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# 2 CBRNE

Dedicated to Global  
First Responders

# DIARY

September 2021

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AFGHANISTAN  
*bids you*  
BON VOYAGE



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# EDITOR'S CORNER




**Editorial**
**Brig Gen (ret.) Ioannis Galatas, MD, MSc, MC (Army)**
*Editor-in-Chief*  
 HZS C<sup>2</sup>BRNE Diary

**Dear Colleagues,**

The last days of August were quite explosive overshadowing the pandemic. The Islamic State of Khorasan attacked the Kabul International Airport killing many – Afghans; Taliban; US servicemen; many children included. It was an expected/unexpected terrorist biphasic attack with a significant death toll due to the high density of people present in the area waiting/hoping to evacuate with military airplanes. But was the location the major factor for so many casualties? Usually, suicide bombers do not kill so many ([DSAT](#)) people because the high explosives carried in their vests are limited in quantity to be able to penetrate security measures without been noticed – unless a VBIED is used. This bomber killed almost two hundred people and injured much more to be attributed to one explosion – one person only.

Most probably a few more will follow targeting all Westerners remaining in the country – both military or civilian. With huge quantities of modern military equipment left behind, it would be no surprise spectacular attacks to be executed. And this makes everybody wonder why Americans did not destroy or booby-trapped the weaponry abandoned? We all remember in the Black Hawk Down movie (based on real facts) that soldiers destroyed the downed Black Hawk with high explosives. This is a common military procedure – you do not abandon MANPADS intact in their boxes; or attack helicopters; or military Humvees, etc. A malicious man might comment that it is like there was a deal between the US military and the Taliban – we will not attack you if you leave all your equipment behind. Of course you might say that it was the Afghan military that practically donated the equipment to the Taliban but part of their training should cover the “what to do when you have to run away to save your life!” issue. Overall, what an irony! To be killed on the last day of the war – such a common scene in war movies!

The Afghanistan case (and the most recent AUKUS alliance), taught (again) the entire world a big lesson identified also in the past by Lord Palmerston (1784-1865) a British statesman and Prime Minister (1855-58 & 1859-65) who quoted that “*we have no eternal allies, and we have no perpetual enemies. Our interests are eternal and perpetual, and those interests we have to follow*” (speech; House of Commons, 01 March 1848). In other words, do not trust the US they will sell you out depending on their interests. A very useful lesson for countries like Greece or Cyprus that still believe that the US will help them in a real crisis with Turkey ... And of course the same applies to the European Union. First, they will ask themselves (i.e., Germany) “what would be our financial losses” and then decide to help or not. Time will show the truth but I am afraid we already know the outcome.

Greek people greatly sympathize with Afghans under Taliban occupation but this is entirely different than opening the country's borders to them. It is reasonable to oppose the American invasion but they did not change their lives, ethics and daily routines like the Taliban are about to do. Instead of staying in their country and fight by all means against a relatively small number of fighters they preferred to flee the nation looking for a better life abroad. They have not been invited. The EU borders are closed. They are not welcomed and it is not wise to be fooled by the Turkish social media propaganda about “open Greek borders” and try to enter Greece illegally.

Both pandemic and infodemic continue to be on the top of breaking news around the globe. Authorities failed to pass the message that vaccination is the ultimate solution for the person and his/her environment and that prevention measures should also be continued. On the other hand, vaccinated people have the wrong implication that the vaccine is the end of all their problems and that vaccination is their passport to the old normal – especially during summertime. This misconception indicates a wrong crisis communication management that greatly contributes to the problem. The WHO and the EMA intentionally hinder to issue of a scientific evaluation for the Sputnik V vaccine and nobody seems to do



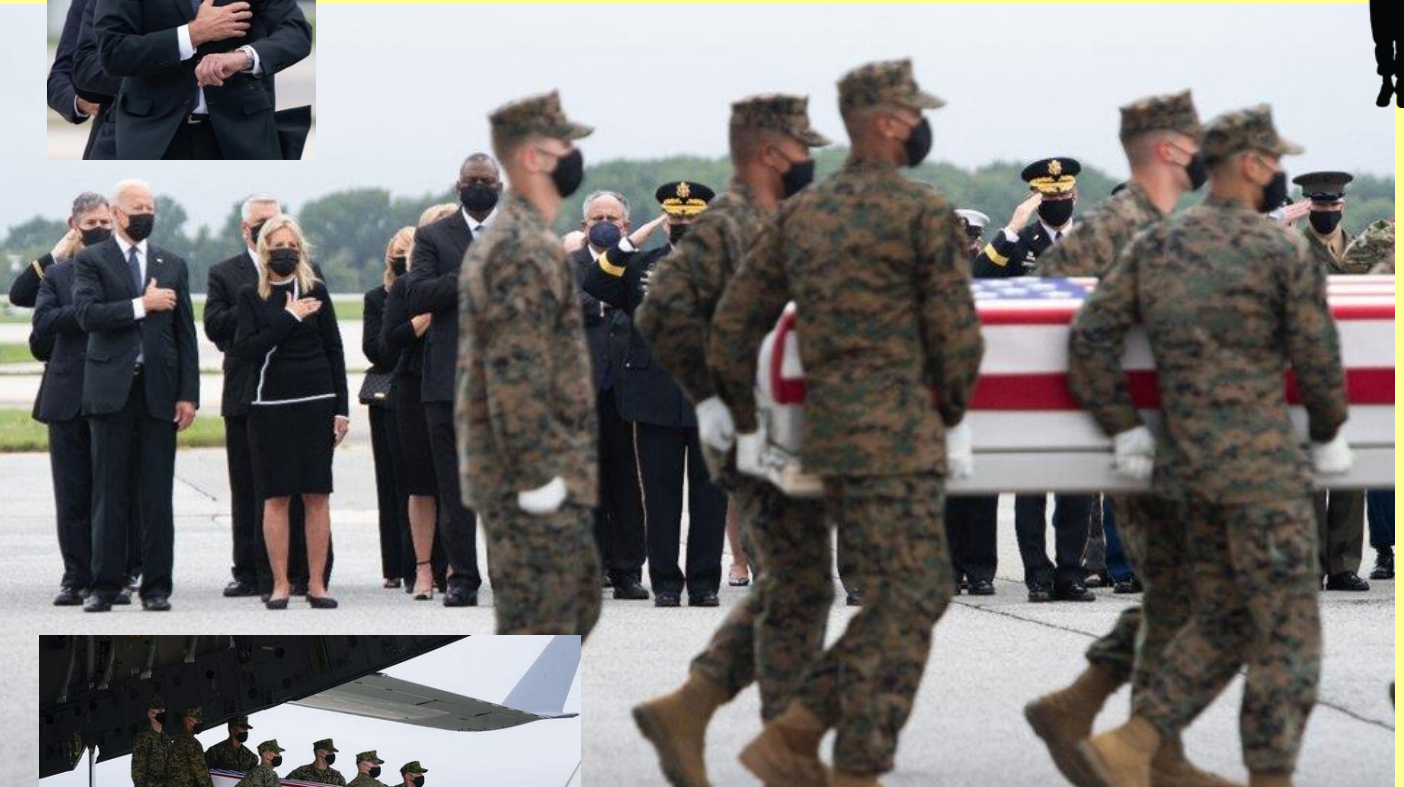


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something about it. It is becoming evident that there is a financial war between the Western world and Russia (and China) with a sense of sick prestige related to who is best – as if this is important for the millions of affected people worldwide. The overall conclusion is that there are many dark sides of the vaccines available; that we do not know precisely all the details of how the virus and the vaccines work along with how the human body defends itself against the coronavirus and many others. After almost one year of vaccinations, several conclusions are available regarding adverse effects and their severity. The problem is that authorities and experts use statistical models to persuade the population that vaccines are safe and the overall ratio of adverse reactions is in favor of vaccination. We are all aware that statistics is a method to make trends visible via numbers and percentages. We often hear/read that this drug is 99% safe. Just fine but if the remaining 1% is named John or Helen then for John or Helen the bad effect is 100%. So simple! A person with underlying medical problems under control with medications says “ok, one day I might die from my medical condition but not right now and right here following vaccination”. These people are not anti-vaxxers! They are people that have to choose a reason to fear about – now or later in life? And this is an issue that authorities prefer to ignore baptizing all those with an opposite opinion as enemies of the public (health).

First Responders, the unexpected always happens! Be prepared; the 600,000 USD Kim Kardashian’s Mansory Lamborghini Ursus might need a special protocol for CBRN decontamination!

*The Editor-in-Chief*



What a shame to die for a worthless lost war and for a President that is looking at his watch!



## Algeria severs diplomatic ties with Morocco

Source: <https://www.dw.com/en/algeria-severs-diplomatic-ties-with-morocco/a-58974969>

Aug 25 – Algeria severed diplomatic ties with [Morocco](#) on Tuesday citing "hostile actions" from its neighbor, as relations between the two countries continued to deteriorate following an extended conflict mainly revolving around Western Sahara.

At a news conference in Algiers, Foreign Minister Ramtane Lamamra accused Morocco of using Pegasus spyware against Algerian officials, supporting a separatist group, and renegeing on bilateral commitments.

Last week, Algeria claimed, without evidence, that deadly wildfires were caused by what it said are Moroccan-backed groups it has labeled terrorists.

"Algeria has decided to break diplomatic relations with Morocco starting today," Lamamra said. "The Moroccan kingdom has never stopped its hostile actions against Algeria," he added.

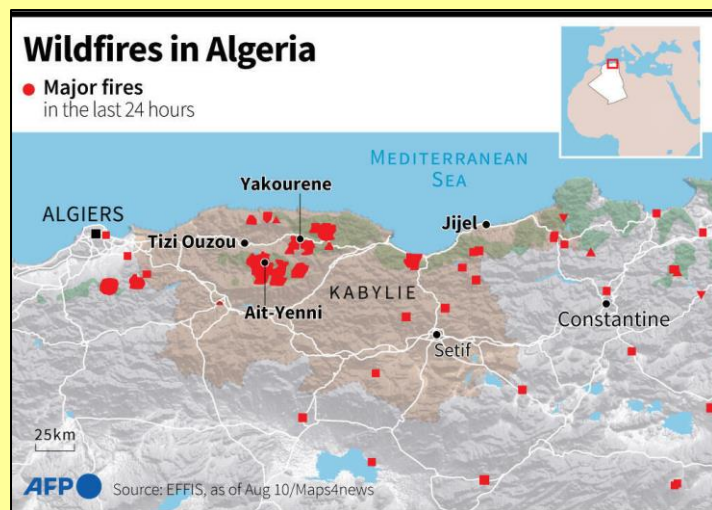
Despite the break-in diplomatic relations, consulates in each country will remain open, Lamamra said.



### Morocco: 'Completely unjustified decision'

The Moroccan Foreign Ministry responded to the move, saying in a statement on Twitter it regretted the "completely unjustified but expected decision, given the escalation observed in recent weeks."

"Morocco categorically rejects the fallacious, even absurd, pretexts underlying the decision," the statement continued, adding that the kingdom would remain a "loyal partner for the Algerian people."



### Wildfires in Algeria kill at least 65 people

The animosity between the two nations over the region has also caused tensions elsewhere, with European countries not recognizing Morocco's claims.

After a Spanish hospital treated the Polisario leader — [Brahim Ghali](#) — earlier this year, Morocco responded by relaxing its border controls with the Spanish exclave of [Ceuta](#), leading to thousands of migrants crossing the border.

Morocco recalled its ambassador from Berlin in May, also due to the European stance on the Western Sahara dispute.

### What is the controversy over Western Sahara?

Relations between the two North African countries have been strained for decades over territorial tensions.

Morocco claims large parts of Western Sahara, while Algeria backs the Polisario Front, a group opposing Moroccan control of Western Sahara and controlling part of the vast, arid territory.

Although Morocco continues to claim large parts of Western Sahara, this is not recognized internationally.

Former US President Donald Trump had promised to recognize Morocco's sovereignty over Western Sahara, and Rabat normalized relations with Israel in return.

The move prompted fears in Algeria, however, that Israel might provide military support for Morocco.







We  
**don't  
forget**  
*our heroes!*



KIA: Capt. George Baltadoros  
Hellenic Air Force F-16 pilot



While the border between Morocco and Algeria has been closed since 1994, diplomatic relations have not been broken since they were restored in 1988 following an earlier spat.

## How climate change helped strengthen the Taliban

Source: <https://www.cbsnews.com/news/climate-change-taliban-strengthen/>

Aug 20 – Rural [Afghanistan](#) has been rocked by climate change. The past three decades have brought floods and drought that have destroyed crops and left people hungry. And the Taliban — likely without knowing climate change was the cause — has taken advantage of that pain.

While agriculture is a source of income for more than 60% of Afghans, more than 80% of conflicts in the country are linked to natural resources, according to a joint [study](#) by the World Food Programme, the United Nations Environment Program and Afghanistan's National Environmental Protection Agency. In 2019, Afghanistan ranked [sixth](#) in the world for countries most impacted by climate change, according to the Germanwatch Global Climate Risk Index.

Over the last 20 years, agriculture has ranged from 20 to 40% of Afghanistan's GDP, according to the [World Bank](#). The country is famous for its pomegranates, pine nuts, raisins and more. However, climate change has made farming increasingly difficult.

Whether from drought or flood-ravaged soil, farmers in the region struggle to maintain productive crops and livestock. When they cannot profitably farm, they're forced to borrow funds to survive. When Afghans can't pay off lenders, the Taliban often steps in to sow government resentment.

"If you've lost your crop and land or the Afghan government hasn't paid enough attention [to you] then of course, the Taliban can come and exploit it," said Kamal Alam, a nonresident senior fellow at the Atlantic Council's South Asia Center.

The Taliban has capitalized on the agricultural stress and distrust in government to recruit supporters. Alam said the group has the means to pay fighters more, \$5-\$10 per day, than what they can make farming.

"[Farmers] fall into choices. That's when they become prey to people who would tell them, 'Look, the government is screwing you over and this land should be productive. They're not helping you. Come and join us; let's topple this government,'" said Nadim Farajalla, director of the climate change and environment program at the American University of Beirut.

In the mountainous north, snow and glaciers have melted more quickly and earlier than ever before, at times flooding fields and irrigation systems, but also leading to snowmelt-related drought in the winter. In the south and west, [some areas](#) have seen heavy precipitation events increase by 10 to 25% over the past 30 years.

Those regions are often left reeling, without adequate aid from the former government.

"With poverty and war and everything else, climate change is the last thing on anyone's mind," said Alam.

Today, [one-third](#) of Afghans are in "crisis" or "emergency" levels of food insecurity due to drought, a danger potentially more threatening than the historic 2018 drought that left [thousands](#) dead.

Farajalla said even Afghans who move into the urban areas in order to leave the stress of farming behind still cannot escape the pressures of "people of ill repute."

"They become destitute enough to be given a few dollars to join this party or that group."

The ripples of these climate-spurned Afghans can last for years. Farajalla said farmers who abandon their land often leave their families behind, arguably making those children easier recruiting targets for extremism.

Climate change has fueled terrorism and civil unrest elsewhere in the world. Boko Haram gripped water-scarce central Africa in 2017 as they gained footholds along the Lake Chad Basin. ISIS has taken advantage of agrarian communities suffering from extreme drought in Iraq and Syria. Farajalla said arid or semi-arid areas in impoverished countries with low levels of education and poor infrastructure are all ripe for extremism.

The Taliban has not only used farmers and rural communities to fortify their ranks, but also to help fund their efforts by taxing farmers on their territory. Most crucially, they have controlled the uber-lucrative poppy trade in Afghanistan.

The country is the world's [leading supplier of opium poppies](#). Not only has the Taliban made [billions](#) from their illicit drug trade, but poppies require less water than other crops, providing more stable means to struggling farming communities. Poppy cultivation is most abundant in the south of the country, where drought in part fueled by climate change has been the most severe and the Taliban is most popular.

These partnerships have helped the Taliban's popularity. But since taking control of the country, the group has vowed to make the nation poppy-free — a tenuous political decision that would not be popular with the rural communities that rely on the crop, said Vanda





Felbab-Brown, director of the Initiative on Nonstate Armed Actors and a senior fellow at the Brookings Institution.

"If they went to go for the ban quickly, they would cause themselves a huge economic downturn. They would set off massive migration of the population. And they would have real problems with maintaining stability," she said.

"Their fighters often harvest poppy. For many of the fighters, the poppy was the principal source to help them fund their family and themselves. They could do jihad for months but would have to disengage to harvest so the family had food."

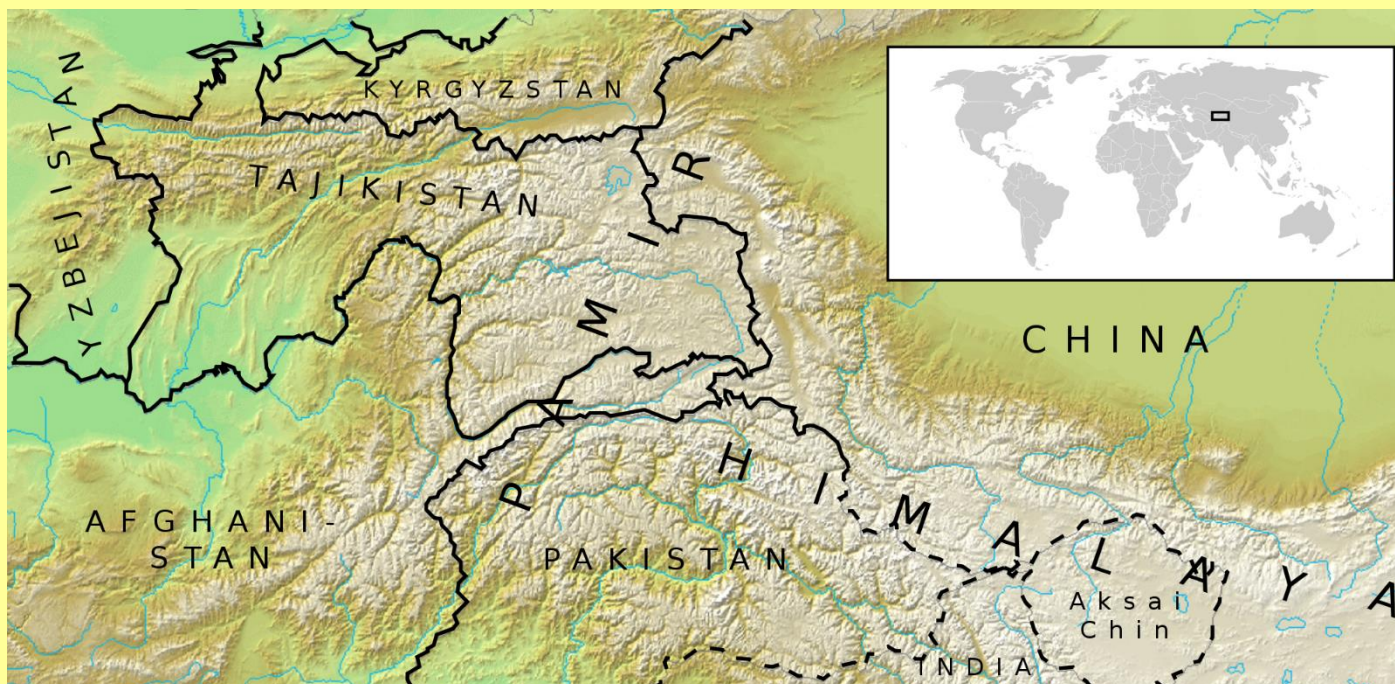
**EDITOR'S COMMENT:** I think that climate change is a pretty good excuse to justify my overweight status!

## Iskandari Pamirski – The Tajik tribe of Alexander the Great

Source: <https://greekasia.blogspot.com/2019/05/iskandari-pamirski-tajik-tribe-of.html>

It seems like a fairy tale, one of those told by the Iskandari Pamirski in the heights of Tajikistan, but it is true. There are entire villages inhabited by descendants of Alexander the Great's soldiers in the depths of the East, on the inaccessible mountains of the Pamir range.

Proud of their Greek origins, they have kept the memory of the Macedonian commander alive, 20 centuries after he passed through their part of the world. The discovery of these completely unknown villages was made by Greek historical researcher and film director Dimitris Manolesakis just a few months ago. He talked to Kathimerini about his journey into the Pamir and our distant compatriots. "Life is difficult here, very difficult, but with Iskandar's help, all will be well, very well," says the old man. His face is peaceful, his voice optimistic. Behind him, the peaks of the Pamir mountains stand against a clear blue sky. "Now that Dimitris has found us, we feel as if we are flying high into the sky," he says, he says, his face shining ecstatically. His village, 4,000 meters above sea level, is indeed not far from the sky. The Pamir range is one of the highest in the world, but also one of the most isolated.



These silent, rugged mountains of central Asia have never known invasion, except by one single leader some 2,333 years ago, Alexander the Great. He was revered because he did not oppress the local people, but instead drew them into his endless enthusiasm for life and learning. When he departed, he left behind some of his soldiers of whom traces can still be seen in the faces of their descendants, who inhabit these mountains. Since then, the traditions have been retained, the faith kept. Not many invaders are the object of reverence, let alone deified, particularly after 20 centuries. Yet this is what Alexander managed to do. Or as they know him, Iskandar. They have named themselves after him: Iskandari Pamirski, the Alexandrians of the Pamir.

Yet, just a few months ago no one knew of their existence. Last fall, Greek historical researcher and film director Dimitris Manolesakis came upon them after persistent and





painstaking exploration among the Pamir mountains in Uzbekistan, Tajikistan and the borders of Afghanistan, China and Kirghizia, in what used to be ancient Sogdia and Bactria, where, according to Marco Polo, lived the descendants of Alexander the Great's troops. As it appears, they still live there. Manolesakis discovered five of these villages. There are more, but at a distance of several days' journey.

The five villages he visited are at heights ranging from 3,000 to 4,000 meters above sea level on different plateaus of the Pamir range.

### Greeks in the heart of Asia

The first to mention the existence of descendants of Alexander's soldiers was the British officer and philhellene Sir George Robertson, who discovered the Kafir-Kalash in the Indian Caucasus in the Himalayas in 1895, in what is now Pakistan, on the Chitral plateau. He made a study of the people and wrote a book about them. Manolesakis was the first Greek to make a film about the Kafir-Kalash, who believe in the Gods of Olympus and retain ancient Greek customs (hence «Kafir» or unbelievers, i.e., non-Muslims), for Greek state television's educational service. Several years ago, he travelled to about eight of their villages in the inhospitable gorges of the Indian Caucasus. The descendants of Greeks in the Pamir were a genuine discovery; until recently, they were unknown to the outside world. On his dangerous trip into the Pamirs, by jeep and on foot, he was helped by Professor Giorgos Michailidis of Tashkent and the historian and museum director Sohinbek Alloueddin.



"I didn't find them where Marco Polo said they were, but even higher; centuries ago, they had fled to higher plateaus, probably to escape invaders" Manolesakis said. "These people are proud of their origins, they tell amazing stories and legends about the strength, wisdom and generosity of Iskandar. Although they are Muslims, at least that is what they declare themselves, they believe in and worship Alexander the Great. They have deified him. They believe not only that he has divine power, but miracle-working abilities." Their own religious leader, the imam, along with other

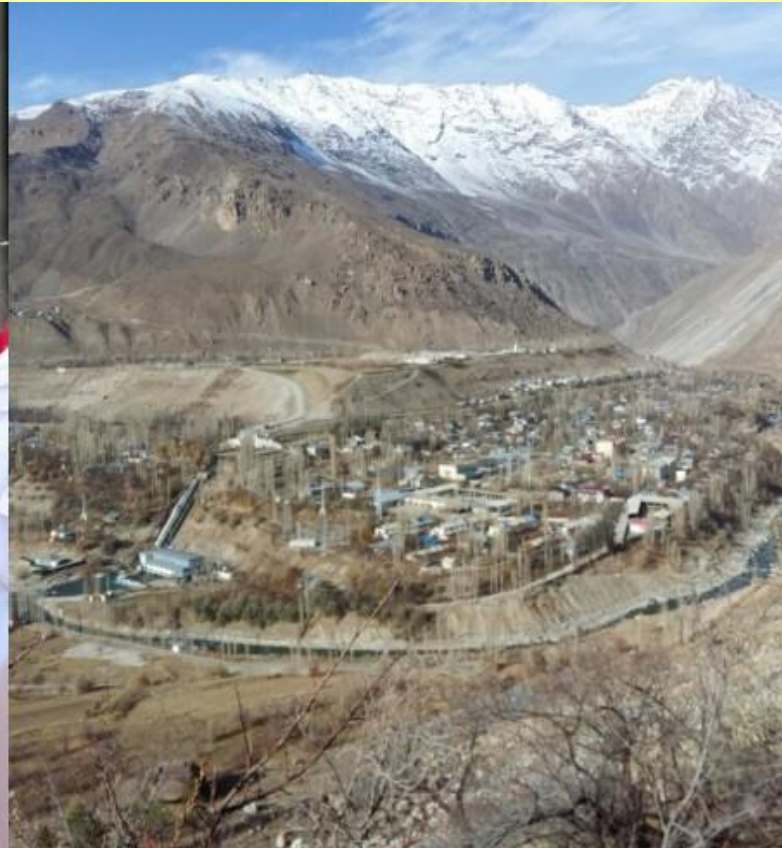




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clerics and local leaders, related on camera some of the miracles attributed to the god-king Iskandar. "If a woman cannot have a child, she goes to Iskandar's grave to pray and when she comes back, she gets pregnant", they say. Every spring and fall they go to pray at a grave which is high in the Yasmullah mountains, and which they believe is that of Iskandar. One of their ancestors found the grave about two centuries ago. It is obviously a cenotaph, but that is of little importance to the people who walk 68 difficult kilometers (42 miles) to honor Iskandar and to ask for his help.

The five villages found by Manolesakis are scattered around the Pamirs and are not aware of each other's existence. They call themselves by different names, according to the region they inhabit: Iskandari Pamirski (Alexandrians of the Pamir), Iskandari Kouli (Alexandrians of the Lake), and Kalashi Pamirski (Kalash of the Pamirs). The latter come from among the Kalash of the Himalayas in Pakistan. Obviously, some of their number had been exiled from the Chitral plateau and sought refuge in the Pamir. Just as the Kalash of the Himalayas, the Kalash of the Pamirs have preserved ancient Greek customs, which they observe in secret places. The descendants of Greeks in the Pamirs speak a language that is a mixture of Farsi, Uzbek, Afghan and ancient Greek words and roots. "For example, they use the Greek phrase *eis kalon* to denote 'beautiful', and *gynaik* for woman" said Manolesakis.



### Stuff of Legends

They have a number of legends about Alexander the Great. One of them refers to Iskandar as a very strong man, who lifted a three-ton rock and put it between two distant points to form a bridge. Whoever can lift that rock, according to the legend, will see Alexander underneath, who will then rise up and read the Koran. Another legend, from the Lake region, tells of how the lake was created. Alexander arrived there with his troops ready to do battle with local tribes. However, shortly before the battle, the heavens opened and so much rain fell that the plain became a lake dividing the two armies. The battle was never fought and the two armies made peace. Many of Alexander's soldiers stayed there and had families. Sometimes at dawn, the Alexandrians of the Lake see Alexander rising from the lake on his horse Bucephalus, or else the horse on its own, galloping around and mating with the local mares. Their legend about Alexander and the fountain of youth is slightly different from the Greek legend. A king offers Alexander some water from the fountain of youth, but tells him to think carefully before deciding. Alexander says he doesn't want to become immortal; he wants his work to be immortal. The king explains to him that no one has ever drunk it for fear of living forever and suffering forever. The descendants of Alexander's men are the subject of a documentary which will be part of a series directed by Manolesakis titled "Alexander of the Peoples" being made under the aegis



of the Foreign Ministry and the Thessaloniki prefecture. It aims to provide an approach the life and times of Alexander, through the memories of the peoples of Asia.

## U.S. Has 'More Terrorists Today Than on 9/11,' says Former DHS Counterterrorism Chief

By Bridget Johnson

Source: <https://www.hstoday.us/federal-pages/dhs/u-s-has-more-terrorists-today-than-on-9-11-says-former-dhs-counterterrorism-chief/>

Aug 24 – The United States needs to acknowledge and craft policy toward confronting the “very sobering” counterterrorism reality that “we have more terrorists today than we did on 9/11,” a former counterterrorism chief at the Department of Homeland Security told Congress.

Former DHS Assistant Secretary for Threat Prevention and Security Policy Elizabeth Neumann, who now serves as chief strategy office for the organization Moonshot, which counters online extremism, told the Senate Homeland Security and Governmental Affairs Committee in an Aug. 5 hearing on the domestic extremist threat that the summer 2019 attacks in Gilroy, El Paso, and Dayton foreshadowed “the current spike of violence that started last summer and continues this year.”

“We have some attacks targeted at institutions including law enforcement. We have some attacks that targeted people groups, particularly those that historically have been marginalized. Others are ideologically motivated or what we would consider terrorism, and still others, we have motives that aren’t determined,” she said.

Neumann stressed that the [DHS Strategic Framework for Countering Terrorism and Targeted Violence](#), which she briefed the committee about in October 2019, emphasized partnerships to recognize and help individuals vulnerable to radicalization and to help those who have been radicalized “find healthier ways to address their grievances or problems before they cross the criminal threshold.”

“El Paso, Marjory Stoneman Douglas High School, the Nashville Christmas bombing, and the recent shooting at the Indianapolis FedEx facility all had a common feature: that there was a bystander that reported to law enforcement that they had concerns, and law enforcement, after the fact, said, ‘Yes, we had concerns about that individual, but we did not have the probable cause or the tools to be able to do anything,’” she said. “We need to find a way to get help to those individuals before they cross that criminal threshold.”

“Building local prevention frameworks will allow bystanders, their neighbors, colleagues, friends, and loved ones that notice something is wrong to consult with experts before they have concerns, before an individual has committed a criminal act,” she added. “And that’s the linchpin of what we describe when we’re talking about prevention.”

Lauding the current administration for taking “the threat of domestic terrorism very seriously” and continuing to implement the prevention strategy launched in the previous administration, Neumann said the COVID-19 pandemic has understandably slowed progress. She encouraged senators to authorize the Center for Prevention Programs and Partnerships at DHS, work with DHS to find a suitable home for the office so it can best perform its mission, and provide it with adequate financial resources — “from the current \$20 million to over \$200 million over a multiyear period.”

“And I recommend that Congress authorize 50 prevention coordinators to be placed in every state next year and increase beyond that after a workforce assessment is completed,” she said, adding, “I don’t believe I’m overstating the extreme challenge the security community faces at this time.”

In addition to radicalization stoked by the isolation of the pandemic and political polarization, Neumann said she’s particularly concerned about the growth of accelerationism, which is “mostly associated with white supremacist ideology, though it is really more of a doctrine that could apply to any ideology,” and seeks to hasten societal collapse through acts of violence such as a race war or civil war. “My concern, in particular, is that I’m seeing threads of this doctrine discussed in the political mainstream,” she said. “Accelerationism is fundamentally anti-democratic, and it’s extremely dangerous... it just takes one catalyst and then you have this social media feedback loop and perhaps one or two leaders kind of sanctioning whatever that catalyst and the response was to lead us to a moment where a mass group of people show up and believe that violence is justified to achieve their ends.”

“The current scope of violent extremism in our country is simply too big for the security community to fix,” she stressed. “We must call in other parts of our society to reflect on their contributions to our current moment and all of us need to work towards a more responsible discourse that allows for disagreement without dehumanizing our opponents.”





Jonathan Greenblatt, CEO and national director of the Anti-Defamation League, said that a “drastic and disturbing rise in anti-Semitic activity across America” foreshadows more extremism because “hate might start with the Jews, but it never ends there — bigotry begets more bigotry, hate leads to more hate.” That includes recent increases in hate crimes against Asian-Americans and the Latino community.

“Over the last decade, 429 innocent victims were murdered at the hands of extremists. The overwhelming majority of whom were far, far right extremists and white supremacists,” he said. “But we also know full well that you don’t have to be an official card-carrying extremist to cause harm. The problem we see is that violence motivated by hate, anti-Semitism, and other forms of bigotry increasingly has been normalized.”

The rise in domestic extremism has been fueled by social media — “a super-spreader of hate” — and “leaders who have repeated extremist rhetoric, co-opted their conspiracies, and knowingly or not have given them the green light,” he said.

ADL’s released its bipartisan [PROTECT plan](#) this year that advocates passing the Domestic Terrorism Prevention Act; better coordination across all federal, state and local government agencies; ensuring that extremists cannot serve in the military, law enforcement, or elected office; holding social media companies accountable for facilitating extremism; funding innovative anti-radicalization efforts; and targeting foreign white supremacist groups.

“There is simply no silver bullet,” Greenblatt told lawmakers. “...As part of this, you need to rethink DHS for the modern era, making sure it’s best prepared and organized to address the threat of domestic terrorism.”

Brian Levin, director of the Center for the Study of Hate and Extremism at California State University, San Bernardino, warned that “the extremist threat today, both domestically and internationally, is in a state of significant realignment across several fronts, and it is also severe.”

“As I have noted for several years, white supremacists and far-right extremists continue to pose the most lethal domestic terror threat facing the United States,” he said. “But they do so in an increasingly diversifying landscape that impacts not only these malefactors but various emerging actors across the entirety of the extremism spectrum. Indeed, we are seeing an era of a democratization of hate.”

He noted the 189 percent spike in anti-Asian hate crime in major U.S. cities in the first quarter of 2021, the wide-ranging backgrounds of the hundreds of defendants in the Jan. 6 Capitol attack, and more violent confrontations around heated issues at the local level such as at school board meetings. The country is also experiencing “increasing activity of militias of various stripes.” Extremist homicides going down in 2020 was likely “a temporary anomaly with respect to the various COVID restrictions,” he said.

Levin said that year-to-date anti-Semitic hate crimes are up 135 percent in New York City and 53 percent in Los Angeles — and both “look like they may be heading for records.”

“As we’ve seen with respect to El Paso and others, we’re seeing a confluence of folks, mass killers, some very young who have access to weaponry. There is an overlap between hate crime and terrorism. But we are seeing violent conflict also rising around conflictual political events,” he said. “...Indeed, extremism is a carnival mirror reflection of mainstream stressors.”

Levin stressed to the committee that “today’s terrorist is increasingly less ideological and organizationally rigid.”

“We have an elastic reservoir of grievance. And targeted violence and hate crimes often overlap, so we need data that is timely and deep, and we have not had that in many years,” he said, warning of the “dissipation of extremism that is becoming more regional and more idiosyncratic in its manifestations.”

Maya Berry, executive director of the Arab American Institute, told senators that what is needed is “accurate data on the nature and extent of white supremacist violence and the political will to change both the policies and practices that have generally overlooked its growth.”

“As we go after white supremacist violence, we must not take an approach that could harm some of the very communities we need to protect from this violence,” she added, advocating against creation of a domestic terrorism charge.

Neumann said a reassessment is needed as if a crime is “done in the name of a White supremacist’s ideology versus in the name of ISIS, those crimes are treated differently.” “I would think that it would behoove us as a people to have a commission that looks at this problem, looks at our mistakes, updates the law on all sides, not just for domestic terrorism, but we’ve got to do counterterrorism better,” she said, later adding that “one of the biggest gaps at DHS has been on the intelligence side, and it’s still not clear to me who in the federal government is responsible for producing a strategic threat picture as it pertains to domestic terrorism.”

Greenblatt noted that “FEMA and DHS, in general, can do a better job of reaching out to faith-based communities to make them aware” of the underutilized Nonprofit Security Grant Program.

“We think the Pray Safe Act is incredibly important,” he said. “That it would create a best-practices portal for faith-based organizations from all religions that would benefit from DHS’ understanding of security protocols that they could take on themselves, what’s worked for other organizations in terms of best practices, how they can apply for federal grants.”



*Bridget Johnson is the Managing Editor for Homeland Security Today. A veteran journalist whose news articles and analyses have run in dozens of news outlets across the globe, Bridget first came to Washington to be online editor and a foreign policy writer at The Hill.*

## A sign ...



1

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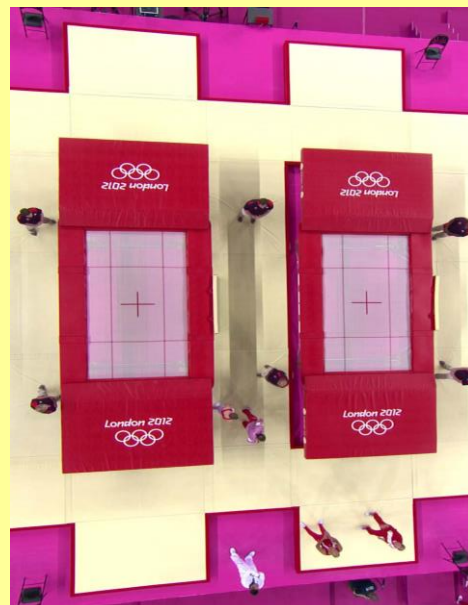
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**Daily Mail Online** @MailOnline

My Olympic gold medal is PEELING! China's champion gymnast sparks concerns over quality of Tokyo 2020 prizes





## Islamic State Khorasan (IS-K)

Source: <https://www.csis.org/programs/transnational-threats-project/past-projects/terrorism-backgrounders/islamic-state-khorasan>

Islamic State Khorasan (IS-K) is the Islamic State's Central Asian province and remains active three years after its inception. The Islamic State announced its expansion to the Khorasan region in 2015, which historically encompasses parts of modern day Iran, Central Asia, Afghanistan, and Pakistan.<sup>1</sup> Despite initial skepticism about the group's existence from analysts and government officials alike, IS-K has been responsible for nearly 100 attacks against civilians in Afghanistan and Pakistan, as well as roughly 250 clashes with the U.S., Afghan, and Pakistani security forces since January 2017.<sup>2</sup> Though IS-K has yet to conduct attacks against the U.S. homeland, the group represents an enduring threat to U.S. and allied interests in South and Central Asia. This backgrounder is an overview of the history, leadership, and current strategic goals of IS-K.

### Formation and Relationship with ISIS Core

In 2014, Pakistani national Hafiz Saeed Khan was chosen to spearhead IS-K province as its first emir.<sup>3</sup> Khan, a veteran Tehrik-e Taliban Pakistan (TTP) commander, brought along other prominent TTP members—including the group's spokesman Sheikh Maqbool and many district chiefs—when he initially pledged allegiance to al-Baghdadi in October 2014. Many of these individuals were included in the first Khorasan Shura or leadership council.<sup>4</sup>

IS-K's early membership included a contingent of Pakistani militants who emerged in Afghanistan's Nangarhar province around 2010, just across the border from the former Federally Administered Tribal Areas (FATA) of Pakistan.<sup>5</sup> Many of these militants were estranged members of TTP and Lashkar-e Islam, who had fled Pakistan to escape pressure from security forces.<sup>6</sup> The appointment of Khan as IS-K's first emir, and former Taliban commander Abdul Rauf Khadim as his deputy, further facilitated the group's growth, utilizing long established recruitment networks in Afghanistan and Pakistan.<sup>7</sup> According to the Combatting Terrorism Center at West Point, as of 2017, some members of Lashkar-e-Taiba, Jamaat-ud-Dawa, the Haqqani Network, and the Islamic Movement of Uzbekistan (IMU) had also defected to IS-K.<sup>8</sup>

IS-K has received support from the Islamic State's core leadership in Iraq and Syria since its founding in 2015. As the Islamic State loses territory, it has increasingly turned to Afghanistan as a base for its global caliphate.<sup>9</sup> Following IS-K's official pledge of allegiance to the Islamic State's global "ummah," Islamic State *wilayats* (or provinces) in Iraq and Syria





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publicly announced their congratulations for the movement's expansion into Central Asia through media statements and videos.<sup>10</sup> To that end, the Islamic State has invested some financial resources in its Khorasan province—as much as several hundred thousand dollars—to improve its networks and organization in Central Asia.<sup>11</sup> Additionally, a recent United Nations publication commented that “[ISIS] core continues to facilitate the relocation of some of its key operatives to Afghanistan,” including Abu Qutaiba, the Islamic State's former leader in Iraq's Salah al-Din province.<sup>12</sup> Afghanistan remains a top destination for foreign terrorist fighters (FTFs) in the region, as well as for fighters leaving battlefields in the Levant.<sup>13</sup> IS-K's public affairs prowess, global prestige, and sustained resources facilitate the recruitment of these FTFs, drawing them away from other militant movements.



### Leadership and Strategy

IS-K founding emir, Hafiz Saeed Khan, was killed by a United States airstrike in Nangarhar province, Afghanistan, on July 26, 2016.<sup>15</sup> Following Khan's death, IS-K has had three subsequent emirs, all of whom have also been eliminated by the United States in targeted strikes: Abdul Hasib was killed in April 2017; Abu Sayed was killed on July 11, 2017; and most recently, Abu Saad Orakzai was killed on August 25, 2018.<sup>16</sup> These leaders, as well as those at the district and provincial levels, generally possessed meaningful experience with local militant movements in Afghanistan, Pakistan, and Uzbekistan prior to joining IS-K. IS-K's overarching strategy includes local and global objectives. In a 2015 video series, IS-K's media office declared that "There is no doubt that Allah the Almighty blessed us with jihad in the land of Khorasan since a long time ago, and it is from the grace of Allah that we fought any disbeliever who entered the land of Khorasan. All of this is for the sake of establishing the Shariah." It went on to declare, "Know that the Islamic Caliphate is not limited



to a particular country. These young men will fight against every disbeliever, whether in the west, east, south, or north.”<sup>17</sup> Like the Islamic State’s core leadership in Iraq and Syria, IS-K seeks to establish a Caliphate beginning in South and Central Asia, governed by sharia law, which will expand as Muslims from across the region and world join. IS-K disregards international borders and envisions its territory transcending nation-states like Afghanistan and Pakistan.

Furthermore, its global aspirations include “[raising] the banner of al-Uqab above Jerusalem and the White House,” which equates to the defeat of both Israel and the United States.<sup>18</sup> IS-K’s ideology seeks to rid its territory of foreign “crusaders” who “proselytize Muslims” as well as “apostates,” which include anyone from Sunni Afghan National Army recruits to Hazara Shias.<sup>19</sup> While there is no evidence that Islamic Khorasan has been involved in plotting against the U.S. homeland, it has mocked and threatened the United States in its official media streams and called for lone-wolf attacks in the West.<sup>20</sup>

IS-K seeks to establish a Caliphate beginning in South and Central Asia, governed by sharia law, which will expand as Muslims from across the region and world join.

IS-K carries out its global strategy in different operating environments by curating it to local conditions. Consider, for example, the divided region of Kashmir. It sits at the top of the Indian subcontinent and serves as a flashpoint for conflict between historically feuding nuclear powers, Pakistan and India. With nationalistic leaders dominating politics in both Islamabad and New Delhi, perpetual unrest in the disputed territories, and precedent of state-sponsored terrorism, Kashmir is fertile ground for future IS-K subversion.<sup>21,22</sup> In Afghanistan and Pakistan, IS-K’s strategy seeks to delegitimize the governments and degrade public trust in democratic processes, sowing instability in nation-states, which the group views as illegitimate. Recently, in the lead up to 2018 parliamentary elections in Afghanistan, IS-K warned citizens in Nangarhar province, “We caution the Muslims in the province from approaching election centers, and we recommend that they stay away from them so as to safeguard their blood, as these are legitimate targets for us.”<sup>23</sup> IS-K claimed multiple attacks on “elections centers” and security forces during the Afghan parliamentary elections, following through on their warning to “sabotage the polytheistic process and disrupt it.”<sup>24</sup>

### Operations and Tactics

According to the CSIS Transnational Threats Project’s recent report on Salafi-jihadist groups, IS-K has a fighting force of between 600 and 800 militants as of October 2018. These numbers are down from peak levels in 2016 when its fighting force numbered between 3,000 to 4,000 militants.<sup>[25]</sup> Despite the decrease in known fighters, the IS-K continues to plot and carry out high-level attacks in Afghanistan and Pakistan and attempts to export its violent ideology to the West.<sup>26</sup> For example, IS-K released congratulatory videos after the 2016 Islamic State inspired attacks in Orlando, Florida, and Magnanville, France, and subsequently released additional footage pleading for further lone-wolf attacks in the West.<sup>27</sup>

Despite the aforementioned efforts to inspire attacks abroad, IS-K’s violence remains largely localized. Since January 2017, IS-K has executed 84 attacks against civilians in Afghanistan and 11 in Pakistan. In Afghanistan, 819 civilians have been killed across 15 provinces, with the highest levels of violence in Kabul and Nangarhar.<sup>28</sup> IS-K focused on Kabul and key provincial capitals during the October 2018 parliamentary elections, and future attacks are likely to follow a similar pattern; with presidential elections scheduled for 2019, IS-K “sleeper cells” will continue to plan “visible and disruptive attacks” in Kabul, Herat, and Jalalabad.<sup>29</sup> In Pakistan, IS-K is responsible for the deaths of 338 civilians since January 2017, largely a result of attacks targeting electoral and sectarian institutions.<sup>30</sup> These tactics in Afghanistan and Pakistan further demonstrate IS-K’s localized strategy aimed at delegitimizing existing states, degrading trust in democracy, exploiting sectarianism, and sowing instability in its areas of influence.

### Inter-Group Competition in Khorasan

Islamic State core’s decision to formally expand into South and Central Asia was premised on the region’s existing networks for recruitment and weak governance, as well as the group’s financial flexibility from success in Iraq and Syria. However, IS-K’s hostility towards Pakistan, indiscriminate takfiri violence, and willingness to exploit local grievances has mounted considerable aversion to the Islamic State in Pakistan and Afghanistan.<sup>31</sup> Its expansion sparked violent conflict and rivalry between IS-K and some of the region’s existing militant organizations, most notably the Afghan Taliban.<sup>32</sup>

Since January 2017, the Armed Conflict Location & Event Data Project (ACLED) has recorded 207 clashes between IS-K and the Afghan Taliban.<sup>[34]</sup> These clashes occurred in 14 of Afghanistan’s 34 provinces, though the majority took place in Nangarhar, Jowzjan, and Kunar provinces. Clashes in Nangarhar and Kunar are to be expected, as these provinces lay on the border with Pakistan and have served as bases of operation for IS-K since its founding. Violence in Jowzjan, however, largely stems from the defection of former Taliban and IMU commander Qari Hekmatullah, who pledged allegiance to IS-K in 2016. Hekmatullah’s networks in Jowzjan facilitated the Islamic State’s expansion in the province through March 2018, but





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following Hekmatullah's death by U.S. airstrike in April 2018, the Taliban resurged.<sup>35</sup> In recent months, the Taliban claims to have achieved "exemplary defeat" of IS-K in Jowzjan.<sup>36</sup>

### United States Response

U.S. policy indicates the recognition of—and response to—the threat posed by IS-K and the escalating violence it has provoked in Central Asia. The U.S. Department of State designated IS-K as a Foreign Terrorist Organization on January 14, 2016, and United States Central Command has escalated its air campaign against the group since 2016 when rules of engagement expanded under President Obama and President Trump.<sup>38</sup> According to data compiled by ACLED, U.S. and NATO airstrikes against IS-K have been conducted over 300 times since January 2017. Though the group's presence across Afghanistan is increasing, airstrikes have been nearly exclusive to Nangarhar and Kunar provinces (96 percent of all airstrikes since January 2017) in an effort to target operational bases and leadership.<sup>39</sup> All in all, while IS-K's goal of establishing an Islamic state in Central Asia remains improbable, its propensity for exploiting grievances, catalyzing instability, and taking advantage of ungoverned spaces will make peaceful reconciliation and nation-building in Afghanistan difficult for the foreseeable future.

►► **NOTE:** References and interactive maps are available at the source's URL.

## Tourism and Terrorism

By Dr. Peter Tarlow

The August 26<sup>th</sup> attacks on the Kabul airport's civilians trying to depart Afghanistan serves as a further reminder of how dangerous the situation is in Afghanistan. With the final date for the US and its allies' departure from that country fast approaching it is important that tourism industry professionals take a deep breath and consider the potential impact of the Taliban's victory on the world of tourism. Although there will be numerous articles regarding the Taliban takeover of Afghanistan written from the political perspective it is often impossible to separate the world of political actions from the world of tourism. For example, Al Qaeda's attacks in September of 2001 were political actions, but the results were an immediate economic for tourism and the tourism industry still feels some twenty years later the reverberations of September 11, 2001. September 2021 will not only mark twenty years since the attacks that are also called 9-11 (September 11<sup>th</sup>) but the dawn of a potentially new and more dangerous era for the world of tourism.

No one knows what the world of tourism will look like in 6 months, a year, or two years from now. The tourism industry is always vulnerable to unpredictable or unforeseen political or economic events that are often called "black swan" events. As advanced communications makes it seem that world grows ever smaller, and events become known around the world almost instantaneously it appears that there the number of black swan events increases with time. These events often influence our traveling decisions, both for pleasure and for business. Tourism officials need to be ever mindful that the currents of history are not a single event, but a potpourri of events. Ironically these mixtures seem unlikely prior to their occurrence but once having occurred seem in hindsight to have been the logical outcome.

The events of the late summer of 2021 exemplify this mélange of events and from a tourism industry perspective require thoughtful analysis. Although I am writing this article from a United States' perspective, in reality many of these historic currents will impact the world tourism industry.

The summer of 2021 was filled with both new and unresolved challenges. For example, the tourism industry had hoped that by the end of the northern hemisphere's summer that the Covid-19 pandemic would have become a part of history rather than an ongoing challenge. The delta variant of the Covid pandemic ended that hope. In August of 2021 much of the world is stuck in issues such as to vaccinate or not and if a third shot is necessary. Six months ago, no one, or very few people, had heard of the Delta variant of Covid. Tourism centers, like Hawaii, were booming, and there was hope that the cruise industry would soon be on its feet. Instead, we read headlines such as: "Hawaii Gov. Discourages Travel to State Amid Uptick in COVID-19 Cases" (Travel & Leisure magazine).

This increase in covid cases is occurring at around the same time that the US (and much of the world) is experience its worst case of inflation in decades. Headlines such as the following one from CNBC (July 2021) "Inflation climbs higher than expected in June as price index rises 5.4%" state what any person who shops already knows. It is especially important that tourism officials understand the impact of inflation as healthy retired people compose a sizeable segment of



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the leisure tourism industry. This segment of the traveling public often lives on fixed incomes and is particularly sensitive to rising prices.

An additional crisis to impact the tourism industry is crime. For example in a BBC news article on July 7<sup>th</sup> about crime in America states: “*The New York Times* looked at 37 cities across the US with data for the first three months of this year (2021), and overall there has been an 18% increase in murders compared with the same time period in 2020.” Such headlines around the world discourage travel to the United States once its borders reopen. The crime wave has also impacted domestic travel to such US cities as Chicago, Portland, Oregon, Seattle, Washington, DC, and New York City.

The attack on the Kabul airport (August 26) underlines the fact that tourism now faces new threats. At this point no one knows the exactly how deadly the Taliban’s takeover of Afghanistan will be on world tourism. What we do know is that Afghanistan is now under the almost complete control of a terrorism group. The Taliban rule over Afghanistan twenty years ago resulted in a safe haven for Al-Qaida terrorists and numerous attacks against major political and tourism targets such as New York’s World Trade Center.

The fact that Afghanistan is now controlled by a fundamentalist Islamic group makes the situation completely different from other current problems, especially as tourism has in the past served as a magnet for terrorism attacks. The potential for terrorists doing major harm to the tourism industry is now greater than any point since the 9-11 attacks.

### Below is a quick summary of some of the challenges that the fall of Afghanistan means for world tourism.

- **Travel might get a lot harder and more dangerous.** The fact that there are now thousands of non-vetted people who have left Afghanistan means that there is a chance that at least some of these people might be part of sleeper-cells and governments will have to take added precautions until it is clear who is traveling and for what circumstances.
- **The US-Mexico border, already dangerous, will become a lot more dangerous.** The United States during the last seven months has had in effect an “open-border” policy. Un or poorly vetted migrants now enter the United States from both friendly and unfriendly nations. Some of these people come for reasons of political asylum or economic opportunity. Others might be coming for less positive reasons and once in the US they are basically free to go wherever they please. This non-stop unregulated migration has already resulted in the rise of crime and illnesses including Covid.
- **Europe should expect an increase in unvetted refugees who will continue to make Europe less safe and less attractive to visitors.** The result will be a decline in European living standards and quality of life.
- **The Taliban’s traditional source of income, illegal drugs and especially the production of heroine, will increase and this increase is bound to cause problems for the tourism industry.** “Narcotic farmers” will no longer have to fear anything other than a tax collector and the result might be a major increase in drug (and perhaps even sex) trafficking around the world, especially in the western nations. It is these nations that produce most of the world’s tourism.
- **The United States’ sudden pullout from Afghanistan and its lack of coordination with its NATO allies might well result in a weakened NATO alliance exactly at the time when tourism may face renewed terrorism threats.** The tourism industry is going to need to work together and with multiple government agencies against any new threats of terrorism or organized crime.
- **The fact that currently the Chinese see a weak America might encourage an attack on Taiwan or other parts of the South China sea.** Such levels of instability can only hurt tourism recovery both along the Asian Pacific rim and in southern Asian countries. Tourism in this region can become totally dominated by the Chinese and countries such as North Korea might become emboldened to act in a reckless manner. It should be remembered that much of the world’s cargo goes by ship and attacks on major sea lanes could result in increased transportation prices.
- **The fall of Kabul is a wake-up call for tourism executives.** This is not the time to cut back on tourism security but rather plan for a potentially difficult period of time. Tourism leaders will need to work with their governments, the law enforcement agencies, and their health ministries to create conditions for an expanded tourism industry and greater safety and security. These will not be easy times, but the tourism industry if it is to survive must face realities, must be prepared for the worst, but at the same time pray for the best and work to bring people together.

*Dr. Peter E. Tarlow is a world-renowned speaker and expert specializing in the impact of crime and terrorism on the tourism industry, event and tourism risk management, and tourism and economic development. Since 1990, Tarlow has been aiding the tourism community with issues such as travel safety and security, economic development, creative marketing, and creative thought. Tarlow has worked with numerous US government agencies including the US Bureau of Reclamation, US Customs, the FBI, the US Park Service, the Department of Justice, the Speakers Bureau of the US Department of State, the Center for Disease, US Supreme Court police, and the US Department of Homeland Security. He has worked with such US iconic locations as the Statue*





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of Liberty, Philadelphia's Independence Hall and Liberty Bell, the Empire State Building, St. Louis' arch, and the Smithsonian's Institution's Office of Protection Services in Washington, DC. Tarlow has been a keynote speaker for governors' tourism conferences around the nation including those for Illinois, South Carolina, South Dakota, Washington State and Wyoming. At numerous universities around the world Tarlow lectures on security issues, life safety issues, and event risk management. These universities include institutions in the United States, Latin America, Europe, the Pacific Islands, and the Middle East. Tarlow earned his Ph.D. in sociology from Texas A&M University. He also holds degrees in history, in Spanish and Hebrew literatures, and in psychotherapy. Dr. Tarlow is a member of the Editorial Board of the C<sup>2</sup>BRNE Diary.

### US troops and Afghans killed in suicide attacks outside Kabul airport

Source: <https://edition.cnn.com/2021/08/26/asia/afghanistan-kabul-airport-blast-intl/index.html>

Aug 27 – Thirteen US service members and at least 60 Afghans have been [killed in two bombing attacks](#) outside Kabul's airport, according to the Pentagon and Afghanistan's Ministry of Public Health.

The deadly blasts came as the United States and other Western countries raced to complete a massive evacuation of their citizens and Afghan allies following the Taliban takeover of the country.

An official with Afghanistan's Ministry of Public Health told CNN on Thursday that more than 60 Afghan people were dead and 140 wounded. (**Update 28/8**: 170 dead [13 US servicemen]; 200 injured [18 US servicemen])

Eighteen US service members were injured in addition to the 13 dead, said Capt. Bill Urban of US Central Command (Centcom).

**US President Joe Biden, speaking from the White House, called the troops "heroes" and said he was "outraged as well as heartbroken." "We will not forgive. We will not forget. We will hunt you down and make you pay," he [warned the perpetrators of the attack](#).**

ISIS in Khorasan, known as [ISIS-K](#), has claimed that an ISIS militant carried out the suicide attack, but provided no evidence to support the claim.

US officials have said the group was likely behind the attack, and Biden on Thursday announced that he had ordered US military commanders "to develop operational plans to strike ISIS-K assets, leadership, and facilities."

In previous days, the President had cited the risk of a terror attack among the reasons for getting US troops out of the country by August 31. He had also promised a swift and forceful response to any disruption to the operation.

#### The suicide bomber

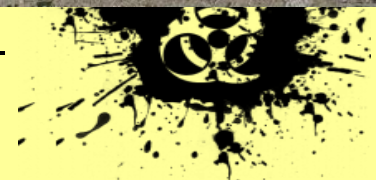
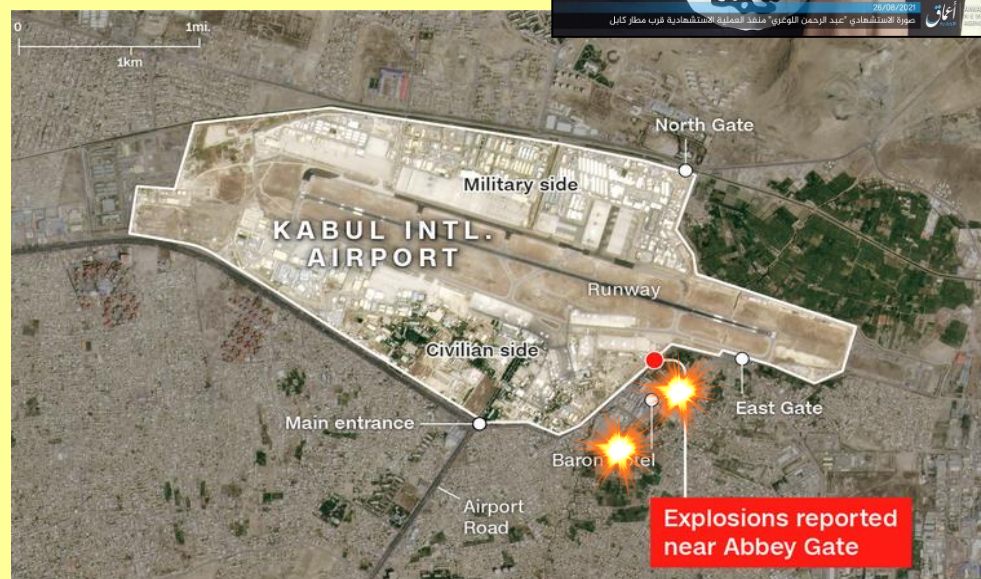
#### Two explosions

Thousands of Afghans have been gathering at the airport's gates in recent days in hopes of being evacuated. Footage posted to social media on Thursday after the explosions showed chaotic scenes of crowds of people trying to help the wounded amid bodies on the ground. Photos showed apparently injured people being transported away from the scene in wheelbarrows.

Ten Marines were among the troops killed and several more were wounded, Marine spokesman Maj. Jim Stenger said. The identities and units of those killed won't be announced until Friday after relatives are notified, he added.

Pentagon spokesman John Kirby said earlier that one of the explosions happened "at the airport's Abbey Gate" and "at least one other explosion happened at or near the Baron Hotel, a short distance from Abbey Gate."

Abbey Gate has become the main entry point to the airport and primary security there has been provided by US Marines. The area





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around that gate had been used for holding refugees after they passed through the Taliban check points outside the airport, and



before they were allowed to go to the airport.

Baron Hotel was used by British soldiers and other allies as an evacuation handling center to process evacuees, before moving them up to the Abbey Gate. It is unclear whether international forces were still in the area when the explosion happened.

The US Embassy in Kabul said US citizens who were at the Abbey Gate, East Gate, or North Gate of the airport "should leave immediately" in the wake of the blast.

"There has been a large explosion at the airport, and there are reports of gunfire," the security alert said. "US citizens should avoid traveling to the airport and avoid airport gates at this time," it added. Immediately after the explosions, gunmen opened fire on service members and civilians, said Marine Gen. Frank McKenzie, Centcom Commander.

Hours after the attacks, coalition forces also conducted a series of scheduled and controlled explosions within Hamid Karzai International Airport, US Central Command spokesman Maj. John Rigsbee told CNN.

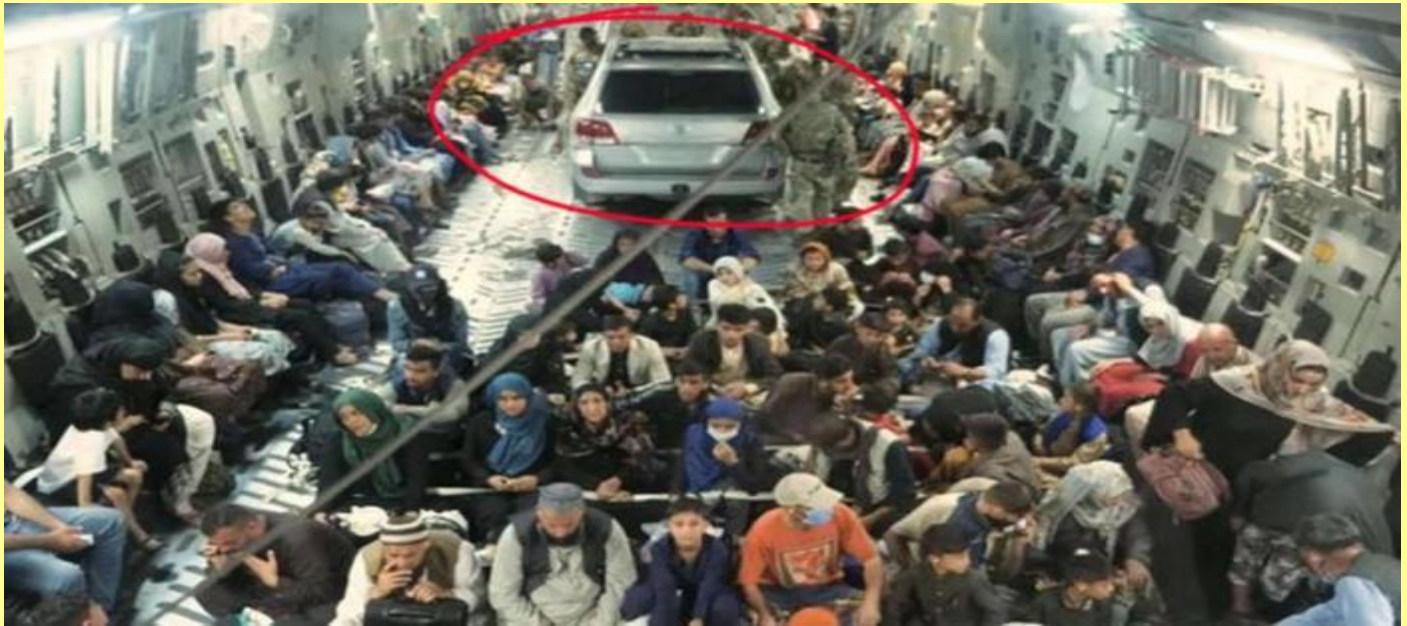


**EDITOR'S COMMENT:** *"We will not forgive. We will not forget. We will hunt you down and make you pay!"* Come on Mr. President! Be serious! This is what you will say to the families of the US soldiers killed during the last day of the war? You will look them in the eyes and lie? Perhaps this is the right time to ask for public forgiveness and disappear from the life of Americans that have lost their pride for the second time after 9/11. My only concern is the possibility of ISIS-K using MANPADS against military/civilian airplanes approaching or departing from Kabul's airport. Many of these deadly weapons are out there on the loose and sooner or later somebody will use them – because somebody left them behind instead of destroying them





## Cars have a soul as well!



Beer showed the way (Germany's bestselling daily, [Bild](#), sharply criticized the government with a story titled "Germany's withdrawal from Afghanistan: Beer and wine were shipped – local staff are still staying," which blamed it for abandoning local Afghan staff who risked their lives for Germany. The German army shipped nearly 65,000 cans of beer and 340 bottles of wine to Germany while completing its troop pullout from Afghanistan at the end of June, the daily reported.) and a Toyota Land Cruiser from the British Embassy in Kabul followed. It is visually obvious that the SUV equals 15 seats of desperate Afghans or international evacuees.

## ven Osama bin Laden was ignoring the President

(NY Post)

16- I asked Shaykh Sa'id, Allah have mercy on his soul, to task brother Ilyas to prepare two groups – one in Pakistan and the other in the Bagram area of Afghanistan – with the mission of

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anticipating and spotting the visits of Obama or Petraeus to Afghanistan or Pakistan to target the aircraft of either one of them. They are not to target visits by US Vice President Biden,

Secretary of Defense Gates, Joint Chiefs of Staff (Chairman) Mullen, or the Special Envoy to Pakistan and Afghanistan Holbrook. The groups will remain on the lookout for Obama or Petraeus. The reason for concentrating on them is that Obama is the head of infidelity and killing him automatically will make Biden take over the presidency for the remainder of the term, as it is the norm over there. Biden is totally unprepared for that post, which will lead the US into a crisis. As for Petraeus, he is the man of the hour in this last year of the war, and killing him would alter the war's path.







# Veni, vidi, non-vici



Department of Defense  

@DeptofDefense



The last American soldier to leave Afghanistan: Maj. Gen. Chris Donahue, commanding general of the [@82ndABNDiv](#), [@18airborne corps](#) boards an [@usairforce](#) C-17 on August 30th, 2021, ending the U.S. mission in Kabul.



## How Dangerous Is Afghanistan's Islamic State?

Source: <https://www.military.com/daily-news/2021/08/27/how-dangerous-afghanistans-islamic-state.html>

Aug 27 – The Islamic State offshoot that Americans blame for Thursday's deadly suicide attacks outside the Kabul airport coalesced in eastern Afghanistan six years ago, and rapidly grew into one of the more dangerous terror threats globally.

Despite years of military targeting by the U.S.-led coalition, the group known as Islamic State Khorasan has survived to launch a massive new assault as the United States and other NATO partners withdraw from Afghanistan, and as the Taliban return to power. President Joe Biden cited the threat of Islamic State attacks in sticking with a Tuesday deadline for pulling U.S. forces out of Afghanistan. Biden blamed the group for Thursday's attacks, which included a suicide bomber who slipped into the crowds of Afghans outside airport gates controlled by U.S. service members.

