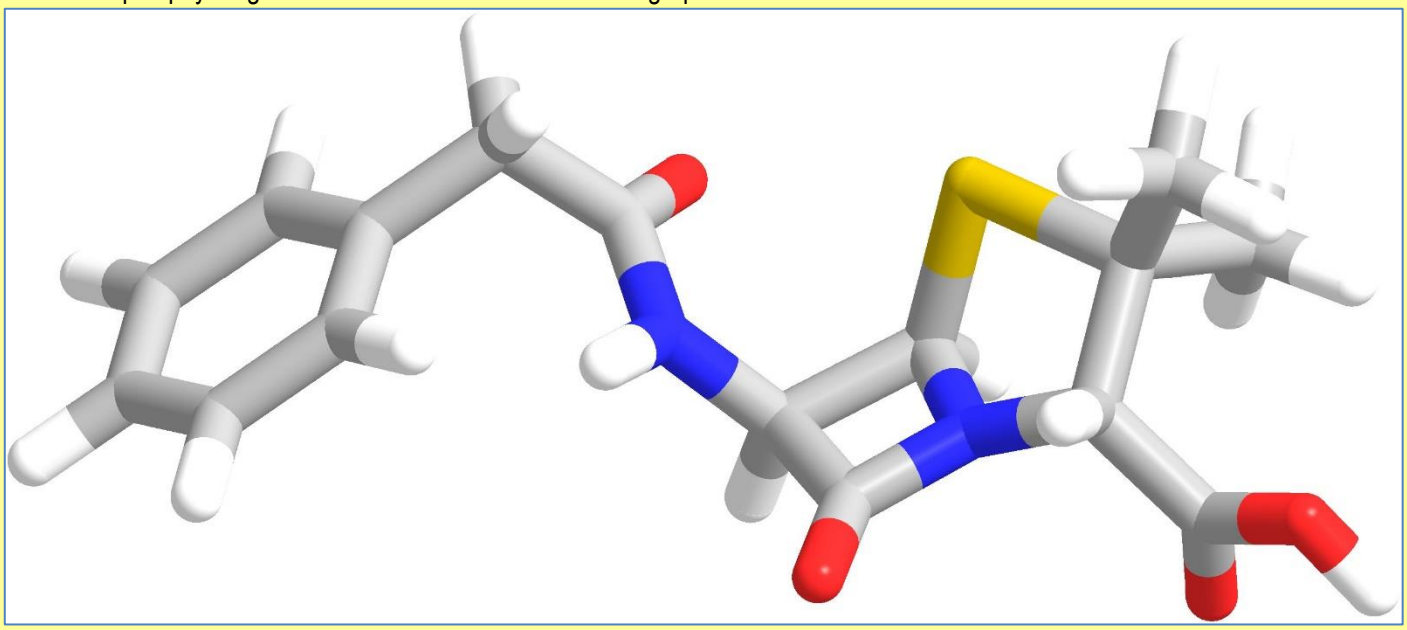


Source: Reuters infographic

Scientists make breakthrough in understanding how penicillin works

University of Sheffield

Source: https://phys.org/news/2021-10-scientists-breakthrough-penicillin.html



Chemical structure of Penicillin G. The sulfur and nitrogen of the five-membered thiazolidine ring are shown in yellow and blue respectively. The image shows that the thiazolidine ring and fused four-membered β-lactam are not in the same plane. Credit: Public Domain

Oct 26 – **The mechanism which allows β-lactam antibiotics, including penicillin, to kill MRSA has been revealed for the first time.**

An international team of researchers led by the University of Sheffield discovered that β-lactam antibiotics kill MRSA (Methicillin Resistant S. aureus) by creating holes in the cell wall which enlarge as the cell grows, eventually killing the bacteria.

The growth of these holes leads to failure of the cell wall and death of the bacteria, something which the scientists now plan to exploit in order to create new therapeutics for antibiotic resistant superbugs.

It was previously known that β-lactam antibiotics work by preventing cell wall growth, but exactly how they kill has remained a mystery until now.

Professor Simon Foster, from the University of Sheffield's School of Biosciences, said: "Penicillin and other antibiotics in its class have been a centrepiece of human healthcare for over 80 years and have saved over 200 million lives. However, their use is severely threatened by the global spread of antimicrobial resistance.

"Concentrating on the superbug MRSA, our research revealed that the antibiotics lead to the formation of small holes that span the cell wall that gradually enlarge as part of growth-associated processes, eventually killing the bacteria. We also identified some of the enzymes that are involved in making the holes. "Our findings get to the heart of understanding how existing antibiotics work and give us new avenues for further treatment developments in the face of the global pandemic of antimicrobial resistance."

Using this knowledge and an understanding of how the enzymes are controlled, the scientists also showed the efficacy of a novel combination therapy against S. aureus.

The team worked with a simple model for how the bacterial cell wall expands during growth and division and established a hypothesis for what happens when this is inhibited by antibiotics like penicillin. The predictions of this model were tested using a combination of molecular approaches, including high resolution atomic force microscopy.

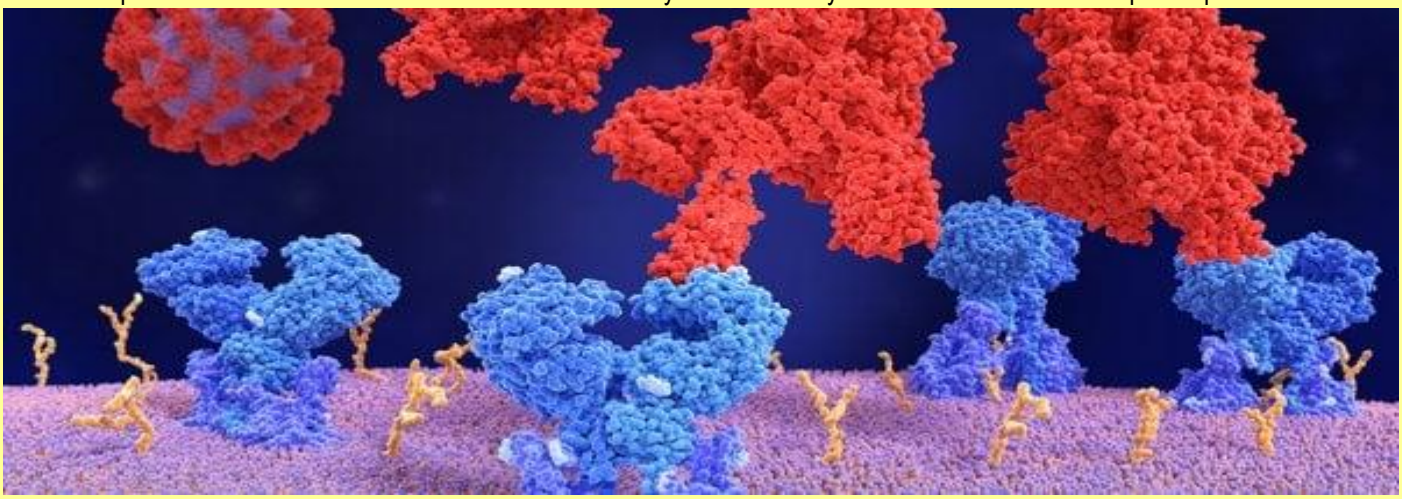
The project was led by the University of Sheffield as an international, interdisciplinary effort, involving groups at Xiamen University in China, Masaryk University in the Czech Republic and McMaster University in Canada.

In 1930 the first documented use of penicillin as a therapy was carried out in Sheffield by Cecil George Paine, a member of the University's Pathology Department. He treated an eye infection in two babies with a crude filtrate from a penicillin-producing mould supplied by his lecturer, Alexander Fleming, whilst studying at St Mary's Hospital Medical School in London.

How Concerned Should You Be About AY.4.2. Delta Subvariant?

By Darren Smith and Matthew Bashton

Source: https://www.sciencealert.com/how-concerned-should-you-be-about-ay-4-2-delta-subvariant-an-expert-explains



Coronavirus spike binding to a human cell receptor. (Juan Gaertner/Science Photo Library/Getty Images)

Oct 26 – No sooner than you thought all the talk of new COVID variants was over, there's news of yet another one: AY.4.2. But what is it, where did it come from, and should we be concerned?

AY.4.2 is what's termed a "lineage". These are labels given to branches of the COVID evolutionary tree to illustrate their relatedness. They are overseen by the diligent Pango network, a joint team of researchers from the universities of Edinburgh and Oxford, who act as the custodians of lineages and handle the assignment of new ones.

If we go back to April of this year, we can trace the origins of AY.4.2. Our team in Northumbria, working as part of Cog-UK – the British consortium that sequences the genomes of COVID samples to see how the virus is changing – had just sequenced two samples connected via travel history to India.

At the time we knew the lineage circulating in India was B.1.617, but the cases we had sampled didn't match this. Variants are distinguished by the different mutations they have in their genetic material and, looking at the mutations in our samples, it appeared our cases were missing some of the commonly accepted mutations of B.1.617 but also had some additional ones.

What we were reporting to colleagues in Cog-UK was classified the following week as B.1.617.2, one of three main sub-lineages of B.1.617, and which was later named delta by the World Health Organization.

AY is a further evolutionary step forward from here. Once a lineage's labelling gets five levels deep, a new letter combination is started to avoid the name getting too long. So the AY forms of the virus aren't vastly different from what's come before, even though their labelling is different. They are all sub-lineages of delta.

There are now 75 AY lineages identified, each with different additional defining mutations in their genome. One of these – AY.4 – has been steadily growing in proportion in the UK over the last few months, accounting for 63 percent of new UK cases in the last 28 days.

Does AY.4 have an advantage?

We're still not sure if AY.4's mutations confer a genuine advantage or if the increasing frequency of the lineage is simply down to what's called a "founder effect". This is when a subset of viruses get separated from the overall viral population, and then reproduce in isolation. In the area where the separated viruses are, all subsequent viruses will therefore be descendants of this subset.

With COVID, this might have happened by there being a single case at a large event. This lone virus would have been the "founder", the only virus spreading at the event. If it infected a sizeable number of people, who later infected others, this may have quickly built up a large amount of virus all from the same origin. Sometimes, for a certain form of a virus to dominate, it doesn't have to be better than others – it simply needs to be in the right place at the right time.

But, given its rise to dominance in the UK, AY.4 might well have a selective advantage. The defining change in AY.4 is the mutation A1711V, which affects the virus's Nsp3 protein, which plays a number of roles in viral replication. However, the impact of this mutation is unknown.

This brings us to AY.4.2 – a sub-lineage of AY.4 – which was first noted at the end of September, though it appears it surfaced in the UK around June. It's defined by two additional genetic mutations, Y145H and A222V, that affect the spike protein. The spike protein is a key part of the virus's outer surface, and is the part of its structure that it uses to get inside cells.
AY.4.2 has grown steadily in volume to the point where it now accounts for about 9 percent of UK cases in the last 28 days. It has also been observed in a few European nations: Denmark, Germany and Ireland, to name a few.
But whether its two mutations offer the virus a selective advantage is unclear as well. A222V was previously seen last year in the B.1.177 lineage that probably emerged in Spain and was then spread across northern Europe, most likely by holidaymakers.
At the time, many were skeptical that A222V conferred an advantage. Indeed, the increase in the form of the virus that's become known as AY.4.2 seems to have only occurred since it acquired its Y145H mutation.
This mutation is within an "antigenic supersite" of the spike protein – a part of the protein that antibodies frequently recognize and target. We know that this part of the spike protein has already been modified once before by a mutation in delta's genetic material, and that this possibly contributes to delta's greater ability to escape immunity, as antibodies have a harder time targeting it as a result.
However, the research exploring this is still in preprint, meaning it is yet to be formally reviewed – so we need to treat its findings with caution.
But it's therefore possible the Y145H mutation could give the virus an even greater ability to escape immunity by making this supersite less recognizable to antibodies.
The counterargument is that, despite introduction into several European countries, AY.4.2 has failed to take hold, dropping off the radar in Germany and Ireland – though it is lingering in Denmark. This would suggest its ability to get around immunity isn't any greater than delta's. Equally, it might just be that there wasn't enough of AY.4.2 arriving in these places for it to take hold.
Really, it's too early to tell if this is the beginning of the next dominant lineage. Any ability it might have to escape immunity needs to be confirmed by experimental work. Clearly, though, it's emergence shows that there's a continued need for genomic surveillance of the virus.

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COVID-19 Signature Warns of Critical Outcomes for Young Adults

A new study employed a multi-omics analysis combined with artificial intelligence to uncover genetic patterns that may help explain why some young, healthy people still develop severe or life-threatening cases of COVID-19. By offering insight about a major unanswered question in the ongoing pandemic, the findings from a deep analysis of 72 patients could inform research into new diagnostic, prognostic, and therapeutic strategies for the disease. **+ MORE**

How a COVID-19 vaccine trial error led to an unexpected discovery

Source: https://newatlas.com/science/astrazeneca-vaccine-trial-error-dose-efficacy-immune-response/

Oct 26 – A controversial dosing mistake marred last year's announcement revealing the efficacy of AstraZeneca's COVID-19 vaccine, but the error strangely led to better results. Now researchers from Northwestern Medicine have replicated those accidental findings and shown **some vaccines may be more effective if the first dose is much lower than the second**.
Late in 2020, following several promising announcements of successful Phase 3 clinical trials testing mRNA COVID-19 vaccines, pharmaceutical company AstraZeneca revealed exciting results for its vaccine candidate developed in association with Oxford University. The preliminary press announcement indicated the vaccine was 70 percent effective at preventing COVID-19.
Even more impressive, however, was the finding that a half-dose followed by a full dose led to even higher efficacy, around 90 percent, compared to the standard dose protocol. It was quickly uncovered that this half-dose protocol was actually a mistake, and not an intentional plan.
Mene Pangalos, an AstraZeneca executive working on the research program, called the error a "useful mistake." And although the company didn't initially disclose the fact this half-dose cohort was a mistake, Pangalos said the error was quickly incorporated into the trial as an alternative dosing experiment.

"It wasn't putting anyone in danger," Pangalos said to the New York Times. "It was a dosing error. Everyone was moving very fast. We corrected the mistake and continued on with the study, with no changes to the study, and agreed with the regulator to include those patients in the analysis of the study as well."
The first phase of any human vaccine trial generally involves what are called "dose-escalation" studies. With a two-dose vaccine protocol these dose escalation studies begin by offering a few people a low first dose (known as the prime dose) and then a second "booster" shot with that same low dose. If all is safe then another few participants are administered a slightly higher dose, again using the same two-dose protocol.
"The idea is to make sure the vaccine is safe, so scientists use dose escalation to determine the 'goldilocks zone': what is the minimum dose of vaccine that you can give to someone while still getting a good immune response?" explains Pablo Penaloza-MacMaster, lead author on the new study.
Vaccine dose escalation studies typically deliver the same dose of vaccine from prime to boost. The mistake made in the AstraZeneca COVID-19 trial offered a unique insight into immune responses when a prime dose is lower than the subsequent boost.
This new research set out to clarify a lingering unresolved question from the AstraZeneca trial data. Because of dynamic changes to the AstraZeneca trial protocol, the cohort receiving the irregular first and second doses also experienced a longer gap between the two doses than other participants. So was the vaccine more efficacious due to the dose discordancy or was it because of the longer gap between doses?
To investigate this question the researchers looked at immune responses in mice to two different COVID-19 vaccines – CanSino and Sputnik V. Both of these are adenovirus serotype 5 vaccines, using the same viral vector as AstraZeneca's candidate.
The study reports a low dose prime followed by a higher dose boost elicited significantly better immune responses in the mice, both qualitatively and quantitively, compared to two high doses. The researchers also saw similar low-dose/high-dose benefits with an experimental HIV vaccine that uses the same adenovirus vector as the COVID-19 vaccines. This indicates the low-dose/high-dose protocol may be beneficial with other vaccines. One potential issue highlighted in the new study is that the initial lower prime dose did result in weaker preliminary immune responses compared to a standard prime dose. This means it is possible one may be less protected between first and second doses using this kind of protocol compared to a standard two-dose regime. Alongside this finding the researchers also confirmed better immune responses can be generated by extending the gap between first and second doses. Penaloza-MacMaster says the problem this raises is that a lower prime dose with a longer gap may leave people susceptible to infection, and this is not ideal in a pandemic when time is of the essence. "With a pandemic, it's ethically challenging to extend that prime-boost interval because you need people to get fully protected as soon as possible," says Penaloza-MacMaster. "But this approach may have its benefits in terms of improving the durability and magnitude of immune responses in the long run, which may be useful not just for SARS-CoV-2 vaccines, but also for other vaccines." As there has been little human research done on this subject the researchers are cautious to extrapolate their findings to humans. **However, the AstraZeneca trial mistake offers compelling evidence a lower first dose and a longer gap before the standard second dose could induce optimal immune responses – at least in adenovirus vector vaccines.** The research team is now investigating immune responses to low-dose/high-dose protocols with mRNA vaccines.

▶▶ **The new study was published in the journal** *Science Immunology*.

Abu Dhabi researchers find new mask technology could filter out viruses

Source: https://www.thenationalnews.com/uae/health/2021/10/27/abu-dhabi-researchers-find-new-mask-technology-could-filter-out-viruses/

Oct 27 – Researchers in Abu Dhabi are developing a technology that could allow masks to filter out specific viruses, such as Covid-19 and the flu.
Associate professor at Khalifa University Dr Ammar Nayfeh and a team of academics and doctors are working on creating this new mask using nanotechnology.
"The idea is to create specific fibres with certain bonds that will filter out the virus," said Dr Nayfeh.
Scientists across the world are using nanoparticles in mask designs due to their ability to slow or stop the spread of micro-organisms.
"Nano masks" are already in use. Made with nanoparticle fabric they are widely available and most people have been wearing them since the outbreak of the Covid-19 pandemic.
But the design has stayed the same despite virus particle sizes changing.

Scientists at Khalifa University used silicon nanoparticles encapsulated in aerosol to resemble the covid virus during testing. It was then sprayed on to two different masks with different fibre densities to demonstrate what would happen upon contact.

"Surprisingly, smaller virus [particles] are easy to block because the way these viruses work is that they get attracted to the fibres easier," said Dr Nayfeh who works in the department of electrical engineering and computer science.
"Medium-sized particles – which are actually the size of the Covid virus – can make it through easier."

Fineguard manufactures face coverings in the UAE using Livinguard materials that repel viruses. A range of lightweight masks are designed for exercise. [photo left]

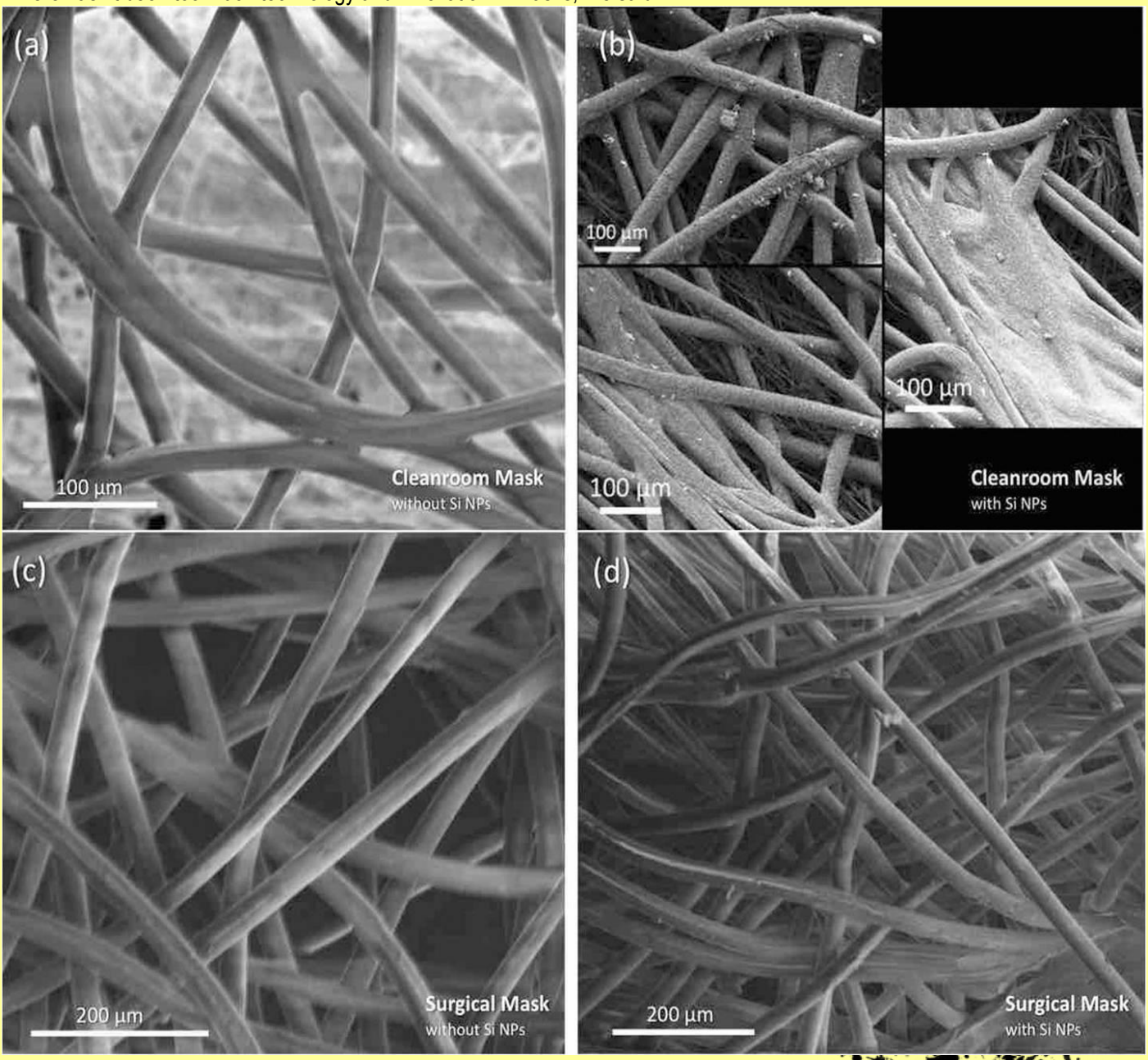
The ViroMasks viroblock mask has a double filter to ease breathing and block 95 per cent of viruses. [photo right]

At Dh699, the LG Puricare wearable air purifier mask is the most expensive in the UAE. [photo above & right]

LG's Puricare wearable air purifier mask is rechargeable and has two filters and three settings to respond to respiration rates.

The scientists also discovered that the structure of these particles changed when they came into contact with the fibre of the mask.
"The point is we can modify the nature of the fibre in the mask. If we can filter [imitation Covid particles] then we can filter out anything else, and this is the next step," Dr Nayfeh said.
While current masks in the market work perfectly well, Dr Nayfeh believes that even one positive case among millions who are protected by standard face masks is one too many.
"If we could protect you 100 per cent instead of 99.9 per cent, then why not?

"Especially for frontline workers who are subjected to large viral loads all the time," he said.
"Can you imagine a future where, when a new virus hits, we can design a mask that can filter specific viruses?"
Nanotechnology is already leading to dramatic improvements in health care.
Scientists have used nanoparticles to target tumours, to deliver drugs, and also to improve medical imaging. Some nanoparticle-based treatments are multifunctional – meaning that they both find tumours and carry drugs for treatment.
"There is a need for better protection for future pandemics," said Dr Nayfeh.
"Even people who wear full PPE [personal protective equipment] can get infected."
Mask wearing has become the new norm with health authorities around the world recommending them as part of a comprehensive strategy to stop the transmission of Covid-19 and save lives.
And while masks have become indispensable everyday items because of the pandemic, Dr Nayfeh said that there has been no update to these masks in years.
"There hasn't been too much technology and innovation in masks," he said.



Scanning electron microscope image of the (a-b) cleanroom and (c-d) surgical mask with and without Si nano particles. Photo: Ayman Rezk

Metoprolol in Critically Ill Patients With COVID-19

By Agustín Clemente-Moragón, Juan Martínez-Milla, Eduardo Oliver, et al
J Am Coll Cardiol. 2021 Sep, 78 (10) 1001–1011
Source: https://www.jacc.org/doi/10.1016/j.jacc.2021.07.003

Severe coronavirus disease-2019 (COVID-19) can progress to an acute respiratory distress syndrome (ARDS), which involves alveolar infiltration by activated neutrophils. The beta-blocker metoprolol has been shown to ameliorate exacerbated inflammation in the myocardial infarction setting.

Objectives
The purpose of this study was to evaluate the effects of metoprolol on alveolar inflammation and on respiratory function in patients with COVID-19–associated ARDS.

Methods
The MADRID-COVID (Intravenous Metoprolol in Respiratory Distress Due to COVID-19) pilot trial was approved by the Fundación Jiménez Díaz University Hospital ethics committee (Eudract registry number 2020-002310-41). A total of 20 COVID-19 patients with ARDS on invasive mechanical ventilation were randomized to **metoprolol (15 mg daily for 3 days)** or control (no treatment). All patients underwent bronchoalveolar lavage (BAL) before and after metoprolol/control. The safety of metoprolol administration was evaluated by invasive hemodynamic and electrocardiogram monitoring and echocardiography.

Results
Metoprolol administration was without side effects. At baseline, neutrophil content in BAL did not differ between groups. Conversely, patients randomized to metoprolol had significantly fewer neutrophils in BAL on day 4 (median: 14.3 neutrophils/μl [Q1, Q3: 4.63, 265 neutrophils/μl] vs median: 397 neutrophils/μl [Q1, Q3: 222, 1,346 neutrophils/μl] in the metoprolol and control groups, respectively; P = 0.016). Metoprolol also reduced neutrophil extracellular traps content and other markers of lung inflammation. Oxygenation (PaO_2:FiO_2) significantly improved after 3 days of metoprolol treatment (median: 130 [Q1, Q3: 110, 162] vs median: 267 [Q1, Q3: 199, 298] at baseline and day 4, respectively; P = 0.003), whereas it remained unchanged in control subjects. Metoprolol-treated patients spent fewer days on invasive mechanical ventilation than those in the control group (15.5 ± 7.6 vs 21.9 ± 12.6 days; P = 0.17).

Conclusions
In this pilot trial, intravenous metoprolol administration to patients with COVID-19–associated ARDS was safe, reduced exacerbated lung inflammation, and improved oxygenation. Repurposing metoprolol for COVID-19–associated ARDS appears to be a safe and inexpensive strategy that can alleviate the burden of the COVID-19 pandemic.

Bioterrorism – Imminent Threat?

Source: https://i-hls.com/archives/111291

Oct 27 – Pressure has ramped up globally for better biosafety and security over the backdrop of the COVID-19 pandemic. Its impact could inspire "bad actors" to explore the potential of viruses as bioweapons, the British Army's former chemical and nuclear weapons chief told telegraph.co.uk.
Research into viruses with pandemic potential should be policed in the same way as work on atomic bombs or sarin gas, said Hamish de-Bretton Gordon, now a biosecurity fellow at Cambridge University.
With the ease of synthetic biology, bad actors could try and replicate Covid-19's consequences for their own gains, a threat that can not be ignored. "The chances of a deadly accident occurring is also too risky to ignore."

The risks must be better policed, either by extending the work of the Organisation for the Prohibition of Chemical Weapons (OPCW) to cover bio-weapons or by setting up a new organization. Others have called for a new body to mimic the International Atomic Energy Agency (IAEA), which monitors nuclear weapons.

Laboratories working around the world on dangerous pathogens study the threat to understand and mitigate it, but experts warn that it is up to nation-states to regulate the work.
Biosafety levels, which run from one to four, monitor how safe a lab is and which pathogens it can study; biosecurity is more about protecting the lab from external bad actors seeking to access its work.
The explosion of gene-editing technologies, which can now be bought by mail-order, also needs to be monitored, experts argue.

Twenty Years After the Patriot Act, What Is the Future of Biosecurity?

Source: https://www.homelandsecuritynewswire.com/dr20211027-twenty-years-after-the-patriot-act-what-is-the-future-of-biosecurity

Oct 27 – The USA Patriot Act was signed into law twenty20 years ago, on 26 October 2001. The law was profoundly shaped by the back-to-back events of the September 11 attacks and the 2001 anthrax attacks, but it was deeply rooted in in fears about bioterrorism that had been growing since the 1990s. Yong-Bee Lim, David Gillum, and Kathleen Vogel write in *Issues in Science and Technology* that this anniversary provides an occasion to reflect on the Patriot Act's legacy, as well as to imagine and plan for different biosecurity futures.
The authors note that the overall intent of the USA Patriot Act was clear: to prevent terrorism by raising the "barrier to entry" for potential terrorists. At its core, the act responded to two kinds of perceived threats—from outsiders and from insiders—and this dichotomy continues to have repercussions today. "Within the realm of biosecurity, the legislation sought to make it harder for states, terrorists, extremist groups, and lone-wolf actors to acquire dangerous biological materials, while also protecting biological research facilities from insider threats such as disgruntled employees and people with a grudge against biological research," they write, adding:

> Twenty years on, it is time to reflect: How well did this legislation promote or hinder biosecurity over time? What unintended or negative consequences have resulted? Most importantly, to what degree is the United States sufficiently prepared to contend with emerging biosecurity threats in a world that is more technologically advanced, interconnected, and interdependent than ever?

The authors write that in its attempts to control insider bioterror attacks, the implementation of the Patriot Act has triggered a series of unintended negative consequences on the life sciences, greatly disrupting who participates in science, where science is done, and how it is conducted.
Specifically, the Patriot Act and the Public Health Security and Bioterrorism Preparedness Response Act of 2002 (PHSBPRA) have imposed significant costs and administrative burdens on scientific institutions that work on the class of harmful pathogens known as *select agents*. In response, some institutions have chosen not to engage in this research.
Moreover, many changes have taken place since 2001, chief among them:

- In the twety years since the Patriot Act was passed, some aspects of biological work have become easier to execute.
- Thanks to more readily accessible equipment, knowledge, and materials, new communities are engaging in life science work. These new actors, such as the do-it-yourself biology (DIYBio) movement, make the traditionally institution-based, top-down governance of the life sciences impossible
- At the international level, coordinated international governance is becoming more challenging to navigate.
- Driven by anthropogenic effects such as climate change and ecological degradation, the global environment itself has also changed, with increasing rates of spillover events of epidemic and pandemic potential.
- Due to the global nature of travel and supply chains, society now requires a much broader capability to respond to outbreaks.
- The life sciences no longer exist purely at the laboratory bench. Increasingly, biological information is digitized and biological skills have been automated to enable the sharing of knowledge, practices, and lab skills around the globe.

The Patriot Act's top-down approach cannot fully address this emerging reality, the authors write. Despite twenty years of effort, some old biosecurity issues continue to plague the country, while a whole new biosecurity frontier is opening up.
The authors conclude:

> After two decades, we believe it is time to catalyze attention and action toward building the diverse communities, knowledge, and capabilities necessary to address contemporary biosecurity concerns in a more comprehensive, equitable, and holistic fashion. This will involve changing the way the United States regulates biosecurity, but it will also require understanding the changing meaning of biosecurity across different contexts. Biosecurity is an umbrella term used across multiple disciplines. Although we use it here to refer to securing materials, information, and knowledge against malicious ends, biosecurity in the agriculture context can mean taking steps to make sure that infectious disease does not get introduced to plants or animals. An example of this includes efforts to understand

and control the transmission of bovine spongiform encephalopathy (more commonly known as mad cow disease) in cow populations—a problem that has cost the United Kingdom significant revenue since the 1990s, as countries, including the United States and China, have at times banned British beef imports because of the disease.

As the globe's interconnections and frailties become more pronounced, society cannot afford to rely only on the definitions of biosecurity that made sense in previous decades. This is not to say that regulations based on those definitions do not continue to serve a purpose: restricting access to pathogens is an important part of biosecurity. However, as the contours of biological practices and threats change, biosecurity must change to address emergent concerns. This requires not only the methods of the past, but also new tools, expertise, and public-private partnerships. Only in this manner can the biosecurity community and policymakers simultaneously address new biological threats while harnessing the strengths that emerge from connecting and building diverse communities that are committed to keeping the life sciences safe and secure.

Statins unlikely to prevent severe COVID-19, Johns Hopkins study finds

Source: https://newatlas.com/health-wellbeing/statins-unlikely-to-prevent-severe-covid19/

Oct 27 – New research led by a team from Johns Hopkins Medicine has found no evidence statin use can reduce a person's risk of severe COVID-19 or death. Countering several small studies suggesting statins may be somewhat protective against severe COVID-19, the study indicates those taking statins could actually be at a slightly higher risk of serious illness.

From improving breast cancer survival to reducing rates of psychiatric events statin use has been linked to a number of health benefits over the past few years, beyond simply lowering levels of bad cholesterol. And as the COVID-19 pandemic swept the globe in 2020 some observational studies began to detect links between statin use and improved COVID-19 outcomes.

"Despite the apparent beneficial effect of statins on the outcomes of various infectious diseases, our study revealed that their specific use to treat COVID-19 is probably not merited," **explains Petros Karakousis, senior study author**. "Compared with earlier research, we looked at a larger and more widely varied inpatient population, and had better criteria for defining disease severity, thereby enabling our results to be more relevant for predicting the impact of statins on COVID-19 outcomes in hospitalized patients."

The retrospective research looked at records from 4,447 hospitalized COVID-19 patients, of which 13 percent were taking statins at the time of admission. The researchers found no difference in mortality rates between statin users and patients not taking statins.

In fact, the study did detect signs statin users were at a slightly higher risk of severe disease. Those on the drug were 18 percent more likely to experience severe COVID-19, defined by a hospital stay of over seven days.

It is unclear whether the statin use can be directly attributed to the slight uptick in severe disease outcomes detected in the study, but Karakousis does point out there is a plausible mechanism by which statins could amplify severe COVID-19 outcomes.

"One plausible explanation for this finding is that statins increase cellular production of angiotensin-converting enzyme 2 [commonly known as ACE2], the receptor on a cell's surface through which SARS-CoV-2 gains entry," Karakousis explains. "Therefore, statins may lower a cell's resistance to infection and in turn, increase the odds that the patient will have a more severe case of COVID-19."

On the other hand, Karakousis does note it is just as reasonable to presume other factors are responsible for the worse disease outcomes detected in the study. Many statin users suffer from several pre-existing conditions such as obesity or diabetes, Karakousis says, and these conditions of course can predispose one to severe COVID-19 outcomes.

Karakousis says a robust clinical trial is the only way to get real clarity on whether statins help or hinder COVID-19. One clinical trial, with results yet to be peer-reviewed and published, has tested the statin hypothesis in a cohort of 600.

The results, presented earlier this year at a cardiology conference, found **no difference between patients given statins for 30 days as they were admitted into intensive care and patients given a placebo**. **On the bright side, this clinical trial did not detect worse outcomes in the statin group compared to placebo**.

▶▶ **The new research was published in the journal *PLOS One***.


Please save us!
OUR LIVES MATTERS!
STOP
WHITE COAT WASTE PROJECT


WHITE HOUSE
WASHINGTON

Congress of the United States
Washington, DC 20515

October 21, 2021

Dr. Anthony Fauci
Director
National Institute of Allergy and Infectious Diseases
5601 Fishers Lane, MSC 9806
Bethesda, Maryland 20892

Dear Dr. Fauci,

We write with grave concerns about reports of costly, cruel, and unnecessary taxpayer-funded experiments on dogs commissioned by National Institute of Allergy and Infectious Diseases.

According to documents obtained via a Freedom of Information Act request by taxpayer watchdog group White Coat Waste Project, and subsequent media coverage[1], from October 2018 until February 2019, NIAID spent $1.68 million in taxpayer funds on drug tests involving 44 beagle puppies. The dogs were all between six and eight months old. The commissioned tests involved injecting and force-feeding the puppies an experimental drug for several weeks, before killing and dissecting them.

cordectomy

Of particular concern is the fact that the invoice to NIAID included a line item for "cordectomy." As you are likely aware, a cordectomy, also known as "devocalization," involves slitting a dog's vocal cords in order to prevent them from barking, howling, or crying. This cruel procedure — which is opposed with rare exceptions by the American Veterinary Medical Association, the American Animal Hospital Association, and others[2] — seems to have been performed so that experimenters would not have to listen to the pained cries of the beagle puppies. This is a reprehensible misuse of taxpayer funds.

While documents state that the ostensible purpose of this study was "to provide data of suitable quality and integrity to support application to the U.S. Food and Drug Administration (FDA) and other regulatory agencies," the FDA itself has recently stated that it "does not mandate that human drugs be studied in dogs."[3] This is apparently not the first time that NIAID has commissioned drug tests on dogs in recent years.[4]

[1] https://dailycaller.com/2021/10/05/antony-fauci-niaid-white-coat-waste-anima-experiment-abuse/
[2] https://www.avma.org/resources-tools/literature-reviews/welfare-implications-canine-devocalization
[3] https://wjla.com/features/i-team/animals-drug-testing-fda-labs-animals
[4] https://dailycaller.com/2021/08/04/anthony-fauci-niaid-georgia-beagle-experiment/

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In light of the above, please provide the following information by November 19th:

- How many drug tests involving dogs have been funded by NIAID since January 2018? How much taxpayer money has been spent on this testing?
- Since the Food and Drug Administration has clearly stated that it does not require dog testing for new drugs, why has NIAID continued to commission testing on dogs?
- What has NIAID done to explore the use of non-canine and non-animal alternatives to meet FDA data requirements? Please describe in detail.
- Has NIAID ever made any dogs available for adoption after the conclusion of an experiment or testing? If so, how many? If no, why not?
- Why has NIAID contracted for cordectomies when they appear to be scientifically and medically unnecessary? What is the average cost for each cordectomy performed?

Thank you for your attention to this matter. It is our duty to ensure the responsible stewardship of taxpayer dollars. We look forward to your prompt and thorough response.

Sincerely,

Nancy Mace
Member of Congress

Eleanor Holmes Norton
Member of Congress

Maria Elvira Salazar
Member of Congress

Ted W. Lieu
Member of Congress

Bill Posey
Member of Congress

Cynthia Axne
Member of Congress

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Cheap antidepressant shows promise treating early COVID-19

Source: https://news.yahoo.com/cheap-antidepressant-shows-promise-treating-223735055.html

Oct 28 – Researchers tested a pill used for depression and obsessive-compulsive disorder because it was known to reduce inflammation and looked promising in smaller studies.

The pill, called **fluvoxamine**, would cost $4 for a course of COVID-19 treatment. By comparison, antibody IV treatments cost about $2,000 and Merck's experimental antiviral pill for COVID-19 is about $700 per course. Some experts predict various treatments eventually will be used in combination to fight the coronavirus.

A nasal COVID-19 vaccine could be the solution to ending the pandemic, experts say, and early trial data looks promising

Source: https://news.yahoo.com/nasal-covid-19-vaccine-could-131135817.html

- COVID-19 vaccines are great at preventing severe illnesses and death.
- But they don't always stop transmission, or mild cases.
- Nasal vaccines could fill that gap.

Oct 28 – If we could vaccinate your nose, there's a good chance we'd be able to end this pandemic right now.

But the COVID-19 shots currently available in the US can't control everything that happens in your nostrils. If they did, they might be able to stop all transmission of the virus that happens through our talking, singing, laughing, breathing, and sneezing around each other.

If successful, a new kind of vaccine - a nasal mist that requires no needle - promises to do all that, by providing the special kind of coronavirus immunity people need to stop shuttling this virus around.

"An intra-nasal vaccine could help bring an end to the pandemic, and help give us true control over SARS-CoV-2 by limiting infection and transmission," Marty Moore, the CEO of Meissa Vaccines, told Insider. "We shouldn't settle for a new normal, we can get back to the old normal."

For now, that idea remains one that needs much more robust clinical data behind it to become a reality that we could all sniff up. But the prospect is still quite exciting to many immunologists around the world.

Shots in the arm aren't always great at preventing the sniffles

One big reason why vaccine breakthrough infections happen is because the injectable COVID-19 vaccines have been designed to give a person's body good *systemic* immunity against the virus, protecting internal organs like the lungs and the heart from severe infection. But a shot in the arm can't do as much for your nose in the long run.

If a vaccinated person is exposed to COVID-19, they may still get a case of the sniffles, or a flu-like COVID-19 illness. This is because they haven't developed great mucosal immunity against the coronavirus - in other words: they're still susceptible to infection via the vulnerable moist tissues that interact with the outside world, like those in the nose, eyes, and mouth.

"Very early on during that honeymoon initially after vaccination when your neutralizing antibodies are at their highest, you get a bit of a spillover effect into the upper airway," Dr. Celine Gounder, an infectious disease specialist at Bellevue hospital in New York, said at the recent ID Week infectious disease conference, explaining the issue of lacking durable mucosal immunity after vaccination.

Meissa is one of a few smaller companies pursuing COVID-19 nasal vaccines in early-stage human trials. Codagenix, another US-based company, has also announced some promising (but extremely small) early trial results. Other nasal vaccines are being developed around the world, with ongoing trials in Israel, Russia, Cuba, India, Hong Kong, and Iran.

"Our aim is to be the transmission-blocking COVID vaccine," Moore said.

Immunologists are excited about the prospect of nasal vaccines - both for unvaccinated people, and as boosters

According to Meissa's early clinical data (which the company says it will be sharing in more detail at an upcoming immunotherapy conference in late November and early December)

unvaccinated patients who are given a couple drops of Meissa's vaccine in each nostril have average mucosal antibody levels slightly higher than those measured in people with natural immunity to the virus.
This suggests that Meissa's vaccine could potentially work well at preventing the more pesky sniffly infections, not just the COVID cases that land people in the hospital.
"It suggests that we can deliver immunity that's like natural infection, but we can do it safely," Moore said.
This prospect has many immunologists quite excited, not just because nasal vaccines could be offered to vaccine-hesitant people who don't like shots, but also because they might, perhaps, be used as boosters to top up the already very good systemic immunity people have gotten from injectable vaccines.
Meissa's initial human trial is still ongoing now, with 70 participants in it so far. It's only phase 1, meaning any approval or even emergency authorization for this type of vaccine is many months and likely several thousand more volunteer participants away, at best.
But so far, the results look good. Meissa, which is conducting much of its research in Kansas, says there are many reasons why people have chosen to join their early-stage trial.
"Sometimes it's people who are PhDs, or highly educated, who see the benefit of an intra-nasal to prevent infection itself," Moore said. "And oftentimes, it's people who just don't want a shot. They don't want something injected into them."
Common side effect complaints after Meissa's nasal vaccine so far have included runny noses, coughs, sore throats, and headaches. But, according to the company, no worrisome safety signals have surfaced with the vaccine, which uses a live-attenuated RSV platform to deliver the coronavirus's characteristic spike protein to vaccinees without risking the coronavirus itself spreading from them.
"There are quite a few people who would rather have drops in the nose than the needle," Moore said. "So I think an intra-nasal vaccine could reach not all, but many vaccine hesitant people."