The group has built a record of highly lethal attacks in the face of its own heavy losses. A look at a deadly group influencing the course of the Kabul airlifts and U.S. actions:

### What is Islamic State Khorasan?

The Islamic State's Central Asia affiliate sprang up in the months after the group's core fighters swept across Syria and Iraq, carving out a self-styled caliphate, or Islamic empire, in the summer of 2014. In Syria and Iraq, it took local and international forces five years of subsequent fighting to roll back the caliphate.

The Afghanistan affiliate takes its name from the Khorasan Province, a region that covered much of Afghanistan, Iran and central Asia in the Middle Ages.

The group is also known as ISK, or ISIS K.

### Who Are the Islamic State Khorasan's Fighters?

The group started as several hundred Pakistani Taliban fighters, who took refuge across the border in Afghanistan after military operations drove them out of their home country. Other, like-minded extremists joined them there, including disgruntled Afghan Taliban fighters unhappy with what they — unlike the West — saw as the Taliban's overly moderate and peaceful ways.

As the Taliban pursued peace talks with the United States in recent years, discontented Taliban increasingly moved to the more extremist Islamic State, swelling its numbers. Most were frustrated that the Taliban was pursuing negotiations with the U.S. at a time when they thought the movement was on the march to a military win.

The group also has attracted a significant cadre from the Islamic Movement of Uzbekistan, from a neighboring country; fighters from Iran's only Sunni Muslim majority province; and members of the Turkistan Islamic Party comprising Uighurs from China's northeast. Many were attracted to the Islamic State's violent and extreme ideology, including promises of a caliphate to unite the Islamic world, a goal never espoused by the Taliban.

### What Makes Them a Leading Threat?

While the Taliban have confined their struggle to Afghanistan, the Islamic State group in Afghanistan and Pakistan has embraced the Islamic State's call for a worldwide jihad against non-Muslims.

The Center for International and Strategic Studies counts dozens of attacks that Islamic State fighters have launched [against civilians](#) in Afghanistan and Pakistan, including minority Shiite Muslims, as well as hundreds of clashes with Afghan, Pakistani and U.S.-led coalition forces since January 2017. Though the group has yet to conduct attacks against the U.S. homeland, the U.S. government believes it represents a chronic threat to U.S. and allied interests in South and Central Asia.

### What Is Their Role with the Taliban?

They are enemies. While intelligence officials believe al-Qaida fighters are integrated among the Taliban, the Taliban, by contrast, have waged [major, coordinated offensives](#) against the Islamic State group in Afghanistan. Taliban insurgents at times joined with both the U.S. and U.S.-backed Afghan government forces to rout the Islamic State from parts of Afghanistan's northeast.

A U.S. Defense Department official, speaking to The Associated Press on condition of anonymity because he was working covertly, said previously that the Trump administration had sought its 2020 withdrawal deal with the Taliban partly in hopes of joining forces with them against the Islamic State affiliate. The administration saw that group as the real threat to the American homeland.



### What Is the Risk Now?

Even when the United States had combat troops, aircraft and armed drones stationed on the ground in Afghanistan to monitor and strike the Islamic State, Islamic State militants were able to keep up attacks despite suffering thousands of casualties, Amira Jadoon and Andrew Mines [note in a report](#) for West Point's Combating Terrorism Center.

The withdrawal is depriving the United States of its on-the-ground strike capacity in Afghanistan, and threatens to weaken its ability to track the Islamic State and its attack planning as well. Biden officials say the Islamic State group is only one of many terror threats it is dealing with globally. They insist they can manage it with so-called over-the-horizon military and intelligence assets, based in Gulf states, on aircraft carriers, or other more distant sites.

One of the United States' greatest fears about pulling out its combat forces after two decades is that Afghanistan under Taliban rule again becomes a magnet and base for extremists plotting attacks on the West.

That threat, U.S. national security adviser Jake Sullivan told CNN last weekend, was something "we're focused on, with every tool in our arsenal."

▶▶ **Read also:** [Afghanistan – Extremism & Terrorism](#)

## Someone needs to say 'no' to a US president

By Dr. Dania Koleilat Khatib

Source: <https://www.arabnews.com/node/1919301>

Aug 29 – The Biden administration has received a lot of criticism for its mismanagement of the hasty US withdrawal from Afghanistan. However, Joe Biden is not the first president to have taken a wrong decision that has had strong repercussions for America. Everyone makes erroneous decisions — the irony is that, in a country that brags about its checks and balances, there is really no one who can say: "No, Mr. President, you can't."

In a shocking announcement, a Republican congressman last week claimed that the chaotic withdrawal had left \$85 billion-worth of weapons in the hands of the Taliban. Though there is not enough evidence to prove that this much weaponry is now under the control of the Taliban — as this amount was spent over two decades and not only on equipment — the group was able to capture a significant amount of the firepower provided by the US and paid for by US taxpayers.

The US withdrawal from Afghanistan and subsequent swift takeover by the Taliban show the potential gravity of a mistake made by a president. Despite the grim views offered by intelligence reports of what would result from the US withdrawal, Biden told the public on July 8 that the Afghan government would not fall and that this was not a comparable situation to the end of the Vietnam War. This was a case of manipulating intelligence reports to appease the public and sugar-coat a decision made by the president. Biden is not the first to do so and he will definitely not be the last.

The motivation for the war in Iraq — which is a major cause of the calamities currently befalling the region — was another case built on the manipulation of intelligence reports. A 2008 Senate Intelligence Committee report found that claims by the White House linking Iraq to Al-Qaeda were "not substantiated by the intelligence." Also, before the war, the State Department and the Department of Energy raised doubts about the conclusion that Iraq had weapons of mass destruction. However, their dissent was never taken seriously.

The Iraq war was a classic example of intelligence being misused and spun by the White House. There was not enough evidence to prove that Saddam Hussein had weapons of mass destruction, yet the Bush administration used bits and pieces to justify the 2003 invasion. The supposed weapons of mass destruction became an issue on which public consensus could be created, and this is why the administration used it.

The US is a country of institutions and the separation of powers, which ensures that no one consolidates too much control and thus usurps power. Nevertheless, the system gives the president tremendous control over the country's decision-making. He is the nation's chief executive and commander in chief. The greater authority one person has, the greater the impact of any blunder they make.

In a democracy, the military is subordinate to the civilian authority. However, given the considerations that ought to guide political decisions, the military, intelligence agencies and bureaucrats in general should have a bigger say, especially in decisions that involve war, peace and the national interest. Such decisions have repercussions for many years to come, while a president is never in it for the long run. If major decisions were vetted by the military and the intelligence agencies, they would be





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shielded from the political factors that motivate presidents' decision-making. Presidents are often pushed in a certain direction by considerations of popularity and the influence of interest groups.

There is a major problem with politics and populism. As a president takes office, his campaign promises become his policy program and the interest groups that financed his campaign want to see a return on their investment. Additionally, the president needs to present something palpable to the average American. With all these elements in place and all this pressure on one person, whose main purpose was only to get elected or re-elected, it makes one wonder how much a president considers the national interest and the long-term repercussions when making decisions. This is why every president is limited by a narrow vision set by his financial donors and a short-sightedness due to the considerations of attempting to get re-elected for a second term.

On the other hand, military and intelligence leaders are not elected and they are not in constant interface with the public. They don't get money from donors to whom they owe their job. They also have their boots on the ground and know the reality of the situation. However, since they don't have power — as we saw in the case of Iraq — the president can use military intelligence as a tool to justify a decision he has already taken, instead of using it to inform his decision.

Therefore, checks by the intelligence and military communities are necessary to improve America's decision-making. Their approval would not tarnish democracy or belittle the president, who is the choice of the American people. On the contrary, such checks, if put in place, would give the president the protection he needs to justify his actions to the public. They would also protect democracy from the influence of narrow interest groups and from emotional populism that is devoid of pragmatism and realism.

After the blunder of Iraq, a new procedure was put in place for major decisions, whereby the heads of intelligence agencies now have to personally vouch for the credibility of their evidence in order to improve the decision-making process. However, this is not enough to prevent major errors from occurring. People who know exactly what the situation is should have the power to say: "No, Mr. President, you can't."

*Dr. Dania Koleilat Khatib is a specialist in US-Arab relations with a focus on lobbying. She is co-founder of the Research Center for Cooperation and Peace Building, a Lebanese NGO focused on Track II. She is also an affiliate scholar with the Issam Fares Institute for Public Policy and International Affairs at the American University of Beirut.*

## EU prepares to keep out Afghan refugees

Source: [https://euobserver.com/world/152759?utm\\_source=euobs&utm\\_medium=email](https://euobserver.com/world/152759?utm_source=euobs&utm_medium=email)

Aug 31 – EU countries are preparing to stop Afghan refugees from potentially entering en masse, amid fears of a repeat of the 2015 migration crisis, when 1 million people came to Europe. "The EU and its member states stand determined to act jointly to prevent the recurrence of uncontrolled, large-scale, illegal migration movements faced in the past," EU home-affairs ministers will agree to say after an emergency meeting in Brussels on Tuesday (31 August), according to a draft statement, dated 28 August, and seen by EUobserver.



**EDITOR'S COMMENT:** When they say "EU" they mean all together, Greece included or all together but without Greece – the main EU Gate to Asia?

## Opinion: We're still lying to ourselves about American military power

By Paul Waldman

Source: <https://www.washingtonpost.com/opinions/2021/08/30/were-still-lying-ourselves-about-american-military-power/>



Aug 30 – On Monday morning, [we learned](#) that a U.S. drone strike targeted at a car bomb "killed 10 civilians in Kabul, including several small children," and that "the dead were all from a single extended family and were getting out of a car in their modest driveway when the strike hit a nearby vehicle."

Unlike most such events — and there have been hundreds over our two-decade War on Terror — this one will get a bit of notice in the U.S. media. But only a bit. Neither these deaths, nor the deaths of 13 U.S. servicemembers at the Kabul airport, nor the difficulties of our withdrawal from Afghanistan, are likely to puncture the lies we have been telling ourselves about the way we use our bristling machinery of war all over the world.



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In the debate we're now having about that withdrawal, you can see all those lies repeated and polished anew. Let's consider a few of them:

### **U.S. wars are just and noble, undertaken for all the right reasons**

This is always part of the story we are told about any war; if it's not the primary justification, it comes in a close second.

We invaded Afghanistan to exact revenge for 9/11, but arguments quickly followed about how we'd liberate Afghan women, banish the cruel Taliban, and help move the country into the 21st century. We made the same case in Iraq: Yes, that war was sold on lies about weapons of mass destruction, but we were also going to free the Iraqi people from Saddam Hussein's despotic rule. Thus, it is with every country we invade, bomb, or cripple with economic sanctions: We're doing this not for ourselves, but for them.

### **People in other countries appreciate that our motives are good**

This is a particularly vital lie we tell ourselves: Though we are aggressively ignorant about other countries and often unable to see things from anyone else's perspective, we assume that our good will is self-evident to everyone, *even in places where we have brought misery and destruction.*

Americans literally cannot imagine what it would be like to have a foreign power bomb their streets, let alone watch a foreign military overthrow their government and occupy their country. Yet we assume that people will respond to it by saying "These are some hard times, but the Americans are only trying to help."

When we say, as a military spokesperson did about that drone attack, "We would be deeply saddened by any potential loss of innocent life," we think they'll believe us, although it happens with such regularity and everything we do communicates that we don't value their lives at all.

### **Our anger is righteous and deserved; anyone else's is not**

When President Biden [says](#) of those who ordered the Kabul airport attack, "We will hunt you down and make you pay," people elsewhere know what we prefer not to think about: that in the execution of this payment, it's almost certain that significant numbers of innocent civilians will be killed. We see that as unfortunate but necessary; those in the places where the missiles are landing may not be so understanding.

### **If we don't demonstrate "strength" and "resolve" there will be more terrorism**

This is already a key part of the Republican criticism of the withdrawal. "The chance of another 9/11 just went through the roof," [says](#) Sen. Lindsey Graham (R-S.C.). Senate Minority Leader Mitch McConnell (R-Ky.) [says](#) our withdrawal has "emboldened" terrorists. Remember that word? We used to hear it constantly from Republicans, who insisted that every military escalation would make terrorists less bold, while any sign of weakness would supercharge their boldness.

But 9/11 didn't happen because we allowed terrorists to become bold, and it didn't happen because Afghanistan was a "safe haven" for al-Qaeda. It didn't require enormous training camps or large swaths of land. Terrorism is a tool the weak use against the strong; the idea that a longer, more destructive U.S. military presence in far-off lands makes terrorism *less* likely is positively deranged.

### **The tools we use to force other countries to bend to our will, including but not limited to military power, are effective**

Every time we plan another military action or ramp up a new sanctions' regime, it's as though we just had our brains wiped of the memory of all the mistakes we made, the unintended consequences of our decisions, the liberation we failed to bring, and the suffering we caused. *This time it will work*, we say — then it doesn't, and we say it again.

Not all of us, of course. But millions of us think that we've really helped the people of Cuba, and if we just keep that embargo on for another few decades everything will work out. They think that Iraqis and Afghans appreciate all we've done for them. They think that anywhere there's a dictatorship, people are saying, "What we need is an American invasion." They think that if a drone strike killed their child, they'd say, "That was regrettable, but they were trying to do the right thing."

In many ways, we're still in thrall to the (simplified) story of World War II, that we saved the world and helped it rebuild. But that war ended 76 years ago, and what has happened since shouldn't give us any faith that tomorrow we can repeat what we did in 1945. The sooner we come to terms with that, the better off we — and the rest of the world — will be.

*Paul Waldman is an opinion writer for the Plum Line blog. Before joining The Post, he worked at an advocacy group, edited an online magazine, taught at university and worked on political campaigns. He has authored or co-authored four books on media and politics, and his work has appeared in dozens of newspapers*





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and magazines. He is also a senior writer at the American Prospect. Paul graduated from the Swarthmore College; has an BA in Political Science, University of Pennsylvania and a PhD in Communication.

**EDITOR'S COMMENT:** A very down to earth sincere article that we are not used to. A small addition might be: "Our nuclear arsenal does not serve its deterrence role anymore". Take for example Turkey's behavior that plays with the United States for years, using threats, bargains, double face and unorthodoxies. Same for Afghanis insurgents and terrorists (local and imported).

### Afghanistan: Guess who is flying the Blackhawk ...



There is a man hanging in the circle ...

### After 20 years ...



The new St. Nicholas Greek Orthodox church at 9/11 Ground Zero (to be completed by July 2022)



## Taliban members escorted Americans to gates at Kabul airport in secret arrangement with US

Source: <https://edition.cnn.com/2021/08/31/politics/taliban-escorted-american-kabul-airport/index.html>

The US military negotiated a secret arrangement with the Taliban that resulted in Taliban members escorting groups of Americans to the gates of the Kabul airport as they sought to escape Afghanistan, according to two defense officials.

One of the officials also revealed that US special operations forces set up a "secret gate" at the airport and established "call centers" to guide Americans through the evacuation process.

While one of the military officials said the arrangement with the Taliban "worked beautifully," Americans involved in an unofficial network dedicated to helping Americans and vulnerable Afghans said there were problems -- particularly in the beginning -- as the Taliban turned away US citizens and legal permanent residents the militant group was supposed to allow through.

The two US defense officials said Americans were notified to gather at pre-set "muster points" close to the airport where the Taliban would check their credentials and take them a short distance to a gate manned by American forces who were standing by to let them inside amid huge crowds of Afghans seeking to flee.

The US troops were able to see the Americans approach with their Taliban escorts as they progressed through the crowds, presumably ready to intervene in case anything happened.

## Where is Our Next Military Adventure?

When you spend more on war than the rest of the world combined, you have to raise hell somewhere



By Gary Janosz

Source: <https://extranewsfeed.com/where-is-our-next-military-adventure-ca0a21a5ea65>

Aug 31 – Before we make the world safe for democracy as we did Vietnam, make the world safe from terrorists like Afghanistan or make the world safe from weapons of mass destruction as we did in Iraq, we might want to clean our own house first — we are not exactly a shining beacon on a hill anymore.

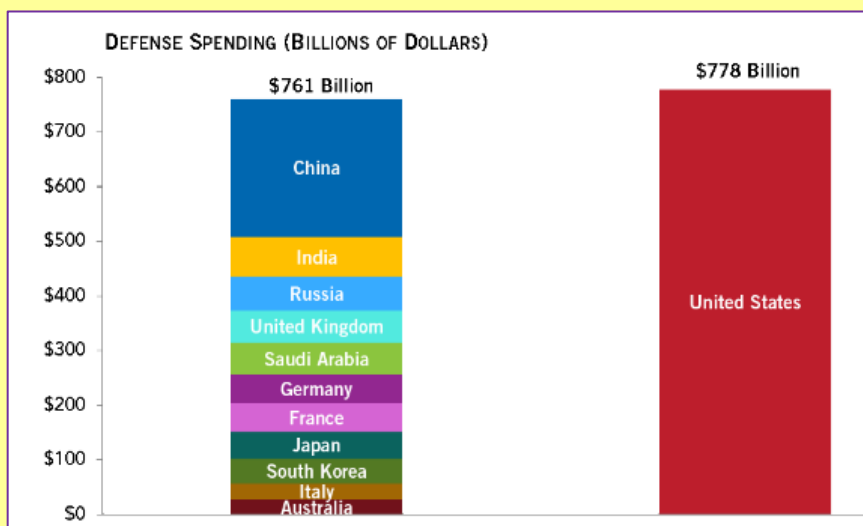
It's a sad day for the US military-industrial complex. The twenty-year Afghanistan cash cow is winding down. The next war gravy train is likely just around the corner, if not on the planning boards already. So be vigilant.

**Vietnam** — The North Vietnamese won, and democracy is still standing. Imagine that! Vietnam is now a tourist destination. Eager vacationers can crawl through the tunnels and hidey-holes where American servicemen died. Visit southeast Asia, enjoy a Bánh mì and Pho soup in the Socialist Republic of Vietnam and celebrate our valiant fight against communism.

**Iraq** — At least the world is now free of weapons of mass destruction, at least the WMDs in the wrong hands. There are 13,355

nuclear warheads available on Earth, 12,000 in the capable hands of the US and Russia. But the most important take-away from our adventures in Iraq —our never-ending supply of oil is intact. The United States imports an average of 177,000 barrels of petroleum per day from Iraq. Deep sigh, at least the world is safe for capitalism and the oil companies.

**Afghanistan** — Our adventure in Afghanistan began with a crystal-clear plan — revenge for 9/11. We were to get bin Laden, kill the terrorists responsible and deny an operating base in Afghanistan for any remaining terrorists. It went so well we stayed for twenty years. We told the locals the same lie we told the South Vietnamese — we will win and set you free. One day you will be a strong democratic ally and friend to the US. And they believed us.





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The US comes from a clearly defined military tradition. The Revolutionary War, was simple and straight forward, kill the redcoats. The Civil War was the battle between the blue and the grey. We always knew who to kill. WWI, WWII everybody wore clearly defined uniforms. Each side always knew where to aim. We need clearly defined battlefields to practice our brand of warfare.

The North Vietnamese and the Afghans were way too smart of that nonsense. They blended in with the civilian population. They hid in holes and caves impervious to bombs. Theirs was the long-form war designed to wear down the enemy. Civilian casualties were never a problem for the Afghans or the North Vietnamese. This callus attitude let them freely hide among the civilian population, safe and sound. They sat back and dared the Americans to commit war atrocities for the folks back home, watching on TV. The atrocity of civilian casualties that America could never tolerate.

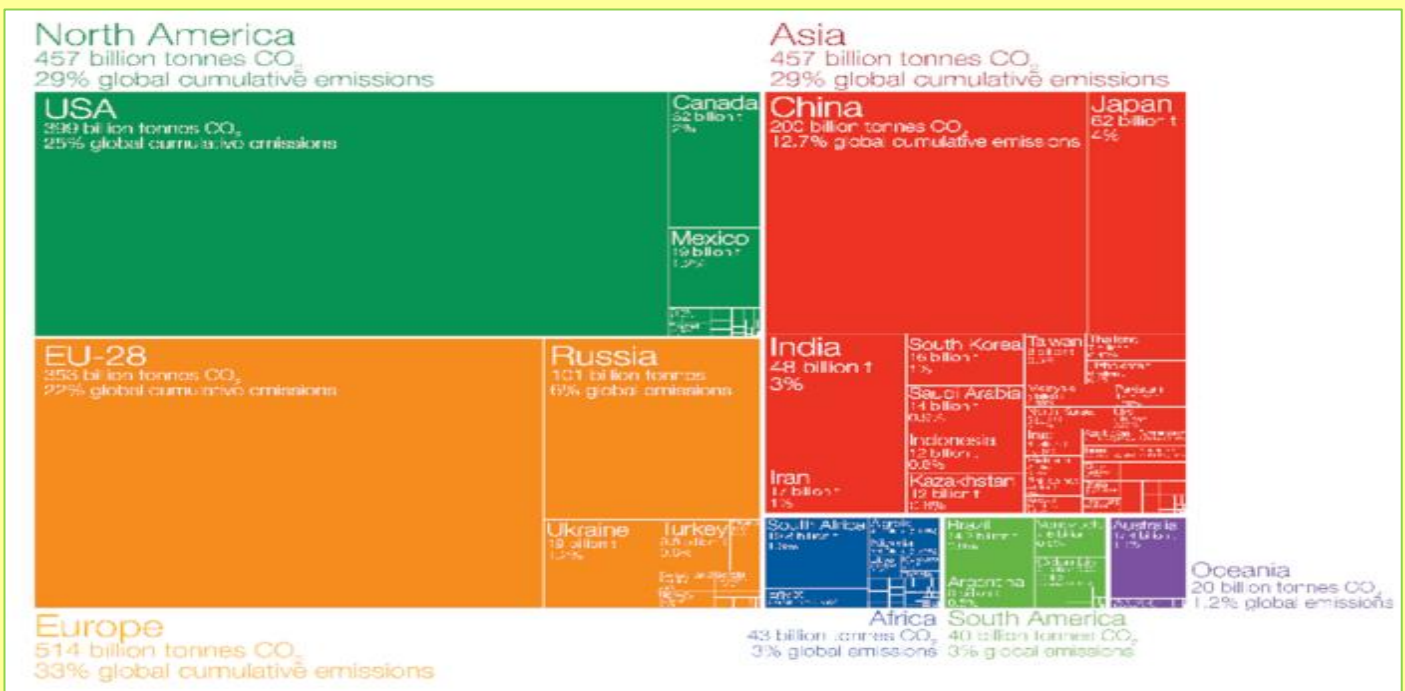
**This is an important lesson, Iraq should have chucked their uniforms and gone to ground, we'd probably still be there. One thing guaranteed — the US will never learn.**

Where's the next engagement? The war industry will soon be idle — can't have that. War is good for the economy and what's good for the economy is good for America.

**We have ceased to be a shining example — of anything except billionaires per acre**

We have so many problems here at home that the rest of the world might shudder at the thought of our help

**The Pandemic** — For the world's supposed scientific leader, we are one pathetic bunch. We lead the world in COVID infections, 39,672,109. That's 18.24 percent of the world's cases for only 4.25 percent of the world's population. Those big numbers for a country that was first with the vaccine. Regardless, we have yet to vaccinate even 50 percent of our citizens. Why? A portion of the country is suspicious of the vaccine, quite sure their own government is out to poison them or plant tiny microchips in their bloodstream. These folks get all their medical information from social media — that font of wisdom. We also had a president to downplayed and belittled the virus and virus precautions at every turn. He politicized a public health emergency and made it a conservative badge of honor to eschew masks and flaunt stupidity and ignorance. Rest assured, the US is working hard to keep the virus alive and well. Who can we help next?



**Climate Change** — Instead of leading the world in the fight against climate change, we are dragging our heels. Even with a sensible president, the conservatives would not even consider the infrastructure bill until all the climate change provisions were struck from the bill. During the previous four years under Trump, the de-regulator, the EPA was crippled



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under Trump’s appointed director, a coal lobbyist, regulations limiting methane and carbon dioxide emissions were struck down, and we pulled out to the Paris Climate Agreement.

We are the world leader in emissions, and we are the number one consumer nation in the world. In the eyes of the world, we are the gluttons of the planet. We over consume everything, taking far more than our share.

**Free and Fair Elections** — Our elections were once the envy of the world, no longer. When Trump lost the popular vote to Hillary Clinton, he began complaining bitterly about voter fraud. Four years of persistent lies from a sore loser and half of the US still doubts the 2020 election results. It did not matter that there was no evidence. Right-wing media picked up his cry and echoed it for four long years. So, of course, when he lost the election to Joe Biden, he lost because of election fraud. Again, no evidence. Sixty courts tossed out the grievance for lack of supporting evidence. Head Trump cheerleader Rudy Giuliani has been temporarily disbarred for making false statements about the 2020 election results. But make no mistake, the US is mired in election fraud, everyone knows that, just look at social media.

Another casualty of the Trump era is the death of the peaceful transition of power from one administration to the next. That died with the January 6th insurrection. The insurrection that conservatives now say was simply rowdy tourists enjoying a typical day at the capital. Do these idiots realize that their proclamations are documented in the worldwide press, that the entire sorry episode was broadcast live on TV for the world to see?

**Hunger** —We are the wealthiest country in the world, yet millions of Americans are [hungry](#). More than 42 million Americans have experienced food insecurity (the new buzzword for hunger), including a 13 million children. Our tax system is so out of whack that billionaires who pay little if any income tax are launching rockets into space while US children attend school hungry. Why would the wealthiest country in the world allow homelessness? Yet 580,466 people roam US streets without a home. The world knows selfish idiots inhabit the US. Why would any country choose to emulate us or want any part of our capitalist/democracy? The fruits of our society are clear for the world to see.

**Health Care** — Many advanced economies offer universal health care for their citizens, but not the US. The US has the [most expensive health care system](#) in the world. All of these countries offer universal health care. Still, the US can’t afford it — Austria, Belarus, Bulgaria, Croatia, Czech Republic, Denmark, Finland, France, Germany, Greece, Iceland, Isle of Man, Italy, Luxembourg, Malta, Moldova, Norway, Poland, Portugal, Romania, Russia, Serbia, Spain, Sweden, Switzerland, Turkey, Ukraine, and the United Kingdom. Why would other countries want the bloated healthcare system of the US?

| # | Country                         | Life Expectancy (both sexes) | Females Life Expectancy | Males Life Expectancy |
|---|---------------------------------|------------------------------|-------------------------|-----------------------|
| 1 | <a href="#">Hong Kong</a>       | 85.29                        | 88.17                   | 82.38                 |
| 2 | <a href="#">Japan</a>           | 85.03                        | 88.09                   | 81.91                 |
| 3 | <a href="#">Macao</a>           | 84.68                        | 87.62                   | 81.73                 |
| 4 | <a href="#">Switzerland</a>     | 84.25                        | 86.02                   | 82.42                 |
| 5 | <a href="#">Singapore</a>       | 84.07                        | 86.15                   | 82.06                 |
| 6 | <a href="#">Italy</a>           | 84.01                        | 85.97                   | 81.90                 |
| 7 | <a href="#">Spain</a>           | 83.99                        | 86.68                   | 81.27                 |
| 8 | <a href="#">Australia</a>       | 83.94                        | 85.80                   | 82.08                 |
| 9 | <a href="#">Channel Islands</a> | 83.60                        | 85.31                   | 81.82                 |

|    |  |       |       |       |
|----|--|-------|-------|-------|
| 41 | <a href="#">Mayotte</a>                  | 79.85 | 83.24 | 76.62 |
| 41 | <a href="#">Czech Republic (Czechia)</a> | 79.85 | 82.35 | 77.33 |
| 42 | <a href="#">Barbados</a>                 | 79.64 | 80.85 | 78.36 |
| 43 | <a href="#">Curaçao</a>                  | 79.41 | 82.08 | 76.42 |
| 44 | <a href="#">Poland</a>                   | 79.27 | 82.98 | 75.51 |
| 44 | <a href="#">Lebanon</a>                  | 79.27 | 81.17 | 77.53 |
| 45 | <a href="#">Estonia</a>                  | 79.18 | 83.06 | 74.98 |
| 45 | <a href="#">Cuba</a>                     | 79.18 | 81.12 | 77.25 |
| 46 | <a href="#">United States</a>            | 79.11 | 81.65 | 76.61 |

**Life Expectancy** — Life expectancy in the United States fell by a year and a half in 2020 to 77.3 years, the lowest level since 2003, primarily due to the deaths caused by the COVID-19 pandemic, a U.S. health agency said on Wednesday. This was the biggest decrease since WWII. Hey, we’re the forty-sixth in life expectancy, right after Estonia and Cuba!

**Crazy People** — It’s hard to pin down this statistic, but the US may be the world leader in developing crazy people. We have the science deniers who claim we never walked on the moon. We have the anti-vaccination crowd who use social media as their medical guide. We have [QAnon](#), who believe that a cabal of blood-drinking pedophiles controls the world. We have the Trumpers who believe anything their emperor says. With [30,573 false](#) or misleading claims over 4 years, that’s a remarkable feat. The US is number one in firearms. American civilians own 393 million guns,





ranking the [U.S. number one in firearms](#) per capita. That's 1.2 firearms for every man, woman, child, and infant. We have the Christian Trumpers who believe Trump was sent by God. And last but not least, our very own [homegrown terrorists](#) and white supremacists. **So, before we invite ourselves into the next war, we might ask our prospective host country if they want what we are selling — because the answer is most likely HELL NO!**

## 20 years after 9/11, jihadi terrorism rises in Africa

By Alexandre Marc

Source: <https://www.brookings.edu/blog/order-from-chaos/2021/08/30/20-years-after-9-11-jihadi-terrorism-rises-in-africa/>

Aug 30 – The very rapid fall of Afghanistan to the Taliban is bringing back the nightmarish thought that global jihadi terrorist groups will again find a haven where they can reorganize and thrive. It also draws attention to Africa, where jihadi groups have been on the rise. Twenty years after September 11, they are expending their war of terror in large portions of the continent. A scenario where a country such as Mali — with its corruption, lack of political cohesion, and weak armed forces — would be overwhelmed by jihadi groups is realistic: it [nearly happened in 2013](#). Reflecting on the lessons of Afghanistan for Africa is urgent, as Western nations [become extremely reluctant](#) to increase their engagement in fighting these insurgencies after the Afghanistan fiasco.

►► **Read the full paper at the source's URL.**

*Alexandre Marc is a nonresident senior fellow at Brookings Institution in the Foreign Policy program. He is also a member of the Institute for Integrated Transitions. He was until very recently the chief specialist for fragility, conflict and violence at the World Bank. He is the lead author of the U.N. World Bank flagship report: “Pathways for peace, inclusive approaches to preventing violent conflicts.” He has also co-led the preparation of the World Bank first strategy for addressing fragility, conflict, and violence. He led the development of the Risk and Resilience Assessment, the World Bank tool for analyzing issues of conflict and violence at regional, country, and sub-regional levels now widely used by the World Bank and other donors. He has extensive experience in the areas of conflict and fragility having worked on related themes across four continents and in more than 80 countries over the last 32 years.*

**EDITOR'S COMMENT:** Jihadi terrorism rises in Africa and Africa is closer to Europe than Asia . . .

## America's 20-year 'war on terror' cost \$8tn and caused 900,000 deaths

Source: <https://www.irishtimes.com/news/world/asia-pacific/america-s-20-year-war-on-terror-cost-8tn-and-caused-900-000-deaths-report-finds-1.4663155>

Sept 02 – The US “war on terror” has **likely killed more than one million people at a cost of \$8 trillion** since it was launched following the September 11th, 2001, attacks on US soil, according to Brown University's [Costs of War project](#).

The timely report – cited on August 31st by US president [Joe Biden](#) in his televised address on the withdrawal from [Afghanistan](#) – examines the costs of conflicts the US has waged in that country, [Iraq](#), [Syria](#), [Yemen](#) and elsewhere.

“It's critical we properly account for the vast and varied consequences of the many US wars and counter-terror operations since 9/11, as we pause and reflect on all of the lives lost,” project co-director [Neta Crawford](#) said in a release accompanying the report.

The report estimates direct deaths at 897,000 to 919,000 people, including 387,072 civilians, but she admits that these figures are “likely a vast undercount of the true toll these wars have taken on human life”. Around 7,000 US soldiers and 8,000 contractors are among the dead.

The report states: “Several times as many more have been killed as a reverberating effect of the wars – because, for example, of water loss, sewage and other infrastructural issues, and water-related disease.”

### Displacement

The project estimates that 38 million people have been displaced in or fled their home countries. “Total displacement could be closer to 49-60 million, which would rival World War II displacement,” the report states.



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Displacement figures for the full-scale US military campaigns in Afghanistan and Iraq are highest, at 5.9 million and 9.2 million respectively.

While 26.7 million people, many of them children, are no longer displaced, this “does not erase the trauma of displacement or mean the displaced necessarily have returned to their original homes or a secure life”, says the report.

The economic cost of US warfare includes \$2.3 trillion for military campaigns in Afghanistan and [Pakistan](#) and \$2.1 trillion in Iraq and Syria, the primary theatres of war.

The wars of the past two decades “have contributed significantly to climate change [as the US military] is one of the world’s top greenhouse gas emitters”, the report finds.

The US invaded Afghanistan to topple the Taliban, then host to al-Qaeda leader and mastermind of the attacks on the US Osama bin Laden, before it occupied Iraq on the basis of unproven allegations that [Saddam Hussein](#) possessed weapons of mass destruction.

The report says the US conducts counter-terrorism operations in 85 countries around the world, continuing the “war on terror”.

“What have we truly accomplished in 20 years of post 9/11 wars, and at what price?” asked Cost of War co-director [Stephanie Savell](#).

“Twenty years from now, we’ll still be reckoning with the high societal costs of the Afghanistan and Iraq wars – long after US forces are gone.”

### What’s troubling allies?

Source: <https://www.ozy.com/>



Sept 03 – On the surface, there’s little in common between Afghanistan and South Korea. One is a desperately poor, war-torn, landlocked nation; the other a modern, wealthy democracy surrounded by seas.

Yet, in many ways, it is Seoul, more than 3,000 miles from Kabul, that best reflects what some in Afghanistan are experiencing today. The departure of the final batch of U.S. troops from Kabul’s Hamid Karzai International Airport on Monday night marked the end of America’s longest *active* war. But American soldiers have been in South Korea for seven decades, stationed as a deterrent against North Korea’s threats since the Korean War that — technically, at least — isn’t over.

As in Afghanistan, the U.S. has trained and led the South Korean military through this period. That this arrangement has continued, despite frequent criticism from some, is a testament to America’s unmatched global influence and to confidence shared by generations of South Korean leaders that they wouldn’t be abandoned.





That confidence, already shaken by former President Donald Trump's threats to withdraw America's security umbrella, is now creaking amid the aftershocks of the chaotic U.S. exit from Afghanistan. A ruling party of lawmakers in South Korea has demanded that the U.S. hand over military control on the peninsula so that the country is fully ready to take charge should Washington ever pull out. To be clear, Seoul didn't expect the U.S. to stay in Afghanistan indefinitely. After all, the U.S. has no treaty commitment toward Afghanistan the way it does toward South Korea.

What's troubling Seoul — and allies and friends of America around the world — is the seeming dissonance between Biden's globalist words and his unilateral, and at times inward-looking, deeds. Afghanistan has raised uncomfortable questions about what Biden's America will mean for a range of capitals, from London, Paris, and Kyiv to Taipei, Tokyo, and Seoul.

**EDITOR'S COMMENT:** I do not think that allies are troubled. They got the message loud and clear: "in difficult times you are alone!"

## New Zealand to criminalise attack planning after mall stabbing

Source: <https://www.reuters.com/world/asia-pacific/new-zealand-supermarkets-take-knives-off-shelves-after-extremist-stabbing-2021-09-04/>

Sept 04 – New Zealand Prime Minister Jacinda Ardern vowed on Saturday to tighten counter-terrorism laws this month after a knife-wielding militant known to the authorities stabbed and wounded seven people in a supermarket.

Police shot dead the 32-year-old attacker, a Sri Lankan national who had been convicted and imprisoned for about three years before being released in July, moments after he launched his stabbing spree on Friday.

Ardern said earlier the man was inspired by the Islamic State militant group and was being monitored constantly but could not be kept in prison by law any longer.

"I am committing, that as soon as Parliament resumes, we will complete that work – that means working to pass the law as soon as possible, and no later than by the end of this month," Ardern told a news conference.

The Counter Terror Legislation Bill criminalises planning and preparation that might lead to terror attack, closing what critics have said has been a loophole allowing plotters to stay free.

But Ardern said it would not be fair to assume that the tighter law would have made a difference in this case.

"This was a highly motivated individual who used a supermarket visit as a shield for an attack. That is an incredibly tough set of circumstances," she said.

Ardern said the attacker came to the attention of the police in 2016 because of his support for a violent ideology inspired by Islamic State.

Police were following the man when he went into the Countdown supermarket in New Lynn mall in Auckland. They said they had thought he had gone in to do some shopping but he picked up a knife from a display and started stabbing people.

Police said they shot him within a minute of the start of the attack.

Ardern said the man arrived in New Zealand in 2011 on a student visa and was not known to have held any extreme views.

He came to the attention of police in 2016 after he expressed sympathy on Facebook for militant attacks, violent war-related videos and comments advocating violent extremism.

In May 2017, he was arrested at Auckland's airport where authorities believed he was travelling to Syria. He was charged after restricted publications and a hunting knife were discovered at his house but was released on bail.

In August 2018, he again bought a knife and was arrested and jailed. He was released into the community in July this year when surveillance began, Ardern said.

Ardern was briefed on the case in late July and again in late August and officials, including the commissioner of police, raised the possibility of expediting the amendment to the counter-terrorism legislation.

Ardern said she wanted to explain why the attacker had not been deported but could not because to do so would violate court suppression orders, which also prevented her from identifying him, she said.

But she said had no intention of naming him anyway.

"No terrorist, whether alive or deceased, deserves their name to be shared for the infamy they were seeking," she said.

New Zealand supermarket group Countdown said on Saturday it had removed knives and scissors from its shelves while it considers whether it would continue to sell them. [read more](#)



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"We want all of our team to feel safe when they come to work," said Kiri Hannifin, Countdown's general manager for safety said in a media statement.

Other supermarket chains had also removed sharp knives from their shelves, media reported.



**EDITOR'S COMMENT:** Why making our lives difficult? When we will comprehend that criminals and terrorists are using our legal system, our democracy, and our way of life to achieve their goals. Is somebody suspect of committing terrorist acts? If he/she is a resident, imprison him/her. If a refugee or illegal immigrant deport him within 24 hours. Too much democracy sooner or later will end up in cases like this one in New Zealand. It is annoying to be always a step behind. It is annoying that our security services still have not learned to think like terrorists to design their countermeasures – something like red/blue war games. I want to kill infidels! Where do I go? To a supermarket or a shopping mall or a mega-cinema. What do I need? A weapon. Can I have a pistol or explosives or a rifle? No, because buying rules are very strict and require papers and IDs and all. A knife is a good idea. But what if a street inspection reveals a knife in my jacket? I will be arrested, etc. What if I do what I want to do in a place with many people and a lot of knives. A supermarket – the perfect combination! Why always been post-active instead of proactive? What the gov will say to the victims? That they were trying to deport him for years? Unsuccessfully? Because he has rights? What about New Zealanders' rights and lives? It is time to change; we are already late ...

## Could the Taliban form an alliance with Mexico's drug cartels?

Source: <https://www.dw.com/en/could-the-taliban-form-an-alliance-with-mexicos-drug-cartels/a-59086206>

Sept 04 - Afghanistan and Mexico might appear distant from one another on a world map and are also separated by major historical, sociological and religious differences. But the Taliban and the Mexican cartels are united by the fact that they are both financially dependent on drug trafficking and use extreme violence to expand their political power and control of territory. [Ahead of the elections in Mexico in June](#), numerous candidates [were threatened and killed by the cartels](#), which supported other candidates and bought votes more openly than ever before.



In 2009, renowned experts had already presented evidence to the US Congress of the global perils posed by the Taliban and Mexico's cartels as "transnational drug-trafficking organizations" at a US Congress hearing, pointing out dangerous similarities that have only increased since then.





### Afghanistan, Mexico and Myanmar control 95%

Roughly 95% of the world's opium poppies are cultivated in Afghanistan, Mexico and Myanmar, with all the illegal production and trafficking of heroin and other opiates that this entails. In Mexico, drug cartels are responsible for this and have the support of government officials. In Afghanistan, according to US and UN documents, producers are in direct contact with the Taliban. They also were complicit with the government — including the US-backed one. Experts at the US Congress hearing in 2009 estimated that 50% of Afghanistan's GDP that year stemmed from the proceeds of the illegal drugs trade.

The Taliban have always had an ambiguous attitude: Consumption of opiates is banned but not the cultivation and sale of opium poppies. According to a US State Department report released early this year, most opium production in Afghanistan was taking place in regions already under Taliban control or at least their influence. It said that the Taliban derived a considerable income from the trade, pointing out that this fueled conflict, undermined the state of law, encouraged corruption and was also a contributing factor to drug abuse in the country.

### How the Taliban fund themselves with drugs, mining and extortion

A UN report published in April corroborated these findings and drew a direct link between the Taliban and opium poppy cultivation. It said that the total area under opium poppy cultivation in Afghanistan had increased between 2019 and 2020 from 163,000 to 224,000 hectares (402,780 to 553,500 acres). Moreover, though 21 hectares had been eradicated in 2019, none had been in 2020.

### Could rivals work together?

The international narcotics business has spawned a number of cartels in Mexico. The Sinaloa Cartel is currently the fastest-growing one and controls the land where poppy cultivation is most profitable. It is thus a potential rival for the Taliban. But the fact that the cartel and the Islamist group serve different markets means that they could actually complement each other.

According to the US Drug Enforcement Administration (DEA), the Sinaloa Cartel almost has a monopoly on the US heroin market. The Pentagon believes it to be present in 60% of the world's countries from EU and West African states to India, China and Russia — all nations where drugs from Afghanistan are also sold. For the moment, the Mexican cartel is mostly responding to demand for South American-made [cocaine](#) and synthetic drugs. But it would not be the first time that organizations, which are actually in competition, came together to increase their profits and political influence.

**EDITOR'S COMMENT:** For the last two decades I was wondering how comes with all that technology and eyes on the space, the US forces failed to eliminate the poppies culture in Afghanistan. They know the exact location of the fields and they have the means (herbicides – remember Agent Orange in Vietnam<sup>1</sup>?) to kill the plants and destroy crops. Why do not they do it? The usual excuse might be that it is the only agricultural product the supports thousands of Afghani families. An equally reasonable explanation might be that somehow the US itself is involved in the overall illegal drug trafficking.

## Licence to thrill: Dubai Police add **Aston Martin Vantage** to luxury fleet

Source: <https://www.thenationalnews.com/uae/transport/2021/09/04/license-to-thrill-dubai-police-add-aston-martin-vantage-to-luxury-fleet/>

Sep 04 – Dubai Police have added a blockbuster new addition to their roster of luxury supercars – one that is licensed to thrill. The Aston Martin Vantage will take pride of place in the force's impressive fleet of turbocharged vehicles, which already includes Ferrari, a Bugatti Veyron, plus several Porsches, Bentleys and McLarens. The luxury British sports car brand is famed for being James Bond's favourite mode of transport over the decades. Dubai Police's sleek Vantage boasts a custom '77' number plate – paying homage to the UAE's seven emirates as well as the world-renowned super spy's code number of 007.

<sup>1</sup> After its use in the 1960s, Agent Orange was banned by the U.S. in 1971 and remaining stocks were taken from Vietnam and the U.S. to Johnston Atoll, a U.S. controlled island about 700 miles SE of Hawaii, where it was destroyed in 1978. There is no 'Agent Orange' in Vietnam or anywhere else today.



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It comes before the release of the latest Bond film, *No Time to Die*.



The Aston Martin Vantage has plenty of substance to go with the style.

"It is an honour to have an Aston Martin join Dubai Police's fleet of supercars and the Vantage is the perfect model to make such a statement – purity at its finest, a hint of aggression, and engineering that pushes it to upwards of 300kph," said Ramzi Atat, Head of Marketing and Communications in the Mena region at Aston Martin.



"We are grateful to the team at Dubai Police, and especially Lt Gen Abdullah Khalifa Al Marri, Commander-in-Chief, for bringing this partnership to life."

The Vantage, which recently celebrated its 70th anniversary, has become synonymous with cutting-edge styling, pace and power.





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The current model has a 4.0-litre, twin-turbocharged V8 engine with an impressive acceleration of 0-100kph time in 3.5 seconds, and supports a top speed of 314kph.

The eye-catching car will be on display for the first time alongside other stunning models in the Dubai Police fleet at Expo 2020 Dubai next month.



Emoticon of a CBRN First Responder

### Neymar: PSG agreed to pay £320,000 'ethical bonus' to star man - latest leaks

**NEYMAR** can earn a staggering £327,000 (€375,000) 'ethical bonus' if he adheres to rules set out by Paris Saint-Germain, which includes applauding their fans after matches.

## US Embassy in Kabul



Shahadah, on the Taliban flag, is an Islamic oath and is the first of the Five Pillars of Islam found in the Quran which reads: "I bear witness that none deserves worship except God, and I bear witness that Muhammad is the messenger of God."



### Unanswered questions, anger and suspicion loom 20 years after 9/11

Source: <https://abcnews.go.com/US/20th-anniversary-911-nears-questions-anger-death-linger/story>

Sept 05 – Though she has no independent recollection of her mother, Patricia Smith has spent 20 years missing and learning about her. Through stories imparted by relatives, family friends and Google searches, she has pieced her mom together like a shattered mirror reflecting an adventure-seeker who once ran with the bulls in Pamplona and swam across New York's Lake Placid.

From a thin chain around Smith's neck dangles a pendant spelling out her mother's name in gold cursive letters. But a badge New York City Police Officer Moira Smith wore on that crisp late summer morning in lower Manhattan sits scratched and dented at the National



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September 11 Memorial & Museum, testament to the only female among 23 NYPD officers killed in the [surprise attack](#) on the World Trade Center.

"It's the only piece of jewelry of hers that I'll wear," Patricia Smith, now 21, said of the necklace. "I get so nervous that I'll lose something. I feel that I only have so many things of hers left that I want to keep all of it."

The five-part documentary series, "9/11 Twenty Years Later: The Longest Shadow," narrated by George Stephanopoulos, streams for five consecutive nights on ABC News Live starting Monday, Sept. 6 at 8:30 p.m. ET.



Saturday marks the 20th anniversary of the most lethal attack in history on American soil, a commemoration of the 2,977 people killed when 19 terrorists from half a world away hijacked and turned four commercial aircraft into missiles that rained death on New York City, the Pentagon and a field in rural Shanksville, Pennsylvania.

The gun belt and badge of Police Officer Moira Smith, on display at The Police Museum in Lower (New York Daily News via Getty Images)

That day of terror brought about changes large and small such that it is difficult to find some part of American life that hasn't been touched by the effects of Sept. 11, 2001. From ramped-up security at airports to the militarization

of policing, to years-long wars and the very fabric of our country's personality and freedoms, the nation and world have been redefined by the events of 9/11.

"When I talk about 9/11 to my students, I begin by explaining to them that it was really a life-changing event. It changed the way that our government works, its focus in terms of protecting the American people. It changed the way Americans live today," said former U.S. Attorney General Alberto Gonzales, the dean of Belmont University Law School in Nashville, who was White House counsel to then-President George W. Bush on 9/11.

2-year-old Patricia Mary Smith holds a plaque honoring her deceased mother, New York City Police Officer Moira Smith, during an event in New York City, Feb. 13, 2002, honoring Officer Smith by christening a ferry in her name. (Mario Tama/Getty Images)

"We obviously wanted Americans to live their lives as normally as possible, but to understand that we live and operate in a very dangerous world where there are people, there are organizations, there are groups that don't have very kind views about our way of life, about our values," Gonzales told ABC News.

### More than 70 million born in U.S. since 9/11

More than 70 million people living in the United States, according to yearly birth data from the Centers for Disease Control and Prevention, had not yet been born on 9/11. Millions more, like Patricia Smith, were too young to





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comprehend the destruction and the metamorphosis that followed.

But some of those with vivid memories are still haunted by the epic intelligence failure that preceded the coordinated attacks. Others who answered their country's patriotic call to hunt down those responsible in the alleged al-Qaeda safe haven of Afghanistan now question if it was worth the sacrifice of more than 2,400 American soldiers.

The war in Afghanistan spanned the administrations of four presidents and the eight-year Iraq War, only to end last month with the chaotic withdrawal of American troops and the deaths of 13 more military service members, four born the same year as 9/11. The Taliban, which controlled Afghanistan in 2001 and provided safe haven to al-Qaeda, is back in power, renewing fears the country will once again become a base for terrorism.

Loren Crowe was a student at Columbia University on 9/11, joined the Army after graduating in 2005, and served two tours in Afghanistan that garnered him two Purple Hearts. Yet, he said he understands why many who served in combat question if it was worth the pain they witnessed on both sides of the wire. He said he can only hope his fellow platoon members who didn't make it back alive "died for something greater," and that he tries to see the positives through the bleak saga of Afghanistan.

"Some folks got an education that they might not have gotten. Some folks had access to health care that they might not have gotten. Was it worth it in the grand scheme of things? You know, who knows?" Crowe told ABC News.

"I think it's just desperately heartbreaking. And I think that more Americans should feel more shame about our lack of ability to provide a better future for them (the Afghans) over 20 years," Crowe said. "That's not any individual's fault. That's a large collective weight that I think probably we as a country need to carry."

While it's been 10 years since Osama bin Laden, the founder of al-Qaeda, was gunned down by SEAL Team 6 in Abbottabad, Pakistan, no one has been convicted of helping him carry out the diabolical plot he mastermind, and only one has pleaded guilty and sentenced to life in prison.

"Justice delayed is justice denied. And now we're 20 years later with no justice," Patricia Smith told ABC News on a recent visit to the memorial pools on the footprints of the twin towers, the 110-story buildings that took seven years to construct and less than two hours for terrorists to topple.

### Death rains from a crystal-clear sky

When Officer Moira Smith departed her home on that fateful Tuesday and headed to the 13th Precinct in lower Manhattan, she kissed her 2-year-old daughter, Patricia, goodbye and left the toddler in the hands of her husband, Jim Smith, an officer working the night shift with the NYPD at the time. The father and daughter spent the morning watching Winnie the Pooh cartoons on a VCR unaware of the attack commencing.



At 8:46 a.m., Smith heard a thunderous noise overhead, looked up into the clear blue sky, and saw a wide-body Boeing 767 swooping perilously close to the world's most famous skyline. American Airlines Flight 11 plowed into the north tower of the World Trade Center, vanishing in a fireball between the 93rd and 99th floors. Smith is believed to be the first cop to radio in the catastrophic incident, the biggest salvo in the nation's never-ending war on terrorism.

Seventeen minutes later, a hijacked United Airlines Flight 175 crashed into the south tower.

[Police Officer Moira Smith helps Edward Nicholls escape from the South Tower of the World Trade Center minutes before its collapse, Sept. 11, 2001. She reentered the building to assist others in the evacuation and was killed \(Corey Sipkin/NY Daily News via Getty Images\)](#)

As the twin towers burned, a newspaper photographer snapped a shot of Smith leading a well-dressed man, his head

bloodied, away from the disaster before she headed back to help others. Moira Smith's



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desperate last radio transmission came from inside the south tower: "I don't have much air. Help me, please," she said, according to a recording of the dispatch.

"And that last transmission you can definitely hear it that my mom was suffering. And I have to live with that," said Patricia Smith, a recent graduate of the University of Alabama who works as an athletic trainer for the Tulane University football team in New Orleans.

### 'Get out of here'

American Airlines Flight 77, a Boeing 757 aircraft, took off from Washington's Dulles International Airport headed for Los Angeles when it, too, was hijacked. At 9:37 a.m., the once-unthinkable happened: The aircraft slammed into the west wall of the Pentagon. United Airlines Flight 93 took off from Newark International Airport in New Jersey that morning headed for San Francisco. According to a report from the National Transportation Safety Board, a team of four al-Qaeda terrorists stormed the cockpit and at 9:32 a.m. the cockpit voice recorder indicated a struggle was occurring and captured the words of someone yelling, "Get out of here."

At an altitude of 41,000 feet, the plane suddenly changed course over northeast Ohio and began descending as it headed southeast. At least 13 passengers and crew members began calling loved ones on their cellphones and onboard GTE Airfones, reporting that the flight had been hijacked by four men wearing red bandanas and wielding knives, that a flight attendant was killed and a passenger stabbed.

According to the recordings, some of the passengers said they were formulating a plan to fight back. One passenger, Todd Beamer, was on the phone with a GTE Airfone operator who heard him say "let's roll" just before the aircraft nosedived over Somerset County, Pennsylvania, and crashed into a field in Shanksville, about 80 miles southeast of Pittsburgh.

Tom Ridge, who was then the governor of Pennsylvania and would be appointed the nation's first Secretary of Homeland Security in the aftermath of 9/11, told ABC News that he is certain the hijackers would have flown the plane into the nation's Capitol Building had the passengers not intervened and stopped the attack.

"Listen to the voicemails from the passengers. We know exactly what's going on," he said.

### 'America is under attack'

Andy Card, then the chief of staff to President George W. Bush, was with the commander-in-chief that morning at Emma E. Booker Elementary School in Sarasota, Florida, to promote the White House's "No Child Left Behind" education program. Before entering a room of children, Card recalled a Navy captain approaching him and the president to say a small plane had crashed into the World Trade Center, an unfortunate tragic accident they initially thought.

After the president began reading to the second-graders from the children's classic "The Pet Goat," the same Navy captain told Card a second plane had hit the World Trade Center towers.

Card said he immediately entered the room where the president was reading and whispered in his right ear, "America is under attack." Concerned about causing a panic, Bush remained in the classroom for several more minutes while the children continued to read, according to the 9/11 Commission Report.

On the way back to Washington, Card said he, Bush and other West Wing staffers watched in horror on television as the south tower of the World Trade Center, the second building struck, collapsed at 9:59 a.m. ET followed 29 minutes later by the pancaking of the north tower.

The following day, Bush traveled to lower Manhattan to see the destruction for himself. He stood atop a pile of smoldering rubble, his left arm draping the shoulder of a veteran firefighter, and began to speak into a bullhorn of the unspeakable loss. When someone in the group of rescuers and volunteer construction workers huddled around him shouted, "George we can't hear ya," the president responded, "I can hear you. The rest of the world hears you, and the people who knocked these buildings down will hear all of us soon."

### Clues missed

For 20 years, former FBI agents Kenneth Williams and Mark Rossini said they have spent countless sleepless nights wondering what if their warnings had been heeded.

Two months before the 9/11 attacks, Williams, then an agent at the FBI's bureau in Phoenix, wrote what became known as the "Phoenix Memo" to his superiors at FBI headquarters that he had collected intelligence indicating bin Laden and al-Qaeda were getting ready to do something in civil aviation in the United States and associates of the terrorist network were attending flight schools in Arizona.

"I wanted this information to be discussed with the broader intelligence community," Williams told ABC News.





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Williams' memo was never acted on because he suspects it did not include a specific threat or potential target. One of 10 suspected terrorists named in Williams' memo had close ties to Hani Hanjour, the hijacker who piloted Flight 77 into the Pentagon.

"I held nobody accountable for not really taking any action on that document because, at the time period, FBI headquarters was looking at real threat information that was coming in involving, for lack of a better description, ticking time bombs," Williams said.

In March 2000, Rossini was on loan from the FBI's I-49 counterterrorism squad to the CIA's counterterrorism center at the agency's headquarters in Langley, Virginia. At work one morning, he read a cable from an informant saying two high-level al-Qaeda operatives had attended an al-Qaeda summit in Malaysia and entered the United States with valid visas in January 2000.

Rossini told ABC News that he encouraged his colleague, Doug Miller, to draft a cable to FBI headquarters because the al-Qaeda operatives entered the U.S. amid nationwide alarm over the "millennium plot" following the arrest of an al-Qaeda-trained operative with a car full of explosives in Washington State.

However, CIA officials who had to approve any information shared with the FBI barred Miller from sending his cable to the FBI. The CIA has never publicly explained why it blocked Miller's document.

The two al-Qaeda operatives were among the 19 Sept. 11 hijackers.

There was an enormous volume of intelligence shared with the FBI by the CIA, Rossini said, but why Miller's memo wasn't cleared to send to the bureau remains a 9/11-related mystery, numerous former officials from both agencies have told ABC News.

"This is my 20-year journey, trying to figure out why. I've had basically a nervous breakdown over it, if you really want to know the truth, rattling my brain why something simple was not done. It defies logic. It defies reason. You shouldn't accept it," said Rossini, who resigned from the bureau in 2008 when he pleaded guilty to misdemeanor charges of accessing records in an FBI database. He was sentenced to a year of probation, ordered to perform 250 hours of community service and pay a \$5,000 fine.

### Living casualties of the 'longest day in the history of days'

Among the voices emerging over the past two decades are ones of anger and distrust in the government over alleged secrets it refuses to disclose. Still, others, who raced to the ruins of the World Trade Center hoping to find survivors, continue to suffer and die from the toxic air government leaders insisted at the time was safe to breathe.

"9/11 is the longest day in the history of days," said construction worker John Feal, one of the hundreds of volunteers who rushed to the World Trade Center to search for victims. "It just has not ended for those that lost loved ones that day, for those who got sick and are still sick, for those who got sick and died."

Feal was severely injured during the search and rescue operation when 8,000 pounds of steel landed on his foot. He founded the FealGood Foundation, a nonprofit that advocates for New York first responders suffering from a host of ailments traced to 9/11 -- including lung disease, gastroesophageal reflux disease (GERD), cancer, post-traumatic stress disorder, pulmonary disease and depression. He has also lobbied Congress to extend compensation for them, even when some elected leaders no longer saw a need to.

"I'll be 55 in November. I was 34 when I got hurt. It's almost half my life," Feal told ABC News. "I wake up every morning and I'm reminded by looking at half-a-foot ... I guess time has evaded me because it feels like yesterday in so many ways."

Other living casualties of 9/11 are people like Brett Eagleson, who was 15 when his father, Bruce, was killed at the World Trade Center. Eagleson has spent years trying to get the federal government to make public what the FBI has learned about the roles top officials of the Kingdom of Saudi Arabia may have played in the attacks. A lawsuit he and other survivors of 9/11 victims filed against Saudi Arabia contends it was more than a coincidence that 15 of the 19 hijackers were from Saudi Arabia.

The 9/11 Commission Report completed in December 2004 found "no evidence that Saudi government as an institution or senior Saudi officials individually funded" the al-Qaeda hijackers. The Saudi Kingdom has denied accusations it was complicit in the 9/11 attacks.

"If there were Saudi officials who, in their spare time, were working with elements of al-Qaeda, that would not surprise me at all," former New Jersey Attorney General John Farmer, who served as senior counsel to the 9/11 Commission, told ABC News.

Leon Panetta, who served as secretary of defense and CIA director in the Obama administration, added: "Just as our country made mistakes in the judgments we made about 9/11, I think the leaders in Saudi Arabia made some of the same mistakes."

But the plaintiffs, whose case is pending, claim that since the commission's report was released, the FBI has continued to investigate whether the Saudi government was involved in 9/11 but has refused to declassify evidence the families suspect show the kingdom was complicit.

Last month, the Department of Justice announced that the FBI had recently closed a portion of its investigation into the attacks and is reviewing some long-classified documents to determine if they can now be disclosed. And last week, President Joe Biden signed an



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executive order directing the declassification of certain 9/11-related documents to be released over the next six months.

"The further and further we get away from 9/11, the easier it is to forget what really happened that day and the easier it is to forget about the truth," said Eagleson, whose father worked for the Westfield Group, which managed the mall at the World Trade Center.

The remains of Eagleson's father and those of more than 1,100 victims of the attack in lower Manhattan have never been recovered.

"That added to the pain and misery," Eagleson told ABC News. "My family, along with many other families, are still waiting on remains to be found."

### 'They destroyed my life'

Just 45 days after the Sept. 11 attacks, as the White House feared a follow-up ambush was imminent, Congress passed the Patriot Act, expanding the government's domestic surveillance powers to include reviewing bank records and even library accounts. The act also allowed the National Security Agency to execute warrantless searches of American citizens' phone calls and emails.

Subsequent lawsuits and whistleblowers such as Edward Snowden, a former computer intelligence consultant for the National Security Agency, revealed abuses of the act, including that the Bush and Obama administrations had secretly acquired in bulk the phone data of millions of innocent U.S. citizens without a warrant.

In the aftermath of 9/11, it also came to light that the U.S. government had allegedly kidnapped, detained and tortured numerous prisoners without ever charging them, including some of the more than 800 detainees sent to the Guantanamo Bay Detention Camp, an American military prison in Cuba outside U.S. legal jurisdiction that remains in operation.

"Anybody who does not know about Guantanamo I think today would be surprised at some of the things that went on there," Marion "Spike" Bowman, the former deputy general counsel for national security at the FBI, told ABC News.

Lakhdar Boumediene, an Algerian-born citizen, was held for seven years and six months at Guantanamo Bay, where he said he was relentlessly interrogated and routinely tortured.

The U.S. government has denied allegations of prisoners being tortured at Guantanamo.

"They destroyed my health. They destroyed my life," Boumediene told ABC News.

Boumediene said that he was living in Sarajevo, Bosnia, and working as an aide at a boarding school for orphans of the Balkan conflicts of the 1990s.

"I had a good life with my wife and children. I had a good job," he said. "And yet, my life had turned 180 degrees."

Following the Sept. 11 attacks, Boumediene was arrested in a sweep of men associated with an Algerian charity worker authorities suspected was plotting to bomb the U.S. embassy in Bosnia. When a judge ordered Boumediene released in 2002 for lack of evidence, he said he was inexplicably turned over to the U.S. military and sent to Guantanamo.

"They destroyed everything. But until now, I still didn't get anything. No compensation, no apologies. Twenty years later, I can't find the truth behind my imprisonment at Guantanamo," Boumediene said.

Boumediene became the lead plaintiff in a federal lawsuit by detainees accusing the Bush administration of denying them the right to habeas corpus, or the ability to challenge their detentions before a natural judge, in violation of the constitution. The U.S. Supreme Court in a narrow 5-4 decision sided with the detainees in June 2008.

Bush said he would abide by the high court's decision, but "that doesn't mean I have to agree with it." He said he strongly concurred with the dissenting justices, including late conservative Justice Antonin Scalia, who wrote that the decision would make the war on terror harder and that "it will almost certainly cause more Americans to be killed."

Four months after the ruling, Boumediene was released to France when federal Judge Richard Leon, a Bush appointee, ruled the Bush administration "relied on insufficient evidence to imprison" him and others deemed "enemy combatants."

### From Sept. 11 to Jan. 6: Lessons unlearned

Panetta was the secretary of defense when bin Laden was killed on May 2, 2011. He recalled the relief that swept through the White House Situation Room and the chants of "USA, USA, CIA, CIA" coming from a crowd gathered across the street in Lafayette Park.

"I think we had sent a message to the world that nobody attacks the United States and gets away with it," Panetta told ABC News.

But a decade after bin Laden's death, America remains under the constant threat of terrorist groups that have metastasized around the world, and, according to Panetta, "without a comprehensive strategy to defeat terrorism in the world."





"I mean, you fight a war. You have an enemy. You go after that enemy. You defeat that enemy. And that's it," Panetta said. "In these instances, you're fighting essentially a guerrilla war in these countries with terrorists who are all over the place."

He said following 9/11, the U.S. had a clear mission to dismantle al-Qaeda and kill bin Laden.

"I think today, that memory has faded," Panetta said. "We're focused on other issues, health. We're now focused on China and Russia. I think it is very important for those responsible for protecting our country to never just go with the times, but to always ask the question: What are the potential threats that are out there?"

Tom Ridge, the former secretary of Homeland Security, said the Jan. 6 insurrection at the Capitol building, which caught police off guard, was an indication that some of the lessons learned from the intelligence breakdown of 9/11 have been forgotten.

"Are we going back to pre-9/11 complacency?" Ridge asked.

A former Republican governor and congressman, Ridge said the attack on the Capitol by American citizens was "shameful."

"But the fact is that Americans assaulted the Capitol when 20 years before Americans died so terrorists couldn't assault the Capitol," Ridge said. "If it isn't enough to make the hair on the back of your neck stand straight up ... well, at least it does mine."

## Twenty years after 9/11, magicians of history transform truth and fiction right in front of our eyes

By **Phil Kadner** (columnist at the Chicago Sun-Times)

Source: <https://chicago.suntimes.com/columnists/2021/9/7/22660849/september-11-2001-terrorist-attacks-world-trade-center-conspiracy-theories-history-phil-kadner>



Two columns of light representing the fallen towers of the World Trade Center shine on the 19th anniversary of the Sept. 11, 2001, terror attacks, *AP Photos*

Sept 07 – Remember Pearl Harbor? D-Day? September 11? January 6?

Hell, remember the Alamo?

Our collective memory is nearly as bad as that of a person suffering from Alzheimer's.

Things that once seemed clear are so quickly distorted by the fog of time.

History changes. Sometimes right in front of your eyes.



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I thought the events of Jan. 6, when hundreds of people stormed the U.S. Capitol, attacked police officers, smashed windows, crashed through locked doors and charged into the hallways to overturn a presidential election would never be forgotten. Seemed like an insurrection to me.

Now, Republicans say it was just a peaceful gathering of tourists. They see no reason to look into the origins of the events of that day.

As for the attack on Sept. 11, the Taliban are back in charge and Americans argue about why we invaded, what we accomplished and whether 20 years of military occupation was sufficient to get the job done. As for what is meant by “the job,” that seems to depend on the recollections of people with fragile memories.

We haven't forgotten our dead. We honor those killed on Sept. 11, and we shed tears for our troops who died fighting since then. We pledge we will never let anything like that happen again.

But we no longer trust the FBI, the CIA or government leaders. Every report, every conclusion, every word uttered during a congressional hearing is challenged by someone. Conspiracy theories abound.

Domestic terrorists are a greater threat than those in the Middle East now, say some experts, yet our countrymen refuse to believe it. It's propaganda. Fake news.

Our nation has changed almost beyond recognition in 20 years.

We invaded Iraq back then because Americans were told Saddam Hussein had weapons of mass destruction and terrorists inside the country were plotting to attack us.

The weapons of mass destruction were never found, and the CIA concluded that the terrorists in Iraq did not exist until after the U.S. overthrew Saddam. Maybe the CIA is lying.

We moved on to other things. ISIS threatened nations throughout the Middle East. Iran stepped up its nuclear program. The Russians moved troops into Syria to bolster that nation's murderous dictatorship.

How is it possible to remember the history of Iraq with all of that going on?

Americans were once united behind their government. I think that was true in 2001.

So many things I once thought I knew have changed with the passage of time. In 1492, Christopher Columbus discovered America. I had to memorize the date for history tests in grammar school. That's how important it was.

Now we are told Columbus didn't discover America, the Vikings did. Only, some scholars say the Americas may have been visited by people from China and maybe even Africa and long before that. As for Native Americans, who knows where they came from before they were discovered and murdered.

I remember things that are no longer true.

On Sept. 11, 2001, I went to Midway Airport and encountered a woman whose husband had been on a United Airlines flight out of Boston. Flight 175. You may remember it. Flight 175 was headed to California when it was hijacked by five al-Qaeda terrorists. It crashed into the south tower of the World Trade Center and that was televised around the world.

People started leaping to their deaths.

But the woman I spoke with at Midway Airport didn't know any of this. Her name was Ellen Mariani and a stranger carrying a reporter's notebook told her that she was now a widow.

I remember the look on her face. But no one else ever will. She was alone at the time and so that piece of history will be gone when I am.

All of my life I have heard people say they will never forget, and the awful truth is they do. Worse, they sometimes remember things that never happened. That is a fact.

## 9/11 changed aviation security forever. Will coronavirus and bioterrorism fuel new threats?

Source: <https://www.asiaone.com/world/911-changed-aviation-security-forever-will-coronavirus-and-bioterrorism-fuel-new-threats>

Sept 08 – On July 15, 2017, staff at the Etihad Airways check-in counter in Sydney airport declined to put through a large, heavy suitcase belonging to a passenger travelling to the United Arab Emirates.

Their decision was based on security rules that were implemented after the Sept 11 terror attacks in the United States, which included baggage weight, size and shape limitations, and a higher scrutiny on checked luggage contents.

Little did they know, their act helped to foil an Islamic State-linked bomb plot.





The bag, carried by Amer Khayat, contained an improvised explosive device hidden inside a meat grinder. He was arrested upon



arrival in Lebanon. His brothers in Australia, Khaled and Mahmoud, were later convicted of covertly planting the bomb in Amer's bag with the aim of detonating it mid-flight.

About five months before, the US and British governments had banned travellers from certain cities in the Middle East and North Africa from carrying a variety of electronic devices over fears explosives could be concealed and brought onto an aircraft.

The near miss in Sydney and the ban on electronic devices are examples of how the aviation industry has raised its vigilance in a global effort to thwart terrorism after the events of Sept 11, in which four planes were hijacked and turned into weapons, killing 246 passengers and 2,731 people on the ground in the worst attack on American soil.

The resulting horror and outrage prompted Washington to launch a war on terror that began with the invasion of Afghanistan in October 2001, culminating just last month in a chaotic troop withdrawal and the fall of Kabul to the Taliban.

Subhas Menon, chief executive of Singapore Airlines' regional subsidiary SilkAir from 2001 to 2004, said Sept 11 "damaged the whole psychology of air travel".

"The whole aviation industry was completely shocked. An aircraft being used as a terrorist weapon against their own people – it was just unthinkable before Sept 11," said Menon, now director general of the Association of Asia Pacific Airlines.

The attack triggered a wave of new security measures that travellers initially found tedious but have become accustomed to today. While travel fears grew in the wake of Sept 11, the sector recovered to reach a total of 1.4 billion international tourist arrivals in 2018. But terror threats remain, with coronavirus-era measures leading to yet more rules that will again change the face of aviation safety, perhaps even for the better, says one analyst.



### What changed after Sept 11?

Faizal Abdul Rahman, a research fellow at the S. Rajaratnam School of International Studies (RSIS) in Singapore, said Sept 11 “shocked the world into realising that aviation security was lacking against unconventional threats”.

There had been previous high-profile international terrorism incidents that involved plane hijackings and vehicle-borne improvised explosive devices, but Sept 11 “marked an innovation of tactics and strategy that evaded the then-existing aviation security measures”, he said.

Governments around the world moved swiftly to improve their intelligence systems and came up with response plans in the event of terrorists weaponising another commercial jetliner.

One of the security changes included the drawing up of restricted areas, such as boarding gates, that only allowed access to ticketed passengers, said Oren Tatcher, an airport planner who has worked on projects in places including Hong Kong and Singapore.

Governments also quickly shored up cockpit defences – a long-standing weak point exposed by hijackers.

Menon, the former executive at Silkair – which has since 2018 merged with its parent Singapore Airlines – said the airline at the time took steps to bolster the cockpit door in a move that was also adopted elsewhere.

Air marshals became regularly stationed on board certain flights out of Singapore, and especially throughout the US, Menon added.

Faizal from RSIS said governments also improved pre-screening procedures with higher-tech equipment to detect weapons and explosives, and shared intelligence of travellers with officials.

In Hong Kong, authorities monitored baggage and hand luggage more closely, in particular those bound for the US, said Albert Lam Kwong Yu, the civil aviation chief from 1998 to 2004.

Days after Sept 11, his officials plugged a glaring loophole that allowed small knives to pass through Hong Kong airport security.

Tony Tyler, a senior executive at Cathay Pacific at the time who later in the decade became its CEO, recalled the airline had X-rayed bags years before it became compulsory to do so.

“Security and safety management is always a matter of risk management, and I think the measures and approaches taken pre-Sept 11 in Asia and elsewhere seemed sensible enough,” said Tyler, who was the head of International Air Transport Association (IATA) from 2011 to 2016.



“Sept 11 proved to the industry that it was essential to stay ahead of threats,” he said. “It has the resources and intellectual firepower to do so.”

More substantive changes to aviation security rules came after **“shoe-bomber” Richard Reid** (photo left) in December 2001 failed a bid to blow up an American Airlines flight in Paris bound for Miami, and terror plots to discharge liquid explosives across the transatlantic ocean were foiled in 2006.

New rules saw passengers having to remove their shoes for checks and restricted from carrying liquid containers larger than 100 millilitres (0.2 pints) onto aircraft.

Tatcher, the airport planner, said the additional checks challenged limited airport

spaces and had an impact on how airports were designed.

Notably, the screening of checked-in luggage became mandatory. “That was a big deal because these machines are enormous,” he said.

While newer airports, such as Hong Kong’s, had such technology in place, it was “almost impossible” to fit the machines in older airports. Some airports reconstructed or expanded their older terminals to comply with the new rule.

That way, the Sept 11 attacks served as a catalyst for innovation and investment in research and development, said Tatcher. Equipment is constantly upgraded and there is growing interest in making security checks smoother.

Jim Cherry, a strategic aviation adviser at British engineering consultancy firm Arup, said the updated airport security protocols changed passenger behaviour, as they now had to arrive several hours before their flights.

“Because the security process was more thorough and often entailed waiting in long lines, passengers were no longer interested in any distractions and proceeded as quickly as possible to and through the search points,” he said.

Yet, once they have cleared the screening processes, passengers often find themselves with hours of free time.

“The consequence of the dramatic increase in dwell time and significantly larger number of people in the secured zone led to major changes in space allocation, restaurant and boutique placement and other accommodation,” Cherry said.

Many airports suspended major expansion and modernisation plans to reconsider how space would have to be reconfigured to reflect the demands of this new reality, he added.





### 'Evil will carry on'

Twenty years of tightened security measures later, the chances of authorities detecting terror plots have vastly improved "through profiling, for possessing weapons and explosive materials, or for using stolen and fake travel documents", said Faizal, the RSIS academic and head of the institute's Centre of Excellence for National Security.

"Moreover, counterterrorism efforts on land help to ensure that terrorists cannot bring their schemes to the air," he added.

But Faizal said that loopholes remained, as there were varying levels of security in different countries. For example, there had been instances of passengers using stolen passports, while terrorists may also deploy "clean skins" – persons with no records of criminal or extremist behaviour – to evade detection, he said.

Clement Lai Ka Chi, who helped to form Hong Kong's Counter Terrorism Response Unit and was in charge of the city's airport policing and security team from 2006 to 2009, said highly motivated perpetrators would always find weaknesses in the rules.

"Evil people are always evil. They have some strong beliefs and will carry on with that. Lone wolves are especially hard to prove since their existence without any organisation means that they will find a way to prove themselves, and be ahead of the game."

Matthew Vaughan, director of aviation security and cyber at IATA, said global aviation rules had since 2001 been revised eight times, to "make sure the security settings are just relevant in the areas we need to protect".

"Twenty years on, we live under a rules-based approach today and it ultimately has to keep changing," he said.

Vaughan, who was security chief at Etihad before the plot emerged, said a terrorist's aim to exploit system vulnerabilities would never go away, but "we can certainly do something about influencing the particular pathways or options they think are available to exploit".

He pointed out that Sept 11 was a domestic terror event, and even with stringent international rules for aviation, it was up to governments to ensure high standards of safety.

### New security threats

With analysts warning that extremist groups will be emboldened by the Taliban seizing power in Afghanistan, the threat of terrorism remains very much alive.

Terrorists are constantly looking for opportunities to launch attacks that cause high damage and fear, so it is crucial for airports to remain alert even during periods where the threat is perceived to be low, Faizal said.

"We need to watch for new threats if the Taliban's return to power enables al-Qaeda to revive its international agenda over the next decade," he said.

Airports should cooperate with security agencies to share intelligence while anticipating how changes in travel patterns and technology could enable new attacks, Faizal added.

Following Kabul's fall to the Taliban, former British prime minister Tony Blair also warned about the need to protect people against bioterrorism threats, such as the release of viruses.

"Its defeat will come ultimately through confronting both the violence and the ideology, by a combination of hard and soft power," he said.

Faizal said governments had been monitoring bioterrorism activity from as early as the 1990s, after Japanese cult group and terrorist organisation Aum Shinrikyo in 1995 launched a sarin gas attack in the Tokyo subway, which injured thousands.

**Japanese authorities last year said Aum Shinrikyo remained a threat, with three splinter groups actively recruiting members and building up cash reserves (photo right).**

Meanwhile, the latest threat to aviation is Covid-19, which has disrupted global travel and left airlines and airports operating at a fraction of their peak. Many countries have implemented measures including on-arrival tests and quarantine zones at airports.

Cherry, the aviation adviser from Arup, pointed out that technologies such as remote and touch-free check-ins as well as self-baggage check-ins, were already being used at some airports even before the pandemic.

"Clearly, the onset of the pandemic has served to accelerate that implementation and will most certainly lead to new, creative ways to further reduce the risk of spreading contagion," he said.



Faizal said that pandemic measures served as an additional layer of vetting and monitoring that would make air travel more difficult and costly for international terrorists.

After Sept 11, the increased aviation security measures brought inconvenience but travellers eventually accepted them as the new normal for safe air travel, he said.

“Looking ahead, travellers would also have to accept the inconveniences of pandemic-era air travel, especially if flying is now more for necessity, not luxury.”

## Terrorizing the Taliban

### A fictional scenario

By William B. Scott

Source: <https://acdemocracy.org/terrorizing-the-taliban/>

Sept 08 – The first casualties were small teams of Taliban thugs going door-to-door in Kabul, searching for Americans and Afghan nationals who had aided the U.S. and its allies. Armed with detailed lists, biometric identification data, and state-of-the-art military gear abandoned at Bagram Air Base, the arrogant fighters were unmerciful.

As one particularly ruthless Taliban zealot dragged an abandoned American student into the street, a brilliant flash elicited a blood-chilling scream. The fighter dropped to the ground, hands clawing what had been his face. Wraparound dark sunglasses he'd lifted from the American booty at Bagram had detonated, instantly blinding him.

The man's sidekick ignored those screams of excruciating pain. He had problems of his own. The American desert-camouflage battle uniform he wore had ignited and was completely engulfed in white-hot flames as if his entire body were a phosphorous flare. Staggering a few steps, Taliban Two collapsed and was immolated in seconds.

The American student cowered in abject fear, staring in shock at her tormentors. Moments earlier, she was facing certain death or horrific slavery. Now, the fanatics who had dragged her from a U.S. State Department “safe house” were writhing in the dust—one howling in agony, blind and helpless. The other was slowly curling into a charred, unrecognizable lump. An appalling stench gagged her, the unmistakable odor of burning human flesh—and death. She half-crawled and stumbled back to her safe-house hidey-hole. Soon, she knew, another Taliban team would be coming for her.

What the woman didn't know—couldn't know, thanks to the Taliban controlling all television and radio news outlets—was the atrocious scene she had witnessed was hardly unique. Throughout Kabul, thousands of Taliban radicals were dying in gruesome ways even those heartless experts of torture and death could never have imagined. Simultaneously, Taliban loyalists manning checkpoints across the region were falling dead or dying, suffering unbearable torment, as they expired.

Initially, those wearing American Kevlar helmets heard Allah's distinct, booming command *inside* their heads: “Stop murdering my children!” Seconds later, a burst of electrostatic energy radiating from the helmet itself electronically lobotomized the fighter's brain, transforming hearty men to dead-eyed human vegetables. Others simply collapsed in place and died, their craniums indisputably fried by an intense surge of microwaves.

Any Taliban carrying an American rifle or pistol and wearing a protective Kevlar vest was downed by powerful shaped charges, as coatings on gun barrels and various parts of their weapons and battle gear detonated. Limbs were blown clear of torsos in a flash, as bullet-resistant vests imploded.

Huge stacks of weapons abandoned by fleeing American forces suddenly exploded, creating massive mushroom clouds in the skies over Bagram. Inside hangars, disabled aircraft and helicopters systematically blew up and burned. Toyota pickup trucks and million-dollar armored vehicles carrying .50-caliber machine guns detonated in unison, instantly killing any Taliban “soldier” onboard.

In Taliban command centers throughout Afghanistan, hundreds of senior leaders merely slumped in chairs or dropped where they stood. Not a sound was detectable. Death arrived silently. When triggered by covert, low-probability-of-intercept terahertz signals beamed from satellites and high-altitude drones, computers, high-tech radios, crates of night-vision devices, and other sophisticated electronic gear emitted waveforms of electromagnetic or electrostatic energy tailored to interact with human organs. Taliban hearts fluttered and stopped beating, their bio-electrical regulators overwhelmed and confused. Synapses in human brains fired erratically, erasing memories, precipitating strokes, and commanding organs to shut down.

One common element linked these nightmares of death and destruction: Equipment and weapons that President Joe Biden had secretly agreed to turn over to the Taliban in exchange for safe passage of Americans and selected Afghans. Unknown to Biden and his advisors, each and every item of left-behind military equipment—clothing, weapons, ammunition, communication gear, drones, and vehicles—shared two features: a built-in





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tracking device and nano-particle coatings of incredibly powerful explosives. However, the coatings were inert and safe, until activated by specific terahertz signals tailored to penetrate virtually every natural or manmade substance. There was no place Taliban-confiscated American materiel could be protected from those signals. Every scrap of gear left behind at Bagram Air Base was a killing machine-in-waiting.

And only a small cadre of Americans knew it

### Flashback: May 2017 — Classified location in Washington, D.C.

Donald J. Trump, the new president, was aghast and furious. “So you’re telling me that roughly \$83 billion of American military hardware is either already in Afghanistan or committed to be delivered there?”

“That’s correct, sir,” a retired three-star Army general and current national security advisor replied. “Every bit of it’s being given to the nascent Afghan military and national police forces.”

The president shook his head and slapped a conference table with an open palm. “Why the hell would we give advanced weapons and technology to those people? Historically, Afghan warlords turn on their ‘allies’ whenever the power structure shifts! You know I’m committed to getting our troops out of that sh..., uh, that damned endless war. And now thousands of weapons and high-dollar, sophisticated equipment are going to fall into bad-guy hands when we pull out! That’s insanity on steroids!”

“Mr. President, you know I never bring a problem, unless I can also offer a solution.” The advisor punched a button on a handheld remote and pointed at a figure appearing on the Sensitive Compartmented Information Facility’s wall-size display screen. “Sir, I’d like you to meet ‘The Black Leopard.’ He couldn’t be here in person, but is honored to brief you on the issue we’re discussing.”

Trump scowled at the man on-screen. “You have a real name?”

“Sir, I’m just an old Marine proud to serve his country yet again. For good reasons that I’ll spare you, ‘Black Leopard’ will have to suffice. Let’s just say there’s a price on this seventy-five-year-old head, and I prefer to keep a low profile.”

The general jumped in, before the president’s retort. “Sir, I’ll explain in detail later. For now, please take my word: Sergeant ‘Leopard’ has handled a situation similar to this in the past—for another president. A touchy operation in Africa about twenty-five years ago. Equipment turned over to a bunch of bad guys had tracking devices embedded...”

The president interrupted, “Got it. For what purpose?”

The ‘Leopard’ grinned and shrugged. “I know nothing, Mr. President. But I *heard* that a bunch of very unpleasant folks turned up seriously dead. Or so I was *told*.” Again, a squint-eyed smile.

“Since then, sir, the ‘Leopard’ has incorporated new features that will ensure stuff going to the Afghans will be...neutralized, so to speak,” the general added.

“Cut the crap, gents. Just tell me what you can do, Leopard,” Trump snapped. Patience was not among his finer qualities.

From a secret location deep in the Colorado Rockies, The Black Leopard quickly outlined the technology: Nano-particle coatings on every weapon, uniform, electronic device, aircraft, and armored vehicle that the previous administration had committed to giving a fledgling Afghan army. Covert markers that, when “painted” by tailored waveform signals, instantly provided location information, enabling each device to be tracked in real-time.

“Once activated by *different* signals beamed from satellites, drones or special ops forces on the ground, those nano-coatings either detonate or emit deadly bursts of energy that kill or otherwise screw-up bad guys.” He continued, explaining in no-BS terms the gruesome effects of those ultra-tiny coatings.

“Bottom line: This is an advanced and extremely efficient means of remotely destroying an enemy force, without risking American lives. The targets have no clue what’s happening, who’s zapping them, or how. They simply get a one-way ticket to terrorist Hades.”

The president glared at the big screen for a long minute, fingers tapping the polished tabletop. “Let’s say I green-light this operation. How are you—one man—going to tag or ‘arm’ this ungodly huge pile of materiel, before it goes to Afghanistan? How do we know it won’t wind up in the wrong hands when we leave that place?”

“That’s the beauty of this option sir,” ‘Leopard’ smiled. “If the stuff stays in the right hands, it works exactly like our own equipment right here in the good ol’ U.S. of A. But let’s say al Qaeda, ISIS or the Taliban somehow snatch it. No problem. We throw a switch, our magic signals precisely paint every piece of gear in whatever-a-stan it happens to be in, and whoever’s holding, wearing, firing, driving or flying the toys we gave the Afghan military instantly dies, burns, goes blind, or is shredded instantly. Trust me, Mr. President, bad shit will happen in a heartbeat, if and when we pull the high-tech triggers.

“As for getting everything ‘doped’ with nano-explosives, I’ll use your off-the-books team, *Checkmate*\*. I’ve worked with General Gray Manor, who I believe you know. His logistics folks will work with defense contractors to integrate our *proprietary* nano-coatings into their manufacturing processes.”



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President Trump scratched his chin a long moment, almost smiled, and nodded. "Tell us what you need to launch this. Do it! ASAP!"

**Late 2021**

Thousands of Taliban fighters dying in and around Kabul, all within months of the ignominious U.S. and allied departure, unleashed a vicious backlash against the terrorist group. Pockets of Taliban goons were captured by angry warlords, who had been receiving obscene amounts of cash for aiding American and NATO forces. Some of the terrorists were simply shot; others were hung or stoned to death by women, who buried their tormentors' battered corpses in hated burqas. A few Taliban managed to reach their sanctuaries in Pakistan, only to be imprisoned by formerly friendly Pakistani intelligence agents. Clearly, those agents and the nation's leaders had received a loud-and-clear back-channel message from a former president of the United States: "We've sold or given Pakistan thousands of weapons and aircraft. You harbor ANY Taliban or other terrorist vermin, and you, too, will suffer the same end as those in Kabul."

Surprisingly, the stunned Biden Administration and its globalist allies, including Chuck Schumer, Lizzy Warren, Bernie Sanders, Nancy Pelosi, Adam Schiff, and hundreds of arrogant Deep State operators throughout the Washington Swamp had little to say about the unbelievable turnaround in Afghanistan. When "mainstream media" sycophants strived to credit Biden with the Taliban's staggering decimation, their requests for White House comments were met with silence.

Had Washington Swamp critters also received back-channel briefings on exactly what had occurred in Afghanistan? Or were they as mystified and stunned as the Taliban they had naively trusted?

The baffled media were left to speculate about two questions: *How were the Taliban crushed so quickly? And who gave the 'Take 'em out' order?*

*\* Checkmate is a covert counterterrorism team of special operators first introduced in "The Permit," a techno-thriller novel.*

*William B. Scott is a Senior Fellow at ACD's Economic Warfare Institute*

**A real hero in a world of corks!**





## What's changed in 20 years

Source: <https://www.axios.com/what-has-changed-since-911-fe66ecb8-0ba0-45e8-b2ed-c9f877899333.html>



Sept 11 – Two decades later, we don't have to look hard to find changes in our lives that happened because of 9/11, from air travel headaches to fear-driven politics that still disrupts many Americans' lives.

- **Here we've identified the biggest changes** that had a lasting impact — or foreshadowed broader social dilemmas we're grappling with today, like the vulnerabilities of the internet and our attitudes toward privacy.

**War powers:** The 2001 Authorization for Use of Military Force was so broad that it has been used by four American presidents to justify military operations around the world, *Axios' Zach Basu reports*.

- It allows the president to use force against anyone "he determines" was involved in 9/11 — a sweeping, vague authorization meant to help the U.S. "prevent any future acts of international terrorism" against the homeland.
- While this initially applied to al-Qaeda and the Taliban in Afghanistan, the law's blank-check language has been [cited for operations](#) in Iraq, Yemen, Somalia, Libya, Syria, Niger, Djibouti, Ethiopia, Eritrea, Kenya and the Philippines, as well as the indefinite detention of prisoners at Guantánamo Bay.
- And the full extent of the law's global reach is not even publicly known: The list of countries where the U.S. is waging the war on terror under the 2001 AUMF is classified, according to a [statement](#) from the White House in April.
- "The authority that has been delegated to the president, we absolutely have to return it to Congress' portfolio," Rep. Peter Meijer (R-Mich.), an Iraq War veteran, told *Axios' Alayna Treene*. Meijer flew to Kabul a week before the United States' planned withdrawal.

**Air travel:** 9/11 changed, perhaps most obviously, the entire experience of air travel, *Axios executive editor Sara Kehaulani Goo writes*.

- The attacks created a crisis of confidence, not only in our leaders' ability to imagine the threat at home, but in our ability to feel safe again. The U.S. government created two new agencies (the Department of Homeland Security and the Transportation Security Administration), spent billions on screening equipment, and instituted new security



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procedures at airports that have been copied at major public events and schools around the country.

- 9/11 also changed the roles of what we expect from private sector employees. Pilots could carry guns in the cockpit. Flight attendants got more training on how to deal with unruly passengers. Air marshals were secretly assigned to flights.
- New rules required airlines to collect more information from each passenger, including date of birth and full name, to check against terrorism "watch list" databases, which flagged thousands of innocent travelers.

**Privacy:** The attacks increased our willingness to give up some privacy to make air travel — and many other transactions — more convenient, *Sara also reports*.

- Private companies found that Americans were willing to pay hundreds of dollars and give up some privacy — a face scan, a fingerprint, personal details — for the ability to skip more time-consuming screening of their bags and clothing at checkpoints.
- Even the TSA created a "pre-check" program, collecting fees and offering separate lines for travelers who gave up personal information in exchange for a faster line.

**Security:** Cities became less open, *Axios' Jennifer Kingson writes*.

- No longer can anyone walk into an office building in New York City (and many other places) and take the elevator up to any floor. We must show a license or other ID, sometimes have a photo taken, sign a register, and have our host put us on a list or call down to a guard.
- Urban surveillance systems, which were already marching forward, intensified and proliferated more quickly than they might have if the terror attacks hadn't happened.

**Tech:** The internet of 2021 was born in the ashes of 2001, *Axios managing editor Scott Rosenberg writes*.

- When the Twin Towers fell, the first news of the disaster was posted online by a theater blogger named James Marino, who'd watched the mayhem on the skyline from his office in a Broadway high-rise and posted about it at 8:56 a.m. (The AP had its own story a minute earlier, but most news sites hadn't gotten it up yet.)
- Today's internet moves at a different scale and pace, but the online aftermath of 9/11 exposed, in embryo, every one of the vulnerabilities we've grown to understand since: the rise of conspiracy theories, political polarization and online echo chambers; the spread of hate speech; and the diminishing potency of facts.

**Racial profiling:** The attacks drew focus to the way law enforcement profiles Arab Americans and Muslim Americans and the discrimination they face, *Axios' Russell Contreras reports*.

- The Patriot Act and the way innocent Arab Americans and Muslim Americans experienced harsh questioning at airports, ports of entry and in public places drew scrutiny in the years following the attacks and foreshadowed the current reckoning with the nation's systemic racism.

**Immigration:** The politics of immigration permanently changed after the attacks, *Russell also writes*.

- Before Sept. 11, the Bush administration was pushing a massive immigration reform bill that could have offered a pathway for citizenship for millions of undocumented immigrants. After the attacks, the federal government turned to stricter policies along the U.S.-Mexico border out of fear that potential terrorists would use it to enter the U.S.
- Mexican and Central American immigrants, once hailed in early 2001 as builders of the U.S. economy, experienced demonization, and politicians used them as scapegoats during elections.

**Health care:** While it's clear that the U.S. was woefully unprepared for the pandemic, there was a flurry of funding in the years after 9/11 — and the anthrax attacks that immediately followed — that could have made us more prepared for COVID had the funding been sustained, *Axios' Tina Reed reports*.

- There was a flurry of [investment in public health](#) in the years immediately following — including spending on hospitals aimed at increasing preparedness training and supplies — although that money quickly dried up as interest in 9/11 waned.
- In 2007, in addition to vaccines against bioterrorism threats, the Department of Health and Human Services awarded more than \$3 billion to [support pandemic preparedness](#).





- Increased concern around the threat of bioterrorism led to the creation of the National Biodefense Analysis and Countermeasures Center, the National Bioforensic Analysis Center, and the first bioattack warning system [known as BioWatch](#) and later [Project Bioshield](#).

## Osama bin Laden changed history on 9/11, **but not** in the ways he expected

Source: <https://www.cbs58.com/news/osama-bin-laden-changed-history-on-9-11-but-not-in-the-ways-he-expected>



Sept 11 – Who could have predicted that in the two decades following the 9/11 attacks, the United States would wage various kinds of military operations in seven Muslim countries -- in Afghanistan, Iraq, Libya, Pakistan, Somalia, Syria and Yemen -- at the [cost](#) of at least \$6 trillion and more than [7,000 American lives](#)?

In addition, tens of thousands of soldiers from countries allied to the United States died, as did hundreds of thousands of ordinary Afghans, Iraqis, Libyans, Pakistanis, Somalis, Syrians and Yemenis who were also [killed](#) during the so-called "war on terror."

All of this carnage was traceable back to Osama bin Laden's decision to launch the 9/11 attacks.

Al-Qaeda's leader is one of the few people of whom it can truly be said that he changed the course of history. Just as an account of Nazism would be nonsensical without reference to the persona and worldview of Adolf Hitler, or a history of France after the revolution of 1789 would make no sense without an understanding of the goals and personality of Napoleon Bonaparte, so too our understanding of al-Qaeda and the ideology and violence it spawned would be incoherent without reference to bin Laden.

This is an unapologetically old-school view of how history is actually made, which posits certain individuals are able to ride the tide of human events and shape them in new and unexpected ways.

Of course, that is not to deny the importance of circumstance. Hitler could not have become Hitler without two hugely significant events: Germany's defeat in World War I and the Great Depression. Nor could Napoleon have become Napoleon without the opportunities presented to him by the chaos of post-revolutionary France.

But it's impossible to understand World War II and the Holocaust without understanding Hitler's ambitions and ideology, just as it's impossible to understand why the largest army hitherto assembled in Europe [marched into Moscow](#) in September 1812 just weeks before the onset of the brutal Russian winter without understanding the vast ambitions of Napoleon.



### A time of ferment

Bin Laden also came of age at a time of important historical changes. As a young man, he lived through a period of great ideological ferment in the Muslim world. During the 1970s, the early promises of socialism and Arab nationalism had delivered little in the way of prosperity or peace in the Middle East, and a new interest in religion gripped the region, a period of Islamic awakening that peaked [in 1979](#) — the first year of a new century on the Muslim calendar — with three seismic events.

First was the overthrow of the Shah of Iran by the cleric Ayatollah Khomeini, which showed the world that a US-backed dictator could be toppled by religious revolutionaries.

Second was the armed takeover of Islam's holy of holies, the mosque in Mecca, by Sunni militants. The [assault on Mecca](#) pushed the Saudi royal family to take a more conservative religious line at home and to finance the export of conservative Wahhabi clerics and mosques around the Muslim world (in part also to combat the rise of the new militant Shia regime in Iran).

Finally, the "infidel" Soviet Union's invasion of Afghanistan precipitated a global movement of Muslims who traveled to Afghanistan and neighboring Pakistan to help combat the Soviets. It was a thrilling time to be a deeply committed Muslim, as the 22-year-old bin Laden already was.

In 1987, bin Laden set up a base — "Al Qaeda" in Arabic- — in Jaji in eastern Afghanistan, where he and a small group of followers fought the Soviets. From that base was forged a new group, al-Qaeda, and also a new doctrine of globalized jihadist terrorism, culminating in the 9/11 attacks, which reshaped the greater Middle East and also the United States itself in unexpected ways.

Bin Laden pushed forward with the 9/11 attacks despite internal opposition within al-Qaeda. In July 2001, Saif al-Adel, a senior al-Qaeda military commander, and Abu Hafsa the Mauritanian, the group's religious adviser, told bin Laden they opposed attacking the United States because they feared the likely American response and were worried the operation would anger the Taliban rulers of Afghanistan, who were then hosting them in the country.

Abu Hafsa the Mauritanian was also concerned killing American civilians could not be justified on religious grounds.

However, bin Laden ruled over al-Qaeda like a medieval monarch, and leaders of the group who were skeptical about the looming attacks in the United States were forced to go along with them.

### The strategy

Bin Laden had a strategy for the 9/11 attacks that went beyond simply murdering as many American civilians as possible. He firmly believed the attacks would result in the withdrawal of American forces from the entire Middle East, which would then lead to the collapse of the US-supported Arab regimes that bin Laden despised.

It was a strategy that made little sense, as the United States would surely follow its own interests and was hardly likely to abandon its substantial role in the Middle East. But bin Laden truly believed that the US was weak, just as the former Soviet Union had been, and could only absorb a few blows.

He drew inspiration from other terrorist groups that had successfully attacked American targets, such as Lebanese Hezbollah, which had bombed the Marine barracks in Beirut in 1983, killing 241 American Marines, sailors and soldiers. Within a few months of the attack, the United States pulled out all of its troops from Lebanon. The [Marine barracks bombing](#) was very much on bin Laden's mind as he plotted attacks, he believed would result in the United States removing its troops from its bases in the Middle East, particularly in Saudi Arabia.

Perhaps the most profound change in the United States brought about by the 9/11 attacks was to greatly expand the military power of the US presidency. The [Authorization for Use of Military Force \(AUMF\)](#), which Congress passed days after the 9/11 attacks, allowed President George W. Bush to "use all necessary and appropriate force against those nations, organizations, or persons he determines planned, authorized, committed, or aided the terrorist attacks that occurred on September 11, or harbored such organizations or persons."

This authorization sanctioned "[forever wars](#)" that lasted for two decades after 9/11. Three presidents as different from each other as presidents Bush, Barack Obama and Donald Trump used the same authorization to carry out hundreds of drone strikes against groups such as ISIS, al-Qaeda in the Arabian Peninsula, al-Shabaab and the Pakistani Taliban. Few of these strikes had any connection to the perpetrators of 9/11.

The AUMF was also used to justify various types of US [military operations](#) in Afghanistan, Ethiopia, Kenya, Libya, Mali, Nigeria, Pakistan, the Philippines, Somalia, Syria and Yemen. And, of course, 9/11 fueled the flawed rationale for Bush to invade and occupy Iraq in 2003.

This result was exactly the opposite of bin Laden's aim with the 9/11 attacks, which was to push the United States out of the greater Middle East, so its client regimes in the region would fall. Instead, new American bases proliferated throughout the region -- in Afghanistan,





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Iraq, Kuwait, Qatar and the United Arab Emirates. Meanwhile, al-Qaeda lost the best base it ever had in Afghanistan. Rather than ending American influence in the Muslim world, the 9/11 attacks greatly amplified it.

Bin Laden later put a post-facto gloss on the strategic failure of 9/11 by dressing it up as a great success and claiming the attacks were a fiendishly clever plot to embroil the US in costly wars in the Middle East. Three years after 9/11, bin Laden released [a videotape](#) in which he asserted, "We are continuing this policy of bleeding America to the point of bankruptcy."

There was no evidence it was really bin Laden's plan in the run-up to the 9/11 attacks, although it is true the investment of American blood and treasure in the wars in the greater Middle East likely weakened the United States.

### Impact on American politics

Bin Laden's 9/11 attacks also had unpredictable, long-term effects on US politics. Real estate impresario Donald Trump launched his political career with the lie that President Barack Obama wasn't an American and was secretly a Muslim. This lie was especially potent in the context of 9/11, one of the hinge events of American history that touched off a [surge of anti-Muslim prejudice](#). During his presidential campaign, Trump often claimed he had seen "thousands" of Arabs [cheering](#) the 9/11 attacks from their rooftops in New Jersey. This was false, but it played well with Trump's base.

Trump's presidential campaign also took place during a wave of mass casualty jihadist terrorist attacks in the West. On November 13, 2015, ISIS terrorists killed 130 people in Paris. Within seven months of the Paris attacks, ISIS-inspired terrorists killed 14 people at an office in San Bernardino, California, and 49 people at an Orlando nightclub. As a result, in the run-up to the 2016 presidential election, just over half of Americans [said](#) they were "very" or "somewhat" worried they, or a member of their family, would be victims of terrorism. This was the largest number to feel this way since just after 9/11.

Sensing a real political opportunity, Trump called for a ["total and complete shutdown"](#) of Muslim immigration to the States and asserted that many Muslims have "great hatred towards Americans." Polling in early 2016 showed [half of all Americans supported banning Muslims](#) traveling to the United States. Other polls showed terrorism as a [top-two issue](#) for Americans, with Trump holding a slight advantage over his Democratic challenger, Hillary Clinton, on the issue.

For al-Qaeda, 9/11 was a great tactical victory. The group inflicted more direct damage on the United States in one morning than the Soviet Union had during the Cold War. But ultimately, it was a strategic failure for the organization, just as Pearl Harbor was for Imperial Japan. A longtime associate of bin Laden's estimated as a result of the US campaign against al-Qaeda after 9/11, 1,600 of the 1,900 Arab fighters then living in Afghanistan were killed or captured. And almost a decade after 9/11, bin Laden himself was [killed](#) by US Navy SEALs raiding his compound in Abbottabad, Pakistan.

But now al-Qaeda has been given a new lease on life by President Joe Biden's ill-considered and hasty withdrawal from Afghanistan and the speedy takeover of Afghanistan by the Taliban.

To gauge the true intentions of the Taliban going forward, you only have to look at one of their key cabinet appointments earlier this week, [Sirajuddin Haqqani](#) as the acting Minister of Interior. **The UN says Haqqani is part of the leadership of al-Qaeda.**

**For the first time in history, a member of al-Qaeda is now a senior cabinet official in the government of a country. Despite all of his strategic missteps, bin Laden would have been thrilled to see this happening around the 20th anniversary of the 9/11 attacks.**

*Peter Bergen is CNN's national security analyst, a vice president at New America and a professor of practice at Arizona State University. Bergen has reported from Afghanistan since 1993. His new book is "The Rise and Fall of Osama bin Laden," from which this essay is adapted. The views expressed in this commentary are his own.*

## Rimini stabbing – Child 'slashed in throat' and four others knifed as bus passenger goes on rampage

Source: <https://www.thesun.co.uk/news/16114219/rimini-stabbing-child-slashed-throat/>

Sept 12 – A child was "slashed in the throat" and four adults knifed after a bus passenger went on the rampage.

The attacker, believed to be from Somalia, pulled out the knife after he was asked for his ticket on the number 11 bus in Rimini, [Italy](#). He attacked the two female conductors with the knife before fleeing.

The man went on to stab a further three people in the horrific attack, including one woman and a child, according to news outlet [TGCom24](#).

While the two conductors were not seriously injured, the child was stabbed in the throat, local news has reported.



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The armed attacker managed to get off the bus by ordering the driver to open the door while threatening him with the knife, before fleeing on foot.

Once on the road, he also attempted to hijack a car.

But, after he ran towards some nearby rail tracks, police managed to capture and arrest the assailant.

The man's arrest was ordered by prosecutor Davide Ercolani.

According to TG Comm 24, the attacker was housed in a Red Cross facility with some witnesses describing him as having a "violent and aggressive personality".

It is thought investigators have not ruled out the possibility that he was under the influence of drugs during the attack.

**EDITOR'S COMMENT:** The word "terrorism" is missing in this article. Perhaps in an effort not to ruin the image of beautiful Rimini.

## Live your dream in the future Germany



German "Green Party" vision for the future German society

## Al-Qaida: the terror group that learned the secret of longevity

By Jason Burke

Source: <https://www.theguardian.com/world/2021/sep/09/al-qaida-the-terror-group-that-learned-the-secret-of-longevity>

Sept 11 – In the summer of 1988, a dozen or so men gathered in the sweltering Pakistani frontier town of Peshawar. Across the border in [Afghanistan](#), the war was reaching a bloody climax, as hundreds of thousands of local mujahideen took on the Soviet occupiers and their local auxiliaries.

The men, who probably met in one of the guesthouses that acted as offices and hostels for foreign visitors to Peshawar, were all from the Middle East. Most had been in Pakistan for several years but had played only a very marginal role in the bloody war raging to the west.





But a handful had been with their de facto leader, a wealthy Saudi Arabian called [Osama bin Laden](#), when he had fought off a Soviet attack on a base inside Afghanistan a year earlier.

They had come together to discuss various issues – administrative problems with the flow of financial and other aid from the Gulf, personal rivalries with senior leaders of the so-called “Afghan Arabs” based in Peshawar, and much more. But they also wanted to talk over a new project: the creation of a unit of committed and experienced Islamist fighters who could deploy to wherever Muslims needed their protection. The group would also be a vanguard who could attract further recruits and spread the radical views of its adherents. Its name would be [al-Qaida](#).

Thirteen years later, al-Qaida and Bin Laden would be responsible for the 9/11 attacks on New York and Washington, which caused 3,000 deaths. These led to Bush administration’s war on terror, the invasions of Afghanistan and Iraq, a manhunt that led to [the death of Bin Laden](#) in 2011, and a multitude of seismic global consequences. Not since 1914, when the assassination of Archduke Ferdinand triggered the first world war, had a single attack by a single terrorist group had such an impact.

Twenty years after that attack, and al-Qaida is very much still with us. **Research suggests that individual terrorist groups usually survive for between five and 10 years, or even less**, so this is an undoubted achievement. To enjoy such longevity in the face of the most expensive, technologically-advanced and expansive effort ever made against a single group is [more astonishing still](#). No one on this tragic anniversary is predicting the end of al-Qaida. So how have they done it?

The first obvious advantage enjoyed by al-Qaida has been the failures and weaknesses of its adversaries. The group’s propaganda has sought to portray local governments across the Islamic world as corrupt, incompetent, repressive and exclusive. This is not unfair criticism, and so makes al-Qaida’s argument that these flaws are due to a rejection of the true path shown by the holy texts and traditions of Islam resonate more easily.

The errors of those directing the campaign against al-Qaida have also helped enormously. In 2002, al-Qaida had lost its safe haven in Afghanistan and many of its members had been killed. The rest were scattered in neighboring countries or on the run further afield. For two years after the 9/11 attack, as [Osama bin Laden](#) moved from safe house to safe house in Pakistan, al-Qaida was effectively rudderless. Though criminally indiscriminate, the CIA’s dragnet did bring in some major figures, and operations elsewhere scooped up many more.

But bellicose rhetoric, a failure to understand the diffuse and ideological nature of the threat and above all the invasion of [Iraq](#) restored the group’s fortunes. It distracted the attention of US policymakers and the resources of its security agencies. The war to oust Saddam Hussein, justified in part by a fallacious link between al-Qaida and the Iraqi regime, appeared to vindicate many of Bin Laden’s arguments and prompted a vast surge of anger across the Islamic world. It also opened a new front, which allowed al-Qaida to get back in the fight.

It did not allow al-Qaida to win, however. The wave of violence unleashed by militants through the middle of the post-9/11 decade aimed to terrorise enemies, radicalise existing members and mobilise new support. It may have achieved the first two goals – at least in part – but not the third. As each new campaign erupted in the Middle East – in Iraq, Jordan, Pakistan, [Saudi Arabia](#) – the extremists lost any sympathy among the general population. By 2010, Bin Laden was so concerned about how the repeated massacres of other Muslims had tarnished the al-Qaida brand that he pondered changing its name – and sent out fierce injunctions to subordinates to dial down the violence. Once again, the pendulum was swinging against al-Qaida, but it would swing back again.

But 2011 was particularly bad for the group. Bin Laden was killed in a US special forces raid on his home in the northern Pakistani town of Abbottabad, and half a dozen other senior figures in the organisation died or were detained too.

In the weeks before his death Bin Laden worried that he, his organisation and their thinking had been marginalised by the upheaval of the Arab spring. The crowds in Cairo’s Tahrir square and elsewhere in the Middle East were shouting for democracy, not for a rigorous Islamic regime. In the end it was Bin Laden’s successor, [Ayman al-Zawahiri](#), an older Egyptian former paediatrician and veteran extremist who found a way to exploit the sudden chaos, and restore al-Qaida’s fortunes.

Zawahiri had an undistinguished career as an extremist leader, lacked charisma and was not well liked within either al-Qaida or the broader jihadist movement. But he immediately demonstrated an unsuspected strategic talent and ability to learn the lessons of previous decades. The main innovation of Bin Laden in the late 1990s had been to direct its full resources against the “far enemy” – the US and the west – not the “near enemy – local governments in the Middle East. Bin Laden’s first ventures in this direction had come when he had targeted US forces in Yemen in 1991, but matured seven years later with massive, [lethal attacks on US embassies in Kenya and Tanzania](#) swiftly followed by [a maritime strike against a US warship in the Gulf of Aden](#). These efforts culminated in the 9/11 attacks, which were deeply controversial within his organisation and opposed by many of its secondary leaders.



Zawahiri turned away from this strategy, making it clear that the far enemy was no longer a priority, partly because such attacks had become much harder and partly because of the response they would be likely to provoke. He also moved al-Qaida away from its doctrine of “only jihad”, stressing the importance of building ties with local communities across the Islamic world which felt under threat.

If al-Qaida could provide protection, security, even governance, then it could build grassroots support and extend its reach. The new strategy soon brought results, bringing new influence and recruits in the Sahel, east Africa, Yemen and in Afghanistan, where a new effort was made to build ties with the Taliban, which would be of crucial importance a decade later.

Then, in 2014, a new challenge emerged: a breakaway group which rejected Zawahiri’s authority entirely. It first called itself the Islamic State in Iraq and Syria, then, once it had seized a swath of land across those two countries and announced the establishment of a caliphate, simply [Islamic State](#).

This could have been a disaster for al-Qaida. [Islamic State](#) was much quicker to exploit the opportunities offered by the stunning spread of social media and smartphones, and appeared to have already achieved the long-term goal that al-Qaida had been striving towards. But the brutality of the newcomers, combined with Zawahiri’s more pragmatic strategy, combined to give al-Qaida the makeover Bin Laden had pondered before his death.

Compared to Islamic State’s spectacular sadism, even al-Qaida seemed less bloodthirsty. A key text for both groups was a manual to jihad ambiguously entitled *The Management of Savagery*. The two interpreted its advice differently. Islamic State and its growing number of affiliates believed the title suggested the uses of extreme brutality while al-Qaida thought it meant the need to control violence. As Bin Laden had done, Zawahiri also steered his organisation away from both the sectarianism and the apocalyptic millenarianism of its rival. When Islamic State’s caliphate collapsed in 2019, al-Qaida was well positioned to claim the leadership of the global jihadist movement once again. It has not done this yet – and Islamic State still contests the role, sometimes violently – but has regained much ground. The fall of Afghanistan to its long-term allies, the Taliban, has provided a further boost.

Ten days after the Taliban seized Kabul, al-Qaida issued a statement congratulating the movement on its “great victory against the crusader alliance”, an echo of the first declarations of war on the west broadcast by Bin Laden 25 years before. This was on behalf of all Muslims, and a “prelude to the liberation of Palestine ... the Levant, Somalia, Yemen, Kashmir”, the group said, underlining its global ambitions but also local focus. For the al-Qaida leadership, “the defeat of the US places the global jihad into a new phase”.

It is too early to tell if this last statement is true. But we can guess one thing.

**Al-Qaida has survived 33 years because it has evolved.** Throughout its bloody history, it has changed with the times. Despite the grand ambitions of its founders, the organisation was originally parochial in its focus, with Saudi Arabia, Bin Laden’s birthplace, prominent among its targets. To propagate its ideology, it sought to execute massive attacks that would get the attention of traditional media, then the sole way to reach a mass audience. [Al-Qaida](#) then turned on the far enemy and prosecuted a truly world-spanning campaign through a decade and a half that was characterised everywhere by unprecedented globalisation.

Their communications strategy was re-engineered to match the new capabilities of satellite networks, and the group took full advantage of the now ubiquitous internet to assist with management of a sprawling organisation and attack planning. Over the last 10 years, as that wave of globalisation has ebbed in the face of economic crises and resistance to the erosion of cultural identities, al-Qaida has evolved again, pivoting neatly to something much more local – and understood that in the new media environment, complex plots work less well than “leaderless” attacks inspired through social media.

The Arabic word chosen as a name for the group back in the late 1980s suggested many things: an organising principle or the solid foundation of a building are two possible interpretations – but above all a military base. This was how these men had referred to the fortified camp from which they had just repulsed the Soviets in the first true battle of their campaign. It was also how irregular fighters and armies had referred to strongholds for much longer, both in Afghanistan and across much of the Islamic world. The difference was that al-Qaida would not be a mere geographical location, but an international, ideological aspiration.

The chances of fulfilling this ambition of creating a vanguard of Islamic fighters who will raise the Muslim world in a vast uprising against unbelieving local rulers and the west too remain extremely slim and the prospects for those still committed to the project unclear. Zawahiri is ailing, or maybe already dead, and no one knows who his successor might be or what he might do. But history suggests that to write off al-Qaida, even after 33 years, would be very optimistic.

*Jason Burke is the Africa correspondent of the Guardian, based in Johannesburg. In 20 years as a foreign correspondent, he has covered stories throughout the Middle East, Europe, and South Asia. He has written extensively on Islamic extremism and covered the wars of 2001 in Afghanistan and 2003 in Iraq. He is the author of four books, most recently [The New Threat](#).*







world

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Shame on  
Faroe Islands 2021



## Lessons from 9/11

By Christina Pazzanese

Source: <https://www.homelandsecuritynewswire.com/dr20210910-lessons-from-9-11>



Sept 10 – Beyond their vast and terrible human toll, the 9/11 terrorist attacks changed and continue to influence life in America in myriad ways. Harvard professors detail how the tragedy reshaped U.S. homeland security and foreign policy, changed the study and treatment of post-traumatic stress disorder (PTSD), led to a nationwide overhaul of crisis planning and management, and prompted substantial new regulatory changes in rules for building and fire safety.

### Homeland Security and Foreign Policy

Is America safer from attack by Islamic terrorists than it was 20 years ago or was the war on terror a failure?

Many people are asking those questions now, after the recent messy withdrawal of American forces from Afghanistan and the return to power there of the Taliban. The decision to leave the country ended a costly 20-year war — increasingly unpopular in the U.S. — that was launched in retaliation for the 9/11 attacks by al-Qaida, which had found safe harbor in the south Asian nation.

“The Taliban flag will be waving in Afghanistan on Sept. 11. That is your split screen. There’s just no question about it,” said [Juliette Kayyem](#) ’91, J.D.’95, Belfer senior lecturer in international security at [Harvard Kennedy School](#) (HKS).

“But I think it’s much more complicated and unfair to our efforts” to conclude that because the Taliban was not defeated, the U.S. wasted \$2.2 trillion and thousands of lives in Afghanistan. “It’s not nothing, and it’s not luck that there was no similar size 9/11 attack in the U.S. for 20 years,” she said.

Without a military presence in Afghanistan, there will be a “detrimental impact” on future U.S. counterterrorism efforts, but “we’re not back to Sept. 10,” said Kayyem.

The counterterrorism capacity and capabilities of the U.S. and our Western allies have improved over the past two decades, especially in surveillance, droning, and information sharing, and U.S. homeland security is far more robust, said Kayyem, a former assistant secretary in the Department of Homeland Security in the Obama administration.

But concerns remain. The withdrawal will be viewed in parts of the Arab world as a Taliban victory over the U.S. and undoubtedly help terrorist recruitment. It will also provide political fodder for critics of U.S. hegemony and interventionism. In addition, some Afghan refugees who have difficulty transitioning in their new countries could prove susceptible to radicalization, Kayyem said.

Though the Taliban controls more territory today than it did on 9/11, the early U.S. counterterrorism efforts were “broadly successful” in weakening al-Qaida and the Taliban and preventing terrorist attacks, said [Fredrik Logevall](#), Laurence D. Belfer Professor of International Affairs at HKS and a professor of history on Harvard’s Faculty of Arts and Sciences.

However, the Bush administration’s pivot to Iraq in 2003 set the mission adrift, and the failed effort to establish a democratic Afghan government after Osama bin Laden’s death [in 2011] deeply undermined that early success, said Logevall.

“The historian in me wants to say that it’s too soon to know if the war on terror was a failure,” he said. “But given the expenditures involved, [which were] massive, given the costs — in all respects of the term ‘cost’ — of the interventions in Afghanistan and Iraq, both with respect to conditions in those countries, but also in the region, I think the picture is a pretty grim one.”

Other costs are lost time and opportunity.

“Waging that counterterrorism has diverted attention from the complex challenges posed, for example, by a rising China, by Russia, by a nuclear North Korea,” said Logevall.

A U.S. foreign policy retrenchment could be on the horizon, given the strong public support for the decision to end the war, he said, along with the fierce criticism of the Biden administration’s execution of the withdrawal.

“It’s clear that Joe Biden has, for a long time, been skeptical about using American military power to turn this or that country into a democracy, and he’s a skeptic about nation-building. So, I think we probably won’t see a lot of effort in that direction,” he said.

But the blowback could also provoke Biden to become more assertive in projecting American military power, said Logevall.

“There’s a nontrivial chance that the administration will want to show, ‘Hey, we’re still in the game, and we’re still the force to be reckoned with.’”

### Post-Traumatic Stress Disorder (PTSD)

Unlike many disasters, 9/11 was a uniquely communal event: It occurred on live television, targeted symbols of American business and government everyone recognized, and claimed victims engaged in everyday activities, like going to work or taking an airline flight.





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“I think 9/11 was a collective trauma for the nation,” said [Richard F. Mollica](#), professor of psychiatry and founding director of the [Harvard Program in Refugee Trauma](#) (HPRT), which conducts training and scientific research and provides mental health services to people in conflict areas and who have experienced natural disasters. “We all realized, as a nation, our vulnerability to these terroristic life events.

Before 9/11, public understanding of post-traumatic stress disorder (PTSD) was limited, and trauma was still an emerging field of study.

“In those early days, people only thought of trauma around war veterans” said [Karestan Koenen](#), a professor of psychiatric epidemiology at [Harvard T.H. Chan School of Public Health](#) who studies PTSD. “I think the 9/11 terrorist attacks really brought home that trauma could happen to anyone, that it can happen and not be your fault.”

The attacks sparked “a revolution” in the field’s thinking about self-care for trauma victims as well as for those who treat them. “In 2001, no one was talking about burnout; no one was talking about self-care; no one was talking about resiliency,” said Mollica.

Sept. 11 showed that some treatments for trauma victims did more harm than good. One treatment that was untested but thought to be therapeutic was “critical incident stress debriefing,” in which people were asked to talk about their experiences, often in minute detail.

“They were activating in people high emotional arousal, and all the research that was done following that showed it actually generated post-traumatic stress disorder and depression and made people sick,” said Mollica. The Harvard Program on Refugee Trauma first developed the [Harvard Trauma Questionnaire](#), a well-known mental health assessment tool, back in the 1980s. “And so, one of the big outcomes of 9/11 was that debriefing was thrown out as part of the psychological first aid.”

“It really brought home the importance of studying [which] treatments are effective and why research on treatment is really important,” said Koenen.

In fact, New Yorkers were far more resilient than many experts had predicted. Traumatologists were surprised to see that what appeared to be elevated rates of PTSD dropped dramatically not long after 9/11, suggesting that they “mistook ordinary stress reactions (e.g., insomnia, anger, intrusive images) as the psychiatric illness of PTSD,” said [Richard McNally](#), a psychology professor who studies anxiety and panic-related disorders.

That misreading underscored the need for the field to focus more on early intervention and prevention in order to be able to answer such key questions as whether we can predict who is most likely to get PTSD, identify those individuals early on, and prevent its onset.

After 9/11, many more were drawn to the field, and the scientific community began to pay closer attention to the disorder. As part of the genomic revolution, the study of the genetics of PTSD and the role that genetic factors play in shaping the response to trauma grew dramatically, said Koenen, who works in this area.

“Before 9/11, a lot of people still dismissed PTSD as a real thing. And 9/11 made it into something more legitimate to study,” said Koenen, who said she had been discouraged from working on trauma as a postdoc in 2001. Sept. 11 spurred more biologically-based research, and there was a huge growth in imaging, brain-related research, and biomarkers, in part because of significant new government investment in 9/11-related scientific research.

Koenen said the work done in the aftermath of 9/11 demonstrated to the public the links between disasters and mental health, paving the way to quicker response to mental health concerns during the pandemic, with increased research and public health outreach, broader public awareness, and acceptance of treatment options as a critical need.

“It’s clear that mental health was top of mind very early, and I’m not sure without 9/11 whether that would have been true,” she said.

### Preparation for Crisis Response

On 9/11 Joseph Pfeifer was a 20-year veteran of the New York City Fire Department, a battalion chief in charge of four firehouses in lower Manhattan, including one across from the World Trade Center. He was out on a call just blocks away when he saw the first plane hit the north tower. As the first chief on the scene, he radioed for a second, then a third alarm, and ordered the first wave of firefighters to begin evacuating the building.

“I knew I was responding to the largest and the most dangerous fire of my life,” he said.

First responders had years of training and experience. [Pfeifer](#), now a senior fellow with the [Program on Crisis Leadership at HKS](#), said that in hindsight there were critical gaps in their preparation as well as in the communication and collaboration between agencies. Police and fire units set up operations blocks apart, adding to the technical difficulties of radio communications. There was limited video and data and uneven information sharing, all of which complicated decision-making.

“I would have loved to have seen 10 seconds of [news] video of the south tower collapsing. I had no idea that building fell down. And yet, I ordered our firefighters to evacuate the north



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tower,” said Pfeifer, who details in a new memoir how his brother, also a firefighter, perished while rescuing people trapped inside the north tower. “I would have done it more urgently if I knew the whole building [had] collapsed.”

After-action analyses confirmed that closer coordination between responding agencies, between federal, state, and local governments, and more comprehensive preparation and training were needed.

[Arnold Howitt](#), founding faculty co-director of the Program on Crisis Leadership, said Sept. 11 (and later, Hurricane Katrina) demonstrated that extreme emergencies could unfold much more quickly and at far greater scale than previously understood.

The federal government began investing heavily in research and training around crisis planning and management in order to do a better job preparing for and responding to more routine emergencies, like major snowstorms, and novel crises, like a terrorist attack. In 2004, FEMA introduced the [National Incident Management System](#), a framework to assist governments, nongovernmental organizations, and the private sector to deal with emergencies.

Looked at broadly, public safety and public health agencies are better prepared, have more thorough training, and greater ability to quickly adapt to changing circumstances and improvise where necessary than they did in 2001, said Howitt.

Communication with the public, now seen as critical to any effective emergency response, has advanced. And the principles and value of collaboration up and down all levels of government, between political leaders and their agency professionals, and across disciplines are far better appreciated nationally than 20 years ago, he said. “Very, very rarely do these large events fit into the skill sets and the responsibilities of a single agency,” Howitt said. “Building those kinds of cooperative relationships has definitely improved significantly in the years since, but it’s also still unevenly implemented.” Federal agencies, however, are limited in what they can do on their own. States and local municipalities retain significant authority and control over what actions can be taken and by whom. Even private businesses sometimes have a say, for example, when hospitals or medical professionals are involved. That makes it harder for the federal government to act quickly in a unified and cohesive way and leads to highly varied crisis responses around the country, limitations that became evident throughout the COVID response, said Howitt.

### Structural Engineering and Fire Safety

The sudden destruction of the twin towers, whose design had been hailed as innovative in the late 1960s, raised serious questions about the soundness of the World Trade Center’s construction and fire safety. “Structural engineers like myself were shocked,” that such iconic structures had been attacked and then had to watch as they burned and collapsed, said [Hanif Kara](#), professor in practice of architectural technology at [Harvard Graduate School of Design](#). “There’s a consensus among structural engineers that the inherent strength and robustness of each tower’s structure prevented an immediate collapse,” said Kara. Since then, much work has been done to understand what caused the collapse, and among the complex findings, “there is little doubt that fire-protection was a major failing.”

Though 9/11 did very little to dampen enthusiasm for super-tall skyscrapers — at least 40 buildings around the world now surpass the 1,368-foot height of the doomed World Trade Center — it did prompt important changes to the way they are built. In 2005, the U.S. National Institute of Standards and Technology (NIST) issued 30 recommendations for revisions to building fire codes, standards, and practices. More active approaches to fire-safety during construction are now common. Building frames must now include fire protection and engineers can use computational analysis to model what could happen structurally in a fire rather than relying on defensive fire protections.

How people exit high-rise buildings in an emergency has also changed since 9/11. “As a consequence of the twin towers’ occupants being trapped within the stairways, which were only [44 or 56 inches] wide, today’s stairs in the replacement WTC towers are 50 percent wider. Additional stairs, purely for urgently exiting, are now considered essential. And, most importantly, [elevators] that operate on backup power are also now a core component of evacuation strategy,” said Kara.

*Christina Pazzanese is Harvard staff writer.*

## Why the U.S. Navy Is Hunting Pirates Off of Africa

By James Stavridis

Source: [https://www.washingtonpost.com/business/energy/why-the-us-navy-is-hunting-pirates-off-of-africa/2021/09/13/54edf290-1460-11ec-a019-cb193b28aa73\\_story.html](https://www.washingtonpost.com/business/energy/why-the-us-navy-is-hunting-pirates-off-of-africa/2021/09/13/54edf290-1460-11ec-a019-cb193b28aa73_story.html)

Sept 14 – The Hershel “Woody” Williams, a massive warship the U.S. Navy calls an “expeditionary sea base,” is now off the west coast of Africa as part of a multinational exercise in countering piracy. Nearly 800 feet long and topped with a flight deck for





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helicopters, the Williams can provide tremendous logistical support — fuel, stores, spare parts — while remaining at sea almost indefinitely, because it has two separate crews that exchange places every four months.

Deploying the mobile base makes an important statement of U.S. commitment in Africa. And, given the scourge of African piracy, it makes strategic sense as well.

The Gulf of Guinea, which contains important shipping lanes for Europe and vast oil reserves, urgently needs multinational counterpiracy operations. Last year, there were 46 successful and attempted piracy incidents in the waters off Nigeria and Benin alone — roughly a quarter of the world's attacks, according to the International Maritime Bureau's global piracy reporting center. The United Nations estimates that West Africa loses more than \$750 million a year due to maritime crime

When I was commander of NATO's armed forces in 2009, we began a large-scale counterpiracy mission off Somalia, Operation Ocean Shield. We all but ended that threat off East Africa, but it has shifted across the continent. And while Somali pirates, made infamous by the movie "Captain Phillips," carried out a small number of audacious assaults on large ships, the problem in the Gulf of Guinea is more complicated and widespread.

Most attacks take place close to shore, with bulk carriers, container ships and small tankers carrying refined petroleum products the main targets. Other attacks involve taking hostages from boats ferrying workers to offshore oil-drilling platforms. The captives are taken to the swampy jungles on the coast and held until their employers pay ransom. (In some cases, there is cooperation from the crewmembers and supposed hostages themselves, who receive a cut after the oil companies pay up.)

The current exercise, Operation Guinex, will run until the end of September. It is led by the U.S. Africa Command and brings together navies from both sides of the Atlantic, including 10 African nations. Brazil has deployed a powerful frigate, the *Independencia*, and the Nigerian navy, the dominant maritime force in the region, has a half-dozen ships involved. In addition to naval maneuvers, there is an emphasis on training local special forces, along the lines of the U.S. Navy SEALs.

Building a collective sea-based force with regional partners is an approach the U.S. has used in Latin America and the Caribbean for decades, enhancing security without the expense and political challenges of a heavy logistical footprint.

Operation Guinex also aims to improve interoperability between U.S. naval platforms and local partners — including point-to-point secure radio transmissions; data links with tracking information on commercial shipping; and access to unclassified satellite feeds. Better intelligence-sharing can provide tactically useful information to the African militaries and help the U.S. gain insight into terrorist threats. (There are unconfirmed reports that some of the pirates' haul has made its way to the terrorist group Boko Haram, which has sworn allegiance to the so-called Islamic State.)

The Navy should build on the deployment of the Williams by increasing its routine port visits to the Gulf of Guinea. These need not be high-tech Arleigh Burke destroyers or Ticonderoga cruisers; humbler U.S. Coast Guard vessels are a better match to the capabilities of the local navies. The Navy's Spearhead class of expeditionary fast transports, essentially smaller versions of the Williams, would also be good choice, as would amphibious vessels with their shallower drafts.

Ideally, cooperation with the Gulf of Guinea nations will become an all-of-government operation, bringing teams from the Drug Enforcement Agency, the State Department's Bureau of International Narcotics and Law Enforcement, the Federal Bureau of Investigation, the Department of Homeland Security and the National Oceanic and Atmospheric Administration. As the North Atlantic Treaty Alliance learned a decade ago in Somalia, defeating piracy can't be done at sea alone — the scourge is driven by dire conditions onshore.

For the U.S., improving military, law-enforcement and diplomatic ties in Africa will be increasingly vital — especially as Chinese political outreach and (often predatory) investment grows.

There is reason to be optimistic. African nations have traditionally been wary of allowing a permanent U.S. military presence, such as providing home ports for Navy ships. This spring, however, the Nigerian government surprisingly urged the Pentagon to move the U.S. Africa Command headquarters from Hamburg, Germany, to a location on the continent.

Africa's population could reach 2.5 billion by mid-century, a quarter of the world's people. Extreme poverty, drought, poor infrastructure, religious disagreements and intrusive outside powers create conditions in which civil conflict, piracy and terrorism flourish. The government of Guinea was overthrown in a military coup just days ago.

The Williams is doing more than fighting the modern-day buccaneers: It is showing that the U.S. has a stake in maintaining stability and security in the world's fastest-growing continent.

*James Stavridis is a Bloomberg Opinion columnist. He is a retired U.S. Navy admiral and former supreme allied commander of NATO, and dean emeritus of the Fletcher School of Law and Diplomacy at Tufts University. He is also chair of the board of the Rockefeller Foundation and vice chairman of Global Affairs at the Carlyle Group. His latest book is "2034: A Novel of the Next World War."*





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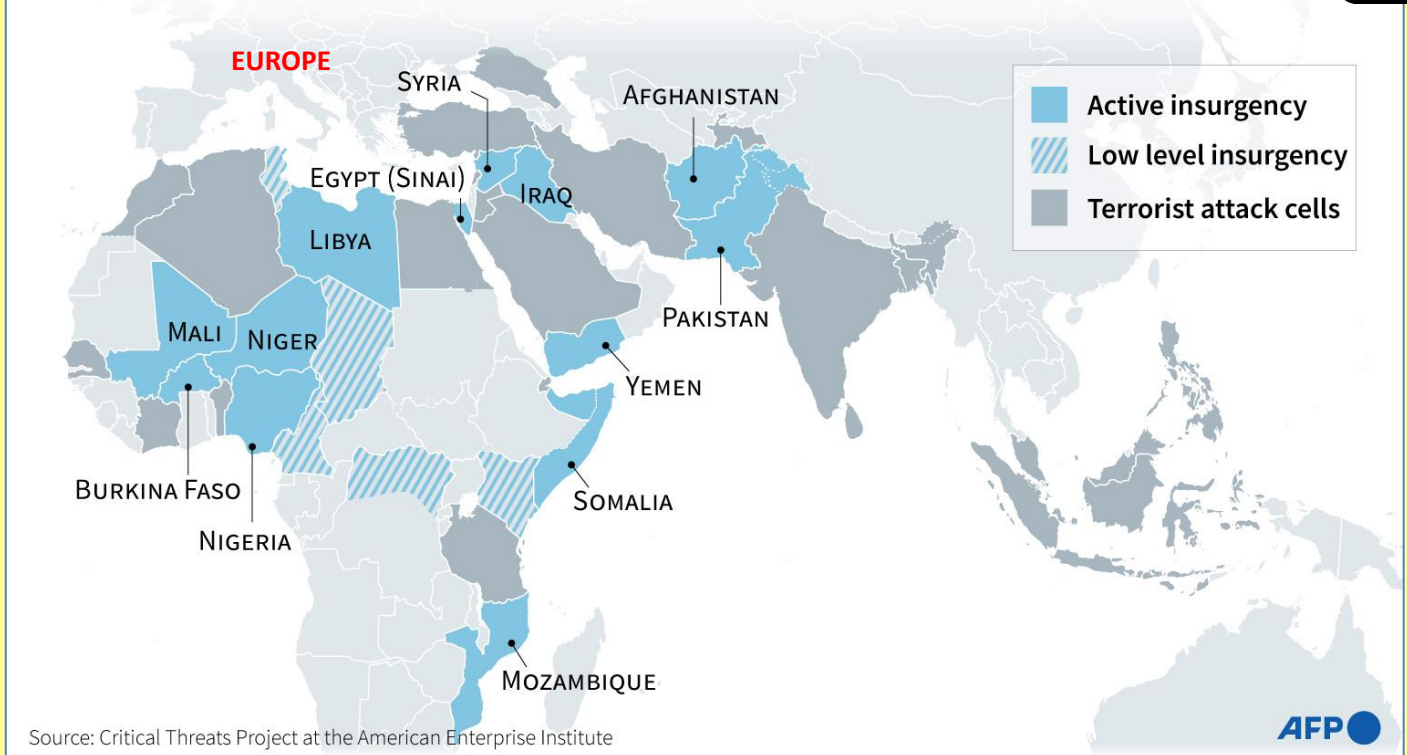


## Global terrorism map

Source: <https://twitter.com/AFP/status/1434780246356623363>

### Countries where jihadists are operating

Mainly Al-Qaeda, Islamic State group or their affiliates



## Remembering the Greek-American Fallen Heroes of 9/11

Source: <https://greekreporter.com/2021/09/10/remembering-the-greek-american-fallen-heroes-of-911/>



|                                |                                   |                                  |                            |
|--------------------------------|-----------------------------------|----------------------------------|----------------------------|
| Joanne Marie Ahladiotis, 27    | Jimmy Grekiotis                   | George Merkouris, 35             | Anthony Savas, 72          |
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| Peter Brennan, 30              | Nicholas John, 42                 | James N. Pappageorge, 29         | Michael C. Tarrou, 38      |
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Of the nearly 3,000 people who perished on September 11, 2001, **39 were Greek-Americans**. Twenty years later, on the anniversary of the attack, the grim memories remain intense for the families of those unjustly lost, and for all of those who believe in freedom and peace.