UAE moves up to third in ranking of best places to live globally during Covid pandemic

Source: https://www.thenationalnews.com/coronavirus/2021/10/28/uae-moves-up-to-third-in-ranking-of-best-places-to-live-globally-during-the-pandemic/

Oct 28 – The UAE has been **ranked third in the world** in a league table looking at how well countries are controlling the coronavirus while at the same time reopening their economies.
The Emirates were behind only Ireland and Spain in the Bloomberg Covid Resilience Ranking, which is published monthly by the business news agency.
A continued decrease in the number of cases and deaths, coupled with very high vaccination rates, enabled the Emirates to jump three places since the last table was released.
Ireland and Spain occupy the top two spots, and other European nations take up most of the rest of the top 10 thanks to case numbers being under control and restrictions having been partly relaxed.
The UAE, which has had slightly under three quarters of a million Covid-19 cases and 2,135 deaths, has experienced a dramatic improvement in its control of the pandemic after its most recent peak in May and June.
There are now fewer than 1,000 cases a week, the lowest for more than a year, while the total number of deaths has been in single figures in recent weeks.

Covid Resilience Ranking

← Worse Better →

Get info and sort on table headers

REOPENING PROGRESS | COVID STATUS ▼ | QUALITY OF LIFE ▼

RANK	CHANGE	ECONOMY	BLOOMBERG RESILIENCE SCORE	PEOPLE COVERED BY VACCINES	LOCKDOWN SEVERITY	FLIGHT CAPACITY	VACCINATED TRAVEL ROUTES
1	–	Ireland	75.1	73.8%	42	-44.2%	396
2	–	Spain	74.6	76.7%	41	-24.4%	397
3	▲3	U.A.E.	74.6	97.3%	39	-39.6%	398
4	▲1	Denmark	74.3	76.1%	24	-37.6%	306.5
5	▼1	Finland	74.2	72.6%	24	-59.3%	396
6	▲4	Norway	73.1	73.9%	20	-27.2%	195
7	–	France	71.5	75.5%	67	-34.5%	397
8	▲23	Chile	71.4	92.4%	32	-21.5%	274
9	▼1	Switzerland	71.3	64.2%	46	-37.4%	396
10	▼7	Netherlands	71.3	69.3%	42	-31%	397

A very high vaccination rate, of 97.3 per cent – the world's highest – also contributes to the UAE's overall Bloomberg Resilience Score of 74.6.

A billboard on Sheikh Zayed Road thanks volunteers for the Covid-19 vaccine trials being conducted in the UAE

The top scorer, Ireland, has a resilience score of 75.1, and was praised for its high vaccination rate and cautious moves towards reopening, although Bloomberg named the country as one of several to have seen a "worrying uptick" in case numbers.
Spain, with a score of 74.6, gains plaudits for easing Covid restrictions and for bringing weekly case numbers down to slightly above 10,000, compared to almost 190,000 at one point in July.
Dr Bharat Pankhania, a senior clinical lecturer and consultant in communicable disease control at the University of Exeter in the UK, said many European countries were coping well because they were continuing to take basic precautions.
"Countries like Greece, Germany, France, Spain and Italy, they wear their masks and get on with it, and their case numbers are low," he told *The National*.
He contrasted the relative success of these countries at maintaining lower case rates with the UK, which fell nine places to 25th position over the past month because of rising case numbers. Covid-related deaths in the UK are running at an average of more than 100 a day.
"The UK has adopted a laissez-faire attitude, so there's a groundswell of, 'We don't want to wear masks and we don't want to take precautions,' and we're behind with our immunisation," he said.
The top 20 includes Saudi Arabia, which is placed 15th with a Bloomberg Resilience Score of 68.5.
It has a slightly lower vaccination rate, of 66.5 per cent, and slightly tougher restrictions than most countries in the top 10.
Another notable inclusion in the upper reaches of the table is Chile, in eighth position, whose rise of 23 places over the past month reflects an improved situation in South America as a whole.
The Bloomberg Covid Resilience Ranking, which measures the world's top 53 economies, is not simply an indicator of how well a country is controlling the coronavirus.

Nations (such as China in 28th position) with very low case and death rates but tougher Covid-related restrictions may score below others (such as the UK) with far higher case numbers and death rates but with fewer limitations.
Measures such as vaccination coverage, quality of healthcare, mortality rates and the extent to which travel has restarted are used to compile the table. Bloomberg noted that countries in South-East Asia such as Malaysia, Thailand, Vietnam and the Philippines remained in the bottom six of the table for the third month.
While Malaysia, with 75.6 per cent of people fully vaccinated, has a relatively high immunisation rate, the others are lagging, with Thailand having 50.6 per cent fully vaccinated, Vietnam 37.8 per cent and the Philippines on 26 per cent, according to Bloomberg.
"If they haven't got vaccination coverage in the high 80s, then you always have that fear that people who are not immunised will get severe disease and they will overwhelm the hospital system," Dr Pankhania said.
Although they are trying to immunise their populations, Dr Pankhania said many nations in South-East Asia had been hampered by a lack of vaccine supply.

Health versus Wealth during the Covid-19 Pandemic: Saving Lives or Saving the Economy?

By Christophe Lesschaeve, Josip GlaurdiĆ, and Michal Mochtak
Public Opinion Quarterly
Source: https://academic.oup.com/poq/advance-article/doi/10.1093/poq/nfab036/6398092

Oct 15 – Efforts to combat the COVID-19 crisis were characterized by a difficult trade-off: the stringency of the lockdowns decreased the spread of the virus but amplified the damage to the economy. In this study, we analyze public attitude toward this trade-off using a survey-embedded experiment conducted with a quota sample of more than 7,000 respondents from Southeast Europe, collected in April and May 2020. The results show that **public opinion generally favored saving lives even at a steep economic cost.** However, the willingness to trade lives for the economy was greater when the heterogeneous health and economic consequences of lockdown policies for the young and the elderly were emphasized. Free-market views also make people more accepting of higher casualties, as do fears that the instituted measures will lead to a permanent expansion of government control over society.

EDITOR'S COMMENT: Highly advisable study for EU leaders to read in order to stop placing profits above public health when comes to non-Western vaccines, drugs, and specialized treatments amid a pandemic.

The search for people who never get COVID

Source: https://www.nature.com/articles/d41586-021-02978-6#author-0

Oct 29 – Imagine being born naturally resistant to SARS-CoV-2, and never having to worry about contracting COVID-19 or spreading the virus. If you have this superpower, researchers want to meet you, to enroll you in their study.
As described in a paper in *Nature Immunology*[1] this month, an international team of scientists has launched a global hunt for people who are genetically resistant to infection with the pandemic virus. The team hopes that identifying the genes protecting these individuals could lead to the development of virus-blocking drugs that not only protect people from COVID-19, but also prevent them from passing on the infection.
"It's a terrific idea," says Mary Carrington, an immunogeneticist at the Frederick National Laboratory for Cancer Research in Bethesda, Maryland. "Really, a wise thing to do."
But success isn't guaranteed. If genetic resistance to the coronavirus SARS-CoV-2 exists, there may be "only a handful" of people with this trait, says Isabelle Meyts, a paediatric immunologist and physician at the Catholic University of Leuven in Belgium, who is part of the consortium behind the effort.
"The question is how to find those people," says Sunil Ahuja, an infectious-diseases specialist at the University of Texas Health Science Center at San Antonio. "It's very challenging. This is not for the faint of heart."

Discordant couples
Nevertheless, the study authors, including **Evangelos Andreakos, an immunologist at the Biomedical Research Foundation of the Academy of Athens, Greece**, say they are

confident of tracking down their quarry. “Even if we identify one, it will be really major,” he says.
The first step is to narrow the search to people who have been exposed, without protection, to a sick person over an extended period, and have not tested positive or mounted an immune response against the virus. Of particular interest are people who shared a home and bed with an infected partner — pairs known as discordant couples.
The team of co-authors from 10 research centres across the world, from Brazil to Greece, have already recruited some 500 potential candidates, who might fit these criteria. And since the publication of their paper less than 2 weeks ago, another 600 people, including some from Russia and India, have contacted them, nominating themselves as possible candidates.
The response was a real surprise, says Jean-Laurent Casanova, a geneticist and study co-author at the Rockefeller University in New York City. “I did not think for one second that people themselves, exposed and apparently not infected, would contact us.”
The goal is to have at least 1,000 recruits; Andreakos says they’ve already started analysing data.

A huge challenge ahead

But the researchers might have an almost impossible task, given the difficulties of proving that candidates were highly exposed to the virus, argues Ahuja. They will have to confirm that the sick partner was shedding high doses of live virus when the couple were interacting closely with one another.
Discordant couples are not uncommon, but it is rare to find those that meet these criteria and have been regularly tested, he says. The fact that many people have now been vaccinated, potentially masking any genetic resistance to the virus, further limits the pool of people to study, Ahuja adds.
Once they have identified possible candidates, the researchers will compare the individuals’ genomes with those of people who have been infected, in search of genes associated with resistance. Any contender genes will be studied in cell and animal models to confirm a causal link to resistance and establish the mechanism of action.
Casanova’s team has previously identified rare mutations that make people more susceptible to severe COVID-19, but the researchers are now shifting gears from susceptibility to resistance.
In genetic surveys called genome-wide association studies (GWAS), other groups have scoured the DNA of tens of thousands of people in search of single-nucleotide changes — which typically only have a weak biological effect — and identified some possible candidates associated with reduced susceptibility to infection.
One of these is found in the gene responsible for the type O blood group, but its protective effect is small, says Carrington, and it’s not clear how it is conferred.

Mechanisms of resistance

The researchers behind the new project have hypothesized the kind of resistance mechanisms they might find. The most obvious could be that some people don’t have a functioning ACE2 receptor, which SARS-CoV-2 uses to enter cells. In one GWAS, posted as a preprint[2], and therefore not peer reviewed, researchers identified a possible link between a rare mutation that probably reduces expression of the *ACE2* gene and a diminished risk of infection.

This type of mechanism has previously been observed with HIV, the virus behind AIDS. Beginning in the 1990s, Ahuja and Carrington were involved in work that helped to identify a rare mutation that disables the CCR5 receptor on white blood cells, preventing HIV from entering them.
“That knowledge has been really useful,” says Carrington. It led to a class of HIV-blocking drugs and two people were also apparently cleared of HIV after receiving bone-marrow transplants from donors with two copies of the resistant genes.
Other people resistant to SARS-CoV-2 might have very powerful immune responses, especially in the cells lining the insides of their noses. Andreakos says some people might have mutations that ramp up genes that stop the virus from replicating and repackaging into new viral particles, or that break down viral RNA in the cell.
Despite the challenges ahead, he is optimistic about discovering people who are naturally resistant. “We are confident that we will find them,” he says.

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To get serious about bioterrorism, we need a vaccine database

By Sigal Atzmon

Source: https://thehill.com/opinion/healthcare/579069-to-get-serious-about-bioterrorism-we-need-a-vaccine-database

Oct 29 – The United States' response to the COVID-19 pandemic has fallen short and has cost the country significantly in terms of human lives, economic growth and social cohesion. What's more, the health crisis has revealed weaknesses in American national security, of which public health has been shown to be a critical factor. It has shown the world a weakened and divided America.

We still don't know where the virus came from, but we do know that bioterrorism is a potential threat that must be taken seriously, as is cybercrime. Those who wish to do us harm could easily exploit private health information. Essential in the management of any health crisis, whether instigated by bad actors or arising naturally, is the security and management of data. The U.S. vaccine program has been disorganized and haphazard. People get their first dose in one location, the second in another and can walk into a pharmacy and get the third booster in a different state. Aside from paper cards from the Centers for Disease Control and Prevention (CDC), there is no centralized record. The government simply has not been able to keep tabs on who has been vaccinated with what or where or when.

There are security implications as well. Last year we saw another country try to steal American research about the development of vaccines, treatment and testing for COVID-19. If unfriendly nations were to gain access to laboratory and personal data, they could easily change and manipulate it to thwart American public health efforts.

To keep itself safe, the U.S. needs to significantly improve the management of the current and any future health crisis and its data security game. It could do that by investing in a technologically cutting-edge vaccine database that would be developed and coordinated by the federal government and deployed and managed by the states. Currently, American health data is haphazardly organized and stored in myriad, unconnected databases, or even worse, on paper. Creating a centralized system would enable the U.S. to protect its people and economy and minimize security threats, while also ensuring that valuable information relating to the current and future health crises are not exploited by hostile actors.

National security is multi-faceted, but we can no longer look at the numerous elements involved — military, political, cyber, climate, health and others — as siloed. We must take a holistic view of homeland security if we have any hope of effectively combating external threats. And we must realize that public health is tantamount to critical infrastructure. Investing in and defending public health is a direct investment in homeland security.

The creation of the Cybersecurity and Infrastructure Security Agency (CISA) in 2018 was a key step in promoting national security, and since then, President Joe Biden's administration has rightfully pushed for infrastructure investment and promoted cybersecurity standards.

Less logical was his proposal to designate $6.5 billion to establish an Advanced Research Projects Agency-Health (ARPA-H), a biomedical research agency that would speed the development of treatments for widespread diseases such as diabetes, Alzheimer's disease and cancer.

The proposal, which was taken out of the social spending bill earlier this month, was not the best use of taxpayer dollars. The National Institutes of Health already invests more than $30 billion in medical research each year. What we need now is to manage the current crisis, to prepare for those that will inevitably come in the future and to do so in a manner that bolsters homeland security by making sure our digital information is protected. The proposed database would do that, as well as better serve scientific discovery at the same time. It makes little sense to put billions into medical research when there is no centralized database in which to store the information.

The new database would be managed on the state level, with anonymized information being fed up to the federal level, providing real data on a national scale. Access would be limited

to authorized people in the states and only for specific purposes, but the infrastructure would be singular so that the data will be uniform and can be used in the aggregate.
This initiative could be developed under the auspices of CISA or it could be overseen by a new national health body formed with the purpose of advising and helping states with their management of public health data.
This body would promote and coordinate pandemic research and tactical and strategic responses and would provide anonymized, uniform and universal data for policymakers, pharmaceutical companies, and scientific bodies. Most importantly, it would make sure such data was stored and protected effectively and would develop a federal standard for doing so.
Bioterrorism and cyber sabotage is the future of warfare. The United States must protect its people, their health and their data from those who wish the country harm. National security is handled at the federal level and public health data should be, too.

Sigal Atzmon *is the founder and CEO of Medix Global, a shared value, data-driven health management company that serves millions of patients in 90 different countries. She was formerly the head of private banking at UMB, where she managed a portfolio of over $4.5 billion.*

Promise and Peril: Dual-Use Research in the Life Sciences

Source: https://www.homelandsecuritynewswire.com/dr20211029-promise-and-peril-dualuse-research-in-the-life-sciences

Oct 29 – Advances in the life sciences and technology are making important contributions to improving global health. New scientific insights that are translated into technologies which are assimilated by innovative processes to play a crucial role in advancing knowledge and addressing critical societal challenges.
Pandora Report notes, however, that transformative developments in many fields can also pose risks to global health. It is thus only prudent to assess the potential adverse consequences of choosing particular technological pathways and potentially deleterious applications of technologies.
Dual-use research of concern (DURC) is defined as life science research which is intended for benefit but which might be misapplied to do harm. A new report from the World Health Organization (WHO) – titled Emerging Technologies and Dual-Use Concerns: A Horizon Scan for Global Public Health — shares the results of an international horizon-scanning exercise, in which a group of experts, from a range of disciplines, undertook a broad examination of scientific and technological developments which could give rise to concern over the next two decades.
They identified fifteen priorities, including the development of a Global Guidance Framework to Harness the Responsible Use of the Life Sciences. George Mason University Biodefense program director Dr. Gregory Koblentz serves on the WHO's advisory board of independent, international experts which are contributing to the development of this framework.
*Pandora Report*notes that WHO activities on the Responsible Use of the Life Sciences intend to increase awareness and provide tools to exploit the benefits and constrain the risks stemming from dual use life sciences and technologies. WHO works with member states and relevant stakeholders to promote responsible science and establish mechanisms for adopting practices which support safe, secure, and responsible life sciences.
WHO urges member states and stakeholders to better prepare for a changing world, to accelerate and harness the gains from emerging technologies and innovation while monitoring the risks and challenges that might arise from these technologies.
Watch the WHO videos on responsible use in the life sciences here and here.

Here are two sections from the WHO report:

Introduction

Advances in the life sciences and technology are making vital contributions to improving global health. New scientific insights that are subsequently translated into technology and refined, adapted and assimilated by innovative processes play a crucial role in advancing knowledge and addressing critical societal challenges. Yet, transformative developments in a wide range of fields can also pose risks to global health. It is therefore prudent to assess the potential adverse consequences of choosing particular technological pathways and potentially deleterious applications of technologies.
Dual-use research of concern (DURC) is defined as life science research that is intended for benefit but which might be misapplied to do harm (1). Such research has increased substantially in the past two decades. It includes, for instance, synthesis of the poliovirus (2), modification of the mousepox virus (3), production of mammal-transmissible strains of H5N1 avian flu (4, 5) and, more recently, de-novo synthesis of the horsepox virus (6). Dual-use issues can arise in a range of disciplines, beyond experiments for gain of function.

WHO both assesses and addresses concerns about dual use of scientific and technological developments by setting normative standards, issuing guidance and guidelines and facilitating discussions among stakeholders. In 2010, WHO issued guidance on responsible research (7), and, more recently, the WHO's Thirteenth General Programme of Work (2019-2023) mandated that WHO should "be at the forefront of … new scientific fields and the challenges they pose" and should closely monitor and provide guidance on "developments at the frontier of new scientific disciplines" (8). In 2020, WHO convened discussions with key stakeholder groups, including funding organizations, scientific journals and scientific academies and councils (9), and issued guidance on biosafety and biosecurity in biomedical laboratories (10). WHO is currently developing a new guidance framework on responsible use of life sciences.

We report here the results of an international horizon scanning exercise, organized by WHO to ensure foresight. The group of experts, from a range of disciplines, undertook a broad examination of scientific and technological developments that could give rise to concern over the next two decades and identified 15 priorities.

A Horizon Scan of Dual-Use Research of Concern

The WHO Science Division established a Global Health Foresight function to monitor developments and assist Member States in building "futures-thinking" and "horizon-scanning" into strategic health planning. The aim is help Member States better anticipate and prepare for a changing world, to accelerate and fully harness the gains from emerging technologies, while monitoring the risks and challenges that might arise from those technologies.

Horizon-scanning is a systematic process for identifying plausible threats and opportunities from future developments (11, 12). It has been applied widely, including in related areas of biosecurity (13) and public health (14). Previous scans have been effective in capturing impactful emerging issues (15). Horizon scans are not designed to predict the future but rather to identify areas that deserve further attention and deliberation. It can provide useful information for policy and for risk mitigation

For this horizon-scanning exercise, WHO used a structured elicitation process to identify issues that were considered plausibly to raise significant dual-use concerns and convened a multidisciplinary group of global experts to discuss them. The issues were anonymously scored and prioritized and, after discussion, reduced to a shortlist of 32 topics. The shortlist was debated before anonymous rescoring and refinement and reduced to the final list of priorities, presented below.

For the purposes of this exercise, we used the WHO definition of DURC as "life science research that is intended for benefit, but which might easily be misapplied to do harm" (1). This deliberately broad definition casts a wide net to capture a wide range of issues. It emphasizes the ostensibly beneficial nature of research in the life sciences but also the risks of misuse. Such risks could have at least three sources: information generated by well-intended research; methods and technologies developed and used in such research; and the products of such research. Additional risks stem from accidents (biosafety) and possible malicious use (biosecurity). Addressing biosecurity risks can in some cases address biosafety risks and vice versa.

The issues presented consequently cover a range of areas, from governance to disease agents and new methods of delivery. We do not present a ranked list of the issues in order to avoid giving a misleading sense of precision and certainty and to avoid overemphasizing minor differences in scoring. Rather, we present the priorities according to their most likely timelines to realization, as identified by the expert group, with the exception of the identified priority governance issues, which are listed separately. The list should not be seen as one of disconnected, discrete technologies but as a system of interlinked trends. The list is also not an exhaustive list of DURC issues. The horizon scan provided a basis for further deliberation by policy-makers and researchers and for wider public engagement.

Improving Safety in Labs Dealing with Lethal Viruses

Source: https://www.homelandsecuritynewswire.com/dr20211029-improving-safety-in-labs-dealing-with-lethal-viruses

Oct 29 – A project aimed at improving biosafety and biosecurity practices in high-risk laboratories working on dangerous pathogens will be led by Dr. Filippa Lentzos, Co-Director of the Centre for Science and Security Studies (CSSS) in the Department of War Studies at King's College London (KCL).

Alongside Dr. Gregory Koblentz from George Mason University, Dr. Lentzos has received £110,000 worth of funding to develop the Mapping Global Bio Labs project, an online tool that tracks the number of high biocontainment laboratories around the world.

Also known as biosafety-level (BSL) 4 labs, these laboratories undertake hazardous research into lethal viruses to improve our understanding of diseases such as Ebola and Lassa Fever and to better prepare the world against new and emerging diseases.

Research into pathogens is vital for public health, biomedical advances and disease prevention. However, these activities pose significant risks. Surges in the number of labs and an expansion in the high-risk research carried out within them have exacerbated safety and security risks.
The debate on the origins of the Covid-19 pandemic has focused attention on lab leaks and safety lapses in the course of scientific research. Whether or not the pandemic resulted from an accident, the key concern is it could have.
Significantly more countries are expected to build these high-risk labs in the wake of Covid-19 as part of a renewed emphasis on pandemic preparedness and response. In addition, high risk gain-of-function research, which deliberately makes potentially pandemic pathogens such as coronaviruses and influenza viruses more dangerous to humans, will likely increase as scientists seek to mitigate against new and emerging diseases.
These trends make it increasingly urgent to put in place higher national and international standards to address the safety and security risks of working with dangerous pathogens.
"Yet at present, there is no requirement to report these facilities internationally, and no international entity is mandated to collect information on the safety and security measures they have in place, or to provide oversight at a global level," explains Lentzos.
Earlier this year Lentzos and Koblentz conducted a feasibility study to map BSL4 labs and biorisk management indicators globally. The project Mapping Maximum Biological Containment Labs Globally was launched at the annual World Health Assembly meeting in May 2021. The publicly accessible tool provides basic information on where the labs are located, when they were established and their size, as well as some information on local oversight and risk management measures.
KCL notes that the funding will build on the successful feasibility study to create an improved, expanded, and much more detailed resource with which to monitor these high-risk labs worldwide. It is hoped the tool will enable international organizations such as the WHO to keep a closer eye on the activities undertaken in these labs and to ensure adequate biosafety and biosecurity measures are put in place.
"Covid-19 was a wake-up call about the vulnerabilities of our modern, globalized societies to a novel respiratory virus," says Lentzos. "Preventing the next pandemic should be a priority for all countries, and ensuring that research with hazardous pathogens, especially those with potential pandemic properties, is conducted safely, securely and responsibly must be a key element of that strategy."

Covid bioweapon claims 'scientifically invalid', US intelligence reports

By Julian Borger
Source: https://www.theguardian.com/world/2021/oct/29/us-intelligence-report-covid-origins

Oct 29 – Allegations that the Covid-19 virus was designed as a bioweapon – a theory aired by some senior Republicans – are based on "scientifically invalid claims" whose proponents "are suspected of spreading disinformation", the US intelligence agencies have reported.
Most of the 17 US agencies also agree that the virus had not been genetically engineered while observing it is becoming increasingly difficult to detect signs of such tampering. However, the intelligence community is still divided on the question of whether the virus was spread by animal-to-human transmission or as the result of a lab accident, concluding that that may never be known barring a dramatic breakthrough in Chinese cooperation.
A summary of the findings was first published by the Office of the Director of National Intelligence (ODNI) in August, but on Friday the ODNI published a fuller version of the study, giving explanations for their agencies' conclusions.
The theory that the virus, known as Sars-CoV-2, was a bioweapon, which was propagated by Senator Tom Cotton and other hardline Republicans, is rejected at the start of the ODNI report.
"We remain skeptical of allegations that SARS-CoV-2 was a biological weapon because they are supported by scientifically invalid claims, their proponents do not have direct access to the Wuhan Institute of Virology (WIV), or their proponents are suspected of spreading disinformation," the study said.
On the question of genetic engineering, the report said that most intelligence analysts believe the virus was not human-made in any way, though that assessment is calibrated as low confidence. As of August this year, there has been no sign of genetic signatures that are usually the telltale signs of engineering, it said, but pointed to academic studies that "some genetic engineering techniques may make genetically modified viruses indistinguishable from natural viruses".
Four intelligence agencies assessed "with low confidence" that the virus spread from animals to humans through natural interaction. The assessment was based on the generally agreed finding that the Wuhan Institute for Virology (WIV) appeared to have been taken by surprise by the new virus and had scrambled to identify it.

"They also see the potential that a laboratory worker inadvertently was infected while collecting unknown animal specimens to be less likely than an infection occurring through numerous hunters, farmers, merchants, and others who have frequent, natural contact with animals," the study said.
One US agency, not named in the study but reported to be the Defense Intelligence Agency, believes "with moderate confidence" that the outbreak was the result of a lab accident at the WIV or elsewhere, the theory promoted by supporters of Donald Trump.
As evidence, it pointed to the fact that the "closest known relatives to Sars-CoV-2 in bats have been identified in Yunnan province, and researchers bringing samples to laboratories provide a plausible link between these habitats and the city".
The report noted that the WIV "previously created chimeras, or combinations, of Sars-like coronaviruses, but this information does not provide insight into whether Sars-CoV-2 was genetically engineered by the WIV".
The ODNI report said a more definitive account of the origins of the virus is likely to be impossible without greater Chinese cooperation, but it is not optimistic that will happen, noting China's efforts so far to block a further investigation by the World Health Organization.

***Julian Borger** is the Guardian's world affairs editor. He was previously a correspondent in the US, the Middle East, Eastern Europe, and the Balkans. His book on the pursuit and capture of the Balkan war criminals, The Butcher's Trail, is published by Other Press.*

EDITOR'S COMMENT: Given certain rumors about "foreign nations" involvement in the Wuhan Lab and coronaviruses projects we will never know what went wrong and what was the purpose behind playing with potentially deadly viruses …

Why a COVID-19 Vaccine Could Further Imperil Deep-Sea Sharks

Source: https://www.liveinhomecare.com/why-a-covid-19-vaccine-could-further-imperil-deep-sea-sharks/covid-19/

Large sharks may be portrayed as villains in thriller movies and feared by swimmers and surfers, but the predators are still vital to the ocean's ecosystem.
Marine conservationists and advocacy organizations worry that the decline in the carnivores' population is upsetting the ecosystem. The groups blame the decline, in part, on pharmaceutical companies using shark liver oil to develop experimental coronavirus disease 2019 (COVID-19) vaccines.

The liver oil is important to sharks because the oil, fins, and a skeleton made primarily of cartilage help sharks maintain their buoyancy. Unlike most fish, sharks do not have a swim bladder to prevent them from floating upward or sinking to the bottom of the ocean.
Central to the issue is squalene, a compound that comes from shark liver oil that is used with other additives as an adjuvant, which enhances the body's immune response to a vaccine. While all sharks have squalene, large sharks have the biggest livers, which means a higher concentration of oil.
Besides experimental COVID-19 vaccines, squalene is being used in several experimental vaccines including pandemic flu and malaria vaccines, according to the World Health Organization.
Stefanie Brendl, executive director of the advocacy group, Shark Allies, said no one is saying that "hundreds of thousands of sharks" will be caught and used for vaccines. However, as it becomes "normalized" and the global demand increases, it's going to become more difficult to move away from using this animal product, she said.

Advocacy Groups Ask For Alternative to Fish-Derived Squalene

The controversy surrounding scientists' use of squalene comes at a time when pharmaceutical companies are producing more COVID-19 vaccines to send to states with limited supplies. Many states initially began vaccinating those most at risk of developing the coronavirus, such as health care workers, first responders, adults 65 years and older who live in long-term care residences, and people 16-64 years old with high-risk medical conditions.
So far, Pfizer-BioNTech and Moderna have been the only companies granted emergency use authorization by the U.S. Food and Drug Administration (FDA) to distribute their COVID-19 vaccines in the United States. Both companies use mRNA technology, and not squalene, for their vaccines.
GlaxoSmithKline (GSK) is collaborating with Sanofi, Medicago, and Clover Biopharmaceuticals in clinical trials to develop experimental COVID-19 vaccines. GSK, which is under scrutiny by Shark Allies, said it would manufacture the adjuvant, which has squalene as an ingredient.
GSK said while research to explore viable alternatives to fish-derived squalene is ongoing, alternatives are not currently available. The company also said its squalene supplier does not use sharks listed as endangered species under the Convention on International Trade in Endangered Species of Wild Fauna and Flora.
Shark Allies has launched a petition to get pharmaceutical companies to replace the shark squalene in some of the vaccine adjuvants with alternative non-animal-derived squalene.
"Why would a company choose to use shark-derived squalene in their adjuvants over sustainable plant-based alternatives?" the organization asked in its petition. "The only answer we can see, which showed up in our initial research, is cost. It was found that olive-based squalene is approximately 30 percent more expensive than shark squalene."

Studies Confirm Shark Species In Decline

Marine experts say the shark population is declining primarily due to human activities, such as overfishing.
A study published in the journal Science, in March 2007 examined various surveys conducted between 1970-2005 Researchers discovered that scalloped hammerhead and tiger sharks may have declined by 97 percent, while bull, dusky, and smooth hammerhead sharks each declined by 99 percent.
As the number of large sharks declined, rays and skates increased considerably along the East Coast and were eating up shellfish, particularly bay scallops, the study said.
The shark decline continues, according to a more recent report by the International Union for Conservation of Nature (IUCN), which documents the status of the world's animal and plant species.
Released in December, the IUCH's comprehensive report found more than 300 species of sharks and rays are threatened with extinction. Among those most at risk are four hammerhead shark species, four species of angel shark, and the giant manta ray. The report also mentioned that 31 animal and fish species have been declared extinct.
Besides sharks, wildlife advocates are also concerned about the horseshoe crab, which has also been used by pharmaceutical companies. The crabs have milky blue, blood that scientists use to produce limulus amebocyte lysate (LAL), a clotting agent that protects the crab from bacteria, fungi, and harmful proteins.
Pharmaceutical companies use LAL as the safety standard to test for contaminants in drugs, medical devices, and vaccines, like the COVID-19 vaccine. LAL will either clot or change color when dangerous bacterial toxins are detected.
Although the crabs are returned to the water after the blood draw, an estimated 15 percent of the crabs die, t, according to a study used by the Atlantic States Marine Fisheries

Commission, which regulates commercial fishing of horseshoe crabs. The biomedical industry estimates between 3-5 percent. Barbara Brummer, the state director of The Nature Conservancy in New Jersey, says the industry is not "transparent" as to how many crabs recover and make it to the next reproductive cycle. In the meantime, marine conservationists continue to monitor the decrease in the large shark population. The experts say that sharks keep the marine ecosystem in balance by preying on animals that are on the lower end of the food chain. A decrease in the large shark population means an increase of other predatory fish and marine animals that would eliminate the amount of fish available for food.

Links

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Ignorance

The Otemachi-based Yoshinoya Tokyo has announced the new "Tokyo Lantern Dinner," which has been proposed to suit the 'New Normal' of the Covid-19 generation. The unique shape of this elastic lantern allows customers to enter and exit freely, and part of the lantern has been made using a 0.15mm transparent vinyl meaning that face-to-face conversations can be held with ease. In addition, the lantern is equipped with a light that gently illuminates the face and food of the person seated beneath it. The private dining area is 40m^2 and the air is renewed 5.5 times per hour (Japanese building law requires renewal 0.5 times an hour).

EDITOR'S COMMENT: Humanity is facing one of the most "*clever*" viruses EVER! And owners of this dining facility take for granted that the SARS-CoV-2 will not bypass the lantern from the open bottom of the structure and spread in the area despite the high air refresh rate?

Needle-Free Vaccine Patches Are Just a Matter of Time Now, Latest Results Indicate

Source: https://www.sciencealert.com/new-mouse-study-suggests-needle-free-vaccine-patch-should-be-coming-very-soon

Nov 01 – Effective vaccines, without a needle: Since the start of the COVID-19 pandemic, researchers have doubled down on efforts to create patches that deliver life-saving drugs painlessly to the skin, a development that could revolutionize medicine.
The technique could help save children's tears at doctors' offices, and help people who have a phobia of syringes.
Beyond that, skin patches could assist with distribution efforts, because they don't have cold-chain requirements – and might even heighten vaccine efficacy.
A new mouse study in the area, published in the journal *Science Advances*, showed promising results.
The Australian-US team used patches measuring one square centimeter that were dotted with more than **5,000 microscopic spikes**, "so tiny you can't actually see them," David Muller, a virologist at the University of Queensland and co-author of the paper, told AFP.

These tips have been coated with an experimental vaccine, and the patch is clicked on with an applicator that resembles a hockey puck. "It's like you get a good flick on the skin," said Muller.
The researchers used a so-called "subunit" vaccine that reproduces the spikes that dot the surface of the coronavirus.
Mice were injected either via the patch over the course of two minutes, or with a syringe.
The immune systems of those who got the patch produced high levels of neutralizing antibodies after two doses, including in their lungs, vital to stopping COVID, and the patches outperformed syringes.
The researchers also found that a sub-group of mice, who were given only one dose of vaccine containing an additional substance called an adjuvant used to spur immune response, "didn't get sick at all," said Muller.

Easy to apply

What makes them more effective?

Vaccines are normally injected into our muscles, but muscle tissue doesn't contain very many immune cells needed to react to the drug, explained Muller.

In addition, **the tiny spikes cause localized skin death, which alerts the body to a problem and triggers a greater immune response.**

For the scientist, the logistical advantages couldn't be clearer.

First, **when dry-coated on a patch, the vaccine is stable for at least 30 days at 25 degrees Celsius (77 degrees Fahrenheit) and one week at 40C (104F), compared to a few hours at room temperature for the Moderna and Pfizer vaccines.**

This offers a major advantage particularly for developing countries.

Second, "**it's very simple to use,**" said Muller. "You don't necessarily need highly trained medical professionals to deliver it."

Burak Ozdoganlar, a professor of engineering at Carnegie Mellon University in the US city of Pittsburgh, has also been working on the technology since 2007.

He sees yet another advantage: "Less amount of vaccine delivered precisely to skin can activate an immune response similar to intramuscular injection," he told AFP. It's an important factor as the developing world struggles to procure enough COVID vaccine.

Ozdoganlar can produce around 300-400 patches a day in his lab, but hasn't been able to test them out on mRNA vaccines, which have come to the fore during the pandemic, because he hasn't been authorized by Pfizer or Moderna.

'The future'

The patch used in the study published on Friday was made by Australian company Vaxxas, which is the furthest along. Human trials are planned from April.

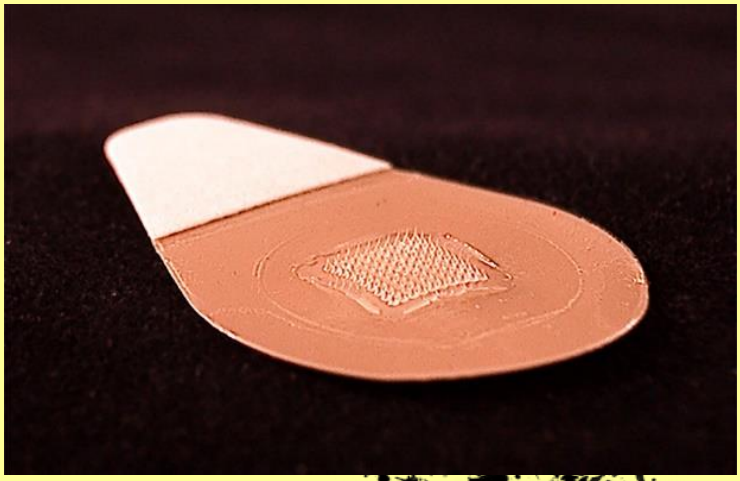
Two other American companies are also part of the race: Micron Biomedical and Vaxess.

The latter, founded in 2013 and based in Massachusetts, is working on a slightly different type of patch, with microneedles that dissolve in the skin.

They say this approach has the benefit of requiring fewer spikes per patch – just 121 – made of a protein polymer that is biocompatible.

"We're working on a seasonal COVID and flu combination product that will be mailed directly to patients' homes, for self-administration," CEO Michael Schrader told AFP.

The COVID vaccine they are using is produced by the company Medigen, already authorized in Taiwan.



Vaxess has just opened a factory near Boston, with funding from the US National Institutes for Health. They aim to produce enough patches to vaccinate 2,000 to 3,000 people in clinical trials, which are to be launched next summer.

The main challenge right now is production, with no manufacturers yet able to make enough patches en masse.

"If you want to launch a vaccine you have to produce hundreds of millions," said Schrader. "We do not have that scale as of today – no one really has that scale." But the pandemic has given a push to the nascent industry, which is now attracting more investors, he added.

"This is the future, in my opinion, it is inevitable," said Schrader. "I think you're going to see over the next 10 years, this (will) pretty dramatically reshape the way that we get vaccines around the world."

Ethics Issues Remain Central to Genetic Engineering and Biotechnology

By Thomas H. Murray, PhD

Source: https://www.genengnews.com/commentary/ethics-issues-remain-central-to-genetic-engineering-and-biotechnology/

Oct 04 – In 1982, when I wrote my first ethics column for *Genetic Engineering News*, enthusiasm for genetic engineering's potential to remake medicine, manufacturing, and agriculture was set against grave concerns for the perils critics feared it might create. By 1986, I had written 28 columns on ethics and genetic engineering for *GEN*, with a bonus 29th five years later on the landmark case of *Moore* v. *Regents of the University of California*.

Some of the issues addressed in those columns now look like historical curiosities, I suspect. They were not so at the time; instead, they were the subjects of furious debates and academic quarrels with vital consequences for public policy, the economy, and the future of genetic engineering and biotechnology. The U.S. Congress and other public bodies launched hearings and other efforts to sort out the ethical issues that came with our rapidly increasing power to manipulate DNA. In that era, I gave invited testimony seven times before the U.S. House of Representatives and three times for the U.S. Senate, along with working on four reports for the U.S. Congress's Office of Technology Assessment.

Unsurprisingly, the ethical issues that interested the readers of *GEN*—or, at least, the issues I wrote about—paralleled those the Senate and Congress thought worth their attention: The values at stake when industry develops stronger ties with universities and researchers; the ethics of using human tissue for commercial purposes (think Henrietta Lacks and the HeLa cell line, or John Moore and the Mo cell line); protecting the human subjects of research; and a bit later, the ethical issues we would confront if we launched a massive effort to map and sequence all human DNA.

Three goals

I had, roughly speaking, three goals. The first was to alert readers to ethical issues such as likely uses and misuses of genetic information. Already companies were doing genetic screening of workers—surreptitiously in some cases—with the company's interest foremost. Another vital matter was how best to respect and protect the human subjects of research. Jesse Gelsinger's death in 1999 may have set back gene therapy for years. An FDA investigation uncovered multiple violations, including failures to disclose relevant information in the informed consent process. (Note: I was a member of the NIH Director's Working Group on Oversight of Gene Therapy Research in 2000 in response to Jesse Gelsinger's death.)

Proper attention to research ethics might have prevented that death and its sequelae. The prospect of biosynthetic human hormones such as growth hormone and later EPO created temptations to human enhancement in sport and other realms, calling for (unfortunately rare) wisdom and self-restraint.

My second goal was to deepen our understanding of context and meaning in relation to genetic engineering and biotechnology. How, for example, should we think about the use of human tissues and cells in research, and about commercializing them? I suggested understanding them as gifts of a kind—but that requires acting as grateful recipients, which has its own demanding ethics.

Some matters that get raised as ethical issues turn out to be insignificant. So, the third goal was identifying and setting aside concerns that didn't amount to important ethical issues. The clearest example of that was probably the widespread argument that mapping and sequencing the human genome would somehow diminish our moral significance.

I pointed out to Congress the fact that because Beethoven's Ninth Symphony can be laid out in musical notation, that in no way diminishes the glory of a magnificent performance of that piece. Likewise, representing the human genome via its genetic sequence in no way diminishes the life of any human being. Every one of us is a "performance" of that genome, magnificent or otherwise.

New ethical issues arise as biotechnology realizes its potential. With the development of novel therapies for grave diseases, some companies devise Expanded Access Programs meant to give people access to therapies that offer real hope for a better, longer life as soon as sound evidence emerges that the therapies are indeed safe and effective. I've been privileged to be involved in developing such programs, and identifying the principles that should guide their design.

There will always be ethical issues in genetic engineering and biotechnology. I must say that it's gratifying to work on those that come with increasing success in addressing human needs and alleviating human suffering.

EDITOR'S COMMENT: Ethical issues central to genetic engineering and biotechnology? Really? With all the respect to Prof. Murray, what about ethics in virology research at military and civilian levels? What about the reconstruction of the 1918 H1N1 pandemic virus or horsepox virus in the lab? What happened with the ethics now to start thinking about tomorrow and the future?

Post-Infection COVID-19 Antibodies Last at Least 10 Months

Source: https://www.sciencealert.com/covid-19-antibodies-last-at-least-10-months-in-infected-people-evidence-suggests

Nov 01 – As the COVID-19 pandemic stretches towards the end of its second year, there's still much we don't know and a lot we're still learning about the antibodies we produce in response to SARS-CoV-2.

Specifically, how long do these proteins produced by the immune system last in the body, giving us some measure of built-in defense against the virus? How well do antibodies fare against different variants of the coronavirus, and how different is the protection afforded by vaccination-based antibodies from antibodies produced by prior infection?