Above is the list of the Greek-American victims (some believed to be Greek because of their names) issued by the New York City Coroner's office:



## North and South Korea unveil new missile systems

Source: [https://www.upi.com/Top\\_News/World-News/2021/09/16/north-south-korea-missile-test-train/2681631784747/](https://www.upi.com/Top_News/World-News/2021/09/16/north-south-korea-missile-test-train/2681631784747/)



The latest missile test marked the first time North Korea used the mobile railway system. The missiles accurately struck their targets in the sea between Korea and Japan, state-run media reported. Photo courtesy of KCNA/EPA-EFE [small photos: Russian RT-23 train missile].

Sept 16 – [North Korea](#) confirmed on Thursday that it has indeed launched a pair of ballistic missiles from a train-based system, which was part of a flurry of activity in a week that also saw South Korea unveil missiles of its own.

The [test marked the first time](#) Pyongyang used the mobile railway system, a report from the state-run Korean Central News Agency said, and the missiles accurately struck their targets in the sea between Korea and Japan.

"The railway-borne missile regiment took part in the drill with a mission to strike the target area [about 500 miles] away from its location," KCNA reported.

South Korea is the seventh country in the world -- and the only one without nuclear weapons -- to develop its own submarine-launched ballistic missile. North Korea has announced its own SLBM, but there has been no clear evidence that it's operational.

## Lebanon crisis

Hezbollah said it had trucked [more than a million gallons of Iranian diesel fuel](#) into Lebanon from Syria, celebrating the move as a way of spiting the U.S. while bringing aid to a country nearly paralyzed by fuel shortages.

**EDITOR'S COMMENT:** When there is no electricity; no fuel for vehicles and industry. When the government members are behaving like kindergarten pupils. Then who cares if it is Hezbollah who brought the diesel or somebody else? Why they do not learn from Hezbollah that masters psychological operations?





## Twenty Years On, We've Learned Nothing From 9/11

By Ron Paul

Source: <http://www.ronpaulinstitute.org/archives/featured-articles/2021/september/13/twenty-years-on-we-ve-learned-nothing-from-911/>

*read.*

Sept 13 – Nothing upset the Washington Beltway elites more than when in a 2007 presidential debate I pointed out the truth about the 9/11 attacks: they attacked us because we've been in the Middle East, sanctioning and bombing the civilian population, for decades. The 9/11 attackers were not motivated to commit suicide terrorism on the Twin Towers and Pentagon because they dislike our freedoms, as then-President Bush claimed. That was a self-serving lie.

They hated – and hate – us because we kill them for no reason. Day after day. Year after year. Right up until just a few days ago, when President Biden slaughtered Zemari Ahmadi and nine members of his family - including seven children - in Afghanistan. The Administration bragged about taking out a top ISIS target. But they lied. Ahmadi was just an aid worker, working for a California-based organization, bringing water to suffering Afghan village residents.

This horror has been repeated thousands of times, over and over, for decades. Does Washington believe these people are subhuman? That they somehow don't care about their relatives being killed? That they don't react as we would react if a foreign power slaughtered our families?

Former Secretary of State Madeleine Albright famously suggested in an interview that killing half a million Iraqi children with sanctions designed to remove Saddam Hussein from power was "worth it." It was an admission that the lives of innocents mean nothing to the Washington elite, even as they paint their murderous interventions as some kind of "humanitarian liberation." The slogan of the US foreign policy establishment really should be, "No Lives Matter."

The Washington foreign policy elites – Republicans and Democrats – are deeply corrupt and act contrary to US national interests. They pretend that decades of indiscriminate bombing overseas are beneficial to the victims and keep us safer as well. That is how they are able, year after year, to convince Congress to hand over a trillion dollars – money taken directly and indirectly from average Americans. They use fear and lies for their own profit. And they call themselves patriots.

The Washington establishment lied to us because they did not want us to stop for a second and try to understand the motive for the 9/11 attacks. Police detectives are not apologists for killers when they try to look for a motive for the crime. But the Washington elite did not want us to think about why people might be motivated to suicide attack. That might endanger their 100-year gravy train.

What was the real message of 9/11 to Americans? Give up your freedoms for the false promise of security. It's OK for the government to spy on all of us. It's OK for the TSA to abuse us for the "privilege" of traveling in our own country.

We must continue to bomb people overseas. Don't worry it's only temporary.

So, twenty years on what have we learned from 9/11? Absolutely nothing. And we all know what the philosopher George Santayana said about those incapable of learning from history. I desperately hope that somehow the United States will adopt a non-interventionist foreign policy, which would actually protect us from another attack. I truly wish Americans would demand that their leaders learn from history. The only way to make us safe is to end the reign of the Washington killing machine.

*Ronald Ernest Paul is an American author, activist, physician, and retired politician who served as the U.S. Representative for Texas's 22nd congressional district from 1976 to 1977 and again from 1979 to 1985, and then for Texas's 14th congressional district from 1997 to 2013. On three occasions, he sought the presidency of the United States.*

## Psychological Assessment of Individuals Linked to Radicalization, Lone-Wolf Terrorism

In recent times, the phenomenon of lone wolf terrorism has been observed with the social assumption that a radicalized individual is only guided by personal, social, and ethnic reasons to commit an extremist act. But there is still much to understand about this phenomenon and improve the methods of investigation or psychiatric interventions. [Read more](#)



## Directed Energy Weapons Shoot Painful but Non-Lethal Beams – Are Similar Weapons Behind the Havana Syndrome?

By Iain Boyd

The latest episodes of so-called Havana syndrome, a series of unexplained ailments afflicting U.S. and Canadian diplomats and spies, span the globe. The cause of these incidents is unknown, but speculation in the U.S. centers on electromagnetic beams.

[Read more](#)

## Business as usual

Sept 21 – Indian officials have seized nearly [3 tons of heroin](#) at western Indian port in a major drug bust. The heroin originated from Afghanistan and was sent to India from an Iranian port. The street price of the huge consignment is USD 2.7 billion.

**EDITOR'S COMMENT:** And the funny thing is that the Taliban ask for international support to rebuild Afghanistan! And soon they will address the world at the UN assembly – because we are kind and civilized! (and we never learn from the past). UN already allocated 45 mil USD to support Afghanistan's health system – something like 50kg of heroin!

**Surprise!**

## Atheism among Muslims Is "Spreading Like Wildfire"

By Daniel Pipes

September 19, 2021

Source: <https://www.meforum.org/62666/atheism-among-muslims-is-spreading-like-wildfire>



Afghanistan 2021: "We do not go to school without our sisters!" (left)





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# CHEM NEWS





## How hands-on gas detection training can enhance industrial safety

By Steven Pike

Source: <https://www.argonelectronics.com/blog/how-hands-on-gas-detection-training-can-support-workplace-safety>



Aug 24 – Industrial-based incidents that occur within confined space environments can pose a substantial safety hazard due to the heightened chance of personnel being exposed to toxic gases.

As several recent workplace accidents have highlighted, the risk applies both to the victims and to those who are tasked with the role of emergency response.

A widely documented [incident](#) that claimed the lives of three underground utility workers in South Florida in the US in 2017 demonstrated just how serious the consequences can be after a 34-year old pipe layer and his two “would-be rescuers” succumbed to noxious fumes while working inside a manhole on a construction site.

An August 2020 report from the Occupational Health and Safety Administration (OSHA) revealed that atmospheric testing of the manhole had identified lethal levels of hydrogen sulfide and carbon monoxide.

In all, OSHA identified ten serious violations both by the company and its contracting partner, including the failure to purge or ventilate the confined space, the exposure of workers to an asphyxiation hazard and the lack of provision of essential rescue and emergency equipment.

The report also highlighted the company’s lack of a written hazard communication programme for the worksite, inadequate entry permit documentation and insufficient training for employees in the safe performance of their assigned duties.

OSHA’s Fort Lauderdale area director Condell Eastmond concluded:

“The hazards of working in manholes are well established, but there are ways to make it safe.

“These employees needlessly lost their lives and others were injured due to their employer’s failure to follow safe work practices.”

### Safe work practices in confined space environments

In the UK, a 2020 [bulletin](#) from the Health and Safety Executive (HSE) also emphasised the importance of ensuring that confined space personnel are trained in knowing how to select the correct systems for gas detection and how to verify the effectiveness of that equipment.

The bulletin highlighted a workplace incident in which a gas detector failed to detect the presence of a flammable vapour, leading to an explosion which resulted in a fatal injury.

As the HSE report explained, the gas detector at the centre of the incident was found to have performed in accordance with the manufacturer’s specifications but was not the correct tool for the detection of the substance being measured.





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According to the HSE's Chemical, Explosives and Microbiological Hazards Division ([CEMHD](#)), the detector had been used for a substance other than its calibration gas and had also not been configured to include a correction factor.

The report recommended several key actions:

- The periodic calibration of gas detection equipment
- The carrying out of a function check prior to each use (and in particular where the substance of interest is not the substance being used to calibrate)
- Ensuring awareness of the response time of the combination of the gas detector and its sample tube

While the incident at the centre of the HSE safety alert focused on a highly flammable substance and measurement of LEL, it also highlighted the risks posed by other gases, in particular reactive gases such as H<sub>2</sub>S and NO<sub>x</sub>.

### Training for the challenges of confined space entry

What is also clear is that there is the need to ensure that personnel fully understand the risks that they may face when operating in hazardous confined space environments and that they are skilled in knowing how to handle and interpret their detector equipment. When considering options for multi-gas detector training, the use of realistic, hands-on scenarios can play a vital role in testing trainees' skills, building confidence and enhancing preparedness.

Argon Electronics' [MultiGAS-SIM](#) is an example of a simulator-based training tool that equips personnel for the complex challenges of operating in confined space environments.

The MultiGAS-SIM supports up to eight different simulation sensor types including O<sub>2</sub> and LEL.

The app can also be configured to include specific simulation sensors to replicate detectors with single or multiple sensor types.

When combined with the interface module, the MultiGAS-SIM app is also able to respond to independently deployed Long Range Vapour Source (LRVS) gas emitters.

## Detecting an unprecedented range of potentially harmful airborne compounds (video)

Source: <https://www.acs.org/content/acs/en/pressroom/newsreleases/2021/august/detecting-an-unprecedented-range-of-potentially-harmful-airborne-compounds-video.html>

Aug 25 — Many of the products we encounter daily — from deodorant to pesticides to paint — release molecules that drift through the air. Breathing in enough of the wrong ones can cause serious and potentially long-term health problems. However, it can be hard to estimate exposure because current devices are limited in what they can detect. Today, researchers report development of a new personal air-sampling system that can detect an unprecedented range of these compounds from a special badge or pen attached to someone's shirt or placed in a pocket.

A video on the research is available at [www.acs.org/VOCs](http://www.acs.org/VOCs).

The researchers will present their results today at the fall meeting of the American Chemical Society (ACS). ACS Fall 2021 is a hybrid meeting being held virtually and in-person Aug. 22-26, and on-demand content will be available Aug. 30-Sept. 30. The meeting features more than 7,000 presentations on a wide range of science topics.

"In every situation there's a unique set of compounds that could be present in the air, including potential hazards that we do not know about," says Allen Appleby, Ph.D., the project's senior researcher, who is presenting the research. "Using a single material, we can capture many classes of these compounds, called volatile organic compounds (VOCs), and potentially offer a much more comprehensive picture of exposures."

The U.S. military is eager to better understand the health threats its personnel face and has provided considerable funding for the project. However, the new sampler could also be used



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in many workplaces and at home, says Apblett, who is a professor at Oklahoma State University and co-founder of Airotect, the company developing the sampler.

VOCs are a major source of air pollution. The compounds originate from numerous household products, as well as from fuels such as gasoline and from industrial processes. Depending on which VOCs someone encounters and their level of exposure, problems ranging from nasal irritation to cancer can result.

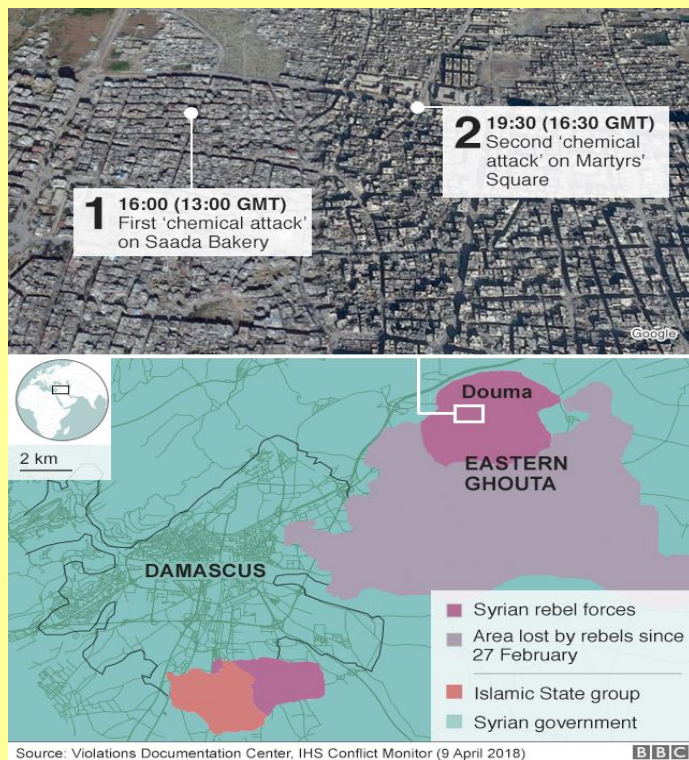
Because someone's exposures can vary as they move about, researchers have sought to design simple, lightweight detectors that can travel with the person and don't need electricity. Badges containing substances that absorb gases are already in use in some workplaces, but these materials have a shortcoming: They latch onto certain varieties of VOCs better than others. If a worker is concerned about, for example, the VOCs formaldehyde, benzene and naphthalene in one location, they would likely need two or more types of these devices to test for them, Apblett says. "We circumvent that with a material that can absorb the broadest spectrum of volatile organic compounds."

That new material is a silica with nanoscale pores contained within a roughly credit-card-sized badge that attaches to clothes. Airotect's team is also experimenting with other configurations to hold the silica, such as one that resembles a pen that could rest within a pocket or a fabric badge that could be sewn on. The silica, known as OSU-6 and developed by a graduate student in Apblett's lab, binds VOCs in its tiny pores through normally weak electrical attractions, known as van der Waals forces. The tight curvature of OSU-6's nanopores significantly enhances these forces, making it possible to bind VOCs much more strongly than the industry standard. Because these bonds are physical, not chemical, in nature, they allow the material to latch onto a wide range of compounds. When in use, the badge is opened to expose three OSU-6-filled tubes to the air. The length of time it's worn depends largely on the potential exposures. Afterward, the badge is sent to a lab where the VOC-laden material is warmed to release the compounds so the researchers can identify and quantify them.

Apblett and his colleagues at Airotect have so far tested the material's ability to detect well over 100 compounds in lab-based experiments. They have also found that OSU-6 stabilizes unstable or reactive compounds, making it more feasible to analyze traditionally difficult-to-monitor reactive compounds. The team has begun testing the sampler's ability to pick up pollutants common in workplaces such as commercial-scale manufacturing operations and agricultural production facilities. They have also begun using it in real-world military scenarios, including military deployments and a student's dormitory room. Once launched, the air sampler will be available to industry and the public, with the cost for device and the lab analysis starting at \$75.

## Syria refutes US accusation of 2013 chemical attack

Source: <https://www.sify.com/news/syria-refutes-us-accusation-of-2013-chemical-attack-news-international-vizhOfjhjgcjh.html>



Aug 25 – Syria's Foreign Ministry on Wednesday slammed the US State Department's recent statement accusing the Damascus government of carrying out a chemical attack in a former rebel-held area in 2013,

The Ministry dismissed the Department's statement as "baseless allegations... through which the US tried to distort facts and spread lies" about the alleged **chemical attack in the Eastern Ghouta** countryside of the capital Damascus, reports Xinhua news agency.

The State Department made the accusation in a recent statement alleging that the forces of Syrian President Bashar al-Assad used "nerve agent sarin" in the Ghouta district of Damascus to kill more than 1,400 people.

The Foreign Ministry, in its response, said that the statement clearly reflects "the US continued hostile method against Syria which comes to cover its failure in Afghanistan and its support to terrorism that Syria encounters".

"The government of the Syrian Arab Republic reaffirms once again that it stands against the use





of that kind of weapons in any place, at any time and under any circumstance and by any side as it is an issue that opposes Syria's principles and moral," said the Ministry.

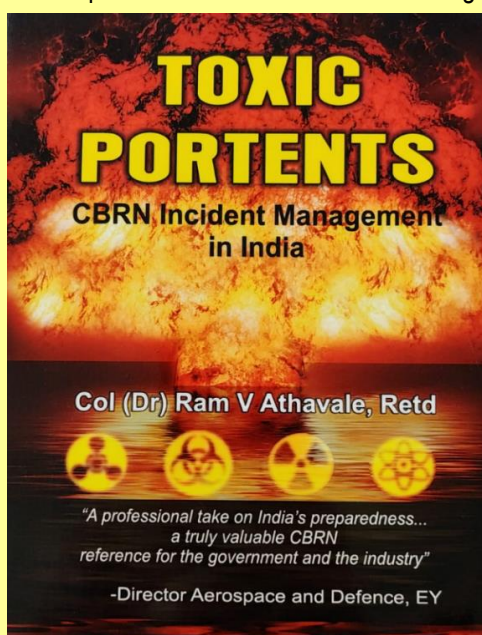
The attack, during the Syrian civil war, took place in the early hours of August 21, 2013, when opposition-controlled areas in Ghouta were struck by rockets containing the chemical agent sarin. Estimates of the death toll range from at least 281 people to 1,729. The attack was the deadliest use of chemical weapons since the Iran–Iraq War.

## Book Review – Toxic Portents: CBRN incident management in India

By Karuna John

Source: <https://www.financialexpress.com/lifestyle/book-review-toxic-portents-cbrn-incident-management-in-india/2316706/lite/>

Aug 24 – The term Chemical, Biological, Radiological and Nuclear (CBRN), is not as intense as the consequences of what devastation each of those elements can unleash on the world, should they be misused. Each time there is a war, a terror attack, or even a pandemic as the world is witnessing right now with Coronavirus, conversations and conspiracy theories start circulating, as news as well as keynotes of the infamous 'WhatsApp university'. Even the former, unfortunately is under informed on the subject.



There is not enough information on the dangers of CBRN elements should they fall into the wrong hands, because there are not enough subject experts willing to share information. A step in filling the glaring gap is Toxic Portents: CBRN Incident Management in India, authored by Col. Ram Athavale (retd). Athavale is a CBRN Security and Incident Management Consultant based in Pune, India and holds a PhD on the subject from the Savitribai Phule Pune University. His doctoral thesis was on 'CBRN Terrorism and its Crisis and Consequence Management in India', was perhaps how the seeds of Toxic Portents the book were sown.

According to Athavale, CBRN emergencies can be "a result of occupational exposure, fire, industrial explosions, release of toxicants and wastes". We see such incidents reported in the news often but as lay people seldom associate it with CBRN. Accidents such as these are often seen as a result of negligence in waste management, maintenance of equipment. The author states that CBRN can be both 'weaponized and non-weaponized', which simply put can be understood as 'you don't need to be in a war situation or a war zone' to be at risk here. Here is a recap, remember the Bhopal gas tragedy (1984), the suspected 'radiation' at Delhi (2010), Plague, Swine Flu, Dengue, Bird Flu, and of course Covid-19? Each of these saw a

near panic, rather a knee jerk response from the administrations concerned, emergency handling too was often symptomatic, and that is after the event had taken place. The lack of preparedness shook India, was recorded in history and exposed the lack of critical infrastructure. Once there was calm after the storm, there was talk of preparedness before the next disaster struck. However, as the second wave of Covid-19 exposed, that too remained a pipe dream. Hopefully, lessons have been learnt.

The book comes at a crucial time to remind that CBRN incident management has to be planned way ahead. When nothing is happening as far as an adverse incident is concerned. Rather, it is a reminder that CBRN incidents can and do happen, in varying intensities even though they are not noticed such as in vulnerable zones such as large public gatherings. The book aims at calmly raising awareness of CBRN threats and risk mitigation measures. It also stresses on an urgent need to educate and train all stakeholders including the general public on CBRN risks and threats.

Is India prepared? However, CBRN incidents are yet to enter the priority files of policy makers who have to be the first to generate awareness of such risks and mitigation. This book is for them, to understand CBRN threats and perhaps discuss the possible response scenarios. It also bravely lists out "What Ails the Indian CBRN Preparedness and Response", not something many policy makers and security experts want to acknowledge leave alone discuss.

Divided into chapters, with self-explanatory titles: Understanding CBRN Threats; Response to CBRN Incidents; Global Initiatives for CBRN Risk Mitigation, Is India Prepared?; What Ails the Indian CBRN Preparedness and Response; Enhancing CBRN Security, lead to suggestions such as 'Developing a National CBRN Strategy and Plan', a CBRN Incident Management Structure, Enforcement of Laws and Protocols, Proliferation Prevention and Border Control, CBRN Security for Critical Infrastructure and High Visibility Events, Industrial and Logistics Security, and Response



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Essentials, Col Athavale's intent to help, both as a subject expert, and as a concerned citizen are clear. However, it is not easy to predict if the book will have a difference where it matters: the political and policy making authorities.

A typical reader will find it highly technical, but someone interested in defence issues, technology, and security concerns will find it an engaging read. However, the book needs more graphics, and better photographs to have a bigger impact, and perhaps reach a younger readership of students, and lay citizens, who urgently need this information now, to be equipped and informed about CBRN, when they find themselves in charge of decision-making offices. Till then, it is a detailed reference book, which is likely to make the reader reach out to the author himself, for a detailed discussion.

### More about the reviewer of the book

*Karuna John is an independent writer and editor. She's worked with leading publications, print and digital for over two decades. Views expressed are personal and do not reflect the official position or policy of Financial Express Online.*

### More about the author of the book

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## Dangerous levels of 'forever chemicals' found at Great Lakes area military sites

Source: [https://www.upi.com/Health\\_News/2021/08/31/military-bases-great-lakes-dangerous-pfas-report/9791630345292/](https://www.upi.com/Health_News/2021/08/31/military-bases-great-lakes-dangerous-pfas-report/9791630345292/)



Six military bases in the Great Lakes region, including Michigan's Selfridge Air National Guard Base, which sits on the coast of Lake St. Clair, have "dangerously" high levels of toxic PFAS chemicals present in their groundwater, according to a new report. Photo by Senior Airman Ryan Zeski/U.S. Air National Guard

Aug 31 – Six military bases in the U.S. Great Lakes region have what an environmental group calls "dangerously" high levels of toxic chemicals called PFAS, according to a report published Tuesday.





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Groundwater samples from the sites contained elevated amounts of PFAS, or per- and polyfluoroalkyl substances -- often referred to as "forever chemicals" because they accumulate over time and do not break down, the Washington, D.C.-based research and advocacy organization Environmental Working Group [said in its report](#).

The affected sites include Niagara Falls Air Reserve Station in New York, as well as Wurtsmith Air Force Base, Alpena Combat Readiness Training Center and Selfridge Air National Guard Base in Michigan.

General Mitchell Air National Guard Base in Wisconsin and Duluth Air National Guard Base in Minnesota also had high levels of the chemicals in groundwater, according to Environmental Working Group.

These sites, which are managed by the U.S. Department of Defense, have PFAS levels high enough to harm the waters of the lakes and potentially affect their fish population, the group said.

Humans exposed to these chemicals, either directly or through eating fish that have absorbed them, also could face significant health complications.

"There are many sources of PFAS, but contaminated DoD sites have recorded some of the highest PFAS detections in the nation," said Scott Faber, senior vice president for government affairs at the Environmental

Working Group.

"Fish harvested near these DoD sites could have higher levels of PFAS contamination," he said.

The contamination underscores the need for swift PFAS cleanup by the DoD, which used these chemicals "in firefighting foams for decades and and knew of their harms," the report said.

The findings are based on an analysis of DoD data on PFAS contamination at the affected sites.

The data reveal levels of PFAS, including perfluorooctanoic, or PFOA, and perfluorooctanesulfonic acid, or PFOS, that range from 5,400 parts per trillion to 1.3 million parts per trillion in the groundwater at the six sites.

The U.S. Environmental Protection Agency uses a baseline level of 70 parts per trillion for areas that require remediation -- making the six locations' levels hundreds or thousands of times higher than those deemed acceptable.

Michigan's PFAS Action Response Team is aware of the contamination and is working with the DoD on remediation efforts, Scott Dean, strategic communications advisor for the state's Department of Environment, Great Lakes and Energy told UPI in an email.

"The focus is on protecting peoples drinking water and reducing or eliminating impacts on the environment," he said.

The PFAS Action Response Team in Michigan and the Department of Natural Resources in Wisconsin have both issued advisories warning against consumption of fish potentially exposed to PFAS.

A [similar analysis](#) conducted by the federal Government Accountability Office and released in June found evidence of PFAS contamination at 687 DoD-run sites.

Although the military has initiated investigations into the level of contamination or conducted remediation feasibility studies at more than 250 of these sites, clean-up efforts have yet to begin, according to GAO.

"DoD is generally focused on addressing PFAS in drinking water that exceeds the Environmental Protection Agency's lifetime health advisory by, for example, providing bottled water or installing treatment systems," Elizabeth Field, director of the GAO's defense capabilities and management team, told UPI in an email.

"However, the department is still in the early phases of investigating PFAS contamination in other environmental media, [such as] groundwater and soil, and as of the end of fiscal year 2020 hadn't begun any long-term cleanup efforts at its installations," she said.

In June, Richard Kidd, the deputy assistant secretary of defense for environment and energy resilience, [told the House Appropriations Subcommittee](#) that of the 129 DoD installations assessed for PFAS at that time, 66 "are proceeding to the remedial investigation and feasibility study."



The agency has committed to complete its investigation of PFAS contamination at bases and facilities by 2024. "DoD has previously testified that PFAS pollution is a priority," the Environmental Working Group's Faber said. However, "it could take many decades to clean legacy PFAS pollution in the groundwater and soil," he said.

## Unique Textile Coating to Alert on Chemical Hazard

Source: <https://i-hls.com/archives/110520>

Sept 03 – New military uniform nanocoatings can add fire and UV-light protection and chemical recognition capabilities to uniforms. In NATO-funded research, Jaime Grunlan, from the Department of Mechanical Engineering at Texas A&M University, is applying water-based nanocoatings to military clothing, adding protective properties.

Military clothing is made from a variety of textiles such as cotton, wool, and synthetic blends. When adding a protective property, the initial benefits of the material are generally lost.

"The reason we like cotton is its soft texture, just like we use nylon because it's strong," Grunlan said. "If the cotton is given flame-resistance properties, the fiber itself is modified, and the cotton will stiffen. Similarly, nylon exposed to a flame resistance treatment will weaken. Changing its structure essentially takes away its valuable intrinsic properties."

Grunlan has developed a water-based, nontoxic solution that can add properties without changing the inherent structure of the clothing.

**A piece of clothing is dipped into a curated solution with a positive charge, extracted, then placed into a solution with a negative charge. The attraction of the opposing charges bonds the chemicals, creating a microscopic nanocoating that adheres to the clothing's surface in an imperceptible layer.**

This technique, commonly referred to as **pad-dry processing**, can be duplicated with various solutions, creating multiple layers with each new deposition. Each solution is tailored specifically to add certain qualities to the fabric.

A unique aspect of the design is chemical recognition. If the nanocoating is exposed to a hazardous substance, **the material will change colors**. "Chemical warfare is increasingly becoming a threat," Grunlan said. "Many chemicals or gases cannot be seen in the air. For that reason, we're focused on detection based upon a color change, which will notify the user of the chemical agent, allowing them time to react quickly." The water-based composition of the solution contributes significantly to its multifunctionality.

## A Weapons of Mass Destruction Strategy for the 21st Century

By **Al Mauroni, Zachary Kallenborn, Seth Carus, and Ron Fizer**

Source: <https://warontherocks.com/2021/09/a-weapons-of-mass-destruction-strategy-for-the-21st-century/>

Sept 08 – The last time the U.S. government [published a national strategy](#) for countering weapons of mass destruction (WMD), Saddam Hussein was still ruling Iraq, North Korea's [Kim Jong-un](#) was a teenager, and [Xi Jinping](#) was governing a Chinese province. The White House and the Kremlin [were also talking about](#) "acting as partners and friends in meeting the new challenges of the 21st century." The world has changed greatly over the past twenty years, and ideally, so should national security strategies.

The December 2002 U.S. government concept for addressing WMD has been completely overtaken by strategic, political, and technological developments, including new risks posed by hypersonic missiles, cyber weapons, drone swarms, pandemic outbreaks, and AI. Today, the United States is threatened by a nuclear [North Korea](#), a potentially [nuclear Iran](#), and an eroding [nuclear nonproliferation framework](#). American policymakers have witnessed [North Korea](#), [Syria](#), and [Russia](#) all use chemical weapons in recent years and have seen concerning biosecurity trends in [Russia](#) and [China](#). Due to the nature of modern global supply chains, various state and non-state actors have greater opportunities to procure the materials and equipment needed to develop and deliver WMD.

Despite these threats, there is limited interagency collaboration, and no common approach, within the U.S. government to countering adversaries' development and use of WMD. Crises, more than deliberate planning, drive the federal government's actions. WMD pose an acute threat to the United States, but discussions about how to handle them have stagnated, leading to new vulnerabilities to U.S. national security. Today, there is a narrow window to define a new security strategy that builds upon the U.S. government's past brushes with international incidents, examines new threats, and leverages fresh ideas to improve U.S. foreign policy objectives.

The U.S. government should, through the National Security Council, formulate a unified strategy that addresses the changing character of, and challenges posed by, WMD. That strategy should align current and future national security capabilities in order to prevent the





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proliferation of such weapons and discourage adversaries from using them to harm the United States, allied nations, and broader American national security interests. An effective strategy should answer at least three questions: What does the term “weapons of mass destruction” mean today? How are WMD challenges changing? How should the U.S. government counter WMD? While the authors differ in our precise answers to these questions, we all believe they should be answered to address contemporary security challenges.



New Jersey National Guard (Photo by Mark C. Olsen)

### What Does the Term ‘Weapons of Mass Destruction’ Mean Today?

In 1948, the United Nations defined “[weapons of mass destruction](#)” as “atomic explosive weapons, radioactive material weapons, lethal chemical and biological weapons, and any weapons developed in the future which have characteristics comparable in destructive effect to those of the atomic bomb or other weapons mentioned above.” With the reference to future weapons, delegates of U.N. members recognized that new highly destructive weapons could emerge. Over time, the international arms control regimes identified non-lethal chemical and biological weapons (e.g., mustard agent, [agent BZ](#), [brucellosis](#), [Q fever](#)) as being “WMD.” [Debate continues](#) as to the possible inclusion of certain [central nervous system agents](#) and emerging infectious diseases as WMD.

Today, some emerging weapons may also warrant being considered as WMD. An out-of-control [cyber weapon](#), for example, may spread throughout the globe, damaging industrial systems. [Nanotechnology aerosols](#) may effectively serve as novel chemical weapons beyond the bounds of existing normative and treaty limitations, and armed, autonomous [drone swarms](#) marry mass harm with brittle, easily-fooled AI. Debate is needed on which, if any, of these weapons should be included alongside traditional WMD, and about the degree to which existing non- and counter-proliferation mechanisms are useful in mitigating the risks these new weapons present.

“Weapons of mass destruction,” and variations of the term “chemical, biological, radiological, and nuclear weapons,” do not appear capable of [accommodating emerging technology](#) risks. There is also a real debate to be had about whether the term remains useful in describing 21st-century challenges, or whether alternatives or supplements such as “[weapons of mass effect](#),” “[weapons of mass agility](#),” or “[weapons of mass disruption](#)” might be more appropriate.



Even without officials and analysts adopting new terms, it's a problem that the federal government does not have a standardized meaning of WMD. Seth Carus' [exhaustive study](#) found that the U.S. government has adopted 20 separate definitions of the term. For example, the departments of Defense and State focus on a defined list of chemical and biological warfare agents along with nuclear weapons as WMD, while the FBI considers any chemical or biological substance as well as high explosives used to harm individuals to be WMD. Definition proliferation is understandable because national security departments, agencies, offices, programs, and projects naturally differ in their focus. However, the cost of idiosyncratic definitions is incoherence in communicating to non-expert stakeholders in civil society, Congress, other members of the federal government, and adversaries that the United States might seek to deter or compel.

Three examples illustrate the definitional challenge and how language may encourage stakeholders to misinterpret policy, strategy, organizational agendas, and threat assessments. First, the Justice Department and the FBI talk about WMD threats when individuals or terrorists attempt to acquire ricin — and, often more precisely, a castor bean mash — or [improvised explosives](#). Neither case represents a plausible mass casualty scenario. This potentially confuses Congress and other policymakers as to what the U.S. government considers a WMD threat.

Second, former U.S. Ambassador to the United Nations Samantha Power [noted](#) in March 2015 that the Syrian government's use of chlorine bombs was “no less evil than that of chemical weapons,” and the use of chlorine in warfare also clearly falls under the scope of the Chemical Weapons Convention. Yet, the United States did not threaten, or pursue, military action or significant diplomatic efforts to disarm Syria of chlorine, akin to [its efforts to disarm Syria](#) of sarin, mustard gas, and other chemical agents. In the future, if U.S. policymakers issue a deterrent or compellent threat on the basis of the terms “weapons of mass destruction” or “chemical weapons,” how will the target of the threat assess American credibility? Based on the lack response to Syrian chlorine use? Or based on the U.S. airstrikes for [Syrian sarin use](#)?

Third, the public health and WMD communities clash over the extent to which bioterrorism and natural pandemics should fall under the scope of WMD response. The public health community uses bioterrorism to [petition for more resources as compensation for significant cuts](#) in federal and state funding. Meanwhile, the Pentagon's Chemical-Biological Defense Program, which was established in the late 1990s to address warfare agents, is increasingly funding research related to natural infectious diseases ([e.g., Operation Warp Speed](#)). Both cases represent mismanagement of federal funds due to the carefully chosen and ambiguous phrase “biological threats.” Adjudicating such issues at an interagency level would help to resolve the disputes.

### How Are WMD Challenges Changing?

Norms against the use of WMD are also threatened. In recent years, some states have used small quantities of chemical agents and radiological isotopes in attacks against domestic political opponents. For example, North Korea's regime assassinated [Kim Jung-nam](#), the half-brother of Kim Jong-un, with VX, and Russian intelligence officers attempted to kill [Sergei and Yulia Skripal](#) using Novichok nerve agents. [Bellingcat's](#) open-source investigations suggest Russia's chemical and biological weapons programs are much deeper and broader than had been publicly understood. At the same time, [global trends](#) such as declining U.S. influence, the rise of authoritarian leaders, and regional tensions are eroding the global nuclear nonproliferation framework.

New technologies are also making it easier for state and non-state actors to acquire, enhance, and use WMD. Today's biological researchers could use synthetic biology to accelerate the development of biological weapons agents, especially highly-controlled agents like [variola virus](#), and to enhance existing agents through gain-of-function research. Drones are a novel WMD delivery option. When coupled with AI-enabled sensors, drones [may increase the targetability](#) of chemical and biological weapons. That could enable the use of smaller amounts of agent and potentially undermine a core rationale for the global norm against them by making it possible to use chemical and biological weapons in a way that discriminates more between civilian and military targets. 3-D printing could potentially allow actors to fabricate the controlled or expensive [parts](#) and equipment needed to develop WMD and associated delivery systems. These technologies rely heavily on digital information — 3-D printer build files, AI software, drone control systems — and they are dual-use, rendering traditional nonproliferation tools like interdiction and export controls less effective. Addressing these challenges is likely to require adaptation of counterproliferation concepts.

These technologies were not foreseen when the initial Department of Defense counterproliferation concept was drafted in 2001. The department's approach was designed to address non-nuclear nation-states seeking chemical and biological weapons for strategic use, as well as to support the federal response to domestic chemical, biological, radiological, and nuclear terrorism incidents. An updated concept, based on direction provided in [Presidential Decision Directive 18](#) from 1993, needs to accommodate the return of great-power competition and aggressive acts conducted below the threshold of open combat. The military's offensive counter-WMD capabilities, such as pre-emptive attacks and [pathway defeat](#), are not necessarily useful





against nuclear powers such as Russia and China, except maybe to counter vertical proliferation in narrow circumstances. The U.S. government no longer has one strategy to counter WMD — it has at least three. There is the [Defense Department's strategy to counter such weapons](#), which includes the traditional mission to protect U.S. forces from adversaries using chemical, biological, radiological, and nuclear weapons on the battlefield. There is a [national strategy to counter WMD terrorism](#). And there is a [strategy to defend against and respond to chemical, biological, radiological, and nuclear incidents in the homeland](#). Within the U.S. government, and even within the Department of Defense, there are multiple concepts and plans to address WMD threats in each of these contexts. Integrating these strategies through a new overarching national strategy may improve unity of effort, identify complementary activities, and create new opportunities for joint activities. For example, any common themes or efforts in the more narrowly defined strategies represent areas where higher-level policy attention or resource allocation can create maximum impact.

### **How Should the U.S. Government Counter WMD Risks?**

The United States should have a guiding strategy to integrate activities aimed at ensuring non- and counter-proliferation of WMD across national security agencies. Such a strategy should recognize the common challenges WMD pose as a class — the need to reinforce international norms, identify and close off proliferation pathways, and punish egregious use of such weapons — but also appreciate the challenges unique to particular classes of weapons, such as the use of chemical weapons in assassination attacks. The guiding strategy should also delineate objectives related to responding to WMD, such as attribution, prosecution, and elimination, across federal agencies, while acknowledging that general response and recovery will be a function of the [National Response Framework](#) created in 1992.

American decision-makers should also take a hard look at what lessons the past two decades offer regarding the utility of particular policy levers, including deterrence, compellence, economic sanctions, and diplomatic sanctions. Policymakers should learn lessons from episodes such as the 2003 Iraq War, former President Barack Obama's attempt to deter Syrian chemical weapons use by setting a "red line," and former President Donald Trump's attempts to compel Syria to stop using chemical weapons. Likewise, if any emerging technologies do merit inclusion as WMD, then the United States should identify how policy levers may support counter- and non-proliferation of such technologies.

More broadly, U.S. policymakers should better investigate how policies, strategies, organizations, and specific operational tactics can be adapted to account for the changes emerging technologies create, both individually and in aggregate. While [various analyses](#) have explored what individual emerging technologies mean for WMD, [virtually none](#) have examined what they mean in aggregate. That's a problem. The U.S. government should understand how these technologies affect broader proliferation dynamics if it is to appropriately adjust its overall strategy. For example, one major shift is the intermingling of [physical and digital systems](#), which means cybersecurity organizations need to be part of the conversation about WMD.

A unified strategy should also aim to identify the specific roles of agencies — particularly those of the departments of Defense, State, Homeland Security, Health and Human Services, Justice, and Energy — as well as how those roles fit together. In the past few years, the national security bureaucracy has undergone major shifts in how it organizes itself, necessitating a clarification of responsibilities. New organizations have been created, including the Joint Artificial Intelligence Center, the U.S. Army Futures Command, and the proposed State Department Bureau for Cybersecurity and Emerging Technologies. Special Operations Command is now the [Department of Defense coordinating authority](#) responsible for assessing counter-WMD awareness and recommending improvements in the plans of other combatant commands. It took over that role from Strategic Command. How each of the various national security organizations supports WMD counter- and non-proliferation should be carefully defined and their responsibilities aligned.

New technologies and aggression below the threshold of open combat — what is now being called "the gray zone" of conflict — represent challenges to the arms control and nonproliferation community's traditional approach of enacting incremental changes during treaty reviews that happen every five years. China's illicit manufacture and shipment of fentanyl to the United States has no clear remedy in U.S. policy. Greater appreciation and preparation is needed within the Defense Department for potential Russian and Chinese use of chemical and biological weapons in regional conflicts, and the State Department has cited both for lack of compliance with arms control agreements. [Verification continues to be a wicked problem](#) for biological weapons and associated technologies decades after the Biological and Toxin Weapons Convention entered into force. In no small part, that is due to significant advances in technology such as synthetic biology and the gene-editing tool CRISPR. Perhaps developments in cyber espionage, AI, and biotechnology may create avenues for new approaches to solving these problems. We are doubtful a silver bullet exists, but clearly something has to change.

The U.S. government should also understand what biodefense looks like in a world that is increasingly dealing with significant public health and biosecurity challenges. American policymakers and officials should carefully assess what lessons the response to COVID-19



might offer for bioweapons preparedness and response, including understanding any errors to avoid. Potential areas for lessons learned include hospital preparedness for pandemic response, rapid vaccine development and deployment, and clearly demarcating agency responsibilities in the National Response Framework and other national guidance documents. How should the capabilities of the Department of Defense, Department of Homeland Security, and other major national security agencies support the efforts of more traditional pandemic-response organizations like the Department of Health and Human Services? The concept of “health security” as a feature of national strategy remains underdeveloped, and it deserves an equally in-depth review to one examining how to counter WMD.

### Next Steps

National security policy on WMD threats should expand beyond the traditional, technically focused counter-WMD community. By relegating WMD discussions to a few isolated offices, the Department of Defense and other government agencies have failed to integrate this mission into the contemporary strategies, plans, and capability developments necessary to handle future WMD crises. Without the active involvement of the entire national security community in a broad discussion about Secretary Lloyd Austin’s “[integrated deterrence](#)” concept and technology developments, the United States will continue to be hobbled by an outmoded WMD definition that only points to solutions that worked during the Cold War. It may be that the term “weapons of mass destruction” should be expanded, supplemented, or just go away. While valuable for the diplomatic community, the term may muddle strategic communication and create bureaucratic misunderstanding. Then again, bureaucratic inertia may mean the term is likely to be retained in its current form. If that is the case, the U.S. government should ensure the term aids, and does not inhibit, national security discussions on current challenges.

The National Security Council should launch a formal process to develop a national WMD strategy to replace the [2002 National Strategy to Combat Weapons of Mass Destruction](#). That process should include input from academics, nongovernmental organizations, and, of course, traditional national security agencies. As part of developing a strategy, policymakers should carefully consider relevant definitional issues. The overall aim of a National Security Council-led process should be to define what policies and strategies are best suited to limiting the vertical and horizontal proliferation of WMD, given specific security contexts such as major combat operations, irregular warfare, and homeland security.

Additionally, the strategy should clarify how it relates to other complementary strategies and national guidance documents, such as the [National Biodefense Strategy](#) and the National Response Framework. Both of these documents address aspects that overlap with WMD non- and counter proliferation and, as such, this revision should also reduce friction and ambiguity between strategies. Insights developed through the strategy development process, as well as the successes (and failures) of the resulting strategy, should inform future strategy development, organizational shifts, and legislative changes as appropriate. Despite the constant turmoil of today’s crises, the Biden administration should take the time to revisit and improve the U.S. approach to the very real threat of weapons of mass destruction.

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*The authors thank [Eric Brewer](#) for his thoughtful comments.*

## Handle with care – the world’s five deadliest poisons

By Simon Cotton

Source: <https://theconversation.com/handle-with-care-the-worlds-five-deadliest-poisons-56089>

When asked to name a poison, people may well think of cyanide, arsenic or strychnine. But these are not the most toxic substances known. More poisonous than these, but still not near the top of the tree, is [tetrodotoxin](#), the pufferfish toxin that poisons around 50 Japanese





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people every year. The fish is a delicacy in Japan, but can be lethal if prepared incorrectly. Incidentally, this was the poison favoured by evil assassin Rosa Klebb in James Bond film [From Russia With Love](#). It also crops up in the [blue-ringed octopus](#) and was more recently discovered in [tiny frogs in Brazil](#).

The LD50 (Lethal Dose, 50%) – the amount needed to kill 50% of the test population – is how toxicity is most often assessed, and is usually quoted per kilogram of body weight. On this scale, for example, sodium cyanide comes out at around 6 milligrams per kg. The LD50 of tetrodotoxin, by comparison, is around 300 micrograms per kg if orally ingested, and as little as 10 micrograms per kg if injected.

Assessing toxicity is not easy. The chemical state of a substance is important, as is how we ingest it. If we swallowed liquid mercury metal (as distinct from inhaling the vapour), it would very likely [pass straight through us harmlessly](#). And yet when in 1996 an American professor got just a drop or two of the compound dimethyl mercury on her rubber gloves, it penetrated the gloves and her skin, sending her into a [fatal coma some months later](#).

Nevertheless, here is a representative selection, in ascending order, of five truly deadly poisons, all at least a hundred times more toxic than cyanide, arsenic or strychnine.

### 5. Ricin

This extremely toxic plant poison was famously used to kill the Bulgarian dissident [Georgi Markov](#), exiled in London. On September 7 1978, he was waiting for a bus near Waterloo Bridge, when he felt an impact on the back of his right thigh. Looking round he saw a man bending down to pick up an umbrella. Markov was soon taken to hospital with a high fever – and died three days later. An autopsy revealed a tiny sphere made of a platinum-iridium alloy in Markov's thigh. The sphere had been drilled to take a small amount of ricin and may have been fired from an air gun hidden in the umbrella.

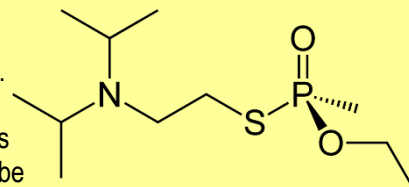


*Ricinus communis*

[Ricin](#) is obtained from the beans of the castor oil plant (*Ricinus communis*), which is cultivated to extract the oil – the ricin remains in the solid fibre. It is a glycoprotein that interferes with protein synthesis in the cell, [causing cell death](#). It has an LD50 of 1-20 milligrams per kg if orally ingested, but far less is required to kill if inhaled or injected (as in Markov's case).

### 4. VX

The only synthetic compound in our top five, VX is a nerve agent with the consistency of engine oil. It emerged from ICI's research into new insecticides in the early 1950s but proved too toxic to use in agriculture. VX kills by interfering with the transmission of nerve messages between cells; this requires a molecule called acetylcholine. After acetylcholine has passed on its message, it needs to be broken down (otherwise it will keep sending the message) by an enzyme catalyst called acetylcholinesterase. VX and other nerve agents stop this enzyme from working, so muscle contractions go out of control and you die of asphyxiation. Nerve agents explained.



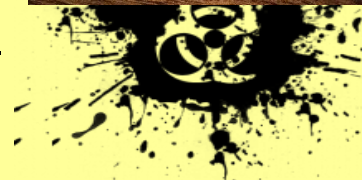
[Nerve agents](#) were made by both sides during the [Cold War](#), but VX became particularly well-known after featuring in Hollywood blockbuster film [The Rock](#). Only one person is known to have been killed by VX, a former member of the [Aum Shinrikyo cult](#), though some 4,000 sheep were killed by it in an accident in Skull Valley, Utah in 1968. It has an LD50 of as little as 3 micrograms per kg (although some reports suggest the figure is a little higher).

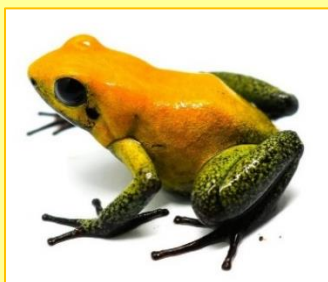
**EDITOR'S COMMENT:** All CWAs are synthetic; not just VX or nerve agents

### 3. Batrachotoxin

We've all heard of South American Indians using venom-tipped blowpipes to hunt their prey. Curare is the best known, and comes [from a plant](#). The most toxic, however, come from the skins of tiny frogs – and the deadliest of all is [Batrachotoxin](#).

*Phylllobates terribilis*





Native Indians in Western Colombia collect these frogs – golden *Phylllobates terribilis* and multicoloured *Phylllobates bicolor* – and sweat out the poison over a fire before putting it on their darts. The LD50 is around 2 micrograms per kg, meaning that an amount the size of two grains of table salt will kill you.

#### *Phylllobates bicolor*

Batrachotoxin kills by interfering with sodium ion channels in the cells of muscles and nerves, jamming them open so that they do not close. The continued migration of Na<sup>+</sup> ions results ultimately in [heart failure](#).

Interestingly, captive-born frogs of these species are not poisonous, suggesting that the poison is derived from their diet. Indeed, nearly 30 years ago, [Jack Dumbacher](#), an American ornithologist, was working in Papua New Guinea when he was scratched on the hand by one of the local Pitohui birds (photo right). He instinctively put his hand to his mouth, which started to go numb. Eventually, it was found that these birds – on the opposite side of the world to Colombia – have plumage containing the same poisonous molecule as the frogs. It is thought that both the birds and frogs obtain the toxin from the beetles they eat – although the poison is far less potent in the birds



## 2. Maitotoxin

There are a number of potent [marine toxins](#), such as Saxitoxin, which are often the cause of poisoning after [eating contaminated shellfish](#). These are often associated with harmful [algal blooms in the sea](#).

Maitotoxin is the most lethal of these substances, reckoned to have a LD50 about an order of magnitude less than batrachotoxin. Formed by a dinoflagellate, a kind of marine plankton, it has a very complicated structure, which presents a massive challenge to synthetic chemists. Maitotoxin is a cardiotoxin, it exerts its effects by increasing the flow of calcium ions through the

[cardiac muscle membrane](#), causing heart failure.

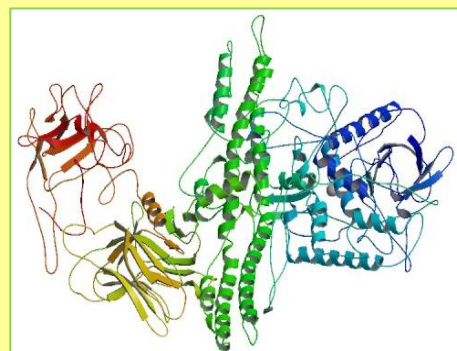
## 1. Botulinum toxin

Scientists differ about the relative toxicities of substances, but they seem to agree that [botulinum toxin](#), produced by anaerobic bacteria, is the [most toxic substance known](#). Its LD50 is tiny – at most 1 nanogram per kilogram can kill a human. Extrapolating from its effect on mice, an intravenous dose of just 10<sup>-7</sup>g would be fatal to a 70kg person.

It was first identified as a cause of food poisoning due to incorrectly prepared sausage (Latin, *botulus*) in late-18th century Germany. There are several botulinum toxins, with type A (figure right) being the most potent. These are polypeptides, consisting of over 1,000 amino acid molecules joined together. They cause muscle paralysis by preventing the release of the signalling molecule (neurotransmitter) acetylcholine.

This same paralyzing property is fundamental to the clinical use of the botulinum toxin in cosmetic [Botox](#). Targeted injections of tiny amounts of the toxin stop particular muscles from working, relaxing muscles that would otherwise cause wrinkly skin. But it has also been applied to a range of clinical conditions, such as paralyzing muscles that, if untreated, would cause crossed eyes (strabismus).

There is increasing interest in using the properties of toxic substances medicinally. The venom of the lethal Brazilian pit viper, *Bothrops jararaca*, for example, contains blood-pressure reducing molecules that have led to pioneering treatments for [high blood pressure](#).



As Greek Paracelsus is reported to have said 500 years ago: “All things are poison, and nothing is without poison: the dose alone makes a thing not poison.” And he had a point. Ultimately, we are surrounded by potentially dangerous substances – it’s the dose that makes it deadly.

*Simon Cotton is Senior Lecturer in Chemistry, University of Birmingham.*





## AccuSense Chemical Recognition System

Source: [https://static1.squarespace.com/static/5cdd96b492441ba96cb4ded9/t/5ce1d1eea265cb0001172e4d/1558303218134/accusense\\_overview.pdf](https://static1.squarespace.com/static/5cdd96b492441ba96cb4ded9/t/5ce1d1eea265cb0001172e4d/1558303218134/accusense_overview.pdf)

The new AccuSense Chemical Recognition System from Seer Technologies allows you to detect, identify, monitor and quantify a multitude of different gases.

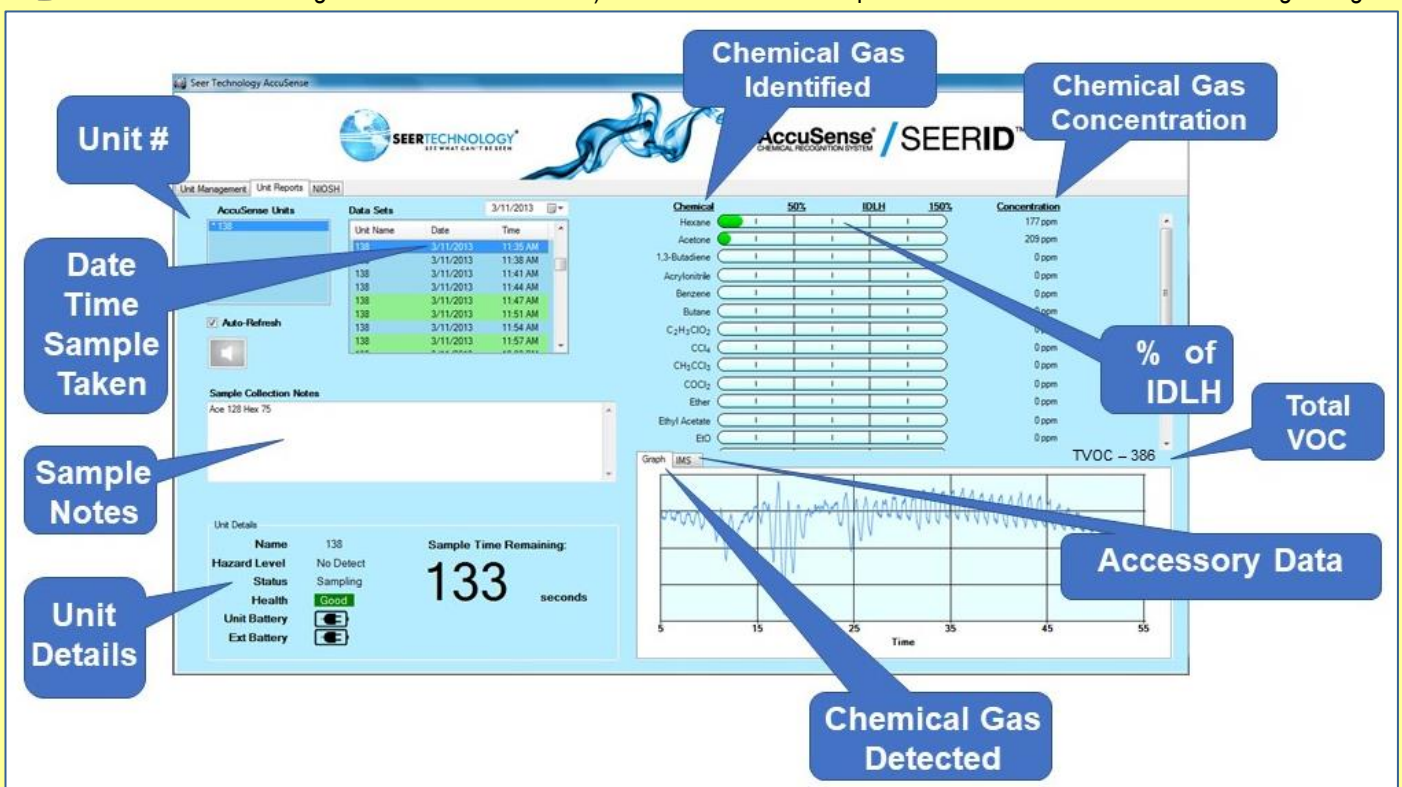
With the dangers of chemical attack always present the importance of the quickest possible first response is critical. Over the years there have been a variety of technologies available to give an indicative measurement of chemical toxicity and threat level or a quantitative measurement that relies on laboratory analysis and give a result days or weeks after the event. The limitations of existing technologies have of course been a huge deficit with regard to the speed and quality of response putting the public and responders at undue risk or delaying response.

The AccuSense from Seer Technologies has been built with the first responder in mind. The system has been built for field deployment and with 15 years of development has ended up being laboratory quality. The system consists of the easily transportable Accusense which can wireless communicate via RF or hardwire Ethernet to a central controller which can communicate with up to 8 field deployed Accusense units.

AccuSense is a laboratory-quality chemical recognition system that provides concentration levels of multiple chemicals simultaneously in a field-portable or fixed-position scenario.

**The robust stainless steel Accusense can be deployed in seconds and with a 3 minute sampling time can give a direct result for up to 21 chemical compounds directly on the control system in seconds.**

The system provides not only an overview of what you have in the air but also giving direct concentrations down to a 1ppm (Part Per Million) resolution. The system incorporates as standard all NATO IDLH (Immediately Dangerous to Life and Health) levels and the 21 compounds can be selected from an ever growing list



## HZS C<sup>2</sup>BRNE DIARY – September 2021

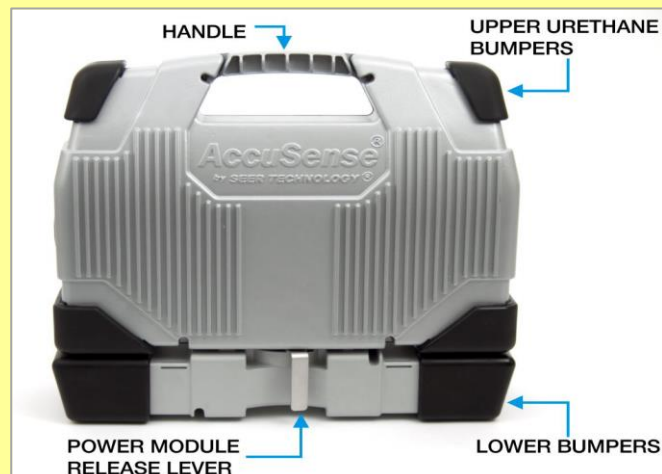
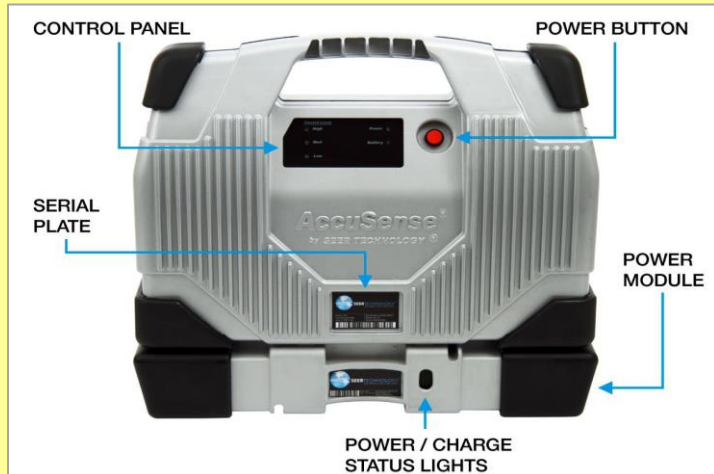
currently over 100! Operators can also skip directly into the NIOSH documents related to the chemical with a single click enabling an instant implementation of risk assessment and response requirements; including breathing apparatus and skin contact.

### So what are the main features?

- ✓ Patented dual hyphenated technology enabling identification of up to 21 chemicals
- ✓ Updated chemical library of over 100 chemicals with new additions being made all the time
- ✓ 3 minute real time sample and analysis
- ✓ IDLH – (immediately dangerous to life and health) alarms for all monitored compounds
- ✓ Rapid deployment with one button operation
- ✓ PC software shows graphical representations for each chemical including in ppm
- ✓ Detection levels down to 1 ppm
- ✓ 16 hour battery life
- ✓ Up to 8 units monitored from one single work station
- ✓ No consumables required

Applications can include; Hazmat response, Law enforcement, military, Site protection, industrial, worker safety, fence line monitoring, process monitoring and for on-site response teams.

The AccuSense is available to hire or buy at Shawcity. Please visit us on stand I100 to get a hands on experience.



## Chemical weapons destruction shut down by COVID because of full hospitals

Source: <https://www.wtvq.com/2021/09/22/chemical-weapons-destruction-shut-down-by-covid-because-of-full-hospitals/>

Sept 22 – The Bluegrass Army Depot, which employs about 1,500 people destroying the last stockpile of the nation's chemical weapons of mass destruction, is not operating right now because all the hospitals in the community are full.

The contract for the weapons destruction requires hospital beds to be available in case of an accident at the plant so workers can be treated.







An operator uses a lift assist to safely place a 155mm projectile containing VX nerve agent in a tray to begin the destruction process at the Blue Grass Chemical Agent-Destruction Pilot Plant. As of May 28, two of five chemical weapons destruction campaigns are complete at the Blue Grass Army Depot.

“The hospitals are now full so with that criteria not being able to be fulfilled, operations at the plant had to cease temporarily until we can get past the surge from the COVID situation,” Craig Williams told the Legislature’s Interim Joint Committee on Veterans, Military Affairs and Public Protection during a hearing Wednesday.

Williams is with the Kentucky Environmental Foundation and serves as a liaison between Madison County officials and the Pentagon and on the Citizens Advisory Committee that links base operations to the community.

## Pet Respiratory Tent

Source: [www.impertechsafety.com](http://www.impertechsafety.com)

The Pet Respiratory Tent provides protection against chemical and biological agents, as well as radioactive dust particles. The filter has a sturdy design appropriate for military and civil defense use, and can be reused if not exposed to chemical or radioactive hazards.

The tent is made from laminate-230, and has one entrance with 4 transparent squares. Its volume is 400 liters and it can contain animal/s who weigh up to 10 Kg in total. Its total length is 1300 mm.

The respiratory tent is resilient and sturdy. It folds flat for storage and can be quickly opened and connected to the air blower hose.



## HZS C<sup>2</sup>BRNE DIARY – September 2021

The tent's battery-powered CBRN blower creates overpressure within the interior of the tent, so as to prevent the entry of chemical and biological contaminants. It supplies approximately 90 liters of air per minute and is powered by 5.8V lithium batteries, providing at least 15 hours of continual operation.

Made from polycarbonate, the blower is fitted with loops for suspension from a belt or back harness, providing maximum convenience under field conditions.

Each Pet Respiratory Tent contains a CBRN filter / P3 filter, a laminate tent, a BL-90 blower, 8 AAA batteries, and a pasture of synthetic grass.

The tent was tested on animals, such as: dogs, cats and ornamental birds.



### Key Features

- ✓ Superior Safety: The respiratory tent provides protection against chemical and biological agents, and radioactive dust particles
- ✓ Guaranteed protection: the tent is connected to a CBRN filter
- ✓ The tent provides 16 air change cycles per hour
- ✓ Can contain more than one animal
- ✓ User comfort: Easy and convenient to operate, strong and durable
- ✓ Allows interaction with the animal/s inside
- ✓ Easy to store
- ✓ Easy to assemble
- ✓ Comes with comfortable synthetic grass for animal comfort
- ✓ Versatile

## Rheinmetall to upgrade Germany's Fuchs / Fox reconnaissance vehicle

Source: <https://www.army-technology.com/news/rheinmetall-upgrade-fuchs-fox-reconnaissance-vehicle/>

TPz FUCHS 1A8 NBC variants of Norwegian armed forces. Credit: Rheinmetall Defence / WikiCommons. Sept 22 – Rheinmetall has secured a contract from Bundeswehr, the unified German Armed Forces, to upgrade Fuchs / Fox armoured NBC reconnaissance vehicle.

Under the contract, Rheinmetall will modernise five A6A1 versions of the vehicle to the new A8A7 configuration.

The works are slated to begin this month and are expected to complete by July 2024. Rheinmetall aims to start delivering the upgraded versions to Bundeswehr in 2023.



The order secures jobs Rheinmetall's Kassel plant. In the future, the Bundeswehr may also look to upgrade its 22 remaining Fuchs / Fox armoured NBC reconnaissance vehicles to the new A8A7 configuration.





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Since 1979, Bundeswehr has fielded several versions of the Fuchs / Fox armoured transport vehicles. More than 100 units of such vehicles were also deployed in Afghanistan.

Overall, around 1,600 Fuchs / Fox vehicles were built to date. Several armed forces have purchased different variants of the vehicle to meet their requirements.

These include armoured personnel carriers, mobile command posts, field ambulances and NBC reconnaissance vehicles.

The latest version of the Fuchs / Fox is the 1A8 variant, which offers greater protection against mines and improvised explosive devices compared to earlier models.



**2021 CBRNe-related conferences**

**NCT Europe 2021**

5-7 October 2021, Italy

<https://nct-events.com/event/nct-cbrne-europe-2021>

**Europe's largest CBRNe event** is coming to Italy for the first time at the **Italian Joint NBC Defense School in Rieti**! Once again NCT will be the leading forum for European and international CBRN Defense Commanders, civil first responders, law enforcement agencies and industry representatives to exchange knowledge on future mission requirements, research and development and next generation CBRNe threats.