Now, a new study led by scientists in the UK gives us a few new leads to address some of these unknowns.

First up, some good news based on the data: The blood of people who were infected in the first wave of the pandemic and then recovered, appears to retain antibodies for up to at least 10 months post onset of symptoms (POS).

"Initial concerns were that the SARS-CoV-2 antibody response might mimic that of other human endemic coronaviruses, such as 229E, for which antibody responses are short-lived and re-infections occur," the team explains in the paper, led by first author and infectious diseases researcher Liane Dupont from King's College London.

"However, our data and that of other recent studies show that although neutralizing antibody titers decline from an initial peak response, robust neutralizing activity against both pseudotyped viral particles and infectious virus can still be detected in a large proportion of convalescent sera at up to 10 months POS."

In the new study, Dupont and fellow researchers examined convalescent sera from 38 individuals, representing a mixed cohort of patients and healthcare workers, all of whom were infected in wave 1.

A previous study by some of the same team showed SARS-CoV-2 antibody levels beginning to drop after reaching peak levels at about three to five weeks POS, and it wasn't known if the drop kept happening beyond the three-month point POS.

Thankfully, the newer data show some encouraging signs. Firstly, neutralizing antibodies were still detected in convalescent sera for up to 10 months POS – the point at which the study was terminated and data processed for publication.

Secondly, there was also evidence of some cross-neutralizing activity against SARS-CoV-2 variants, meaning people who were only ever exposed to the original 'wild type' SARS-CoV-2 might still have some level of protection from later, mutated variants, although at lower levels.

"Overall, wave 1 sera showed neutralizing activity against B.1.1.7 [aka the Alpha variant], P.1 [Gamma] and B.1.351 [Beta], albeit at a lower potency for B.1.1.7 and B.1.351," the researchers write.

Other results showed that infection with the SARS-CoV-2 variants – including B.1.617.2, aka Delta – "generates a cross-neutralizing antibody response that is effective against the parental virus but has reduced neutralization against divergent lineages", the researchers explain, noting that for now, vaccines developed using the spike protein from the original virus are likely to provide the broadest antibody response against current variants of concern, and newly emerging lineages.

It's worth noting that lab experiments measuring antibody activity in blood samples under glass is not the same thing as measuring people's ability to actually fight the virus off in real life, but there is still promising news here, including potentially for future vaccine research and design.

"Although sustained neutralization against the infecting SARS-CoV-2 variant is important, efficacious cross-neutralizing activity is essential for long-term protection against emerging SARS-CoV-2 variants," the researchers write.

"Observations suggest that COVID-19 vaccine boosting could be an important step for increasing both neutralization breadth and vaccine efficacy against newly emerging SARS-CoV-2 variants of concern."

▶▶ **The findings are reported in** *Nature Microbiology*.

New Study Reveals Zinc Really Might Help Treat a Cold, But There's a Catch

Source: https://www.sciencealert.com/zinc-is-back-in-the-light-as-a-potential-for-treating-respiratory-infections

Nov 02 – In 1771, the German physician Hieronymus David Gaubius introduced the western scientific community to "a medication with many promises" – zinc. More than 200 years later, we can find it amongst the many supplements on pharmacy shelves. It's even known to be one of the rare things that might help fight off a common cold. Or does it? Evidence for zinc supplement use is limited, study results have been mixed, and dosage, formulation and length of prescription have not been investigated properly to date.

A new meta-analysis of 28 randomized controlled trials has now strengthened the notion that supplementing zinc could prevent symptoms and shorten the duration of viral respiratory infections, like the common cold or the flu.
"It is commonly thought that zinc's role in preventing and treating infections is only for people who are zinc deficient; our findings really challenge this notion," says integrative medicine doctor Jennifer Hunter from Western Sydney University in Australia.
"The two large trials from China found very low dose zinc nasal spray reduced the risk of clinical illness. The two smaller trials in the US that evaluated the preventive effects of oral zinc excluded people who were zinc deficient.
"All the other trials that evaluated zinc for treating the common cold were in populations where zinc deficiency is very unlikely."
When zinc was taken as a preventative measure, the analysis found there was a 28 percent lower risk of developing milder symptoms, and an 87 percent lower risk of developing moderately severe symptoms. As a treatment, taken *after* getting sick, zinc was also found to slightly reduce the time symptoms stuck around for. Usually, taking zinc reduced the worst symptoms by around two days.
That's a fairly minimal effect, especially when you consider the symptoms remained just as severe overall. What's more, if the patient is purposefully infected with a cold virus, the zinc doesn't stop them from contracting the illness. This analysis is an intriguing step forward, but the researchers also caution that some of the studies included were small, did not compare the same dosages, and could include bias in the reporting of symptoms. This is something that always has to be kept in mind when conducting meta-analyses – the resulting data will only be as reliable as the input. Also, while the findings are interesting, they can't tell us much about how zinc actually curbs a viral infection like a cold.
Before the late 18th century, when Gaubius offered up the 'secret drug' he had 'found', zinc was mostly being sold by alchemists to treat severe convulsions. When Gaubius got his hands on the powder, however, he discovered it was nothing more than zinc oxide.
For a while in the 19th century, zinc was used to treat epilepsy, but by the 20th century, the medication had faded out of popularity and out of our minds. It wasn't until the 1960s that zinc resurfaced as a potential treatment for natural zinc deficiencies and a rare inherited disorder called Wilson's disease, which causes a build-up of copper in vital organs. As an anti-copper agent, zinc has since proved to be quite an effective treatment for this neurological disease. When it comes to fighting viral infections, however, its potential remains largely unrealized. Nevertheless, some health guidelines recommend oral zinc for those fighting lower respiratory infections, and the recent COVID-19 pandemic has brought its potential to light again. Despite pending results from a few randomized control trials, some healthcare workers have already started to use zinc as a treatment for COVID-19.

The risks are low if the patient is screened correctly and the dosage does not get too high. Unless a person has a disorder that allows bodily zinc to filter into the brain, there are almost no serious health effects from taking the supplement.

Some dosages of zinc can, however, come with non-serious side effects, like nausea or, as is common with using too much zinc nasal spray, a loss of smell. And overall, we still don't even know what's the best way to take zinc, either.
"Clinicians and consumers need to be aware that considerable uncertainty remains regarding the clinical efficacy of different zinc formulations, doses and administration routes," says Hunter.
"At the moment there just isn't enough research to say whether a zinc nasal spray, versus a nasal gel, versus a lozenge, versus oral zinc is any better or worse than the others. Most of the trials used zinc gluconate or zinc acetate formulations, but that doesn't mean that other zinc compounds are less effective." We simply need more research. Gaubius would surely agree.

▶▶ **The study was published in** *BMJ Open*.

Side effects and Immunogenicity following administration of the Sputnik V COVID-19 vaccine in health care workers in Iran

By Farhang Babamahmoodi, Majid Saeedi, Reza Alizadeh-Navaei, et al.
Scientific Reports volume 11, Article number: 21464 (2021)
Source [full paper]: https://www.nature.com/articles/s41598-021-00963-7

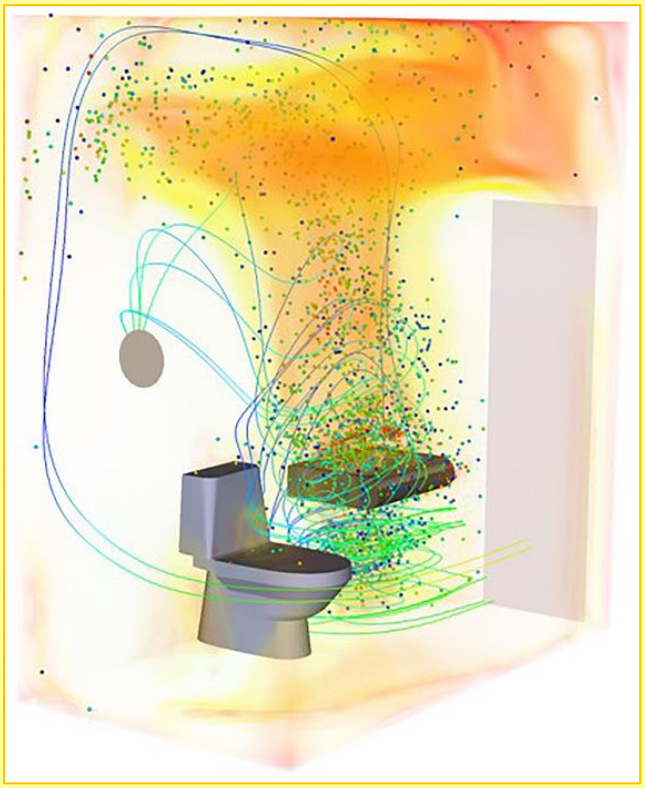
The Sputnik V is a COVID- 19 vaccine developed by the Gamalia institute of epidemiology and microbiology and released on August 11, 2020. We provided independent evidence on side effects and immunogenicity following the administration of the Sputnik V COVID-19 in Iran. In this observational study, the healthcare workers who were vaccinated with the Sputnik V COVID-19 vaccine within February and April 2021 were evaluated. Among a total of 13,435 vaccinated healthcare workers, we received 3236 self-declaration reports of Sputnik V associated adverse events with the mean age 39.32 ± 10.19 years old which 38.8% were men and 61.2% were women. Totally 68.8% of females versus 66.2% of males

reported side effects after receiving the first dose and 31.2% of females versus 33.8% of males reported side effects after the second dose of vaccine. The most common side effect was a pain in the injection site (56.9%), fatigue (50.9%), body pain (43.9%), headache (35.7%), fever (32.9%), joint pain (30.3%), chilling (29.8%) and drowsiness (20.3%). Side effects of the vaccine were significantly more frequent in females and younger individuals. Among a total of 238 participants, more than 90% after the first and second dose of vaccine had a detectable level of SARS-CoV-2 RBD antibody and SARS-CoV-2 neutralizing antibody. Although the overall rate of adverse effects was higher than the interim results from randomized controlled trials, our findings support the manufacturer's reports about the high humoral immunogenicity of vaccine against COVID-19.

Ventilation matters: Engineering airflow to avoid spreading COVID-19

Source: https://www.eurekalert.org/news-releases/933078

Nov 02 – As we approach two full years of the COVID-19 pandemic, we now know it spreads primarily through airborne transmission. The virus rides inside tiny microscopic droplets or aerosol ejected from our mouths when we speak, shout, sing, cough, or sneeze. It then floats within the air, where it can be inhaled by and transmitted. This inspired researchers in India to explore how we can better understand and engineer airflow to mitigate the transmission of COVID-19. To do this, they used their knowledge of airflow around aircraft and engines to tailor the airflow within indoor spaces.



In Physics of Fluids, from AIP Publishing, they report computer simulations of airflow within a public washroom showing infectious aerosols in dead zones can linger up to 10 times longer than the rest of the room. These dead zones of trapped air are frequently found in corners of a room or around furniture.

Recirculating flow in a dead zone over the wash basin can trap infectious particles for a long time (Credit: Vivek Kumar, Ansys Inc.)

Washrooms generate aerosols and are present within offices, restaurants, schools, planes, trains, and other public spaces. They have been identified as a potential source of infection transmission within densely populated areas in India.

"We explored a small, single-person facility used by many, one after another," said Krishnendu Sinha, a professor of aerospace engineering at the Indian Institute of Technology Bombay. "I have a similar washroom in my house, which made it easier to study it. Mobility was restricted, and laboratories were closed, but this allowed us to continue our study during the lockdown."

The researchers discovered that chances of infection are significantly higher in a dead zone.

"Surprisingly, they can be near a door or window, or right next to where an air conditioner is blowing in air," he said. "You might expect these to be safe zones, but they are not."

Computer simulations show "air flows in circuitous routes, like a vortex," said Vivek Kumar, a co-author. "Ideally, air should be continuously removed from every part of the room and replaced by fresh air. This isn't easy to do when air is recirculating in a dead zone."

The biggest questions around airflow center around how to ventilate indoor spaces to minimize infection spread. Where should fans and ventilation ducts be placed? How many of them? How much air should flow through them?

"Currently, ventilation design is often based on air changes per hour (ACH)," said Sinha. "These design calculations assume fresh air reaches every corner of the room uniformly. From computer simulations and experiments within a real washroom, we know this does not occur.

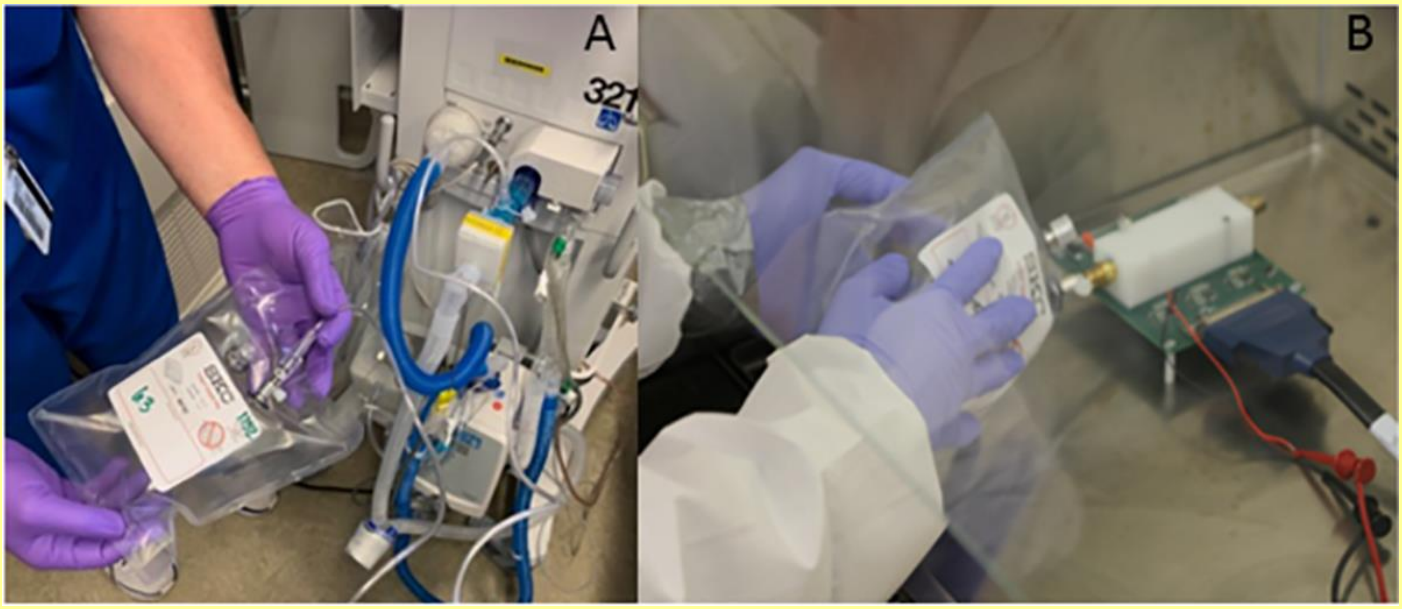
"ACH can be 10 times lower for dead zones. To design ventilation systems to be more effective against the virus, we need to place ducts and fans based on the air circulation within the room. Blindly increasing the volume of air through existing ducts will not solve the problem."

The article, "Effect of recirculation zones on the ventilation of a public washroom," is authored by Krishnendu Sinha, Mani Shankar Yadav, Utkarsh Verma, Janani Sree Murallidharan, and Vivek Kumar. It will appear in Physics of Fluids on Nov. 2, 2021 (DOI: 10.1063/5.0064337). After that date, it can be accessed at: https://aip.scitation.org/doi/10.1063/5.0064337.

Breath Test Study Shows 'Novel' Way to Rapidly Test for COVID

Source: https://www.medscape.com/viewarticle/962019

Nov 01 – Results were promising in a study of a breath test for diagnosing COVID-19 in critically ill patients. The study was published online on Thursday in *PLOS ONE*. Lead author Matthew Exline, MD, a pulmonology and critical care expert at the Ohio State University (OSU) Wexner Medical Center, in Columbus, Ohio, and colleagues write, "The 'breath print' identified patients with COVID-19 pneumonia with 88% accuracy upon their admission to the ICU [intensive care unit]." Diagnosis took only 15 seconds, the authors say. The study included **46 ICU patients** who were undergoing mechanical ventilation. Of those, 23 had active COVID-19, and 23 did not have COVID. The patients who did not have COVID served as controls for the study. Exhaled breath bags were collected on ICU days 1, 3, 7, and 10 or until the patient was removed from mechanical ventilation. The breathalyzer detected high concentrations of exhaled nitric oxide in a pattern that was was distinctive for patients with active COVID-19 pneumonia.



A. Breath bag was connected to exhalation port of ventilator at approximately 1 liter of exhaled gas was collected over 3–5 respiratory cycles. **B.** Samples were brought to a BSL 3 lab and attached to breathalyzer circuit in hood.

Faster, Cheaper Than the Gold Standard

Exline told *Medscape Medical News* that although the 88% accuracy rate is less than that of the gold-standard molecular tests approved by the US Food and Drug Administration (FDA), the breath test is much faster and cheaper and is less invasive. The FDA-approved molecular tests are reported to have an accuracy of 99%. Results from reverse transcription polymerase chain reaction (RT-PCR) tests can take many hours, Exline notes. Additionally, with molecular tests, patients have continued to test positive after the infection has resolved. Exline's co-author for the study, Perena Gouma, PhD, chair in ceramic engineering at OSU, had been working on the breathalyzer long before the COVID-19 pandemic. She wanted to test it with COVID patients. It was decided to test the device on patients in the ICU because these patients could be followed over time and it was known that they had severe COVID-19. The researchers were blinded to which patients had COVID-19 and which patients did not. The researchers are also testing to see whether the breathalyzer can detect COVID-19 in patients who have less severe disease. The patients in that study are outpatients currently at OSU, Exline said. "We see this as a technology that could in the future be a new, novel way of detecting disease [in addition to] COVID," he said.

Other Breath Test in the Works

Several centers around the world are working on developing such tests. Exline said, "To our knowledge, no one has a commercially viable breathalyzer." He said the advantage of the breathalyzer Gouma designed is that "[w]e would have the ability to change the molecule we're detecting pretty quickly" if COVID were to eventually change signatures.

The Netherlands rolled out its version of a rapid breath test, called SpiroNose, earlier this year. With that device, people breathe into a machine. The device can indicate a possible SARS-CoV-2 infection within a minute, Reuters reports. Patients who test positive then undergo testing with PCR to confirm that the infection is SARS-CoV-2.

At the Children's Hospital of Philadelphia, in Pennsylvania, Audrey Odom John, MD, PhD, and colleagues have identified biomarkers in children's breath that are unique COVID-19.

Their findings were published this year in *ACS Infectious Diseases.* John is a co-inventor on a preliminary patent for SARS-CoV-2 biomarkers. Researchers at Rutgers University, in Newark, New Jersey, are working on a breathalyzer that they hope will yield a COVID diagnosis in 10 minutes.

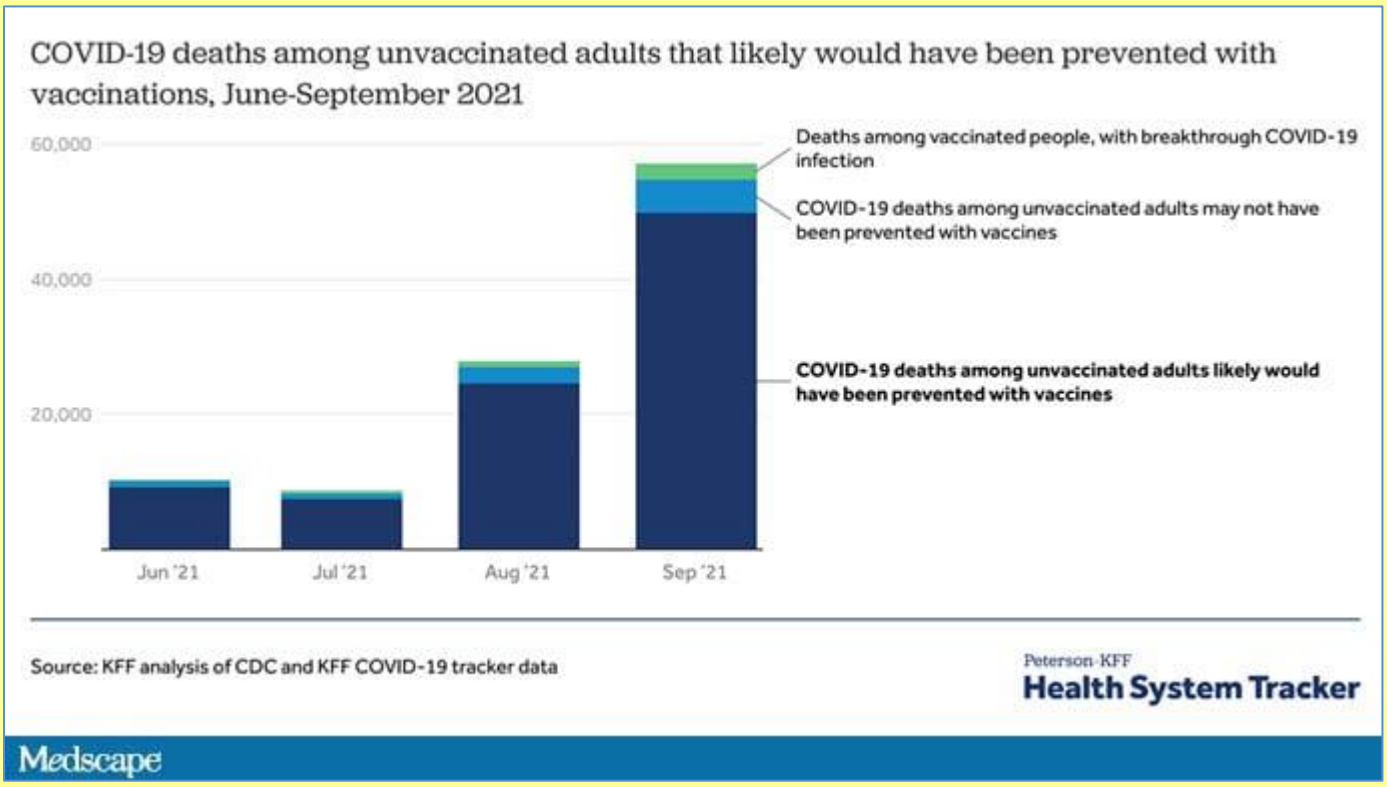
Two startups in Singapore have developed breath tests for COVID-19 that reportedly produce results in less than 2 minutes. According to *Nikkei Asia,* the tests are designed to be used at large events and for border control.

No Vaccine, Thank You: We're Invincible

By F. Perry Wilson, MD, MSCE

Source: https://www.medscape.com/viewarticle/961510

Oct 27 – With vaccine authorizations hitting the 5- to 12-year-old age group soon, we'll see an uptick in the overall vaccination rate in the United States, but of course there are tens of millions people who are eligible for the vaccine who remain unvaccinated. This is a problem. According to a Kaiser study, 90,000 COVID deaths since June 2021 would have been prevented by vaccination.

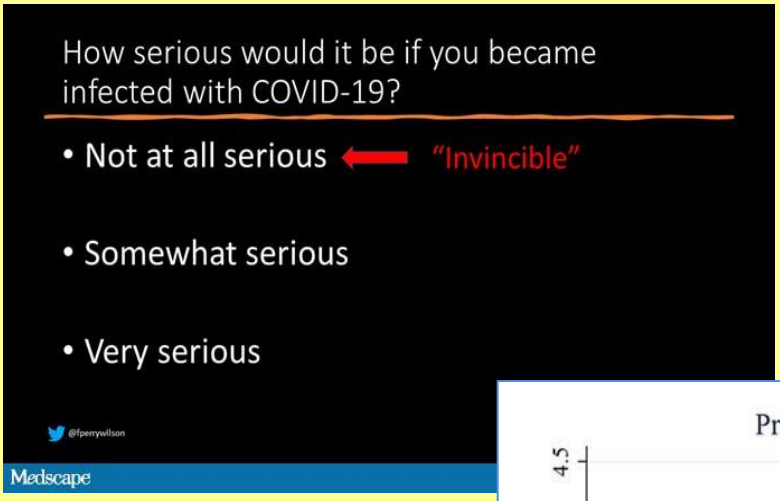


But the rhetoric surrounding *why* people choose not to get vaccinated tends to focus on the perception of harm. The narrative quickly settles on the idea that people who don't get vaccinated think the risks of the vaccine are way higher than they actually are. And of course, plenty of good faith and bad faith debate occurs on social media surrounding those risks.

But that's a bit one-sided. A new article appearing in PLOS One shows us what is, I think, an equally plausible reason some people choose not to get vaccinated. It's not that they overestimate the risk of vaccination; they underestimate the risk of COVID. Or, as the authors put it, they feel invincible.

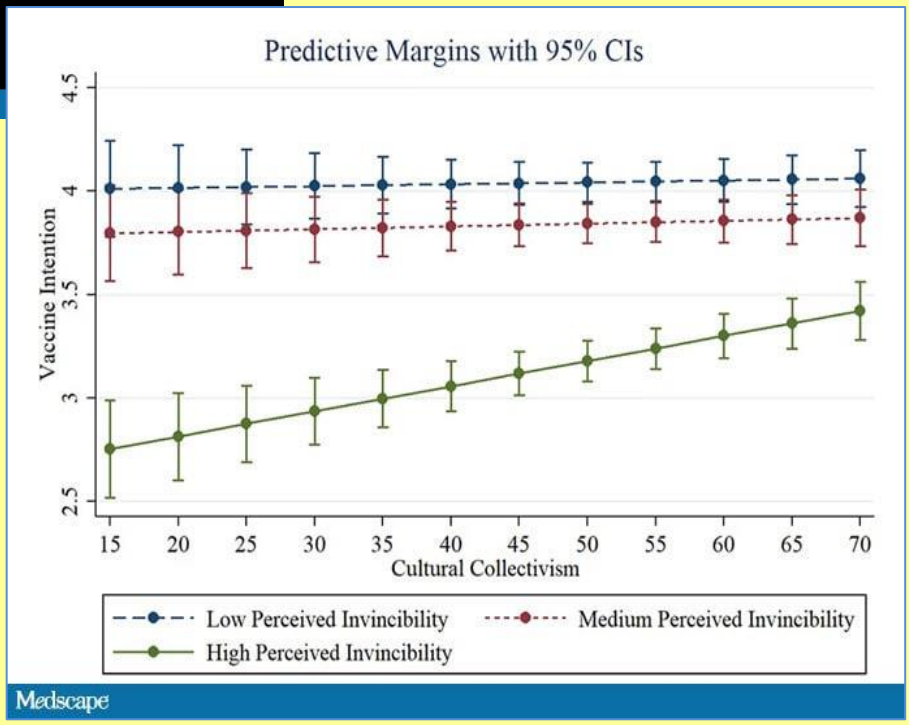
Invincibility is actually a relatively well-studied phenomenon in the psychological literature. It has various definitions, but it basically refers to an individual, false belief that one will be successful in any endeavor, regardless of risk. Invincibility promotes risky behaviors, including taking less precautions when driving or having sex. Maybe people don't choose to get vaccinated because they feel invincible to coronavirus.

A feeling of invincibility is quite personal; you might even call it egocentric. But we don't *only* get vaccinated to protect ourselves, but also to protect our community. How does a society's stance on collectivism interplay with the individual feeling of invincibility to lead to choices about vaccination?



To answer the questions, the researchers conducted a survey that spanned 51 countries and nearly 300,000 individuals. Of note, the survey was conducted from July to November 2020 — so no vaccines had actually been released yet. To get at the sense of invincibility they asked, "How serious would it be if you became infected with COVID-19"? They also asked about intention to get vaccinated and about how important it is to take actions to prevent the spread of COVID-19 in your community.

Let's focus on willingness to get vaccinated.



Topline results (right figure) are no surprise. Those who felt invincible — that an infection would be "not at all serious" — were much more likely to state they weren't going to be vaccinated. In fact, it appears that a feeling of invincibility was the single most significant predictor of not getting vaccinated — beating out age, sex, and level of education.

Feeling invincible to COVID-19 was also linked to feeling that pro-social behaviors, like mask-wearing and social distancing, aren't important — which makes sense I suppose. If you don't think COVID can hurt you, you might also think it can't hurt others. That said, in countries with more of a collectivist culture, the effect of feeling invincible was strongly mitigated. As you can see here, as the collectivism score of a country increases, the vaccine intention, even among those who feel invincible, also increases.

This suggests a potential path forward, the authors write. Perhaps in the less collectivist countries, like the United States, an appeal to community would move the needle, even among those who feel they would handle the virus just fine.

President Biden has been hitting the pro-social themes in multiple speeches, probably for just this reason.

As President Biden said, It's the only way we ever get back to normal — to cheer together in stadiums full of fans; to gather together on holidays again safely; go to graduations, weddings.

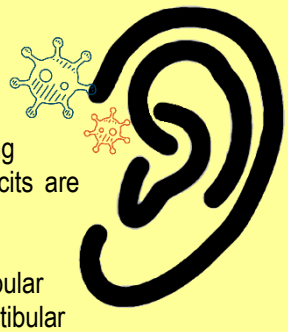
Of course, sometimes it's the message, and sometimes it's the messenger.

Look, there are plenty of people out there who believe that COVID-19 won't affect them very much. Many of them are right. But some of them are very wrong. And right now, we have no good way to figure out in advance who is who. And that's the problem with feeling invincible, right? In the end, the real end, the ultimate end, none of us are.

***F. Perry Wilson, MD, MSCE**, is an associate professor of medicine and director of Yale's Clinical and Translational Research Accelerator.*

Direct SARS-CoV-2 infection of the human inner ear may underlie COVID-19-associated audiovestibular dysfunction

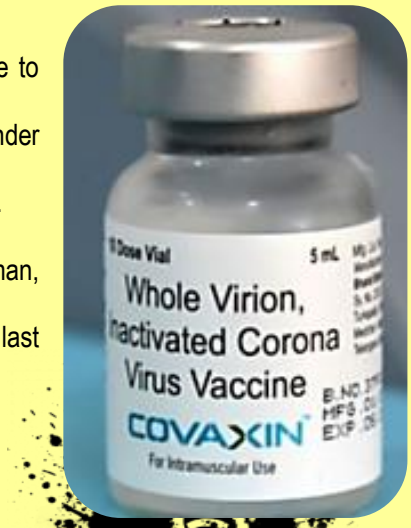
By Minjin Jeong, Karen E. Ocwieja, Dongjun Han, et al.
Communications Medicine volume 1, Article number: 44 (2021)
Source: https://www.nature.com/articles/s43856-021-00044-w



Backg round
COVID-19 is a pandemic respiratory and vascular disease caused by SARS-CoV-2 virus. There is a growing number of sensory deficits associated with COVID-19 and molecular mechanisms underlying these deficits are incompletely understood.
Methods
We report a series of ten COVID-19 patients with audiovestibular symptoms such as hearing loss, vestibular dysfunction and tinnitus. To investigate the causal relationship between SARS-CoV-2 and audiovestibular dysfunction, we examine human inner ear tissue, human inner ear in vitro cellular models, and mouse inner ear tissue.
Results
We demonstrate that adult human inner ear tissue co-expresses the angiotensin-converting enzyme 2 (ACE2) receptor for SARS-CoV-2 virus, and the transmembrane protease serine 2 (TMPRSS2) and FURIN cofactors required for virus entry. Furthermore, hair cells and Schwann cells in explanted human vestibular tissue can be infected by SARS-CoV-2, as demonstrated by confocal microscopy. We establish three human induced pluripotent stem cell (hiPSC)-derived in vitro models of the inner ear for infection: two-dimensional otic prosensory cells (OPCs) and Schwann cell precursors (SCPs), and three-dimensional inner ear organoids. Both OPCs and SCPs express ACE2, TMPRSS2, and FURIN, with lower ACE2 and FURIN expression in SCPs. OPCs are permissive to SARS-CoV-2 infection; lower infection rates exist in isogenic SCPs. The inner ear organoids show that hair cells express ACE2 and are targets for SARS-CoV-2.
Conclusions
Our results provide mechanistic explanations of audiovestibular dysfunction in COVID-19 patients and introduce hiPSC-derived systems for studying infectious human otologic disease.

Covaxin: WHO approves India Covid vaccine for emergency use

Source: https://www.bbc.com/news/world-asia-india-58800168



Nov 03 – The World Health Organization (WHO) has granted approval for emergency use to India's government-backed Covid-19 vaccine, Covaxin.
The vaccine was approved in India in January while the third phase of clinical trials was still under way, sparking some concern and criticism.
Bharat Biotech, which makes the vaccine, has since published data suggesting 78% efficacy.
The WHO said in a tweet it believed the benefits far outweighed the risks.
Some experts had pointed to a fast-track approval and incomplete data, but the firm's chairman, Dr Krishna Ella, said the vaccine was "200% safe".
The WHO's expert panel, which authorises emergency approvals, had asked for more data last month while examining the application Bharat Biotech had filed in July.
In its approval it said:

- The vaccine was recommended for use in **two doses**, with a dose interval of four weeks, in all age groups 18 and above

- Covaxin had **78% efficacy** against Covid 19 of any severity, 14 or more days after the second dose, and is extremely suitable for low- and middle-income countries due to easy storage requirements
- Available data on vaccination of pregnant women with the vaccine are insufficient to assess vaccine safety or efficacy in pregnancy

The approval will also be a relief to the tens of millions of Indians who have received the jab - India has administered more than 105 million Covaxin doses so far - and a fillip for Bharat Biotech.

Few countries have recognised Covaxin and India hopes the WHO approval will change that.

How that will play out on travel restrictions for vaccinated Indians remains unclear.

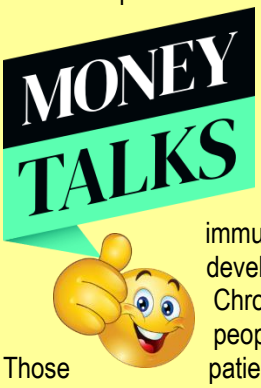
Covishield, the Indian-made version of Astrazeneca, remains the most popular jab, accounting for most of India's 810 million jabs. It has been approved by the WHO but the UK recognised the jab only after a refusal to do so sparked anger in India.

India has so far fully vaccinated more than 253 million people - about a quarter of its eligible population.

And some 653 million people - about 70% - have had at least one dose of a Covid vaccine so far.

Abu Dhabi secures new drug to treat unvaccinated Covid-19 patients

Source: https://www.thenationalnews.com/uae/2021/11/03/abu-dhabi-secures-new-drug-to-treat-unvaccinated-covid-19-patients/



Nov 03 – New medication to reduce severe infections and deaths from Covid-19 in non-vaccinated people will soon be approved for use in UAE hospitals.

The Department of Health Abu Dhabi announced the procurement of the **AZD7442 drug** made by AstraZeneca, which is a new antibody drug to fight infections in high-risk patients.

The UAE is one of the first countries to receive the innovative medicine that is specifically for use in immunocompromised patients, some of whom can not take a Covid-19 vaccine, or when vaccinated do not develop as many antibodies as healthy people.

Chronic disease and autoimmune disorders such as type 1 diabetes and rheumatoid arthritis can also leave people at greater risk of viral infection.

Those patients will now be prioritised for the drug, once it is approved, if they are struck down by Covid-19.

"When approved, this medication will help immunocompromised patients who could not receive the vaccine due to medical reasons and limiting autoimmune disorders," said Dr Jamal Al Kaabi, undersecretary of the Department of Health Abu Dhabi.

"The UAE continues to exhibit unprecedented leadership, with Abu Dhabi at its core, when it comes to a human-centred Covid-19 response.

"The UAE will continue to act as a catalyst for change by leveraging collaborations, both regionally and internationally."

Dr Alkaabi said the public-private partnership behind AZD7442 was a major factor in bringing the world's first long-acting antibody to the UAE.

An effective medicine

The health authority worked alongside Rafed, the UAE's primary group purchasing organisation for essential medical equipment, to buy supplies of the drug to help the most vulnerable during the pandemic.

Phase 3 trials revealed data that demonstrated a benefit to patients in both prophylaxis and treatment of Covid-19.

A supply chain process has been established with Rafed to buy, store and distribute the AstraZeneca medication through the Rafed Distribution Centre, the region's largest facility specialising in cold-storage.

The signing of the agreement follows a declaration made by the DoH and AstraZeneca to collaborate in areas of innovation, clinical research, real world evidence generation, digital health and the global positioning of Abu Dhabi as a life-science hub.

"The UAE is demonstrating once again its commitment to safeguarding the health of its citizens and residents by working with leading pharmaceutical manufacturers around the world," said Rafed chief executive Rashed Al Qubaisi.

"AZD7442 brings great hope to patients with various immune disorders who are not able to take the Covid-19 vaccine.

"Through our strategic logistics partner network, Rafed is establishing an infrastructure to ensure a streamlined distribution across the UAE, and potentially the Middle East and Africa."

A successful trial

Results of drug trials were announced by AstraZeneca in August.

It showed AZD7442 reduced the risk of developing Covid symptoms by 77 per cent, compared with a placebo.
Randomised trials in 5,197 people found no severe cases of Covid or related deaths in those who took the drug.
In the trial's placebo arm, there were three cases of severe Covid-19, which included two deaths.
More than 75 per cent of trial participants had co-morbidities, placing them at greater risk of worse symptoms, and included conditions reported to cause a reduced immune response to vaccination.
Sameh El Fangary, GCC and Pakistan cluster president for AstraZeneca, said the collaboration was a landmark moment to help unvaccinated people during the pandemic.
"This demonstrates our commitment to bringing innovative medicines to the UAE and the rest of the GCC, to provide patients with better health outcomes now and in the future," he said.

Madagascar: Plague outbreak update

Source: https://apps.who.int/iris/bitstream/handle/10665/345001/OEW36-300805092021.pdf

Sept 04 – According to the World Health Organization (WHO), a total of 30 suspected cases of pulmonary plague including 12 confirmed and 7 death cases (CFR=23%) are reported so far. Active case finding, chemo prophylaxis for high-risk contacts of alive and death cases are ongoing; regular meetings of the plague control committees at reginal and health district level; mass sensitization activities; contact tracing; ongoing investigation as well as vector and anti-reservoir control measures, are also ongoing.

DR Congo: Cerebrospinal Disease of Unknown Origin outbreak update

Source: https://apps.who.int/iris/bitstream/handle/10665/345001/OEW36-300805092021.pdf

Sept 05 – According to the World Health Organization (WHO), 233 suspected cases have been reported with 126 deaths (case fatality ratio (CFR): 54.1%). At the moment, the causative agent of the disease has not been confirmed, however, following a preliminary investigation, the teams are working with a case definition of cerebrospinal meningitis (CSM).

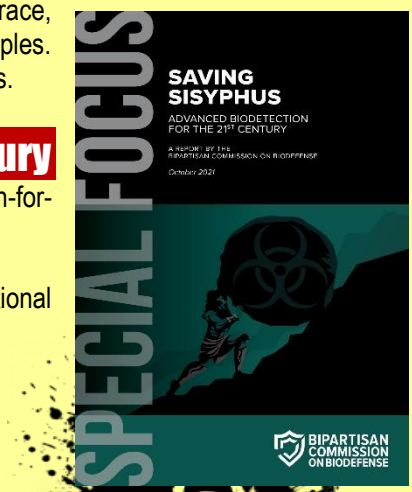
Diurnal Variation in SARS-CoV-2 PCR Test Results: Test Accuracy May Vary by Time of Day

By Candace D. McNaughton, Nicholas M. Adams, Carl Hirschie Johnson, et al.
Source: https://journals.sagepub.com/doi/10.1177/07487304211051841

False negative tests for SARS-CoV-2 are common and have important public health and medical implications. We tested the hypothesis of diurnal variation in viral shedding by assessing the proportion of positive versus negative SARS-CoV-2 reverse transcription polymerase chain reaction (RT-PCR) tests and cycle time (Ct) values among positive samples by the time of day. Among 86,342 clinical tests performed among symptomatic and asymptomatic patients in a regional health care network in the southeastern United States from March to August 2020, we found evidence for diurnal variation in the proportion of positive SARS-CoV-2 tests, with a peak around 1400 h and 1.7-fold variation over the day after adjustment for age, sex, race, testing location, month, and day of week and lower Ct values during the day for positive samples. These findings have important implications for public health testing and vaccination strategies.

Saving Sisyphus: Advanced Biodetection for the 21st Century

Source: https://biodefensecommission.org/reports/saving-sisyphus-advanced-biodetection-for-the-21st-century/



Oct 22 – The Bipartisan Commission on BioDefense released a new report on the National BioWatch system which details specific actions that must be taken to make the system effective.
BioWatch was established in 2003 as a national biodetection system but has never been able to consistently demonstrate its operational capability in the field. The system detects a small number of organisms with questionable accuracy and produces results up to 36 hours

after a pathogen may have been present near a detector, long after responders would need to act. It is far more likely that sick people seeking treatment at hospitals will make public health and safety officials aware of a biological event well before BioWatch results are available.

▶▶ View Full Report

Dubai reduces social distancing rule to one metre in some areas

Source: https://www.thenationalnews.com/uae/2021/11/04/dubai-reduces-social-distancing-rule-to-one-metre-in-some-areas/

Nov 04 – The Dubai government has reduced the two-metre social distancing rule to just one metre in some areas of the emirate. An email sent by Dubai Tourism and Commerce Marketing to local businesses indicated restaurants and cafes, shopping centres, gyms, beaches, public and entertainment parks, offices and workplaces no longer needed to implement the two-metre rule between customers and clients.
"This is a remarkable achievement after the challenging 19 months we had all endured," Naim Maadad, founder of Gates Hospitality, told *The National*. "A step in the right direction yet again and we are well on the road to full recovery. "The onus though remains on all of us to enforce such regulations responsibly." Social distancing with a space of two metres was brought in last year to help curb the spread of Covid-19. Masks are still required in all public areas, with some exceptions.

EDITOR'S COMMENT: After almost two years in the pandemic and still cannot realize that the virus is AIRBORNE and his "flying" capability remains the same. Two meters were not enough – various studies support this. But going back to the one-meter status is of no use not to name it otherwise. It is good that masks are still required preferably without exceptions other than being in your house or car. Something that many nations forget to enforce believing that the vaccine is the perfect shield – such a stupid attitude!

SARS–CoV–2 Spike Impairs DNA Damage Repair and Inhibits V(D)J Recombination In Vitro

By Hui Jiang and Ya-Fang Mei
Viruses 2021, *13*(10), 2056
Source: https://www.mdpi.com/1999-4915/13/10/2056/htm

Severe acute respiratory syndrome coronavirus 2 (SARS–CoV–2) has led to the coronavirus disease 2019 (COVID–19) pandemic, severely affecting public health and the global economy. Adaptive immunity plays a crucial role in fighting against SARS–CoV–2 infection and directly influences the clinical outcomes of patients. Clinical studies have indicated that patients with severe COVID–19 exhibit delayed and weak adaptive immune responses; however, the mechanism by which SARS–CoV–2 impedes adaptive immunity remains unclear. Here, by using an in vitro cell line, we report that the SARS–CoV–2 spike protein significantly inhibits DNA damage repair, which is required for effective V(D)J recombination in adaptive immunity. Mechanistically, we found that the spike protein localizes in the nucleus and inhibits DNA damage repair by impeding key DNA repair protein BRCA1 and 53BP1 recruitment to the damage site. Our findings reveal a potential molecular mechanism by which the spike protein might impede adaptive immunity and underscore the potential side effects of full-length spike-based vaccines.

Cross-Reactive Antibody Blocks Infections against Multiple Coronaviruses in Mice

Researchers have identified and tested an antibody that limits the severity of infections from a variety of coronaviruses, including those that cause COVID-19 as well as the original SARS. The therapeutic activity suggests that this could be a treatment deployed in the current pandemic and potentially stockpiled to prevent the spread of a future outbreak or epidemic with a SARS-related virus. + MORE

Identification of *LZTFL1* as a candidate effector gene at a COVID-19 risk locus

By Damien J. Downes, Amy R. Cross, Peng Hua, et al.

Nature Genetics (2021)

Source: https://www.nature.com/articles/s41588-021-00955-3

The severe acute respiratory syndrome coronavirus 2 (SARS-CoV-2) disease (COVID-19) pandemic has caused millions of deaths worldwide. Genome-wide association studies identified the 3p21.31 region as conferring a twofold increased risk of respiratory failure. Here, using a combined multiomics and machine learning approach, we identify the gain-of-function risk A allele of an SNP, rs17713054G>A, as a probable causative variant. We show with chromosome conformation capture and gene-expression analysis that the rs17713054-affected enhancer upregulates the interacting gene, **leucine zipper transcription factor like 1 (*LZTFL1*)**. Selective spatial transcriptomic analysis of lung biopsies from patients with COVID-19 shows the presence of signals associated with epithelial–mesenchymal transition (EMT), a viral response pathway that is regulated by *LZTFL1*. We conclude that pulmonary epithelial cells undergoing EMT, rather than immune cells, are likely responsible for the 3p21.31-associated risk. Since the 3p21.31 effect is conferred by a gain-of-function, *LZTFL1* may represent a therapeutic target.

In plain words

Researchers believe that the dangerous version of the gene makes human lungs more susceptible to coronavirus. This led them to conclude that LZTFL1 "derails" a key defense mechanism used by cells covering the lungs to defend themselves against Covid. When the cells that line the lungs interact with the coronavirus, one of their defenses is to turn into less specialized cells and become less hospitable to the virus. This process reduces the amount on the surface of the cells of a basic protein called ACE-2, which is the "key" for the coronavirus to attach to cells. However, for people with the dangerous version of the LZTFL1 gene, this process does not work as well and the lung cells remain vulnerable to the virus invading. Scientists say that although it affects the lungs in this way, there is no impact on the immune system. Thus, high-risk individuals can receive immunological protection from the vaccine.

Why indoor air quality maters?

Translation from a Greek article (by Demitrios Skouteris [political analyst])

The average person breathes eight (8) to ten (10) liters of air per minute or four to five two-liter bottles. Suppose you are in a room with ten (10) other people. Breathe every minute their pulmonary secretions that would fill forty (40) to fifty (50) two-liter bottles. What do your children breathe in schools? A schoolroom with 25 students produces per minute from two hundred (200) to two hundred and fifty (250) liters of pulmonary secretions (exhales), which are inhaled by all present. If they stay in the room for 45 min then they have inhaled from 9,000 to 11,250 liters of air burdened by the pulmonary secretions of all. If we travel by Metro. We assume that there are 90 passengers in our wagon (instead of the 172 of full capacity). For a 25 min journey and with a fixed number of passengers, each passenger will have inhaled from 18,000 to 22,500 liters of air burdened by the pulmonary secretions of all. If we again choose a bus with 90 passengers and a route of 40 min, each passenger will have inhaled from 28,800 to 36,000 liters of air burdened by the pulmonary secretions of all. Let no one be surprised if the number of people infected with Covid 19 increases by hundreds now.

EDITOR'S COMMENT: Number speak the truth! Numbers dictate a specific life-saving intervention that is air disinfection devices in mass transportation, schools, public mass gathering places, entertainment facilities, hospitals, supermarkets, etc. So simple and much more efficient compared to endless rapid and molecular tests that are profitable but not effective.

Bill Gates warns world leaders to practice 'germ games' to prepare for bioterrorist attacks

Source: https://thehill.com/changing-america/well-being/medical-advances/580069-bill-gates-warns-world-leaders-to-practice-germ

Nov 04 – Bill Gates had a message during his sit-down interview with Jeremy Hunt, former secretary of state for health and social care and current U.K. chair of the Health Select Committee – world leaders should prepare for bioterrorist attacks.

In attendance at Cop26 on Tuesday, Gates warned international authorities, including the World Health Organization, that bioterrorism is imminent and the best course of action is to play "germ games," Sky News reported.

"**Germ games**," according to The Science Times, is when government agencies practice scenarios of another pandemic catastrophe or a smallpox attack against an airport.

Why the Editor does not like his smile?

The billionaire says governments and agencies like the World Health Organisation Pandemic Task Force should invest billions to practice "playing with germs."

"It'll take probably about a billion a year for a pandemic Task Force at the WHO level, which is doing the surveillance and actually doing what I call 'germ games' where you practice," Gates said.

Six years ago, Gates also warned that an infectious virus was likely to kill millions of people across the globe.

"You say, OK, what if a bioterrorist brought smallpox to 10 airports? You know, how would the world respond to that?" he continued. "There's naturally-caused epidemics and bioterrorism-caused epidemics that could even be way worse than what we experienced today and yet, the advances in medical science should give us tools that, you know, we could do dramatically better."

Gates noted that such a doomsday prep would require the U.S. and the U.K. to spend "tens of billions" on research and development (R&D) on the next pandemic, Sky News reported.

As Changing America previously reported, Gates is well known to have predicted during a 2015 Ted Talk that an infectious virus was likely to kill millions of people across the globe five years prior to COVID-19.

The second prominent threat facing the modern world, Gates said, was climate change.

What the hell? Newsmax correspondent thinks Satan is in COVID-19 vaccines

By Matt Field

Source: https://thebulletin.org/2021/11/what-the-hell-newsmax-correspondent-thinks-satan-is-in-covid-19-vaccines/

Nov 03 – The White House correspondent slot is a coveted perch in Washington, DC media real estate. After landing a nice job and a press pass, a select few of journalism's crème de la crème get to march through the White House gates and mix it up with the president's inner circle; they get the chance to tell truth to power at the highest level. Or at least to sit in on White House briefings and go to the White House correspondents' dinner.

Some news organizations have sent reporters to the White House gaggle who have gone on to enduring fame for their journalistic rigor and iconic visual profiles. Others—like the right-wing television channel *Newsmax*—seem to have missed the reasonableness memo.

Emerald Robinson, *Newsmax*'s White House correspondent, was taken to task this week for spewing some of the wildest COVID-19 vaccine disinformation seen on planet Earth to her 437,000 followers on Twitter. Robinson could simply have claimed that highly tested, safe, and effective coronavirus vaccines contain microchips that the government uses to track people.

That would have been nonsense, but not far removed from a standard anti-vaxxer line. But Robinson made a more bizarre claim: She implied that the vaccines contain something even more devilish than microchips. The devil himself.

"Dear Christians, the vaccines contain a bioluminescent marker called **LUCIFERASE** so that you can be tracked. Read the last book of the New Testament to see how this ends," she wrote in a since deleted tweeted.

Luceferin is an organic compound involved in bioluminescence; it aids the process by which, for example, lightning bugs make their blinking lights. Luciferase is an enzyme connected to the same bioluminescence process. Neither type of chemical is in the Moderna, Pfizer, AstraZeneca, or Johnson and Johnson vaccines, according to a *Reuter*'s fact check of claims similar to Robinson's.

Let's repeat: Luciferase is just not there in the vaccines and is unrelated to the devil, even if "lucifer" is in the name.

Leaving the strange world of chemicals beginning with a secondary name for Satan aside, Robinson recently emitted a variety of other tweets that spread mis- or disinformation related to the pandemic or vaccines. In one, she seemed to imply—without evidence, as some gullible news outlets describe the act of lying—that a player for the FC **Barcelona** soccer team, Sergio Aguero, was suffering from a heart condition brought on by a COVID-19 vaccine. She retweeted a tweet by an ESPN account wishing the player well after he was hospitalized, saying, "A month ago this star soccer player was encouraging young kids to get vaccinated."

In another tweet, she accused US intelligence agencies of starting the pandemic. "Our spy agencies can't discover the origins of COVID because they are responsible for the origins of COVID!" she tweeted on Oct. 30, linking to a *Reuters*'s article about an inconclusive review of the pandemic origins by US intelligence agencies.

A screenshot of a tweet suggesting that US intelligence agencies had a hand in starting the COVID-19 pandemic.

In yet another tweet, this one on Nov. 1, Robinson wrote, "Dear @DARPA: if COVID was such a surprise to the world then how did you manage to fund implantable biochips to deploy Moderna's vaccine last year," implying, without evidence, that the US Defense Advanced Research Projects Agency (DARPA), the research and development wing of the US military, knew in advance about the pandemic and created implantable biochips for COVID-19 vaccines, an assertion that is—to use the technical, scientific term—crazy. The tweet was eventually taken down by Twitter for violating the platform's policies.

A screenshot of a tweet that was later removed by Twitter.

Robinson has not yet responded to a request for comment sent to her LinkedIn account.
Newsmax is no stranger to misinformation or outright disinformation. Along with One America News Network, Newsmax rose to prominence during Donald Trump's presidency and feverishly promoted false allegations of election fraud that backed Trump's utterly false claim that he had actually won the election. Dominion Voting Systems, a maker of voting machines, filed defamation lawsuits in August against both networks over broadcasts that claimed, falsely, that the company had stolen millions of votes from Trump.

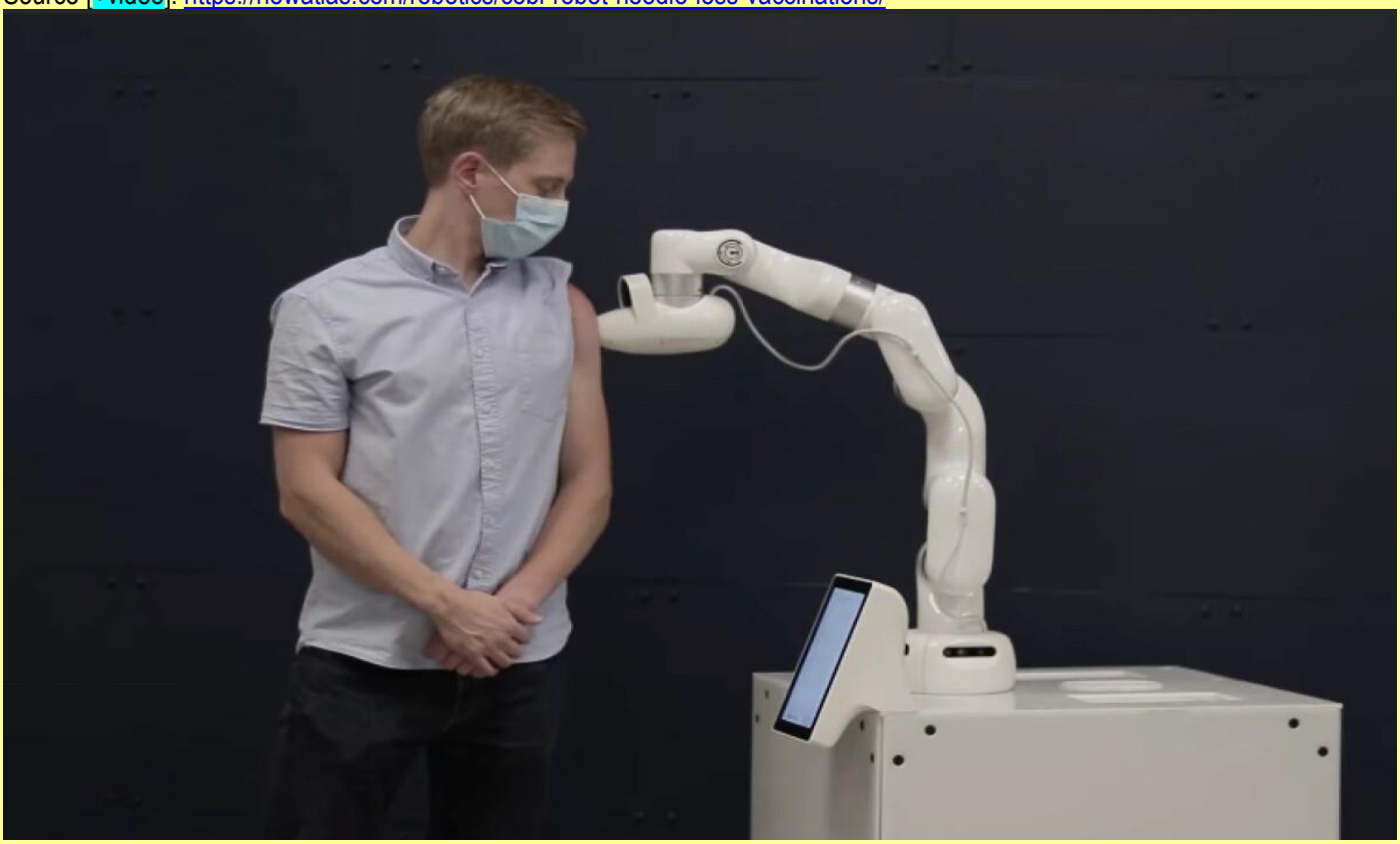
Editor's note: *The Daily Beast reported Wednesday that Twitter has locked Emerald Robinson's account for violating the company's COVID-19 misinformation policy.*

Matt Field *is Editor, Disruptive Technologies at the Bulletin of the Atomic Scientists. Before joining the Bulletin, he covered the White House, Congress, and presidential campaigns as a news producer for Japanese public television. He has also reported for print outlets in the Midwest and on the East Coast. He holds a master's degree in journalism from Northwestern University.*

Ivermectin-COVID-19 Study Retracted; Authors Blame File Mixup . . .

Cobi robot autonomously performs needle-less vaccinations

Source [+video]: https://newatlas.com/robotics/cobi-robot-needle-less-vaccinations/



Along with its obvious use for administering the COVID-19 vaccine, the Cobi robot could also be utilized for other types of vaccinations (University of Waterloo)

Nov 04 – It goes without saying that a *lot* of people are receiving the COVID-19 vaccine these days, and will continue to do so for some time. A new robot is designed to help streamline the process, by autonomously – and needlessly – vaccinating human patients.

Known as Cobi, the device was developed by Canadian startup Cobionix, a University of Waterloo spinoff company. It's claimed to be the first robot to ever successfully perform an intramuscular injection, and it did so without using a hypodermic needle.
The idea is that after pre-registering for a vaccination online, patients will show up at a clinic or other location that's utilizing a Cobi robot, then display a piece of identification to a camera on the unit's touchscreen interface. As they arrive, multiple 3D depth sensors detect their presence.
Once their ID has been verified, the Cobi robotic arm retrieves a vial of vaccine from a built-in storage area. A LiDAR sensor on the "hand" of that arm is then used to create a 3D digital map of the patient's body, which is analyzed via AI-based software to determine the optimal injection site.
Utilizing a third-party needle-less technology, the vaccine itself is subsequently injected in the form of a high-pressure jet of fluid that passes through a human-hair-width orifice. The company is unable to provide more details at this time.
Cobionix co-founder Tim Lasswell tells us that it will be about two years before Cobi enters the healthcare market. Once that time comes, it is hoped that the robot will allow more people to be vaccinated at once, while also lowering healthcare costs – it could additionally be utilized in remote locations which lack trained clinicians.

The Importance of Biodefense in the Wake of COVID-19

By Zakir Gul and Alexandre Bernier
Source: https://www.thedefensepost.com/2021/11/05/importance-biodefense-covid/

Airmen assigned to the 88th Test and Evaluation Squadron pose for a photo in full Chemical, Biological, Radiological, and Nuclear flight gear during a developmental test at Nellis Air Force Base, Nevada, April 21, 2021. Photo: Senior Airman Dwane R. Young/US Air Force

Nov 05 – The COVID-19 pandemic has led to disruption on an unprecedented scale. More than 750,000 Americans died, while more than 46.9 million cases have been reported. Schools and universities transitioned online for several months, and in April 2020, US unemployment reached its highest level on record at 14.8 percent.
It is precisely the chaos and disruption brought on by a global pandemic that could prompt adversarial nation-states and terrorist groups to research, develop, and acquire biological weapon capabilities.
The prospect of such capabilities should prompt US officials to assess preparedness against acts of bioterrorism and biological warfare. American national security is at stake. The potential threat must be taken seriously.

Biological Weapons and Bioterrorism

The United Nations defines biological weapons as platforms that release disease-causing organisms to injure or kill humans, animals, or plants.

When terrorist organizations use biological weapons and biological agents, such acts are referred to as bioterrorism.

In the United States, two prominent bioterrorist attacks have occurred. The anthrax letter attacks in September and October 2001 resulted in the death of five individuals and clearly illustrated the threat of biological weapons.

In September 1984, salad bars in Oregon were laced with salmonella. The incident resulted in the infection of 751 individuals. The perpetrator was a local cult led by Bhagwan Shree Rajneesh.

Just as technology has enabled the development of new and improved medications, procedures, and medical technologies, the threat of biological attacks has continued to increase in proportion to scientists' ability to understand and manipulate biological systems.

Genetic Engineering

With the advent of genome engineering, the ability to manipulate bacteria and viruses at the molecular level has thus far presented the greatest advancement in the development of biological weapons. A bacterium or virus can be made more resilient and better suited for infecting humans through genetic engineering.

The technology could also make existing pathogens more transmissible or virulent, compounding the danger of biological weapons and significantly increasing their potential to serve as weapons.

In addition, the biological nature of such weapons makes the potential fallout of an attack even greater, as many agents are self-replicating and can be transmitted from person to person. A small, targeted attack, for example, could result in a larger-scale outbreak that spreads beyond the initial area in which the agent was released.

Biodefense

In response to the capability of leveraging biotechnology for developing biological agents as potential weapons, government resources have been allocated for "biodefense" programs aimed at detecting bioterrorist attacks and countering biological threats. Biodefense also includes efforts such as the establishment of strategic stockpiles of vaccines and medications.

The Department of Homeland Security established the BioWatch Program in 2003; however, a recent report by the Bipartisan Commission for Biodefense questioned its effectiveness in identifying biological attacks.

Although bioterrorist incidents in the US are rare, it's crucial for the national security apparatus and government to continue developing countermeasures and responses to biological incidents, both natural and synthetic, that can lessen the catastrophic impact on lives, societies, economies, and institutions.

***Zakir Gul**, Ph.D., is Associate Professor and Chair in Criminal Justice at The State University of New York (SUNY) in Plattsburgh. His research and teaching focus on terrorism, cyberterrorism, homeland security, intelligence, and policing.*

***Alexandre Bernier** is a senior biochemistry major at SUNY. He is an undergraduate research student in the Department of Chemistry and Biochemistry and the Department of Criminal Justice pursuing a minor in Biodefense under the tutelage of Dr. Zakir Gul. He is interested in the intersection of the biomedical sciences and national security.*

Study compares decline in effectiveness for Moderna, Pfizer, Janssen vaccines; and mortality consequences

Science (2021). DOI: 10.1126/science.abm0620

Source: https://medicalxpress.com/news/2021-11-decline-effectiveness-moderna-pfizer-janssen.html

Nov 04 – As COVID-19 breakthrough infections continue to emerge in some vaccine recipients and health authorities are developing policies around booster vaccinations, national data on COVID-19 vaccine breakthrough infections is inadequate but urgently needed. Now a study from the Public Health Institute, the Veterans Affairs Medical Center and the University of Texas Health Science Center, published today in the journal *Science*, has analyzed COVID infection by vaccination status among **780,225 Veterans.**

Researchers found that protection against any COVID-19 infection declined for all vaccine types, with overall vaccine protection declining from 87.9% in February to 48.1% by October 2021.

- The decline was greatest for the Janssen (Johnson & Johnson) vaccine, with protection against infection declining from 86.4% in March to 13.1% in September
- Declines for Pfizer/BioNTech were from 86.9% to 43.3%
- Declines for Moderna were 89.2% to 58%.

While most previous studies have focused on the Pfizer/BioNTech or Moderna vaccines, the *Science* study is the first to compare protection declines across the three main vaccine types, and the first to show the comparably dramatic decline in effectiveness for the Janssen vaccine. Declines were assessed over the period February 1, 2021 to October 1, 2021, reflecting the emergence and dominance of the Delta variant in the U.S. Patterns of breakthrough infection over time were consistent by age, despite rolling vaccine eligibility, implicating the Delta variant as the primary determinant of infection.

Importantly, vaccination of any type was protective against death among individuals who did become infected. The relative benefit of vaccination for protection against death was greater for persons under 65 but was also very strong for persons over 65.

The study showed that the risk of death from COVID infection was highest in unvaccinated Veterans, regardless of age and comorbidities. While some breakthrough infections resulted in death, vaccination remained protective against death in those who became infected during the Delta surge.

For those under 65 years old, vaccines overall were 81.7% effective against death.

- **Protection against death was greatest for the Pfizer vaccine, at 84.3%.**
- **Moderna was the next most effective, at 81.5%.**
- **Janssen was 73% effective.**

For those 65 and over, overall vaccine effectiveness against death was 71.6%.

- **Moderna was 75.5% effective.**
- **Pfizer was 70.1% effective.**
- **Janssen was 52.2% effective.**

"Our study gives researchers, policy makers and others a strong basis for comparing the long-term effectiveness of COVID vaccines, and a lens for making informed decisions around primary vaccination, booster shots, and other multiple layers of protection, including masking mandates, social distancing, testing and other public health interventions to reduce chance of spread," said Dr. Barbara Cohn of PHI, the lead author of the study. "For example, the CDC recommendation for boosters for all Janssen recipients over 18 is supported by our results. And, given the declines in vaccine protection and the dominance of the more infective Delta variant, we urge swift action to promote primary vaccination, boosters and to also encourage masking, social distancing and other layers of protection against infection. This is supported by our finding that breakthrough infections are not benign, but also by the strong evidence that vaccination still protects against death even for persons with breakthrough infections, compared to persons who become infected and are not vaccinated."

The FDA authorized Pfizer boosters for some groups in September and Moderna and Janssen boosters in October, and the CDC has made similar recommendations, including supporting a "mix and match" approach that allows people to choose any of the three vaccine boosters regardless of which they were given initially.

Pfizer Announces Its COVID-19 Pill Reduces Risk of Hospitalization or Death by 89%

Source: https://www.sciencealert.com/pfizer-announces-its-covid-19-pill-reduces-risk-of-hospitalization-or-death-by-89-percent

Nov 05 – Pfizer said Friday that a clinical trial of its pill to treat COVID-19 had shown it is highly effective, hailing it as a big step toward ending the pandemic.

A simple pill to treat the coronavirus at home has been sought since the start of the global health crisis. So far, all treatments have been either intravenous or vaccine shots.

Pfizer's is the second anti-COVID pill after that of Merck, which is actually an influenza medicine rebranded to fight the coronavirus. Pfizer's has been created specifically to fight COVID.

The Pfizer drug called **Paxlovid** achieved an 89 percent reduction in risk of hospitalization or death among adult patients with COVID who are at high risk of progressing to severe illness, the US company said.

The results from the middle-to-late stage clinical trial were so strong that Pfizer will stop recruiting new people for the trial, it said. Pfizer will submit the data to the Food and Drug Administration as soon as possible as part of its "rolling submission" for Emergency Use Authorization.

"Today's news is a real game-changer in the global efforts to halt the devastation of this pandemic," said Pfizer CEO Albert Bourla.

"These data suggest that our oral antiviral candidate, if approved or authorized by regulatory authorities, has the potential to save patients' lives, reduce the severity of COVID-19 infections, and eliminate up to nine out of 10 hospitalizations," he added.

The main analysis of the data looked at numbers from 1,219 adults in North and South America, Europe, Africa, and Asia.

In the days immediately after symptoms appeared, some of them were given the experimental drug and others got a placebo – for five days, every 12 hours.

"The scheduled interim analysis showed an 89 percent reduction in risk of COVID-19-related hospitalization or death from any cause compared to placebo in patients treated within three days of symptom onset," Pfizer said. **Ten people who took the placebo died**, while among those who got the Pfizer medication, none did.

Pfizer had planned a testing pool of 3,000 people but stopped when it got to 70 percent of that because the results of the medication were so promising.

EDITOR'S COMMENT: We all applause new life-saving drugs but how ethical these studies are? Ten patients out of 1,219 died because they were given the placebo. What if they were given the real thing? Would they be with their families? Alive? We must change the way we test the effectiveness of pharmaceutical products. The double-blind placebo-controlled era must come to an end. Perhaps artificial intelligence will provide some good ideas to save the future "ten" patients.

The search for a pill

Several companies are working on so-called oral antivirals, which would mimic what the drug Tamiflu does for influenza and prevent the disease from progressing to severe.

Britain on Thursday became the first country to approve an anti-COVID pill, as it greenlit the use of Merck's antiviral drug called **molnupiravir** to treat patients suffering from mild to moderate coronavirus.

Pfizer's product is known as a "protease inhibitor" and has been shown in lab testing to jam up the virus' replication machinery.

If it works in real life, it will likely only be effective at the early stages of infection.

By the time COVID progresses to severe disease, the virus has largely stopped replicating and patients suffer from an overactive immune response.

Until now, COVID therapeutics such as monoclonal antibodies and Gilead's remdesivir – authorized for use in the EU under the name Veklury – have been administered intravenously. Merck's molnupiravir was initially developed as an inhibitor of influenza and respiratory syncytial virus – two other important acute respiratory infections – by a team at Emory University in Atlanta, Georgia.

Britain, which has been one of the countries hardest hit by the pandemic, announced on October 20 that it had ordered 480,000 doses of molnupiravir.

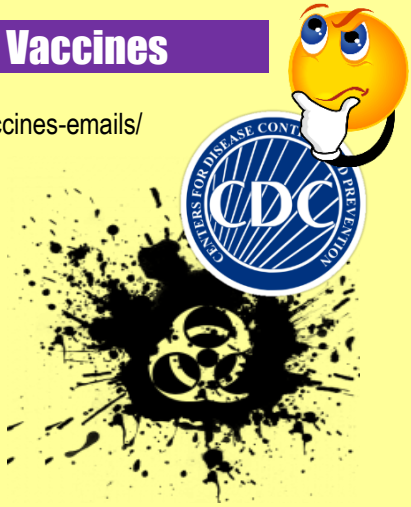
Pfizer is carrying out two other clinical trials with its pill: among people who are not at risk of progressing to severe COVID, and among people close to someone with COVID to see if it protects them against the illness.

Besides Pfizer and Merck, the Swiss pharma giant Roche is also working on a COVID pill.

CDC Changed Definition of 'Vaccine' Because of COVID-19 Vaccines

By Zachary Stieber (Epoch Times Staff)

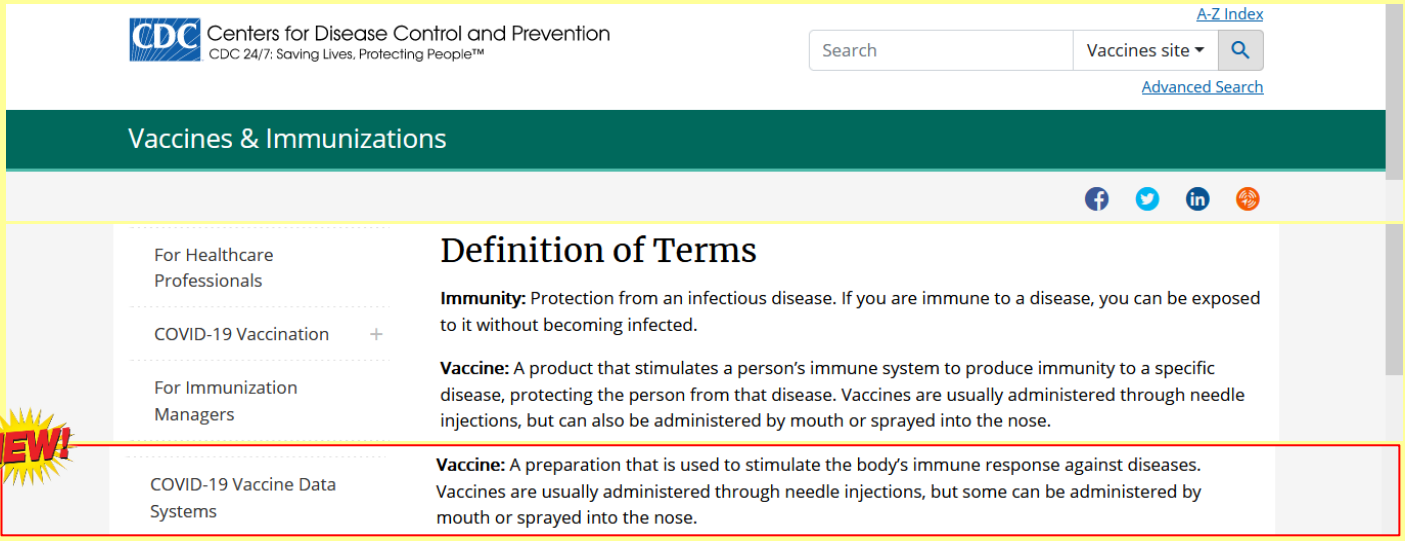
Source: https://epochtimes.today/cdc-changed-definition-of-vaccine-because-of-covid-19-vaccines-emails/



Nov 07 – The Centers for Disease Control and Prevention (CDC) altered the definition of "vaccine" because of concern that its definition did not apply to COVID-19 vaccines, according to newly released internal emails.

The agency updated its definition on Sept. 1.

The definition was formerly, "a product that stimulates a person's immune system to produce immunity to a specific disease, protecting the person from that disease." It is now, "A preparation that is used to stimulate the body's immune response against diseases."



One CDC employee in August, shortly before the definition was changed, said that the definition was being used by "right-wing COVID-19 pandemic deniers … to argue that mRNA vaccines are not vaccines," according to the newly published emails.

The Pfizer and Moderna COVID-19 vaccines utilize messenger RNA technology. All three COVID-19 vaccines authorized for use in the United States have plummeted in effectiveness against infection in recent months after initially being promoted as protecting against infection and severe disease. The definition "was twisted to claim that the existing COVID-19 vaccines were not vaccines because they only prevented severe illness," the CDC employee said.

Alycia Downs, listed on LinkedIn as the lead health communication specialist for the agency, messaged a colleague on Aug. 19, saying she needed to update the definition and others like it "since these definitions are outdated and being used by some to say COVID-19 vaccines are not vaccines per CDC's own definition."

Downs didn't receive a response so she messaged again the following week, writing, "The definition of vaccine we have posted is problematic and people are using it to claim the COVID-19 vaccine is not a vaccine based on our own definition."

Valerie Morelli, another CDC official, approved the change on Sept. 1, even though it seems to differ greatly from a definition she laid out in an earlier document (pdf). "If this is for the general public, I am good with the change," Morelli wrote.

The emails were obtained by lawyer Travis Miller through a Freedom of Information Act request. The CDC did not dispute their authenticity.

Instead, the agency sent The Epoch Times the same response it received earlier in the year when it inquired about the change. The agency says the "slight changes in wording" for the definition "haven't impacted the overall definition" and that the previous definition "could be interpreted to mean that vaccines were 100% effective, which has never been the case for any vaccine, so the current definition is more transparent, and also describes the ways in which vaccines can be administered."

Other parts of the CDC website still say the COVID-19 vaccines grant immunity.

"It typically takes 2 weeks after vaccination for the body to build protection (immunity) against the virus that causes COVID-19," one page says. COVID-19 is the disease caused by the CCP (Chinese Communist Party) virus.

Most People With PEG Allergy or Reactions to First COVID-19 Shot Can Still Complete Vaccine Series

Source: https://www.medscape.com/viewarticle/962454

Nov 06 – With the rollout of COVID-19 vaccines, there's been concern about possible allergic reactions to polyethylene glycol (PEG), an ingredient used to stabilize lipid nanoparticles in the Moderna and Pfizer-BioNTech's mRNA vaccines. Two posters presented at this year's

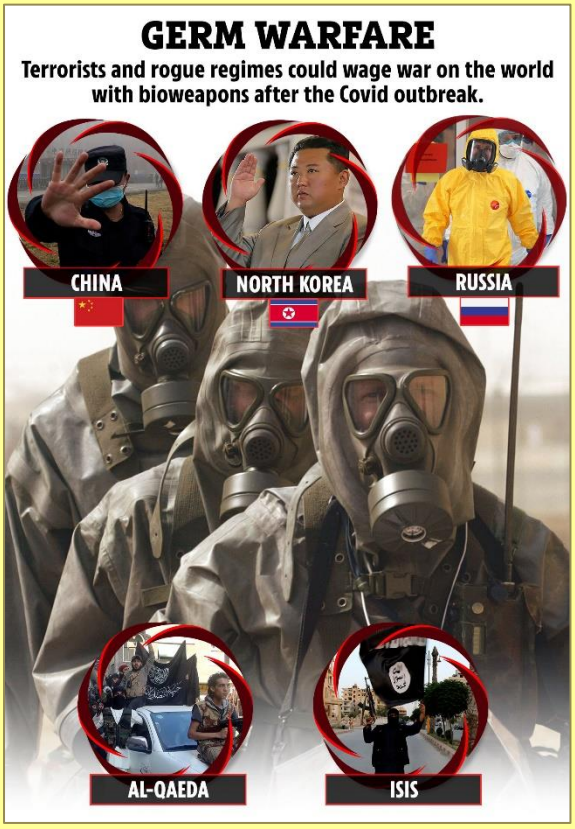
American College of Allergy, Asthma and Immunology annual meeting show that allergists can help safely assess whether people who are allergic to PEG can receive a COVID-19 shot, and whether individuals who reacted to the first dose can take a second.
The new studies also suggest that "most patients in each category will be able to safely take the COVID-19 vaccine," Brian Schroer, MD, director of allergy and immunology at Akron Children's Hospital in Ohio, told *Medscape Medical News.*
In the first study, researchers led by allergy fellow Mitchell Pitlick, MD, at the Mayo Clinic in Rochester, Minnesota, combed Epic electronic health records for 100 adults with a PEG allergy documented prior to receiving a COVID-19 vaccine. As part of this retrospective chart review, the team collected information on demographics, comorbidities, atopic history, PEG allergy history, and vaccination outcome. Ninety-seven patients received mRNA vaccines (64 Pfizer-BioNTech vaccine, 33 Moderna), and three got the Johnson & Johnson vaccine.
Among those 100 adults, most of the symptoms in response to PEG-containing drugs occurred with oral preparations (84%), and the vast majority of these were reported as gastrointestinal intolerance with no other symptoms, indicating they were probably not true allergic reactions, said Pitlick. Five percent of patients had anaphylaxis listed as a reaction symptom for their PEG allergy. Yet these five individuals received a COVID-19 vaccine — four getting Pfizer-BioNTech and the other a Johnson & Johnson shot — and did fine. In fact, all 100 patients in the study tolerated the COVID-19 vaccine series without any allergy symptoms.
This study suggests that "just because you have an allergy label to PEG doesn't mean you need to be turned away from receiving an mRNA COVID-19 vaccine," Pitlick said, noting that one of his patients received both doses of the Pfizer vaccine with no issues despite having had three separate episodes of anaphylaxis to PEG-containing devices and medications.
In a multisite US study published July 26 in *JAMA Internal Medicine,* even an immediate allergic reaction to the first dose of an mRNA COVID-19 vaccine did not keep patients from getting a second dose. Among the 84% who proceeded, 12% reported mild symptoms but all were able to safely complete their vaccination series.
The second study, presented by allergy fellow Jennifer Ohtola, MD, PhD, and colleagues at the Cleveland Clinic in Ohio, assessed the utility of PEG oral challenges in patients evaluated for COVID-19 mRNA vaccine allergy. The team reviewed charts to assess COVID-19 vaccination outcomes of 63 patients who underwent PEG/polysorbate 80 skin testing from January through June 2021 either because they were concerned prevaccination about previous adverse reactions to vaccines, medications, or PEG/polysorbate (n = 38) or reported a reaction to the first COVID-19 mRNA vaccine dose (n = 25).
In total, only five of 63 patients (7.9%) had a positive PEG skin test — and of the two who additionally underwent an oral challenge, both had symptoms. This is consistent with the low sensitivity and high specificity of PEG skin testing in other studies. In this study, "patients who had negative skin testing and PEG oral challenge were able to receive a COVID-19 mRNA vaccine safely," said Ohtola.
Among those who were PEG skin test negative, more than half who reported symptoms during their PEG oral challenge went on to tolerate COVID-19 mRNA vaccines. On the flip side, three patients with negative PEG skin testing subsequently reported allergic reactions during vaccination. These anomalies raise the question "if PEG is really to blame for mRNA vaccine reactions," Pitlick told *Medscape Medical News.* Still, Ohtola said, the findings suggest that "**PEG oral challenge** can provide additional guidance for patient and allergist in the shared decision-making process of receiving COVID-19 vaccination."

Terrorists will wage terrifying new biowar as Wuhan 'lab leak' chaos shows they could get away with murder, say experts

Source: https://www.the-sun.com/news/4020923/terrorists-wage-war-bioweapons-wuhan-lab-leak/

Nov 07 – Terrorists will wage war on the world with catastrophic bioweapons after the Wuhan "lab leak" chaos showed how they could get away with murder, experts have warned.
Evidence of a Covid lab leak has been piling up over the last year as scientists, researchers and governments hunt for answers - but US intelligence agencies fear they might never be able to uncover the true origins of the pandemic.
Although questions continue to rage over whether the deadly virus could have escaped from the Wuhan Institute of Virology, investigations into the shady lab have been "easily" shut down by China.
But genetic engineering expert Alina Chan and renowned science writer Matt Ridley have warned that "ignoring or dismissing" the possibility of a lab leak will have "serious implications" for the world.
Chan and Ridley said terrorists who are considering using bioweapons will have noted how quickly China was able to dismiss the idea of a lab leak - and avoid scrutiny.
It means militants will now know how easily they can "get away" with the release of a cataclysmic bioweapon, knowing the source of the attack will likely never be found.

In their new book, *Viral*, Chan and Ridley said: "Regimes around the world that are carrying out military-civilian, dual-use pathogen research, and terrorists who are also considering the use of bioweapons, are paying attention to what has happened.
"Not only will they have noticed the vast scale of disruption caused by an epidemic; they will also have noticed how easily the Chinese authorities dismissed a lab leak and neutered an international investigation, with the willing help of many scientific experts worldwide.
"Nefarious actors may have learned that they can easily get away with the creation and release of dangerous pathogens - with an unpredictably large impact on their target populations."
In a chilling warning, the World Health Organisation said the risk of deadly pathogens being used in a terror attack is increasing.



EDITOR'S COMMENT: If China and Russia are considered "rogue" regimes, then there is another country missing from this poster

Biological agents, such as anthrax, botulinum toxin, and plague, can cause a huge number of deaths in a short amount of time - and the outbreak would be difficult to contain once unleashed on the world.
There have been warnings that terrorist groups such as ISIS and Boko Haram, or rogue states such as North Korea, could access biological weapons - like Ebola or Zika - and use them to create weapons of mass destruction.
ISIS is already known to have used Iraqi prisoners as human test subjects in experiments with chemical and possibly biological weapons between 2014 and 2016.
The UN investigators shed a terrifying new light on the terrorist group's forays into making a weapon of mass destruction.
"Evidence already secured indicates that ISIL tested biological and chemical agents and conducted experiments on prisoners as part of this program, causing death," the report said.
"Weaponized vesicants, nerve agents and toxic industrial compounds are suspected to have been considered under the program."
And there have already been ISIS-linked terror plots foiled in Europe.
In 2018, suspected Islamist extremist Sief Allah Hammami, a 29-year-old Tunisian, was arrested in Germany after planning a "biological weapon attack" using the poison ricin.

Biggest potential threat

The terrifying plot was described as "the biggest potential threat ever found in Europe".
Prosecutors confirmed the suspect "had contacts with people on the jihadist spectrum".
In a briefing to the European Parliament, analyst Beatrix Immenkamp urged members of the public to take the threat of bioterrorism from terrorists more seriously.
She said: "European citizens are not seriously contemplating the possibility that extremist groups might use chemical, biological, radiological or nuclear materials during attacks in Europe."
And experts have grimly warned al-Qaeda could also unleash bioweapons on the world in future terror attacks.
US spy chiefs have already said the terror group could rekindle its former terrorist training camps in Afghanistan to plot atrocities against Britain and America within two years as the jihadis regroup.
With the Taliban back in charge following the withdrawal of US led forces, al-Qaeda is said to be returning to the war-torn country.
Dr Zeno Leoni, from the Defence Studies Department of King's College London, said the terror group could "absolutely" use bioweapons in a future attack considering its previous attempts.
He pointed to the alleged bioterrorism plot to attack the London Underground with ricin by the suspected al-Qaeda operative Kamel Bourgass.
Dr Leoni told The Sun Online: "I think bioterrorism could be very basic, such as when anthrax was used in the US after 9/11. Or, it could involve the more sophisticated use of genetically engineered organisms."