**NCT Virtual Hub - Italy's response to COVID-19: Lessons Learned**

7 October, Online

Live from our **NCT Europe 2021** at the NBC School in Rieti, Italy, world top experts will analyze the impact of the COVID-19 pandemic and Italy's response to it.

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

TBD, Online


**NCT Asia Pacific 2021**

10-12 November 2021, Korea

<https://nct-events.com/event/nct-cbrne-asia-2021>

**NCT CBRNe Asia Pacific** is coming to Seoul, 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.

**NCT Virtual Hub - Future Trends in CBRN Decon**

TBD, Online

**CBRNE Summit USA**

12-14 October 2021, Las Vegas, NV, USA

<https://intelligence-sec.com/events/cbrne-summit-usa-2021-2/>

We are pleased to announce the launch of our **CBRNe Summit USA** conference and exhibition which will take place in Las Vegas, Nevada, on the 12th – 14th October 2021. CBRNe threats are increasing and also the threat of lone wolf extremists carrying out random attacks in major cities.

During our international event you will hear perspectives from military and civil officials who deal with CBRNe incidents. Many government departments and agencies across





## HZS C<sup>2</sup>BRNE DIARY – September 2021

the region have realised 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 USA will focus on a number of key topics across the whole spectrum of the CBRNe domain such as local Nevada State CBRNe Response Capabilities, Chem-Bio Countermeasures and Response strategies, International CBRNe Response and Preparedness, U.S. Preparedness and Response to CBRNe Threats and Attacks, First Responder Techniques – Hazmat and Decon and Combating Infectious Diseases across the U.S.

To take part in our inaugural CBRNe Summit USA conference and exhibition as either a speaker, sponsor, exhibitor or delegate please contact us at [events@intelligence-sec.com](mailto:events@intelligence-sec.com) or call us at +44 7792 47 32 46.

## NATO EOD Demonstration & Trials

13-14 October 2021, Slovakia

<https://www.eodcoe.org/en/events/nato-eod-demonstrations-trials-2021/>

We all recognize that we are in the era dealing with a range of prominent threats such as cyber or terrorism. Permanent constant technical development of engineering technology and related procedures are forcing action to seek constantly better solutions related to detection, neutralization and removal of all types of hazards.

The main idea of the **NATO EOD Demonstrations and Trials 2021** is "*Technological Innovations Influencing Future EOD and Related Capabilities*", a challenge for EOD/IEDD experts, scientists, producers, industry and SMEs involved in the fight against terrorism.

The event is held under the sponsorship of the NATO HQ ESC (Emerging Security Challenging) Division and is organized by the NATO EOD Centre of Excellence, Slovakia.



## 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 7<sup>th</sup> 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](mailto:events@intelligence-sec.com) or by phone +44 (0)1582 346 706.



## IMEKO-TC17 International Measurement Federation TC17-VRISE2021: Topical VIRTUAL Event

### CALL FOR ABSTRACT

EVENT DATE: Friday Oct 6th, 2021

Theme: TC17 VRISE2021 - Topical Event on Robotics for Risky Interventions and Environmental Surveillance

Abstract are solicited from prospective authors on topics related to the theme of Robotics for Risky Interventions and Environmental Surveillance for the TC17-VRISE2021: Topical Event



### SCOPE and Topics

*Measurement of CBRNE – related environmental risks Environmental surveillance (air quality, pollution, etc, Search and Rescue by incidents/accidents/disasters), Medical Management (teaching facilities, entertainment facilities, hospitality facilities, etc.) and Robotics Trends, Detection sensing systems*

The abstracts are limited to only 450 words and limited to 2 pages (12 font Cambria for text). [No paper submission is required]

- ✓ Deadline to receive the abstract.....**July 30th, 2021**
- ✓ Date for Approval to authors .....Aug 1st, 2021

### Please note the following for the event

- 1) The number of presentations is limited to 15. The abstract selection committee will select the papers based on the quality and the relevance to the theme.
- 2) Only Abstract will be submitted by authors. A composite collection of abstracts for all presentations will be provided online to all attendees.
- 3) Registration for all video-attendees will be complimentary. All attendees will register using IEEE Vtools.
- 4) **A local physical participation is also foreseen. Fees 50€ (lunch/coffee) , information on accommodations and registrations on request**
- 5) All registrants will be provided ZOOM URL to login and only registrants will be allowed to attend this free event.
- 6) Authors of a number of selected presentations will be requested to submit papers after the event for possible IMEKO publication(optional) with no charges.

### Event Coordinators

Prof em Y.Baudoin (ICI/RMA/ER KC) ,Vice-Chair TC17,  
M.Y.Dubucq (Dir ICI), Prof O.Tokhi (CLAWAR), Dr Ir Zafar Taqvi (Chair IMEKO TC17)

### Advisers

Claude Lefebvre (General secretary FSF-IHCE)  
Dr I. Galatas (Center for Security Studies (KEMEA), Athens  
Dr F.Van Trimpont (General Secretary of European Council of Disaster Medicine)

### Event Organizers Supporting the Event:

- ICI
- IEEE Galveston Bay Section, Region 5

### PLEASE SEND YOUR ABSTRACT TO THE FOLLOWING

- ❖ Dr Zafar Taqvi, [z.taqvi@ieee.org](mailto:z.taqvi@ieee.org)
- ❖ Prof Y. Baudoin, [Yvan.Baudoin@ici-belgium.be](mailto:Yvan.Baudoin@ici-belgium.be)





## Qatar Health 2022

08-12 February 2022

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

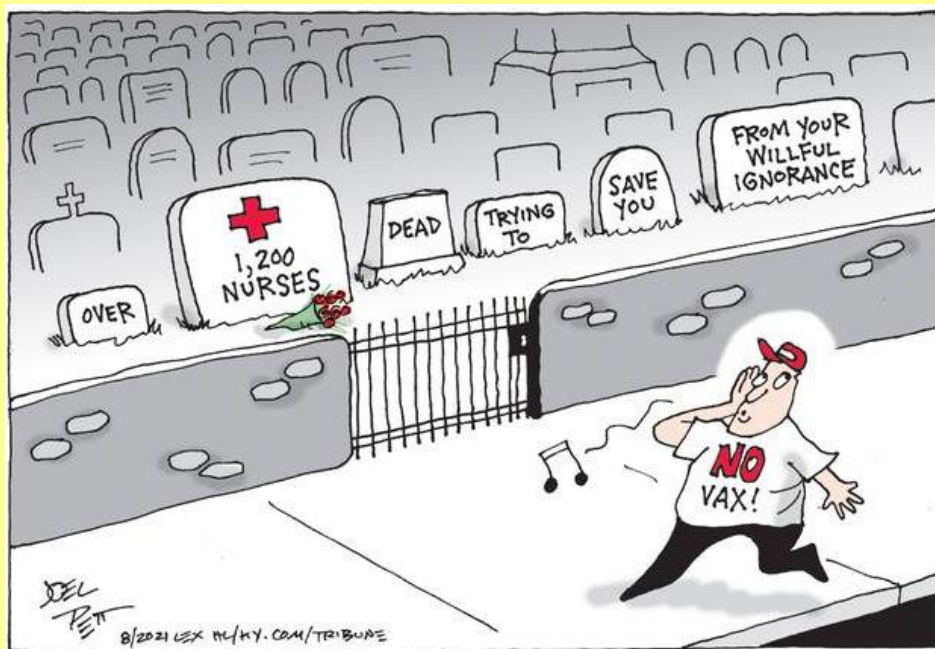
Qatar Health 2022 is a collaborative effort between Hamad Medical Corporation and the Ministry of Public Health in preparation for the FIFA World Cup 2022. It will be virtually hosted in Qatar from 8 to 12 February 2022. The conference will build on the previous success of QH2020 and QH2021 by continuing 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.

►► Abstract submission deadline: 27 July 2021.





ICI  
International  
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HOTZONE  
SOLUTIONS  
GROUP



# BIO NEWS





## Scientists Have Calculated The Probability of Another COVID-Level Pandemic Emerging

Source: <https://www.sciencealert.com/stats-suggest-the-probability-of-a-covid-19-like-pandemic-is-about-2-in-any-given-year>

Aug 24 – Statistics aren't everyone's cup of tea. They can be complicated, bad actors can [cherry pick what they like](#), and sometimes they can tell us things we don't want to know.

For example, a new statistical study has discovered that large pandemics are much more common than you might expect. In fact, the team found that a [pandemic](#) with a similar level of impact to [COVID-19](#) has around a 2 percent probability of occurring each year. When you add that up across an entire lifetime, this means we each have a 38 percent chance of experiencing a big one at least once, and the odds look set to get worse with time.

"The most important takeaway is that large pandemics like COVID-19 and the [Spanish flu](#) are relatively likely," [said Duke University global environmental health researcher, William Pan.](#)

The team looked at the historical record of epidemics from the year 1600 until now. They found 476 documented epidemics, around half of which had a known number of casualties. About 145 caused less than 10,000 deaths, while 114 others we know existed, but not the number of deaths.

Importantly, infectious diseases that are currently active were excluded from the analysis – so that means no COVID-19, [HIV](#), or [malaria](#).

The team used detailed modelling with a [generalized Pareto distribution](#) to analyze the data, finding that the yearly number of epidemics is immensely variable, and an extreme [epidemic](#) like the [Spanish flu](#) of 1918-1920 had a probability of occurring somewhere between 0.3 and 1.9 percent each year over the last 400 years.

"The slow decay of probability with epidemic intensity implies that extreme epidemics are relatively likely, a property previously undetected due to short observational records and stationary analysis methods," [the team writes in the paper.](#)

But this isn't a steady probability either – it's growing.

In the last 50 years, we've seen increasing levels of new pathogens spreading through humans. [SARS-CoV-2](#) is the most obvious example, but even in the last few decades we've had swine flu, bird flu, [Ebola](#), and many, many more.

"Together with recent estimates of increasing rates of disease emergence from animal reservoirs associated with environmental change," [the team writes,](#) "this finding suggests a high probability of observing pandemics similar to COVID-19 (probability of experiencing it in one's lifetime currently about 38 percent), which may double in coming decades."

So, even while we are recovering from a current outbreak, it's important that we don't assume we won't see another life-changing pandemic soon enough.

In fact, if we play our cards right, our response and resources for COVID-19 can prepare us [for the next pandemic.](#)

"This points to the importance of early response to disease outbreaks and building capacity for pandemic surveillance at the local and global scales, as well as for setting a research agenda for understanding why large outbreaks are becoming more common," [Pan said.](#)

If statistics have anything to do with it, the next pandemic is coming – let's just hope we don't forget the past.

▶▶ The research has been published in [PNAS](#).

## How Will Delta Evolve Next? A Scientist Predicts What The Future Could Look Like

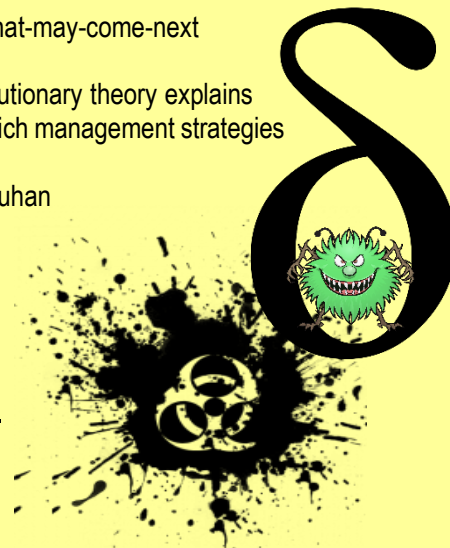
By Hamish McCallum

Source: <https://www.sciencealert.com/here-s-how-evolutionary-theory-explains-delta-and-what-may-come-next>

Aug 24 – The [COVID-19 pandemic](#) is a dramatic demonstration of evolution in action. Evolutionary theory explains much of what has already happened, predicts what will happen in the future and suggests which management strategies are likely to be the most effective.

For instance, evolution explains why the [Delta variant](#) spreads faster than the original Wuhan strain. It explains what we might see with future variants. And it suggests how we might step up public health measures to respond.

But Delta is not the end of the story for [SARS-CoV-2](#), the virus that causes COVID-19. Here's what evolutionary theory tells us happens next.



### Remind me again, how do viruses evolve?

[Evolution](#) is a result of random mutations (or errors) in the viral genome when it replicates. A few of these random mutations [will be good for the virus](#), conferring some advantage. Copies of these advantageous genes are more likely to survive into the next generation, via the process of natural selection.

New viral strains can also develop via [recombination](#), when [viruses](#) acquire genes from other viruses or even from their hosts.

Generally speaking, we can expect evolution to favor virus strains that result in a steeper [epidemic](#) curve, producing more cases more quickly, leading to two predictions.

First, the virus should become more transmissible. One infected person will be likely to infect more people; future versions of the virus will have a higher reproductive or R number.

Second, we can also expect evolution will shorten the time it takes between someone becoming infected and infecting others (a shorter "serial interval").

Both these predicted changes are clearly good news for the virus, but not for its host.

### Aha, so that explains Delta

This theory explains [why Delta is now sweeping the world](#) and replacing the original Wuhan strain.

The original Wuhan strain had an R value of 2-3 but Delta's R value is about 5-6 (some researchers say this figure is [even higher](#)).

So someone infected with Delta is likely to infect at least twice as many people as the original Wuhan strain.

There's also evidence Delta has a [much shorter serial interval](#) compared with the original Wuhan strain.

This may be related to a [higher viral load](#) (more copies of the virus) in someone infected with Delta compared with earlier strains.

This may allow Delta to transmit sooner after infection.

A higher viral load may also make Delta transmit more easily in the [open air](#) and after "[fleeting contact](#)".

### Do vaccines affect how the virus evolves?

We know COVID-19 vaccines designed to protect against the original Wuhan strain work against Delta but are [less effective](#). Evolutionary theory predicts this; viral variants that can evade vaccines have an evolutionary advantage.

So we can expect an [arms race](#) between vaccine developers and the virus, with vaccines trying to play catch up with viral evolution.

This is why we're likely to see us having regular [booster shots](#), designed to overcome these new variants, just like we see with flu booster shots.

COVID-19 vaccines [reduce your chance](#) of transmitting the virus to others, but they don't totally block transmission. And evolutionary theory gives us a cautionary tale.

There's a [trade-off](#) between transmissibility and how sick a person gets (virulence) with most disease-causing microorganisms. This is because you need a certain viral load to be able to transmit.

If vaccines are not 100 percent effective in blocking transmission, we can expect a shift in the trade-off towards higher virulence. In other words, a side-effect of the virus being able to transmit from vaccinated people is, over time, the theory predicts it will become more harmful to unvaccinated people.

### How about future variants?

In the short term, it's highly likely evolution will continue to "fine tune" the virus:

- its R value will continue to increase (more people will be infected in one generation)
- the serial interval will decrease (people will become infectious sooner)
- variants will make vaccines less effective (vaccine evasion).

But we don't know how far these changes might go and how fast this might happen.

Some scientists think the virus may already be approaching "[peak fitness](#)". Nevertheless, it may still have [some tricks up its sleeve](#).

The UK government's Scientific Advisory Group for Emergencies (SAGE) has recently [explored scenarios](#) for long-term evolution of the virus.

It says it is almost certain there will be "antigenic drift", accumulation of small mutations leading to the current vaccines becoming less effective, so boosters with modified vaccines will be essential.

It then says more dramatic changes in the virus ("antigenic shift"), which might occur through recombination with other human coronaviruses, is a "realistic possibility". This would require more substantial re-engineering of the vaccines.

SAGE also thinks there is a realistic possibility of a "reverse zoonosis", leading to a virus that may be more pathogenic (harmful) to humans or able to evade existing vaccines. This





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would be a scenario where SARS-CoV-2 infects animals, before crossing back into humans. We've already seen SARS-CoV-2 infect [mink, felines, and rodents](#).

### Will the virus become more deadly?

Versions of the virus that make their host very sick (are highly virulent) are generally selected against. This is because people would be more likely to die or be isolated, lowering the chance of the virus transmitting to others.

SAGE thinks this process is unlikely to cause the virus to become less virulent in the short term, but this is a realistic possibility in the long-term. Yet SAGE says there is a realistic possibility more virulent strains might develop via recombination (which other coronaviruses are known to do).

So the answer to this critical question is we really don't know if the virus will become more deadly over time. But we can't expect the virus to magically become harmless.

### Will humans evolve to catch up?

Sadly, the answer is "no". Humans do not reproduce fast enough, and accumulate enough favorable mutations quickly enough, for us to stay ahead of the virus.

The virus also does not kill most people it infects. And in countries with well-resourced health-care systems, it doesn't kill many people of reproductive age. So there's no "selection pressure" for humans to mutate favorably to stay ahead of the virus.

### What about future pandemics?

Finally, evolutionary theory has a warning about future pandemics.

A gene mutation that allows a virus in an obscure and relatively rare species (such as a bat) to gain access to the most common and widely distributed species of large animal on the planet – humans – [will be strongly selected for](#).

So we can expect [future pandemics](#) when animal viruses spill over into humans, just as they have done in the past.

*Hamish McCallum is Director, Centre for Planetary Health and Food Security @ Griffith University.*

## Pfizer COVID-19 vaccine is first to receive full FDA approval

Source: <https://newatlas.com/health-wellbeing/pfizer-coronavirus-vaccine-full-fda-approval/>

Aug 23 – The US Food and Drug Administration (FDA) has now fully approved Pfizer's mRNA vaccine, making it the first COVID-19 vaccine to be completely authorized and marked as safe for use. The approval is hoped to instill confidence in those still hesitant to get vaccinated.

Pfizer's COVID-19 vaccine, developed with BioNTech, was the first to become available in the United States after receiving an emergency use authorization (EUA) last December. The EUA was based on initial clinical trial data including around 40,000 people. Full FDA approval required additional efficacy data and a longer safety follow-up, which Pfizer and BioNTech submitted in May.

The updated trial data concluded the vaccine was 91 percent effective in preventing symptomatic COVID-19. About 12,000 subjects in the trial have been followed for over six months to affirm the vaccine's long-term safety profile.

"Based on the longer-term follow-up data that we submitted, today's decision by the FDA affirms the efficacy and safety profile of our vaccine at a time when it is urgently needed," says Albert Bourla, Pfizer's CEO. "About 60 percent of eligible Americans are fully vaccinated, and infection, hospitalization and death rates continue to rise rapidly among unvaccinated populations across the country. I am hopeful this approval will help increase confidence in our vaccine, as vaccination remains the best tool we have to help protect lives and achieve herd immunity."

Pfizer indicates it has shipped 1.2 billion doses of its vaccine since December 2020. More than 120 countries have administered those doses.

Following the FDA approval the vaccine can now be marketed in the United States under its commercial name, Comirnaty. Pronounced koe-mir'-na-tee, the name is a portmanteau of COVID, mRNA and immunity.

The FDA's full approval allows the vaccine to be administered to all adults over the age of 16. An EUA allows for 12 to 15 year-olds to receive the vaccine, while ongoing trials are yet to offer clarity on vaccination for younger children.

The full approval only covers the two-dose protocol. Despite a recent [US government vaccine booster announcement](#), the FDA is yet to authorize third doses to the general



population. However, the full approval does open the door to off-label uses of the vaccine. This means doctors and clinicians can offer third doses to patients if they so choose.

It is hoped this approval helps convince those yet to be vaccinated to take the leap. A [recent poll](#) found 30 percent of unvaccinated adults cited a lack of full FDA approval as the reason they have not yet had a shot. Peter Marks, director of FDA's Center for Biologics Evaluation and Research, says he hopes this full approval helps the public understand this vaccine is safe and effective.

"Our scientific and medical experts conducted an incredibly thorough and thoughtful evaluation of this vaccine," says Marks. "We evaluated scientific data and information included in hundreds of thousands of pages, conducted our own analyses of Comirnaty's safety and effectiveness, and performed a detailed assessment of the manufacturing processes, including inspections of the manufacturing facilities."

The FDA's full approval is also expected to lead to more large-scale organizations and businesses introducing vaccine mandates. While it is currently legal for businesses to require staff be vaccinated, many organizations have stated they would wait for full FDA approval before issuing mandates.

The Pentagon, for example, [instantly announced](#) a vaccine mandate for all military personnel following the FDA's approval. This includes over one million active troops.

New York City also quickly followed the FDA announcement with [a vaccine mandate for all](#) public school teachers and staff. Encompassing almost 150,000 employees, the mandate requires all school employees, including contractors, to have a first vaccine dose by the end of September.

**EDITOR'S COMMENT:** Great! Perhaps now FDA, WHO and EMA will have the time to provide a positive or negative verification of the Sputnik V vaccine.

## COVID-19 is most transmissible 2 days before and 3 days after symptoms appear

Source: <https://www.bu.edu/sph/news/articles/2021/covid-19-is-most-transmissible-2-days-before-3-days-after-symptoms-appear/>

Aug 23 – Each wave of the pandemic has underscored just how gravely contagious COVID-19 is, but there is less clarity among experts on exactly when—and to what extent—infected individuals are most likely to spread the virus.

Now, a new study co-led by a School of Public Health researcher has found that individuals infected with the virus are most contagious two days before, and three days after, they develop symptoms.

[Published in the journal \*JAMA Internal Medicine\*](#), the study also found that infected individuals were more likely to be asymptomatic if they contracted the virus from a primary case (the first infected person in an outbreak) who was also asymptomatic.

"In previous studies, viral load has been used as an indirect measure of transmission," says [Leonardo Martinez](#), assistant professor of epidemiology, and who co-led the study with [Yang Ge](#), research assistant in the Department of Epidemiology & Biostatistics at the University of Georgia College of Public Health. "We wanted to see if results from these past studies, which show that that COVID cases are most transmissible a few days before and after symptom onset, could be confirmed by looking at secondary cases among close contacts."

Martinez and colleagues conducted contact tracing and studied COVID-19 transmission among approximately 9,000 close contacts of primary cases in the Zhejiang province of China from January 2020 to August 2020. "Close" contacts included household contacts (defined as individuals who lived in the same household or who dined together), co-workers, people in hospital settings, and riders in shared vehicles. The researchers monitored infected individuals for at least 90 days after their initial positive COVID test results to distinguish between asymptomatic and pre-symptomatic cases.

Of the individuals identified as primary cases, 89 percent developed mild or moderate symptoms, and only 11 percent were asymptomatic—and no one developed severe symptoms. Household members of primary cases, as well as people who were exposed to primary cases multiple times or for longer durations of time, had higher infection rates than other close contacts. But regardless of these risk factors, close contacts were more likely to contract COVID-19 from the primary infected individual if they were exposed shortly before or after the individual developed noticeable symptoms.

"Our results suggest that the timing of exposure relative to primary-case symptoms is important for transmission, and this understanding provides further evidence that rapid testing and quarantine after someone is feeling sick is a critical step to control the epidemic," Martinez says.

In comparison to mild and moderate symptomatic individuals, asymptomatic primary individuals were much less likely to transmit COVID to close contacts—but if they did, the contacts were also less likely to experience noticeable symptoms.





“This study further emphasizes the need for vaccination, which reduces clinical severity among people that develop COVID,” says Martinez.

The study’s senior authors were Ye Shen of the Department of Epidemiology & Biostatistics at UGA College of Public Health, and Feng Ling of the Zhejiang Provincial Center for Disease Control and Prevention in Hangzhou, China. The study was co-authored by researchers at SPH, UGA, the Zhejiang Provincial Center for Disease Control and Prevention, the University of Texas School of Public Health, and Tulane University School of Public Health and Tropical Medicine.



### World's first mobile MRI machine detects strokes that require surgery

The world's first portable MRI machine proved its potential in early trials last year, and a new Yale-led study has built on this success by using it to detect cases of stroke in need of surgical intervention, with a high degree of accuracy. [Read more](#)

### Largest real-world study of COVID-19 vaccine safety published by Israel's Clalit Research Institute in The New England Journal of Medicine

Source: [https://www.nejm.org/doi/full/10.1056/NEJMoa2110475?query=featured\\_home](https://www.nejm.org/doi/full/10.1056/NEJMoa2110475?query=featured_home)

**Aug 26 – Major study, conducted in collaboration with researchers from Harvard University, examined data on over 2 million people in Israel.**

**The study compared rates of 25 adverse events between vaccinated and unvaccinated individuals, and separately, between unvaccinated individuals infected and not infected with coronavirus: Findings show that the vaccine is safe, while coronavirus infection is associated with numerous serious adverse events.**

**Few adverse events were associated with the vaccine. Myocarditis, the most serious one, was associated with an excess of 2.7 cases per 100,000 vaccinated persons. In contrast, coronavirus infection in unvaccinated individuals was associated with an excess of 11 cases of myocarditis per 100,000 infected persons.**

**Coronavirus infection – but not vaccination – was also associated with a greatly increased risk of pericarditis, arrhythmias, heart attacks, strokes, pulmonary embolism, deep-vein thrombosis, acute kidney damage, and others.**

The Clalit Research Institute, in collaboration with researchers from Harvard University, analyzed one of the world’s largest integrated health record databases to examine the safety of the Pfizer/BioNTech BNT162B2 vaccine against COVID-19. The study provides the largest peer-reviewed evaluation of the safety of a COVID-19 vaccine in a nationwide mass-vaccination setting. The study was conducted in Israel, an early global leader in COVID-19 vaccination rates.

Previous efforts to characterize vaccine safety have relied on voluntary active reporting by vaccinated individuals, which is known to be incomplete. The present study relies on the analysis of millions of anonymized electronic medical records, which are far more comprehensive.

Furthermore, in order to provide the necessary context for interpreting vaccine safety findings, this study is the first to examine a wide range of adverse events *both* among vaccinated individuals *and* among unvaccinated individuals who were infected with the coronavirus. Thus, two separate analyses were conducted:

1. Vaccination Outcomes Analysis: 884,828 vaccinated individuals aged 16 and over were carefully matched with 884,828 unvaccinated individuals based on an extensive set of sociodemographic, geographic and health-related attributes. Individuals were assigned to each group dynamically based on their changing vaccination status (235,541 individuals moved from the unvaccinated cohort into the vaccinated cohort during the study). Rates of the 25 potential adverse events within three weeks following either vaccine dose



were compared between the two groups. This analysis took place from December 20, 2020, the launch of Israel's national vaccination campaign, through May 24, 2021.

2. Infection Outcomes Analysis: To provide context for the vaccine safety findings above, a separate analysis was conducted that estimated the rates of the same 25 potential adverse events among 173,106 unvaccinated individuals who were infected with the coronavirus, compared to 173,106 carefully matched controls who were not infected with the coronavirus. This analysis took place from March 1, 2020 (the beginning of the COVID-19 pandemic in Israel) through May 24, 2021.

**The vaccine was found to be safe: Out of 25 potential side effects examined, 4 were found to have a strong association with the vaccine.**

Myocarditis was found to be associated with the vaccine, but rarely – 2.7 excess cases per 100,000 vaccinated individuals. (The myocarditis events observed after vaccination were concentrated in males between 20 and 34.) In contrast, coronavirus infection in unvaccinated individuals was associated with 11 excess cases of myocarditis per 100,000 infected individuals.

Other adverse events moderately associated with vaccination were swelling of the lymph nodes, a mild side effect that is part of a standard immune response to vaccination, with 78 excess cases per 100,000, appendicitis with 5 excess cases per 100,000 (potentially as a result of swelling of lymph nodes around the appendix), and herpes zoster with 16 excess cases per 100,000.

In contrast to the relatively small number of adverse effects associated with the vaccine, high rates of multiple serious adverse events were associated with coronavirus infection among unvaccinated patients, including: Cardiac arrhythmias (a 3.8-fold increase to an increase of 166 cases per 100,000 infected patients), kidney damage (14.8-fold increase; 125 excess cases per 100,000), pericarditis (5.4-fold increase; 11 excess cases per 100,000), pulmonary embolism (12.1-fold increase; 62 excess cases per 100,000), deep vein thrombosis (3.8-fold increase; 43 excess cases per 100,000), myocardial infarction (4.5-fold increase; 25 excess cases per 100,000), and stroke (2.1-fold increase; 14 excess cases per 100,000).

The research was conducted by Dr. Noam Barda, Dr. Noa Dagan, Yair Ben-Shlomo, Dr. Eldad Kepten, Dr. Jacob Waxman, Reut Ohana and Prof. Ran Balicer from the Clalit Research Institute, Dr. Doron Netzer of Clalit Health Services, as well as Prof. Miguel Hernán and Prof. Marc Lipsitch of the Harvard T.H. Chan School of Public Health, Prof. Isaac Kohane of the Department of Biomedical Informatics at Harvard Medical School, and Prof. Ben Reis of Boston Children's Hospital and Harvard Medical School.

This study focused on adverse events that may develop in the short to medium term after vaccination, and those with clinical significance. The study did not focus on common immediate symptoms such as redness and discomfort at the injection site or fever. Symptoms that occurred within 6 weeks of the vaccine (three weeks after each vaccine dose) were defined as an adverse event of the vaccine if they occurred more frequently among the vaccinated group compared to the control group.

The results of this study validate and complement the previously reported findings of the Pfizer/BioNTech Phase-III randomized clinical trial, which, with 21,720 vaccinated individuals, could not precisely and comprehensively assess vaccine safety. The present study's large size allows a more detailed assessment of the vaccine's safety across a wider range of adverse events.

"The extensive nationwide rollout of Israel's COVID-19 vaccination campaign provided the Clalit Research Institute with a unique opportunity to assess, through its rich and comprehensive digital datasets, the safety of the vaccine in a real-world setting, without needing to rely on individual-driven active reporting of side-effects" said **Prof. Ran Balicer**, senior author of the study, Director of the Clalit Research Institute and Chief Innovation Officer for Clalit. "These results show convincingly that this mRNA vaccine is very safe and that the alternative

of 'natural' morbidity caused by the coronavirus puts a person at significant, higher and much more common risk of serious adverse events. These data should facilitate informed individual risk-benefit decision-making, and, in our view, make a strong argument in favor of opting-in to get vaccinated, especially in countries where the virus is currently widespread," added Prof. Balicer, who also serves as Chairman of Israel's National Expert Advisory Team on COVID-19 response.

"This study sheds light for the first time on the significant side effects of the coronavirus vaccine. Since this is a more comprehensive analysis based on electronic medical records, these are more reliable assessments than those published to date which have relied on voluntary active reporting systems," explains **Doron Netzer**, Chief Medical Officer of Clalit's Community Health Division.

**Prof. Ben Reis**, Director of the Predictive Medicine Group at the Boston Children's Hospital Computational Health Informatics Program and Harvard Medical School, said, "To date, one of the main drivers of vaccine hesitancy has been a lack of information regarding potential side effects of the vaccine. This careful epidemiological study provides reliable information on vaccine safety, which we hope will be helpful to those who have not yet decided about vaccination." He continued, "Those who have hesitated until now to get vaccinated due to concerns about very rare side effects – such as myocarditis – should be aware that the risks for this very same side effect are actually higher among unvaccinated infected individuals."

**Prof. Miguel Hernán**, Director of the CAUSALab and Professor at the Harvard T.H. Chan School of Public Health, said, "This research is a perfect example of how randomized trials





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and observational healthcare databases complement each other. The original trial of the Pfizer/BioNTech vaccine provided evidence of its safety, but the estimates were too imprecise given the small sample size. This analysis of Clalit's high-quality database emulates the design of the original trial, uses its findings as a benchmark, and expands upon them to confirm the vaccine's safety on a wide range of adverse events. This combination of evidence from randomized trials and observational studies is a model for efficient medical research, something which is especially important in COVID times."

**Prof. Marc Lipsitch**, Director of the Center for Communicable Disease Dynamics and Professor at the Harvard T.H. Chan School of Public Health, said, "In all studies of vaccine safety, a major challenge is to ensure that those we are comparing to identify the vaccine's side effects are similar in the other characteristics that may predict whether they will experience these side effects. This is especially hard in the context of a rapidly growing, age-targeted vaccine campaign. Clalit's extraordinary database made it possible to design a study that addressed these challenges in a way that provides tremendous confidence in the inferences that come out of the study."

The research was funded in part by the newly announced Ivan and Francesca Berkowitz Family Living Laboratory Collaboration at Harvard Medical School and Clalit Research Institute. "The strengthening of the scientific collaboration between Harvard and Clalit made possible by the Berkowitz Living Laboratory Collaboration is already bearing fruit and giving us a foretaste of the value of healthcare systems instrumented for research," said **Prof. Isaac Kohane**, Chair of the Department of Biomedical Informatics at Harvard Medical School and co-Director of the Ivan and Francesca Berkowitz Family Living Laboratory Collaboration along with Professor Balicer. "Israel offers a unique environment in which to study the vaccine and its effects, and this study is an excellent example of what can be accomplished through such close scientific collaborations."

### How long does COVID-19 take to spread through one household?

Source: <https://www.studyfinds.org/covid-19-spread-one-household/>

Aug 26 — Researchers from the University of North Carolina are showcasing just how quickly COVID-19 can spread from person to person under one roof. Additionally, the study is providing some much-needed information as to how and why communities of color have suffered more than other demographics throughout the pandemic.

Researchers tracked 100 COVID-positive individuals living in the local Raleigh area between April and October 2020. Those participants lived with an additional 208 housemates.

Aside from 73 of those housemates testing positive by the time researchers arrived, the team gave PCR tests to all housemates weekly for three weeks following their housemate testing positive for COVID-19. Ultimately, researchers concluded the secondary attack rate [among housemates](#) was 32 percent.

"We think this number is much higher," says senior study author Jessica Lin, MD, assistant professor in the UNC Department of Medicine, Division of Infectious Diseases at the UNC School of Medicine, in a [university release](#). "Sometimes we were getting to households to test people four or five days after the initial COVID-positive [person showed symptoms](#). By that time a lot of household members were already infected. But because that infection happened before we got there, we couldn't include it in our data."

This work took place long before the even-more-contagious Delta variant emerged. With this in mind, study authors hypothesize current rate of infection among housemates is quite higher right now.

#### Viral loads determine infection speed

Most secondary housemate infections occurred quickly, taking place [within the first week](#) of the initial positive COVID-19 test. Moreover, such cases shared a similar [nasopharyngeal viral load](#), which refers to just how much of the virus an infected individual carries in their nose and throat.

"This means the viral load of the index case matters," Prof. Lin adds. "A higher viral load means it's more likely that there will be secondary transmission in a household, and viral load is also an indication of how sick a person could get from the virus."

Researchers also investigated how much *living density*, or the amount of people living within a given household, played into infection rates. Well, 44 percent of examined participants were Hispanic or non-white, and researchers discovered that minority households tend to have greater living density and thus a higher risk of secondary infection.

"It's very difficult to follow public health guidelines in some living situations," Prof. Lin notes.

"If you have multiple people and generations sharing common areas or bedrooms, or say you are a single parent, it becomes nearly impossible to isolate or even physical distance."







**Vive la pandémie !**



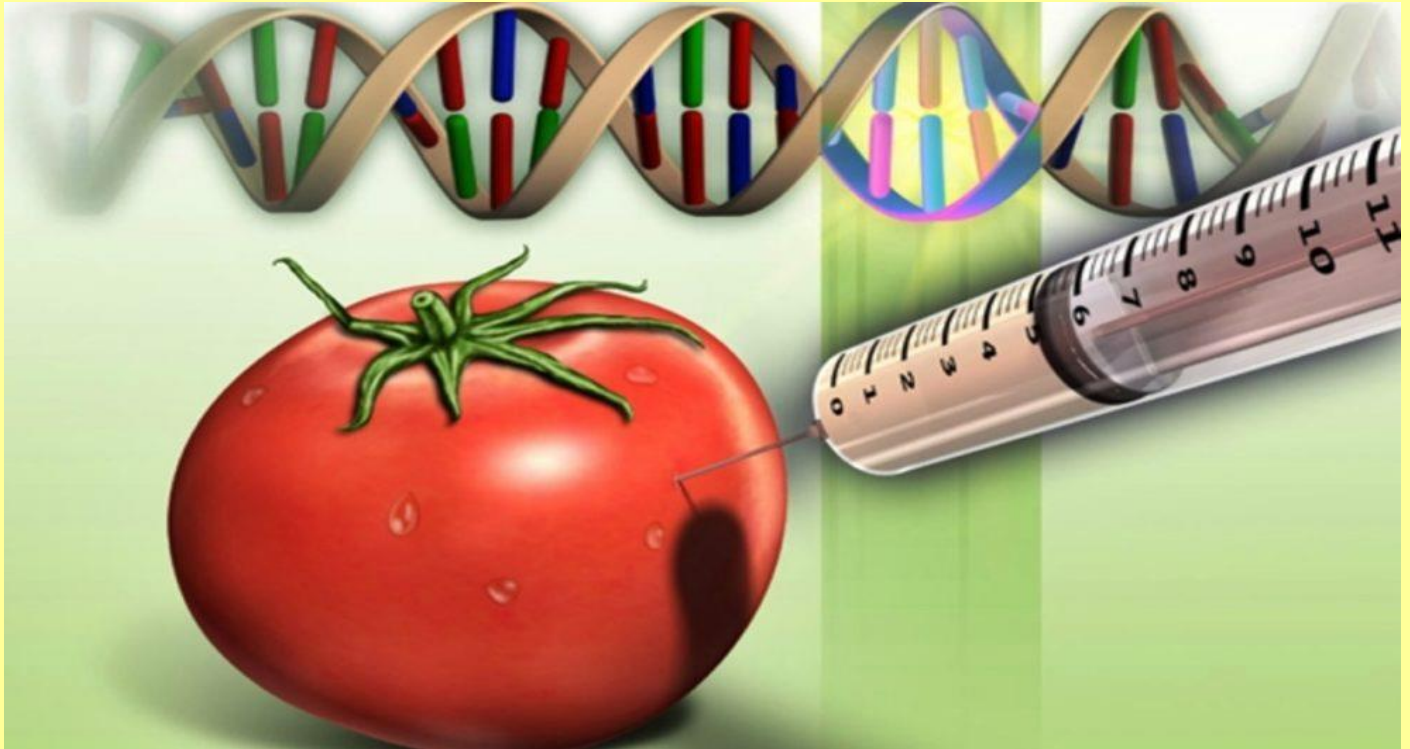


All in all, study authors conclude their work points to one overarching message: people need to get the [COVID-19 vaccine](#). The more people living under one roof that are vaccinated, the less of a chance for more infections.

“Household transmission is the main place where most people are [getting COVID](#),” Prof. Lin concludes. “It’s spreading from their family and friends, people that are in their bubble and they feel safe with. When you get vaccinated, you aren’t just protecting yourself, you’re protecting those important people around you.”

## Scientists in Uzbekistan are working on an ‘edible transgenic tomato vaccine’ against COVID

Source: <https://insiderpaper.com/scientists-in-uzbekistan-edible-tomato-vaccine-against-covid/>



Aug 27 – Scientists in Uzbekistan are testing “an edible transgenic tomato [vaccine](#)” to counter the COVID virus, reports Anadolu Agency. Scientists from the Academy of Sciences’ Center for Genomics and Bioinformatics are working to develop an edible vaccine against the virus by altering the genetics of tomatoes, according to a statement issued by the Innovative Department Ministry on Friday. After two months, seedlings in the center’s laboratory will grow tomatoes in the form of a vaccine, and people who eat these tomatoes are expected to produce antibodies against the virus, according to the statement. Scientists cloned the crown part of a [coronavirus](#) found in the country and placed it in a plant cell, and as a result, these plant cells acted as a vaccine. “The experiment showed that the S-protein of the coronavirus, synthesized in a tomato, enters the intestines and awakens the immune system. The produced antibodies will fight the pathogen,” the scientist said, reports [Sputnik](#). He added that the first phase of clinical trials will begin as soon as the animal experiments are completed. In Oct 2019, the scientists at Stanford were [reported](#) to have created a ‘vaccine’ to protect tomato plants.

## Antibody Tests Should Not Be Your Go-To for Checking COVID Immunity

Source: <https://www.npr.org/sections/health-shots/2021/08/28/1031287076/antibody-tests-should-not-be-your-go-to-for-checking-covid-immunity>

Aug 28 – Booster shots against the coronavirus have already started rolling out in the U.S. for some people and millions more could be due for them soon. But as breakthrough



infections become more common, many people are wondering in the meantime: Does my immune system have enough firepower to protect me right now?

A natural way to look for an answer would seem to be checking for certain antibodies in your blood that target the coronavirus. These are specific proteins made by your immune cells in response to the [vaccine](#) or the virus — proteins that serve as a key part of the body's arsenal in preventing COVID-19.

Unlike other COVID-19 tests that are used to diagnose an active infection, these antibody tests are aimed at finding evidence of your body's immune response to a past infection with the virus, but they can also pick up certain antibodies that your body generated in response to the vaccine. And while the Food and Drug Administration [does not currently recommend antibody tests to assess immunity](#), that isn't stopping some people.

"I know a lot of people, even outside of studies, are just getting their antibody levels done," says [Dr. Ghady Haidar](#), a transplant infectious diseases physician at the University of Pittsburgh Medical Center.

There are [dozens of tests on the market](#) that scan blood samples from a blood draw or a finger prick for the presence of these antibodies. Some tests just let you know if you have them — or not. Others can actually give you scores that reflect your levels. You might think that high enough levels of antibodies mean you don't need that booster, right? Eh, not so fast.

While it could be tempting to consider these tests a measuring stick of your immune response — or lack thereof — researchers and doctors say your protection against the virus still can't be boiled down to antibody levels in a simple blood test.

### Why tests don't tell the full story

On an individual level, antibody tests can be useful for picking up evidence of a past SARS-CoV-2 infection. They're also helpful to researchers studying the prevalence of the virus across a population or tracking the degree to which antibody levels wane over time. And the decline in antibody levels against the coronavirus among some people who got vaccinated late last year were cited [as part of the scientific case](#) for why millions of Americans need booster shots.

But scientists in the field say there's still considerable uncertainty about [what these levels of detectable antibodies really mean](#) when it comes to protection. And a lack of standardization among the commercially available tests for antibodies makes it even harder to decipher the results.

"There is no test that will give you that [degree of certainty] at this point," says [Gigi Gronvall](#), a senior scholar at the Johns Hopkins Center for Health Security [who has studied serology testing and COVID-19](#). "There are tests that would show that you've been vaccinated or not, but is that going to be the kind of information you need?"

Maybe not, she suggests. Why? Antibody tests only give one view into the body's collection of defenses against the coronavirus. In fact, it's just a subset of antibodies, made in response to the virus or a shot of the vaccine, that neutralize the spike protein on the virus. The spike protein is what enables the coronavirus to break into cells and replicate.

There are tests that would show that you've been vaccinated or not, but is that going to be the kind of information you need?

"We have a mix of antibodies. Some of them are very good and protective. Some are not as protective," and each person will have their own mix of these different types of antibodies, says [Ali Ellebedy](#), an immunologist at Washington University School of Medicine in St. Louis who's [studying the antibody response to the coronavirus](#).

A key unanswered question for researchers like Ellebedy is just how many of these neutralizing antibodies are needed to block the virus?

Studies do [show](#) all [three](#) available vaccines in the U.S. — the shots from Pfizer, Moderna and Johnson & Johnson — can successfully prompt people to produce neutralizing antibodies for the coronavirus variants, including delta. Natural infection with the virus also leads the immune system to produce antibodies that can disarm the virus, though doctors [still recommend](#) you get vaccinated even if you've had COVID-19 in the past, because the [shots bolster your immune response](#), including your antibodies. But Ellebedy says that having detectable antibodies from a blood test six months after vaccination "only means that your immune system mounted a successful response then and that you have [immune memory](#)."

While scientists have generated a "ton of data" on which antibodies are best at neutralizing the virus, Ellebedy says, the available antibody tests are not designed to specifically pick up whether you have enough of these protective antibodies, especially in the face of evolving variants.

And don't forget the immune system is more than just antibodies, so even with low detectable levels in your blood, you're not defenseless. "Antibody tests — it's really probing just one part of your immune system," says [Elitza Theel](#), who directs the Infectious Diseases Serology Laboratory at the Mayo Clinic.

Your immune system really kicks into action if your body encounters the coronavirus. At that point, it generates new antibodies to block the virus and taps another line of defense —





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called T cells — which clear out the infected cells that have been converted into factories where the virus can multiply.

### If you do get an antibody test, can you learn anything from it?

Yes, as long as you don't expect it to give you a straightforward answer for how well-protected you are from catching the virus. The FDA and the Centers for Disease Control and Prevention [recommend against](#) using antibody tests for this purpose, but it's understandable that Americans are looking to these widely available tests for some indication of their immunity, especially given the growing concerns about declining efficacy of the mRNA vaccines over time. So what sort of legit information could you glean from the results?

[Dr. Nicole Bouvier](#) says it's reasonable to look at how your results fit into the range of values of a particular test, to get a sense where you fall relative to others who've taken it. Lab companies may also be able to tell you the average level of antibodies of someone who had a coronavirus infection and recovered.

"That can give you a benchmark for the immune response to natural infection, and then you can sort of gauge your vaccine response against that," says Bouvier, an associate professor of infectious diseases and microbiology at the Icahn School of Medicine at Mount Sinai.

The tests may give you numerical readings that indicate the level of antibodies in your blood that bind to specific SARS-CoV-2 proteins. "What we're basically learning is that the higher your number is, the more likely you are to be protected," Bouvier says, "and that you don't actually need a super, super high number in order to be protected." But this rule of thumb is [based on large studies](#) and doesn't necessarily hold true on an individual level.

The bottom line is that even doctors who are studying this topic don't know what these antibody readings actually say about your immunity, says Haidar of the University of Pittsburgh Medical Center, who is [running a study](#) on coronavirus antibody response in immunocompromised individuals.

"We don't know what the optimal antibody level is that correlates with protection," he says.

For example, Haidar says it's clear that immunocompromised patients may not have as robust an immune response to the vaccine, and that looking for the presence of antibody levels can hint at their level of protection. But even this can be misleading — because some research suggests that detectable antibodies from those patients still "may not be able to prevent infection as well as antibodies from people who are otherwise healthy."

Haidar concedes that if someone has no detectable antibodies on the test, "even though they may have some protection from T cells — and we don't have a full understanding of what this actually means — I can tell you that they are likely not as protected as someone who, let's say, has an antibody level of 1,000."

Only complicating the picture for consumers is that the [tests on the market are not standardized](#). They can have varying degrees of sensitivity and look for different antibodies.

Some antibody tests sold commercially detect certain antibodies that are only generated in response to the actual virus. Getting a test that looks for these other antibodies ([antibodies that target the nucleocapsid protein](#), for example) could lead someone who is vaccinated to get a negative result and falsely think they are not protected.

Despite all these caveats, the idea of a blood test that can eventually give consumers a reliable indication of their immunity is not far-fetched. "We have correlates of protection for other vaccine-preventable diseases like measles and hepatitis," says Theel. "But we're just not there yet with COVID."

## Death toll from unknown viral fever in India reaches 68

Source: <https://report.az/en/other-countries/death-toll-from-unknown-viral-fever-in-india-reaches-68/>

Aug 30 – An unknown virus has killed at least **12** children in the Indian state of Uttar Pradesh over the past day, [Report](#) informs, citing TASS.

**The total number of deaths from the epidemic in the region has reached 68 people, including 40 children.**

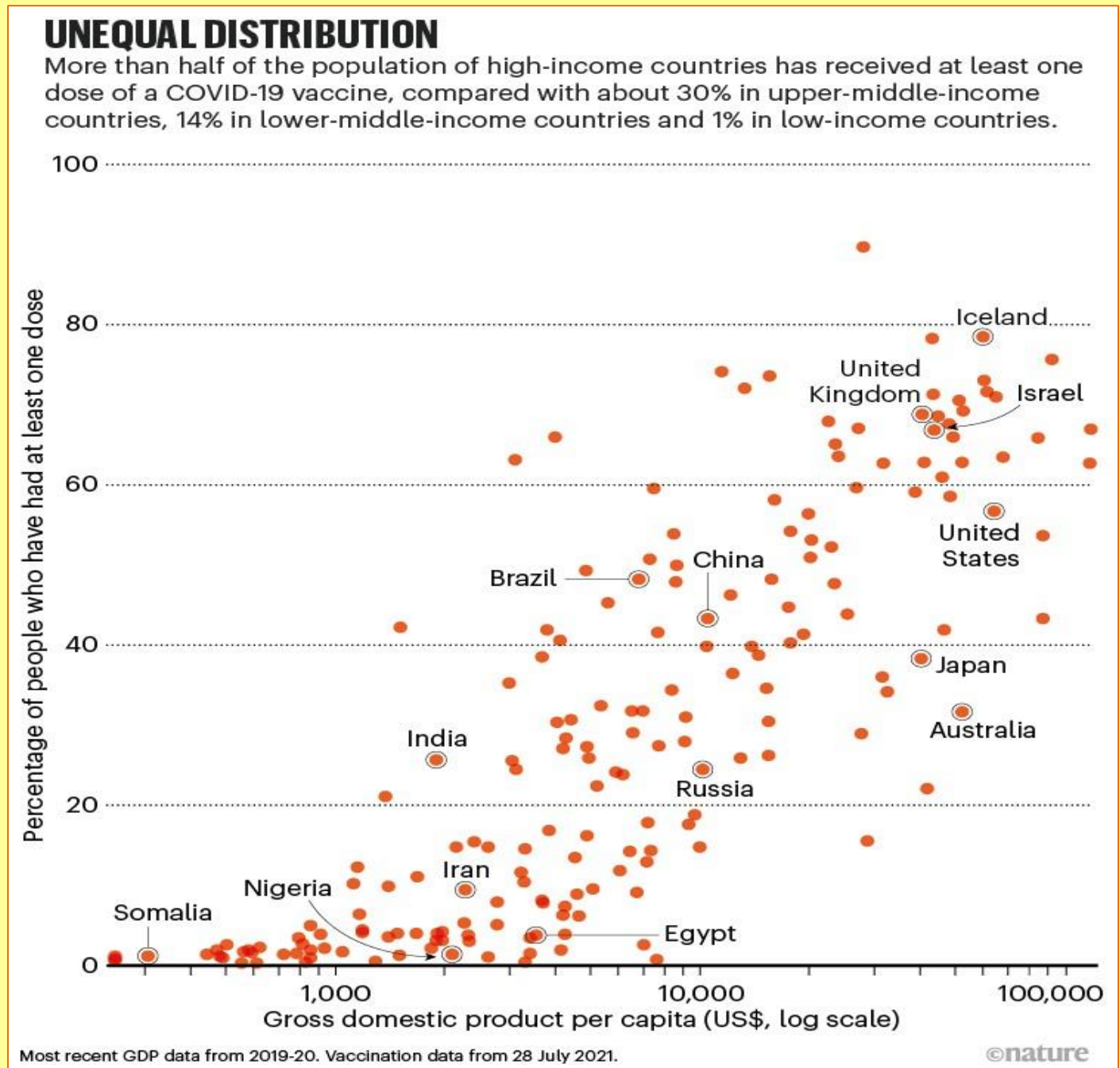
Thus, this is only an approximate number, as the local health department did not register deaths from fever in private hospitals and at home.



According to Indian doctors, the main reason for the emergence and spread of the virus is the non-compliance of the population with sanitary and hygienic norms, as well as the increase of the carriers of the disease - swarm of midges that breed in water basins and rivers.

## Countries that need vaccines are not getting them

Source: <https://naturemicrobiologycommunity.nature.com/posts/10-images-that-illustrate-the-shameful-global-vaccine-inequity>



This graph, from a [Nature paper](#) by Amy Maxmen, shows the unequal distribution of vaccination as a scatter plot. While many rich nations are offering booster doses, "on the African continent, where only 2% of people have been vaccinated, COVID-19 rates are escalating, with fatality rates higher than the global average."





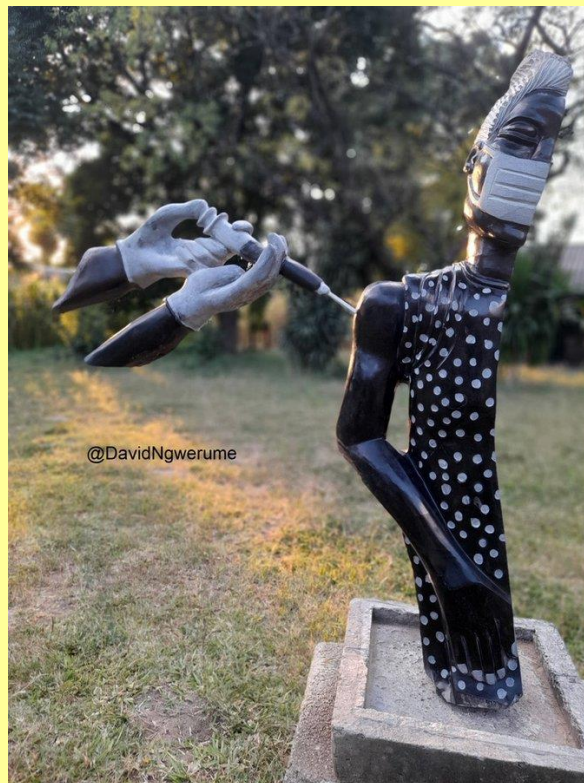
## Covid-19: Year TWO

August 31, 2021

Source: <https://www.worldometers.info/coronavirus/>

- ❖ Coronavirus Cases : 217,925,862 (Update Sept 24: 231,115,643)
- ❖ Deaths : 4,524,100 (Update Sept 24: 4,736, 446)

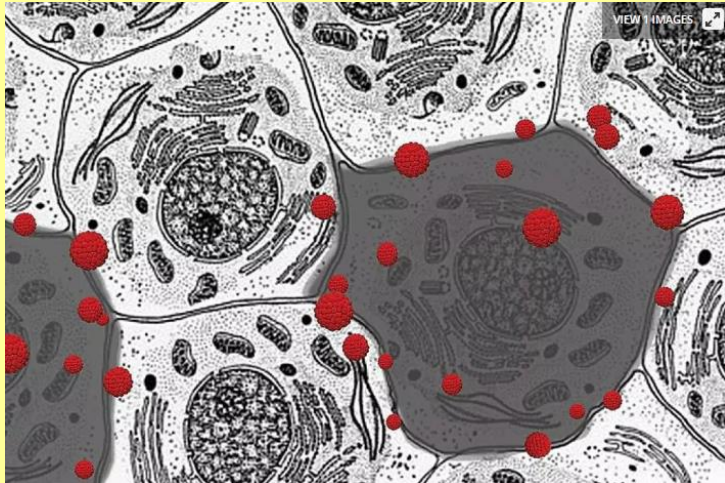
| All | Europe                    | North America | Asia         | South America   | Africa            | Oceania        |             |               |  |
|-----|---------------------------|---------------|--------------|-----------------|-------------------|----------------|-------------|---------------|--|
| #   | Country, Other            | Total Cases   | Total Deaths | Total Recovered | Tot Cases/ 1M pop | Deaths/ 1M pop | Total Tests | Population    |  |
|     | World                     | 217,925,862   | 4,524,100    | 194,805,953     | 27,958            | 580.4          |             |               |  |
| 1   | <a href="#">USA</a>       | 39,946,708    | 656,393      | 30,944,465      | 119,867           | 1,970          | 582,524,012 | 333,257,237   |  |
| 2   | <a href="#">India</a>     | 32,768,880    | 438,592      | 31,959,680      | 23,478            | 314            | 521,541,098 | 1,395,753,675 |  |
| 3   | <a href="#">Brazil</a>    | 20,752,281    | 579,643      | 19,692,898      | 96,831            | 2,705          | 56,897,224  | 214,314,149   |  |
| 4   | <a href="#">Russia</a>    | 6,901,152     | 182,429      | 6,162,430       | 47,266            | 1,249          | 178,500,000 | 146,007,206   |  |
| 5   | <a href="#">UK</a>        | 6,757,650     | 132,485      | 5,427,062       | 98,940            | 1,940          | 266,714,771 | 68,300,272    |  |
| 6   | <a href="#">France</a>    | 6,746,283     | 114,308      | 6,225,201       | 103,089           | 1,747          | 124,769,146 | 65,441,374    |  |
| 7   | <a href="#">Turkey</a>    | 6,366,438     | 56,458       | 5,823,111       | 74,555            | 661            | 76,140,298  | 85,392,352    |  |
| 8   | <a href="#">Argentina</a> | 5,178,889     | 111,607      | 4,869,104       | 113,380           | 2,443          | 22,017,526  | 45,677,243    |  |
| 9   | <a href="#">Iran</a>      | 4,960,744     | 107,151      | 4,175,405       | 58,197            | 1,257          | 28,213,229  | 85,240,218    |  |
| 10  | <a href="#">Colombia</a>  | 4,907,264     | 124,883      | 4,737,467       | 95,264            | 2,424          | 24,121,717  | 51,512,348    |  |



## Long COVID and chronic fatigue syndrome share striking similarities

Source: <https://newatlas.com/health-wellbeing/long-covid-chronic-fatigue-syndrome-links-redox-imbalance/>

Aug 30 – A new review article, spearheaded by researchers from Johns Hopkins University School of Medicine, asserts the increasingly prominent condition known as **long COVID shares significant physiological similarities to chronic fatigue syndrome**. The researchers say a better understanding into the overlap between both illnesses can inform therapeutics in the future for many kinds of post-viral illnesses.



Early in 2020, a few months into the pandemic, doctors started to notice some COVID-19 symptoms lingering in otherwise completely recovered patients. [These symptoms were diverse](#), spanning everything from sexual dysfunction to bladder issues, but most patients shared several common features – fatigue, brain fog and reductions in exercise capacity.

Two cells in a cluster being attacked by free radicals (red) and undergoing oxidative stress. Johns Hopkins Medicine researchers suggest that oxidative stress may cause the similar symptoms seen in both long COVID and ME/CFS – M.E. Newman, Johns Hopkins Medicine

The condition was dubbed long COVID, and more recently labeled clinically as PASC (Post-Acute Sequelae of SARS-CoV-2 infection). The [research so far suggests between](#) 10 and 30 percent of those suffering mild COVID-19 can experience lingering symptoms for months. Up to [three-quarters of severe hospitalized patients](#) report persistent symptoms.

Until relatively recently chronic fatigue syndrome (CFS) was stigmatized as more of a psychological condition than a physical one. Also known as myalgic encephalomyelitis (ME), and generally referred to under the umbrella term ME/CFS, it is now commonly accepted as a real chronic disease, however, its origins are still unclear.

Up to 2.5 million people in the United States are thought to suffer from ME/CFS. For many sufferers [the condition appeared quickly](#), out-of-the-blue, following some kind of acute viral infection.

“... many cases of post-infectious fatigue follow in the wake of acute infections that are not known to cause permanent damage to the heart, lungs or kidneys – and in people without comorbid PTSD or depression,” write ME/CFS researchers Anthony Komaroff and Lucinda Bateman in [a long COVID article](#) published in early 2021. “In the typical case of ME/CFS, in particular, the inciting ‘infectious-like’ illness most often appears to be a transient infection, or a primary infection that becomes permanent but does not typically produce chronic organ dysfunction (such as occurs with Epstein-Barr virus).”

Considering how little is known about ME/CFS it would certainly be premature to claim the illness is the same as long COVID, but a new article published in *Proceedings of the National Academy of Sciences* is suggesting there is evidence the two conditions share similar biological abnormalities.

“The body’s response to infection and injury is complex and covers all body systems,” explains lead author on the new article, Bindu Paul. “When that response is in disarray – even just one aspect of it – it can cause feelings of being tired, brain fog, pain and other symptoms.”

Paul and colleagues point out in the article that acute cases of COVID-19 and patients with ME/CFS both display signs of what is called redox imbalance. This condition involves an imbalance between reactive oxygen species (which can include free radicals) and antioxidant defense mechanisms inside cells. Excessive volumes of reactive oxygen species can damage cellular components and induce production of inflammatory molecules.

The hypothesis presented in the article is that this redox imbalance leads to systemic inflammation and neuroinflammation which accounts for many symptoms seen in both long COVID and ME/CFS. The researchers are cautious to note this redox imbalance hypothesis is not presented as the singular cause of both conditions but instead offers directions for investigators to begin looking at future treatments.

“Clearly, COVID-19–induced permanent damage to the lungs (chronic hypoxia), heart (congestive failure), and kidneys (fluid and acid-base abnormalities) could cause some of the persisting symptoms seen in long COVID-19,” Paul and co-authors write in the new





article. "In both long COVID-19 and ME/CFS other symptoms (e.g., fatigue, brain fog) may be generated by neuroinflammation, reduced cerebral perfusion due to autonomic dysfunction, and autoantibodies directed at neural targets ..."

Paul and colleagues note there are a number of current treatments attempting to address redox imbalances. Some are being tested to treat acute hospitalized COVID-19 patients, and others have been trialed to improve symptoms of fatigue on ME/CFS patients. None have so far proved extraordinarily effective, and the researchers suggest the heterogenous nature of redox imbalance may make it a challenging therapeutic target.

"In general, however, oral therapies directed at restoring redox balance have not produced dramatic improvements in conditions associated with redox imbalance," the researchers write in the article. "No single antioxidant can scavenge or neutralize the wide variety of ROS and RNS singlehandedly. Hence, up-regulating pathways that counteract multiple abnormalities and bolster antioxidant defense and balance may be more beneficial. The timing of intervention may also be critical."

In general, post-viral illness is a remarkably understudied field and growing concerns over long COVID offer the biggest research boost on the topic in decades. Mady Hornig, a ME/CFS researcher from Columbia Mailman School, welcomes the long-overdue attention and suggests insights gleaned from novel studies into long COVID could hopefully lead to new treatments for all kinds of post-viral illnesses.

"One of the interesting things we've seen so far is that some COVID-19 patients who initially seem to be on the path to developing ME/CFS actually start to feel better after four or five months," [says Hornig](#). "We think that looking closely at these people and comparing them to others who eventually do get diagnosed with ME/CFS could yield valuable insights. Might there be something distinct about their immune systems that makes them more resilient? That could be the kind of discovery that opens up new possibilities for treatment."

►► The new review article was published in [PNAS](#).

## **SATIRE – In an alternative universe Bill Gates has called for the withdrawal of all Covid-19 Vaccines**

Source: <https://dailyexpose.co.uk/2021/08/29/bill-gates-calls-for-the-withdrawal-of-all-covid-19-vaccines/>

## **Self-Injecting Pill Could Allow Oral Delivery of Monoclonal Antibody and Other Protein Drugs**

MIT engineers, in collaboration with scientists from Brigham and Women's Hospital and Novo Nordisk, developed a type of self-injecting capsule, called a liquid-injecting self-orienting millimeter-scale applicator (L-SOMA), which is swallowed, and then effectively injects the liquid medication directly into the stomach wall. The technology could allow the oral delivery of monoclonal antibody, or other large protein-based drugs that normally have to be injected. **+ MORE**

## **Scientists Monitoring New Coronavirus Variant with Unusually High Mutation Rate**

Source: <https://www.sciencealert.com/south-africa-scientists-are-monitoring-a-potential-new-coronavirus-variant>

Aug 31 – Scientists in South Africa are monitoring a new [coronavirus](#) variant with an unusually high mutation rate, and whose frequency has gradually increased in recent months, [the National Institute for Communicable Diseases said Monday](#).

The variant, known as **C.1.2**, was flagged last week by the KwaZulu-Natal Research and Innovation and Sequencing Platform [in a preprint study](#) that has yet to be peer-reviewed.

While the majority of South Africa's coronavirus cases are currently caused by the [Delta variant](#) – first detected in India – C.1.2 caught scientists' attention because its mutation is almost twice as fast as observed in other global variants.

Its frequency remains relatively low, however, and it has so far been **detected in less than 3 percent of genomes** sequenced since it was first picked up in May – although this has increased from 0.2 to 2 percent last month.

NICD scientists on Monday said C.1.2 was only "present at very low levels" and that it was too early to predict how it might evolve.



## HZS C<sup>2</sup>BRNE DIARY – September 2021

"At this stage we do not have experimental data to confirm how it reacts in terms of sensitivity to [antibodies](#)," NICD researcher Penny Moore said during a virtual press briefing.

But "we have considerable confidence that the vaccines that are being rolled out in South Africa will continue to protect us against severe illness and death," she added.

So far C.1.2 has been detected in all nine of South Africa's provinces, as well as in other parts of the world including China, Mauritius, New Zealand, and Britain.

It is however not frequent enough to qualify as a "variant of interest" or a "variant of concern" such as the highly transmissible Delta and Beta variants, the latter of which [emerged in South Africa](#) late last year.

South Africa is the continent's hardest hit country with over 2.7 million [COVID-19](#) cases reported to date, of which at least 81,830 have been fatal.

The Beta variant drove a second wave of infections in December and January, and the country is now grappling with a persistent third Delta-dominated wave predicted to overlap with a looming fourth.

## New barnacle-inspired paste could stop heavy bleeding in seconds

Source: <https://www.science.org/content/article/new-barnacle-inspired-paste-could-stop-heavy-bleeding-seconds>



Aug 26 – When someone's losing a lot of blood, doctors turn to coagulants. But these products can take minutes to work—minutes a patient may not have. Enter barnacles. The marine crustaceans can glom onto nearly anything—from ships to whales—thanks to an [oil they secrete](#) that primes surfaces by sweeping away contaminants, *Wired* reports. In a new study, scientists made their own synthetic version of barnacles' glue by grinding up adhesive sheets and mixing them with silicone oil that repels blood. The substance was able to [stop bleeding in rat and pig models](#) in as few as 15 seconds, they report this month in *Nature Biomedical Engineering*. The next step is to figure out how long the paste will last before dissolving, and whether it could damage tissue over time.



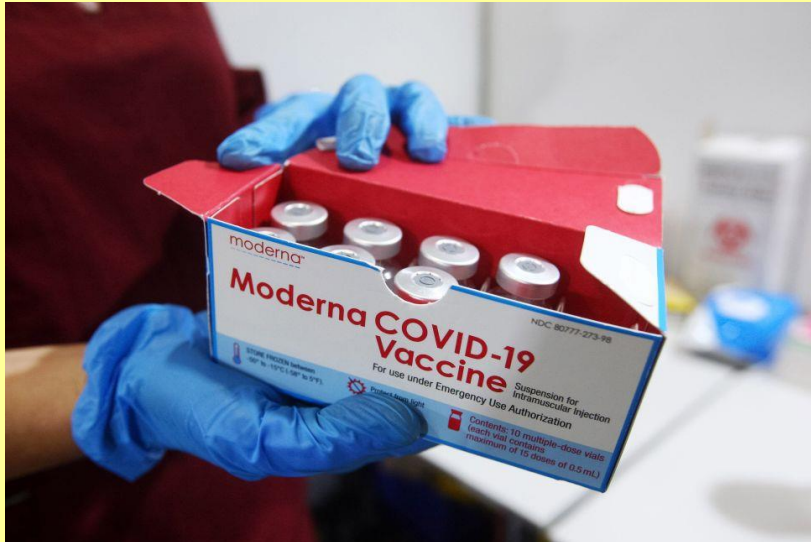


## More Studies Suggest Moderna's COVID-19 Vaccine Is More Effective Than Pfizer's

Source: <https://observer.com/2021/08/moderna-covid-vaccine-twice-antibody-pfizer-biontech-study/>

Aug 31 – Moderna's COVID-19 vaccine generates more than twice as many antibodies as a similar shot made by Pfizer and BioNTech, according to a new real-world study from a major Belgium hospital system.

The research, published Monday as [a letter](#) in the *Journal of the American Medical Association*, suggests that antibody levels among



people who hadn't been infected with COVID-19 before receiving two doses of the Moderna vaccine averaged 2,881 units per milliliter, compared with 1,108 units per milliliter in a similar-sized group who got the Pfizer-BioNTech shot.

A total of 1,647 people participated in the study. A group of 688 people were vaccinated with Moderna's mRNA-1273 shots, while 959 received two shots of Pfizer's BNT162b2. All of them are health care workers at the Ziekenhuis Oost-Limburg in Belgium, a tertiary care center.

The notable difference in antibody levels might be explained by a higher amount of mRNA content in the Moderna vaccine and the longer interval between doses, according to the study. Each Moderna dose contains 100 micrograms of active mRNA ingredient, while the Pfizer-BioNTech shot contains only 30

micrograms of similar content. The Moderna injections were administered four weeks apart, compared with three weeks for Pfizer-BioNTech.

A higher antibody level suggests that Moderna's vaccine is more protective against breakthrough infections, or infections in people who have been fully inoculated.

The Moderna shots also appear to be more effective than Pfizer at blocking mutations of the coronavirus, such as the delta variant. A separate U.S. study released earlier this month found that Moderna's overall effectiveness against COVID-19 dropped only slightly to 76 percent in July from the 86 percent recorded in January 2021 before the delta variant emerged, while Pfizer's overall efficacy fell from 76 percent to 42 percent over the same period.

That study included more than 50,000 participants in the Mayo Clinic Health System.

Both Moderna and Pfizer are studying the effect of adding a third booster to their two-shot structure as breakthrough infections rise globally. The FDA is expected to authorize the additional booster shot in September. The agency has already [approved a third booster](#) shot for people with compromised immune systems.

## Pre-Existing T Cells Play Key Role in SARS-CoV-2 Infection and Vaccination

New results highlighting the role of T cells in COVID-19 may help explain why the elderly have more severe clinical outcomes during a SARS-CoV-2 infection. The research suggests that T cell responses derived from immune system memory against coronaviruses that cause the common cold enhanced immune responses after both infection with SARS-CoV-2 and after vaccination. Notably, these coronavirus-reactive T cells decreased with age. [+ MORE](#)

## Pfizer moves towards an oral anti-COVID-19 therapy

Source: <https://www.news-medical.net/news/20210802/Pfizer-moves-towards-an-oral-anti-COVID-19-therapy.aspx>

Aug 02 – Researchers in the United States have described a novel antiviral agent against severe acute respiratory syndrome coronavirus 2 (SARS-CoV-2) currently being evaluated in clinical trials as a treatment for coronavirus disease 2019 (COVID-19).



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“Alongside vaccines, antiviral therapeutics are an important part of the healthcare response to counter the ongoing threat presented by COVID-19,” says Dafydd Owen from Pfizer Worldwide Research in Cambridge, Massachusetts, and colleagues. The team has now described an orally bioavailable inhibitor of the SARS-CoV-2 main protease (Mpro) that cleaves viral polyproteins into the shorter proteins needed for viral replication.

The inhibitor – called **PF-07321332** – also exhibits *in vitro* pan-human coronavirus antiviral activity and excellent *in vivo* safety profiles. A pre-print version of the research paper is available on the [medRxiv](#)\* server, while the article undergoes peer review.

### Crowded U.S. Jails Drove Millions Of COVID-19 Cases, A New Study Says

Source: <https://www.npr.org/2021/09/02/1033326204/crowded-jails-drove-millions-of-covid-19-cases-a-new-study-says>

Sept 02 – If the U.S. had done more to reduce its incarceration rate, it could have prevented millions of COVID-19 cases.

That's the conclusion of researchers who conducted what they say is the first study to link mass incarceration rates to pandemic vulnerability. Many of those preventable cases, they add, occurred in communities of color.

The [U.S. jail and prison system](#) acts as an epidemic engine, according to the study from researchers at Northwestern University and the World Bank.

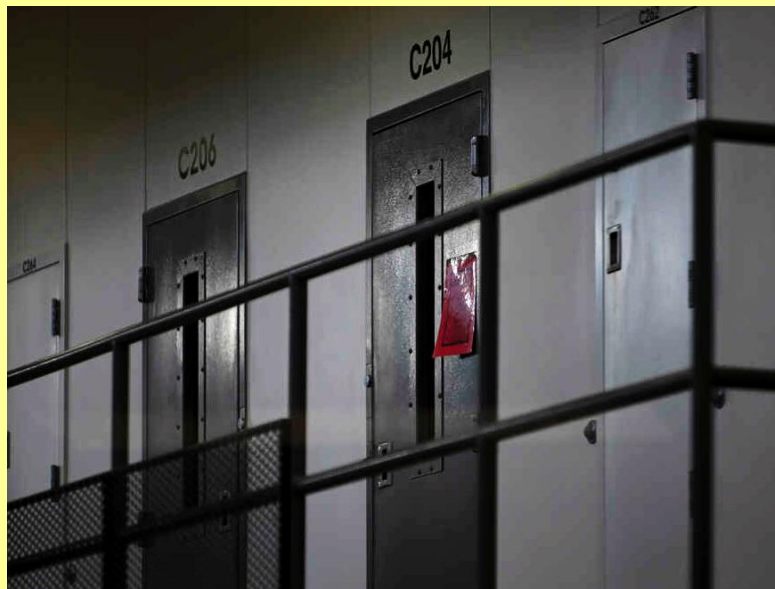
That engine is driven by a massive number of people who, despite some counties' efforts to trim jail populations, have been cycling between cramped detention facilities and their home communities.

#### How many cases could have been prevented?

After analyzing data from 1,605 counties, the researchers linked an 80% reduction in the U.S. jail population to a 2% drop in the growth rate of daily COVID-19 cases.

Such a substantial drop in the incarceration level could have been achieved by instituting alternatives to jail for nonviolent offenses, according to the researchers — Dr. Eric Reinhart of the Northwestern University Feinberg School of Medicine and Daniel Chen of the Toulouse School of Economics and the World Bank.

That 2% reduction is a conservative estimate, but it still represents a dramatic potential shift, Reinhart told NPR.



When compounded daily, Reinhart said in a Northwestern news release about the study, "even just a 2% reduction in daily case growth rates in the U.S. from the beginning of the pandemic until now would translate to the prevention of millions of cases."

Tens of thousands of deaths could also have been prevented, he said.

A red tag on a cell door signifies an active COVID-19 case for its inhabitants. The first medically vulnerable inmates in Minnesota were vaccinated at Faribault Prison in January. (Aaron Lavinsky/Star Tribune/Getty Images)

#### Hundreds of thousands of people cycle through "infectious disease incubators"

The U.S. has long had the world's highest incarceration rate among industrialized countries reporting such statistics. During the pandemic, it has also reported more

COVID-19 cases and deaths than any other country despite having less than 5% of the global population.

The new research, published Thursday in the journal [JAMA Network Open](#), suggests those circumstances are directly related.

**On average, U.S jails currently host some 650,000 detainees every day, according to Reinhart. The dynamic also includes more than 220,000 full-time jail staff, who commute back and forth from their homes each day, the study said.**





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Many of those detainees are held in custody for only short periods of time as they either await trial or serve short sentences. The U.S. jail population has a 55% weekly turnover rate, according to the study.

"This jail churn effectively produces epidemic machines that seed outbreaks both in and beyond jails, undermining public safety for the entire country," Reinhart said.

Citing crowded conditions and poor health care in jails and prisons, a summary of the study from Northwestern said the U.S. facilities "have effectively become infectious disease incubators," putting the country at a higher epidemiological risk.

### Minority communities suffer an outside impact

The link between prisons and public health is one of the reasons Black and Hispanic communities have been disproportionately harmed by the coronavirus, the study's authors said.

The spread of the coronavirus between jails and communities "likely accounts for a substantial proportion of the racial disparities we have seen in COVID-19 cases across the U.S.," Reinhart said.

"Ultimately, this also harms all U.S. residents regardless of race, class or partisan affiliations, as disregarding the health of marginalized people inevitably causes harm — albeit unevenly — to everyone else in a society, too," he added.

The benefits of cutting the jail population would be magnified, Reinhart and Chen wrote, in counties with high proportions of Black residents as well as in urban areas with above-average population density.

### How the study was performed

The study's findings are based on data from jails that reduced their populations at rates from 20% to 50% during the pandemic in response to health risks from COVID-19.

The researchers sought to predict what the results would look like if the U.S. dropped its jail population by 80%, which would bring the country closer to the average rates seen in peer nations.

The study relied on data gathered at the county level from January 2020 to November, representing 72% of the U.S. population.

## What the US is learning — if anything — from defending against biological attacks

By Tom Termin

Source: <https://federalnewsnetwork.com/defense-main/2021/09/what-the-us-is-learning-if-anything-from-defending-against-biological-attacks/>

Sept 01 – If the government learned anything from the pandemic, it's that an outbreak from nature has much in common with a biological attack — at least in terms of preparedness and response. [Federal Drive with Tom Temin](#) asked David Lasseter, former deputy assistant secretary of Defense for Countering Weapons of Mass Destruction, about the matter — starting with, has the thinking changed?

**David Lasseter:** The quick response is a yes. I mean, throughout this recent pandemic, through the planning and discussion about how to respond, and part of the discussions I had with other senior leaders across interagency is this, frankly, a bifurcation of public health like a traditional pandemic, and the public health response bifurcating that from a biological threat, even if it's naturally occurring, but probably more precisely, those that may arise from a liability for those that are even a man-made, or a deliberate release. So there's been a lot of discussions, and I think you'll see probably some meat or some information from those discussions over the course of the next number of months of ensuring that we're really overlaying these two concerns and that to be prepared for a public health emergency, such as a natural pandemic, we too have to be prepared for biological weapons, because taking consideration of COVID-19 whether there's some debate, as you well know and discourse, throughout the country, from the intelligence community to around the world about origins. And so it's important to understand that regardless of origin, we have to be prepared. And in my previous role at the Department of Defense, my focus was on the warfighter, ensuring that the warfighter was protected and working with the Combat Defense Office and Defense Threat Reduction Agency to ensure that those mitigation measures and the protective measures were in place. So sure, that's a long way, pardon me Tom, for saying yes. I mean, there's a need to ensure that, that we're, we're overlaying these two concepts.

**Tom Temin:** Because in reality, as we saw from the incident on the aircraft carrier, the Theodore Roosevelt, that that was kind of the manifestation of how national security can, in fact, be affected by some kind of bio event, whether intentional or non-intentional, whether by an enemy or by natural causes, because a major asset of the Navy, and of the 11 carriers,



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we've got only five or six are ever operational at a given time as it is – to take one out in that manner could constitute a national security threat.

**David Lasseter:** You're exactly right. And it wasn't just the operational impact. Could the US military respond to contingency or threat to the homeland, our allies or partners? Absolutely, and could have done it and did do it in certain instances over the course of these last 19 months, but is absolutely certain that the pandemic impacted operations, impacted exercises, impacted throughput all the way down to recruit training. And with that, impacting that throughput, there's obviously a cost impact. And so from the active component down to the reserve and guard components, there was certainly impact, and imagine a bio weapons impact, I think it would be much worse just on the psyche, that conceivably, on the very essence of whatever that biological weapon might be.

**Tom Temin:** And now you're advising companies on developing defenses and biosecurity measures. From the standpoint of DoD, did the pandemic kind of cement or strengthen the need for great relationships with industry to help respond when something breaks?

**David Lasseter:** Yeah, absolutely. I think we saw from an all of us have seen from the results of operation warp speed and the incredible interaction, coordination all hours of the day, every day, for for many months, the relationships between department defense and HHS, and obviously the White House and national security professionals across US government, with those incredible biopharmaceutical companies and the broad biotech industry that wants to develop medical countermeasures. In this case, probably most clear to everyone being the vaccine, but also you know, therapeutics and, and also improvements in mitigation techniques, whether it's testing that we've seen over the last year plus is greatly improved. Now that capability must remain now we must be able to tap into that in real time going forward. So there are so there are things that the government and specifically department defense most continue to invest in, in the private sector, you know, commercial off the shelf items. I was struck by comments last week at NDIA by some of our senior leaders within DoD, Dr. Vann acting assistant secretary for nuclear, chemical and biological defense, and Dr. Hann at DTRA, and others, Jason Roos at CBRND, talked about the need for the US government, in this case mainly DoD, to be working closely with industry and pulling in those capabilities.

**Tom Temin:** And what about bacterial infection threats, which have not been as much in the news these days, because we're dealing with a viral type of infection where the response from industry is big, expensive, required billions of federal infusion to get these things done quickly, the vaccines that we now benefit from, those that choose to, but what about the bacterial side? Because prior to this, we were learning that the germs, the bacterial types of germs, were becoming more and more resistant to the well known remedies that we had in place for many years.

**David Lasseter:** Yeah, there's a broad set of concerns. I mean, the threats, I'm not telling you anything you don't know, but the threats continue to grow and emerge, and across the bio space, it is a lot of it based on growth, population growth, individuals easily moving from country to country, region or region, the proximity to natural habitats. But yes, I mean, the bacterial concerns are something that the US government and clearly industry are tracking. I would say that obviously when a pandemic like COVID emerges that does crowd out probably a lot of the work in other areas, it doesn't mean that it is routed out to the point that there's not a focus on it. But in my mind, there's going to be broader attention to it especially as the department goes through posture reviews on how we can improve our bio defense capabilities and the White House. The current administration has obviously announced increased focus and attention to all these issues.

**Tom Temin:** And briefly tell us about the advisory role that you have with a company called Heat Biologics, which is trying to develop immune system responses to some of the threats we face. What's going on there?

**David Lasseter:** Great company in North Carolina, has a robust platform that the company believes can respond to a variety of pathogens and biological threats, and really in the future be utilized as a response or medical countermeasure for any biothreat it's quick and efficient. Heat Biologics has brought together a top-tier team of leaders in the space. I think COVID encouraged the company to understand that critical need in America for a robust pandemic prevention program that can respond to any pathogen or virus that threatens Americans, and obviously by extension our partners and allies. To my knowledge, I think Heat is – guess I should say our knowledge – they're the only ones doing anything like this specifically. There's tons of threats out there., we could talk about specific ones, but there's certain ones that you could imagine a capability like this could positively impact. And so I think you know, but the board is made up of former Senator Mark Pryor, former Assistant Secretary for Nuclear, Chemical & Biological, Andy Weber, former Congressman Jack Kingston and Dr. Gregory Koblenz, who's the director of the bio-defense program at George Mason University. So really a stellar group of experts, both from a congressional standpoint, but also former executive branch officials. So I'm honored to be a part of this team and I think it's a novel, one-of-a-kind, first impression type of board that I suspect others might try to emulate or replicate.

*Tom Temin is the host of the Federal Drive and has been providing insight on federal technology and management issues for more than 30 years.*





## Mu is the latest coronavirus variant labeled of interest by WHO

Source: <https://newatlas.com/health-wellbeing/mu-coronavirus-variant-of-interest-who/>

Sept 01 – For the first time in several months the World Health Organization has added a new SARS-CoV-2 variant to its official tracking list. Designated by the Greek Alphabet letter Mu, this newly defined “variant of interest” has been detected in 40 countries to date.

The variant was first characterized in Colombia in January, 2021. Initially labeled B.1.621, it has been found to account for 39 percent of sequenced cases in Colombia and 13 percent in Ecuador. But it has not been detected in great amounts in the rest of the world.

“The Mu variant has a constellation of mutations that indicate potential properties of immune escape,” states the WHO in its latest report. “Preliminary data presented to the Virus Evolution Working Group show a reduction in neutralization capacity of convalescent and vaccine sera similar to that seen for the Beta variant, but this needs to be confirmed by further studies.”

The WHO’s Technical Advisory Group on Viral Evolution has three [tiers for classifying novel SARS-CoV-2 variants](#). The first is an Alert for Further Monitoring in which a variant shows “evidence of phenotypic or epidemiological impact” requiring further monitoring. B.1.621 was designated Alert for Further Monitoring in late May. Following further assessment the WHO’s advisory group reclassified the B.1.621 as a Variant of Interest on August 30. Once a variant is classified as a VOI it is officially given a Greek Alphabet character title. The final top classification tier is Variant of Concern.

So far there is little robust research on Mu, either in regards to increased transmissibility, immune escape or disease severity. A correspondence published recently in *The Lancet Infectious Diseases* from a team of UK researchers suggested the variant does contain several mutations associated with vaccine escape, so it should be closely monitored as a variant of concern.

“The presence of mutations associated with vaccine escape might warrant reclassification of this variant to a variant of concern and deployment of additional public health resources to contain spread,” [the researchers write](#).

A [small lab study](#) published in late July found antibodies generated by the Pfizer vaccine could still effectively neutralize the Mu variant. However, the team of Italian researchers did note the neutralization was significantly lower than that seen with prior SARS-CoV-2 variants.

The new classification from the WHO is the twelfth to receive a Greek Alphabet designation. There are currently four variants designated with the most problematic Variant of Concern classification: Alpha, Beta, Gamma and Delta. And there are five currently designated Variants of Interest: Eta, Iota, Kappa, Lambda and now Mu. Three variants, previously designated as VOIs have been downgraded after close study and surveillance: Epsilon, Zeta and Theta.

There are 12 more characters left in the Greek Alphabet for yet to be designated SARS-CoV-2 variants. Once the WHO runs out of those characters it will shift to naming new variants of interest [after stars or constellations](#).

**EDITOR’S COMMENT:** The new variant is “Mi”, not “Mu”! (“mu” is for cows). On September 3<sup>rd</sup>, WHO listed Mi as variant of interest.

## A Virologist Explains Why You Don't Need to Panic About The C.1.2 Variant

By Ian M. MacKay

Source: <https://www.sciencealert.com/a-virologist-explains-why-you-don-t-need-to-panic-about-the-c-1-2-variant?>

Sept 02 – Scientists in South Africa have discovered [a new viral variant](#) of [SARS-CoV-2](#), the virus that causes [COVID-19](#).

It’s not a single virus but a clustering of genetically similar [viruses](#), known as C.1.2.

The researchers, in a pre-print study released last week but yet to be peer reviewed, found this cluster has [picked up a lot of mutations](#) in a short period of time.

Indeed, this is what viruses do. They continually evolve and mutate due to selective pressures but also because of opportunity, luck and chance.

C.1.2 has some concerning individual mutations. But we don’t really know how they’ll work together as a package. And it’s too early to tell how these variants will affect humans compared with other variants.

There’s no need to panic. It’s not spreading widely, and it’s not at Australia’s doorstep. The tools we have in place work against SARS-CoV-2, whatever the variant.



**Will it be more infectious or severe?**

**C.1.2 is distinct from but on a genetic branch near the [Lambda variant](#), which is common in Peru.**

It has some concerning individual mutations. But we don't know how these mutations will work altogether, and we can't predict how bad a variant will be based on mutations alone.

We need to see how a certain variant works in humans to give us an idea of whether it's more transmissible, causes more severe disease or escapes the immunity we get from vaccines more than other variants.

At this stage we don't know enough about how C.1.2 behaves in humans because it hasn't spread enough yet. It represents less than 5 percent of new cases in South Africa, and has only been found in around 100 COVID cases worldwide since May. It's not yet listed by the [World Health Organization](#) as a variant of interest or a variant of concern.

**Will it overtake other variants?**

It's early days, so it's impossible to predict what will happen to C.1.2.

It could expand and overtake other variants, or it could fizzle and disappear.

Again, just because this virus has a bunch of mutations, it doesn't necessarily mean the mutations will work together to out-compete other variants.

Delta is the kingpin variant at the moment, so we need to keep an eye on C.1.2 to see if it starts to push out Delta.

So, it's important to keep watching it in case it starts transmitting widely. One group in Australia, the Communicable Diseases Genomics Network, [monitors these developments closely](#).

**There's no need to panic**

At this point, there's no need for concern.

Australia still has its border restrictions in place, so the odds of this rarely occurring virus coming into the country and spreading are very low.

There's no evidence our vaccines don't work against it. Our vaccines provide protection from severe disease and death against all other SARS-CoV-2 variants thus far and there's a good chance they'll continue to do so against C.1.2 variants.

It won't be long until we have a better idea of how C.1.2 behaves. There's a lot of eyes on it, and we need to have patience as the data comes in.

Sensationalism and panic in the meantime isn't going to solve anything.

New variants, and other bits of news amid the [pandemic](#), are often latched onto and amplified by certain people and media. There's a real risk this causes fear when it's not needed, and inducing fear is a form of harm.

It is a tough time for the public because it's hard to know who to listen to and trust.

I would say it's best to listen to the experts, particularly organisations whose job it is to track and communicate risks about these things, like the WHO and your local jurisdiction's health department.

Don't amplify or pay attention to obvious alarmism and extreme negativity, and make sure you're getting your information from media sources that are trustworthy.

**Vaccination remains our best single tool**

The chances of new variants arising increases the more the virus spreads.

Vaccinating as many people as possible, as quickly as possible, is key to reducing the risk of new variants arising.

That's not to say it will reduce the risk to zero and there will be no more variants. Mutations happen by chance, and happen in a single person. One way mutations can arise is in people whose immune systems are compromised — they mount an incomplete immune response and the virus adapts, escapes and is released with more mutations.

Nothing is perfect in biology. People's immune systems respond in different ways, and a lot is based on an individual's immune history — how competent their immune system is and whether they have chronic disease.

We also won't have every single person fully vaccinated, and vaccines aren't 100% perfect, so there will still be some spread of the virus.

But vaccination reduces the risk a lot. We also know [what else works to limit this virus](#), including ventilation, filtering air, masks and social distancing measures.

*Ian M. Mackay is Adjunct Associate Professor, Faculty of Medicine @ The University of Queensland.*







Wild World of History

@history\_wild



CDC Website Reveal That Refugees From Afghanistan Took IVERMECTIN Before They Arrived In The U.S. (Photos) [redstatenation.com/cdc-website-re...](https://redstatenation.com/cdc-website-re...) via @NationStateRed



For Afghan immigrants but not us.

- All Middle Eastern, Asian, North African, Latin American and Caribbean refugees should receive presumptive therapy with:
  - Albendazole, single dose of 400 mg (200 mg for children 12-23 months)
  - AND
  - Ivermectin, two doses 200 mcg/Kg orally on 2 days before departure to the United States
- All African refugees who did not originate from countries where *Loa loa* infection is endemic (Bosnia and Herzegovina) receive presumptive therapy with:
  - Albendazole, single dose of 400 mg (200 mg for children 12-23 months)
  - AND
  - Ivermectin, two doses 200 mcg/Kg orally on 2 days before departure to the United States
  - Praziquantel, 40 mg/kg, which may be divided on 2 days before departure to the United States.



U.S. FDA @US\_FDA



You are not a horse. You are not a cow. Seriously, y'all. Stop it.



Why You Should Not Use Ivermectin to Treat or Prevent COVID-19  
Using the Drug ivermectin to treat COVID-19 can be dangerous and even lethal. The FDA has not approved the drug for that purpose.

fda.gov

## A 'Gold Standard' Clinical Trial Just Confirmed Masks DO Reduce The Spread of COVID

Source: <https://www.sciencealert.com/gold-standard-randomized-controlled-trial-confirms-we-all-need-to-keep-wearing-masks>

Sept 02 – Results from a massive study in Bangladesh unequivocally show that surgical masks reduce the spread of [SARS-CoV-2](#), scientists say.

The results – from the highest-quality, gold-standard type of [clinical trial](#), known as a randomized controlled trial – should "end any scientific debate" on whether masks are effective in battling the spread of [COVID-19](#), Jason Abaluck, an economist at Yale and one of the authors who helped lead the study, told [The Washington Post](#).

"This is an incredibly challenging but important study to pull off," Megan Ranney, an emergency medicine physician and a professor at Brown University who was not part of the study, told the *Post*.

"Anti-mask people keep saying, 'Where's the randomized controlled trial?' Well, here you go."

For the past year and a half, scientists have said that masks reduce the spread of the [virus](#). But it's very difficult to study how much masks help to curb transmission in the real world, where not everyone is masking, using the same quality of masks or even wearing masks properly.

Observational studies, which simply compare mask-wearing behaviors to infection rates in different areas, can be muddied by so many other factors. Randomized trials – in which people are randomly assigned to receive a medical intervention or not – are the most robust form of evidence. But those are expensive and difficult to conduct, especially for behavior like masking.

In the new study, researchers from Bangladesh and the US tested the effectiveness of mask promotion and usage across **600 villages in Bangladesh. The study, which involved more than 342,000 adults, is the largest randomized trial ever conducted on mask usage**, according to the *Post*.

The study was posted as a [preprint](#) to the Innovations for Poverty Action nonprofit website on Sept. 1 while it is being peer-reviewed for publication in the journal *Science*, according to the *Post*.

In the trial, which ran from November 2020 to April 2021, about 178,000 people received the "intervention" and about 164,000 people did not. Everyone in the intervention group received free masks, were provided ample information on the importance of mask wearing, had community leaders as role models and received in-person reminders for eight weeks, according to the study.

People in the control group received none of these interventions. The researchers then placed observers throughout the community who tracked, on a weekly basis, how many people properly wore masks and physically distanced themselves at mosques, markets and main entrance roads to villages and tea stalls.

Five and nine weeks after the trials started, the researchers surveyed the participants for COVID-19-like symptoms. Then, about 10 to 12 weeks after the trial start, they took blood samples from the participants who were symptomatic and tested them for SARS-CoV-2 [antibodies](#).

The masking interventions tripled proper mask use, from 13.3 percent in the control group observations to 42.3 percent in the masking intervention group. They also found that physical distancing was about 24.1 percent in the control group observations compared with 29.2 percent in the treatment group.

Five months after the trial, the "impact of the intervention faded," meaning that less people wore masks properly, but mask wearing remained 10 percent higher in the intervention group compared with the control group, the researchers wrote.

In the intervention group, 7.62 percent of people had COVID-19-like symptoms, compared with 8.62 percent in the control group. The researchers collected blood samples from nearly 11,000 participants, and found that the intervention reduced symptomatic COVID-19 infection by 9.3 percent.

"Our results should not be taken to imply that masks can prevent only 10 percent of COVID-19 cases, let alone 10 percent of COVID-19 mortality," the authors wrote in the paper.

That's because the intervention only led to 29 more people out of every 100 people to wear masks. "The total impact with near-universal masking—perhaps achievable with alternative strategies or stricter enforcement—may be several times larger than our 10 percent estimate," they wrote.





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Villages were given either cloth masks or surgical masks. In villages that were given surgical masks, symptomatic infection was reduced by 11.2 percent compared with the control group.

That percentage was even higher in older adults: In those who were 60 years or older and who were given free surgical masks along with the other interventions, symptomatic infection was reduced by 34.7 percent compared with the control group.

They did not find that cloth masks reduced symptomatic infection compared with control groups.

The study is one of many that show the benefits of masking, but it has some limitations.

For example, although they were told to remain discreet and wear plain clothing, researchers who were surveying the participants on how well they wore masks and physically distanced themselves may have been recognized by the study participants, who then may have changed their behaviors, the authors wrote.

The study also couldn't explain whether masks made symptoms less severe by reducing the viral load people were exposed to, or whether they reduced new infections completely.

### CRISPR & Genome Editing

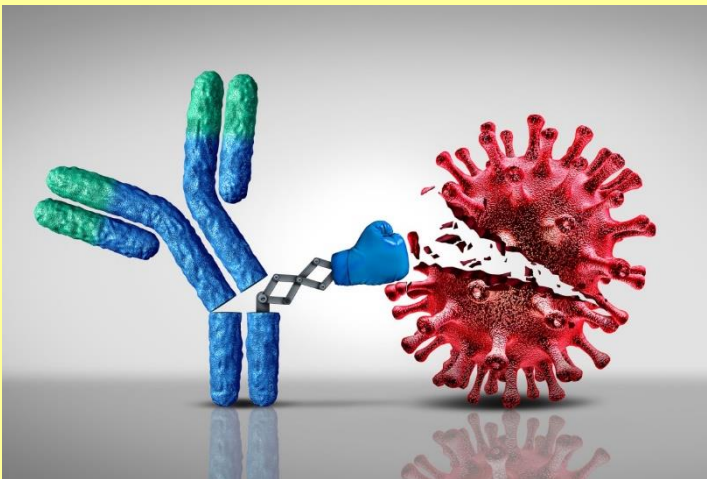
In June, a scientific team published the first-ever clinical data that support the safety and efficacy of in vivo CRISPR genome editing in humans. The expectation that gene editing approaches, including CRISPR, are going to lead to breakthroughs such as this underlies an Allied Market Research report's prediction that the global genome editing market, which accounted for \$4.81 billion in 2020, is expected to reach \$36.06 billion in 2030. This *GEN* supplement discusses new techniques and complex models that rely on CRISPR technology. [+ MORE](#)

### CRISPR-Based Tech Could Revolutionize Antibody-Based Diagnostics

Scientists have used an adaptation of the genome editing technology CRISPR to develop a new tool that can identify antibodies to SARS-CoV-2 in patient blood samples. The technology harnesses a modified, catalytically inactive Cas9 enzyme and single guide RNAs to enable the study of custom peptide libraries and overcome the limitations of current display technologies. [+ MORE](#)

### Massive study confirms vaccination reduces the risk of long COVID

Source: <https://newatlas.com/health-wellbeing/vaccination-reduces-risk-long-covid/>



Sept 02 – A large study led by researchers from King's College London has found fully vaccinated adults are around 50 percent less likely to suffer from long COVID if they are unfortunate enough to experience a breakthrough SARS-CoV-2 infection.

The new research comes from a huge ongoing project called the [Zoe COVID Symptom Study](#), which was launched early in 2020 and involves the general public downloading an app to provide daily COVID status reports.

So far more than 4.7 million people have downloaded the app, delivering researchers an unprecedented volume of data. This latest analysis of Zoe data, published in *The Lancet Infectious Diseases*, looked at the characteristics of COVID-19 infections in a large cohort of vaccinated individuals.

Data from nearly one million fully vaccinated subjects was analyzed in the new research. Compared to unvaccinated

controls, the research found vaccinated individuals experiencing a breakthrough COVID-19 infection were 49 percent less likely to report symptoms lasting longer than 28 days.

The research also looked at the characteristics of COVID-19 infections in vaccinated individuals. While vaccinated individuals experienced similar COVID-19 symptoms, such as cough, fever and headaches, they reported milder symptoms compared to unvaccinated



subjects. Vaccinated subjects were also significantly less likely to experience multiple symptoms in the first week of an infection. “Vaccinations are massively reducing the chances of people getting long COVID in two ways,” explains Tim Spector, lead investigator on the Zoe COVID study. “Firstly, by reducing the risk of any symptoms by eight to 10 fold and then by halving the chances of any infection turning into long COVID, if it does happen. Whatever the duration of symptoms we are seeing that infections after two vaccinations are also much milder, so vaccines are really changing the disease and for the better.”

The findings also offer a reminder of the importance of getting a second vaccine dose for effective protection. Frail older adults were found to still be at significant risk of COVID-19 infection after one vaccine dose, and even after full vaccination this vulnerable cohort was twice as likely to get sick from a breakthrough infection.

Clare Steves, a King’s College London researcher working on the study, says this is an important reminder for those in high-risk cohorts to get that second dose, and potentially booster shots when they become available.

“In terms of the burden of long COVID, it’s good news that our research has found that having a double vaccination significantly reduces the risk of both catching the virus and if you do, developing long-standing symptoms,” says Steves. “However, among our frail, older adults and those living in deprived areas the risk is still significant and they should be urgently prioritized for second and booster vaccinations.”

►► The new study was published in [The Lancet Infectious Diseases](#).

## Moderna Makes Twice as Many Antibodies as Pfizer, Study Says

Source: <https://www.bloomberg.com/news/articles/2021-08-31/moderna-jab-spurs-double-pfizer-covid-antibody-levels-in-study>

Aug 31 – [Moderna Inc.](#)’s Covid vaccine generated more than double the antibodies of a similar shot made by [Pfizer Inc.](#) and [BioNTech SE](#) in research that compared immune responses evoked by the two inoculations.

The study is one of the first to compare levels of antibodies produced by the two vaccines, which are thought to be one of the important components of the immune response. It didn’t examine whether the antibody differences led to a difference in efficacy over time between the two shots, which both were more than 90% effective in final-stage clinical trials.

The [research](#) looked at antibody levels against the coronavirus spike protein in about 1,600 workers at a major Belgium hospital system whose blood samples were analyzed 6 to 10 weeks after vaccination. The participants hadn’t been infected with the coronavirus before getting vaccinated. Levels among those who got two doses of the Moderna vaccine averaged 2,881 units per milliliter, compared with 1,108 units per milliliter among those who received two Pfizer doses.

The results, published Monday in a letter to the *Journal of the American Medical Association*, suggested the differences might be explained by the higher amount of active ingredient in the Moderna vaccine -- [100 micrograms](#), versus [30 micrograms](#) in Pfizer-BioNTech -- or the slightly longer interval between doses of the Moderna vaccine -- four weeks, versus three weeks for Pfizer-BioNTech.

Outside researchers said it was premature to conclude that the difference in antibody levels was medically important.

“I would urge caution in making the conclusion that because Moderna demonstrated a slightly higher peak on average that its efficacy will be slower to wane,” said [David Benkeser](#), a biostatistician at Emory University, in an email. “Such a conclusion requires a host of assumptions that have not yet been evaluated.”

Both vaccines produce high levels of antibodies, he noted, and other studies have shown even relatively low levels of antibodies are protective.

Still, it’s possible that higher initial antibody levels might correlate with longer duration of protection against mild breakthrough infections, said [Deborah Steensels](#), a microbiologist at Ziekenhuis Oost-Limburg, a large hospital in Belgium, who was lead author on the study. Also, if higher antibody levels are confirmed to be important, then the Moderna vaccine might be better for immunocompromised people who don’t respond well to vaccines, she said.

Pfizer said in a statement that its vaccine “continues to be highly efficacious” in preventing Covid-19, including against severe cases and hospitalization. Continuing analysis of its final-stage study has shown a decline of efficacy against symptomatic infection over time, the drugmaker said, but initial trial data also show that a third dose of the existing vaccine at least six months after the first two significantly raises neutralizing antibody levels.

Moderna’s vaccine was associated with a two-fold risk reduction against breakthrough SARS-CoV-2 infections compared to Pfizer’s in a review of people in the Mayo Clinic Health System in the U.S. from January to July. The results were reported in a separate [study](#) released ahead of publication and peer review on Aug. 9.





## Metoprolol safe reduces lung inflammation in patients with severe COVID-19

Source: <https://www.healio.com/news/cardiology/20210901/infectious-diseases-tag-emerging-diseases>

Sept 01 – IV administration of the beta-blocker metoprolol in patients with COVID-19-associated acute respiratory distress syndrome was safe and effective at reducing exacerbated lung inflammation, according to new data. “Reduced lung inflammation was associated with a significant improvement in oxygenation and with a trend toward fewer days on mechanical ventilation and of ICU admission,” the researchers wrote. Agustin Clemente-Moragon, BSc, of the Centro Nacional de Investigaciones Cardiovasculares, Madrid, and colleagues conducted the pilot trial to assess the impact of metoprolol on alveolar inflammation and respiratory function in patients with COVID-19-associated acute respiratory distress syndrome (ARDS). Clemente-Moragon and colleagues enrolled 20 [patients with COVID-19 and ARDS](#) who were on invasive mechanical ventilation and randomly assigned them to metoprolol (15 mg daily for 3 days; n = 12) or no treatment (control; n = 8). Each patient received bronchoalveolar lavage (BAL) before and after metoprolol/control. Researchers reported no adverse effects [to metoprolol administration](#). Baseline data indicated that neutrophil content in BAL was similar between groups, whereas at day 4, patients receiving metoprolol had less neutrophils in BAL (median, 14.3 neutrophils/ $\mu$ L vs. 397 neutrophils/ $\mu$ L;  $P = .016$ ).

In addition, metoprolol lowered neutrophil extracellular traps content and other markers of lung inflammation. Oxygenation, defined as the ratio between arterial oxygen partial pressure and fractional inspired oxygen, improved after 3 days in the treatment arm (median, 130 at baseline vs. 267 at day 4;  $P = .003$ ) but did not improve in the control arm. Although the following differences did not reach statistical significance, those in the metoprolol group spent less days on invasive mechanical ventilation (15.5 vs. 21.9;  $P = .17$ ) and had fewer days of ICU admission after enrollment (14.5 vs. 21.4;  $P = .15$ ).

“Metoprolol repurposing for the treatment of ARDS associated with COVID-19,” Clemente-Moragon and colleagues wrote, “is a safe and cheap intervention that can help to alleviate the massive personal and health care burden associated with the pandemic.”

Mourad H. Senussi, MD, MS, of Baylor St. Luke’s Medical Center, wrote in an accompanying editorial that the findings shed light on the important pathophysiologic underpinnings that help establish biological plausibility for this inexpensive, safe and widely available medication. “Although observed in patients with COVID-19, this sets the groundwork for further research in the use of beta-blockade in the critically ill,” Senussi wrote. “Further studies are needed to elucidate and identify where along the inflammatory spectrum these critically ill patients lie, which patients would benefit from beta-blockers and at what time point during their hospital stay.”

►► Reference: [Senussi MH. J Am Coll Cardiol. 2021;doi:10.1016/j.jacc.2021.07.006.](#)

## Getting Ready for Future Pandemics an 'Economic and Moral Imperative'

Source: <https://www.medpagetoday.com/infectiousdisease/generalinfectiousdisease/94364>

Sept 03 – The U.S. must invest time and money now to prepare for the next pandemic, Biden administration officials said Friday. “We really need to start preparing now,” said Eric Lander, PhD, director of the Office of Science and Technology Policy at the White House, on a phone call with reporters. “We’ve got to seize the unique opportunity to transform our scientific capabilities so we’re prepared for the increasing frequency of biological threats on the horizon. Investing to avert or mitigate the huge toll of future pandemics or other biological threats is both an economic and a moral imperative.”

“Five years from now, we need to be in a far stronger position to stop infectious diseases before they become open pandemics, like COVID-19,” he continued. “There’s a lot that we can do to transform our scientific capabilities for vaccines, therapeutics, diagnostic development, for early warning for public health systems. Importantly, these kinds of advances will not only strengthen our systems for dealing with future biological threats, they will be valuable for everyday public health and medical care for all Americans, and for the world.”

Beth Cameron, PhD, Special Assistant to the President and senior director for Global Health Security & Biodefense on the National Security Council (NSC), said that the COVID-19 pandemic “enumerated a number of challenges in our preparedness for a moderate pandemic, but we do need additional capabilities to be fully prepared for any biological event that comes our way. And that includes countering bioterrorism, countering the development and use of biological weapons, strengthening the Biological Weapons Convention -- including food security, food defense, zoonotic spillover events and others.”

Cameron and Lander introduced the administration’s new [27-page pandemic preparedness plan](#). Lander explained that the plan rests on five pillars:

- Transforming our medical defenses, including dramatically improving vaccines, therapeutics, and diagnostics



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- Ensuring situational awareness about infectious disease threats, for both early warning and real-time monitoring
- Strengthening public health systems, both in the U.S. and internationally, to be able to respond to emergencies, with a particular focus on protecting the most vulnerable communities
- Building core capabilities, including personal protective equipment, stockpiles and supply chains, biosafety and biosecurity, and regulatory improvement
- Managing the mission, with the seriousness of purpose, commitment, and accountability of the Apollo Program

The estimated cost of the plan is \$65.3 billion over 10 years, Lander said. "It's vital that we start with an initial outlay of \$15-to-\$20 billion to jump-start these efforts. Accordingly, we're proposing that the current budget reconciliation provides at least \$15 billion for this goal," he noted, referring to a "soft" infrastructure bill currently being considered by Congress. "The administration will work toward other appropriations to support the remainder of that \$65.3 billion budget above baseline needed to execute the plan in full." Asked during a question-and-answer session about the likelihood of getting that first \$15-to-\$20 billion in funding into the bill, Lander said, "We are in discussions with [Capitol] Hill, and are very optimistic."

Lander likened the seriousness and importance of the pandemic program's mission to the Apollo space program. "We're proposing there be a centralized Mission Control, acting as a single, unified program management unit that draws on expertise from multiple agencies at HHS -- including NIH, CDC, BARDA [the Biomedical Advanced Research and Development Authority], FDA, and CMS -- as well as other agencies and departments, such as the DOD [Department of Defense], DOE [Department of Energy], and the VA [Department of Veterans Affairs]," he said.

In addition to reporting on the mission's progress, Mission Control should "conduct periodic exercises to evaluate our actual national pandemic preparedness by deploying these capabilities, including through testing rapid product development, and it should seek input of outside experts and working groups that allows us to get the best possible advice."

Cameron pointed out that on his first day in office, President Biden [signed an executive order](#) that re-established the Office of the Directorate for Global Health Security and Biodefense, an office that is part of the NSC and for which Cameron worked during the Obama administration; that office was [folded into another part of the NSC](#) by President Trump in 2018. "We're really there to provide that high-level 'belly button,' if you will, to elevate these important issues to the president and the NSC. Our team has a 'no fail' mission to rapidly mobilize the policy machinery to elevate high-consequence infectious disease outbreaks quickly across the White House and to the national security adviser and really to empower agencies to adopt a 'no regrets' response."

Cameron was asked how much the current plan was built on the one developed during the Obama administration. "This work very much draws on lessons from those efforts, and ... in addition to that, draws on lessons from this pandemic, which really showed us that we had to be able to act much more quickly to provide medical countermeasures," Cameron said. "We were able to do more quickly in this pandemic, but we want to bring that timeline as far to the left as we possibly can."

One such lesson relates to home testing, Lander said. "We would like to get to the place where, in a future pandemic some years from now, you don't have to drive to CVS to get a test, but we have incredibly inexpensive tests that, if needed, people could apply daily at home to know if they were infected, if they needed medical care ... We would like to be able to have this capability that can be done extremely frequently, conveniently, inexpensively, and accurately so we can get this information. That would be so much more effective, for everyone to know every day if they should stay home or if they need medical care to come to them."

## White House science adviser warns US not ready for future pandemics

Source: <https://nypost.com/2021/09/04/white-house-science-adviser-dr-eric-lander-warns-us-not-ready-for-future-pandemics/>

Sept 04 – President Biden's top scientific adviser said Friday that the US must [prepare for the possibility that a pandemic](#) worse than the COVID-19 outbreak will strike within the next decade.

Dr. Eric Lander, a geneticist and director of the White House Office of Science and Technology Policy, told reporters on a conference call that the pandemic had arrived at a time when advances in both science and technology "made it possible to respond much more rapidly than ever before."

"Had COVID-19 emerged five years ago, we would have had far fewer tools to do this," Lander said, "But, five years from now, we need to have much better capabilities."

Lander called on Congress to allocate at least \$15 billion to [kick-start a plan for pandemic preparedness in the budget](#) reconciliation bill set to be debated this fall on Capitol Hill.

The plan unveiled by Lander — which has a final price tag of \$65.3 billion over the next seven to 10 years — features five "pillars to protect the US against biological threats." They include improving vaccines, therapeutics and diagnostics; developing more robust early





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warning and real-time monitoring systems; modernizing the public health system; building stockpiles of personal protective equipment and expanding supply chains; and establishing a centralized “Mission Control” with input from agencies across the federal government.

“The COVID-19 pandemic has exposed fundamental issues with America’s public health that go far beyond pandemic preparedness,” Lander said. “The issues include the need to increase overall public health funding, strengthen the public health workforce, eliminate barriers to access, improve data systems, address disparities, improve communications, and improve coordination across federal, state, local, and Tribal authorities.”

In an [accompanying 27-page document](#) titled “American Pandemic Preparedness: Transforming Our Capabilities,” White House officials wrote that the initial \$15 billion ask was “modest” compared to the estimated \$16 trillion loss to the economy caused by COVID-19.

“If major pandemics similar to COVID-19, costing the US roughly \$16 trillion, occur at a frequency of every 20 years, the annualized economic impact on the U.S. would be \$800 billion per year,” the document read. “Even for somewhat milder pandemics, the annualized cost would likely exceed \$500 billion.”

The document also noted the annualized cost of the plan (between \$6 billion and \$9 billion) would be less than is spent annually on missile defense and counter-terrorism (\$20 billion and \$170 billion, respectively). It added that more than a third of the total \$65.3 billion cost would be used to design, develop and [test new vaccines](#) for “active viral diseases,” as well as adapt them to keep pace with variants and simplify their distribution.

“Even with the knowledge and the tools that dramatically improved our ability to respond, COVID-19 has still been devastating for the nation and the world,” Lander said.

“As of today, COVID-19 has killed at least 642,000 Americans and many, many millions of people around the world, and many recovered patients are living with long-term effects of the disease.”

“There is a reasonable likelihood that another serious pandemic that could be worse than COVID-19 will occur soon, possibly even within the next decade,” he added. “And the next pandemic will very likely be substantially different than COVID-19. So, we must be prepared to deal with any type of viral threat.”

**EDITOR’S COMMENT:** This article and the article above give a pretty good picture of the confused US of today. And if they are not ready (again) then “Houston we all have a problem!”

## The COVID-19 Pandemic Is Affecting Space Launches. Here's Why

Source: <https://www.sciencealert.com/space-organizations-are-running-low-on-liquid-oxygen-because-covid-19-patients-need-it-to-breathe>

Sept 04 – Supply chains have been wreaking havoc across the industrial world. The complex web that holds the world’s economies together has been fraying at the edges, resulting in some unexpected shortages, such as a lack of [rental cars in Alaska](#) and a lack of [Lunchables](#) at the author’s local grocery store.

Now there’s a supply shortage that directly ties to the [pandemic](#) that is starting to affect the space launch industry – oxygen.

It’s common knowledge at this point that liquid oxygen ([LOX](#)) is an important tool for combating severe symptoms of [COVID-19](#). Most patients admitted to the hospital with the [virus](#) need oxygen directly pumped into the lungs, usually supplied by LOX suppliers such as AirGas or other commercial gas companies.

Oxygen is also used in high quantities in a completely different application – rocket engines.

Chilled oxygen is a necessary propellant chemical for all the leading launch firms, including SpaceX, Virgin Orbit, and [ULA](#). But it’s becoming harder and harder to obtain the liquid form of the most abundant element in the Earth’s crust.



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That's in no small part because the same process used to create oxygen for rocket fuel can also create oxygen used for COVID patients. And as Richard Craig, the vice president of technical and regulatory affairs for the Compressed Gas Association, [put it](#): "People come first."

Even avid space exploration fans wouldn't disagree with that logic. But the spike in COVID cases over the summer is starting to tax the supply chain for oxygen.

It got to the point that both Gwynne Shotwell, SpaceX's President, and [Elon Musk](#), its CEO, spoke out about the potential impact a lack of oxygen could have on their flight schedule. Shotwell went so far as to [directly ask](#) conference-goers at the 36th Space Symposium to "send [her] an email" if they happen to have any liquid oxygen to spare.

She will be hard-pressed to find any in the home state of some of SpaceX's launches. Florida is one of the hardest-hit states in the current resurgence of the pandemic.

LOX normally isn't transported over far distances – most are created about 200-300 miles (322-483 kilometers) from where it is distributed. It is possible to transport the liquid further. However, another confounding factor impacts the intricate LOX supply chain – truck drivers.

LOX is highly flammable and explosive, so drivers that ferry it between production and consumption sites such as rocket pads have to be even more highly trained than a standard commercial truck driver. Right now, there is a shortage of commercial truckers of all stripes and a particular shortage of those qualified to haul liquid oxygen.

While some suppliers are, in fact, able to ship oxygen supplies farther than their usual customer base, that takes up valuable time from the truckers who would otherwise be able to deliver it to closer locations.

Those drivers aren't only responsible for delivering oxygen, though.

Other components for rocket launches, such as liquid nitrogen, are also carried by highly qualified drivers. This causes supply chain restrictions from the other side as well.

NASA had to delay a rocket launch of an Earth-surveillance satellite by a week due to a lack of liquid nitrogen ULA uses to test the rocket before launch. But the liquid nitrogen was itself a casualty of the oxygen shortage, according to a [statement from NASA](#): "Current pandemic demands for medical liquid oxygen have impacted the delivery of the needed liquid nitrogen supply to [Vandenberg](#)."

This surely will not be the last scheduling casualty of this growing supply chain problem.

SpaceX hopes to surpass their total of 26 launches from last year and are well on their way to doing so. But their timeline, and all other launch providers' timelines, might be impacted by this supply chain disruption.

This is just another reason to hope for a swift end to the pandemic for space exploration enthusiasts.

### Anthrax infections and it's dark bioterrorism history

Source: [https://www.youtube.com/watch?v=MBrATAAOi7Y&feature=emb\\_logo](https://www.youtube.com/watch?v=MBrATAAOi7Y&feature=emb_logo)

### Brazilian viper venom may become tool in fight against COVID, study shows

Source: <https://www.reuters.com/business/healthcare-pharmaceuticals/brazilian-viper-venom-may-become-tool-fight-against-coronavirus-study-shows-2021-08-31/>

Aug 30 – Brazilian researchers have found that a molecule in the venom of a type of snake inhibited coronavirus reproduction in monkey cells, a possible first step toward a drug to combat the virus causing COVID-19.

A study published in the scientific journal *Molecules* this month found that the molecule produced by the jararacussu pit viper inhibited the virus's ability to multiply in monkey cells by 75%.

"We were able to show this component of snake venom was able to inhibit a very important protein from the virus," said Rafael Guido, a University of Sao Paulo professor and an author of the study.

The molecule is a peptide, or chain of amino acids, that can connect to an enzyme of the coronavirus called PLPro, which is vital to reproduction of the virus, without hurting other cells.

Already known for its antibacterial qualities, the peptide can be synthesized in the laboratory, Guido said in an interview, making the capture or raising of the snakes unnecessary.

"We're wary about people going out to hunt the jararacussu around Brazil, thinking they're going to save the world ... That's not it!" said Giuseppe Puerto, a herpetologist running the Butantan Institute's biological collection in Sao Paulo. "It's not the venom itself that will cure the coronavirus."





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Researchers will next evaluate the efficiency of different doses of the molecule and whether it is able to prevent the virus from entering cells in the first place, according to a statement from the State University of Sao Paulo (Unesp), which was also involved in the research. They hope to test the substance in human cells but gave no timeline.



The jararacussu is one of the largest snakes in Brazil, measuring up to 6 feet (2 meters) long. It lives in the coastal Atlantic Forest and is also found in Bolivia, Paraguay, and Argentina.

## 27 U.S. Air Force Pilots Resign Over Covid-19 Vaccination Mandate

Source: <https://bestnewshere.com/27-u-s-air-force-pilots-resign-over-covid-19-vaccination-mandate/>

Twenty-seven active-duty U.S. Air Force pilots have resigned their commissions over the unconstitutionality of Secretary of Defense Lloyd Austin's mandate requiring all Armed Forces members to at once receive a Covid-19 vaccination, Real Raw News has learned. The exodus began on August 27, with 12 pilots from the 1<sup>st</sup> Fighter Wing at Joint Base Langley-Eustis, Virginia, submitting to their commanding officer letters of resignation only hours after they received a 4:00 a.m. text message instructing them to submit to mandatory Covid-19 vaccinations by 10:00 a.m. that same day. It's unknown whether the pilots collaborated ahead of resigning, but all 12 resignations were handed in within a 90-minute period.

One officer, a 29-year-old **F-22 Raptor** pilot, said of the situation, "We undergo routine physicals and must meet rigorous fitness standards to stay on flight duty. I think it's safe to say all Air Force pilots are in good physical condition. We must be to endure extreme G-force stress on our body. There is no reason we should be at risk of Covid-19 or becoming sick from it. I know I'm not alone in rejecting this potentially dangerous and soundly untested shot."

Pilots at other airbases apparently joined him in solidarity.

A day later, 15 pilots of the 2<sup>nd</sup> Bomb Wing in Barksdale, Louisiana tendered letters of resignation after they, too, received orders to get the jab. The orders stated explicitly that



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any officer refusing a Covid-19 vaccination would lose his flight status and be subject to disciplinary action, including a potential dishonorable discharge from the service.



A pilot with the 2<sup>nd</sup> Bomb Wing told RRN that he and his fellow pilots marched into their commanding officer's office and dropped the resignation letters on his desk. He added that airmen and maintenance crews—enlisted persons who cannot simply resign from the service—are also furious about the mandatory vaccination requirement. Several of them, he told RRN, have sent hardship letters asking for early dismissal from the Air Force, mainly because they don't have faith in a vaccine that has killed thousands of healthy people, military and civilians alike. "This is only the beginning. A lot more of us will be turning in our wings," he said.

### **"Designer Biology" and the Need for Biosecurity-by-Design**

By Dr. Diane DiEuliis, and Dr. James Giordano

*NCT Magazine 2021*

Source: <https://nct-magazine.com/nct-magazine-july/designer-biology-and-the-need-for-biosecurity-by-design/>

Synthetic biology has a number of definitions. Most recently, the National Academies of Sciences (NAS), in an effort to develop further understanding of risks associated with synthetic biology capabilities, defined the field as "concepts, approaches, and tools that enable the modification or creation of biological organisms." The NAS notes that, "While the goals of synthetic biology are beneficial, these capabilities also could be used to cause harm."<sup>2</sup> We concur; to be sure, synthetic biology can – and we believe rightly should – be regarded as dual-use technology, with risks that extend beyond the purview of current biosecurity controls. As originally conceived, biosecurity measures tend to be focused upon controlling access to pathogens that bad actors could use for harm; given the emphasis on physical security, such protocols were considered as policies of "gates, guns, and guards". However, synthetic biology now affords capabilities to modify or create dangerous microorganisms, including viruses, as evidenced by synthetic development of polio,<sup>3</sup> influenza viruses (and notably the 1918 strain),<sup>4</sup> and horsepox, among others. While somewhat more technically difficult, engineering harmful bacteria also poses a dual use threat. While such syntheses are typically undertaken in controlled, secure laboratory environments by experienced research personnel, these endeavors are exemplary of the expanding capabilities – and power – of synthetic biology, which could be misused. Of particular concern in this regard is the growing number of synthetic DNA providers that have made





molecular tools and substrates available to users worldwide. Recently, there has been vigorous debate regarding the possible origins of the novel coronavirus (viz -, that it could have been created or modified in a research laboratory, and then accidentally disseminated into either the wild and/or human populations). While this remains conjecture, it nonetheless represents a viable scenario; as the synthetic creation of SARS-CoV-2 was readily accomplished at the start of the pandemic for research purposes, thereby emphasizing the rapidity with which certain goals and products of synthetic biology creation can be achieved and produced. Equally important is that tools and methods of synthetic biology are increasingly available to an expanding group of users (e.g.- public scientists accessing direct-to-consumer resources and services, and the do-it-yourself [DIY] community) that is outside of the regulatory provenance of academic and/or governmental research institutions.

►► **Read the full paper at the source's URL.**

*James Giordano, Ph.D., is Professor in the Departments of Neurology and Biochemistry; Chief of the Neuroethics Studies Program; Director of the Program in Biotechnology, Biosecurity and Ethics of the Cyber-SMART Center; and Chair of the Sub-program in Military Medical Ethics at Georgetown University. He is Senior Fellow in Biosecurity, Technology, and Ethics at the US Naval War College, Newport, RI; Bioethicist-in-Residence of the US Defense Medical Ethics Center; and Senior Science Advisory Fellow of the SMA Branch, Joint Staff, Pentagon. Prof. Giordano is the author of over 300 peer-reviewed publications, 7 books and 35 governmental reports on bioscience and technology, biosecurity, and ethics, and is an elected member of the European Academy of Science and Arts, and a Fellow of the Royal Society of Medicine (UK). A former US Naval officer, holding designations as an aerospace physiologist, research physiologist, and research psychologist, he served with the US Navy and Marine Corps.*

*Dr. Diane DiEuliis is a Senior Research fellow at National Defense University. Her research areas focus on emerging biological technologies, biodefense, and preparedness for biothreats. Specific topic areas under this broad research portfolio include synthetic biology, the US bioeconomy, dual use life sciences research, disaster recovery, and behavioral, cognitive, and social science as it relates to important aspects of deterrence and preparedness. Dr. DiEuliis teaches a biotechnology course, and guest lectures in a variety of foundational professional military education courses. Prior to joining NDU, Dr. DiEuliis was the Deputy Director for Policy, and served as Acting Deputy Assistant Secretary for Policy and Planning, in the Office of the Assistant Secretary for Preparedness and Response (ASPR), U.S. Department of Health and Human Services.*

**Be calm and read this August 2021 document!**



**Australian Government**  
 Department of Health  
 Therapeutic Goods Administration

**IMPORTANT**

## Database of Adverse Event Notifications - medicines

### Medicine summary

You searched for the following **3 medicines** between **01/01/2019 – 07/08/2021**:

- COMIRNATY COVID-19 vaccine (BNT162b2 (mRNA))
- COVID-19 Vaccine (TNS) (COVID-19 Vaccine (Type not specified))
- COVID-19 Vaccine AstraZeneca (ChAdOx1-S (Viral vector))





## Hundreds of Medical Journals Just United Together to Issue a Brutally Frank Warning

Source 1: <https://www.sciencealert.com/medical-journals-warn-the-risk-of-waiting-for-the-pandemic-to-end-before-fixing-the-climate-is-too-great>  
 Source 2 (Editorial): <https://www.bmj.com/content/374/bmj.n1734>

Sept 07 – Global warming is already affecting people's health so much that emergency action on [climate change](#) cannot be put on hold while the world deals with the [COVID-19 pandemic](#), medical journals across the globe warned on Monday.

"Health is already being harmed by global temperature increases and the destruction of the natural world," read an editorial published in more than 220 leading journals ahead of the COP26 climate summit in November.

Since the pre-industrial era, temperatures have risen around 1.1 degrees Celsius.

**The editorial, written by the editors-in-chief of over a dozen journals including the *Lancet*, the *East African Medical Journal*, Brazil's *Revista de Saude Publica* and the *International Nursing Review*, said this had caused a plethora of health problems.**

"In the past 20 years, heat-related mortality among people older than 65 years has increased by more than 50 percent," [it read](#).

"Higher temperatures have brought increased dehydration and renal function loss, dermatological malignancies, tropical infections, adverse mental health outcomes, pregnancy complications, allergies, and cardiovascular and pulmonary morbidity and mortality."

[It also pointed to the decline in agricultural production](#), "hampering efforts to reduce undernutrition".

These effects, which hit those most vulnerable like minorities, children, and poorer communities hardest, are just the beginning, it warned.

As things stand, global warming could reach +1.5C on pre-industrial levels around 2030, according to the [UN's Intergovernmental Panel on Climate Change](#).

And that, along with the continued loss of biodiversity, "risk catastrophic harm to health that will be impossible to reverse," [the editorial warned](#).

"Despite the world's necessary preoccupation with COVID-19, we cannot wait for the pandemic to pass to rapidly reduce emissions." [In a statement ahead](#) of the publication of the editorial, [World Health Organization](#) chief Tedros Adhanom Ghebreyesus said: "The risks posed by climate change could dwarf those of any single disease".

"The COVID-19 pandemic will end, but there is no vaccine for the climate crisis. Every action taken to limit emissions and warming brings us closer to a healthier and safer future."

The editorial pointed out that many governments met the threat of COVID-19 with "unprecedented funding" and called for "a similar emergency response" to the environmental crisis, highlighting the benefits.

"Better air quality alone would realize health benefits that easily offset the global costs of emissions reductions," [it read](#).

The authors also said "governments must make fundamental changes to how our societies and economies are organized and how we live".

## Even Highly Allergic Adults Unlikely to React to COVID-19 Vaccine

Source: <https://www.medscape.com/viewarticle/957843>

Aug 31 – About 2% of highly allergic individuals had a reaction to the Pfizer-BioNTech COVID-19 vaccine, according to new research from Israel [published online](#) August 31 in *JAMA Network Open*. Symptoms resolved in a few hours with medication, and no patients required hospitalization.

About 2% of highly allergic individuals had a reaction to the Pfizer-BioNTech COVID-19 vaccine in a study from Israel published August 31 in *JAMA Network Open*. Symptoms resolved in a few hours with medication, and no patients required hospitalization.

Risk for allergic reaction has been one of several obstacles in global vaccination efforts, the authors, led by Nancy Agmon-Levin, MD, of the Sheba Medical Center, Ramat Gan, Israel, write. Clinical trials for the Moderna and Pfizer-BioNTech COVID-19 vaccines excluded individuals with allergies to any component of the vaccine or with previous allergies to other vaccines. Early reports of [anaphylaxis](#) in reaction to the vaccines caused concern among patients and practitioners. Soon after, the Centers for Disease Control and Prevention and other authorities [released guidance](#) on preparing for allergic reactions.

"Despite these recommendations, uncertainty remains, particularly among patients with a history of anaphylaxis and/or multiple allergies," the authors write.

In response to early concerns, the Sheba Medical Center opened a COVID-19 referral center to address safety questions and to conduct assessments of allergy risk for the Pfizer-





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BioNTech vaccine, the first COVID-19 vaccine approved in Israel. From December 27, 2020, to February 22, 2021, the referral center assessed 8102 patients with allergies. Those who were not clearly at low risk filled out a questionnaire about prior allergic or anaphylactic reactions to drugs or vaccines, other allergies, and other relevant medical history. Patients were considered to be at high risk for allergic reactions if they met at least one of the following criteria: previous anaphylactic reaction to any drug or vaccine, multiple drug allergies, multiple other allergies, and mast cell disorders. Individuals were also classified as high risk if their healthcare practitioner deferred vaccination because of allergy concerns.

Nearly 95% of the cohort (7668 individuals) were classified as low risk and received both Pfizer vaccine doses at standard immunization sites and underwent 30 minutes of observation after immunization. Although the study did not follow these lower-risk patients, "no serious allergic reactions were reported back to our referral center by patients or their general practitioner after immunization in the regular settings," the authors write.

Five patients were considered ineligible for immunization because of known sensitivity to polyethylene glycol or multiple anaphylactic reactions to different injectable drugs, following recommendations from the Ministry of Health of Israel at the time. The remaining 429 individuals were deemed to be at high risk and underwent observation for 2 hours from a dedicated allergy team after immunization. For these high-risk patients, both vaccine doses were administered in the same setting. Patients also reported any adverse reactions in the 21 days between the first and second dose.

Women made up most of the high-risk cohort (70.9%). The average age of participants was 52 years. Of the high-risk individuals, 63.2% reported prior anaphylaxis, 32.9% had multiple drug allergies, and 30.3% had multiple other allergies.

During the first 2 hours following immunization, nine individuals (2.1%), all women, experienced allergic reactions. Six individuals (1.4%) experienced minor reactions, including skin flushing, tongue or uvula swelling, or a cough that resolved with antihistamine treatment during the observation period. Three patients (0.7%) had anaphylactic reactions that occurred 10 to 20 minutes after injection. All three patients experienced significant bronchospasm, skin eruption, itching, and shortness of breath. Two patients experienced [angioedema](#), and one patient had gastrointestinal symptoms. They were treated with adrenaline, antihistamines, and an inhaled bronchodilator. All symptoms resolved within 2 to 6 hours, and no patient required hospitalization.

In the days following vaccination, patients commonly reported pain at the injection site, fatigue, muscle pain, and [headache](#); 14.7% of patients reported skin eruption, itching, or [urticaria](#).

As of February 22, 2021, 218 patients from this highly allergic cohort received their second dose of the vaccine. Four patients (1.8%) had mild allergic reactions. All four developed flushing, and one patient also developed a cough that resolved with antihistamine treatment. Three of these patients had experienced mild allergic reactions to the first dose and were premedicated for the second dose. One patient only reacted to the second dose.

The findings should be "very reassuring" to individuals hesitant to receive the vaccine, [Elizabeth Phillips, MD](#), the director of the Center for Drug Safety and Immunology at Vanderbilt University Medical Center, told *Medscape Medical News*. She was not involved with the research and wrote an invited commentary on the study. "The rates of anaphylaxis and allergic reactions are truly quite low," she said. Although about 2% of the high-risk group developed allergic reactions to immunization, the overall percentage for the entire cohort would be much lower, she noted.

The study did not investigate specific risk factors for and mechanisms of allergic reactions to COVID-19 vaccines, Phillips said, which is a study limitation that the authors also acknowledge. The National Institute for Allergy and Infectious Diseases is currently trying to answer some of these questions with a multisite, randomized, double-blinded [study](#). The study is intended to help understand why people have these allergic reactions, Phillips added. Vanderbilt is one of the sites for the study.

While researchers continue to hunt for answers, the algorithm developed by the authors provides "a great strategy to get people that are at higher risk vaccinated in a monitored setting," she said. The results show that "people should not be avoiding vaccination because of a history of anaphylaxis."

## International study reveals how Delta came to dominate the pandemic

Source: <https://newatlas.com/health-wellbeing/delta-variant-transmission-immune-escape-vaccine-coronavirus/>

Sept 07 – A comprehensive new study, published in the journal *Nature*, is describing how the [Delta variant of SARS-CoV-2](#) has so rapidly become dominant all over the world. The research offers thorough evidence Delta's effective spread is through a combination of greater resistance to immune antibodies and a more efficient ability to infect cells and replicate compared to prior virus variants.



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First recorded in India in December, 2020, the [Delta variant of SARS-CoV-2](#) has spread across the globe at an incredible rate. [Clearly outperforming](#) all other currently circulating variants, Delta is now the dominant form of SARS-CoV-2 and present in most countries around the world.

This new study is the result of a massive international collaborative effort involving dozens of scientists. The first arm of the research investigated how effectively the Delta variant evades pre-existing immune antibodies generated either by a prior COVID-19 infection or a vaccination.