But he added: "It is difficult not to imagine the involvement of states should a sophisticated attack happen."
Al-Qaeda has reportedly already experimented with producing poison from nicotine.

UN workers destroy growth media which could be used to produce biological weapons in IraqCredit: AP:Associated Press

It's not just terrorists who could be emboldened by the stifled investigation into the origins of the Covid pandemic.
China is also feared to have spent decades illicitly researching biological weapons at dozens of secretive sites ahead of a potential apocalyptic World War 3.
The vast country is home to at least 50 covert labs where state scientists are thought to have manufactured deadly "bacteria bombs", stockpiled deadly pathogens such as anthrax, and even probed weaponising coronaviruses.
High profile defector Wei Jingsheng claimed China once carried out Nazi-style bioweapons and nuclear experiments on "human Guinea pigs".
China is alleged to have developed its germ warfare unit after World War 2 after being subjected to biowarfare by Japan - with the military academy being set up in 1951.
Documents obtained by the US show the People's Liberation Army commanders believed future battles could be fought with bioweapons.
And bombshell evidence from scientists and researchers suggests Covid may have been tinkered with - but China denies all allegations of wrongdoing over the pandemic.
US intelligence reports and analysts have also highlighted startling concerns about bioweapon programmes in North Korea and Russia.
A US State Department report published in 2017 said Russia has not "sufficiently documented" whether its Soviet bioweapons have been destroyed.
And a 2001 report from the South Korean government said North Korea was believed to have a stockpile of 2,500 to 5,000 tonnes of chemical and biological weapons - such as anthrax.

Major strides

Analysts believe Pyongyang has made "major strides" in all technical areas needed for the production of bioweapons.

Andrew C. Weber, a Pentagon official in charge of nuclear, chemical and biological defense programmes under President Obama, told the New York Times: "North Korea is far more likely to use biological weapons than nuclear ones.

"The program is advanced, underestimated and highly lethal."

And according to NATO consultant Dr Jill Dekker, Syria has also worked with several pathogens, including anthrax, plague, smallpox, and cholera - some of which came from Russia, North Korea, Iran and Iraq.

Former PM Tony Blair has warned terrorists could wage war on the West with grim bioweapons after seeing the catastrophe caused by Covid.

He said it was no longer "the realm of science fiction" that Islamist extremists could attack with bugs.

In a speech at the RUSI think tank marking 20 years since the 9/11 attacks, he said: "Covid 19 has taught us about deadly pathogens.

"Bio-terror possibilities may seem like the realm of science fiction. But we would be wise now to prepare for their potential use by non-state actors.

"Islamism, both the ideology and the violence, is a first-order security threat; and, unchecked, it will come to us, even if centred far from us, as 9/11 demonstrated."

An open, non-randomised, phase 1/2 trial on the safety, tolerability, and immunogenicity of single-dose vaccine "Sputnik Light" for prevention of coronavirus infection in healthy adults

By Inna V.Dolzhikova, Dmitry V.Shcheblyakov, Olga V.Zubkova, et al.

The Lancet Regional Health - Europe | Volume 11, December 2021, 100241

Source: https://www.sciencedirect.com/science/article/pii/S2666776221002271

While the world is experiencing another wave of COVID-19 pandemic, global vaccination program is hampered by an evident shortage in the supply of licensed vaccines. In an effort to satisfy vaccine demands we developed a new single-dose vaccine based on recombinant adenovirus type 26 (rAd26) vector carrying the gene for severe acute respiratory syndrome coronavirus 2 (SARS-CoV-2) spike (S) glycoprotein – "Sputnik Light".

Methods

We conducted an open label, prospective, non-randomised phase 1/2 trial aimed to assess safety, tolerability, and immunogenicity of "Sputnik Light" vaccine in a single center in Russia. Primary outcome measures were antigen-specific humoral immunity (Anti-RBD-SARS-CoV-2 antibodies measured by ELISA on days 1, 10, 28, and 42) and safety (number of participants with adverse events monitored throughout the study). Secondary outcome measures were antigen-specific cellular immunity (measured by antigen-dependent CD4+ and CD8+ T-cell proliferation, number of antigen-specific interferon-γ-producing cells as well as interferon-γ concentration upon antigen restimulation) and change in neutralizing antibodies (measured in SARS-CoV-2 neutralization assay).

Findings

Most of the solicited adverse reactions were mild (66·4% from all vaccinees), few were moderate (5·5%). No serious adverse events were detected. Assessment of Anti-RBD-SARS-CoV-2 antibodies revealed a group with pre-existing immunity to SARS-CoV-2. Upon this finding we separated all safety and immunogenicity data based on pre-existing immunity to SARS-CoV-2. There were notable differences in the vaccine effects on immunogenicity by the groups. Vaccination of seropositive (N=14) volunteers rapidly boosted RBD-specific IgGs from reciprocal geometric mean titer (GMT) 594·4 at a baseline up to 26899 comparing to 29·09 in seronegative group (N=96) by day 10. By day 42 seroconversion rate reached 100% (93/93) in seronegative group with GMT 1648. At the same time, in the seropositive group, seroconversion rate by day 42 was 92·9% (13/14) with GMT 19986. Analysis of neutralizing antibodies to SARS-CoV-2 showed 81·7% (76/93) and 92·9% (13/14) seroconversion rates by day 42 with median reciprocal GMT 15·18 and 579·7 in the seronegative and seropositive groups, respectively. Antigen-specific T cell proliferation, formation of IFNγ-producing cells, and IFNγ secretion were observed in 96·7% (26/27), 96% (24/25), and 96% (24/25) of the seronegative group respectively and in 100% (3/3), 100% (5/5), and 100% (5/5) of the seropositive vaccinees, respectively.

Interpretation

The single-dose rAd26 vector-based COVID-19 vaccine "Sputnik Light" has a good safety profile and induces a **strong** humoral and cellular immune responses both in seronegative and seropositive participants.

EDITOR'S COMMENT: If it is effective, safe and cheap why WHO and EMA hesitate to approve? Is it politics? Is it business? Is it perception? (not Western; no good) Are they going to do the same with the Covid pilles? Do we have a pandemic or a dominance game?

Biological Weapons in the 'Shadow War'

By Glenn Cross

Source: https://warontherocks.com/2021/11/biological-weapons-in-the-shadow-war/

Nov 09 – Do countries still need to worry about threats from biological weapons? The COVID-19 pandemic has led to renewed discussion of biological weapons and whether bad actors — both nations and terrorists — have refocused their attention on developing them. In a recent *War on the Rocks* article, Joseph Buccina, Dylan George, and Andy Weber argue that the "inadequate initial U.S. response to COVID-19, coupled with new advances in biotechnology, could make biological weapons more appealing for U.S. adversaries." They add that China and Russia could use biological agents in a "low-boil" manner to undermine the United States as part of a "Shadow War," a term first coined by Jim Sciutto, referring to a hybrid war, gray war, or non-linear war.

The specter of mass casualty biological weapons attacks — whether by nations or terrorists — is unrealistic. The United States should not overreact to the threat of biological weapons. Although the threat from biological weapons has not vanished, it is, in fact, at one of its lowest points since the Cold War's end. Biological weapons are primarily a tool of assassination — largely for purposes of ensuring regime security in authoritarian states — and special forces operations. U.S. policymakers should strengthen diplomatic and intelligence community efforts to protect the American people from this enduring — but manageable — threat.

The History of Biological Weapons Use

During the Cold War, several nations developed biological weapons for potential military use. Scholar W. Seth Carus identified 15 national biological weapons programs active from 1915 to the end of the Cold War. He points out that the number of national biological weapons programs fluctuated, with the majority lasting for only a short time. The number of biological weapons programs during the Cold War fluctuated from between eight to five.

The development and possession of biological weapons is trending dramatically downward since the end of World War II. With the 1975 Biological Weapons Convention, signatories placed biological weapons use beyond the pale and the use of biological weapons has been stigmatized. After the Cold War, countries largely abandoned large-scale counterforce or countervalue biological weapons capabilities, and those that retained biological weapons programs focused on its utility for assassinations and sabotage operations in the immediate prelude to conflict. Although not a new capability, however, the potential use of biological weapons by special operations forces or intelligence operatives against fixed targets like naval bases, ports, and airbases was particularly attractive to some countries.

Despite the Biological Weapons Convention and international efforts to combat the biological weapons threat, concerns about biological weapons use remain. The United States currently assesses only one country (North Korea) possesses an offensive biological weapons program and three countries (China, Iran, Russia) are engaged in activities that raise concerns about their compliance to the Biological Weapons Convention.

Nations likely no longer see utility in developing or possessing biological weapons for use in large-scale, offensive military operations given the devastating capabilities of today's advanced conventional weapons.

Even as a deterrent, biological weapons have little-to-no utility against an adversary contemplating the use of biological weapons. Historically, almost all nations possessing biological weapons saw it as a deterrent against adversarial use. Most nations renounced first-use of biological weapons, holding biological weapons only to retaliate in kind. The use of weaponized *Yersinia pestis* (the causative agent of plague) by Imperial Japan against China during World War II is a glaring exception. In that case, Japan used biological weapons against a numerically superior opponent incapable of retaliation. Other cases of biological weapons use during World War II included the small scale use by Polish resistance against German occupation and the Nakam revenge attack against German prisoners of war immediately after the war's end.

Typically, biological weapons-related activities are observable when they reach larger-scale weaponization, dissemination testing, and military biological weapons training. The early stages of biological weapons development and production are much harder to uncover. Given the challenges involved in accurately detecting and identifying of biological weapons programs, it is no wonder that the track record of most intelligence agencies in assessing the existence of biological weapons programs is dismal. Western intelligence agencies failed to correctly identify and characterize the Soviet Union's large biological weapons program, Iraq's medium-size program before Desert Storm, and smaller programs such as those in Rhodesia, South Africa, and Chile.

Identifying or attributing the covert use of biological weapons to an actor is fraught with challenges and uncertainties. Any level of retaliation beyond diplomatic protests and expulsions needs to meet a very high bar. The seven-year Amerithrax investigation or the current controversies over COVID-19's origins highlight the difficulties underlying attribution of a biological event. This likely incentivizes small-scale, covert biological weapons programs for some countries' intelligence services or special forces.

The Role of Biological Weapons in the "Shadow War"

Do biological weapons have any role in the "Silent War" between great powers? They do, but that role is limited to assassination attempts and special operations forces. In that sense, things have not changed since the Cold War. Targets of these assassination plots typically were political opponents, dissidents, journalists or academics critical of a regime, defectors, and individuals deemed a security threat. The goal of covert biological weapons use in assassinations historically was not messaging, signaling, or as one author described it, "theatrical murder." The goal is nonattributable assassination of key targets, typically to reinforce regime security. Messaging to deter potential opponents from speaking or acting against the regime is largely a second-order effect, with recent Russia use of Novichok agents being an exception.

Biological weapons use in special forces operations would concentrate on covert attacks against enemy leadership, military command and control infrastructure, deployment areas, military airfields, and naval ports during the prelude to conflict. Use in these scenarios is "subliminal," to use a term popularized by David Kilcullen. This type of biological weapons use is not new. Fears of biological weapons sabotage attacks by the Soviet Union during the Cold War reach as far back as the 1957 National Intelligence Estimate on Soviet abilities to attack the continental United States.

Given realistic biological weapons threats focus largely on assassinations and special operations forces, embracing a deterrence by denial strategy against biological threats

misses the mark. Under this strategy, a country would make major investments in public health in anticipation of a mass casualty attack on the American people. Although good reasons exist to increase funding for public health measures, the fear of biological weapons is not one of them. Doing so would assume an intent that is not currently evident and conflates intent with capability.
Lastly, it's worth considering whether nations may secretly develop new or novel biological threat agents for use either in subliminal conflict (i.e., "gray war" or "hybrid war") or to eliminate internal opponents (i.e., regime security). Detecting national biological weapons programs is an exceptionally difficult problem for intelligence agencies. Most biological weapons-related research and development activities are small-scale and being dual-use can be easily hidden within legitimate civilian biological research either in academic institutions or pharmaceutical industries.

Terrorism and Biological Weapons

The threat of terrorists using biological agents exists but is very limited. The fear of nonstate actors using biological agents rose with Aum Shinrikyo's 1995 failed efforts to spread botulinum and anthrax in Japan. Fears of bioterror reached its most recent crescendo with the 2001 anthrax letter mailings, coming as they did within weeks after the 9/11 attacks. The threat of further bioterror attacks, however, never materialized.
Despite the fact that terrorist biological weapons attacks have not materialized since the Amerithrax scare, some continue to argue that the supposed ease and lower cost of biological weapons development, production, and use along with the societal disruption of COVID-19 has incentivized bad actors to adopt biological weapons. These concerns have been echoed by others who assume that misuse is inevitable and following the COVID-19 example will result in mass casualties and crippling political, societal, and economic repercussions.
However, the bioterror threat seems to have diminished — not grown — since the 2001 Amerithrax letter mailings. The core al-Qaeda biological weapons efforts were first envisioned in the late 1990s and began in earnest shortly afterward. Yet the U.S. invasion of Afghanistan and the fall of the Taliban in late 2001 effectively disrupted al-Qaeda's biological weapons work which largely centered on anthrax. Left without a suitable safe haven, al-Qaeda was never able to reconstitute its biological weapons efforts. The Taliban's return to power in Afghanistan, however, may result in a reemergence of al-Qaeda and its biological weapons ambitions. Time will tell whether the Taliban now will grant safe haven to al-Qaeda that could be used for biological weapons work. What is undoubted is that the Taliban and al-Qaeda have a shared history and have continued to work closely together. Without a presence in Afghanistan, U.S. intelligence will have a more difficult time detecting any resurgent al-Qaeda biological weapons efforts.
The threat of a biological weapons effort by the Islamic State in Iraq never materialized, although the group did manage to produce and use chemical weapons agents until that program was effectively disrupted. Other terrorist groups' interest in biological weapons has been rudimentary with a focus predominately on toxins such as ricin and botulinum. U.S. domestic extremists, self-radicalized individuals, and lone actors also have gravitated toward ricin, but no known casualties have resulted from the decades-long interest in ricin.
Some analysts, however, argue that the life science revolution and global proliferation of related scientific and technical capabilities has opened a Pandora's Box of biothreats. The argument goes that the rapid revolution in genetic engineering — including synthetic biology — the DIY bio movement, and the advent of technologies like CRISPR (acronym for "clustered regularly interspaced short palindromic repeats") makes their misuse likely. However, as noted in the 2018 National Academies of Science report, *Biodefense in the Age of Synthetic Biology*, the large-scale production and delivery of biological weapons agents is inherently difficult, with biological weapons use favoring small-scale, highly targeted attacks.

Conclusion

The threat of intentional, large-scale biological weapons dissemination likely is a thing of the past. Almost no nation, with the possible exception of North Korea, is intent on the theater-wide battlefield use of biological weapons. The threat today is that biological weapons will be used as a tool by intelligence services to assassinate or debilitate high-value targets, or by special forces to conduct small-scale, targeted attacks to sabotage facilities or deny their use by an adversary. Use of non-lethal biological weapons to degrade petroleum, oil, lubricants, and/or electronics almost certainly is more feasible today. In the context of great-power competition, biological weapons use also may be indirect (i.e., biological weapons use directed at a competitor's allies or proxies/surrogates in a region). However, the recent chemical weapons use in assassinations and the use of chemical weapons in Syria — followed by a tepid international response — likely has incentivized the future use and development of biological weapons agents.
Biological weapons have a role in the "Shadow War" — which is far more insidious, far more difficult to detect, and far harder to defend against. It likely cannot be deterred using our current approaches and attribution is fraught with challenges, both technical and political.

Glenn Cross, Ph.D., is a former deputy national intelligence officer for Weapons of Mass Destruction responsible for biological weapons analysis. The views expressed here are solely those of the author in his private capacity and do not in any way represent the views, positions, or policies of the U.S. government including any of its constituent departments, agencies, or entities. The author wishes to thank an anonymous reviewer, W. Seth Carus, and Al Mauroni for their useful comments on this article.

Early Trials Underway to Test Mushrooms as COVID Treatment

Source: https://www.medscape.com/viewarticle/962529

Nov 08 – Early trials are under way to test medicinal mushrooms and Chinese herbs to treat COVID-19 patients with mild to moderate symptoms.

The US Food and Drug Administration (FDA) approved the MACH-19 trials (the acronym for Mushrooms and Chinese Herbs for COVID-19) after researchers applied for approval in April.

The first two phase 1 randomized, double-blind, placebo-controlled trials have begun at UCLA and the University of California San Diego to treat COVID-19 patients quarantining at home with mild to moderate symptoms. A third trial is investigating the use of medicinal mushrooms as an adjuvant to COVID-19 vaccines.

The researchers have also launched a fourth trial testing the mushrooms against placebo as an adjunct to a COVID booster shot. It looks at the effect in people who have comorbidities that would reduce their vaccine response. An article in *JAMA* last week described the trials.

The two mushroom varieties being tested — turkey tail and agarikon — are available as over-the-counter supplements, according to the report. They are a separate class from hallucinogenic or "magic" mushrooms being tested for other uses in medicine.

"They are not even as psychoactive as a cup of tea," Gordon Saxe, MD, PhD, MPH, principal investigator for the MACH-19 trials, told *Medscape Medical News*.

For each of the MACH-19 treatment trials, researchers plan to recruit 66 people who are quarantined at home with mild to moderate COVID-19 symptoms. Participants will be randomly assigned either to receive the mushroom combination, the Chinese herbs, or a placebo for 2 weeks, according to the *JAMA* paper.

D. Craig Hopp, PhD, deputy director of the Division of Extramural Research at the National Center for Complementary and Integrative Health (NCCIH), told *JAMA* in an interview that he was "mildly concerned" about using mushrooms to treat people with active SARS-CoV-2 infection.

"We know that a cytokine storm poses the greatest risk of COVID mortality, not the virus itself," Hopp said. "The danger is that an immune-stimulating agent like mushrooms might supercharge an individual's immune response, leading to a cytokine storm."

Stephen Wilson, PhD, an immunologist who consulted on the trials when he was chief operating officer of the La Jolla Institute for Immunology, says in the *JAMA* article that a cytokine storm is unlikely for these patients because the mushroom components "don't mimic inflammatory cytokines." Wilson is now chief innovations officer at Statera Biopharma.

"We think the mushrooms increase the number of immunologic opportunities to better see and respond to a specific threat. In the doses used, the mushrooms perturb the immune system in a good way but fall far short of driving hyper or sustained inflammation," Wilson said.

Saxe said the FDA process was extensive and rigorous and FDA investigators also asked about potential cytokine storms before approving the trials. Cytokine storm is not an issue with a healthy response, Saxe pointed out. It's a response that's not balanced or modulated.

"Mushrooms are immunomodulatory," he said. "In some ways they very specifically enhance immunity. In other ways they calm down overimmunity." Saxe noted that they did a sentinel study for the storm potential "and we didn't see any evidence for it."

"Not a Crazy Concept"

Saxe pointed out that one of the mushrooms in the combo they use — agarikon — was used to treat pulmonary infections 2300 years ago.

"Hippocrates, the father of western medicine, used mushrooms," he said. "Penicillin comes from fungi. It's not a crazy concept. Most people who oppose this or are skeptics — to some extent, it's a lack of information."

Saxe explained that there are receptors on human cells that bind specific mushroom polysaccharides.
"There's a hand-in-glove fit there," Saxe said, and that's one way mushrooms can modulate immune cell behavior, which could have an effect against SARS-CoV-2.
Daniel Kuritzkes, MD, chief of the Division of Infectious Diseases at *Brigham* and Women's Hospital in Boston, Massachusetts, who was not part of the study, told *Medscape Medical News* said he wasn't surprised the FDA approved moving forward with the trials.
"As long as you can demonstrate that there is a rationale for doing the trial and that you have some safety data or a plan to collect safety data, they are fairly liberal about doing early-phase studies. It would be a much different issue, I think, if they were proposing to do a study for actual licensing or approval of a drug," Kuritzkes said.
As yet unanswered, he noted, is which component of the mushrooms or herbs is having the effect. It will be a challenge, he said, to know from one batch of the compound to the next that you have the same amount of material and that it's going to have the same potency among lots.
Another challenge is how the mushrooms and herbs might interact with other therapies, Kuritzkes said.
He gave the example of St. John's Wort, which has been problematic in HIV treatment.
"If someone is on certain HIV medicines and they also are taking St. John's Wort, they basically are causing the liver to eat up the HIV drug and they don't get adequate levels of the drug," he said.
Though there are many challenges ahead, Kuritzkes acknowledged, but added that "this is a great starting point."
He, too, pointed out that many traditional medicines were discovered from plants.
"The most famous of these is quinine, which came from cinchona bark that was used to treat malaria." Kuritzkes said. Digitalis, often used to treat heart failure, comes from the fox glove plant, he added.
He said it's important to remember that "people shouldn't be seeking experimental therapies *in place of* proven therapies, they should be thinking of them *in addition to* proven therapies."

A Massive Global Syringe Shortage Could Hit in 2022, WHO Warns

Source: https://www.sciencealert.com/a-massive-global-syringe-shortage-could-hit-in-2022-who-warns

Nov 10 – The World Health Organization warned Tuesday there could be shortfall of up to 2 billion syringes in 2022, which threatens to hamper vaccine efforts globally if production does not improve.
The shortages are the result of COVID-19 vaccine campaigns, with billions more syringes than normal being used worldwide, badly denting global supplies.
Lisa Hedman, the WHO's senior advisor on access to medicines and health products, said as the supply of COVID-19 vaccine doses increases, the supply of syringes needs to keep pace.
"We are raising the real concern that we could have a shortage of immunization syringes, which would in turn lead to serious problems, such as slowing down immunization efforts," she told reporters.
"Depending on how the vaccine uptake goes, it could be a deficit of anywhere from 1 billion to 2 billion."
More than 7.25 billion COVID-19 vaccine doses have been administered globally, according to an AFP tally.
That's nearly double the number of routine vaccinations given per year – and twice the number of syringes required.
Hedman said one serious result of a shortage could be delays in routine vaccinations, which could have a public health impact "for years to come" if a generation of youngsters miss out on normal childhood vaccinations.
Shortages could also lead to the unsafe practice of reusing syringes and needles.
Hedman said any constraint on syringe supply could only be worsened by export restrictions and transportation problems.
She urged countries to plan syringe needs well in advance to avoid hoarding and panic buying situations.
Hedman said "efforts are being made to reduce that risk to zero in terms of the actual number that we could be short".

Video: Graphene, Aluminum, Lipid Nanoparticle (LNP) Capsids, Parasite in Four Vaccines

By Dr. Robert O. Young

Nov 09 – Absolutely bombshell and major reveals on what is in the vaccines, with use of electron and other kinds of microscopy from original research by Dr. Robert Young and his team, confirming what the La Quinta Columna researchers found — toxic nanometallic content with cytotoxic and genotoxic effects as well as an identified parasite. **Read more...**

An Avalanche of Plastic Waste Generated by The Pandemic Is Seeping into The Ocean

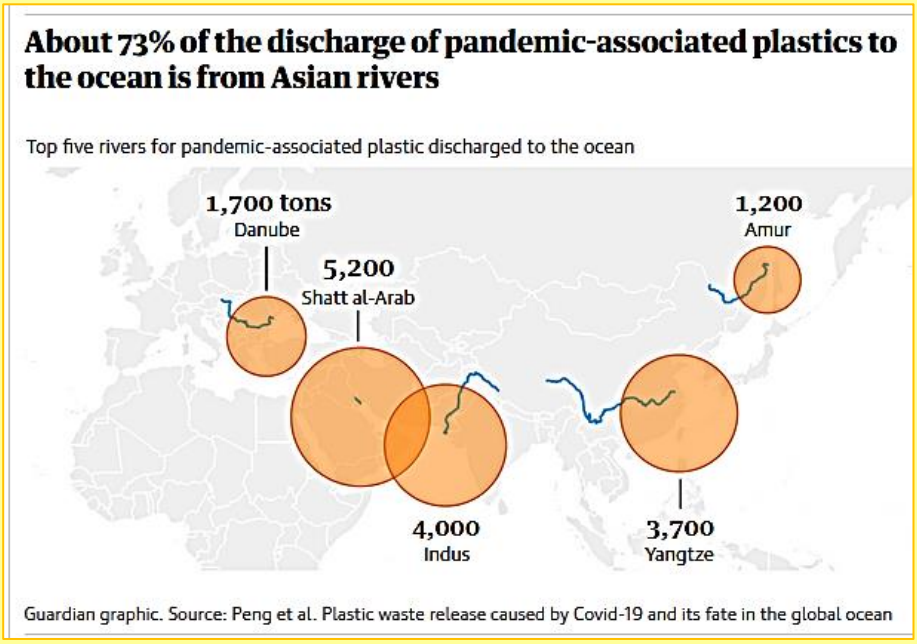
Source: https://www.sciencealert.com/model-suggests-28-000-tons-of-covid-19-waste-has-now-entered-our-oceans

Nov 09 – During the COVID-19 pandemic, more than 28,000 tons (25,000 metric tons) of pandemic-related plastic waste, such as masks and gloves, have ended up in the ocean, according to a new study.

That's more than 2,000 double-decker buses worth of waste, *The Guardian* reported. And within a few years, a portion of those plastic gloves and packaging materials from pandemic purchases could be swirling around the North Pole.

The analysis found that 193 countries produced about 9.2 million tons (8.4 million metric tons) of pandemic-associated plastic waste from the start of the pandemic to mid-August 2021, according to *The Guardian*.

The majority of the plastic – about 87.4 percent – was used by hospitals, while 7.6 percent was used by individuals. Packaging and test kits accounted for about 4.7 percent and 0.3 percent of the waste, respectively, the authors reported in a recent study, published online on Nov. 8 in the journal *Proceedings of the National Academy of Sciences*.



The team developed a model to predict how much of this plastic waste wound up in the ocean after being discarded. They predicted that, as of Aug. 23, about 28,550 tons (25,900 metric tons) of the plastic debris had already found its way into the oceans, transported there by 369 major rivers, according to *The Guardian*.

In three years' time, the majority of the debris will shift from the surface ocean to beaches and the seafloor, with more than 70 percent washing onto beaches by year's end, the authors wrote.

While in the short-term, the trash will mostly impact coastal environments near its original sources, in the long-term, garbage patches may form in the open ocean, the model predicts.

For instance, patches may accumulate in the northeast Pacific and the southeast Indian oceans. And plastic that gets swept toward the Arctic Circle will hit a dead-end, and much of it will then swiftly sink to the seabed, the model predicts. The researchers also predict that a so-called circumpolar plastic accumulation zone will form by 2025.

And "at the end of this century, the model suggests that almost all the pandemic-associated plastics end up in either the seabed (28.8 percent) or beaches (70.5 percent), potentially hurting the benthic ecosystems," meaning the deepest regions of the ocean, the authors wrote.

"The recent COVID-19 pandemic has led to an increased demand for single-use plastic, intensifying pressure on this already out-of-control problem," the study authors wrote. "These findings highlight the hotspot rivers and watersheds that require special attention in plastic waste management."

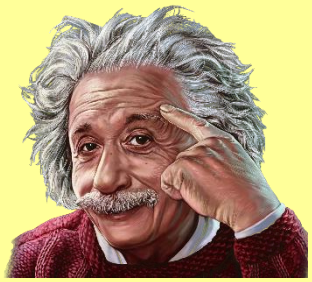
In particular, the study highlights a need for better systems for collecting, treatment and disposing of medical plastic waste in developing countries, to keep it out of rivers, and an overall need to limit the use of single-use plastics and increase the use of sustainable alternatives, where possible, the authors wrote.

▶▶ **Read more about the new study in** *The Guardian.*

Myocarditis and Pericarditis after mRNA COVID-19 Vaccination. CDC Report

Nation of Islam Pushes Anti-COVID-19 Vaccine Message, Conspiracy Theories

Source: https://www.homelandsecuritynewswire.com/dr20211110-nation-of-islam-pushes-anticovid19-vaccine-message-conspiracy-theories



Nov 10 – Months before the first COVID-19 vaccine began to be distributed in the United States, the Nation of Islam (NOI) had already widely disseminated its directive that Black people refuse the vaccine. Over a year later, the NOI and its leading members have continued their unrelenting promotion of anti-vaccine messages in social media posts, print materials, sermons and beyond. More recently, anti-vaccine advocacy has led NOI members to collaborate with and be promoted by various individuals and groups outside of the NOI, including conspiracy theorists and QAnon proponents.

Despite sometimes holding significantly different views about other aspects of the pandemic or their ideologies more broadly, a shared commitment to protesting the vaccine, as well as a distrust of the government and mainstream media, has facilitated these joint efforts. Through all of this, the NOI has exploited legitimate concerns and distrust about the history of medical experimentation on marginalized communities in the United States in order to promote conspiratorial claims about a government-sponsored depopulation plot that targets Black people.

Background

Advocating against vaccines is a familiar strategy for the NOI. In the 1960s, NOI leader Elijah Muhammad instructed his followers to reject the polio vaccine. In the mid-2010s, the NOI revived its anti-vaccine advocacy under leader Louis Farrakhan with a focus on the disproven allegation that vaccines are linked to autism in children. Early in the coronavirus pandemic, NOI leaders and members again began to revisit the topic of vaccines, including promoting conspiratorial claims that the COVID-19 vaccine was part of an agenda to kill Black people.

On July 4, 2020, Farrakhan delivered a highly-publicized speech in which he instructed Black people in the U.S. and around the world: "Don't take the vaccines…Don't let them vaccinate you, with their history of treachery through vaccines, through medication." He claimed that the vaccines were part of a depopulation plot sponsored by the U.S. government, Dr. Anthony Fauci, and Bill and Melinda Gates, among others. "We will not accept your vaccine," Farrakhan continued, "because we're not accepting death." Farrakhan further claimed that any attempt to force Black people to take the vaccine would be considered "a declaration of war." Within days, the speech had received over one million views online.

In subsequent weeks and months, quotations from the speech were repurposed as hashtags and slogans plastered on the NOI's website, social media accounts, and other online and print materials, including in the group's weekly newspaper, The Final Call. Specialized brochures urging readers to heed Farrakhan's warnings about the vaccine were distributed alongside The Final Call. Before its Twitter account was suspended in 2021 for violating the platform's policies, the Nation of Islam Research Group, known for producing some of the NOI's most virulently antisemitic content, posted numerous graphics warning against the vaccine, which were further shared on other NOI-affiliated accounts and platforms.

NOI members at all levels of the organization have since propagated the anti-vaccine messages. Ishmael Muhammad, the NOI's Student National Assistant Minister, has frequently reiterated Farrakhan's instructions during the NOI's nationally-broadcast weekly sermons. "The Minister has made it clear to us that we're not taking their vaccine. It's not up for debate. It's a divine order from God," he stated in January 2021. During another weekly sermon later that same month, NOI Executive Council member and Student Minister Wesley Muhammad blamed Jews for the pandemic and warned against trusting the "vaccine mafia."

Collaborations to Spread Anti-Vaccine Message

In addition to tactics which utilize the NOI's own publications and social media channels, the NOI has also spread its anti-vaccine propaganda through collaborations with or promotion from a wide range of individuals and groups over the past year. Some of these individuals and groups have a more mainstream following while others pander to a more extreme audience. These collaborative activities though have provided a platform for NOI members to grow their audiences and serve to seemingly legitimize NOI's false and misleading claims.

Mainstream Platforms and Collaborators

In December 2020, Farrakhan addressed the National Black Leadership Summit, which was hosted virtually by the Nubian Leadership Circle, a group that promotes Black unity worldwide. Farrakhan reiterated his claims about the supposed government-sponsored "death plan" targeting Black people and described the COVID-19 vaccines as "free shots of toxic waste."

NOI chapters have also joined anti-vaccine coalitions at the local level. For example, NOI Student Minister Henry Muhammad and other members of the NOI's Muhammad Mosque No. 7C in Brooklyn, NY participated in an October 2021 rally with community activists outside the Barclays Center, home to the NBA's Brooklyn Nets, to support Nets player Kyrie Irving and his decision to not receive the COVID-19 vaccine. Abroad, local NOI members in Barbados joined with other religious groups and activists to form the Barbados Concerned Citizens Against Mandated and Coerced Vaccination coalition which organized an August 2021 protest against a potential vaccine mandate.

Rizza Islam, an NOI member and social media influencer who has promoted antisemitic and anti-LGBTQ+ content, is a prominent anti-vaccine advocate with a history of collaborating with other anti-vaxxers and conspiracy theorists. His conspiratorial claims about the government's use of vaccines as a means of population control stretch back years, though the coronavirus pandemic has helped him build his current following. By early 2021, he had amassed over half a million followers across various social media platforms and was listed among the dozen most influential online anti-vaxxers in a report published by the Center for Countering Digital Hate, a non-profit organization which analyzes online misinformation. He continues to circumvent repeated social media bans, despite platform policies which prohibit sharing vaccine-related misinformation.

During the pandemic, Rizza Islam received mainstream exposure and support, enabling him to both directly further his anti-vaccine messages and establish himself as a leading representative of the NOI. In March 2021, he appeared on ABC's primetime show, "Soul of a Nation," to provide perspective on the Black Muslim experience. While vaccines were not the focus of the segment, Rizza Islam's signature anti-vaccine bowtie and pocket square—adorned with an image of a syringe covered by a red circle with a slash through it—were both visible in promotional materials for the episode (the symbols were blurred when the full segment aired).

Rizza Islam was also featured on multiple occasions on the cable program "Black News Tonight," hosted by Marc Lamont Hill on BNC, including a September 2021 appearance to debate the efficacy of the COVID-19 vaccine with a pro-vaccine physician. BNC is available to more than 50 million homes across the country and video of the segment, in which Rizza Islam repeated misinformation about vaccines allegedly being unsafe and ineffective, has received hundreds of thousands of views online since the episode aired.

Celebrities have also contributed to the spread of the NOI's anti-vaccine content. Rap artist Jay Electronica has reposted content from NOI leaders and shared links to articles published by The Final Call about why Black people should not trust the COVID-19 vaccine, reaching hundreds of thousands of followers. Former NBA players Stephen Jackson and Kwame Brown, rapper T.I., and music producer Pete Rock have met with Rizza Islam during his anti-vaccine tour or supported his content online. After one of Rizza Islam's social media accounts was terminated for violating misinformation policies in June 2021, Jackson posted a video in his defense, stating "y'all owe my boy an apology…He'd been telling y'all Fauci was lying. He'd been exposing all the bullshit about the vaccine…My brother Rizza Islam been bringing all this dumb shit to the light."

Local elected officials and politicians are among those who have helped spread the NOI's anti-vaccine misinformation. Marcus Muhammad, a longtime NOI member and the current second-term mayor of Benton Harbor, MI, regularly posts anti-vaccine content on his social media, including reposts directly from NOI-affiliated channels. In Connecticut, a Norwalk city council member organized and co-hosted an event for Rizza Islam's anti-vaccine speaking tour in October 2021. A city council member in South Fulton, GA has hosted events with Rizza Islam multiple times in 2021, including a community event which was promoted by the city's official social media accounts and advertised as providing "researched information about what the Black community needs to know about the pandemic." During one of his visits to South Fulton, Rizza Islam was also honored with a proclamation from the city which praised him for "fostering community edification on the issue of vaccinations within the Black community."

Conspiratorial platforms and collaborators

At the NOI's annual Saviours' Day event in February 2021, which was held in Chicago and livestreamed online, anti-vaccine messages took a leading role and extremists from other organizations helped promote this message. For instance, longtime anti-vaccine advocate Robert F. Kennedy Jr., who leads the Children's Health Defense organization, and QAnon proponent Dr. Judy Mikovits, who gained fame for her role in the viral Plandemic videos in 2020, were both featured during a plenary session on the coronavirus pandemic.

California-based NOI Student Minister Abdul Malik Sayyid (AKA Tony) Muhammad, Farrakhan's Western Regional Representative, co-produced an anti-vaccine documentary film with Kennedy and fellow anti-vaccine conspiracy theorist Kevin Jenkins, titled "Medical Racism: The New Apartheid." The film, targeted at Black viewers, had its first public showing at Saviours' Day weekend, ahead of an official premiere in March 2021.

Other NOI members have also regularly collaborated with Jenkins, who runs the Urban Global Health Alliance, on anti-vaccine efforts. Rizza Islam and local NOI members joined Jenkins for a protest outside the CDC headquarters in March 2021. Rizza Islam, Atlanta-based NOI member King Cam, and local NOI Student Ministers are among those who have

served as featured speakers at anti-vaccine events co-hosted by Jenkins and Angela Stanton-King, a QAnon proponent and anti-LGBTQ+ bigot.
Prominent anti-vaccine conspiracy theorist Dr. Simone Gold and QAnon proponent Dr. Carrie Madej have also been featured alongside NOI members at some of these events. Rizza Islam previously spoke at a December 2020 event sponsored by America's Frontline Doctors, the discredited medical group led by Gold. Both The Final Call newspaper and the NOI Research Group have provided links to the America's Frontline Doctors website in articles about the coronavirus pandemic and vaccines.
In a display of one of the most unexpected alliances forged by anti-vaccine advocacy during the pandemic, Rizza Islam appeared as a guest on InfoWars in August 2021 with host Alex Jones, a notorious right-wing conspiracy theorist who has drawn admiration from white supremacists. During the interview, Jones praised Rizza Islam and the NOI for their opposition to the vaccines. Rizza Islam reciprocated Jones' praise and adjusted his messaging to appeal to Jones' audience, expanding his typical focus on the racial component of the supposed depopulation agenda to a broader warning about the threat that the government's actions pose to all people.
"This [government] is done for," Rizza Islam told Jones, "this one under Satan, this one under evil and wickedness and pedophilia and rape and all of that, that is over…In the Black community, we've always known it to be the system of white supremacy…As we know now, it's more than just that. It is a globalist system. It is pure evil." Rizza Islam returned to InfoWars in October 2021 for another segment about the COVID-19 vaccine.

Next-gen supercharged COVID-19 vaccines may also target the common cold

Source: https://newatlas.com/science/new-target-future-coronavirus-vaccines-common-cold/

Nov 10 – UK researchers investigating a cohort of healthcare workers with a strange pre-existing resistance to SARS-CoV-2 infection have discovered a new antigen target for the next generation of COVID-19 vaccines. The researchers speculate the next wave of vaccines using this antigen could potentially protect against all circulating coronaviruses, including those known to cause the common cold.
Vaccines work by presenting the body with a molecule designed to help the immune system learn how to identify certain pathogens. These molecules are known as antigens, or antibody generators, and the big antigen our first wave of COVID-19 vaccines targeted is the infamous coronavirus spike protein.
Looking to the next generation of COVID-19 vaccines, researchers are looking beyond the spike protein, investigating alternative SARS-CoV-2 antigens. This new research started by studying a cohort of healthcare workers in the UK who strangely seemed to repeatedly test negative to SARS-CoV-2 despite high levels of exposure to the virus.
This cohort consistently tested negative to common antibody and PCR tests, however, the researchers did detect some blood markers suggestive of SARS-CoV-2 infection. An increase in immune T-cells specifically geared to target SARS-CoV-2 was detected, indicating the healthcare workers had potentially experienced a low-level infection but managed to somehow fight it off early.
"We know that some individuals remain uninfected despite having likely exposure to the virus," explains Leo Swadling, lead author on the new study. "What we didn't know is whether these individuals really did manage to completely avoid the virus or whether they naturally cleared the virus before it was detectable by routine tests. By intensively monitoring health care workers for signs of infection and immune responses, we identified a minority with this particular SARS-CoV-2 specific T cell response."
The T-cells detected in the study were trained to target non-structural proteins that play a role in the early stages of the virus's life cycle. These proteins are part of the virus's replication transcription complex, more commonly referred to as replication proteins.
Most interestingly, these particular replication proteins are common to all coronaviruses. So the researchers hypothesize those individuals with strong T-cell responses targeting these proteins may have had recent exposure to a more innocuous common-cold-causing coronavirus.
"The regions of the virus that these T cells recognize are highly conserved amongst other members of the coronavirus family, such as those that cause common colds every year," says Swadling. "Previous common cold exposure may have given these individuals a head starts against the virus, tipping the balance in favor of their immune system eliminating the virus before it could start to replicate."
These findings build on a growing hypothesis suggesting a cross-reactive immune response between SARS-CoV-2 and common coronaviruses. A recent Stanford University study speculated prior exposure to coronaviruses that cause the common cold may explain why some people experience incredibly mild or even asymptomatic forms of COVID-19.