Across a series of in vitro experiments the researchers found **the Delta variant was six times less sensitive to immune antibodies from individuals who had recovered from a prior COVID-19 infection, and eight times less sensitive to vaccine-induced antibodies. This sensitivity was compared to antibody responses generated against the original strain of SARS-CoV-2.**

The second arm of the study focused on how the Delta variant more efficiently infects and replicates within host cells. Here the researchers generated a cellular model of an airway grown from human cells.

Observing the virus infecting these cells in detail revealed the Delta variant's increased ability to break into cells compared to other SARS-CoV-2 variants. The researchers suggest this ability is mediated by a greater volume of what are known as cleaved spikes.

A synthetic version of Delta, known as a pseudotyped virus, was created to mimic a few key mutations. This effectively confirmed the increased number of cleaved spikes on the virus surface is what helps Delta more efficiently enter host cells.

Once inside those cells the Delta variant was also found to replicate faster than previous variants. These factors, the researchers hypothesize, are why Delta has so quickly become dominant over all other variants currently circulating.

"By combining lab-based experiments and epidemiology of vaccine breakthrough infections, we've shown that the Delta variant is better at replicating and spreading than other commonly observed variants," says Ravi Gupta, a senior author on the new study from the University of Cambridge. "There's also evidence that neutralizing antibodies produced as a result of previous infection or vaccination are less effective at stopping this variant. These factors are likely to have contributed to the devastating epidemic wave in India during the first quarter of 2021, where as many as half of the cases were individuals who had previously been infected with an earlier variant."

Gupta says we may need to begin considering Delta-specific vaccines, as the study also analyzed around 100 vaccinated healthcare workers who were subsequently infected with the Delta variant. Current vaccines were still found to be profoundly effective at preventing severe disease, hospitalization and death, however, the research found vaccinated individuals infected with Delta were transmitting the virus to others at greater levels than previous variants.

Anurag Agrawal, from India's CSIR Institute of Genomics and Integrative Biology and joint senior author on the new study, says this kind of breakthrough viral transmission is a significant problem as it allows the virus to silently spread through vaccinated communities until it catches either vulnerable populations or the unvaccinated.

"Infection of vaccinated healthcare workers with the Delta variant is a significant problem," says Agrawal. "Although they themselves may only experience mild COVID, they risk infecting individuals who have suboptimal immune responses to vaccination due to underlying health conditions – and these patients could then be at risk of severe disease. We urgently need to consider ways of boosting vaccine responses against variants among healthcare workers. It also suggests infection control measures will need to continue in the post-vaccine era."

►► The new study was published in the journal [Nature](#).

## Optical Techniques Offer Fast, Efficient COVID-19 Detection

Source: <https://www.newswise.com/coronavirus/optical-techniques-offer-fast-efficient-covid-19-detection/>

Sept 07 – Without the prospect of herd immunity on the immediate horizon, speedy detection for COVID-19 remains imperative for helping to curb the pandemic. Point-of-care testing that can provide immediate results is an urgent need.

Researchers from the University of Texas at Austin and Omega Optics Inc. investigated the opportunities and challenges in developing rapid COVID-19 sensing techniques. They discuss the prospects of optical biosensors for point-of-care COVID-19 testing in the journal *Applied Physics Reviews*, from AIP Publishing.

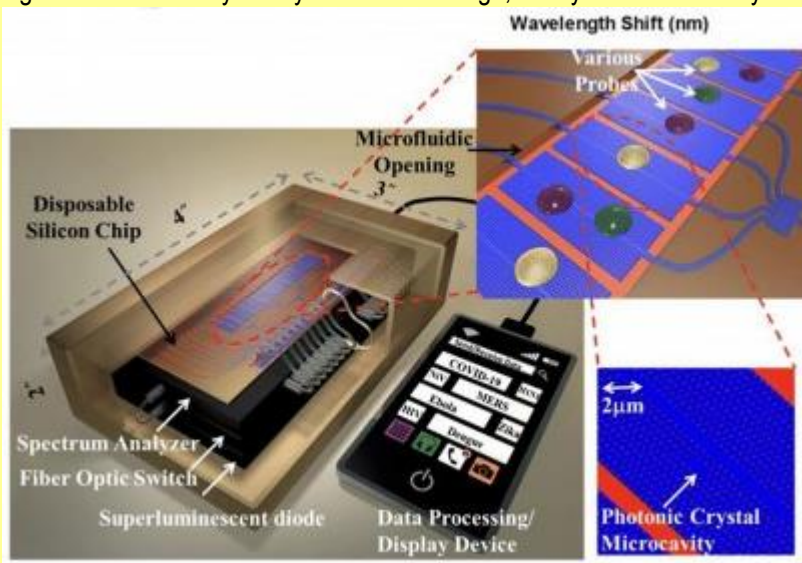
"Due to growing cases resulting from more transmissible variants around the world and the need to prevent and control cases and outbreaks when they arise, we should be utilizing rapid testing more commonly to detect and stop the spread before hitting the transmission peak," said Aref Asghari, one of the authors.





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One of the most promising solutions to accurate rapid testing is using optical biosensors. When a virion is present on the surface of an optical sensor, its interaction with a light beam on the sensor affects the light's properties, causing a measurable shift in the light signal. Even with only a very small viral dosage, the system can reliably detect the coronavirus in real time.



"In case of COVID-19, the viral load at the onset of infection can be low enough to not be detected by many commercially available methods," Asghari said. "Therefore, viral detection, especially at earlier infection stage, can be very challenging."

There are a number of different ways in which this interaction can be utilized and improved upon, such as integrating it with measurements of plasma oscillations or incorporating graphene into its fabrication process.

Each potential configuration uses a different mechanism to sense the virus and has its own set of advantages and drawbacks, but the primary takeaway remains the same. Even with the widespread availability of vaccines, the pandemic cannot be overcome without developing faster ways to determine infection, particularly as mutations and

new variants of the virus continue to arise.

"The combination of vaccines and rapid tests will drive down community transmission to a point where we can effectively eliminate the virus," Asghari said.

**The article:** *"Fast accurate point of care COVID-19 pandemic diagnosis enabled through advanced lab-on-a-chip optical biosensors: Opportunities and challenges"* is authored by Aref Asghari, Chao Wang, Kyoung Min Yoo, Ali Rostamian, Xiaochuan Xu, Jong-Dug Shin, Hamed Dalir, and Ray T. Chen. The article appears in *Applied Physics Reviews* on Sept. 7, 2021 (DOI: [10.1063/5.0022211](https://doi.org/10.1063/5.0022211)) and can be accessed at <https://doi.org/10.1063/5.0022211>.

## Abu Dhabi top of the world for global Covid-19 response

Source: <https://www.thenationalnews.com/uae/2021/09/09/abu-dhabi-tops-global-covid-19-response-ranking-of-world-cities/>

Sep 09 – Abu Dhabi has topped a global ranking of 50 cities for its response to the Covid-19 pandemic with Dubai also making the top five.

The capital led the way for its efforts to safeguard public health, bolster the economy from the financial fallout of the outbreak and deliver strong vaccination rates.

The emirate was singled out for the efficiency of its government services and its quarantine management in the report, titled 'Ranking of the Safest Cities during the Covid-19 Pandemic for the Second Quarter of 2021', released by analytics consortium Deep Knowledge Group in London.

The first pandemic performance league table was published in April, with Abu Dhabi leading the way then, too.

The city headed the latest list ahead of Singapore, Seoul, Tel Aviv and Dubai.

Toronto, Sydney, Zurich, Dublin and Ottawa rounded off the top 10.

The UAE has taken a proactive response to combating the pandemic. A mass testing strategy and a nationwide vaccination campaign have been vital in driving down infection rates.

Field hospitals were set up rapidly in the early stages of the pandemic to ease pressure on health services, while stay-at-home measures were introduced when necessary.

Employees and pupils have returned to classrooms and offices gradually as part of a strategy to return to normality.

Safety measures – such as the mandatory wearing of masks in public – have remained in place throughout the pandemic. Officials have called on the public regularly to remain



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committed to safety measures and have issued reminders of the importance of following the rules during potential infection peak periods such as public holidays.

| Rank | City           | Country     | Covid-15 Safety Ranking |
|------|----------------|-------------|-------------------------|
| 1    | Abu Dhabi      | UAE         | 73.16                   |
| 2    | Singapore      | Singapore   | 71.69                   |
| 3    | Seoul          | South Korea | 71.41                   |
| 4    | Tel Aviv- Yafo | Israel      | 67.28                   |
| 5    | Dubai          | UAE         | 67.02                   |
| 6    | Toronto        | Canada      | 65.40                   |
| 7    | Sydney         | Australia   | 65.24                   |
| 8    | Zurich         | Germany     | 65.23                   |
| 9    | Dublin         | Ireland     | 64.75                   |
| 10   | Ottawa         | Canada      | 64.58                   |
| 11   | London         | UK          | 64.14                   |
| 12   | Amsterdam      | Holland     | 63.75                   |
| 13   | Berlin         | Germany     | 63.31                   |
| 14   | Tokyo          | Japan       | 63.09                   |
| 15   | Copenhagen     | Denmark     | 62.93                   |

(a small typing error in #8 😊) – Source: [Deep Knowledge Analytics](#)

### 'Community was protected'

The top ranking was also made possible through the efforts of senior management and staff in various public and private institutions, along with the dedication of field teams and healthcare professionals.

"Abu Dhabi topped the ranking due to measures that contributed to enhancing the speed and effectiveness of its response to the pandemic," read a statement from Abu Dhabi Government Media Office."

As a result of these measures, the health and safety of the community was protected, while maintaining an open and competitive economy. Abu Dhabi also maintained its position as a pioneer in scientific research, digital initiatives and technology, and a leading destination for medical tourism."

On Wednesday, the UAE recorded 833 Covid-19 cases, its lowest number of infections in almost a year.

The country's death rates from the virus have remained among the lowest in the world throughout the coronavirus outbreak.

Abu Dhabi hosted phase three trials for the Sinopharm vaccine last year before making the shot widely available to the public in December. More than 88 per cent of the public have received one dose and about eight in 10 are now fully vaccinated.

## A highly potent and stable pan-coronavirus fusion inhibitor as a candidate prophylactic and therapeutic for COVID-19 and other coronavirus diseases

By Jie Zhou, Wei Xu, Zezhong Liu, et al.

*Acta Pharmaceutica Sinica B* (August 2021)

Source: <https://www.sciencedirect.com/science/article/pii/S2211383521002756?v=s5>

The development of broad-spectrum antivirals against human coronaviruses (HCoVs) is critical to combat the current coronavirus disease 2019 (COVID-19) pandemic caused by severe acute respiratory syndrome coronavirus 2 (SARS-CoV-2) and its variants, as well as future outbreaks of emerging CoVs. We have previously identified a polyethylene glycol-conjugated (PEGylated) lipopeptide, EK1C4, with potent pan-CoV fusion inhibitory activity. However, PEG linkers in peptide or protein drugs may reduce stability or induce anti-PEG antibodies *in vivo*. Therefore, we herein report the design and synthesis of a series of dePEGylated lipopeptide-based pan-CoV fusion inhibitors featuring the replacement of the PEG linker with amino acids in the heptad repeat 2 C-terminal fragment (HR2-CF) of HCoV-OC43. Among these lipopeptides,

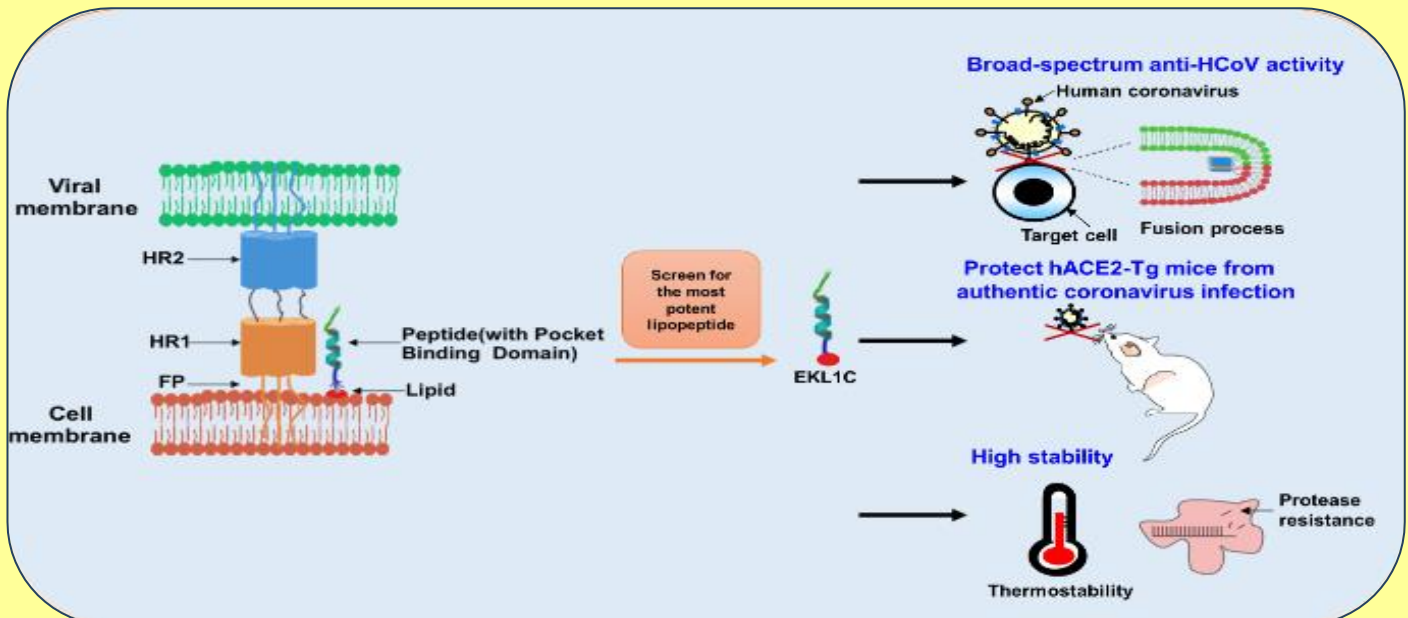




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EKL1C showed the most potent inhibitory activity against infection by SARS-CoV-2 and its spike (S) mutants, as well as other HCoVs and some bat SARS-related coronaviruses (SARSr-CoVs) tested. The dePEGylated lipopeptide EKL1C exhibited significantly stronger resistance to proteolytic enzymes, better metabolic stability in mouse serum, higher thermostability than the PEGylated lipopeptide EK1C4, suggesting that EKL1C could be further developed as a candidate prophylactic and therapeutic for COVID-19 and other coronavirus diseases.

### Graphical abstract



The dePEGylated lipopeptides were designed, synthesized, and screened for the most effective one, EKL1C, which was shown to have broad-spectrum anti-coronavirus activity, potent protection of human angiotensin-converting enzyme 2 (hACE2) transgenic mice against authentic coronavirus infection, and high stability.

## Top 11 Best Selling COVID-19 Vaccines and Drugs of H1 2021

By Alex Philippidis

Source: <https://www.genengnews.com/a-lists/top-11-best-selling-covid-19-vaccines-and-drugs-of-h1-2021/>

Sept 08 – The debate over whether and how broadly to approve additional “booster” doses of [COVID-19](#) vaccines is expected to play out this month. This much is certain: The FDA’s Vaccines and Related Biological Products Advisory Committee will discuss whether to recommend booster doses for the Pfizer/BioNTech COVID-19 vaccine (COMIRNATY®, BNT162b2) [meets on September 17](#).

After that, it’s anyone’s guess what will happen. The FDA typically follows the recommendations of its advisory panels—as it did last December when it [granted an emergency use authorization \(EUA\) for Pfizer and BioNTech](#), followed a week later by an [EUA for Moderna](#) (mRNA-1273, marketed in Europe as Spikevax®), and in February by an [EUA for Johnson & Johnson](#) (Janssen Pharmaceutical Cos)’s single-shot COVID-19 vaccine.

However, the FDA’s acting commissioner Janet Woodcock, MD, has joined Rochelle P. Walensky, MD, MPH, director of the Centers for Disease Control and Prevention, in urging President Joe Biden’s administration to postpone a plan they helped draft, and which he announced August 18—to begin distributing booster doses of COVID-19 vaccines starting the week of September 20.

According to *The New York Times*, which cited unnamed sources, Woodcock has since maintained privately that setting a firm date to start the booster shots was risky until regulators have thoroughly reviewed data in support of that decision.

The booster doses would add to the billions Pfizer, BioNTech, and Moderna have reaped from their COVID-19 vaccines this year, and should reap again next year: “We expect Pfizer/BioNTech and Moderna could each see annual sales of roughly \$2 billion,”



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Morningstar analyst Damien Conover [wrote](#) August 18. Morningstar has projected strong vaccine sales for Pfizer/BioNTech (\$35 billion in 2021 and \$39 billion in 2022) and Moderna (\$21 billion in 2021 and \$22 billion in 2022), with growth expected to come from sales in developing markets and third-dose booster sales in the U.S. and other developed markets.

The Pfizer/BioNTech and Moderna vaccines accounted for 70% of the total combined \$36.907 billion in sales generated during January-June 2021 by the top-selling 11 COVID-19 vaccines and drugs for which sales figures have been disclosed (or in the case of one company, suggested in an investor presentation)—and compiled by *GEN* in this A-List.

Each drug or vaccine is listed by its name(s), sponsor(s), first half 2021 sales as disclosed by sponsor(s), U.S. sales, second-quarter 2021 sales, and the sponsors' 2021 sales guidance to investors, with a comparison to forecasts as of the first quarter where available. Total COVID-19 vaccine and drug sales of the best sellers have rocketed from the \$10.91 billion in sales tallied in *GEN*'s [A-List of Q1 2021 best sellers](#), and especially from the \$4.23 billion in *GEN*'s [2020 best sellers A-List](#).

Unlike those previous lists, this latest list of COVID-19 best-sellers could not include [CoronaVac](#), the vaccine developed by Sinovac, since at deadline the company had not released results for either the first or second quarters of 2021. However, an investor with a 15% stake in Sinovac, Sino Biopharmaceutical, reported a six-fold year-to-year jump in net income, to RMB 8.48 billion (\$1.3 billion), with Sinovac and other associated companies and joint ventures contributing RMB 6.91 billion (about \$1.1 billion) of that total: "A glimpse into the windfall made during the coronavirus pandemic by the Chinese vaccine developer," Bloomberg News reported.

Some companies with vaccines and drugs in development are already recording sizable revenue from them. Novavax, for example, said it has generated \$745.246 million in the first six months of 2021 (\$298.017 million during Q2), which the company said reflected development activities relating to its vaccine [NVX-CoV2373](#) for services performed under the U.S. government and Coalition for Epidemic Preparedness Innovations agreements.

This list does not include numerous additional COVID-19 vaccines and drugs that are well into clinical development but have yet to win any approvals or emergency authorizations from regulators. More than 300 vaccines and drugs are in development for COVID-19, according to *GEN*'s [COVID-19 DRUG & VACCINE CANDIDATE TRACKER](#)

### Top Public Companies

#### 11. [Sotrovimab \(formerly VIR-7831, also called GSK4182136\)](#)

**Sponsors:** GlaxoSmithKline (GSK) and Vir Biotechnology

**H1 2021 Sales (Worldwide):** £16 million (\$22 million) <sup>1</sup>

**U.S. Sales:** \$0 (0%)

**Q2 2021 Sales:** £16 million (\$22 million) <sup>1</sup>

**Guidance (Change from Q1 2021):** N/A

#### 10. [Regkirona® \(regdanvimab; CT-P59\)](#)

**Sponsor:** Celltrion Healthcare

**H1 2021 Sales (Worldwide):** KRW 43.7 billion (\$37.6 million) <sup>2</sup>

**U.S. Sales:** \$0 (0%)

**Q2 2021 Sales:** KRW 34.5 billion (\$29.7 million) <sup>2</sup>

**Guidance (Change from Q1 2021):** N/A

#### 9. [Single-Shot COVID-19 Vaccine \(formerly JNJ-78436735, Ad26.COV2.S\)](#)

**Sponsor:** Johnson & Johnson (Janssen)

**H1 2021 Sales (Worldwide):** \$264 million

**U.S. Sales:** \$151 million (57%)

**Q2 2021 Sales:** \$164 million

**Guidance (Change from Q1 2021):** N/A

#### 8. [Olumiant \(baricitinib\)](#) <sup>3</sup>

**Sponsor:** Eli Lilly





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**H1 2021 Sales (Worldwide): \$402.2 million** <sup>3</sup>

U.S. Sales: \$42.5 million (about 11%)

Q2 2021 Sales: \$284.7 million

Guidance (Change from Q1 2021): N/A

### 7. [Bamlanivimab and etesevimab](#) <sup>4</sup>

Sponsor: Eli Lilly

**H1 2021 Sales (Worldwide): \$959.1 million**

U.S. Sales: \$734 million (76.5%)

Q2 2021 Sales: \$148.9 million

Guidance (Change from Q1 2021): \$1 billion to \$1.1 billion, down from \$1 billion to \$1.5 billion <sup>5</sup>

### 6. [Pandemic COVID-19 Vaccine \(marketed in some countries as Vaxzevria or Covishield; formerly AZD1222\)](#)

Sponsors: AstraZeneca and Serum Institute of India

**H1 2021 Sales (Worldwide): \$1.135 billion** <sup>6</sup>

U.S. Sales: \$0 (0%)

Q2 2021 Sales: \$862 million <sup>6</sup>

Guidance (Change from Q1 2021): N/A <sup>7</sup>

### 5. [Actemra® / RoActemra® \(tocilizumab\)](#)

Sponsors: Roche and Genentech, a Member of the Roche Group

**H1 2021 Sales (Worldwide): CHF 1.642 billion (\$1.789 billion)** <sup>8</sup>

U.S. Sales: CHF 689 million (\$751 million)

Q2 2021 Sales: CHF 863 million (\$940 million)

Guidance (Change from Q1 2021): N/A

### 4. [Veklury® \(remdesivir\)](#)

Sponsor: Gilead Sciences

**H1 2021 Sales (Worldwide): \$2.285 billion**

U.S. Sales: \$1.236 billion (54%)

Q2 2021 Sales: \$829 million

Guidance (Change from Q1 2021): Between \$2.7 billion and \$3.1 billion, up from between \$2 billion and \$3 billion

### 3. [REGEN-COV™ / Ronapreve™ \(casirivimab/imdevimab\)](#)

Sponsors: Regeneron Pharmaceuticals (REGEN-COV) and Roche (Ronapreve)

**H1 2021 Sales (Worldwide): \$4.156 billion** <sup>9</sup>

U.S. Sales: \$2.853 billion (69%) <sup>10</sup>

Q2 2021 Sales: \$3.528 billion <sup>11</sup>

Guidance (Change from Q1 2021): After forecasting approximately \$2.9 billion earlier this year, based on a U.S. government contract <sup>10</sup>, Regeneron said it expects only \$34 million in U.S. net product sales during Q3 relative to the agreement. "U.S. net product sales of REGEN-COV in the fourth quarter of 2021 will be dependent upon acceleration of COVID-19 cases and related drug utilization," Regeneron said August 5 in announcing its Q2 results.

### 2. [Moderna COVID-19 Vaccine \(mRNA-1273; Spikevax™ in Europe\)](#)

Sponsor: Moderna

**H1 2021 Sales (Worldwide): \$5.93 billion** <sup>12</sup>

U.S. Sales: \$3.451 billion (58%)

Q2 2021 Sales (Worldwide): \$4.197 billion <sup>13</sup>

Guidance (Change from Q1): ~\$20 billion, up from \$19.2 billion

### 1. [COMIRNATY® \(BNT162b2\)](#)

Sponsors: Pfizer and BioNTech



**H1 2021 Sales (Worldwide): \$19.927 billion** <sup>14</sup>

**U.S. Sales:** \$4.072 billion (20.5%) <sup>14</sup>

**Q2 2021 Sales (Worldwide): \$14.077 billion** <sup>15</sup>

**Guidance (Change from Q1):** \$52.3 billion consisting of \$33.5 billion projected by Pfizer and €15.9 billion (\$18.8 billion) projected by BioNTech—up from approximately \$41 billion consisting of \$26 billion (Pfizer) and ~€12.4 billion (\$14.7 billion; BioNTech) <sup>16</sup>

▶▶ References are available at the source's URL.

## Thousands suffer health effects of Ground Zero's toxic dust 20 years after 9/11 attacks

By Brian P. Dunleavy

Source: [https://www.upi.com/Health\\_News/2021/09/09/9-11-health-survivors-first-responders-anniversary/2511630696729/](https://www.upi.com/Health_News/2021/09/09/9-11-health-survivors-first-responders-anniversary/2511630696729/)

Sept 09 – A new [World Trade Center](#) stands in lower Manhattan 20 years after [Sept. 11](#), 2001, but thousands of people who were there that day -- from first responders hoping to save lives to people who were just on their daily commute -- continue to feel health effects linked to the terrorist attack.



More than 80,000 first responders are enrolled in the World Trade Center Health Program, a National Institute for Occupational Safety and Health initiative created under the Zadroga [9/11](#) Health Act of 2010, which provides care at no cost to those with health conditions related to the attacks.

*A volunteer worker wipes dust from his face as he carries an oxygen tank for firefighters after the September 11, 2001 terrorist attacks on the World Trade Center. File Photo by Monika Graff/UPI*

In addition, it oversees the care of more than 30,000 civilians who survived the events of that day, including those who lived and worked in the neighborhood and students at schools nearby.

Both numbers have increased over the past decade, with the

number of first-responder enrollees rising by about 40% since 2011 and the population of survivors under care growing three-fold since 2016. Many have cancer.

These trends are likely to continue, as new cancer cases among survivors of the attacks are expected to emerge due to disease "latency," according to environmental and occupational medicine specialist Dr. Iris G. Udasin.

Solid tumor cancers related to toxic exposures take at least four years to develop, with most remaining latent for 15 to 20 years, Udasin said.

"Because of cancer latency and other health problems, such as diabetes and heart disease, developing with age, we're seeing survivors who had been healthy for years only now entering the program," Udasin, director of the WTC Center of Excellence at Rutgers University, told UPI in a phone interview.

As part of a WTC Center of Excellence, a designation awarded to several hospitals in the New York area, Udasin and her colleagues care for nearly 5,000 survivors.

"Only now are they getting sick," she said.

Although the number of first responders and survivors in the WTC Health Program continues to rise, its "outreach" efforts for the latter group have not been as effective, Udasin said.

More than 10% of patients treated at Rutgers said they lacked access to at least one needed healthcare service under the WTC program, Udasin and her colleagues found in a study [published earlier this year](#).

### More than cancer

Cancer may be the health problem most commonly associated with the attacks, given the dust and debris that rained down on lower Manhattan and the cloud that hung over the area for weeks afterward.





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However, first responders and survivors suffer from myriad issues, many of which continue to affect their quality of life 20 years later, said Mark Farfel, director of the New York City Department of Health's WTC Health Registry.

The registry includes data on roughly 71,000 first responders and survivors, but estimates that as many as 400,000 people were exposed to toxic dust particles generated by the attacks in the five boroughs alone.

"The 9/11 disaster has had a long-lasting effect on the physical and mental health of thousands of survivors," Farfel told UPI in a phone interview.

In an [analysis](#) he and his colleagues published in 2019, among those in the registry, 15% reported asthma diagnosed after 9/11, while 22% had gastroesophageal reflux disease, or acid reflux, 14% had post-traumatic stress disorder and 15% reported depression. Nearly half of those who reported these conditions suffered from more than one of them, and many indicated that their quality of life has been affected as a result, the data showed.

Hearing loss also is common among survivors, Farfel said.

Lila Nordstrom, who was a senior at Stuyvesant High School, just north of the World Trade Center at the time of the attacks, has had chronic asthma and acid reflux, as well as rhinosinusitis -- sinus inflammation -- and PTSD in the years since.

These, along with various cancers, are among the most common conditions experienced by WTC Health Program enrollees, according to its data, which is available online.

Nordstrom now works with others who were students at Stuyvesant on Sept. 11 to help connect them with healthcare.

"The World Trade Center Health Program has helped so many people, but many others find that they can't access its benefits because they suffer from conditions not covered under the program," she told UPI.

This includes autoimmune disorders that have been linked with PTSD, particularly in women, said Nordstrom, who has written a book about their experiences called *Some Kids Left Behind*.

Many of her schoolmates continue to experience problems ranging from migraines to blood and thyroid cancers, Nordstrom said.

"There are hundreds, if not thousands, of people -- survivors -- who are essentially left on their own," she said.

Helaina Hovitz Regal, who was in middle school in lower Manhattan 20 years ago and lived in the neighborhood, has had PTSD and still suffers from chronic migraine headaches.

"When we think about 9/11 survivors, we often think of those who are suffering from physical health issues, but alongside them are people who are also living with incredibly painful mental health issues," Hovitz Regal told UPI by email.

"Mental health and physical health are very strongly connected, and what can occur alongside the stress and anxiety of living with PTSD are physical issues ... that can have a serious impact on their quality of life," she said.

Hovitz Regal, who wrote a memoir called *After 9/11: One Girl's Journey Through Darkness to a New Beginning*, also works as an advocate for people struggling with their mental health after surviving the attacks. She does not, however, compare her health problems to those suffering from a life-threatening illnesses.

However, "we are all dealing with [the] aftermath [and] we are all worthy of recovery," she said.

### Ongoing health challenges

Like Hovitz Regal, most of those enrolled in the WTC Health Program live in New York, New Jersey and Connecticut, though all 50 states and Washington, D.C., are represented.

About 2% of the first responders covered under the WTC Health Program worked at the Pentagon and in Shanksville, Pa., where other planes hijacked by the terrorists were crashed, killing all onboard.

However, data is not available on how many of the survivors receiving treatment under the program were at these locations at the time of the attacks.

The program covers various cancers and airway and respiratory diseases linked with exposure to toxins at the site, as well as mental health problems and, for first responders, musculoskeletal problems such as low back pain.

As of June 30, survivors age 35 and younger account for 1% of the program enrollees, while those age 35 to 44 make up 2%.

More than half of the enrollees are current or former first responders age 45 to 64, meaning they were 25 to 44 years old at the time of the attacks.

Nearly one-third of the survivors enrolled in the program have digestive disorders related to the attacks, while one-fourth of them have been diagnosed with linked cancers.

Up to 30% of the program enrollees suffer from multiple health conditions related to the attacks. The most common forms of cancer among the survivors include prostate, breast, skin, thyroid and lung, based on program data.

Combined, more than 3,000 of the first responders and survivors with these cancers and lung and digestive diseases enrolled in the program have died.



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"The health effects of the 9/11 attacks are still very real for many, many people," Farfel, of New York City's WTC Health Registry, said. "And, as the years pass, these health effects continue to have a great impact on their lives and their healthcare needs," he said.

*Brian P. Dunleavy has been covering health and medical research for more than 25 years. In addition to UPI, he has written for EverydayHealth.com, Biography.com, History.com, the Village Voice and amNewYork, among other outlets. He holds a master's degree from the University of Missouri School of Journalism.*

### Face masks for COVID pass their largest test yet

Source: <https://www.nature.com/articles/d41586-021-02457-y#author-0>

Sept 09 – Face masks protect against COVID-19. That's the conclusion of a gold-standard clinical trial in Bangladesh, which backs up the findings of hundreds of previous observational and laboratory studies.<sup>1</sup> Critics of mask mandates have cited the lack of relevant randomized clinical trials, which assign participants at random to either a control group or an intervention group. But the latest finding is based on a randomized trial involving nearly 350,000 people across rural Bangladesh. The study's authors found that surgical masks — but not cloth masks — reduced transmission of SARS-CoV-2 in villages where the research team distributed face masks and promoted their use. "This really should be the end of the debate," says Ashley Styczynski, an infectious-disease researcher at Stanford University in California and a co-author of the preprint describing the trial. The research "takes things a step further in terms of scientific rigour", says Deepak Bhatt, a medical researcher at Harvard Medical School in Boston, Massachusetts, who has published research on masking. Styczynski and her colleagues began by developing a [strategy](#) to promote mask wearing, with measures such as reminders from health workers in public places. This ultimately tripled mask usage, from only 13% in control villages to 42% in villages where it was encouraged. The researchers then compared numbers of COVID-19 cases in control villages and the treatment communities. The team found that the number of symptomatic cases was lower in treatment villages than in control villages. The decrease was a modest 9%, but the researchers suggest that the true risk reduction is probably much greater, in part because they did no SARS-CoV-2 testing of people without symptoms or whose symptoms did not meet the World Health Organization's definition of the disease.

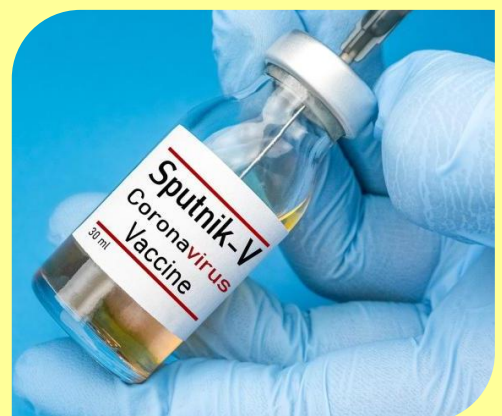
#### Material difference

The study linked surgical masks with an 11% drop in risk, compared with a 5% drop for cloth. That finding was reinforced by laboratory experiments whose results are summarized in the same preprint. The data show that even after 10 washes, surgical masks filter out 76% of small particles capable of airborne transmission of SARS-CoV-2, says Mushfiq Mobarak, an economist at Yale University in New Haven, Connecticut, and a co-author of the study. By contrast, the team found that 3-layered cloth masks had a filtration efficiency of only 37% before washing or use. Neither the laboratory findings nor the mask-trial findings have been peer reviewed. The study results prompted Monica Gandhi, an infectious-disease physician at the University of California, San Francisco, to switch from cloth masks. "I bought surgical masks for myself — pink ones," she says. The only other randomized clinical trial<sup>2</sup> of masking during the pandemic that has been published to date evaluated the relationship between an individual's infection status and self-reported masking. By randomizing entire villages, Gandhi says, the latest study improves the assessment of both mask adherence and community-level transmission. Masks will remain an especially crucial line of defence in Bangladesh and other low- and middle-income countries, where [access to vaccines is limited to non-existent](#). "If this changes the discourse in the US, where masks are being unnecessarily politicized, then that's a bonus," says Mobarak.

### Russia: Sputnik-V efficacy against Delta mutation is between 83% -94% and far exceeds the efficacy of Pfizer and Moderna

Source: <https://www.athina984.gr/en/2021/09/10/rosia-i-apotelesmatikotita-toy-sputnik-v-kata-tis-metallaxis-delta-einai-metaxy-83-94-kai-ypervainei-kata-poly-tin-apotelesmatikotita-ton-pfizer-kai-moderna/>

Sept 10 – The effectiveness of the Russian Sputnik-V vaccine against the coronavirus Delta mutation ranges between 83% -94% based on various data and recording methods, which means that it is much higher than the effectiveness of





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foreign vaccines. The statement was made today by Alexander Ginzburg, director of the Gamaleya National Research Center for Epidemiology and Microbiology, which has developed the Russian Sputnik-V vaccine.

**"Effectiveness in protecting the Sputnik-V vaccine, according to the Ministry of Health data as recorded today ranges from 83% to 94%... At the same time the effectiveness of the Pfizer and Moderna vaccines, according to data from the US "and Israeli universities range from 40% and some up to 52%, which of course is significantly worse," said Ginzburg.**

Ginsburg also pointed out that the epidemiological situation that developed after the appearance of the Delta mutation "actually zeroed in on the vaccine market". According to him, one billion of the world's inhabitants, who have been vaccinated with foreign vaccines, must be vaccinated to increase the number of corresponding antibodies to a high enough level.

The director of the Gamaleya Institute also said that in order to control the infection transmitted through this mutation, 70-75% of the country's population should be vaccinated, as with such a percentage of vaccinated the disease will begin to decline. He stressed, however, that we must constantly monitor for new strains of the coronavirus in order for the vaccines to remain effective.

Referring to the Delta mutation, he said that its appearance changed the tactics and strategy of coronavirus vaccination, as now a high level of antibodies must be maintained.

Given this change, Ginzburg finally said that the Russian Ministry of Health reacted very quickly to this changing situation and gave instructions, according to which citizens should be vaccinated with the Sputnik-Light vaccine once every six months.



EU citizens **demand** a clear-cut answer today: Is Sputnik V effective or not?

## Battle-hardened terrorists closing in on deadly biological weapons

Source: <https://www.thenationalnews.com/world/uk-news/2021/09/10/battle-hardened-terrorists-closing-in-on-deadly-biological-weapons/>

Sep 10 – A deadly chemical or biological attack on a major city is extremely likely, perhaps inevitable, in the next decade, according to leading international terrorism experts.

The effect on society and the economy of terrorists perfecting the weapons could potentially be more devastating than the [Al Qaeda](#) attacks 20 years ago that led to \$45 billion in insurance pay-outs, an event hosted by the International Forum of Terrorism Risk (Re)Insurance heard.

Given the devastation caused by [Covid-19](#), a biological or chemical device was now the "perfect weapon of choice for the terrorists", said Douglas Wise, former deputy director of the US Defence Intelligence Agency.

"We know that terrorists are seeking access to that kind of material," he told the documentary film, *9/11 Two Decades of Disruption*. "It's simple to use, doesn't require extraordinary technology and it's very easy to deploy. And the terrorists know that the impact to societies, to nations, to economies is existential."



Lady Suzanne Raine, the former director of counter terrorism at the UK Foreign Office, said Al Qaeda now had a “scientific understanding” about chemical, biological, radiological and nuclear weapons through “battlefield” development.



Police mobile CBRN (chemical, biological, radiological and nuclear) response team in Abu Dhabi. International experts say a terrorist attack using one of these deadly substances is increasingly likely. Victor Besa / The National

“The question has to be, when and if that battlefield experimentation moves out of a battlefield,” she said. “You would expect it more likely would happen through a returning fighter because they’ve got the experience of using them and sooner or later you would expect it to happen.”

Mr Wise agreed: “We’ve seen again and again that terrorist organisations aspire to carry out these kinds of mass casualty, high impact events and it’s not for lack of effort that they have not succeeded, thus far.”

A successful attack, potentially causing more fatalities than the 3,000 from [9/11](#), would have a major psychological effect on society, said former FBI agent Ali Soufan, chairman of the Soufan Group, a global intelligence consultant.

“The possibility of a CBRN attack, rightfully gets a great deal of attention because we can imagine that with biological or chemical weapons it could be a tremendous shock to society and to the perception of safety that we aim to protect,” he said.

Over the past 30 years terrorists regularly used deadly substances although as yet not a weapon of mass destruction, said Prof Andrew Silke of Cranfield University.

“To say that you expect another one before 2030 is fairly unremarkable, we absolutely are going to have chemical and biological attacks, probably on an annual basis and maybe considerably more often.”

Brig Ed Butler, who led British special forces during the post-9/11 period, raised serious concerns of a terrorist dirty-bomb, using radiation to kill and contaminate.

“If we did have a radiological device go off in the middle of London or a major conurbation we wouldn’t be coming back into the city. Our whole country would change much more than





from Covid, which has been dreadful. If you can imagine having parts of central London being denied for years and years that's something which would be catastrophic."



South Korean rescue workers wearing chemical protective suits participate in an anti-terror drill in Seoul. AFP

While the insurance industry worked effectively post 9/11 preventing insolvencies and an economic downturn, the attacks did present a major challenge, said Britt Newhouse, former chairman of Guy Carpenter, the American reinsurance firm. "As a student of history my biggest fear is something like this is going to happen again, bigger and worse and motivated by real true evil intentions," he said.

**EDITOR'S COMMENT:** Two red and two lemon sitting ducks entering the crime scene (photo above) at the same moment that the police officer present is in Level-C PPE. Again, and again the same "without a reason" selection of PPE. As if terrorists will bother to invent a new chemical weapon that can penetrate gas filters to be used in terrorist acts. Of course, if you have never been inside a Level-A PPE you can order others to do that from the comfort of your office desk ...

## Inside Dubai airport's new Covid-19 testing lab

Source: <https://www.thenationalnews.com/uae/2021/09/08/exclusive-inside-dubai-airports-new-covid-19-testing-lab/>

Sept 08 - It is one of the world's [busiest airports](#). Now, Dubai International **also has one of the world's biggest in-house Covid-19 testing laboratories**. A stone's throw from Dubai International's Terminal 2, the lab reduces waiting times for [arriving passengers](#) by making sure their PCR test results are delivered in only four to six hours.

Before the laboratory was launched in June, the passengers' samples used to be collected from the airport every 12 hours and sent to various labs in the city. Now samples are collected every 30 minutes and taken to the in-house centre operated by Pure Health.



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The laboratory is open round the clock and has the capacity to process **100,000 samples a day.**



"I think one of the keys is regular delivery," said Carlo Kaabar, medical director of the Ministry of Health and Prevention laboratories, as he gave *The National* a tour of the 1,860-square-metre facility.

"We don't wait a few hours to receive a big batch at once, we're doing it regularly.

"We receive manageable batches and we keep delivering the results. That's a simple formula that has worked very well for us."

More than **330 healthcare staff** at the airport collect PCR samples from passengers, and about 100 people work behind the scenes in the lab to process them.

"The fact that it's in the vicinity of the airport, that's obviously a big plus. We didn't want the transport to be a bottleneck," said Mr Kaabar.





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After a batch of samples is received, the staff check them and verify the passengers' details using barcodes.

The team then conducts the polymerase chain reaction (PCR) test to detect genetic material from the virus using the latest World Health Organisation-standard equipment.

The results are delivered to the passenger by a text message and also made available on the AI Hosn mobile application.

Passengers are required to remain in their hotel or residence until they receive the result. If they test positive, they need to go into isolation and follow the Dubai Health Authority guidelines.

The laboratory is also linked to government reporting platforms to share information between health authorities and airlines, said Essa Al Shamsi, vice president of terminal operations at Dubai Airports.

"So far, we have tested more than five million passengers at Dubai International Airport since the pandemic started. More than 110 airport staff have been vaccinated at an in-house vaccination centre as well," he said.

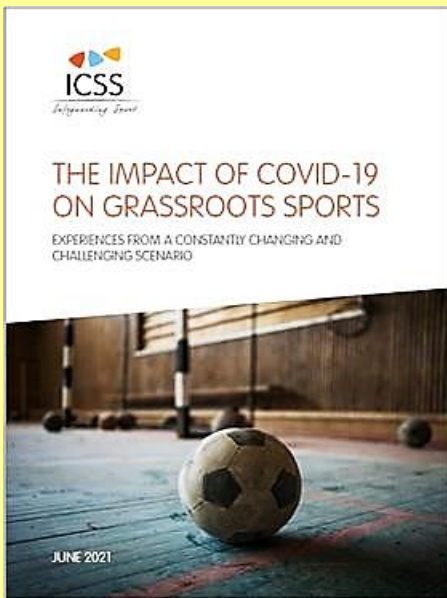
Dubai's airport operator expects an influx of travellers as Covid-19 restrictions ease and the emirate hosts global events.

Passenger traffic at Dubai International is anticipated to reach at least 56 million in 2022, its chief executive Paul Griffiths said in August.

"The laboratory is prepared to handle surges in passenger traffic, especially with major events such as Expo 2020," he said.

"The laboratory also has potential to increase its capacity in future, if needed, because of the way it's built. It just gives passengers that extra confidence when they come to this country."

**EDITOR'S COMMENT:** Great installation! But I would prefer stricter adherence to PPE rules (e.g., hoods over the head, surgical gloves over the sleeves). Little things can sometimes make the difference).



### Case Study Report: The Impact of COVID-19 on Grassroots Sports – Experiences From a Constantly Changing and Challenging Scenario

Source: <http://theicss.org/wp-content/uploads/2021/09/ICSS-THE-IMPACT-OF-COVID-19-ON-GRASSROOTS-SPORTS-JUNE-2021.pdf>

The ICSS carried out a multicentric collective case study with the support of the World Health Organization (WHO) COVID-19 Mass Gatherings Cell and took a deep dive into the impact of COVID-19 on four different grassroots sports organisations functioning at the national and local levels.

The case study presents an in-depth exploration of the social impact of COVID-19, learning from the experience of four grassroots sports organisations in Australia, India, South Africa, and Spain. The case study recounts experiences from a constantly changing and challenging scenario and provides examples of what these grassroots sports organisations have done to navigate, recover and even thrive out of their national emergencies amidst a global pandemic.

### Experts argue COVID-19 vaccine boosters should be delayed

Source: <https://newatlas.com/health-wellbeing/experts-argue-against-coronavirus-vaccine-booster-shots/>

Sept 13 – A new article published in *The Lancet* is arguing against broadly administering COVID-19 vaccine booster shots at this point in time. The article is co-authored by two of the US Food and Drug Administration's top vaccine advisors, both of whom recently announced they were stepping down from their positions.

The succinct but thorough review article outlines the evidence for COVID-19 vaccine booster shots. The article explains there may be a need for vulnerable and immunocompromised populations to receive a third vaccine dose right now, **but in otherwise healthy individuals the data currently indicates vaccines remain highly protective against severe COVID-19.**

"Current evidence does not, therefore, appear to show a need for boosting in the general population, in which efficacy against severe disease remains high," the article states. "Even



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if humoral immunity appears to wane, reductions in neutralizing antibody titre do not necessarily predict reductions in vaccine efficacy over time, and reductions in vaccine efficacy against mild disease do not necessarily predict reductions in the (typically higher) efficacy against severe disease.”

The review article is authored by a large international team, including researchers from the University of Oxford and the World Health Organization. But two specific co-authors on the article are generating the most attention – Philip Krause and Marion Gruber.

Krause and Gruber, director and deputy director of the FDA’s Office of Vaccines Research & Review, both controversially announced they were stepping down from their positions two weeks ago. Between them they have decades of experience regulating and reviewing vaccine safety at the FDA.

Their unexpected resignations came soon after the US government made a formal announcement for a [broad COVID-19 vaccine booster program](#) commencing in late September. The unusual booster announcement preceded any formal decisions made by the FDA or CDC, and it has been [reported this played a notable role](#) in Krause and Gruber’s ultimate decision to step down.

The new review article in *The Lancet* summarizes the current booster debate, which hinges on growing evidence showing vaccine effectiveness waning against mild symptomatic disease. Current data indicates vaccines are still profoundly effective at protecting individuals from severe COVID-19, hospitalization and death up to six months after immunization.

However, increasing numbers of mild breakthrough infections are being observed, particularly in relation to the now dominant Delta variant. Instead of deploying booster programs right now, the article argues the focus should be on getting more unvaccinated individuals immunized. The article also argues for the development of variant-specific boosters to be administered if, or when, current vaccine protection from severe disease begins to wane.

“Although vaccines are less effective against asymptomatic disease or against transmission than against severe disease, even in populations with fairly high vaccination rates the unvaccinated are still the major drivers of transmission and are themselves at the highest risk of serious disease,” the article states. “The effectiveness of boosting against the main variants now circulating and against even newer variants could be greater and longer lived if the booster vaccine antigen is devised to match the main circulating variants. There is an opportunity now to study variant-based boosters before there is widespread need for them.”

The FDA’s Vaccines and Related Biological Products Advisory Committee is set to meet this coming Friday, September the 17th. Here they will decide on whether or not to recommend the booster program previously announced by the White House.

Ahead of the FDA meeting later this week new research is set to be published in *The New England Journal of Medicine* offering the first real-world data on COVID-19 vaccine boosters from Israel’s recent landmark third dose program. The research, previously [published on a pre-print server](#), indicates a third vaccine dose can significantly reduce risk of COVID-19 infection and also reduce risk of severe disease.

Lead author on the new *Lancet* review article, Ana-Maria Henao-Restrepo, a researcher working with the World Health Organization, says the primary goal of vaccination is to prevent severe disease. And she says current vaccine supplies should be used to fulfill that primary goal, reiterating [recent calls from the WHO](#) for countries with high vaccination rates to hold off on administering booster shots until the end of the year.

“The limited supply of these vaccines will save the most lives if made available to people who are at appreciable risk of serious disease and have not yet received any vaccine,” says Henao-Restrepo. “Even if some gain can ultimately be obtained from boosting, it will not outweigh the benefits of providing initial protection to the unvaccinated. If vaccines are deployed where they would do the most good, they could hasten the end of the pandemic by inhibiting further evolution of variants.”

►► The new review article is published in [The Lancet](#).

## The World Needs a Pandemic Plan B

By Thomas Wright

Source: <https://www.theatlantic.com/ideas/archive/2021/09/pandemic-proofing-global-order/620022/>

Sept 13 – There is never a good time for a pandemic, but the coronavirus may have hit the world at the worst possible moment. In the decade before the virus, China had grown more dictatorial and assertive; populist nationalists held power in the United States, India, and Brazil; geopolitical tensions were heightened, not just between Beijing and Washington but within the West itself; and the very notion of objective truth was being called into question.

There would be no muddling through this pandemic. Global cooperation broke down almost entirely, partly because many leaders were hardly on speaking terms. The World Health





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Organization buckled under pressure from China and became a punching bag for the United States. The couple of bright spots were few and far between.

The pandemic is not yet over and already a number of expert reports are calling for the world to come together, reform the WHO, and prepare for the next pandemic. The past 18 months have raised an unsettling yet vital question: How do we function when we're broken? The true lesson of 2020 is that we need a plan to deal with enormous global problems in moments of high tension.

COVID-19 need not have been such a painful and costly disease. Indeed, it was not supposed to be this way. In the 17 years since the SARS epidemic of 2002–03, which China initially [covered up](#), Beijing completely overhauled its public-health architecture to guarantee a more transparent, rapid, and effective response. This included empowering the Chinese Center for Disease Control and Prevention, putting in place a new system for reporting data up the chain, and working more closely with the international scientific community, including Americans.

But prior to this pandemic, telltale signs indicated that China might be regressing in its commitment to global public health. For [our new book](#), Colin Kahl and I spoke with four senior officials who were based at the U.S. embassy in Beijing as the coronavirus began to spread, including the person who led the team of dozens of public-health professionals working at the mission in China. They told us that public-health cooperation between China and the international community had been fraying since the years before COVID-19.

The health team's top priority was to persuade the Chinese government to fully share samples of a strain of bird flu known as H7N9—which experts believed could be the source of the next pandemic—with the WHO Collaborating Center for Influenza, as it was obliged to do, but the effort was unsuccessful. There were symbolic problems too. In 2019, the embassy organized an event to commemorate 40 years of U.S.-China relations and decided to focus on public health. Yet the guest speaker, an official from the Chinese CDC, and other Chinese health officials canceled without explanation the day before the event. It was a harbinger of things to come.

When the coronavirus hit, many of the post-SARS reforms melted away. The head of the Chinese CDC learned about the virus from social media. U.S. public-health professionals stationed at the embassy in Beijing found that their channels of communication had run cold. Some analysts blamed the early secrecy on regional officials who did not want to give Beijing bad news, but once Xi Jinping assumed control, he doubled down on the opacity. Even the much-heralded sharing of the coronavirus's genetic sequence occurred because a Chinese scientist defied a government order.

This was a moment of revelation for the rest of the world. Reform and engagement that were supposed to have transformed China's role in global public health had clearly failed. Once it suppressed the virus at home, China also became more assertive in its foreign policy, cracking down on Hong Kong, retaliating against Australia for seeking an international investigation into the origins of the virus, engaging in a deadly border spat with India, and unleashing aggressive “wolf warrior” diplomacy around the world.

For China, the pandemic confirmed its power and capabilities, created more latitude for it to do as it wished, and revealed the inexorable decline of the West. Common threats, such as pandemics, were supposed to bring nations together. Instead, China went its own way.

For years, American allies had worried that the Trump administration would be completely ill-equipped to deal with a major foreign-policy crisis. When that crisis finally arrived, ironically, some senior figures in the White House grasped the severity of the threat long before their European counterparts. The president's instinctive go-it-alone nationalism and his combative approach with Washington's purported allies, however, held back any hopes that they could capitalize on this early realization.

Matthew Pottinger, the deputy national security adviser, and a handful of others persuaded Donald Trump to impose a partial travel ban on China on January 29, 2020, but failed to persuade him to prepare for what was coming next. Trump believed that the travel ban was sufficient, and listened to those officials—among them Treasury Secretary Steven Mnuchin and White House Chief of Staff Mick Mulvaney—who told him not to do anything that could disturb the markets. It was better to wait and see, they said. He was also reassured by Xi, who told him on a number of occasions that everything was fine.

The complacency in Europe was worse. In mid-January 2020, the European Commission's Health Security Committee held a conference call to brief member states on the emerging crisis, but less than half called in. After two Chinese tourists in Rome tested positive for COVID-19 on January 30, the Italian government called an emergency meeting of European Union health ministers, but it took two weeks to schedule. The matter was not even on the EU foreign-policy chief Josep Borrell's agenda when he visited Washington in mid-February 2020. Trump-administration officials were particularly shocked to see the United Kingdom play down the virus and consider herd immunity a viable option.

In early March, the markets went into free fall. COVID-19 was spreading across Europe and the EU was in disarray as countries closed their borders unilaterally and engaged in a frenetic dash for scarce medical supplies. Trump's advisers warned that millions could die if he took no further action. So on March 11, the president—who until then had opposed any lockdowns—reluctantly agreed to shut the economy down for three weeks. The dam was



breaking, and a national crisis loomed. Trump quickly turned on China, whose leader had assured him that the virus was under control. Trump's message to his aides, one told us, was blunt: "These guys have fucked us, and they fucked me personally." It was a visceral reaction that would have profound and lasting consequences.

In early 2020, the U.S. government was split on China—one group saw the rivalry through an economic and trade lens; the other saw it as a broader geopolitical struggle. Before the pandemic, Trump was in the first group. In March, he flipped, several officials from both camps told us. One said that the administration accomplished more on China in the following 10 months—through sanctions, regulatory restrictions, and the deepening of alliances—than in the previous three years. The impacts of this shift stretched beyond the Trump administration. Joe Biden's team also adopted the lens of strategic competition, while European attitudes toward China hardened.

From that point forward, the Trump administration largely saw the pandemic as a symptom of a greater China challenge. The problem was that this worldview began to define, and limit, the pandemic response in general. Secretary of State Mike Pompeo blew up a G7 communiqué over the refusal of other member states to use the term *China virus*. Trump tried to pull together an in-person meeting of G7 leaders. Five of the other six agreed, but German Chancellor Angela Merkel pulled the plug: She was being personally cautious about travel but also felt that her presence brought out the worst in Trump. When she called to tell him, a furious Trump yelled at her and hung up the phone. According to a senior German diplomat, the two leaders never spoke again.

Differences among the U.S. and its allies really came to a head over the WHO and its dealings with China.

The WHO had previously worked with a secretive China that refused to cooperate with the international community during the SARS epidemic. The director-general at the time publicly confronted China, and it backed down. In 2020, however, the WHO publicly praised China even though WHO officials were privately frustrated and concerned, believing that this was the only way to secure any access or cooperation in the Xi era. Chinese diplomats also lobbied for a delay in the WHO declaring a Public Health Emergency of International Concern, a vital step in organizing an international response.

American officials were furious. They did not expect the WHO to directly criticize China, but they did want Tedros Adhanom Ghebreyesus, the director-general, to accurately describe what Beijing was doing, or even to just say nothing. In January, Trump's ambassador to the WHO, Andrew Bremberg, warned Tedros that he was putting his "personal and institutional reputation at risk." But early in the crisis, Trump was also praising Xi, and WHO officials didn't believe that anyone else had a better plan to secure any cooperation from China.

Once Trump shut down the economy and turned on China, he went after the WHO, announcing that he was considering withholding U.S. funding from the organization. He then preempted his own deadline to withdraw and pulled his country out entirely, in the middle of its negotiations with the WHO on whether or not it would remain. According to one official, Trump decided this on the spur of the moment, just to juice up a speech on China that he felt was otherwise flat. He told Bremberg to keep negotiating, but the world no longer believed that he wanted to stay.

With the U.S. on its way out, China's obstructionism got to the point where even Tedros snapped. One episode in early 2021 was particularly revealing. The WHO finally placed a team in China to investigate the virus's origins. On February 27, the team gave a press conference to announce its interim findings. Peter Ben Embarek, the chair of the investigation team, said the theory that the coronavirus had escaped from a lab was "extremely unlikely" and wasn't "a hypothesis we suggest implies further study." As an added bonus for Beijing, the investigative team also held open two other explanations pushed by the Chinese government: that the coronavirus might have been imported into China via frozen food, and that a first outbreak could have occurred outside of Wuhan—even outside of China.

Embarek's statement was widely greeted as a definitive refutation of the Trump administration's claim that the coronavirus might have escaped from a lab. But, in the WHO headquarters in Geneva, senior officials were stunned. "We fell off our chairs," one told my co-author and me. Tedros felt that the team did not have sufficient access or underlying data to make an assessment on the lab theory one way or the other, and told the investigators as much. The team was defensive. It felt that even getting a reference to the lab was a victory. The Chinese members of the team had not wanted to include it at all, so the team believed that saying a lab leak was "extremely unlikely," not impossible, was a win. Tedros, who had previously worked in a lab himself, would have none of it. He told them that they should not have compromised on the language.

On March 30, six weeks after the completion of its investigation, the WHO team released its final report. The lab claim was included: "Introduction through a laboratory incident was considered to be an extremely unlikely pathway," the report states. Tedros was frustrated; he believed that the report was excellent in many ways but, as he had said, the team should not have drawn this conclusion. Now, as the report was rolled out, he highlighted the inadequacy of Beijing's cooperation and the limitations of the team's report. "I do not believe that this assessment was extensive enough," [he said](#).





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Some analysts and experts have dismissed the pandemic as relatively unimportant geopolitically. Richard Haass, the president of the Council on Foreign Relations, has [written](#) that it merely accelerated trends that were already under way. But this drastically understates its effect.

If the U.S. and China are to become embroiled in a cold war, future historians could well date its formal start to early 2020, when Beijing refused to cooperate with the rest of the world and Washington responded by going all in on geopolitical competition. The pandemic poses extremely difficult questions about whether global cooperation is even possible in an era of nationalism and rivalry. There are other troubling legacies. The vaccination gap between wealthy democracies and the rest of the world is turbocharging global inequality and could lead to a permanent two-tier world of the “safe” and the “unsafe.”

As the world turns its attention to preparing for the inevitable next pandemic, many may be tempted to urge leaders to just do better—to sign new treaties, to agree to work with one another, and to keep the global good in mind. That would be ideal, no doubt, but we cannot count on it. The world needs a plan B.

The Biden administration must push for reform of the WHO, but it should also create a new alliance of like-minded countries that would operate in parallel to it. Any country could join as long as it agrees to the very strict conditions of membership—including much higher levels of transparency and access for WHO inspectors. When the next pandemic strikes, this alliance could coordinate on travel and trade restrictions, as well as public messaging, financial penalties, and sanctions on countries that fail to cooperate fully with the WHO.

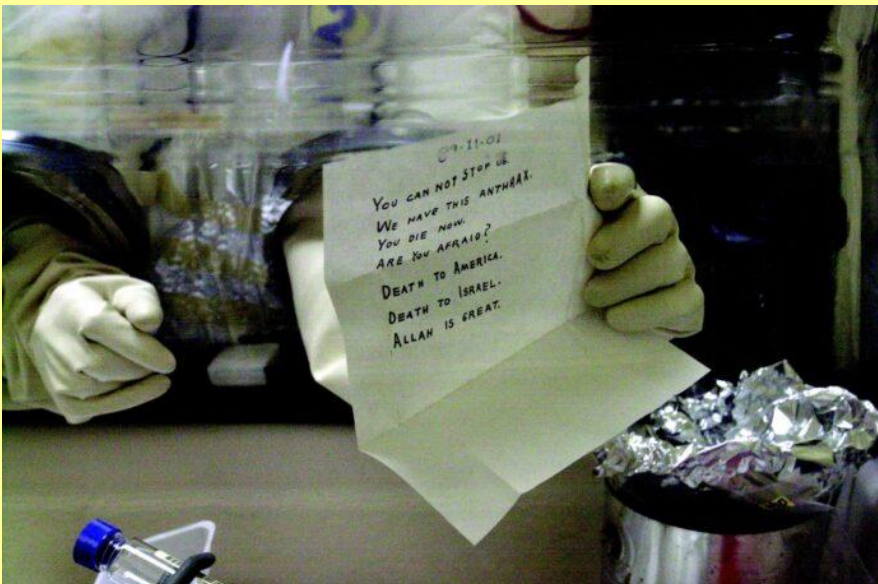
COVID-19 is a warning. The next pandemic could be more lethal and less susceptible to vaccines. We cannot wait for the world to cast aside nationalism and geopolitical rivalries. Try as we might to fix the world order, we must prepare to deal with pandemics in one that remains broken.

*Thomas Wright is a contributing writer at The Atlantic, a senior fellow at the Brookings Institution, and the co-author, with Colin Kahl, of [Aftershocks: Pandemic Politics and the End of the Old International Order](#).*

## State of Biodefense: How America Has Not Addressed the Threat

By Dr. Asha M. George

Source: <https://www.hstoday.us/911/state-of-biodefense-how-america-has-not-addressed-the-threat/>



A laboratory technician's hands hold the anthrax laced letter addressed to Sen. Pat Leahy (D-Vt.) at the U.S. Army's Fort Detrick biomedical research laboratory on Dec. 5, 2001. (FBI photo)

Sept 13 – Even before September 11, 2001, and the anthrax attacks that began shortly thereafter, the public and private sectors anticipated bioterrorism and grew increasingly concerned about pandemic influenza. They had already started working to strengthen national biodefense. Despite the support of President Bill Clinton, only limited efforts began until the anthrax events of 2001 galvanized the government. Old programs received more support and new programs were established. BioWatch (to detect the terrorist use of biological agents in some large

metropolitan areas), the National Biosurveillance Integration System (to analyze data from various federal departments and agencies), and the National Biodefense Analysis and Countermeasures Center were established at the Department of Homeland Security to address biological terrorism and warfare.

Congress also recognized the need for a robust medical countermeasure development pipeline to address current and future biological threats. In 2004, the Project BioShield Act



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help incentivize and assist industry by providing guaranteed funding to develop and purchase new countermeasures before another biological attack occurred. Two years later, the Pandemic and All Hazards Preparedness Act made the Department of Health and Human Services more capable of responding to large-scale biological events by creating the Office of the Assistant Secretary for Preparedness and Response and the Biomedical Advanced Research and Development Authority.

While some of the initiatives were helpful during the initial response to COVID-19, the pandemic made it clear that critical gaps in our national biodefense remain 20 years later. The global crisis resulted from a foreseeable, easily anticipated combination of mutations, lack of immunity, poor preparedness, limited surveillance, and failure to learn from past pandemics. We failed to ensure that we would be able to respond efficiently, effectively, and quickly. COVID-19 has devastated American lives, the economy, and our national confidence, and yet the next biological event could be even worse and happen at any time.

The United States helped to develop vaccines for COVID-19 faster than anyone predicted and should be proud of that accomplishment. Regardless, nearly every other aspect of our response to the pandemic continues to fall short – not just compared to other countries, but also compared to what we know our Nation can do.

### Increasing Biological Threats

When disasters occur, America swings into action. We spend time and resources focused on doing whatever we can, whatever it takes to save lives. Unfortunately, we also often give in to our desires to put the latest disaster behind us, forgetting about the illness and death caused by diseases that spread faster than we can control them. We want so much to believe that pandemics occur only once in a century and that we can make up our losses easily afterwards. But the economic impacts of biological events are staggering – \$200 million for Lyme Disease (2002), \$10-15 billion for Foot and Mouth Disease (1999-2003), \$30-50 billion for Severe Acute Respiratory Syndrome (SARS, also known as SARS-CoV-1, in 2003), \$30 billion for H5N1 avian influenza (2004-2009), \$1.8 billion for *E.coli* 0157:H7 (2006), \$45-55 billion for H1N1 influenza (2009), \$10 billion for Ebola (2014-2016), \$7-18 billion for Zika (2015-2017) – and these are just some examples that made headlines over the past 20 years. For COVID-19, the United States alone has sustained about \$16 trillion in economic losses, losses that continue the longer the pandemic continues. Billions and trillions in losses are not easy to make up. Neither are the lives lost.

Despite the human and economic toll, we cannot allow this pandemic to pull our focus entirely away from other biological threats and we cannot ignore the connections between current day events and these threats. One of the reasons the United States worried about biological agents before 2001 was that terrorists had expressed interest in obtaining and using biological weapons. After the anthrax events that same year, we saw how devastating biological attacks could be. Today, we are worried about the failed state of Afghanistan in part because the Taliban and Al Qaeda (both resident in that country) place value on the ability of biological weapons to evoke terror and weaken their enemies. Malevolent actors are actively looking to buy biological agents and weapons on the dark web and in black markets. These actors use the internet to talk about executing biological attacks with anthrax, botulism, and other weaponizable diseases.



Cpl. Albert Gaston, a chemical, biological, radiological and nuclear (CBRN) defense specialist with the CBRN response element (CRE), 31st Marine Expeditionary Unit, relays a report while inspecting a building for mock contamination during CBRN response training at Camp Hansen, Okinawa, Japan, Feb. 1, 2017. (U.S. Marine Corps photo by Cpl. Darien J. Bjorndal)

asymmetric advantages on the battlefield. The U.S. Department of State suspects that China and Iran – and is convinced that North Korea and Russia – possess active biological weapons programs. These and other countries have also made investments into their bioeconomies top budgetary priorities. The biotechnology they are advancing is often dual

In addition to bioterrorism, biological warfare is once again a concern. Biological weapons provide terrorist organizations and nation states





use, meaning that they could use advanced biotechnology for peaceful, noble purposes, or they could use it produce biological agents and weapons.

Public and private sector laboratory facilities throughout the world and in the United States that work with select agents (biological agents that could severely threaten human and animal public health and safety, animal and plant health, or animal or plant products) also still offer little assurance that they have overcome biosafety and biosecurity concerns. Anthrax escaped the control of the U.S. Army Medical Research Institute of Infectious Diseases in 2002. The Centers for Disease Control and Prevention failed to adequately follow biosafety requirements in 2014, potentially exposing 75 of their staff to anthrax. Dugway Proving Grounds inadequately inactivated anthrax samples and sent them throughout the United States from 2005 to 2015. Tularemia escaped the control of the National Primate Research Center at Tulane University in 2015. Vials containing smallpox were found at an FDA facility in 2014, somehow overlooked for decades. Hundreds of biosafety and biosecurity incidents are reported every year in the United States. Most incidents are unpublicized. The risk of accidental releases of biological agents from laboratory facilities has at best not abated and at worst only increased over time.