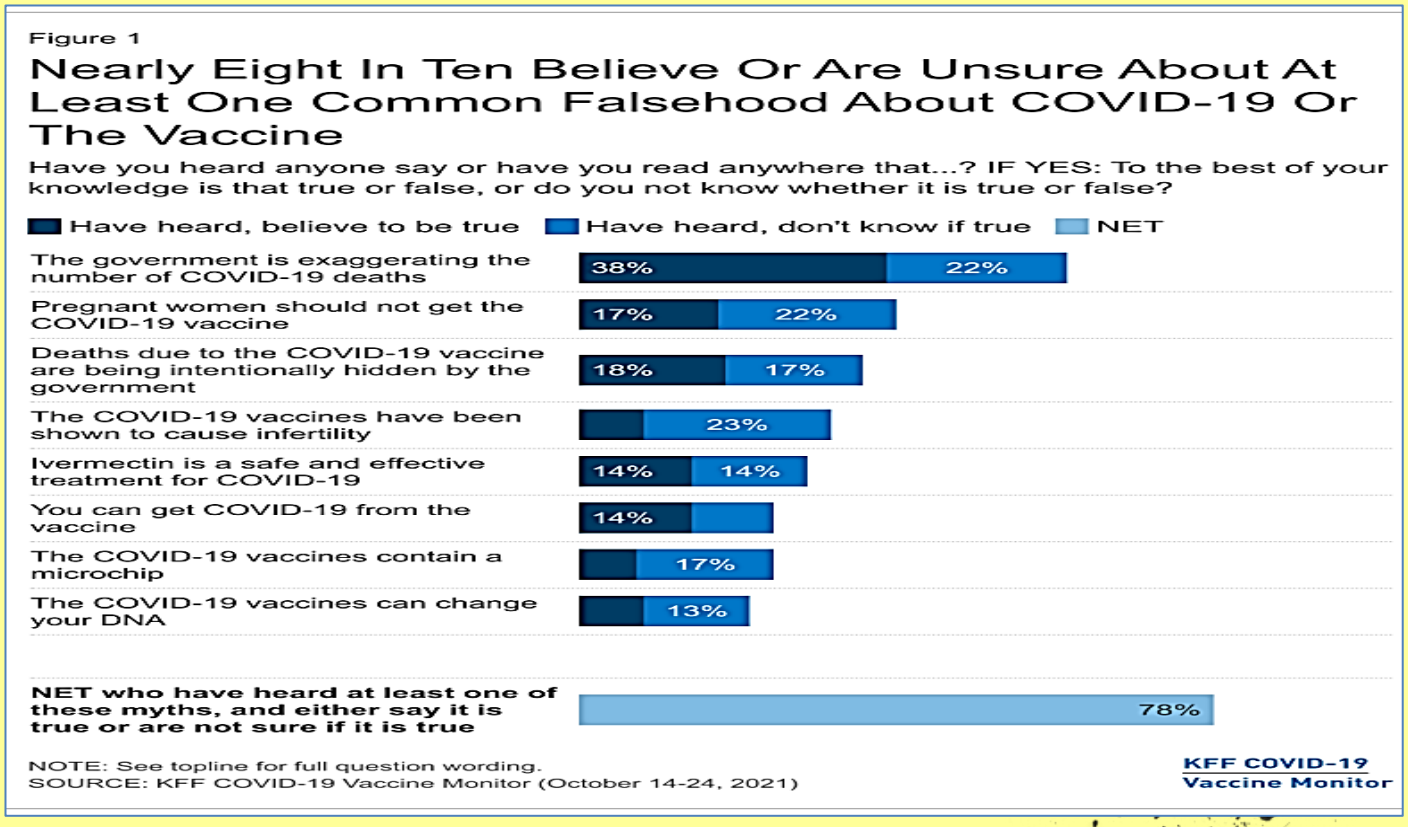
But the most promising implication of this study is the speculation that these replication proteins could be incorporated as antigens into future COVID-19 vaccines. Mali Maini, senior author on the new study, says a vaccine inducing T-cells to target these replication proteins may offer protection against all current coronaviruses, including those that cause the common cold.
Maini also points out a future vaccine would include these newer antigens in addition to those spike protein antigens. This would create a complimentary system with antibodies trained to quickly recognize the spike protein and memory T-cells targeting these replication proteins.
"T cells recognizing the virus's replication machinery would provide an additional layer of protection to that provided by the spike-focused immunity that is generated by the already highly efficacious current vaccines," says Maini. "This dual-action vaccine would provide more flexibility against mutations, and because T cells can be incredibly long-lived, could also provide longer-lasting immunity. By expanding pre-existing T cells, such vaccines could help to stop the virus in its tracks at a very early stage."

▶▶ **The new study was published in the journal** *Nature*.

Majority of Americans believe at least some form of COVID misinformation

Source: https://newatlas.com/health-wellbeing/survey-americans-believe-covid19-false-information-kff/

Nov 10 – A new survey from the Kaiser Family Foundation (KFF) has found 78 percent of Americans believe at least one piece of COVID-19 misinformation. The nonpartisan survey also found more than one third of those polled believe the US government is exaggerating the number of COVID-19 deaths.
KFF is a nonpartisan and nonprofit organization offering independent health policy analysis in the United States since 1948. The new Media and Misinformation survey is part of an ongoing KFF project called the COVID-19 Vaccine Monitor, which tracks dynamic changes to public attitudes regarding COVID-19 vaccinations.
The survey was conducted in October and included a nationally representative sample of 1,519 adults. The sample included a relatively even split between Democrats, Republicans and Independents. Around one third of the sample was unvaccinated.

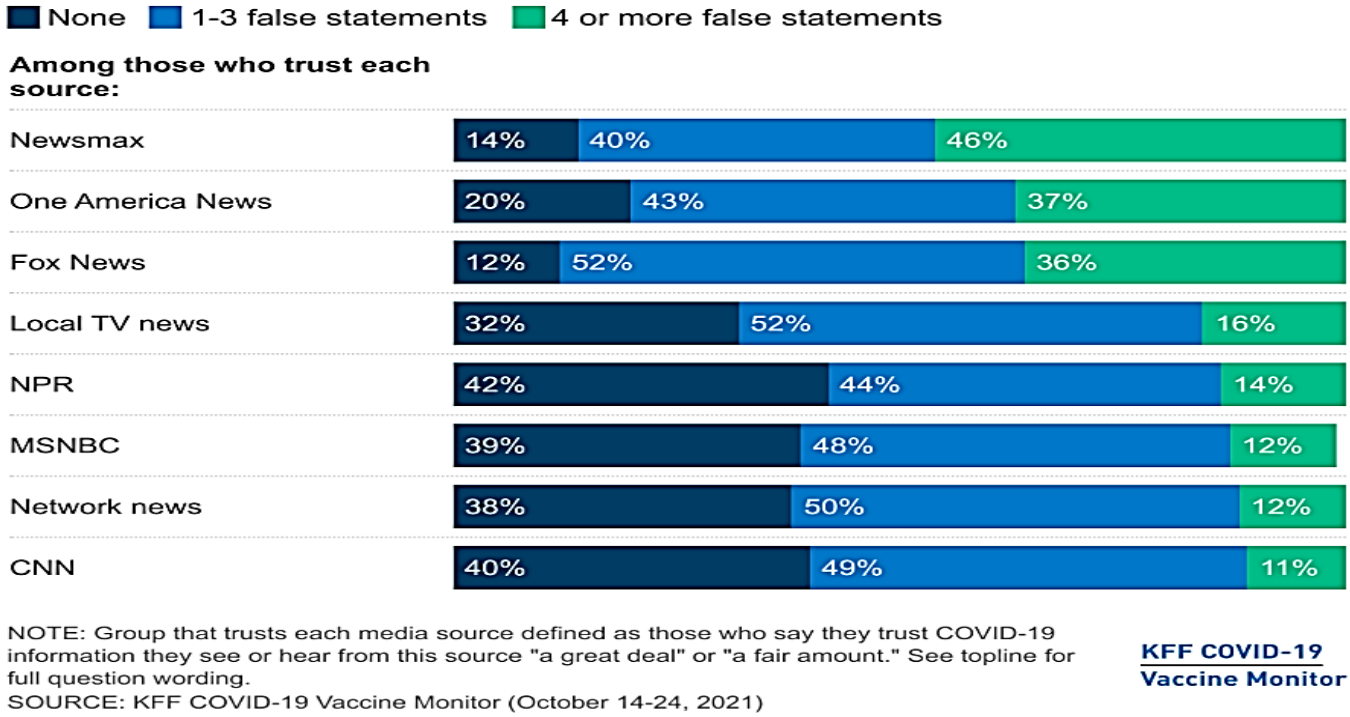


Participants were asked if they thought the statements were true, false or they weren't sure
KFF COVID-19 Vaccine Monitor

Figure 6

Belief In Misinformation Differs Based On Trusted News Sources For COVID-19 Information

Number of false statements about COVID-19 that individuals believe to be true or are unsure about:



NOTE: Group that trusts each media source defined as those who say they trust COVID-19 information they see or hear from this source "a great deal" or "a fair amount." See topline for full question wording.
SOURCE: KFF COVID-19 Vaccine Monitor (October 14-24, 2021)

KFF COVID-19 Vaccine Monitor

Susceptibility to misinformation was somewhat linked to what news sources people trusted most - KFF COVID-19 Vaccine Monitor

Eight false statements were presented to the group and they were asked if they believe the statements to be true, false, or whether they were unsure about the information.

The statements, as seen in the figure below, spanned a number of common pieces of COVID-19 misinformation. These included false statements such as "COVID-19 vaccines cause infertility" and "COVID-19 vaccines contain a microchip."

Little more than one in five adults surveyed were sure all eight statements were untrue. One third of all surveyed said at least four of the statements were either true or they were unsure of their truth.

Although Republicans were overall more likely to believe in a greater volume of false statements, Democrats were not immune to misinformation, with only 38 percent disputing all eight statements. Those unvaccinated subjects were most likely to believe in multiple false statements, with 64 percent expressing belief or uncertainty in four or more of the pieces of misinformation.

The survey also looked at the correlation between belief in misinformation and where individuals source their news. Fox News watchers had the highest rates of belief in misinformation, with 88 percent of those believing, or expressing uncertainty about, one of the eight statements. However, CNN and MSNBC viewers also fell victim to misinformation, with 60 percent of those groups believing, or at least questioning, one of the eight false statements.

"The findings highlight a major challenge for efforts to accurately communicate the rapidly evolving science about the pandemic when false and ambiguous information can spread quickly, whether inadvertently or deliberately, through social media, polarized news sources and other outlets," says a statement from KFF accompanying the release of the new report.

In July the US Surgeon General Vivek Murthy issued an advisory to the American public warning of the the threats of health misinformation. Since then his office has produced a

toolkit to help those in the community "understand, identify, and stop the spread of health misinformation."
"Health misinformation is an urgent threat to public health," Murthy said back in July. "It can cause confusion, sow mistrust, and undermine public health efforts, including our ongoing work to end the COVID-19 pandemic. From the tech and social media companies who must do more to address the spread on their platforms, to all of us identifying and avoiding sharing misinformation, tackling this challenge will require an all-of-society approach, but it is critical for the long-term health of our nation."

Israel successfully completes COVID-19 'war game'

Source: https://www.jpost.com/health-and-wellness/coronavirus/israel-successfully-completes-covid-19-war-games-684719

Nov 11 – Dozens of top officials took part in what Prime Minister Naftali Bennett called a COVID-19 war exercise on Thursday to gauge the country's preparedness for the next wave of the pandemic.
"We are starting an unprecedented event here," the prime minister said at the start of the exercise – "not only on an Israeli scale but on a global level. We are conducting a war exercise to prepare for a new variant that does not even exist yet."
The "Omega Exercise," as Bennett called it, was held in the format of a "war game," the Prime Minister's Office said. Bennett has regularly referred to the "Omega strain," the next harmful COVID-19 variant that has not yet been discovered. A war game is a game of the mind; no physical exercises took place.
Bennett said that Israel has surfaced from the Delta wave without locking down, proving that "with proper management, the pandemic can be defeated."
Israel has only around 500 new cases per day, after averaging several thousand new cases per day only two months ago. The country ran a mass booster-shot campaign, inoculating more than four million Israelis while maintaining open schools and an open economy.
Under the previous administration, Israel locked down three times.
Bennett acknowledged that the pandemic has not yet disappeared, noting how in countries, like several in Europe, there are a record number of daily cases.
"The most threatening thing is not the current situation, but what we do not know yet," he said. "Just as the Delta strain suddenly and violently erupted, other, more deadly and more contagious, vaccine-resistant variants could arrive."
He said that the exercise was meant to be a proactive attempt to prepare for such a scenario. The event was meant to check that all the ministries are ready for the next wave, that the hospitals can manage under extreme circumstances, and that the country's top scientists are closely following every variant that has emerged in the world – no matter how small.

The team evaluated the preparedness of the country in the health, legal, economic, internal security, travel and communication realms, including looking at specific policies for how to handle gatherings, quarantine, events, tourism and more.

Representatives from senior-level officials and teams from across ministries and sectors took part in the exercise. It was held at the National Management Center in Jerusalem.
A spokesperson for the prime minister said assessment of the results of the war game would proceed immediately and continue over the next week or so to determine the next steps for managing the pandemic in Israel.

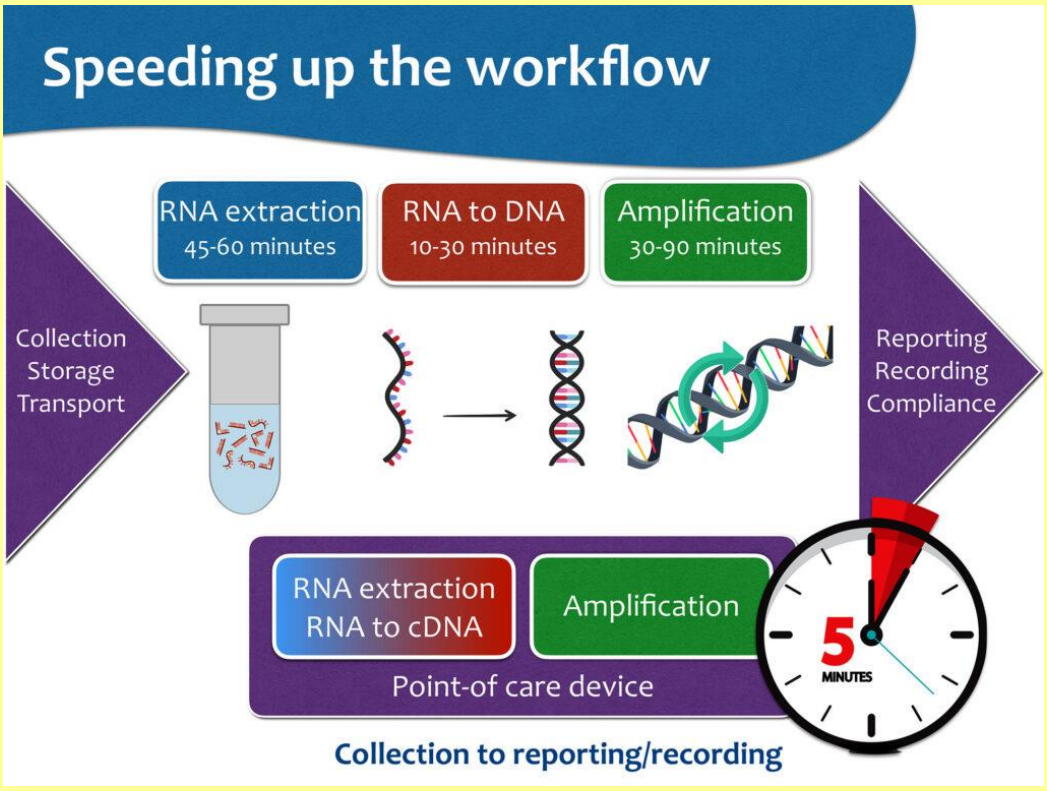
PCR Gains New Powers and Broadens Its Clinical Remit

By Vivienne Raper, PhD
Source: ttps://www.genengnews.com/topics/omics/pcr-gains-new-powers-and-broadens-its-clinical-remit/

Nov 01 – Polymerase chain reaction (PCR) tests have become routine because of the COVID-19 pandemic, with more than a million PCR tests being carried out daily in the United States alone. What are now commonly known as RT-PCR tests have become key to the world's pandemic response.
Although "RT-PCR" is on everyone's lips, the term can be confusing. The "RT" can stand for "real time" or "reverse transcription." Also, RT-PCR tests may or may not incorporate a technique called quantitative PCR (qPCR).
Finally, qPCR is sometimes taken to mean the same thing as real-time PCR.
For the sake of clarity, the gold standard diagnostic test for COVID-19 should be called "qRT-PCR" to emphasize that it incorporates reverse transcription PCR and quantitative PCR. Like other PCR techniques, qRT-PCR relies on PCR, a common method for making many copies

of small DNA segments. In addition, qRT-PCR employs a reverse transcriptase, which creates complementary DNA copies of the RNA in a sample. Finally, qRT-PCR uses qPCR, which monitors the amplification of a targeted DNA molecule during the PCR by measuring fluorescent signals from the binding of fluorescent dyes or probes. (In qPCR, fluorescence is monitored in real time, that is, during amplification, not at the end of amplification, as in conventional PCR.)

Because qRT-PCR combines PCR amplification, reverse transcription, and fluorescence monitoring, it is able to measure the amount of RNA molecules that have been targeted for analysis, even RNA molecules that are present in quantities that would otherwise be too small to measure. Needless to say, these RNA molecules may correspond to viral RNA, such as the RNA from the SARS-CoV-2 virus.



At Anglia Ruskin University, Stephen Bustin, PhD, has been working to make PCR analysis faster and more reliable. He believes that with the development of standardized workflows and optimized protocols, RT-qPCR systems could be devised that would provide five-minute reporting/recording of test results at the point of care.

Of course, PCR technologies have clinical applications beyond COVID-19 testing, as well as research applications. For example, reverse transcription can be used to monitor gene expression or mRNA synthesis. And if qPCR uses fluorescent DNA probes rather than dyes, it can measure multiple DNA targets—that is, it can realize multiplexing applications. Yet another PCR technology is digital PCR. It involves partitioning PCR samples into thousands of nanodroplets, with a separate PCR reaction performed on each one. In digital PCR, the "digital" refers to the absolute quantification of target nucleic acids. Digital PCR does not rely on references or standards to derive absolute quantities from relative or "analog" measurements. Accordingly, it is capable of greater precision.

The latest advances in qPCR and digital PCR will be discussed at the 8th qPCR & Digital PCR Congress, which is to be held December 6–7 in London. The event's presentations will focus on the challenges of using qPCR and digital PCR in clinical settings—challenges such as accuracy, reproducibility, assay optimization, multiplexing, and standardization. Several of these challenges are discussed in this article, which shares insights from the upcoming event's most intriguing speakers.

Making PCR faster

The pandemic has highlighted some of the deficiencies in PCR testing. "It's become obvious testing is a crucial part of the response, but PCR testing is extremely infrastructure- and time-consuming," says Stephen Bustin, PhD, professor of molecular medicine, Anglia Ruskin University. If you're lucky, he continues, it might be six hours before you have a sample, but it's usually two or three days until you have an analyzable result.

Bustin has worked with PCR for decades. He achieved a measure of fame in 2007 as an expert witness for the U.S. Department of Justice. In this capacity, he presented a reanalysis of the RT-qPCR data underpinning Andrew Wakefield's infamous work linking the MMR vaccine with autism.

Through his work, Bustin has learned that PCR is often performed poorly and applied inappropriately. He has also found that these problems have real-life consequences. In the case of the Wakefield reanalysis, he uncovered contamination issues in the original PCR analysis of intestinal samples taken from autistic children.

Bustin has been working to make PCR analysis faster and more reliable. He recalls how he reacted after a colleague reported that extreme PCR could perform 30 cycles of amplification in 20 seconds. Extreme PCR's speed, Bustin realized, could be valuable in COVID-19 diagnostics. He still feels that way: "We need a personalized point-of-care system where you can do PCR in as little time as possible."

Since 2019, Bustin has been working on a method to run 30 cycles of PCR amplification in 75 seconds. At the congress, he plans to explain how to take a sample, enrich the RNA content, perform a reverse transcriptase reaction, and then run a rapid PCR on the DNA.

He explains that conventional PCR relies on a heating block to adjust temperature, whereas his method uses a robot to move samples rapidly between heated water baths. "I can't tell you a lot about it," he says. "The university is quite interested in it, and there are a lot of patents."

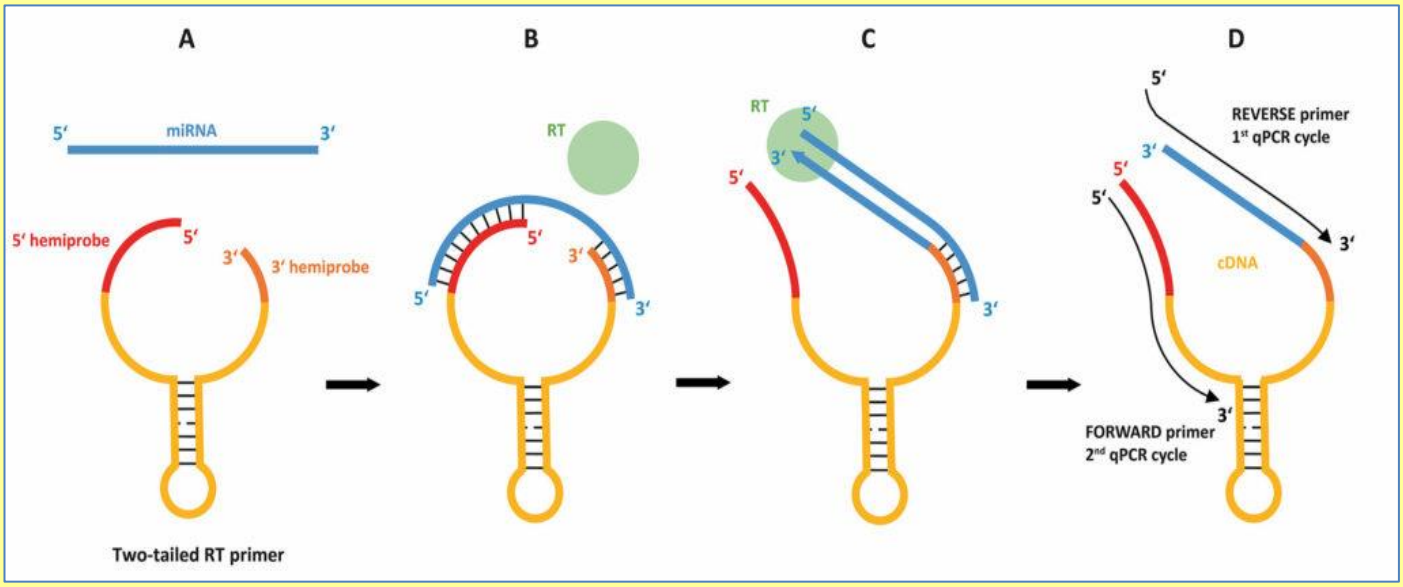
Although Bustin must be discrete, he does share that he's working with OptiSense, a small analytical instrument company based in Horsham, U.K. The collaborators have a two-year business plan to miniaturize the technology. They are currently developing a prototype instrument.

"If it works, it's going to revolutionize how we do PCR," Bustin asserts. "The aim is to do a PCR in five minutes. So, you might pop down to Boots [a U.K. pharmacist] and get a SARS-CoV-2 or flu test. You could test before you go into a waiting room or a hospital setting. Visitors could get tested before entering a care home, or people could get tested in an airport or on a cruise—the potential uses are quite limitless."

Amplifying the applications

The U.K.'s Cell and Gene Therapy Catapult (CGTC) has been working with industry partners and academic collaborators to progress the use of PCR for gene therapy manufacturing. That's according to Lily Li, PhD, a viral vector analytical senior scientist at the CGTC. Li will be presenting a study at the convention that compares qPCR with droplet digital PCR (ddPCR) for monitoring genome viral vector copy number in adeno-associated virus (AAV) manufacturing.

"When manufacturers make these AAV gene therapy products, they need to monitor the genome copy number of the AAV," Li says. "One of the most-used ways is by qPCR, and that's why adequate AAV characterization is critical for process development, manufacturing, clinical dosing, and ultimately product safety."



An advanced PCR technology called two-tailed RT-qPCR is being developed for microRNA detection by Mikael Kubista, PhD, head of gene expression profiling, Institute of Biotechnology, Czech Academy of Sciences. Instead of using a single probe, two-tailed PCR uses two hemiprobes that bind to different stretches of targeted microRNA and are connected by a tether. Using two probes ensures high sensitivity and enables discrimination of highly homologous microRNAs

Li notes that the precision of qPCR can be poor for AAV characterization, and that qPCR can behave suboptimally when applied to complex gene therapy products.

"All this complexity may affect how qPCR, one of the most common [PCR] methods, works," she explains. Her research indicates that ddPCR performs better than qPCR. "It's less susceptible to complex factors and more robust," she details. "We know it's more capable of processing these variables." She acknowledges, however, that qPCR is cheaper and delivers higher throughput than ddPCR, and that many manufacturers still consider qPCR to be a gold standard technique.

Improving PCR precision

A recent innovation in PCR that promises to advance precision diagnostics is two-tailed PCR, says Mikael Kubista, PhD, head of gene expression profiling, Institute of Biotechnology, Czech Academy of Sciences. "I think we first published on it three or four years ago," he recalls. "And that was the publication of an application for microRNA detection."

Regular qPCR uses two primers and, optimally, a probe. The primers are short sections of single-stranded DNA that flank the region of DNA to be copied (and amplified). The probe, meanwhile, is the fluorescently labeled DNA oligonucleotide that binds downstream of the primer and fluoresces when the DNA is cut during amplification. According to Kubista, the primers and probe tend to be 20–25 bases long and are thus unable to detect or amplify a DNA/RNA molecule shorter than 50 bases.

"Generally, this has been a major problem when analyzing short molecular targets like microRNAs," he says. "If you work with fragmented material, the standard method is to make the RNA longer to fit the two primers, but if you make the original RNA target longer, you have to include another reaction, the elongation."

Kubista explains that elongating the original RNA compromises the PCR yield by adding an additional process step. You also lose specificity, he explains, because the primer targets a small, specific sequence of bases.

Two-tailed PCR overcomes this problem by priming with a single molecule that hybridizes to both ends of the microRNA, he explains. Although each hemiprobe is too small on its own to form a stable interaction with the microRNA, the hemiprobes hybridize with the same efficiency as a regular primer when they are put together on the same molecule.

"You gain sensitivity because you don't have to include an additional elongation reaction," Kubista explains. "You PCR the target directly, and you also have fantastic specificity." Two-tailed PCR, he says, can detect as little as one molecule of sequence variation among 100 to 1,000 sequences in a digital PCR droplet.

After the two-tailed PCR technology first appeared in published work in 2017, it began to be commercialized by BioVendor, which currently offers the technology in the form of off-the-shelf assays. The first panel to detect SARS-CoV-2 microRNAs was developed using two-tailed PCR. The technology also has applications for monitoring organ rejection. In these applications, the technology can monitor donor DNA—that is, DNA from a donor heart, lung, kidney, or liver—that enters the patient's bloodstream during rejection. The tiny fragments of donor DNA, Kubista asserts, are detectable with two-tailed PCR.

Turning to advanced sequencing techniques

Another researcher working to improve the specificity of DNA detection in patient's blood is Viktor A. Adalsteinsson, PhD, associate director of the Gertsner Center for Cancer Diagnostics at the Broad Institute of MIT and Harvard. Adalsteinsson is focused on improving the sensitivity of techniques for detecting minimal residual disease (MRD).

"There's been a lot of interest in tracking MRD—the cancer left after treatment," he says. "There are millions of cancer patients that undergo surgery for an early-stage cancer. But if there's no way to know if there's MRD left elsewhere in the body, it's difficult to assess the need for further treatment or the risk of a future recurrence.

"When there's very little tumor DNA in the blood, the likelihood that all mutations from a patient's tumor are drawn in any one tube of blood is slim. We think that looking for all mutations in a patient's tumor genome can improve detection."

He will be presenting a study at the congress showing that tracking more mutations per patient improved the likelihood of detecting MRD. The study describes how Adalsteinsson and colleagues tracked mutations using an ultrasensitive blood test they developed for cell-free DNA. The test used exome sequencing for patient-specific single-nucleotide variants.

The researchers compared the results from their test to the results from a ddPCR test. Both tests were used to evaluate a cohort of breast cancer patients. The new test, the researchers found, had a thousand-fold lower error rate. Adalsteinsson and colleagues have developed several other new methods. For example, they developed Concatenating Original Duplex for Error Correction (CODEC), a sequencing method that combines the massively parallel nature of next-generation sequencing with the single-molecule capability of third-generation sequencing. They developed Duplex-Repair, a method that can limit interior duplex base pair resynthesis, rescue the impact of induced DNA damage, and afford more accurate duplex sequencing. And they developed Minor Allele Enriched Sequencing through Recognition Oligonucleotides (MAESTRO), a method for mutation enrichment. According to Adalsteinsson, MAESTRO has made it possible to track genome-wide tumor mutations in blood.

Addressing Natural and Deliberate Biological Threats: Early Lessons from the COVID-19 Pandemic

Source: https://www.homelandsecuritynewswire.com/dr20211112-addressing-natural-and-deliberate-biological-threats-early-lessons-from-the-covid19-pandemic

Nov 12 – The COVID-19 pandemic is continuing to take heavy tolls on America and the world, with hundreds of thousands of deaths and millions of infections in the United States alone.

In August 2020, the Council on Strategic Risks (CSR) and Sandia National Laboratories convened public and private sector leaders to share their observations on the ongoing pandemic—and on the various efforts to stop it. The discussion synthesized lessons which will be critical to countering biological threats in the future.

The other day, CSR released the results of that dialogue in a new report, Critical Steps in Preventing Future Pandemics: Early Lessons from the COVID-19 Crisis for Addressing Natural and Deliberate Biological Threats.

"Infectious disease threats will continue to emerge, whether naturally, by accident, or deliberately. Stopping them from spreading and causing mass effects is possible even today, but we have much work to do bringing our assets to bear" said Andy Weber, Senior Fellow at CSR and former U.S. Assistant Secretary of Defense for Nuclear, Chemical, and Biological Defense Programs. "We have to create true early warning systems for biological threats, and use the past year's innovation in developing medical countermeasures rapidly as the starting point for even faster responses in the future."

The challenges of addressing the COVID-19 pandemic have been well documented. The new report adds new details for policy makers and the private sector regarding innovation and positive trends that emerged from pandemic responses. Expanding on what has worked will be just as critical as avoiding repeating past mistakes. "Many U.S. academic centers, government and private sector laboratories, and federal agencies quickly pivoted their people and facilities to addressing the COVID-19 fight," said Dr. Anup Singh, Director of the Biological and Engineering Sciences at Sandia National Laboratories and a key leader in its pandemic response efforts. "Moving forward, we have to continue supporting the ability of these American assets to surge and stop biological threats when they arise—and continue what we've done well in public-private cooperation."

COVID-19 is not the last biological threat we will face—and it may not be the worst. The new report highlights steps that will help the United States and other countries prevent future emerging infectious diseases from growing into pandemics and bringing mass-scale devastation, such as:

- Continue building on the cross-sector collaboration and agility shown in the COVID-19 response.
- Expand capabilities for detecting biological threats early.
- Prioritize ways to create and disseminate medical countermeasures even faster.
- Create the U.S. bio industrial base needed for rapid response to biological threats, and keep it healthy.
- Form coalitions, improve coordination, and expand steady-state and surge capacities.

"This report offers details to support these recommendations and ideas for implementing them. Moreover, if they are successful, they may be more effective than major government reorganization and other time-consuming steps," said Christine Parthemore, Chief Executive Officer of CSR who formerly worked on countering weapons of mass destruction threats at the Department of Defense.

This report is the second issued by CSR and Sandia in their collaboration to explore biological threats and solutions. Their 2020 report, Making Bioweapons Obsolete: A Summary of Workshop Discussions, was issued just as the COVID-19 pandemic was spreading globally.

"The COVID-19 crisis shows the mass disruption that biological threats can create—and drives home why such threats may be attractive to those wishing to cause strategic levels of devastation," CSR says.

"The nation's leaders have a historic responsibility to make this the last mass-scale pandemic, and render deliberate biological threats ineffective. The United States has the tools, technologies, and talent to reach this vision. The time to act is now."

Public Health as National Security

Source: https://www.homelandsecuritynewswire.com/dr20211112-public-health-as-national-security

Nov 12 – The international community continues to deal with the fallout of COVID-19, and worries about more transmissible and lethal coronavirus variants have reinforced concerns that the world is entering an "age of pandemics." Experts agree that it is not a matter of if, but when, the next large-scale outbreak of infectious disease will occur.

Governments around the world are devoting more resources to global health security as the framework for preventing, detecting, and responding to biological threats, whether naturally occurring, accidental, or deliberate.
Despite promises of expanded multilateral cooperation, however, there are disagreements over the meaning of health security and whether it is the best approach for mitigating the risk of future pandemics. Among the questions yet to be answered: Should public health be framed as a national security issue? Can the concept of health security help policymakers break the gridlock in global health governance and address the growing threat of infectious diseases?
Amanda Moodie and Nima Gerami, with Federica D'Alessandra, of the Blavatnik School of Government at the University of Oxford have just published a report — Rethinking Health Security After COVID-19
— which aims to answer these and similar questions.
Here are the opening sections of the report:

Executive Summary

The COVID-19 pandemic has posed major challenges to existing systems of global health governance. Even countries considered leaders in health preparedness, notably the US and the UK, struggled to contain COVID-19 domestically and were unable to mount an effective international response. As a result, the world suffered over 4.4 million deaths and an estimated 4.4 per cent decline in global GDP in 2020 alone – the deepest global recession since the end of World War II. The economic and health impacts of the pandemic have, meanwhile, fallen disproportionately on the world's most disadvantaged and vulnerable populations.

COVID-19 has therefore laid bare deep fissures in the current global health architecture and highlighted the need for urgent reform. One proposal for reducing the risk of future pandemics is to elevate public health as a national security priority. For decades, policymakers and experts have argued that the concept of national security should extend beyond state-centric, militaryfocused threats, to include infectious diseases and climate change.

Accordingly, the US and UK governments, both erstwhile leaders in global health and biological preparedness, have committed to promoting health security as a framework for mitigating the threat of future pandemics. A health security approach, it has been argued, will increase attention, resources, and institutional capacity for dealing with health crises.

Yet the reflexive tendency to frame health risks in security terms has precluded serious examination of the assumptions and trade-offs underlying the health security paradigm. In this report, we contend that, while the security implications of pandemics are clear, the concept of health security distracts attention from the underlying determinants of health that exacerbate the effects of severe disease outbreaks and disproportionately affect the most vulnerable. Rather than adopting a securitised approach to infectious disease, COVID-19 should prompt world governments to focus on the wider determinants of health – such as universal health coverage and access to quality health care, among other health-related UN Sustainable Development Goals – as a way to ameliorate the impact of pandemics and other crises. The report challenges the following assumptions that undergird health security and proposes recommendations for an alternative approach.

Health Security: Assumptions and Policy Trade-offs

Assumption 1: Securitizing health generates resources for responding to severe disease outbreaks.

While framing health as a security issue is a useful tool for raising attention, awareness, and funding for pandemic preparedness, the focus on the external threats posed by infectious disease detracts from progress in the wider determinants of health, including access to quality health care, education, and clean water, which exacerbate health outcomes during biological events.

Assumption 2: Securitization fosters multilateral cooperation on public health problems.

Instead of promoting a collective approach to health challenges, the focus on health security has the potential to deepen the Global North-South divide, given the lack of consensus around the meaning of health security – with the North largely focused on preventing the cross-border spread of infectious diseases and the South emphasising action on the social determinants of health for non-communicable diseases.

Assumption 3: Synergy between national security and public health communities is necessary for rapid responses.

Deepening the cooperation between the national security and public health communities is an integral part of pandemic preparedness and response, but an increased reliance on the military in health initiatives will likely prove unsustainable, counterproductive, and potentially self-defeating in the long run.

Policy Recommendations

What might an alternative approach to health, grounded in multilateralism and respect for individual rights, look like in practice?

1. Move away from securitised responses to health in favour of a traditional public health approach that prioritises human health and well-being as a component of foreign policy.

- ✓ Emphasise the need for global solidarity on health issues more broadly, including on infectious disease outbreaks and non-communicable diseases.
- ✓ Increase resources for addressing the wider determinants of health that exacerbate the impact of disease outbreaks, such as access to quality health care, education, and clean water, as set out in the UN Sustainable Development Goals.

2. Maintain a separate focus on biodefense in the appropriate fora.

Decouple public health from bioterrorism, which requires a different institutional approach and risks diverting scarce resources away from improving health systems.

3. Strengthen existing global health institutions to facilitate multilateral cooperation.

- ✓ Empower the World Health Organization to respond more effectively to future health crises by increasing and diversifying funding streams to include both communicable and noncommunicable diseases.
- ✓ Encourage donors to provide unrestricted funding to international health institutions to prevent the politicisation of health.
- ✓ Build public-private partnerships to improve the efficacy, sustainability, and durability of global health initiatives in the long term. These partnerships should build international capacity to proactively address underlying determinants of health that can prevent or mitigate the impact of infectious diseases.

4. Promote equitable vaccine distribution and long-term funding for vaccine and medical countermeasure development.

- ✓ Support multilateral funding mechanisms, such as COVAX, as part of a more systematic approach to global health research and development.
- ✓ Increase manufacturing capacity for diagnostics, treatments, and vaccines and share vaccine research, as well as any surplus supply.

5. Consider adopting a multilateral pandemic preparedness treaty or other legally-binding instrument to promote enforcement of obligations.

Adopt the proposed multilateral pandemic preparedness treaty, provided that its negotiations lead to legally-binding enforcement provisions, in order to improve trust, increase information sharing, and boost capacities in both developed and developing countries in response to emerging health challenges.

Microorganisms as potent biological weapons

By Gelinde Narakine

Source: https://www.thenational.com.pg/microorganisms-as-potent-biological-weaponsmicroorganisms-as-potent-biological-weapons/

Nov 12 – Words or phrases such as biological weapons, bioweapons, biological warfare, biowarfare, germ warfare, biological terrorism, or bioterrorism could send chills down one's spine.

This is because few threats have the capacity of killing so many so fast as does biological terrorism. For years we lived under the fear of nuclear winter wiping out the human race. Now there is a similar threat from biological weapons and bioterrorism.

Bioweapons involve the use of toxins or infectious agents that are biological in origin. This can include bacteria, viruses, parasites or fungi. These agents can be used to injure or kill people, animals, or plants, as part of an obvious or secretive war effort.

According to the Centers for Disease Control and Prevention (CDC), bioterrorism is "the intentional release of viruses, bacteria, or other germs that can sicken or kill people, livestock, or crops."

This can be achieved in a number of ways, such as via aerosol sprays, in explosive devices, via food or water, or absorbed or injected into skin. Because some pathogens are less robust than others, the type of pathogen used will depend on how it can be deployed. Utilising such weapons holds a certain appeal to terrorism. When compared with nuclear-powered warheads, missiles, or other more hi-tech equipment, the attraction is simple: Bioweapons are inexpensive to make, require materials, equipment, and

expertise that are easy to procure, and, for the most part, involve biological agents that are readily available. As an added feature, bioweapons have the potential to cause great harm.

The threat of bioterrorism has risen progressively in the world, particular over the last four or five decades. Unfortunately, the global reality of the difficult social, economic, and political environment has created conducive conditions for such threats to rise. With mounting religious fundamentalism in some countries, disillusioned nationalistic goals in others, economic deprivation in many, and, in the industrial West, the increased desperation of violent far-right groups, there has been a worldwide rise in terrorism in general. The combination of this increase, with a heightened appreciation of the evil attractiveness of bioweapons is what makes the current global situation so critical, and somewhat frightening.

Although biological weapons are as old as human history, modern technology brings new worries. Some experts are concerned about recent advances in genetic engineering and gene editing technology. When utilised for good, the latest tools can work wonders. However, as with most cutting-edge technology, there is always the potential for misuse. The technology allows researchers to edit genes, thereby easily modifying DNA sequences to alter gene function.

In the right hands, this tool has the potential to correct genetic defects and treat disease. However, when in the hands of those with alternate agenda, it has the potential for evil use. Thus, in 2016, gene editing was featured in a list of weapons of mass destruction and proliferation, as highlighted in 'World Threat Assessment', a report by the US Intelligence Community.

Given the broad distribution, low cost, and accelerated pace of development of this dual-use technology, its deliberate or unintentional misuse might lead to far-reaching economic and national security implications. Advances in genome editing, have compelled groups of high-profile American and European biologists to question in 2015, the unregulated editing of the human germline (cells that are relevant for reproduction), which might lead to creation of inheritable genetic changes.

With futuristic next generation technologies, and an advanced knowledge of genetics, there would be no theoretical end to the misery that could be caused. There is potential to create drug-resistant strains of microorganisms, or pesticide-protected bugs, capable of wiping out a country's staple crop.

The Biological and Toxic Weapons Convention (Convention on the prohibition of the development, production and stockpiling of bacteriological weapons and their destruction) was signed in 1972 by 109 states (with notable exceptions). This treaty prohibits development or use of such weapons. Despite the existence of this international agreement and global understanding, within boundaries of some countries (also signatories to this treaty), there is reason to believe ongoing production of biological weapons. Such practices create avenues for dishonesty and deception, making efforts to maintain the integrity of such multinational treaties for goodwill and peace not only difficult, but also unrealistic.

In the event of a medical emergency of pandemic scale, medical professionals are always on the frontline. Their responsibility with regard to bioterrorism goes beyond detecting an episode and treating its victims. They play an important duty to continue to institutionalize the scorn associated with the use of bioweapons.

Furthermore, the medical profession plays an ethical role in relation to bioweapons, because this technology represents the ultimate perversion of biomedical research. Indeed, with the help of the rapidly growing field of bioengineering, the possibility exists of constructing new, doomsday organisms.

Medical experts shudder at the thought of combining the contagiousness of common cold or even smallpox with the pathogenicity of Ebola virus. Using gene editing techniques, genomes of viruses can easily be manipulated for use as potent biological weapons.

There are numerous historical accounts, from the ancient times to the most recent years that show use of biological agents for potential warfare purposes, causing panic and terror among civil populations. Nevertheless, their true frequency of use and impact remain very difficult to appreciate, because: (1) data are largely lacking; (2) reality was (and is) often hidden and manipulated, as the 'truth' may not be openly disseminated, given its intrinsically non-ethical nature and therefore, rendered 'classified', and (3) the passage of time adds an additional layer of complexity by distorting facts. Addressing such impediments would pave way for better understanding of the true nature of production and the extent to which biological weapons are being used.

Biological terrorism and smaller-scale atrocities involving microorganisms indeed constitute a reality – a reality not void of myths, cover-ups, denial, controversies, and conspiracies.

Regardless of all these, the use of microorganisms as potent biological weapons of bioterrorism still remain an undeniable reality. In light of all these, the question now should not whether it will occur, but rather, when will it occur. Or should we wait for another incident of catastrophic magnitude to solidify our resolve.

I am indebted to the authors of following literatures for use of information on this article:

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Rare Allergic Reactions in mRNA COVID-19 Vaccines: What Should You Know?

By Andrew D. Bowser and Charles P. Vega, MD
Source: https://www.medscape.org/viewarticle/962592

Nov 12 – Anaphylaxis is not an extremely rare event in the United States, and the authors of the current study provide a brief review of severe allergic reactions.[1] They stated that 2% to 5% of the US population has experienced anaphylaxis, usually as a reaction to food, medication, or an insect sting; however, fatal anaphylaxis is very rare. One study estimated the risk of dying from a lightning strike to be higher than death from anaphylaxis.
Thankfully, anaphylaxis related to the Pfizer BioNTech and Moderna vaccines appears highly infrequent. According to data from the US Vaccine Adverse Event Reporting System, as reported in JAMA, anaphylaxis events occurred at rates of 4.7/1 million doses and 2.5 cases/1 million doses of each respective vaccine. Nearly all (95%) of these cases occurred among women, and 79% of patients experiencing anaphylaxis had a past history of allergies; however, a review of 3486 cases of death around the time of COVID-19 vaccination failed to find any causal relationship between the vaccine and mortality.
The current study by Warren and colleagues examines cases of vaccine-related anaphylaxis to provide more details on risk factors and the pathophysiology of anaphylaxis to COVID-19 mRNA vaccines.

Study Synopsis and Perspective

A common inert ingredient may be the culprit behind the rare allergic reactions reported among individuals who have received messenger ribonucleic acid (mRNA) COVID-19 vaccines, according to investigators at a large regional health center that was among the first to administer the shots.
Blood samples from 10 of 11 individuals with suspected allergic reactions reacted to polyethylene glycol (PEG), a component of both the Pfizer BioNTech and Moderna, Inc. mRNA vaccines, according to a report in JAMA Network Open.
In total, only 22 individuals had suspected allergic reactions out of nearly 39,000 mRNA COVID-19 vaccine doses administered, the investigators reported, noting that the reactions were generally mild and all fully resolved.
Those findings should be reassuring to individuals who are reticent to sign up for a COVID-19 vaccine because of fear of an allergic reaction, said study senior author Kari Nadeau, MD, PhD, director of the Parker Center for Allergy and Asthma Research at Stanford University, Stanford, California.
"We're hoping that this word will get out, and then that the companies could also think about making vaccines that have other products in them that don't include polyethylene glycol," Nadeau said in an interview with *Medscape Medical News*.
Polyethylene glycol is a compound used in many products, including pharmaceuticals, cosmetics, and food. In the mRNA COVID-19 vaccines, PEG serves to stabilize the lipid nanoparticles that help protect and transport mRNA[2]; however, its use in this setting has been linked to allergic reactions in this and previous studies.
No immunoglobulin (Ig) E antibodies to PEG were detected among the 22 individuals with suspected allergic reactions to mRNA COVID-19 vaccines, but PEG IgG was present.[1] That suggests non--IgE-mediated allergic reactions to PEG may be implicated for the majority of cases, Nadeau said.
This case series provides interesting new evidence to confirm previous reports that a mechanism other than the classic IgE-mediated allergic response is behind the suspected allergic reactions that are occurring after mRNA COVID-19 vaccination, said Aleena Banerji, MD, associate professor at Harvard Medical School and clinical director of the Drug Allergy Program at Massachusetts General Hospital in Boston, Massachusetts.
"We need to further understand the mechanism of these reactions, but what we know is that IgE-mediated allergy to excipients like PEG is probably not the main cause," Banerji, who was not involved in the study, said in an interview with Medscape.
In a recent research letter published in *JAMA Internal Medicine*,[3] Banerji and co-authors reported that all individuals with immediate suspected allergic reactions to mRNA COVID-19 vaccines went on to tolerate the second dose, with mild symptoms reported in the minority of patients (32/159, or ~ 20%).

"Again, that is very consistent with not having an IgE-mediated allergy, so it seems to all be fitting with that picture," Banerji said.
The case series by Nadeau and co-authors was based on review of nearly 39,000 mRNA COVID-19 vaccine doses administered between December 18, 2020 and January 26, 2021.[1] Most mRNA vaccine recipients were Stanford-affiliated healthcare workers, according to the report.
Among recipients of those doses, they identified 148 individuals who had anaphylaxis-related International Classification of Diseases, Tenth Revision codes recorded over the same time period. In a review of medical records, investigators pinpointed 22 individuals as having suspected allergy and invited them to participate in follow-up allergy testing.
A total of 11 individuals underwent skin prick testing, but none of them tested positive to PEG or to polysorbate 80, another excipient that has been linked to vaccine-related allergic reactions. One of the patients tested positive to the same mRNA vaccine they had previously received, according to the report.
Those same 11 individuals also underwent basophil activation testing (BAT). In contrast to the skin testing results, BAT results were positive for PEG in 10/11 (or 91%) cases and positive for their administered vaccine in all 11 cases, the report shows.
High levels of IgG to PEG were identified in blood samples of individuals with an allergy to the vaccine. Investigators said it is possible that the BAT results were activated because of IgG via complement activation-related pseudoallergy, as has been hypothesized by some other investigators.[4]
The negative skin prick testing results for PEG, which contrast with the positive BAT results to PEG, suggest that the former may not be appropriate for use as a predictive marker of potential vaccine allergy, according to Nadeau.
"The take-home message for doctors is to be careful," she said. "Don't assume that just because the person skin-tests negative to PEG or to the vaccine itself that you're out of the woods, because the skin test would be often negative in those scenarios."

Study Highlights

- Investigators drew study data from patient and employee records at Stanford Health in California. They searched for diagnosis codes for anaphylaxis recorded between December 18, 2020 and January 26, 2021.[1]
- The main study outcomes included characteristics of cases of anaphylaxis related to the vaccine. Researchers performed skin prick testing and basophil activation tests, along with testing immunoglobulin levels, to better characterize the pathophysiology of anaphylaxis episodes.
- Researchers were particularly interested in reactions to stabilizing ingredients in the vaccines. Polysorbate 80 (P80) is a widely used emulsifier, and PEG is used in the COVID-19 mRNA vaccines and a variety of household products.
- **38,895 patients** received an mRNA vaccine: 60% of these patients were women; 64% were White, and 20% were Asian.
- **148 total cases of anaphylaxis** were found in the health system. 22 of these cases featured symptoms that began within 3 hours of receiving a COVID-19 mRNA vaccine.
- The mean age in the 22 vaccine anaphylaxis cases was 40.9 ± 10.3 years, and 68% had a documented history of allergic reactions. 45% of patients had a history of allergic reactions to antibiotics, and 41% of patients had a previous allergic reaction to foods.
- **14% of cases of vaccine anaphylaxis received epinephrine, and all reactions fully resolved.**
- Skin prick tests to PEG and P80 were negative in 11 patients with a history of vaccine anaphylaxis tested. In contrast, 10 of 11 of these patients had a positive basophil activation test for PEG, and 11 of 11 had a positive basophil activation test for the vaccine that caused the reaction.
- PEG IgE was not detected in any patient whereas high levels of IgG against PEG were found in all patients who tested positive for an allergy to vaccine.

Clinical Implications

- Anaphylaxis occurs in **fewer than 5 patients/1 million doses** of COVID-19 mRNA vaccine, and no deaths have been associated with these vaccines; however, the lifetime risk of any anaphylaxis event is between 2% and 5%. Mortality because of anaphylaxis remains extremely rare in the United States.
- Risk factors for anaphylaxis to one of the COVID-19 mRNA vaccines in the current study by Warren and colleagues included being a woman and a previous history of allergic reaction. The reactions in this study appeared to be mediated by a mechanism that did not include IgE against PEG.

- Implications for the healthcare team: The healthcare team should understand that anaphylaxis to the COVID-19 mRNA vaccine is very rare and is more common among women and among patients with a history of allergy.

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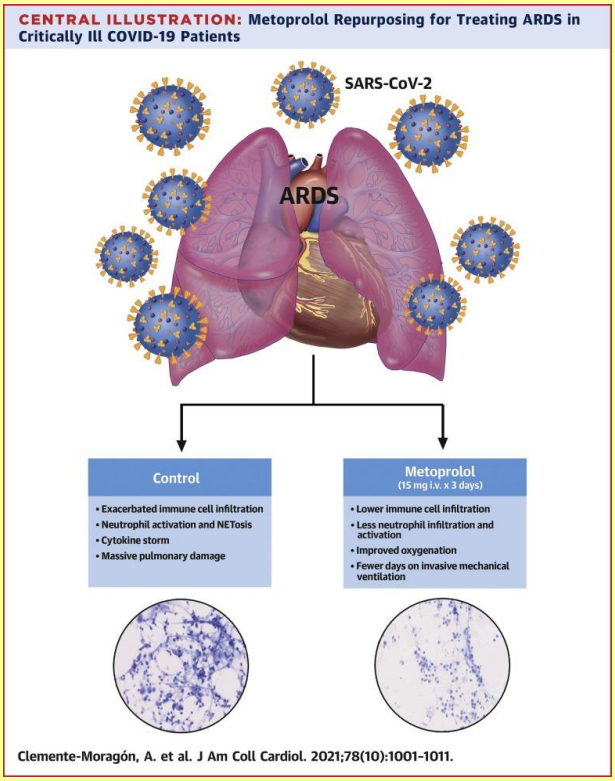
BREAKING: Initial Reports Coming Out of China Indicate There Was a New COVID-19 Lab Leak at University in Shanghai

Source: https://www.thegatewaypundit.com/2021/11/breaking-initial-reports-coming-china-indicate-new-covid-19-lab-leak-university-shanghai/

Nov 13 – Reports coming out of China indicate that another laboratory leak of COVID-19 has occurred at another China institution.
According to a just-received November 12, 2021 Chinese language text and supported by other sources in China, there has been a presumed laboratory leak of COVID-19 at East China University of Science and Technology.
Allegedly, laboratory workers tested positive for COVID-19 after **conducting experiments involving the insertion of COVID-19 genetic material into the bacterium E.coli as an expression vector for COVID-19 proteins.**
The text states that East China University of Science and Technology has been closed in relation to COVID-19 infections of laboratory workers.
The Chinese source said that all mention of this event on social media has now been removed by authorities.
It is not clear in which laboratory the alleged COVID-19 leak occurred, but the State Key Laboratory of Bioreactor Engineering, Newworld Institute of Biotechnology at East China University of Science and Technology, particularly the laboratory of Dong-Zhi Wei, is known for using bacteria like E.coli as expression vectors.

Metoprolol in Critically Ill Patients With COVID-19

By Agustín Clemente-Moragón BSc, Juan Martínez-Milla MD, PhD, Eduardo Oliver PhD, et al.
Journal of the American College of Cardiology; Volume 78, Issue 10, 7 September 2021, Pages 1001-1011
Source: https://www.sciencedirect.com/science/article/pii/S073510972105590X?via%3Dihub



Severe coronavirus disease-2019 (COVID-19) can progress to an acute respiratory distress syndrome (ARDS), which involves alveolar infiltration by activated neutrophils. The beta-blocker metoprolol has been shown to ameliorate exacerbated inflammation in the myocardial infarction setting.

Objectives

The purpose of this study was to evaluate the effects of metoprolol on alveolar inflammation and on respiratory function in patients with COVID-19–associated ARDS.

(◀ Enlarge the page to see the details of the figure)

Methods

A total of 20 COVID-19 patients with ARDS on invasive mechanical ventilation were randomized to metoprolol (15 mg daily for 3 days) or control (no treatment). All patients underwent bronchoalveolar lavage (BAL) before and after metoprolol/control. The safety of metoprolol administration was evaluated by invasive hemodynamic and electrocardiogram monitoring and echocardiography.

Results

Metoprolol administration was without side effects. At baseline, neutrophil content in BAL did not differ between groups. Conversely, patients randomized to metoprolol had significantly fewer neutrophils in BAL on day 4 (median: 14.3 neutrophils/μl [Q1, Q3: 4.63, 265 neutrophils/μl] vs median: 397 neutrophils/μl [Q1, Q3: 222, 1,346 neutrophils/μl] in the metoprolol and control groups, respectively; P = 0.016). Metoprolol also reduced neutrophil extracellular traps content and other markers of lung inflammation. Oxygenation (PaO_2:FiO_2) significantly improved after 3 days of metoprolol treatment (median: 130 [Q1, Q3: 110, 162] vs median: 267 [Q1, Q3: 199, 298] at baseline and day 4, respectively; P = 0.003), whereas it remained unchanged in control subjects. Metoprolol-treated patients spent fewer days on invasive mechanical ventilation than those in the control group (15.5 ± 7.6 vs 21.9 ± 12.6 days; P = 0.17).

Conclusions

In this pilot trial, intravenous metoprolol administration to patients with COVID-19–associated ARDS was safe, reduced exacerbated lung inflammation, and improved oxygenation. Repurposing metoprolol for COVID-19–associated ARDS appears to be a safe and inexpensive strategy that can alleviate the burden of the COVID-19 pandemic.

India's Covaxin COVID-19 vaccine 77.8% effective, Lancet study finds

A new study in The Lancet is offering the first peer-reviewed and published data on the efficacy of Covaxin, a COVID-19 vaccine developed in India. The vaccine was **77.8 percent effective** at preventing symptomatic COVID-19 in a Phase 3 clinical trial. **Read more**

Experimental RNA therapy harnesses immune system to fight COVID-19

Source: https://newatlas.com/medical/synthetic-rna-therapy-yale-interferon-coronavirus/

Nov 14 – Researchers at the Yale School of Medicine have developed a new kind of COVID-19 treatment designed to stimulate the body's immune defenses and fight off a coronavirus infection at its earliest stages. In preclinical animal tests an experimental RNA molecule helped immunocompromised mice completely clear the virus from their system.

When a cell is infiltrated by a virus it releases proteins called interferons. These proteins signal to other cells that a pathogen is in the vicinity, triggering a number of antiviral defenses and "interfering" with the virus's ability to replicate.

Some viruses have cleverly evolved methods to stifle an interferon response, allowing the virus more time to replicate before other immune system defenses catch up.

Several early studies on SARS-CoV-2 revealed those who ultimately suffered severe COVID-19 demonstrated low levels of type 1 interferon production at the earliest stages of infection. So stimulating the body's initial interferon response as the virus is beginning to take hold could be an effective early treatment for COVID-19.

To do this researchers have developed a synthetic RNA molecule called SLR14. The molecule is designed to mimic genetic material from SARS-CoV-2 and subsequently activate specific receptors tuned to produce type 1 interferons.

Across a series of animal tests the researchers demonstrated a single dose of SLR14 protects from severe disease and death if administered either just before exposure to the virus, or soon after initial infection. The RNA molecule was found to be effective against all current circulating variants of SARS-CoV-2, including Delta.

The researchers also tested the treatment in an immunocompromised mouse model. Here the animals were suffering from chronic long-standing SARS-CoV-2 infections and treatment with SLR14 was enough to stimulate an immune response that completely eradicated the virus.

"These results demonstrated that SLR14's utility extends beyond prophylactic antivirals," the researchers write in the newly published study, "but also therapeutics that can be given to patients with immunocompromised conditions, providing an immediate solution to simultaneously cure chronic infection and suppress future emergence of immune-evasive variants."

Akiko Iwasaki, corresponding author on the new study, say this particular finding was "surprising and spectacular." It indicates this kind of RNA therapeutic could be very useful in protecting immunocompromised patients who are unable to produce effective levels of antibodies or killer T cells.

Iwasaki also points out these kinds of RNA therapeutics are much cheaper and easier to manufacture than more complex biologic therapies currently used, such as monoclonal antibodies. Plenty more work, including human clinical trials, will be needed before these

RNA therapeutics are ready for widespread use but Iwasaki says more research into this new treatment approach will help us better inform responses to the emergence of novel viruses in the future.
"SLR14 therefore holds great promise as a new class of RNA therapeutics that can be applied as antivirals against SARS-CoV-2," Iwasaki says. "Moreover, because this RNA-based therapeutic approach is simple and versatile, our study will facilitate pandemic preparedness and response against future respiratory pathogens sensitive to type I interferons."

▶▶ **The new study was published in the** *Journal of Experimental Medicine*.

Novel Vaccine and Treatment for Alzheimer's Disease Developed to Target Truncated Amyloid Beta Protein

A promising new approach to potentially treating, and vaccinating against Alzheimer's disease has been developed by researchers in the U.K. and Germany. Rather than focus on the amyloid beta (Aβ) protein plaques in the brain that are commonly associated with Alzheimer's disease, the antibody and vaccine both target a different, soluble form of the protein, which is thought to be highly toxic. **+ MORE**

Graphene oxide detection in aqueous suspension

Observation study in optical and electron microscopy – Interm report

June 28, 2021
By Prof. Dr. Pablo Campra Madrid
Doctor of Chemical Sciences and Bachelor of Biological Sciences, ESCUELA SUPERIOR DE INGENIERIAUNIVERSIDAD DE ALMERÍA, SPAIN
Source: https://www.docdroid.net/Ov1M99x/official-interim-report-in-english-university-of-almeria-pdf

This is a controversial study. There are scientists and medical doctors who disagree with the results of the Spanish study. **The evidence has to be either ascertained or refuted**. What is required is that independent scientists and health professionals conduct their own lab analysis of the contents of the vaccine vial. Similarly, we call upon the national health authorities of the 193 member states of the UN which are currently vaccinating their people, to conduct their own study and analysis of the vaccine vial. And if graphene-oxide is detected, the vaccination program should immediately be discontinued.

Why has Pfizer changed the formulation of its Covid-19 Vaccine for Children to include an ingredient that stabilises people suffering a Heart Attack?

By Patricia Harrity
Source: https://theexpose.uk/2021/11/01/pfizer-adds-ingredient-to-vaccine-for-kids-that-treats-heart-attacks/

Vaccine formulation

Authorization is being requested for a modified formulation of the Pfizer-BioNTech COVID-19 Vaccine. Each dose of this formulation contains 10 µg of a nucleoside-modified messenger RNA (mRNA) encoding the viral spike (S) glycoprotein of SARS-CoV-2 that is formulated in lipid particles and supplied as a frozen suspension in multiple dose vials.

To provide a vaccine with an improved stability profile, the Pfizer-BioNTech COVID-19 Vaccine for use in children 5-11 years of age uses tromethamine (Tris) buffer instead of the phosphate-buffered saline (PBS) as used in the previous formulation and excludes sodium chloride and potassium chloride. The packaged vials for the new formulation are stored frozen at -90°C to -60°C. The frozen vials may be thawed and stored at refrigerator at 2°C to 8°C for up to 10 weeks.

The Pfizer-BioNTech COVID-19 Vaccine does not contain preservative. The vial stoppers are not made with natural rubber latex. For the 10-µg RNA dose, each 1.3-mL filled via vial must be diluted with 1.3mL 0.9% sodium chloride for injection to provide 10 doses at 10 µg RNA / 0.2 mL Injection volume. After dilution, the vials should be stored at 2°C to 25°C and should be used within 12 hours.

Nov 01 – A document prepared for the FDA Advisory Committee meeting, in which members voted seventeen to zero in favour of giving emergency use authorisation for the administration of the Pfizer Covid-19 injection to children aged 5 to 11, confirms that Pfizer have modified the formulation of their injection for children to include an ingredient that reduces the acidity of blood and is used to stabilise people who have suffered a heart attack.

The FDA Briefing Document titled 'EUA amendment request for Pfizer-BioNTech COVID-19 Vaccine for use in children 5 though 11 years of age' states the following on page 14 –
"Authorization is being requested for a modified formulation of the Pfizer-BioNTech COVID-19 Vaccine. Each dose of this formulation contains 10 µg of a nucleoside-modified messenger RNA (mRNA) encoding the viral spike (S) glycoprotein of SARS-CoV-2 that is formulated in lipid particles and supplied as a frozen suspension in multiple dose vials."
"To provide a vaccine with an improved stability profile, the Pfizer-BioNTech COVID-19 Vaccine for use in children 5-11 years of age uses tromethamine (Tris) buffer instead of the phosphatebuffered saline (PBS) as used in the previous formulation and excludes sodium chloride and potassium chloride".

EMERGENCY USE GRANTED

The Food and Drug Administration (FDA) granted emergency use authorization (EUA) to Pfizer's COVID-19 vaccine for children aged between 5 to 11 years old on October 29th 2021. The authorisation was based on what the FDA believes was their "thorough and transparent evaluation of the data" which included input from independent advisory committee experts, and the vote was overwhelmingly in favour of making the vaccine available to all children in this age group.
However, with overwhelming evidence against the safety of the vaccine and now a change in the formula used in clinical trials EUA should never have been granted.

THE 90% EFFECTIVE CLAIM IS MEANINGLESS

The Pfizer risk and benefit analysis presented to the FDA for EUA approval, states that resulting from their clinical trials they have found the COVID-19 vaccine to be 90.7% effective at preventing symptomatic disease in children ages five to 11. The UKs Joint Committee on Vaccination and Immunisation (JCVI) have said that the evidence strongly indicates that almost all children and young people are at very low risk from COVID-19.
Where symptoms are seen in children and young people, they are "typically mild, and little different from other mild respiratory viral infections which circulate each year". Children also recover from these infections quickly and according to many studies develop a robust broad spectrum immunity.
The rates in 5 to 11 are so low that there were no "cases" of severe COVID-19 or death from either the treatment (n= 1,518) or control group (n= 750), this renders the "90% effective" claim, meaningless. This should have stopped an EUA application in its tracks, as clearly there is no emergency for this age group in particular and therefore no benefit either.

TRIALS WERE TOO SMALL

Additionally, Pfizer admit that the number of participants in the current clinical development program is **too small** to detect any potential risks of myocarditis associated with vaccination or long-term safety of COVID-19 vaccine in participants 5 to 11 years old.
The FDA had addressed this earlier in the year and asked Pfizer to expand the clinical trials, nevertheless, this had not happened., Pfizer just ignored them and instead "fudged it by importing data from a different study" according to experienced risk and benefit analyser Toby Rogers PHD.
In his article, "Ten red flags in the FDA risk benefit" Toby Rogers simplified, "if the rate of particular adverse outcome in kids as a result of the vaccine is 1 in 5,000 and the trial only enrols 1,518 in the treatment group then it is unlikely to spot this particular harm in the clinical trial".

POLUTTED DATA

The study that was added "polluted data rather than clarified outcomes" as participants from cohort 1, which was 95.1% of the trial had safety follow-ups up to 2 months after Dose 2 and cohort 2 were only monitored for adverse events for a mere 17 days at the time of the September 6, 2021 data cut-off."
According to Dr Robert Malone, inventor of mRNA technology, the harms of myocarditis from these vaccines will likely unfold over the course of years the risks of "adverse events such as cardiomyopathy will be cumulative." They will likely have to be repeated twice for each school year, at approx. six-month intervals.
For minimal if any direct clinical benefit to the child and will not prevent infection". Therefore, the trials did not allow nearly adequate time to analyse the long-term effects, but also the other 4.9% who did not have a safety follow up after dose 2 with no indication of whether they were in the control group or the treatment group, potentially skews the results.

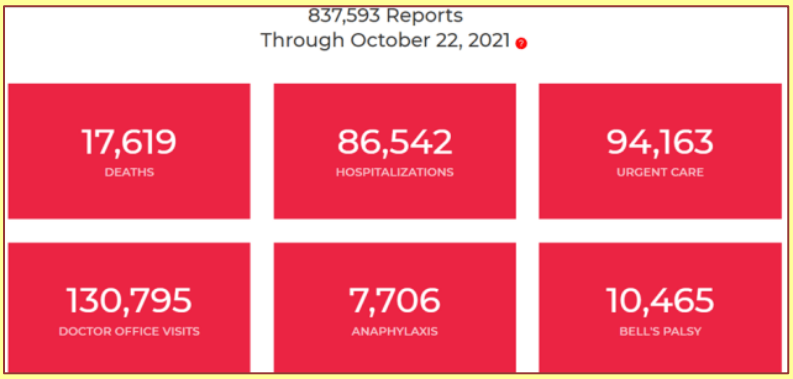
WHAT ARE THE OTHER RISKS OF THE VACCINE?

Pfizer-BioNTech do admit however, that Myocarditis and Pericarditis have occurred in some people who have received the vaccine. A first dose of Pfizer's vaccine comes with a risk of 3 to 17 cases of vaccine-induced Myocarditis and a second dose risks an additional 12 to 34 cases of myocarditis.

How can this be deemed safe? Yet through the recording of adverse events following vaccination, we have been made aware of the many other risks there have been 837,593 reports to date to the US VAERS site alone. There is a remote chance that the vaccine could cause a severe allergic reaction according to Pfizer-BioNTech. A severe allergic reaction would usually occur within a few minutes to one hour after getting a dose of the vaccine.

Signs of a severe allergic reaction can include:

• Difficulty breathing • Swelling of the face and throat • A fast heartbeat • A bad rash all over the body • Dizziness and weakness

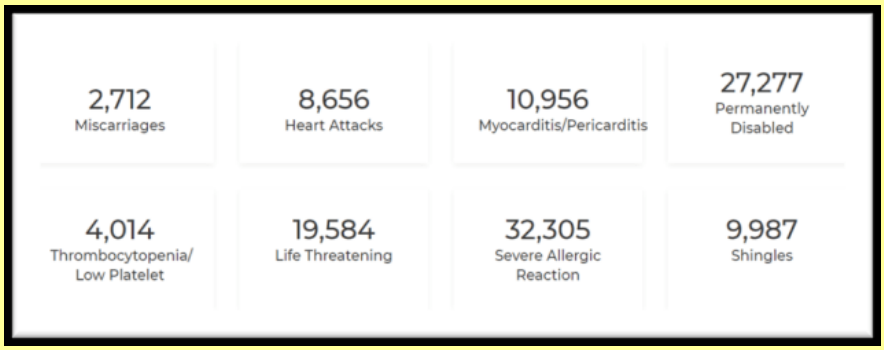


VAERS 31/10/2021

THE MODIFIED FORMULATION

If Pfizer believes that their vaccine was safe why have they changed the formulation? The authorisation for the EUA being requested is not for the formulation that had been tested in the clinical trials, what has been requested is "a modified formulation of the Pfizer-BioNTech COVID-19 Vaccine".

This is to provide a vaccine with an improved stability profile, the Pfizer-BioNTech COVID-19 Vaccine for use in children 5-11 years of age uses tromethamine (Tris) buffer instead of the phosphate buffered saline (PBS) as used in the previous formulation and excludes sodium chloride and potassium chloride.



This is similar to the Moderna COVID-19 Vaccine formulation, yet according to the Centers for Disease Control and Prevention (CDC), have also said that since April 2021, increased cases of myocarditis and pericarditis have been reported particularly in adolescents and young adults in the United States after mRNA COVID-19 vaccination from both Pfizer-BioNTech and Moderna. See here: What are the ingredients in the Moderna COVID-19 Vaccine

THE INGREDIENTS

When the Pfizer COVID-19 vaccine was granted an EUA from the FDA, its ingredients list was published online along with other safety data. The list included the now excluded ingredients sodium chloride and potassium chloride and includes the additional ingredient Tromethamine.

Tromethamine (Tris) is a blood acid reducer which is used to stabilize people with heart attacks. **Here are known side effects**: Respiratory depression – local irritation- tissue inflammation – injection site infection – febrile response – chemical phlebitis – venospasm (vein spasms) – hypervolemia – IV thrombosis – extravasation (with possible necrosis and sloughing of tissues) – transient decreases in blood glucose concentrations – hypoglycemia, and Hepatic Necrosis with infusion via low-lying umbilical venous catheters.

CLINICAL TRIALS NULL AND VOID

Typically vaccines can take 10 to 15 years, before being made available to the public, up until now the fastest ever vaccine was developed for mumps in four years in the 1960s. Yet the U.S. Food and Drug Administration (FDA) has granted emergency authorization to the Pfizer, Moderna, and Johnson & Johnson vaccines in less than a year.

With so much evidence against the vaccination in general, the FDA have not had a "thorough and transparent evaluation of the data" as they say, or if they have, they are not fit for purpose, because they should never have authorised the roll out of the Pfizer BioNTech vaccine to children as young as 5 to 11 years old. Alarmingly, with the changed formulation, the clinical trials are really only just about to begin in children.

Antidepressants Linked With Less Risk of Dying From COVID-19, Study Finds

Source: https://www.sciencealert.com/antidepressants-are-linked-with-less-risk-of-dying-from-covid-19-study-finds

Nov 15 – Use of antidepressants is associated with less risk of mortality in patients with COVID-19 infections, new research shows.
The findings, gleaned from a study of the health records of **over 80,000 patients** who contracted COVID-19 in the US last year, indicate that people taking selective serotonin reuptake inhibitors (SSRIs) had a significantly better chance of survival than matched patients not using the medications.
"Our subgroup analysis found a statistically significant reduction of 28 percent in the relative risk of mortality for the patients treated with fluoxetine and 26 percent for the patients treated with **fluoxetine or fluvoxamine**," researchers explain in the new study, authored by a team from the University of California, San Francisco (UCSF) and Stanford University.
While the findings only show a correlation in the data – not proof of a causative effect – it isn't the first time this link has been seen.
A number of studies have observed that antidepressant use is somehow associated with better outcomes for COVID-19 patients, although the precise mechanisms behind the phenomenon are not yet fully understood.
Nonetheless, scientists are making progress with each new analysis, and have plenty of ideas as to why SSRIs might be able help to protect people from succumbing to severe or deadly cases of COVID-19 – and it's likely to be more than just one channel that's involved.
"It has been previously observed that SSRIs may have anti-inflammatory properties mediated through a reduction of several proinflammatory cytokines, including interleukin 6 and tumor necrosis factor," the team, led by first author and computational health scientist Tomiko Oskotsky from UCSF, writes in the new study.
Beyond anti-inflammatory effects, it's also possible that SSRIs might be working against processes that help the coronavirus to take hold in the body.

SSRI antidepressants, including fluoxetine and fluvoxamine, belong to the group of pharmacological compounds called functional inhibitors of acid sphingomyelinase (FIASMA).

These compounds inhibit an enzyme called acid sphingomyelinase (ASM), which breaks down sphingomyelin, a lipid in cell membranes, into other molecules, including one called ceramide.

"Preclinical data indicate that SARS-CoV-2 activates the ASM-ceramide system, resulting in the formation of ceramide-enriched membrane domains that facilitate viral entry and infection by clustering ACE2, the cellular receptor of SARS-CoV-2, and the release of proinflammatory cytokines," psychiatrist Nicolas Hoertel from the University of Paris, who wasn't involved with the study, explains in a perspective article on the new research.
In other words, it's possible that SSRIs, amongst other things, are making it harder for SARS-CoV-2 to infect cells, by disrupting the molecules the virus uses as anchor points.
"Importantly, the reconstitution of ceramides in cells treated with these antidepressants restores the infection," Hoertel writes.
"Taken together, these results show the potentially crucial importance of the ASM-ceramide system as a treatment target in COVID-19."
As promising as it is, however, more research is needed, and the researchers emphasize that their own analysis doesn't bring us closer to understanding any causal effects.
What it does do, though, is help us understand the level of reduced mortality risk SSRIs seem to offer to patients with COVID-19.
From a vast cohort of 490,373 deidentified COVID-19 patients in the Cerner Real-World Data database, the researchers drilled down to 83,584 patients who met their study criteria.
Of these, 3,401 patients took SSRIs during the study timeframe (January to September 2020), and were compared to a control group of matched patients that didn't take SSRIs in the same period.
Overall, patients taking any SSRI had a lower mortality rate (14.6 percent) than those who didn't (16.3 percent), with the lowest mortality rates seen in patients taking fluoxetine only (9.8 percent, compared to controls at 13.3 percent) and patients taking fluoxetine or fluvoxamine (10 percent, compared to 13.3 percent).

SSRIs that weren't fluoxetine or fluvoxamine also appeared to show a small protective benefit, but the data were not statistically significant, the researchers say.
While there's still much we don't know for sure about how fluoxetine or fluvoxamine might bring about these improved outcomes, in a time of pandemic, any link this promising needs to be chased up further, as it could ultimately have life-saving consequences.
"Because most of the world's population is currently unvaccinated and the COVID-19 pandemic is still active, effective treatments of COVID-19 – especially those that are easy to use, show good tolerability, can be administered orally, and have widespread availability at low cost to allow their use in resource-poor countries – are urgently needed to reduce COVID-19-related mortality and morbidity," Hoertel writes.
"In this context, short-term use of fluoxetine or fluvoxamine, if proven effective, should be considered as a potential means of reaching this goal."

▶▶ **The findings are reported in** *JAMA Network Open*.

COVID-19 booster: Lower antibody level doesn't mean less protection from the coronavirus

Source: http://outbreaknewstoday.com/covid-19-booster-lower-antibody-level-doesnt-mean-less-protection-from-the-coronavirus-60767/

Nov 16 – If you got the COVID-19 shots back in early spring, your antibodies are likely waning. But it's not something you need to be worried about, according to a new study from the University of Georgia.
"Overall, antibody levels are decreasing, but their ability to protect against infection isn't," said Ted Ross, lead author and the director of UGA's Center for Vaccines and Immunology. "The quality is still there even if the total quantity has gone down."
Published in *Frontiers in Immunology*'s Vaccines and Molecular Therapeutics, the study found that vaccination results in a significantly more robust immune response than seen in people who contracted the coronavirus naturally.
Vaccinated participants showed higher levels of neutralizing antibodies, which serve as lookouts for viruses and alert the body's immune system when it's been infected. These individuals' antibodies were also more effective at binding with the virus, which prevents it from latching onto and infecting cells.
Additionally, the study showed that for most people who were infected with the virus, a single shot of the Moderna or Pfizer vaccine was enough to make them fully immune to the coronavirus. Some may require both shots to be fully protected, though, and there's currently no way to tell who does or doesn't. So, Ross recommends that everyone—even those who've had COVID-19—receive the second shot. "It doesn't hurt you to get the second one," he said.
The research is part of a large-scale, multi-year surveillance program with more than 3,100 participants, ranging from 18 to 90 years old. They give blood and saliva samples each month so the researchers can track their immune response to vaccination or natural infection.
"The takeaway is that even if you have waning antibodies, the quality of those antibodies still protect you against severe disease and hospitalization," said Ross, who is also a professor in UGA's College of Veterinary Medicine. "People were concerned that if you had waning antibody levels, you would become susceptible to the virus again. But right now that doesn't seem to be the case for most people."

Who needs a COVID-19 booster shot?
The CDC recently recommended booster shots for older adults, those with underlying medical conditions and people who work or live in high-risk settings if they received the Moderna or Pfizer vaccine series six or more months ago. The agency also encourages a booster for everyone who received the one-shot Johnson & Johnson/Janssen COVID-19 vaccine.
Some health care experts questioned whether booster access should be expanded to all due to the uncertainty surrounding the vaccines' long-term efficacy in staving off disease.
But people who were vaccinated in the spring and don't qualify for a booster shouldn't panic.
"Now I don't know what will happen in another six months or another 12 months, but right now, if you were vaccinated in the spring, you should still have protective antibodies in you," Ross said. "The elderly tend to lose their immunity more quickly. We see that with influenza too. That's why they have to get vaccinated again. Younger people can maintain it longer."
That being said, if you're eligible for a booster, go for it.

"My attitude is that if you're offered one, you should get one. It can't hurt you," Ross said. "And unfortunately, here in the U.S., many of the vaccines are being thrown away because they reached their expiration date. It's unfortunate that we're not shipping them around the world to other people who need them, but if the alternative is throwing them away, I say get a booster shot."
In addition to getting the COVID-19 vaccine series, social distancing and wearing masks are still one of the most important ways to stop the spread of the disease.

EDITOR'S COMMENT: The thing is – as far as I know – that there are no lower and upper neutralizing antibody levels to validate the results; therefore, apart from zero all the other levels are speculative.

Real-world data finds 3rd COVID vaccine dose greatly boosts protection

Source: https://newatlas.com/health-wellbeing/3rd-dose-coronavirus-covid-vaccine-boost-protection-uk-data/

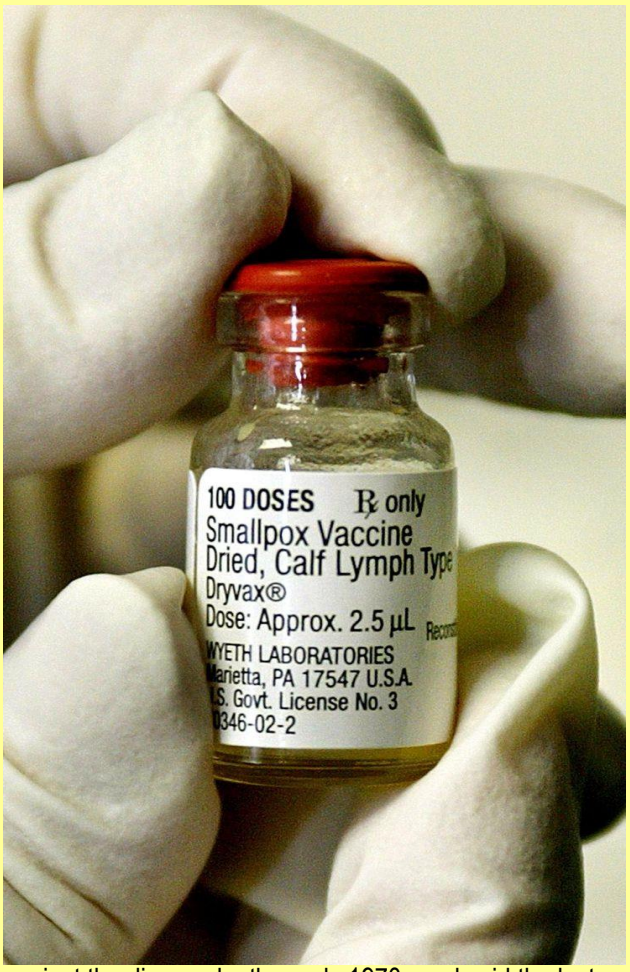
Nov 16 – New real-world data from the UK Health Security Agency has shown a third COVID-19 vaccine dose significantly boosts protection against symptomatic disease. The findings indicate a third dose will be vital in pushing back the growing wave of SARS-CoV-2 infections related to waning efficacy around six months after the initial two-dose vaccination.
In mid-September, the UK government started rolling out a third dose of mRNA COVID-19 vaccine to those over the age of 50, and six months beyond an initial vaccination course. Using data from the National Immunisation Management System, researchers are now offering robust real-world evidence on the effectiveness of a third COVID-19 vaccine dose.
The findings indicate a huge increase in protection from symptomatic COVID-19 for over-50s around two weeks after a third dose. Overall, the new study found the third dose was 94 percent effective at preventing symptomatic disease.
A press release from the UK Health Security Agency (UKHSA) announcing the new findings notes protection from hospitalization and death with two COVID-19 vaccine doses remains relatively high after six months. However, older adults or those with pre-existing medical conditions do show a relevant degree of waning protection several months after two vaccine doses, and a third dose can boost overall protection from severe disease relative to those relying solely on long-term protection from two doses.
"The analysis shows that, in those who received the booster, the risk of catching symptomatic COVID-19 was reduced by more than an additional 80% compared to those who had only received two doses (87.4% for those who received two doses of AstraZeneca vaccines as a primary course and 84.4% for those who received two doses of Pfizer-BioNTech vaccines as a primary course)," the statement explains.
David Spiegelhalter, from the University of Cambridge, calls the new data "encouraging." He says the findings particularly reveal a third dose helps boost waning protection from hospitalization in the vulnerable.
"An earlier study from this team estimated that double-Pfizer jabs gave around 99.7% protection against hospitalization, but which waned to 92.7% after 20 weeks," says Spiegelhalter. "This may not sound much, but, in terms of 'lack of protection', it means their vulnerability relative to being unvaccinated went from 0.3% to 7.3%, more than a 20-fold increase in risk, which gives a stronger impression of the importance of waning immunity. Fortunately, the latest data suggest the booster may rectify this."
The new data adds to a growing argument suggesting the primary COVID-19 vaccination course should be three doses rather than two. In a recent *New York Times* interview Anthony Fauci, director of the US National Institute of Allergy and Infectious Diseases and Chief Medical Advisor to the President, says we should start thinking about the third dose not as an optional boost but as a vital part of the primary vaccination protocol.
"…boosting is going to be an absolutely essential component of our response," Fauci said. "Not a bonus, not a luxury, but an absolutely essential part of the program."
Peter English, former chair of the British Medical Association's Public Health Medicine Committee, concurs with Fauci's three-dose primary protocol prediction. English estimates due to the profoundly infectious nature of the Delta variant of SARS-CoV-2 any meaningful degree of population immunity will require high volumes of people vaccinated with three doses.
"I have been predicting, confidently, for some time, that the vaccines will become a three-dose vaccination program, like so many of our other vaccine programs: a three doses "primary course"; which may subsequently be followed a year or more later by a reinforcing dose, if immunity wanes, or if vaccine-escape variants arise," English says.
It is still early days for third dose programs around the world and one big unanswered question is whether effectiveness will wane at the same rate after three doses as has been seen after two. The world will be closely looking at Israel, which started its booster program in August, for insights on long-term third dose efficacy.

The Times of Israel recently reported on preliminary data from an unpublished study indicating promising long-term effects on antibody levels after a third vaccine dose. The researchers **speculate antibody levels after a third dose could remain strong for up to 10 months.**

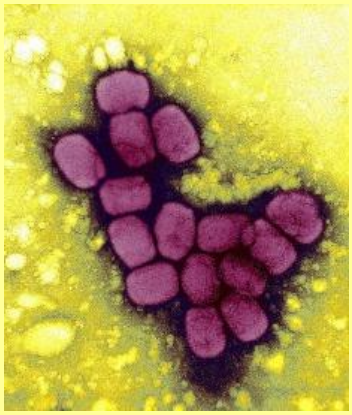
Frozen vials labeled 'smallpox' turned over to CDC after discovery by lab worker in Pennsylvania

Source: https://www.marketwatch.com/story/frozen-vials-labeled-smallpox-turned-over-to-cdc-after-discovery-by-lab-worker-in-pennsylvania-01637194232

Nov 17 — Federal health authorities on Wednesday confirmed the discovery of some frozen vials labeled "Smallpox" in a freezer at a facility in Pennsylvania that conducts vaccine research. The Centers for Disease Control and Prevention said the vials "were incidentally discovered by a laboratory worker" who was cleaning out the freezer.



"CDC, its administration partners, and law enforcement are investigating the matter and the vials' contents appear intact," CDC spokesperson Belsie González said in an email.



"The laboratory worker who discovered the vials was wearing gloves and a face mask," González wrote. "There is no indication that anyone has been exposed to the small number of frozen vials."

The CDC would not specify where in Pennsylvania the vials were found.

Smallpox is a deadly, infectious disease caused by the variola virus that plagued the world for centuries and killed nearly a third of the people it infected. Victims suffered scorching fever and body aches, and then spots and blisters that would leave survivors with pitted scars.

A nurse displays a vial of smallpox vaccine in used in a 2003 bioterrorism and public health emergency preparedness exercise in Los Angeles. (mike nelson/Agence France-Presse/Getty Images)

The United States was able to end routine childhood vaccination against the disease by the early 1970s and said the last natural outbreak in the country occurred in 1949. In 1980, the World Health Assembly declared smallpox eradicated.

There are two sites designated by the World Health Organization where stocks of variola virus are stored and used for research: the CDC facility in Atlanta and a center in Russia. Smallpox research in the United States focuses on the development of vaccines, drugs and diagnostic tests to protect people against smallpox in the event that it is used as an agent of bioterrorism, according to the CDC.

In July 2014, officials said a government scientist cleaning out an old storage room at a Bethesda, Md., research center found six decades-old glass vials containing freeze-dried smallpox samples packed away and forgotten in a cardboard box. Officials called it the first discovery of unaccounted-for smallpox in the country.

Zombie Apocalypse? How Gene Editing Could Be Used as a Weapon – and What to Do About It

By Pin Lean Lau

Source: https://www.homelandsecuritynewswire.com/dr20211115-zombie-apocalypse-how-gene-editing-could-be-used-as-a-weapon-and-what-to-do-about-it

Nov 15 – It has been over a year since the World Health Organization (WHO) declared COVID-19 a pandemic. And perhaps the most important lesson is that we were completely unprepared to face the debilitating virus.

This raises some scary thoughts. What if the threat wasn't COVID-19, but a gene-edited pathogen designed to turn us into zombies – ghost-like, agitated creatures with little awareness of our surroundings? With recent advances in gene editing, it may be possible for bioterrorists to design viruses capable of altering our behavior, spreading such a disease and ultimately killing us. And chances are we still wouldn't be sufficiently prepared to deal with it.

A zombie apocalypse may sound far-fetched, reserved for the annals of graphic novels, immersive gaming experiences and popular culture. But there are examples of "zombification" in nature. Perhaps the most well known is rabies, which can cause aggression and hallucination and is almost always fatal once symptoms appear.

But there are others. A recently discovered kind of wasp, for example, can turn a particular species of spider (*Anelosimus eximius*) into "zombies" by laying eggs on their abdomen. The resulting larvae then attaches itself to the spider, feeding on it, while the spider, once a social individual, leaves the colony and prepares to die alone. Other zombification examples from nature include the African sleeping sickness, a fatal neurological condition created by insect-borne parasites, and the *Ophiocordyceps unilateralis* fungus, which changes the behaviour of carpenter ants before killing them and sprouting out of their heads.

Weaponizing Pathogens

Last year, the Nobel Prize in Chemistry recognized the development of a type of genetic scissors called CRISPR-Cas9. Interest in this technology has been simmering for a while, with equal doses of excitement and fear. Because of its ability to edit the human genome with unprecedented precision, replacing a single letter in the DNA, CRISPR has already proven itself useful in treating genetic conditions such as sickle cell disease, beta thalassemia, and many others.

But CRISPR-Cas9 could theoretically also be used for darker purposes, such as bioterrorism. It could alter pathogens to make them more transmissible or fatal. Alternatively,

it could turn a non-pathogen, such as a harmless microbe, into an aggressive virus. The technique may even be able to alter a virus to make it dangerous for a larger range of species than it currently infects, or make it resistant to antibiotics or antivirals.
Whether CRISPR could be used to infect humans in a way to make them zombie-like remains a theoretical speculation. At the moment, there are probably easier ways to terrorize people. But as biotechnologies improve in the wake of COVID, the risk from bioterrorism is increasing.
If a zombie-like disease could be created, it clearly wouldn't make deceased people reawaken as zombies. But an infection that passed through saliva with extremely high transmission and mortality rate, and which caused agitation, destructive behavior and death, wouldn't be far off the horror that we see in zombie movies. Such a virus would spread rapidly from human to human in a similar manner to diseases such as Ebola and Marburg viruses. In the epic zombie film, 28 Days Later, the fictitious "rage virus" was, in fact, inspired by these two real-life viruses.
Given these possibilities, it is not surprising that the director of the US National Intelligence, James Clapper, termed gene editing "weapons of mass destruction and proliferation" in 2018.
Many countries are aware of the risks. In 2018, the US government released its first bio-defense strategy, involving multiple government agencies. The plan covers not only deliberate bioterror threats, but also "naturally occurring outbreaks and infectious diseases that escape a lab accidentally". And, curiously, the US Department of Defense Strategic Command unit has issued a training program called CONOP 8888 (Counter-Zombie Dominance), which simulates a zombie apocalypse situation. However, this was designed to be completely fictitious, providing military and defense training without the need to involve real, classified information.

How to Stop It

Do we stand a chance against such gene-edited pathogens? We have international law conventions on biological and chemical toxins. These strictly prohibit states from acquiring or retaining biological weapons. But it is questionable whether these are adequate in the face of novel approaches. Gene editing technologies such as CRISPR are getting cheaper and easier to work with. That means rogue scientists or organizations could use them for bioterrorism.
Ideally, specific provisions in these international instruments should be revisited and adapted to the changing environment. This may include imposing a moratorium on experimenting with gene editing as biological weapon tools or allowing experimentation strictly for benefiting human health.
In June, a WHO expert committee published two reports (see here and here) that made recommendations about how human genome editing could be governed at the appropriate institutional, national and global level. Its framework incorporates structures of governance that already exist in different countries, such as regulatory authorities or national guidelines regarding genome editing or similar technologies. It recommends, for example, that ethics committees review clinical trials and approvals in the area.
While these recommendations provide some clarity, it is concerning that these are simply guidelines that do not have the force of law. The WHO is not in a position to regulate genome editing in individual countries. It therefore becomes incumbent on individual countries to implement these recommendations as part of their own national law. Another problem is that the guidelines do not address issues of safety and efficacy – stating this wasn't part of the scope of the review. But that may change going forward.
For now, these recommendations are the closest thing we have to a global framework of governance. And as the technology continues to develop, it is hoped that they will also evolve accordingly. But ultimately, we may need to think about how to make such frameworks legally binding.
If all else fails, we might have to start working on our cardio and survival skills, and take a leaf out of the books of survivalist preppers.

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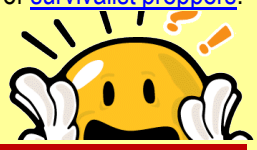


Wait what? FDA wants 55 years to process FOIA request over vaccine data

Source: https://www.reuters.com/legal/government/wait-what-fda-wants-55-years-process-foia-request-over-vaccine-data-2021-11-18/

Nov 18 – Freedom of Information Act requests are rarely speedy, but when a group of scientists asked the federal government to share the data it relied upon in licensing Pfizer's COVID-19 vaccine, the response went beyond typical bureaucratic foot-dragging.
As in 55 years beyond.

That's how long the Food & Drug Administration in court papers this week proposes it should be given to review and release the trove of vaccine-related documents responsive to the request. If a federal judge in Texas agrees, plaintiffs Public Health and Medical Professionals for Transparency can expect to see the full record in 2076. The 1967 FOIA law requires federal agencies to respond to information requests within 20 business days. However, the time it takes to actually get the documents "will vary depending on the complexity of the request and any backlog of requests already pending at the agency," according to the government's central FOIA website. Justice Department lawyers representing the FDA note in court papers that the plaintiffs are seeking a huge amount of vaccine-related material – about 329,000 pages. The plaintiffs, a group of more than 30 professors and scientists from universities including Yale, Harvard, UCLA and Brown, filed suit in September in U.S. District Court for the Northern District of Texas, seeking expedited access to the records. They say that releasing the information could help reassure vaccine skeptics that the shot is indeed "safe and effective and, thus, increase confidence in the Pfizer vaccine." But the FDA can't simply turn the documents over wholesale. The records must be reviewed to redact "confidential business and trade secret information of Pfizer or BioNTech and personal privacy information of patients who participated in clinical trials," wrote DOJ lawyers in a joint status report filed Monday.

The FDA proposes releasing 500 pages per month on a rolling basis, noting that the branch that would handle the review has only 10 employees and is currently processing about 400 other FOIA requests.

"By processing and making interim responses based on 500-page increments, FDA will be able to provide more pages to more requesters, thus avoiding a system where a few large requests monopolize finite processing resources and where fewer requesters' requests are being fulfilled," DOJ lawyers wrote, pointing to other court decisions where the 500-page-per-month schedule was upheld.

Civil division trial lawyer Courtney Enlow referred my request for further comment to the DOJ public affairs office, which did not respond. Plaintiffs' lawyers argue that their request should be top priority, and that the FDA should release all the material no later than March 3, 2022. "This 108-day period is the same amount of time it took the FDA to review the responsive documents for the far more intricate task of licensing Pfizer's COVID-19 vaccine," wrote Aaron Siri of Siri & Glimstad in New York and John Howie of Howie Law in Dallas in court papers.

"The entire purpose of the FOIA is to assure government transparency," they continued. "It is difficult to imagine a greater need for transparency than immediate disclosure of the documents relied upon by the FDA to license a product that is now being mandated to over 100 million Americans under penalty of losing their careers, their income, their military service status, and far worse."

They also argue that Title 21, subchapter F of the FDA's own regulations stipulates that the agency "is to make 'immediately available' all documents underlying licensure of a vaccine."

Given the intense public interest in the vaccine, the plaintiffs' lawyers say that the FDA "should have been preparing to release (the data) simultaneously with the licensure. Instead, it has done the opposite." Siri declined comment.

To meet the plaintiffs' proposed FOIA deadline, the FDA would have to process a daunting 80,000 pages a month. But the plaintiffs note that the FDA has 18,000 employees and a budget of $6 billion and "has itself said that there is nothing more important than the licensure of this vaccine and being transparent about this vaccine."

To be sure, most people -- including many who sanctimoniously proclaim "I do my own research" -- lack the expertise to evaluate the information. But the plaintiffs, who also include overseas professors from the UK, Germany, Denmark, Australia and Canada, appear to be well-positioned to do so. As Siri and Howe argue, "Reviewing this information will settle the ongoing public debate regarding the adequacy of the FDA's review process." U.S. District Judge Mark Pittman has set a scheduling conference for December 14 in Fort Worth to consider the timeline for processing the documents. Opinions expressed here are those of the author. Reuters News, under the Trust Principles, is committed to integrity, independence and freedom from bias.

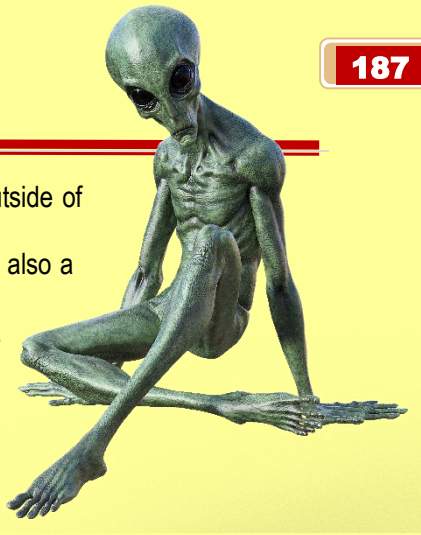
Alien Pathogens Could 'Hitchhike' to Earth - And We're Totally Unprepared, Experts Warn

Source: https://www.sciencealert.com/biosecurity-for-alien-pathogens-is-not-ready-for-the-commercial-space-race-experts-warn

Nov 19 – The race to commercial space flight has well and truly started, with more than 85 companies and organizations seeking a future in **interplanetary tourism**. Yet some researchers worry we might be getting ahead of ourselves.

Before travel outside of Earth becomes a regular event, the world needs to implement some basic biosecurity measures, they warn. Otherwise, we could start receiving unwelcome alien visitors.

If a foreign organism manages to hitch a ride back to our planet on one of our spacecrafts, it could wreak havoc on Earth's equilibrium.



The chance of that actually happening is improbable, especially since we haven't yet found life outside of Earth. But given how bad it could get, it's a reality some think we should prepare for.
A more likely scenario would be a human tourist carrying an Earthly organism to space, and that's also a significant risk.
In space-like conditions, studies have shown some microbes can undergo rapid genetic mutations. After growing a thousand generations of *Escherichia coli* in micro-gravity conditions, for instance, researchers found the harmful bacteria grew even more competitive, acquiring antibiotic resistance.
If that resistant strain is then carried back to Earth, it could seriously threaten human life.
"Risks that have low probability of occurrence, but have the potential for extreme consequences, are at the heart of biosecurity management," says invasion biologist Phill Cassey from the University of Adelaide in Australia. "Because when things go wrong, they go really wrong." The international Committee on Space Research (COSPAR) has put together a Panel on Planetary Protection, but no current member has expertise in invasion science.
Invasion biologists in Australia think that's a serious oversight. They say we need more sophisticated protocols to prevent biological contamination from extraterrestrial environments to Earth and vice versa.
"Given the enormous foundation of research in the science and management of invasive species," the biologists write, "we contend that greater collaboration between invasion biologists and astrobiologists would enhance existing international protocols for planetary biosecurity—both for Earth and for extraterrestrial bodies that could contain life."
Because right now, it seems our biosecurity protocols are failing us.
When an Israeli spacecraft crashed into the Moon in 2019, for instance, it dumped dehydrated tardigrades onto the surface, which could possibly still be alive.
Even more worrisome, bacterial strains with signs of extreme resistance have also been isolated in NASA "clean rooms" where employees assemble spacecraft. If these dangerous microbes hitchhike into space, there's a chance they could grow even more virulent in microgravity. Stopping that from happening in the first place is much easier than trying to tackle mutating organisms once they make it to, say, Mars. Even then, however, some experts think it might be nearly impossible keeping Earthly microbes here on Earth. Everywhere else humans have gone, we've inevitably taken organisms with us. Space, invasion scientists warn, is merely "the next frontier of biosecurity risk".

▶▶ **The study was published in** *BioScience*.

Deaths – 1.1 Million Adverse Drug Reactions, European Medicines Agency Data Shows

Source: https://www.redvoicemedia.com/2021/11/just-in-over-30000-covid-shot-deaths-1-1-million-adverse-drug-reactions-european-medicines-agency-data-shows/

Nov 20 – Chilling new data about the COVID-19 vaccine has just come to light, and it proves that people were right to be skeptical of the jabs all along.
The official European Union database of suspected drug reaction website has revealed that as of November 13, there were 30,551 fatalities and 1,163,356 adverse drug reactions from COVID vaccines Pfizer, Moderna, Johnson & Johnson, and AstraZeneca.
The European Medicines Agency stated that the adverse reaction data from COVID-19 shots were posted in an ADRreports.eu portal that "allows users to view the total number of individual suspected side effect reports (also known as Individual Case Safety Reports, or ICSRs)."
The data that came up on the website and individual case report forms were taken from EudraVigilance, which is "a system designed for collecting reports of suspected side effects, used for evaluating the benefits and risks of medicines during their development and monitoring their safety following their authorization in the European Economic Area (EEA)."
This data was then submitted to EudraVigilance electronically by "national medicines regulatory authorities and pharmaceutical companies that hold marketing authorizations (licenses) for the medicines."
ADRreports website states:

- *Pharmaceutical companies that hold the marketing authorisation of a medicine, as well as medicines regulatory authorities in the EEA,* ***are legally required to submit reports of suspected side effects to EudraVigilance****. This includes reports received from healthcare professionals and patients. This excludes non-serious side effects occurring outside the EEA.*
- *The web report does* ***not include reports from studies*** *(e.g., clinical trial, non-interventional study)* ***or other types of reports*** *(i.e., only spontaneous reports).*
- ***A side effect is classified as 'serious'*** *if it (i) results in death, (ii) is life-threatening, (iii) requires hospitalisation or prolongation of existing hospitalisation, (iv) results in persistent or significant disability/incapacity (as per reporter's opinion), (v) is a congenital anomaly/birth defect, or (vi) results in some other medically important conditions.*

The BioNTech/**Pfizer** vaccine had **14,303 fatalities** and **562,213 cases of adverse reactions** through November 13. Here is the information about the Pfizer fatalities:

- *Blood and lymphatic system disorders include* ***200 fatalities*** *and* ***12,412 not recovered***
- *Cardiac disorders include* ***2,095 fatalities*** *and* ***10,336 not recovered***
- *Congenital, familial and genetic disorders include* ***32 fatalities*** *and* ***125 not recovered***
- *Ear and labyrinth disorders include* ***10 fatalities*** *and* ***7,561 not recovered***
- *Endocrine disorders include* ***5 fatalities*** *and* ***512 not recovered***
- *Eye disorders include* ***31 fatalities*** *and* ***6,636 not recovered***
- *Gastrointestinal disorders include* ***573 fatalities*** *and* ***25,520 not recovered***
- *General disorders and administration site conditions include* ***4,057 fatalities*** *and* ***82,029 not recovered***
- *Hepatobiliary disorders include* ***73 fatalities*** *and* ***334 not recovered***
- *Immune system disorders include* ***74 fatalities*** *and* ***1,911 not recovered***
- *Infections and infestations include* ***1,545 fatalities*** *and* ***11,502 not recovered***
- *Injury, poisoning, and procedural complications include* ***235 fatalities****and* ***1,915 not recovered***
- *Investigations include* ***440 fatalities*** *and* ***7,080 not recovered***
- *Metabolism and nutrition disorders include* ***247 fatalities*** *and* ***2,249 not recovered***
- *Musculoskeletal and connective tissue disorders include* ***177 fatalities****and* ***45,626 not recovered***
- *Neoplasms benign, malignant, and unspecified (incl cysts and polyps) include* ***111 fatalities*** *and* ***369 not recovered***
- *Nervous system disorders include* ***1,532 fatalities*** *and* ***60,907 not recovered***
- *Pregnancy, puerperium, and perinatal conditions include* ***55 fatalities****and* ***253 not recovered***
- *Product issues include* ***2 fatalities*** *and* ***26 not recovered***
- *Psychiatric disorders include* ***172 fatalities*** *and* ***6,633 not recovered***
- *Renal and urinary disorders include* ***223 fatalities*** *and* ***1,213 not recovered***
- *Reproductive system and breast disorders include* ***5 fatalities*** *and* ***19,918 not recovered***
- *Respiratory, thoracic, and mediastinal disorders include* ***1,599 fatalities****and* ***15,449 not recovered***
- *Skin and subcutaneous tissue disorders include* ***123 fatalities*** *and* ***17,883 not recovered***
- *Social circumstances include* ***19 fatalities*** *and* ***888 not recovered***
- *Surgical and medical procedures include* ***55 fatalities*** *and* ***237 not recovered***
- *Vascular disorders include* ***613 fatalities*** *and* ***8,618 not recovered***

For the **Moderna** vaccine, there were **8,385 fatalities** and **155,793 adverse reactions** to 11/13/2021. Here's the information on those Fatalities:

- *Blood and lymphatic system disorders incl.* ***94 fatalities*** *and* ***2,977 not recovered***
- *Cardiac disorders incl.* ***895 fatalities*** *and* ***3,504 not recovered***
- *Congenital, familial and genetic disorders incl.* ***6 fatalities*** *and* ***52 not recovered***
- *Ear and labyrinth disorders incl.* ***2 fatalities,*** *and* ***2,401 not recovered***
- *Endocrine disorders incl.* ***3 fatalities*** *and* ***160 not recovered***
- *Eye disorders incl.* ***29 fatalities*** *and* ***2,197 not recovered***
- *Gastrointestinal disorders incl.* ***324 fatalities*** *and* ***7,467 not recovered***
- *General disorders and administration site conditions incl.* ***2,944 fatalities*** *and* ***31,159 not recovered***
- *Hepatobiliary disorders incl.* ***40 fatalities*** *and* ***192 not recovered***
- *Immune system disorders incl.* ***15 fatalities*** *and* ***650 not recovered***

- *Infections and infestations incl.* ***769 fatalities*** *and* ***3,864 not recovered***
- *Injury, poisoning, and procedural complications incl.* ***156 fatalities*** *and* ***1,201 not recovered***
- *Investigations incl.* ***136 fatalities*** *and* ***1,883 not recovered***
- *Metabolism and nutrition disorders incl.* ***204 fatalities*** *and* ***1,048 not recovered***
- *Musculoskeletal and connective tissue disorders incl.* ***170 fatalities*** *and* ***14,145 not recovered***
- *Neoplasms benign, malignant, and unspecified (incl cysts and polyps) incl.* ***65 fatalities*** *and* ***193 not recovered***
- *Nervous system disorders incl.* ***810 fatalities*** *and* ***18,937 not recovered***
- *Pregnancy, puerperium, and perinatal conditions incl.* ***7 fatalities*** *and* ***121 not recovered***
- *Product issues incl.* ***2 fatalities*** *and* ***5 not recovered***
- *Psychiatric disorders incl.* ***140 fatalities*** *and* ***2,118 not recovered***
- *Renal and urinary disorders incl.* ***164 fatalities*** *and* ***587 not recovered***
- *Reproductive system and breast disorders incl.* ***7 fatalities*** *and* ***3,554 not recovered***
- *Respiratory, thoracic, and mediastinal disorders incl.* ***900 fatalities*** *and* ***5,291 not recovered***
- *Skin and subcutaneous tissue disorders incl.* ***76 fatalities*** *and* ***6,658 not recovered***
- *Social circumstances incl.* ***35 fatalities*** *and* ***802 not recovered***
- *Surgical and medical procedures incl.* ***77 fatalities*** *and* ***268 not recovered***
- *Vascular disorders incl.* ***315 fatalities*** *and* ***2,788 not recovered***

With the **Johnson & Johnson** vaccine, there were **1,793 fatalities** and **37,038 adverse reactions** to 11/13/2021. The information on those Fatalities are as follows:

- *Blood and lymphatic system disorders incl.* ***39 fatalities*** *and* ***388 not recovered***
- *Cardiac disorders incl.* ***154 fatalities*** *and* ***517 not recovered***
- *Congenital, familial and genetic disorders incl.* ***0 fatalities*** *and* ***18 not recovered***
- *Ear and labyrinth disorders incl.* ***2 fatalities,*** *and* ***528 not recovered***
- *Endocrine disorders incl.* ***1 fatalities*** *and* ***36 not recovered***
- *Eye disorders incl.* ***7 fatalities*** *and* ***598 not recovered***
- *Gastrointestinal disorders incl.* ***74 fatalities*** *and* ***2,100 not recovered***
- *General disorders and administration site conditions incl.* ***479 fatalities and 8,852 not recovered***
- *Hepatobiliary disorders incl.* ***11 fatalities*** *and* ***39 not recovered***
- *Immune system disorders incl.* ***9 fatalities*** *and* ***106 not recovered***
- *Infections and infestations incl.* ***140 fatalities*** *and* ***669 not recovered***
- *Injury, poisoning, and procedural complications incl.* ***18 fatalities*** *and* ***262 not recovered***
- *Investigations incl.* ***101 fatalities*** *and* ***1,778 not recovered***
- *Metabolism and nutrition disorders incl.* ***45 fatalities*** *and* ***192 not recovered***
- *Musculoskeletal and connective tissue disorders incl.* ***42 fatalities*** *and* ***5,125 not recovered***
- *Neoplasms benign, malignant, and unspecified (incl cysts and polyps) incl.* ***3 fatalities*** *and* ***25 not recovered***
- *Nervous system disorders incl.* ***195 fatalities*** *and* ***6,390 not recovered***
- *Pregnancy, puerperium, and perinatal conditions incl.* ***1 fatalities*** *and* ***8 not recovered***
- *Product issues incl.* ***0 fatalities*** *and* ***1 not recovered***
- *Psychiatric disorders incl.* ***16 fatalities*** *and* ***445 not recovered***
- *Renal and urinary disorders incl.* ***21 fatalities*** *and* ***140 not recovered***
- *Reproductive system and breast disorders incl.* ***6 fatalities*** *and* ***1,059 not recovered***
- *Respiratory, thoracic, and mediastinal disorders incl.* ***227 fatalities*** *and* ***1,385 not recovered***
- *Skin and subcutaneous tissue disorders incl.* ***7 fatalities*** *and* ***1,131 not recovered***
- *Social circumstances incl.* ***4 fatalities*** *and* ***157 not recovered***
- *Surgical and medical procedures incl.* ***53 fatalities*** *and* ***328 not recovered***
- *Vascular disorders incl.* ***138 fatalities*** *and* ***1,222 not recovered***

For the AZD1222/VAXZEVRIA (CHADOX1 NCOV-19)from Oxford/ **AstraZeneca**, there were **6,070 fatalities** and **408,312 cases** to 11/13/2021. Here's the information on those Fatalities:

- *Blood and lymphatic system disorders incl.* ***246 fatalities*** *and* ***4,787 not recovered***

- *Cardiac disorders incl.* ***685 fatalities*** *and* ***4,253 not recovered***
- *Congenital, familial and genetic disorders incl.* ***7 fatalities*** *and* ***67 not recovered***
- *Ear and labyrinth disorders incl.* ***3 fatalities*** *and* ***5,412 not recovered***
- *Endocrine disorders incl.* ***4 fatalities*** *and* ***250 not recovered***
- *Eye disorders incl.* ***29 fatalities*** *and* ***6,475 not recovered***
- *Gastrointestinal disorders incl.* ***312 fatalities*** *and* ***21,929 not recovered***
- *General disorders and administration site conditions incl.* ***1,450 fatalities*** *and* ***70,400 not recovered***
- *Hepatobiliary disorders incl.* ***59 fatalities*** *and* ***276 not recovered***
- *Immune system disorders incl.* ***28 fatalities*** *and* ***863 not recovered***
- *Infections and infestations incl.* ***407 fatalities*** *and* ***7,177 not recovered***
- *Injury, poisoning, and procedural complications incl.* ***175 fatalities*** *and* ***2,665 not recovered***
- *Investigations incl.* ***147 fatalities*** *and* ***4,983 not recovered***
- *Metabolism and nutrition disorders incl.* ***89 fatalities*** *and* ***3,365 not recovered***
- *Musculoskeletal and connective tissue disorders incl.* ***92 fatalities*** *and* ***46,384 not recovered***
- *Neoplasms benign, malignant, and unspecified (incl cysts and polyps) incl.* ***22 fatalities*** *and* ***184 not recovered***
- *Nervous system disorders incl.* ***948 fatalities*** *and* ***58,962 not recovered***
- *Pregnancy, puerperium, and perinatal conditions incl.* ***12 fatalities*** *and* ***71 not recovered***
- *Product issues incl.* ***1 fatalities*** *and* ***68 not recovered***
- *Psychiatric disorders incl.* ***58 fatalities*** *and* ***5,353 not recovered***
- *Renal and urinary disorders incl.* ***58 fatalities*** *and* ***1,109 not recovered***
- *Reproductive system and breast disorders incl.* ***2 fatalities*** *and* ***7,424 not recovered***
- *Respiratory, thoracic and mediastinal disorders incl.* ***722 fatalities*** *and* ***11,185 not recovered***
- *Skin and subcutaneous tissue disorders incl.* ***48 fatalities*** *and* ***14,633 not recovered***
- *Social circumstances incl.* ***6 fatalities*** *and* ***470 not recovered***
- *Surgical and medical procedures incl.* ***25 fatalities*** *and* ***300 not recovered***
- *Vascular disorders incl.* ***435 fatalities*** *and* ***7,180 not recovered***

mRNA COVID-19 Vaccine Improved through mRNA Backbone Optimization

With only 48% efficacy, CureVac's first mRNA COVID-19 vaccine, CVnCoV, delivered disappointing results. Now, a second-generation mRNA vaccine, with optimization of non-coding regions, has demonstrated improved protection against COVID-19 in preclinical testing with 18 cynomolgus macaques. The new findings suggest that CV2CoV induced substantially higher binding and neutralizing antibodies, memory B cell responses, and T cell responses as compared with CVnCoV. Clinical trials of CV2CoV are planned. **+ MORE**

Creating dangerous viruses in the lab is a bad way to guard against future pandemics

By Laura H. Kahn

Source: https://thebulletin.org/2021/11/creating-dangerous-viruses-in-the-lab-is-a-bad-way-to-guard-against-future-pandemics/

Nov 19 – In 2011, three top US government scientists penned an opinion piece in *The Washington Post* arguing why research modifying highly pathogenic avian influenza (H5N1) was a worthy undertaking. At the time, the National Institutes of Health (NIH) was facing blowback over having funded experiments that modified the virus to be transmissible among ferrets. The scientists argued that eliciting potentially dangerous mutations in the virus was necessary to protect humanity, should those mutations evolve naturally. "We cannot predict whether or not something will arise naturally, nor when or where it might appear. Given these uncertainties, important information and insights can come from generating a potentially dangerous virus in the laboratory," wrote Anthony Fauci, the head of the National Institute of Allergy and Infectious Diseases, Francis Collins, the head of NIH, and Gary Nabel, then a top official at Fauci's institute.

Amid the controversy generated by this influenza research, the US government implemented a "pause" on federal funding in 2014 for selected research reasonably anticipated to increase transmissibility or pathogenicity of influenza, SARS, and MERS

viruses.

USAID animal disease surveillance work in Asia. Credit: Richard Nyberg / USAID. Credit: CC BY-NC 2.0.

These were experiments that fell within a subset of scientific study called "gain-of-function" research. In 2017, the government lifted the pause and put in place a requirement that the US Department of Health and Human Services conduct a risk-benefit assessment on research that could confer these attributes to potential pandemic pathogens.
The federal government continues to fund such experimentation, but, as scientists, media, and online sleuths have delved into the origins of COVID-19, they have revealed weaknesses in past and current government oversight of projects modifying viruses. The revelations have underscored the degree to which gain-of-function research in the name of predicting pandemics is an idea that doesn't seem to fade.

US-funded coronavirus bioengineering

In 2018, EcoHealth Alliance, a US-based nonprofit research organization, submitted a grant proposal to the Defense Advanced Research Projects Agency (DARPA) called DEFUSE: Defusing the Threat of Bat-borne Coronaviruses asking for over $14 million for a three-and-a-half year project to, as the name suggests, prevent a bat coronavirus from spilling over into people and seeding an outbreak. The team would study "viral evolution and spillover risk[s]" of SARS-related bat coronaviruses by collecting viruses from caves in Yunnan, China and doing experiments that included testing hybrid, lab-created bat coronaviruses on mice engineered to have human receptors.
One eye popping segment in the 2018 EcoHealth proposal to DARPA dealt with finding so-called "furin cleavage sites." In SARS-CoV-2, the virus that causes COVID-19, a furin cleavage site allows its spike protein to be cut by the furin enzyme present in human airway

tissues, making the virus better able to infect cells than others without the feature. The furin cleavage site represents a crucial difference between the COVID-19 virus and its relatives, including SARS-CoV, the virus responsible for the 2003 outbreak of that respiratory disease.

The process by which viruses hijack the cellular machinery of their hosts to reproduce themselves is sloppy, and the viruses that a cell produces aren't always identical to the ones that infected the cell to begin with. This sloppiness helps the virus to evolve and adapt to new hosts—such as us. The furin cleavage site in SARS-CoV-2 could have evolved in this way.

Some proponents of the idea that the pandemic began with a lab accident in Wuhan, however, wonder whether the furin cleavage site's presence in the COVID-19 virus is simply a mark of natural viral evolution—an artifact of sloppy viral reproduction—or rather is something else entirely: a sign of human bioengineering.

DARPA did not approve EcoHealth's 2018 proposal, and it's unknown whether the project received other funding. But the EcoHealth proposal, like another of the organization's collaborations with the Wuhan Institute of Virology that did get government funding, show the enduring interest scientists have in modifying viruses in the name of predicting pandemic pathogens. (NIH officials have denied that EcoHealth's NIH-funded research is gain of function research, although NIH documents show that the organization failed to adhere to terms related to enhanced viral growth in its hybrid bat coronavirus studies. There is significant debate on what the definition of a dangerous gain-of-function experiment is.)

Predicting pandemics through gain-of-function research

An overarching goal of EcoHealth's work—as documented in the DARPA proposal and in other projects—was to learn which viruses were poised to spill over, in other words, to predict pandemics. Predicting how and when the next pandemic could arise is important, but tampering with viruses to do so is the wrong way to go about it. Predicting pandemics isn't like predicting the weather.

Weather prediction is a purely observational exercise. We have satellites and other tools to track weather to predict hurricanes. The forecast process begins with observations. Scientists use this data to develop hurricane forecast models. Geophysical fluid dynamics are well understood, based on the laws of physics (i.e. density, flow velocity, pressure, and temperature) enabling scientists to develop atmospheric and climate models. Scientists do not experiment on clouds to see if they can cause hurricanes.

In 2004, the National Academy of Sciences published its seminal report, Biotechnology Research in an Age of Terrorism. It listed seven experiments of concern that should not be done.

1. Demonstrate how to make a vaccine ineffective
2. Confer resistance to antibiotics or antiviral agents
3. Enhance a pathogen's virulence or make a non-virulent microbe virulent
4. Increase transmissibility of a pathogen
5. Alter the host range of a pathogen
6. Enable a pathogen's ability to evade diagnostic or detection modalities
7. Enable the weaponization of a biological agent or toxin

Bioengineering SARS-related coronaviruses in ways that could increase efficient infection of human cells and that increase viral load, pathogenicity, and lethality in mice genetically engineered to have respiratory cells with human features, i.e., humanized mice, as NIH documents show was done by EcoHealth Alliance and its Wuhan partners, would conceivably implicate points 3, 4, and 5 of the 2004 report. Whether the Wuhan experimentation was gain of function is a matter of debate, but some scientists disagree with NIH's assessment that it wasn't. Ideally, Congress should hold a hearing to debate what kind of research should not be done and do more to investigate the origins of the pandemic. Certainly, there have been calls to do so. There are other less risky ways of preventing pandemics than conducting gain-of-function research on pathogens. Many pathogens capable of causing human outbreaks originate in animals, and surveillance of wild and domestic animals for signs of illness makes sense. This is the One Health approach. With One Health, the goal is to prevent the spread of deadly zoonotic microbes into humans through improved communication and collaboration between human and veterinary medicine. Preventing pandemics through rapid identification and response is an important goal; the One Health approach that emphasizes animal and human health and disease surveillance is the key to doing this, not risky gain-of-function research.

Author's note: *Many thanks to Richard Ebright, Board of Governors Professor of Chemistry and Chemical Biology, Waksman Institute, Rutgers University for his invaluable comments and links to technical references.*

Laura H. Kahn *is a physician and policy researcher and is the author of* Who's in Charge? Leadership during Epidemics, Bioterror Attacks, and Other Public Health Crises.

Povidone-iodine solution as SARS-CoV-2 prophylaxis for procedures of the upper aerodigestive tract a theoretical framework

By Syed H. S. Naqvi, Martin J. Citardi, Davide Cattano, et al.

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Source: https://journalotohns.biomedcentral.com/articles/10.1186/s40463-020-00474-x

The COVID-19 pandemic has raised concerns of inadvertent SARS-CoV-2 transmission to healthcare workers during routine procedures of the aerodigestive tract in asymptomatic COVID-19 patients. Current efforts to mitigate this risk focus on Personal Protective Equipment, including high-efficiency filtration as well as other measures.

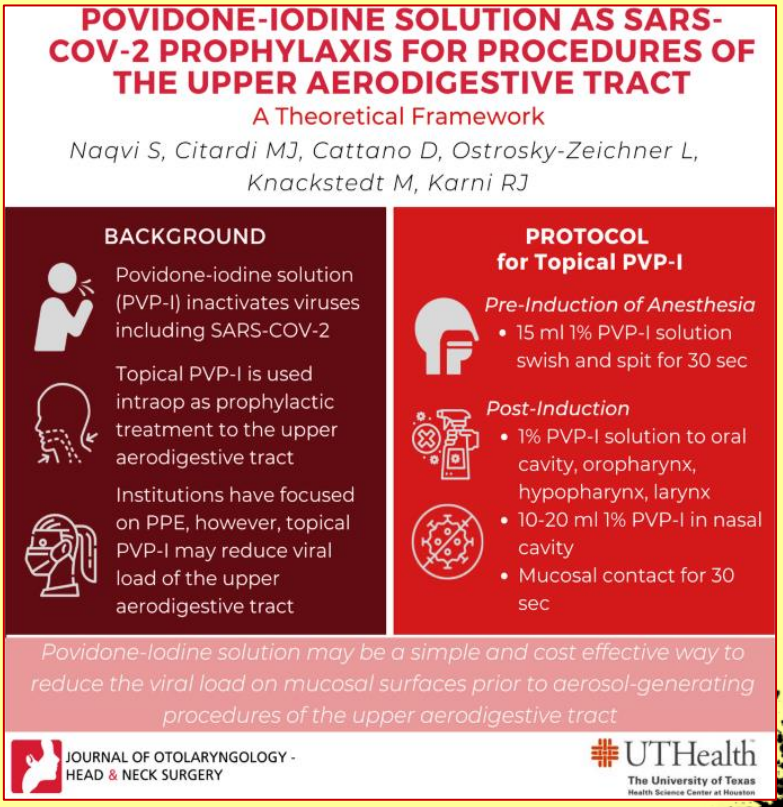
Because the reservoir for SARS-CoV-2 shedding is in the nasopharynx and nasal and oral cavities, the application of viricidal agents to these surfaces may reduce virus burden. Numerous studies have confirmed that povidone-iodine inactivates many common respiratory viruses, including SARS-CoV-1. Povidone-iodine also has good profile for mucosal tolerance. Thus, we propose a prophylactic treatment protocol for the application of topical povidone-iodine (Betadine™ - Avrio Health, LP), to the upper aerodigestive tract.

Mechanism of action

PVP-I functions as an antiseptic through several mechanisms and is considered to have the broadest spectrum of action compared to other common antiseptics such as chlorhexidine. The two most potent antiseptic metabolites of PVP-I are molecular I_2 and hypoiodous acid, which deliver free iodine. These free iodine molecules oxidize amino acids, nucleic acids and cell membranes. Through oxidation of cell surface receptors, PVP-I prevents the attachment of viruses to cellular receptors

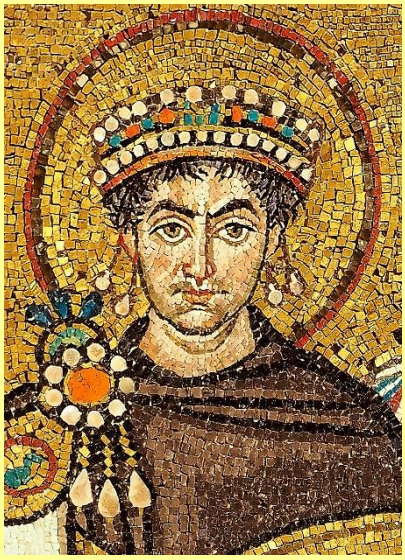
Conclusion

Such an approach represents a low-cost, low-morbidity measure that may reduce the risks associated with aerosol-generating procedures performed commonly in otorhinolaryngology operating rooms.



We May Have Underestimated The First Known Outbreak of Bubonic Plague

Source: https://www.sciencealert.com/we-may-have-underestimated-the-first-known-outbreak-of-bubonic-plague



Nov 23 – The Justinianic Plague spread through west Eurasia between the 6th and 8th centuries CE, signifying the first known outbreak of bubonic plague in this part of the world.

According to a new analysis of ancient texts and genetic data, its impact was much more severe than some recent studies have suggested.

Certain scholars think this 'first pandemic' may have killed up to half the population of the Mediterranean region at the time, helping to bring down the Roman Empire.

Meanwhile, other historians argue the consequences were far less significant, and suggest the outbreak might not have had any more impact than the flu does in modern society today.

This brings us to this latest study. Historian Peter Sarris from the University of Cambridge says historians and archeologists need to work together with geneticists and environmental scientists to fully understand the scope and scale of ancient disease outbreaks – including, in this particular example, the arrival of the bubonic plague.

"Some historians remain deeply hostile to regarding external factors such as disease as having a major impact on the development of human society, and 'plague skepticism' has had a lot of attention in recent years," Sarris says.

Sarris points to several clues that show the devastating impact of the Justinianic Plague, including a flurry of crisis measure legislation passed between the years 542 and 545 CE as the population dropped, followed by a reduction in law making as the pandemic fully took hold.

A law passed in 542 designed to prop up the banking sector of the imperial economy, for example, was described as having been written amid the "encircling presence of death" by Justinian. Other laws at the time were intended to avoid the exploitation of workers during what seemed to be a severe labor shortage.

What's more, a series of lightweight gold coins were issued, representing the first reduction in the value of gold currency for centuries – something that would have been seen as emergency banking legislation at the time. The heavyweight of copper coins circulating in Constantinople was reduced at around the same time.

These signs are more significant than examples cited by other historians, Sarris argues. Some studies use the relatively infrequent mentions of the plague in ancient literature as evidence that its effects weren't all that widespread or damaging to society.

"Witnessing the plague first-hand obliged the contemporary historian Procopius to break away from his vast military narrative to write a harrowing account of the arrival of the plague in Constantinople that would leave a deep impression on subsequent generations of Byzantine readers," says Sarris.

"That is far more telling than the number of plague-related words he wrote. Different authors, writing different types of text, concentrated on different themes, and their works must be read accordingly."

Sarris also highlights the growing amount of DNA evidence showing just how far the bubonic plague spread during this time – all the way to Edix Hill in England, according to a 2018 genetic analysis of a burial site, in one case mentioned in the research.

DNA analysis like this is a much more reliable method of working out where the plague spread to, Sarris says, compared with leafing through ancient texts. It can also shed new light on the routes that the disease took around Europe as it spread.

In this particular case, the disease may have spread to England through the Baltic and Scandinavian countries, arriving there before it hit the Mediterranean – and giving historians a fresh understanding of how this 'first pandemic' evolved.

"We have a lot to learn from how our forebears responded to epidemic disease, and how pandemics impacted on social structures, the distribution of wealth, and modes of thought," says Sarris. "Increasing genetic evidence will lead in directions we can scarcely yet anticipate, and historians need to be able to respond positively and imaginatively, rather than with a defensive shrug."

▶▶ **The research has been published in** *Past & Present*.

keep in mind

Vaccinated citizens	Unvaccinated citizens
✓ They can be infected	✓ They can be infected
✓ They can transmit the virus	✓ They can transmit the virus
✓ If they get sick, they have a good chance to survive	✓ If they get sick, their lives might be severely impaired or die

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