Director of National Intelligence Dan Coats told Congress in 2019 about how the Intelligence Community had grown increasingly concerned about biological agents and weapons. He noted that there were more different kinds and that the biological agents and weapons were much easier to produce than ever before. He described the potential impact of biological threats on agriculture, economies, militaries, and public health. This warning came two years before speculation ran rampant regarding the role the Wuhan Institute of Virology might have played in the propagation of COVID-19. We have yet to strengthen our national ability to attribute biological events, making the use of biological attacks more attractive to those actively seeking not to get caught.

### **Blueprint for Biodefense**

The Bipartisan Commission on Biodefense was established in 2014 to recommend and promote changes to U.S. policy and law that strengthen national biodefense and optimize resource investments. In October 2015, the Commission released its foundational report, *A National Blueprint for Biodefense: Leadership and Major Reform Needed to Optimize Efforts*, containing 33 recommendations (and 87 associated action items) about how the federal government could better defend the Nation against, eliminate vulnerabilities to, and reduce the consequences of, biological threats.

In March 2021, the Commission followed up on that report with *Biodefense in Crisis, Immediate Action Needed to Address National Vulnerabilities* to describe how far the federal government had come in implementing our recommendations. **We determined that from 2015–2020, out of the 87 action items we recommended, the government completed 3, took some action to address 56, took no action on 22, and took emergency or crisis actions on 6 to address the COVID-19 pandemic.**

### **The Ups and Downs of Leadership**

Since 2001, we have seen that strong national biodefense depends on strong national leadership. Congress and the White House must hold all federal departments and agencies, as well as other public and private sector entities with responsibilities for biodefense, accountable. They must continuously direct the federal government to make biodefense a priority, especially now that COVID-19 has revealed weaknesses in our defense against biological threats.

Our response to COVID-19 and previous large-scale pandemics (e.g., H1N1) involved many (and in the case of COVID-19, all) federal Departments and agencies, as well as non-federal governments and nongovernmental organizations. Their efforts had to be coordinated. They had to be led. One Department, such as the Department of Health and Human Services, cannot tell other Departments and agencies what to do. One Department also does not possess all of the needed resources or authority to respond to a large-scale biological event by itself. Waiting until COVID-19 overwhelmed the Department of Health and Human Services before requiring other federal agencies to assist did not serve President Trump well.

Making biodefense a high priority only after a crisis begins and letting a leadership vacuum develop after a threat passes is a relatively common occurrence. For example, after the H1N1 influenza pandemic faded away, the Obama Administration eliminated the position of the Special Assistant to the President for Health and Biodefense when it reorganized the White House staff and had the National Security Council staff support both the National Security Council and Homeland Security Council. Subsequently, when Ebola reached the United States in 2014, President Obama brought back Ron Klain to temporarily coordinate the U.S. response to the virus. The Obama Administration subsequently reinstated a directorate, this time in the National Security Council, to deal with global health security and biodefense. President Trump removed this directorate during his term as part of another White House reorganization, choosing instead to place a greater priority on the biological threats created by nation states.

As a result, the Trump Administration, like its predecessor, again had to appoint a coordinator for the response to COVID-19. Earlier this year, President Biden restored the global health security and biodefense directorate in the National Security Council.



As far back as the Wilson Administration, various White Houses have emphasized and deemphasized the biological threats to the Nation. Different Presidents assumed or hoped that the latest biological crisis will be the only such crisis to occur in a century, or at least during their terms. But our long history with bioterrorism, biological warfare, naturally occurring diseases that spread quickly, and accidental releases of dangerous pathogens from laboratories and other facilities – coupled with the ease and speed of travel and transportation – clearly demonstrate that the biological threat never really recedes. This Administration and every Administration after it must accept the pervasiveness and ever-present nature of the biological threat and accordingly ensure that high level White House staff continuously address it.

The Commission recommends that the President establish a dedicated Deputy National Security Advisor for Biodefense, overseen by the Vice President of the United States. Two directorates – for Global Public Health Security and Biodefense and for Domestic Public Health Security and Biodefense – should report to this Deputy National Security Advisor. Further, high level staff in the Executive Office of the President should maintain some focus on the biological threat the way National Security Advisor Jake Sullivan and the Director of the Office of Science and Technology Policy Eric Lander do today.

### **Chaos Over Coordination**

Despite the existence of the Trump Administration's Coronavirus Task Force, the federal government's early response to the spread of COVID-19 around the world and in the United States was often disorganized and contradictory, making state, local, tribal, and territorial governments responsible for what had historically been considered federal obligations. Chaos ensued as nonfederal governments took wildly different approaches and competed for increasingly scarce personal protective equipment, testing supplies, and other critical materials. Before COVID-19, the Trump Administration emplaced an interagency Biodefense Steering Committee (to oversee implementation of the National Biodefense Strategy) and a Biodefense Coordination Team (established at the Department of Health and Human Services to help the Biodefense Steering Committee execute its duties). The Administration did not empower the Committee or the Team with the authority they needed to coordinate the efforts of all public and private sector entities involved in response to the pandemic. Eventually, President Trump put Vice President Pence in charge of the response, but it took months to coordinate federal efforts effectively.

In 2015, the Commission recommended that the federal government produce a National Biodefense Strategy that took the many different strategies to address parts of biodefense into account. The Trump Administration developed and released the congressionally mandated strategy in 2018. It superseded previously issued strategies (such as that described in Homeland Security Presidential Directive 10) and went far to combine and align the panoply of disparate, uncoordinated federal policies and strategies to address biological threats. Unfortunately, the Trump Administration did not make many strides towards implementing this Strategy. We will never know what impact full implementation of the National Biodefense Strategy might have had on the response to COVID-19 in 2020. The Biden Administration is now in the unenviable position of having to create a more comprehensive implementation plan while responding to an ongoing pandemic and rising biological threats.

### **Independence Over Collaboration**

The National Biosurveillance Integration System (located within the Department of Homeland Security) is supposed to aggregate, analyze, and disseminate biosurveillance information from inside and outside of the federal government. Had it been fully resourced and functioning as intended, it would have proven invaluable during the COVID-19 pandemic. However, few federal departments and agencies provide data to the System, and many question the value of the analysis produced. If other federal departments and agencies do not provide their biosurveillance data to the Department of Homeland Security, the National Biosurveillance Integration System cannot fulfill its congressional mandate.

"We will never know what impact full implementation of the National Biodefense Strategy might have had on the response to COVID-19 in 2020."

The Nation also needs a stratified hospital system for biodefense. Hospitals throughout the country vary in terms of their capacities and capabilities. All are not equally capable of responding to every disease, no matter what the source. While we expect that all hospitals be able to render some minimal level of care for all ailments, we also know that some hospitals operate at a higher level than others. The Nation has stratified hospitals for trauma response, cardiac care, pediatric emergencies, and other situations requiring specialized care. Many of these stratified systems were put in place well before 2001, but the federal government has not yet established or provided enough incentives or requirements to hospitals to create such a system. As a result, hospitals respond to biological events individually, spontaneously, and in an uncoordinated fashion, as seen during every biological event over the past 20 years, including most recently, the COVID-19 pandemic.





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The Department of Health and Human Services began a pilot for the Regional Disaster Health Response System in 2019. The Regional Disaster Health Response System began in three metropolitan jurisdictions and aims to grow. While this effort is promising, it should not take decades to establish a stratified biodefense hospital system throughout the country. It needs the support of the Department's Hospital Preparedness Program, as well as associated cost reimbursements by the Centers for Medicare and Medicaid Services, well before the next biological event occurs. For their part, Medicare and Medicaid must learn from their slow response to COVID-19 and execute their role in coordinating all health insurers, making preparedness for large-scale biological events a requirement for hospital accreditation.

### Quiescence Instead of Innovation

The idea behind the Strategic National Stockpile was deceptively simple: stockpile medical countermeasures, essential supplies, and equipment needed to respond to a biological event, taking into consideration current and likely biological threats. In practice, however, determining what should go into the Stockpile and how to maintain enough inventory to help the entire Nation respond to a large-scale biological event like the COVID-19 pandemic proved to be an enormous challenge. Stockpiling previously developed medicines and old technology that address biological threats identified decades ago is not enough. Diverting funds from the Stockpile to other public health priorities by the Centers for Disease Control and Prevention did not help. When the pandemic hit, federal and non-federal agencies turned to the Strategic National Stockpile to get the supplies they needed, only to find that it could not help much to address a threat that its contents were not specifically designed to address. Supplies in the stockpile that could help with the crisis, including ventilators, were also too few to sufficiently support the demand during the early response to the pandemic.

The contents of the Strategic National Stockpile and the types of drug candidates needed to address today's threats have not seen enough innovation over the past 20 years. Some federal agencies, such as the Biomedical Advanced Research and Development Authority at the Department of Health and Human Services, helped greatly to foster innovation needed for COVID-19 medical countermeasures. However, these were relatively short-term, quickly funded efforts. Decades have gone by without the long-term funding and investments needed to increase innovation in medical countermeasures at least at the same rate that biological threats are changing and growing. Congress hesitates to provide multi-year funding when that is exactly what is needed to support innovation in this arena. The only other option is to provide much more funding to support short-term hysterical efforts to develop a medical countermeasure once a disease like COVID-19 threatens our country. Congress provided multi-year funding when it established Project BioShield in 2004. Clearly, it needs to do so again. COVID-19 is not the last biological threat we are going to see in our lifetimes. It is not even the last biological threat we are going to see this year.

Medical countermeasures are not the only domain in need of innovation. During the COVID-19 pandemic, distribution of medical countermeasures depended on overburdened supply chains and just-in-time delivery to health care facilities and pharmacies, coupled with the usual difficulties in delivering and distributing contents of the Strategic National Stockpile to states, localities, tribes, and territories. The Department of Health and Human Services could not handle the demands placed on it to deliver countermeasures



throughout the Nation, using systems that were originally designed in some cases decades ago for other purposes. The Department of Defense was able to help in this regard because its logistical enterprise continuously innovates. A Medical Countermeasure Response Framework infused with innovative distribution practices can only help.

Soldiers of the 23rd Weapons of Mass Destruction Civil Support Team decontaminate their protective suits after sweeping the area utilizing special biological and chemical detectors in response to a possible **biological** threat during a training exercise at the David C. Canegata Recreational Center and Sports Complex on Sept. 25, 2019. (U.S. Army National Guard photo by Army Staff Sgt. Gregory Camacho)

A key element of biodefense in need of innovation is biodetection. BioWatch, the Nation's system of biological detectors was emplaced in 2003 in response a credible bioterrorist threat. Extant technology was used at the time with the intention that it would be replaced with better, more advanced technology as time and science progressed. Today, 18-year-old



technology continues to hobble the system, and while some improvements have been made with associated laboratory testing, BioWatch does not perform well and as a result, cannot effectively deter biological attacks. The system screams for innovation, but the Department of Homeland Security has not generated needed innovation since it began trying so many years ago. This is not to say that other federal agencies have experienced the same results. For example, both the Department of Defense and the National Aeronautics and Space Administration have fostered needed biodetection innovation in concert with real-time mission requirements. For their part, industry makes its own investments in the development of innovative technology but struggles to understand how to meet the needs of BioWatch when the Department of Homeland Security depends on a needs assessment conducted 18 years ago and struggles to clearly articulate requirements in the challenging, diverse, multiplicative biological threat environment. New biodetection technology (in conjunction with a reassessment of the BioWatch mission) must provide meaningful information to the political, public health, emergency response communities who will have to act quickly when a biological event occurs.

In January 2021, our Commission released a report, *The Apollo Program for Biodefense: Winning the Race Against Biological Threats*, that called for significant increases in federal investment in innovation for biodefense. We believe that with smart investments of \$10 billion a year for 10 years, the United States of America can effectively take pandemic threats off the table by 2030. We applaud the Biden Administration's recently released American Pandemic Preparedness Plan for similarly calling for the robust transformation of U.S. biodefense.

### Fighting for The Future

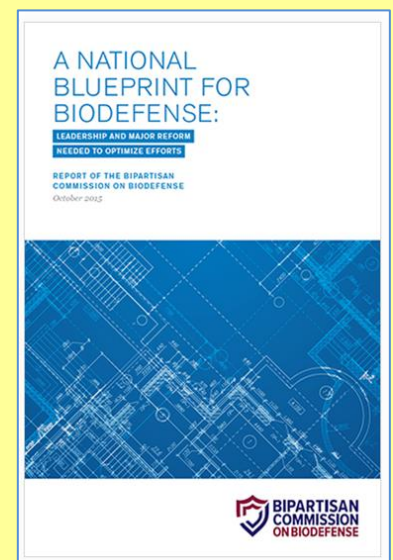
COVID-19 is not the end of the biological threat. It is one among many. While we must address this clear and present danger, we cannot do so to the exclusion of all other biological threats. As expected, unimpeded, the biological threat will only increase over time. We should assume that large-scale biological events affecting our national security, public health, and economic well-being could occur now and plan accordingly. The Nation cannot afford to wait until COVID-19 disappears. Other diseases are mutating, too, our enemies are already at work developing and producing biological weapons, and if we are not careful, we will quickly find ourselves unable to compete in the global bioeconomy.

The Bipartisan Commission on Biodefense began its efforts seven years ago in 2014. Over the past 20 years, the biological threat has only increased. But the country's efforts to defend against the biological threat have not kept up with the threat. Beginning with the anthrax attacks of 2001, biological events reveal time and again that the numerous gaps remain in the Nation's ability to prevent, deter, prepare for, detect, respond to, attribute, recover from, and mitigate a biological event. **Twenty years after 9/11, and six years after we released *A National Blueprint for Biodefense*, the United States remains at catastrophic biological risk.**

People used to say that dealing with the biological threat was too hard and that because it was too hard, we should not waste our time trying to address it. It was perceived as a problem for some future generation, but hardly a quarter of a generation has passed since September 11, 2001, and the anthrax events that began that same year, during which time the United States has had to deal with eight major pandemics, numerous biological incidents threatening our national security, hundreds of laboratory infractions and lapses, and the reinvigoration of biological weapons programs throughout the world. It no longer matters whether the biological threat is too difficult to deal with. Our hands have been forced and we must deal with it.

America has the opportunity now to face the biological threat squarely. The future is still bright. We can secure the homeland against biological threats by building on the good work that has come before and pushing back against the tyranny of disease.

*Dr. Asha M. George is executive director of the Bipartisan Commission on Biodefense. is a public health security professional whose research and programmatic emphasis has been practical, academic, and political. She served in the US House of Representatives as a senior professional staffer and subcommittee staff director at the House Committee on Homeland Security in the 110th and 111th Congress. She has worked for a variety of organizations, including government contractors, foundations, and non-profits. As a contractor, she supported and worked with all Federal Departments, especially the Department of Homeland Security and the Department of Health and Human Services. Dr. George also served on active duty in the U.S. Army as a military intelligence officer and as a paratrooper. She is a decorated Desert Storm Veteran. She holds a Bachelor of Arts in Natural Sciences from Johns Hopkins University, a Master of Science in Public Health from the University of*





North Carolina at Chapel Hill, and a Doctorate in Public Health from the University of Hawaii at Manoa. She is also a graduate of the Harvard University National Preparedness Leadership Initiative.

## Ebola Vaccine Good News: Clinical Trial Shows Strong Immune Response

Source: <https://www.genengnews.com/news/ebola-vaccine-good-news-clinical-trial-shows-strong-immune-response/>

Sept 14 – Welcome news for Ebola virus disease prevention was published yesterday in two papers presenting data showing that Johnson & Johnson's (J&J) two-dose Ebola vaccine regimen is safe, well tolerated, and produces a strong immune response in people over the age of one. This news comes five years after the largest outbreak of Ebola since its discovery and just one month after an Ebola outbreak was declared in the Ivory Coast.

The study aimed to assess the safety and long-term immunogenicity of a two-dose vaccine regimen.

The first vaccine is the adenovirus type 26 vector-based vaccine encoding the Ebola virus glycoprotein (Ad26.ZEBOV). The second is the modified vaccinia Ankara vector-based vaccine, encoding glycoproteins from Ebola virus, Sudan virus, and Marburg virus, and the nucleoprotein from the Tai Forest virus (MVA-BN-Filo).

The authors found that the vaccine regimen was well tolerated and induced antibody responses to *Zaire ebolavirus* 21 days after the second dose in 98% of participants, with the immune responses persisting in adults for at least two years.

Conducted in Sierra Leone, the [EBOVAC-Salone](#) study is the first to assess the safety and tolerability of this vaccine regimen in a region affected by the 2014–2016 West African Ebola outbreak, which was the worst on record. It is also the first study reporting the evaluation of this vaccine regimen in children.

The data were published in *The Lancet Infectious Diseases* in two separate papers: "[Safety and immunogenicity of the two-dose heterologous Ad26.ZEBOV and MVA-BN-Filo Ebola vaccine regimen in children in Sierra Leone: a randomized, double-blind, controlled trial](#)" and "[Safety and long-term immunogenicity of the two-dose heterologous Ad26.ZEBOV and MVA-BN-Filo Ebola vaccine regimen in adults in Sierra Leone: a combined open-label, non-randomized stage 1, and a randomized, double-blind, controlled stage 2 trial.](#)"

During the 2014–16 outbreak of Ebola in West Africa, 28,652 cases and 11,325 deaths from Ebola were reported. Approximately 20% of cases were in children under 15 years, and children younger than five years are at a higher risk of death than adults.

"This study represents important progress in the development of an Ebola virus disease vaccine regimen for children, and contributes to the public health preparedness and response for Ebola outbreaks," said Muhammed Afolabi, MD, assistant professor at the London School of Hygiene and Tropical Medicine.

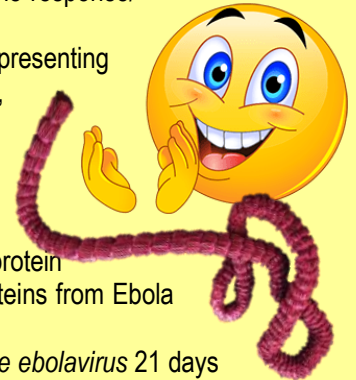
The clinical trial recruited participants from September 2015 to July 2018. The study was divided into two stages. In stage one, 43 adults aged 18 years or older received the Ad26.ZEBOV vaccine followed by the MVA-BN-Filo vaccine after 56 days. In stage two, 400 adults and 576 children and adolescents (192 in each of the three age cohorts of 1–3, 4–11 and 12–17 years of age) were vaccinated with either the Ebola vaccine regimen (Ad26.ZEBOV followed by MVA-BN-Filo) or a single dose of a meningococcal quadrivalent conjugate vaccine followed by placebo on day 57. Adults participating in stage one of the study were offered a booster dose of Ad26.ZEBOV two years after the first dose which induced a strong immune response within seven days.

"To protect people from Ebola, we will need a range of effective interventions," said Daniela Manno, clinical assistant professor at the London School of Hygiene and Tropical Medicine. "These findings support the additional strategy of providing an Ad26.ZEBOV booster to previously immunized individuals at the start of an Ebola virus disease outbreak."

The study findings have already contributed to the approval and marketing authorization of the two-dose Ebola vaccine regimen in July 2020 by the European Medicines Agency, for use in both children and adults. It also contributed to the WHO Prequalification in April 2021, which will facilitate formal registrations of this vaccine regimen in countries at risk of Ebola virus disease outbreaks.

"The threat of future Ebola virus disease outbreaks is real and it's important to remember that this disease has definitely not gone away," noted Deborah Watson-Jones, PhD, clinical epidemiologist from the London School of Hygiene & Tropical Medicine. "Despite the additional global challenges around COVID-19, we must not slow down efforts to find effective ways of preventing Ebola virus epidemics and, should outbreaks occur, of containing them rapidly. Vaccines have a key role in meeting both of these objectives."

In May 2021, J&J said it would donate thousands of Ebola vaccine regimens in support of a WHO early access clinical program launched in response to an outbreak in Guinea and aimed at preventing Ebola in West Africa. The program began by vaccinating health workers, other frontline workers and others at increased risk of exposure to the Ebola virus in Sierra Leone. To date, more than 250,000 individuals participating in clinical trials and vaccination



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initiatives have received at least the first dose of the J&J Ebola vaccine regimen, including 200,000 who have been fully vaccinated. Further studies are being carried out in Sierra Leone to investigate whether the vaccines are safe and induce immune responses among infants aged under one year, and to follow up the adult and child participants over five years to assess the potential for long term protection.

“This is an example of crucial research which brings together scientists from Africa with partners in the north and pharmaceutical companies to tackle a major public health threat in Africa,” said Sir Brian Greenwood, MD, professor of clinical tropical medicine, London School of Hygiene and Tropical Medicine.

The research in Kambia district was a collaboration between the London School of Hygiene & Tropical Medicine and Sierra Leone’s College of Medicine and Allied Health Sciences under the EBOVAC1 project.

### EMA still awaiting Sputnik V data before approval

Source: <https://euobserver.com/tickers/152872>

Sept 10 – The European Medicines Agency (EMA) said it still needs more data on Russia’s Sputnik V coronavirus vaccine before the jab can be authorised for use across the EU, The Moscow Times reports. The regulator said it was still in discussions with Moscow over data submitted to support the application. **Russia submitted its application in February**, following the publication of research in The Lancet showing the vaccine had 91.6-percent efficacy.



**EDITOR’S COMMENT:** Either the EMA is lying or the Russians do not care for the European market. We will be back by the end of 2021. We need an answer from both of them!

### SARS-CoV-2 Variants of Concern Neutralized by Bispecific Antibodies

Bispecific antibodies are a promising next-generation antidote against existing and emerging SARS-CoV-2 variants of concern. A research team, led by scientists at the National Institute of Allergy and Infectious Diseases (NIAID), has developed bispecific antibodies that simultaneously bind to two different antigens, targeting multiple regions of the SARS-CoV-2 spike protein. The researchers showed that these bispecific antibodies can neutralize the original virus as well as the emerging variants of concern. **+ MORE**

### Bioterrorist Attacks: A Brief History

By **Barry C. Fox, M.D., University of Wisconsin**

Source: <https://www.thegreatcoursesdaily.com/bioterrorist-attacks-a-brief-history/>

Sept 16 – You may remember the first case, which occurred in Florida and resulted in the first death from anthrax. Letters were sent to American Media, NBC, ABC, CBS, and a senator’s office at the State Department. This attack resulted in 22 cases of anthrax, with five deaths due to inhalation of bacterial spores.

Besides the deaths, there was mass chaos in the Washington, DC, area due to concern about the postal service and the death of two workers. Nineteen thousand tests were performed, and 33,000 individuals were placed on prophylactic antibiotics. Time-consuming and costly environmental surveys of post offices and mailrooms were performed, and mail service was significantly interrupted. Decontamination of one building alone cost \$23 million.

Experts say that it’s not a maybe anymore; bioterrorism will happen—meaning the intentional release of viruses, bacteria, or other germs. These germs have the potential to devastate our food supply, infest our water, contaminate the air, and ultimately sicken or kill people.

#### Bioterrorist Attacks in the Middle Ages

Although not well documented, there are a few stories of early bioterrorism. As early as the 14th and 15th centuries, dead, diseased bodies of infected humans or animals were flung at the enemy with catapults—some of the first trials of bioweapons. One instance took place in





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Caffa, a city in Ukraine, which was under attack. The Tartars turned their misfortune of a plague epidemic into a new form of attack weapon.

There are also several accounts of attempting to spread smallpox to the enemy via tainted blankets, one of which took place during the conquest of the Incas in Peru and another against Native American Indians. Believe it or not, in 1675, there was an early Bioweapons Treaty. The Holy Roman Empire and the French agreed not to use poisonous bullets against one another. Other agents over the years included the saliva of rabid dogs and even containers of poisonous snakes. Those of you who are Sherlock Holmes fans might be amused to know about a fictional account of bioterrorism. In *The Adventure of the Dying Detective*, Holmes investigates a murder where he suspected a bioweapon had been used. All indications pointed to plague as being the murder weapon in question.

### Modern Bioterrorism

Let's explore modern threats of bioterrorism and the agents that might be used in an attack. There have been efforts in the 20th century to curtail the use of bioweapons. For example, in 1925, the Geneva Protocol was established, prohibiting the use of chemicals and biological agents, but not the research and development of them.



During the Cold War, both Russia and the United States developed weapons of bioterrorism. And during the '50s and '60s in the U.S., open-air tests were performed with what was thought to be a harmless bacteria named *Serratia Marcescens*. The U.S. government wanted to know what would happen if a bioweapon was planted in a subway or was dropped from a plane.

In an actual trial in San Francisco, it was disturbing to find that almost all of the 800,000 residents showed traces of *Serratia*. In another test, a light bulb filled with harmless bacteria was dropped on the subway tracks in New York City. The organism spread throughout the subway system within 20 minutes.

By the late 1960s, the United States had a large arsenal of different pathogens stored up in the form of bacteria, fungi, and

toxins. However, in 1969, President Nixon terminated the offensive biological warfare program. He ordered the destruction of stockpiled weapons. After that, the U.S. research focused on defensive, rather than offensive measures.

### How the Soviets Messed Up

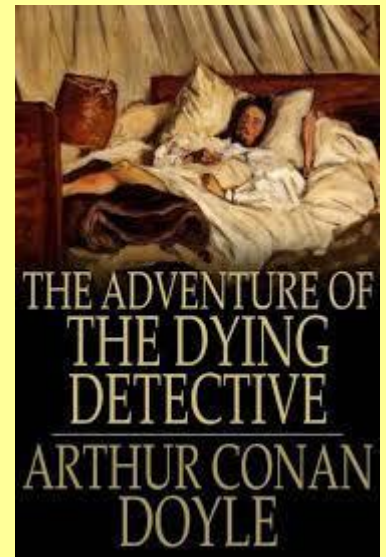
In 1972, the U.S. and more than 100 nations signed the Biological and Toxin Weapons Convention, or BWC, the world's first treaty banning an entire class of weapons. More specifically, the treaty banned the research, development, production, stockpiling, or acquisition of biological weapons, as well as the means to deliver them.

But in 1979, a powdered form of anthrax was accidentally released from a Soviet bioweapons facility in Russia, killing 70 people. This facility was able to produce tons of the toxin. Although the Russians blamed contaminated meat for the deaths to cover up the accident, in 1992, a U.S. team visited the site. They found evidence in the lungs of victims—that many died from inhalation anthrax—a serious violation of the BWC treaty.

Through several defectors from the Soviet Union, the United States gained knowledge of the enormous size of the Soviet's bioweapons program. This allegedly included a genetically altered super plague, antibiotic-resistant anthrax, and long-range missiles to spread disease.

Evidently, the Soviet program had facilities with thousands of scientists. In the 1980s and 1990s, many of these scientists became free agents—with dangerous knowledge for sale. Today, we think there are bioweapons in at least 12 countries, spurring the need for preparedness by medical and public health organizations.

► Learn more about [emerging and reemerging diseases](#).  
An Introduction to Infectious Diseases. [Watch it now Wondrium](#).



## How COVID-19 hybrid immunity could be a potential pandemic game-changer

By Nedda Dastmalchi

Source: <https://www.yahoo.com/gma/covid-19-hybrid-immunity-could-100339328.html>

Sept 17 – With the FDA gearing up to decide if all Americans need booster shots, some researchers are pointing to preliminary data suggesting that mixing different [vaccines](#) could offer an even stronger immune boost.

For now, data is too sparse to support a mix-and-match strategy, experts say. But scientists are learning more about just how strong the immune response can be for someone who has previously been infected with COVID-19 then gets the vaccine -- a phenomenon called "hybrid immunity."

"The best thing we can hope for is that three vaccine doses will emulate the super immune response, found among those previously infected with the virus," said Dr. Paul Goepfert, an infectious disease physician and director of the Alabama Vaccine Research Clinic. "This [type of immunity] will protect against variants in the future."

With the nation still slogging through the pandemic and contending with the delta variant's threat of breakthrough infections, "super immunity" becomes an appealing concept.

In one review [recently published in Science](#), people with that hybrid immunity see an immediate and "striking" improvement in protection -- up to a 100-fold increase in their antibody response as compared to what they built up after their COVID-19 infection -- Dr. Shane Crotty, review author and virologist at the La Jolla Institute for Immunology, said.

Experts are also discovering these hybrid antibodies appear to be more versatile and recognize more variants, including those as distant as the original SARS virus, Crotty said.

One yet to be peer reviewed [study of previously COVID-19 positive patients](#) who were then vaccinated at least six months later found participants were able to fight off both variants of concern tested: delta, the most infectious, and beta, the most lethal.

"With prior infection, their antibodies are able to recognize numerous variants, but with the addition of the vaccine, they are able to generate a large number to have a stronger effect against the virus," Crotty said.

Like an exercise regimen that pairs weight lifting with cardio, Crotty explained that these individuals benefit from the combination of quantity and varied quality of the immune response they build. And that could indicate promising signs for boosters.

Scientists are seeking to replicate that strong protection, but without people having to contract COVID-19,

Instead, they're hoping booster doses of vaccines could convey a similar effect.

But timing is key when it comes to additional doses, whichever vaccine is given. Researchers say that exact right interval when immune response has matured -- but before protection begins to wane -- is the ideal target.

"Our immune system is built to have repeated exposures to the same antigen," which will "substantially" enhance immune protection, Dan Barouch, director of the Center for Virology and Vaccine Research at Beth Israel Deaconess Medical Center said.

Experts are still gleaning what exactly is the benefit of this enhanced immunity, though it's not novel to [coronavirus](#).

Flu vaccines, for example, are "boosted" for children receiving them, while adults receive one dose, yearly.

"This is because of hybrid immunity. Adults have already been exposed to influenza and have primed their immune response," Goepfert said.

"What we have seen is that waiting six months does mount a better immune response later," he added. "It seems that our immune system likes to rest and develop antibodies, and then mount a stronger response when it sees the same pathogen again later on."

There is not enough data yet to say if the mix-and-match approach of priming one vaccine and boosting with another is going to offer better or more durable protection. But while the jury remains out, experts are hopeful.

"The mix-and-match approach in vaccine administration has been studied for decades, but unfortunately not for COVID," Barouch said. "while larger studies are underway, it is best to stay with the same vaccine for the booster, if approved."

*Lily Nedda Dastmalchi, D.O., M.A., is a physician and cardiology fellow at Temple University Hospital, and a contributor to the ABC News Medical Unit.*

## The Risk of Lab-Created, Potentially Pandemic Pathogens

Source: <https://www.homelandsecuritynewswire.com/dr20210917-the-risk-of-labcreated-potentially-pandemic-pathogens>

Sept 17 – In 2012, the research work of Ron Fouchier and Yoshihiro Kawaoka "[renewed the debate](#) over whether potential pandemic virus research is too dangerous to conduct." These





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researchers published “studies on making avian influenza contagious through the air among mammals.” At the time of publication, highly pathogenic avian influenza, or H5N1, was already known to transmit human-to-human, if only rarely.

This debate on developing pathogenic threats for research purposes led the U.S. government to impose a moratorium on funding gain-of-function research. Dr. Lynn Klotz, PhD, a Senior Science Fellow at the Center for Arms Control and Non-Proliferation, shares his “[grave concern](#)” that the probability of a pandemic caused by a lab incident or accident is much too high.”

[Pandora Report](#) quotes Klotz to say that his calculation demonstrated the “[high likelihood](#)” of release into the community from at least one of the fourteen facilities that now create airborne-transmissible potential pandemic viruses and made estimates of the probability that a release will seed a pandemic with potentially millions of fatalities.” These fourteen facilities conduct research with [avian and human pandemic influenza viruses](#). This calculation supports his “grave concern that the probability of a pandemic caused by a lab incident or accident is much too high.”

Klotz estimates that the chance of a release from a laboratory for an estimated five years of research producing and studying mammalian airborne transmissible H5N1 avian influenza and human flu viruses is [15.8%](#). [Human error](#) can cause accidents that result in the release of a dangerous pathogen into the surrounding community. Given the risks, Klotz recommends a strong level of precaution, specifically a [moratorium](#) on this mammalian airborne transmissible avian influenza research.

## Ronapreve: 'Most vulnerable' to get new Covid drug next week

Source: <https://www.bbc.com/news/health-58602999>

Sept 18 – The UK’s “most vulnerable” hospital patients, who are unable to build up an antibody response to Covid, will be offered new drug Ronapreve from Monday.

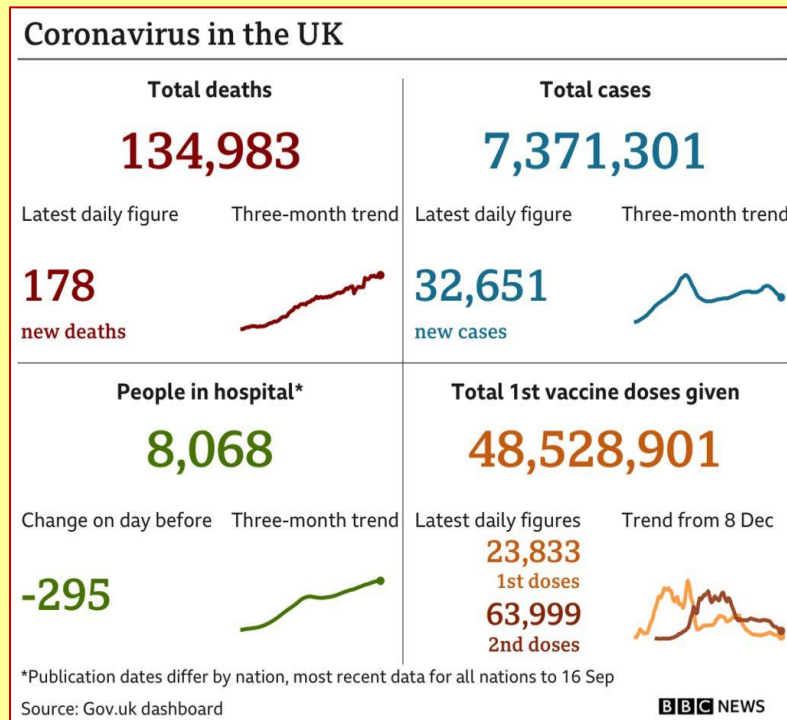
The new Covid treatment, approved just last month, uses a pair of laboratory-made antibodies to attack the virus.

It was famously used as part of the suite of experimental medicines given to US President Donald Trump last year.

The antibody cocktail has been shown to reduce hospital stays by four days and cut the risk of death by a fifth.

The government said it had secured sufficient supply of the new therapeutic for eligible NHS patients across the four nations to cover the forthcoming winter.

Health Secretary Sajid Javid said he was “thrilled it will be saving lives from as early as next week”.



“The UK is leading the world in identifying and rolling out life-saving medicines, particularly for Covid 19, and

we will continue our vital work to find the best treatments available to save lives and protect the NHS,” he said.

The new treatment is expensive and priority will be given to those patients at greatest risk of becoming severely ill.



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It will be offered to those over-50 without the necessary antibodies, and those aged 12-49 who are immuno-compromised - for example those with certain cancers - who struggle to mount an antibody response, either through being exposed to Covid, or from vaccination.

The government said guidance would be sent to clinicians imminently so they can begin prescribing the treatment as soon as possible.

Of those eligible patients, antibody testing will initially be used to determine whether they are seronegative - meaning those who do not have an adequate existing antibody response - and will therefore be eligible for treatment.

**The treatment antibodies - casirivimab and imdevimab - will then be administered to patients through a drip.** The drug works by binding to the virus' spike protein, stopping it from being able to infect the body's cells.

The antibody therapy attacks the virus, unlike other Covid treatments such as the steroid dexamethasone that calm the body's overactive immune system.

There had been concern the idea was a dud after trials failed when antibodies were taken from patients who had recovered from Covid.

However, the companies Regeneron and Roche tested monoclonal antibodies in the laboratory to find the two that were best able to stick to the virus.

This has proved far more effective, and the therapy continues to work against new variants.

"Ronapreve is the first dedicated medicine developed for Covid 19 to receive marketing authorisation from the MHRA, representing a significant milestone in how the NHS is able to fight this disease," said Paul McManus, Covid 19 lead at Roche Products Ltd.

"We're grateful for the collaboration of the vaccine taskforce and NHS England in helping to bring this important antibody cocktail to treat and prevent acute Covid 19 across the UK."

## Beyond CRISPR: New class of gene-editing enzymes discovered

The CRISPR gene-editing system is built on a bacterial defense mechanism that allows scientists to make precise edits to DNA. Now scientists at MIT have discovered a new class of enzymes called **OMEGAs** that perform a similar function, perhaps better. [Read more](#)

## 60,000 people still die every week from Covid-19. What life-saving drugs can we give them?

Source: <https://www.thenationalnews.com/coronavirus/2021/09/19/60000-people-still-die-every-week-from-covid-19-what-life-saving-drugs-can-we-give-them/>

Sept 19 – Despite the fast rollout of vaccines, more than 60,000 people are dying each week from Covid-19.

The need for improved treatments is as great as ever.

[As reported in The National](#), prophylactic or preventative drugs that could be administered in the early stages of infection are being trialled by some of the world's major pharmaceutical companies.

During later stages of infection, including cases where patients have become seriously ill and are admitted to hospital, a number of treatments are available.

These are typically drugs that have previously been authorised to treat other conditions, but are being "repurposed" to combat Covid-19. Such repurposing is faster than developing all-new drugs.

Here we look at some of the drugs and consider what may be available in future.

### What drugs are being used against Covid-19?

Among the most successful and affordable have been **corticosteroids like dexamethasone**, which an estimate earlier this year suggested had saved one million lives during the pandemic.

This anti-inflammatory drug dampens down the immune system, preventing it from overreacting and releasing excessive amounts of chemicals called cytokines in a process known as the "cytokine storm". This can cause organ failure and death.

"Corticosteroids like dexamethasone have a huge impact if you give them at the right time," said Prof Paul Hunter, a professor in medicine and an infectious diseases specialist at the University of East Anglia in the UK.





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“If you give dexamethasone too early, you make people more sick. It knocks the body’s immune system and it cannot overcome the virus. If you give it at the right time, you make them less sick.”

Another key class of drugs are **monoclonal antibodies**, which are identical antibodies produced artificially in large numbers. Among them is **tocilizumab**, a repurposed rheumatoid arthritis drug, which also targets the cytokine storm by inhibiting the action of a cytokine called Interleukin-6, and may be given alongside a corticosteroid like dexamethasone.

### Antiviral monoclonal antibodies

While some monoclonal antibodies dampen down an excessive immune response, others target the virus itself.

One such treatment has been developed by **Regeneron** Pharmaceuticals and Roche. Administered to Donald Trump after he contracted Covid-19 when he was president in October, this contains two monoclonal antibodies and aims to stop the coronavirus attaching to receptors on the surface of cells in the respiratory system.

**Bamlanivimab**, also a monoclonal antibody, may also be given, alongside another drug, to prevent severe disease. Like the Regeneron treatment, it targets the spike protein and aims to prevent the coronavirus entering human cells.

Another monoclonal antibody treatment to target the spike protein is **sotrovimab**. Produced by the British pharmaceutical giant GlaxoSmithKline and the California-based Vir Biotechnology, it was approved by regulators in Europe, the US and the UAE in May and has been widely used in the Emirates.

Three months after what GSK staff recalled as a “lights-went-on moment”, the UAE [became the first country to receive a shipment of the drug](#), after it proved to be highly effective at limiting severe illness.

Given intravenously, it has been found in trials cited by the European Medicines Agency to reduce the risk of hospitalisation and death by 85 per cent.

[Speaking to The National in August 2021](#), Dr Averyan Vasylyev, GSK’s medical affairs director in the Gulf, said: “From a medical point of view, it’s like a perfect medicine.”

### Not all drugs have convinced regulators or clinicians

Some drugs have offered initial promise, only to disappoint in trials, among them an antimalarial drug called **hydroxychloroquine**. An analysis of trials published in the journal *Nature* in April found the drug was actually associated with higher mortality.

**Remdesivir**, an anti-viral drug, was approved by the US Food and Drug Administration last year, but a lack of evidence that it is effective led the World Health Organization to recommend against giving it to Covid-19 patients.

A study by French researchers released this month in *The Lancet* found “no clinical benefit” from remdesivir in hospitalised patients who had had symptoms for more than seven days and needed oxygen.

### What is on the horizon?

There could be more monoclonal antibody treatments on the way, despite the FDA’s rejection this month of an application for an emergency use authorisation (EUA) for **lenzilumab**, which aims to **prevent the cytokine storm**.

The drug’s maker, Humanigen, still aims to bring the drug to market and authorisation may be forthcoming once there are trial results with more patients. Other monoclonal antibody treatments are being trialled, including **plonmarlimab**, from a company called I-Mab, which also targets the cytokine storm. A study by University of Cambridge researchers using artificial intelligence screened 2,000 drugs approved for other uses and identified 200 that could be effective against Covid-19.

The research, published two months ago, found that just one fifth of these were in clinical trials, so there are many hundreds of potentially useful drugs yet to be tried. “I think there’s a long way to go and scope for much more,” said Dr Andrew Freedman, an infectious diseases specialist at Cardiff University in the UK. “I’ve not seen anything yet that’s going to make a huge difference. We may get more drugs in future – there’s definitely a need for that.”

## COVID-19 Vaccines Seem to Affect Periods, And That's Finally Being Investigated

Source: <https://www.sciencealert.com/covid-19-vaccines-impact-on-periods-are-finally-going-be-investigated>

Sept 20 – Since the rollout of [COVID-19 vaccines](#), thousands of women in the UK have been saying that their periods have been disrupted, say experts.

After more than 30,000 women said their menstrual cycle being somewhat altered after getting the [COVID-19](#) vaccine, [reported Sky News](#).



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The UK's Yellow Card scheme, where people can voluntarily report their side effects to any medication – including vaccinations – has shown that many women have seen a disruption in their periods.

Dr. Victoria Male, a Reproductive Immunologist from Imperial College London, [wrote in the \*British Medical Journal\*](#) that while these changes are safe and short-lived, has stated that an investigation as to why this happens is crucial.

In the US, the [National Institute of Health is investing US\\$1.67 million](#) into understanding how the COVID-19 vaccines impact periods. Dr. Male states that periods can be heavier or delayed because of an immune response, and poses no danger to one's body.

"Robust research into this possible adverse reaction remains critical to the overall success of the vaccination program. One important lesson is that the effects of medical interventions on menstruation should not be an afterthought in future research," wrote Dr. Male. [Writing in \*The Telegraph\*](#), Caroline Criado-Perez, author of *Invisible Women*, said: "As with most clinical studies, the COVID-19 vaccine trials did not investigate menstrual cycle effects – in fact, in many trials women are wholesale excluded because of potential menstrual cycle effects, so perhaps we should be grateful for small mercies that women were included at all."

There is no reason to be significantly concerned about menstrual changes and long-term impacts, writes Dr. Male, as the vast majority of those reporting the post-vaccine alterations state that normality ensues quickly.

Meanwhile, the data available shows that the COVID-19 vaccine has [no adverse effects on fertility and pregnancy](#).

## Bioterror: the dangers of garage scientists manipulating DNA

By Izabella Kaminska

Source: <https://www.ft.com/content/9ac7f1c0-1468-4dc7-88dd-1370ead42371>

Paul Dabrowa does not know if it is illegal to genetically modify beer at home in a way that makes it glow. The process involves taking DNA information from jellyfish and applying it to yeast cells, then using traditional fermenting methods to turn it into alcohol. But he is worried that it could be against the law given that it involves manipulating genetic material. "This stuff can be dangerous in the wrong hands, so I did that in an accredited lab," he says, adding that he has only got as far as making yeast cells glow in a Petri dish. For the most part Dabrowa, a 41-year old Melbourne-based Australian who styles himself as a bit of an expert on most things



prefers to conduct his biohacking experiments in his kitchen. He does this mostly to find cures for his own health issues. Other times just for fun.

Portrait of Paul Dabrowa, Australian biohacker, who modified his gut bacteria to lose weight Australian biohacker Paul Dabrowa used faecal transplants to genetically modify his gut bacteria to lose weight © Ying Ang/FT

In recent years the community of hobbyists and amateurs Dabrowa considers his kin has been energized by the falling cost and growing accessibility to gene-editing tools such as Crispr. This has led to an explosion of unchecked experimentation in self-constructed labs or community facilities focused on biological self-improvement. Despite a lack of formal

microbiological training, Dabrowa has successfully used fecal transplants and machine learning to genetically modify his own gut bacteria to lose weight without having to change his daily regime. The positive results he's seen on himself have encouraged him to try to commercialise the process with the help of an angel investor. He hopes one day to collect as many as 3,000 faecal samples from donors and share the findings publicly. Much of his knowledge — including the complex bits related to gene-editing — was gleaned straight from the internet or through sheer strength of will by directly lobbying those who have the answers he seeks. "Whenever I was bored, I went on YouTube and watched physics and biology lectures from MIT [Massachusetts Institute of Technology]," he explains. "I tried the experiments at home, then realised I needed help and reached out to professors at MIT and Harvard. They were more than happy to do so." At the more radical end of the community are experimentalists such as Josiah Zayner, a former Nasa bioscientist, who became infamous online after performing gene therapy on himself in front of a live audience. Zayner's start-up, The Odin — to which Crispr pioneer and professor





of genetics at Harvard Medical School George Church is an adviser — has stubbornly resisted attempts to regulate its capacity to sell gene-editing kits online in the idealistic belief that everyone should be able to manage their own DNA. These garage scientists might seem like a quirky new subculture but their rogue mindset is starting to generate consternation among those who specialise in managing biological threats in governments and international bodies. In 2018 the states that are signatories to the 1972 Biological Weapons Convention (BWC) identified gene editing, gene synthesis, gene drives and metabolic pathway engineering as research that qualifies as “dual use”, meaning it is as easy to deploy for harmful purposes as it is for good.



Many of the parties are now worried that increased accessibility to such technologies could heighten accidental or deliberate misuse, including the development of biological weapons by rogue actors for mass or targeted attacks. It's a regulatory oversight that worries Dabrowa more than most. He's spent years trying to warn officials and journalists about the growing capabilities of amateurs

Josiah Zayner, a former Nasa bioscientist, became infamous online after performing gene therapy on himself live © Bloomberg

like himself. “I would go and meet ministers with a vial of cowpox and explain the threat,” he says, referencing the relatively benign pathogen that has been used since the days of Edward Jenner to help inoculate people against smallpox.

►► [Read the full article at the source's URL.](#)

## **Anaphylaxis and Coronavirus Disease 2019 Vaccine: A Danger Relationship?**

By **Luciana Kase Tanno; Mariana Castells; Marco Caminati; Gianenrico Senna; Pascal Demoly**

*Curr Opin Allergy Clin Immunol.* 2021;21(5):411-417.

Source: <https://www.medscape.com/viewarticle/957579>

According to the World Health Organization's (WHO) report, globally, as of 22 May 2021, there have been 165 771 430 confirmed cases of coronavirus disease 2019 (COVID-19), including 3 437 545 deaths.<sup>[1]</sup> Long-term sequelae manifestations and serious complications have been reported among COVID-19 survivors, including individuals who initially presented with mild acute illness.

Since the start of the COVID-19 outbreak, scientists started a global run to reach safe and effective vaccines, in what we can consider as a true scientific evolution. There are no doubts that the vaccine against COVID-19, combined with other preventive barrier measures, is an essential global intervention to stop the pandemic, save lives and reduce widescale social disruption.

The United Kingdom, Bahrain, Canada, Mexico, USA, Singapore, Oman, Saudi Arab, Kuwait and European Union began their vaccination programme with the BNT162b2 (Pfizer-BioNTech) vaccine, whereas USA and Canada also started the mRNA-1273 (Moderna) vaccination programme in mid-December 2020.

Broader COVID-19 vaccination programs have been launched in many countries in early 2021. On 11 December 2020, the US Food and Drug Administration (FDA) issued an Emergency Use Authorization (EUA) for Pfizer-BioNTech COVID-19 vaccine.<sup>[2,3]</sup> This followed by the authorization of Moderna mRNA-1273 vaccine for use by other regulatory agencies, such as the European Commission, UK Medicines and Healthcare Products Regulatory Agency (MHRA), Israel Ministry of Health among others<sup>[3-6]</sup> and several other vaccines in many other countries.

As of 21 May 2021, a total of 1 488 242 899 vaccine doses have been administered according to the WHO report. Globally, in the past week (10–16 May 2021), the number of new cases and deaths continued to decrease with just over 4.8 million new cases and just under 86 000 new deaths reported; a 12 and 5% decrease, respectively compared to the previous week.<sup>[1]</sup> Efforts are ongoing to vaccinate as many people as possible.

### **First Reports of Anaphylaxis and Their Consequences**

As of 23 December 2020, first doses of Pfizer-BioNTech COVID-19 vaccine had been administered in the United States and 4393 (0.2%) adverse events reported, and among



these, 175 cases of severe allergic reactions, including anaphylaxis.<sup>[2]</sup> Further surveillance data reported for the United States suggested a rate closer to 1:200 000 doses for the Pfizer-BioNTech vaccine and 1:360 000 for the Moderna vaccine.<sup>[2,4]</sup>

In the United Kingdom, after the two recipients of Pfizer-BioNTech vaccine experienced anaphylaxis reported personal history of prior anaphylaxis,<sup>[7]</sup> the UK regulators issued an advisory statement, which listed prior anaphylaxis to vaccine, medicine or food as a contra-indication,<sup>[8]</sup> generating an initial concern that patients with atopic diseases might be more likely to develop allergic reactions to COVID-19 vaccines. This recommendation was initially followed by the US Food and Drug Administration (FDA) and the US Centers for Disease Control and Prevention (CDC), but later changed their recommendations.<sup>[9]</sup> On 30 December 2020, the UK Minister of Health reviewed the previous recommendations, limiting the contra-indications to patients who reacted to the first injection or who had a confirmed allergy to any component of the vaccine, as it has long been recommended for any vaccine. However, it generated considerable fear worldwide by the population and many inquiries from health professionals dealing with COVID-19 and vaccination programs. As a consequence, the international and national allergy academies have produced guidelines and recommendations to support patients and healthcare professionals according to current evidence-based data.<sup>[10-12]</sup>

The introduction of a new vaccination is always the subject of debate, even inducing reactions of rejection. This problem echoes the significant public mistrust of the vaccine programme, mistrust amplified by the internet, false rumors, opportunistic colleagues and deleterious media frenzy. More than ever the science of real data must prevail and communication must be mastered and scientific.

### The Truth Regarding Anaphylaxis due to Vaccines

Anaphylaxis, both immunoglobulin E (IgE)- or non-IgE-mediated, is clinically known as a systemic hypersensitivity reaction characterized by rapid onset and the potential to endanger life through airway, breathing or circulatory involvement. It is usually, although not always, associated with skin and mucosal changes.<sup>[13]</sup> Its heterogeneous clinical presentation and sudden occurrence in virtually any setting without warning hampers the prompt recognition and treatment of this condition, increasing the risk of death. This multifaceted disease can occur at any age and in varying degrees of severity.<sup>[13]</sup> European data indicated incidence rates of all-cause anaphylaxis ranging from 0.3 to 7.9/10<sup>5</sup> people/year, with an estimate that 0.3% (95% confidence interval [CI] 0.1–0.5) of the population will suffer from anaphylaxis at some point in their life, known as the 'lifetime anaphylactic risk'.<sup>[14,15]</sup> The calculation made at the Montpellier University Hospital Center is 0.32/10<sup>5</sup> (95% CI 0.28–0.65).<sup>[15]</sup> Although it is a cause of death well known by physicians, anaphylaxis has never been properly monitored due to the difficulties of classification and coding in the different versions of the WHO International Classification of Diseases (ICD). For this reason, anaphylaxis has never been considered underlying cause of death in death certificates leading to under notification, until recently thanks to the construction and implementation of its 11th version, ICD-11 by the WHO Collaborating Center in Montpellier with the WHO governance for international classifications.<sup>[16,17]</sup> Strikingly however, it has been listed for a long time in vaccine safety surveillance programs.<sup>[18]</sup>

Although severe, anaphylaxis due to vaccine is extremely rare, estimated at 2.5–11/1 000 000, and specific cases should receive individualized investigation and care.<sup>[19-21]</sup> However, this data is based on passive reports and most of cases have not been deeply evaluated or validated by allergists. Also, difficulties in recognition anaphylaxis, in particular of less severe cases, can hamper the collection of accurate epidemiological data of reported cases.

The frequency of anaphylaxis<sup>[21]</sup> varies from vaccine to vaccine as follows: DPT (diphtheria, pertussis and tetanus) (0.36/100 000, usually due to the vaccine agent), influenza (0.08/100 000, exceptionally due to ovalbumin), MMR (measles, mumps and rubella) (0.18/100 000, less and less due to the porcine gelatin stabilizing it, never to the egg proteins it actually barely contains).

### Anaphylaxis to mRNA-corona Virus Disease 2019 Vaccines: A Matter of its Components?

Allergic reactions to vaccines are generally due to adjuvants and other excipients/components in the vaccine such as preservatives and antibiotics, rather than to the active component itself.<sup>[10]</sup> Although the exact cause of vaccine-associated anaphylaxis with mRNA vaccines is still unknown, a polyethylene glycol (PEG)-conjugated lipid derivative in the lipid nanoparticles was immediately suspected to be the causative agent, a 'crime of dirty faces'.<sup>[22]</sup>

PEG, also known as macrogols, are a group of polyether compounds that are widely used in medicinal, cosmetic and household products (including creams and lotions, shampoo, hair dye, and dental hygiene products). They are formed via the polymerization of ethylene oxide, resulting in PEG polymers of variable chain length and thus molecular weight.<sup>[23]</sup>

In COVID-19 vaccines, the inclusion of pegylated nanoparticle encapsulating the mRNA impairs enzymatic degranulation of the mRNA, increases the water-solubility and, therefore, the bioavailability of the lipid nanoparticles. The Pfizer-BioNTech vaccine contains two novel lipid nanoparticles, one of which is 'pegylated' (polyethylene glycol of molecular weight 2000 Da, abbreviated to PEG-2000). The Moderna mRNA vaccine also includes a different pegylated lipid (also a PEG-2000).





PEG allergy is very uncommon, despite the widespread use in medicines, foods and household products. The majority of reports are due to high molecular weight PEG present as excipients in intra-articular corticosteroids or as active ingredients of laxative and bowel preparations.<sup>[23,24]</sup> The PEG-induced reactions publications appear to be at the more severe spectrum, most describing multiple episodes of anaphylaxis, often requiring multiple doses of epinephrine.<sup>[24]</sup>

The underlying mechanism of PEG-associated anaphylaxis is largely unknown, although IgE-dependent and IgE-independent mechanisms have been proposed. Recent report suggests that basophil activation tests to PEGylated liposomal drugs may be useful for the assessment of BNT162b2- (Pfizer-BioNTech COVID-19 vaccine) associated anaphylaxis.<sup>[24,25]</sup>

There is very little data to link the anaphylactic reactions to mRNA vaccines Pfizer and Moderna to the PEG that forms the nanoparticles for two reasons: we have not been able to do skin testing with vaccine products in large series and we have not been able to confirm positive PEG skin testing in the patients who have reacted, so that the allergenic components in the vaccines remain unknown and may be different for each patient.

### Evidence-based Data: Coronavirus Disease 2019 Vaccine Surveillance

Monitoring and surveillance platforms are key to identify potential dangerous adverse effects to vaccines and trigger rapid and appropriate response accordingly. Data are produced and used in global, regional or national immunization programmes, regulatory authorities, ministries of health, partners and pharmacovigilance centers as well as vaccine manufacturers. Most of worldwide programs follow the WHO vaccine safety surveillance guidelines, but are adapted according to the needs and possibilities of national or regional levels.<sup>[26]</sup> The passive surveillance system supported by the CDC and the FDA in the United States is the Vaccine Adverse Event Reporting System (VAERS).<sup>[27,28]</sup> The European Medicines Agency (EudraVigilance), and the WHO (VigiBase) are as well robust international pharmacovigilance databases. Postmarketing safety trials will be essential to continue to increase knowledge about COVID-19 vaccine safety and efficacy, particularly in populations absent or underrepresented in preauthorization clinical vaccine trials, such as children and pregnant women.

Populational-based studies and national surveillance programs do not count with specific investigation to confirm (or not) allergies and understand the mechanisms involved. However, clinical complaints that arise immediately after the administration of a vaccine, whether or not compatible with an allergic reaction, have a significant impact on the public's perception of vaccines and their willingness to be vaccinated more.

Early safety monitoring of the Pfizer-BioNTech COVID-19 vaccine detected 21 cases of anaphylaxis after reported administration of 1 893 360 first doses of Pfizer-BioNTech COVID-19 vaccine (11.1 cases per million vaccine doses administered) as well as cases of less severe nonanaphylactic reactions, based on US data on 14–23 December 2020.<sup>[29]</sup> Most (86%) anaphylactic cases developed symptoms within 30 min of vaccination, and 81% had a personal history of allergies or allergic reactions, including previous anaphylaxis. Most (90%) reported anaphylaxis cases after receipt of Pfizer-BioNTech COVID-19 vaccine occurred in women, although 64% of the vaccine doses administered were given in women.<sup>[2]</sup>

Since the initial UK reports, in which two cases of anaphylaxis after mRNA Pfizer/BioNTech COVID-19 vaccine, only one patient was confirmed to be allergic to PEG,<sup>[7]</sup> other reports have followed, without allergy work up so far. Therefore, the level of evidence that PEG-2000 is the culprit agent is so far null.

US CDC estimated that anaphylaxis to the mRNA COVID-19 vaccines would occur in 2.5–11.1 cases per million of doses, largely in individuals with a history of allergy with no indication of a confirmed role of PEG.<sup>[7]</sup> Blumenthal *et al.*<sup>[30]</sup> observed from all 64 900 subjects who received the first dose of mRNA COVID-19 vaccine, 16 developed self-reported anaphylaxis (0.025% [95% CI 0.014–0.040%]), 7 cases from the Pfizer/BioNTech vaccine (0.02% [95% CI 0.011–0.056%]) and 9 from Moderna vaccine (0.023% [95% CI 0.011–0.044%]), which dramatically raises the possible incidence to 30 (Pfizer) to 70 (Moderna) per million. Most of the vaccine recipients with anaphylaxis had allergy histories, with 31% having prior anaphylaxis. The main limitation of this study is that the data presented was based on self-reported reports and covered 81% of all vaccinated subjects in their area.

The last publication from the French National Agency for the Safety of Medicines and Health Products (ANSM), reports lower number of cases. From overall 13 610 000 doses in 8 April 2021, 9 889 000 were Pfizer/BioNTech vaccines, 994 000 were Moderna vaccine and 2 725 089 AstraZeneca vaccine. Sixty-seven severe hypersensitivity reactions were reported (0.0005% per application), 58 cases (5.86 per million) from Pfizer/BioNTech vaccine, four cases (4.02 per million) from Moderna vaccine and five cases (1.83 per million) from AstraZeneca vaccine.<sup>[20]</sup> [Table 1](#) shows the current rate of anaphylaxis per million of doses according to the COVID-19 vaccine surveillance platforms and records.

### Lessons From the Field

We are dealing with a new generation of vaccines, with innovative mechanisms and promising effects, but with potential adverse reactions, as for any drug. We still have limited



data so far regarding the allergic or hypersensitivity effects associated with COVID-19 vaccines, but what is truly known are three facts that are novel and have never been reported before for any vaccination campaign:

***There is a Predominance of Females who Present Hypersensitivity Reactions and Anaphylaxis (Over 90% of the Patients Reported in all Published Studies are Females)***

One possible explanation for the sex imbalance is that sensitization to PEG (if confirmed the major culprit) is more common in women due to the relatively frequent exposure to PEG-containing products, such as cutaneous exposure to cosmetics or the use of medications such as contraceptives. Preexisting anti-PEG antibodies have been reported to be associated with severe allergic reactions upon administration of a PEGylated drug,<sup>[22,31]</sup> suggesting that prior exposure to the PEG-containing products may sensitize subjects and establish anti-PEG hypersensitivity. The female-biased severe allergic reaction against mRNA COVID-19 vaccines is partly supported by a higher prevalence of anti-PEG antibodies in women than in men.<sup>[22]</sup> Another possible explanation is the effect of hormones, such as estrogens, in allergic immunological responses. Hormonal status and the X-chromosome coded factors are deeply involved in the regulation of T-cell and B-cell responses, which may influence the sex differences noticed in allergic diseases.<sup>[32]</sup> Although the influence of hormones is not fully understood in anaphylaxis, the possible role of sex hormones is indirectly suggested through the rare phenotype of catamenial and breastfeeding anaphylaxis.<sup>[33,34]</sup> Estrogen and progesterone affect mast cells *in vitro* but *in vivo* effects are still unknown.<sup>[35,36]</sup> An animal model has demonstrated that anaphylaxis is more severe in female than male mice and that estrogens upregulate endothelial nitric oxide synthase and mast cell degranulation, resulting in increased vascular permeability and systemic manifestations.<sup>[37]</sup>

***Sixty Percent of the Patients who Reacted had Previous Food Allergy, Drug Allergy, Hymenoptera Allergy or Reacted to Allergen Immunotherapy and/or Carry an Epinephrine Device***

If we consider that about 30% of persons in the general population might have a personal history of some allergic condition, the data provided so far indicates that patients who experienced mRNA vaccine-related anaphylaxis reports two-fold more associated allergic or hypersensitivity conditions when compared to the general population. However, it is still not clear the reasons for this association. Even with this association, the formal recommendation is that people get vaccinated even if they have a history of severe allergic/hypersensitivity reactions not related to vaccines or injectable medications. Patients with a personal history of allergies to oral medications or familiar history of severe allergic/hypersensitivity reactions should also be vaccinated.<sup>[2]</sup>

***Thirty Percent of the Patients who Reacted had Prior Anaphylaxis***

In the context of new vaccines development and licensed at an unprecedented pace, there is additional pressure to properly distinguish symptoms directly related to mast cell degranulation from other mechanisms of action, to discern true immune-mediated allergic reactions within the larger context of adverse reactions. Overestimating anaphylaxis rates after COVID-19 vaccine injections is able to delay or deter vaccination programs. Public health bodies and healthcare professionals must apply the most accurate criteria to assign the diagnosis of anaphylaxis.

All cases of the personal history of anaphylaxis to the vaccine or a parenteral biological, an injected steroid, colonoscopy preparation, or laxatives and personal history of idiopathic anaphylaxis should receive individualized evaluation before receiving the mRNA vaccine.<sup>[11]</sup>

**Relevance of Allergy in Patient Selection for Vaccination**

Healthcare workers must follow local authorizations and policy in terms of indications and contra-indications for vaccines against COVID-19. Even with high number of guidance and recommendations from the allergy academies, all convey that the only recommendation should be addressed to patients who experienced prior allergic reaction to the vaccine in question or its components. These cases should be referred to allergists for risk stratification and allergy work-up to tailor the etiological diagnosis and recommendations. Allergists worldwide are currently testing these patients and documented case series will likely soon be published.

Potential risk factors should be controlled before the vaccination, such as asthma, as for any vaccine. Although patients with clonal mast cells disorders, including mastocytosis, are at risk for mast cells activation and anaphylaxis when exposed to certain drugs and procedures, there is no evidence of increased sensitization or reactivity to COVID-19 vaccine components. Patients with mast cells activation disorders may be good candidates for mRNA COVID-19 vaccines, with premedication, in an appropriate setting and under medical surveillance.<sup>[38-40]</sup>





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Various diagnostic algorithms have emerged to investigate allergy to vaccine and PEG, however, the main concerns are: the choice of vaccine after anaphylaxis to a first vaccine dose and, the patients with proven PEG allergy, not to mention the potential cross-reactivity between PEG and polysorbates. Generally, subjects who developed a systemic allergic reaction to a vaccine, should not receive a second dose of the same type of vaccine, nor a vaccine with similar excipients without prior allergy workup.

### Conclusion

Vaccines against COVID-19 are an essential global intervention to control the current pandemic situation. Anaphylactic reactions have been reported after severe acute respiratory syndrome coronavirus 2 RNA vaccines. This risk is estimated at 2.5–11/1 000 000 in the context of vaccine safety surveillance programs. The COVID-19 vaccination is rolling out vastly and surveillance programs are key to monitor severe adverse reactions, such as anaphylaxis. Anaphylaxis due to vaccine is extremely rare and specific cases should receive individualized investigation and care. **The role of PEG still needs to be proven.**

## Coronavirus death toll in US eclipses 1918 influenza pandemic estimates

Source: <https://www.yahoo.com/gma/coronavirus-death-toll-us-eclipses-202053174.html>

Photos: <https://abcnews.go.com/International/comparing-contrasting-coronavirus-1918-flu-pandemics-images/story?id=71971264>

Sept 20 – More than a century ago, the globe was left devastated by a pandemic that has been described by experts as "[the deadliest in human history.](#)"

The 1918 influenza pandemic killed at least 50 million people worldwide, according to the Centers for Disease Control and Prevention, equivalent in proportion to 200 million in today's global population. An estimated 675,000 of those deaths occurred in the United States.

Now, 18 months into the [coronavirus pandemic](#), the virus has claimed more American lives than its counterpart a hundred years ago. At this point, at least 675,446 Americans have been confirmed to have died since the onset of the coronavirus pandemic, according to data collected by Johns Hopkins University, with thousands of Americans lives still being lost each day.

Surpassing the 1918 death toll is a dismal milestone, but experts suggest there are key differences between both pandemics that must be taken into account, given modern day access to better medical treatments and vaccinations.

"These are two different viruses, two different times in history, at two different times of medical history, with what you have available to combat or treat it," Howard Markel, professor of the history of medicine at the University of Michigan, told ABC News.

The influenza outbreak of 1918 began in the spring, with the novel H1N1 virus passing from birds to humans, and lasted for approximately two years. Approximately one-third of the world's population at that time, or 500 million people, was ultimately estimated to have been infected, according to the CDC.

According to experts, it is important to recall, when comparing data from the two pandemics, that the numbers of deaths stemming from the 1918 pandemic are just estimates. In fact, according to Dr. Graham Mooney, assistant professor of the history of medicine at the Johns Hopkins University School of Medicine, it is likely that these figures were significantly underestimated, because of non-registration, missing records, misdiagnosis or underreporting.

Likewise, experts believe that the current COVID-19 death count could already be greatly undercounted, due to inconsistent reporting by states and localities, and the exclusion of excess deaths.

In comparing the pandemics, Markel said, it is important to remember that we now have many more people living in the U.S. than in 1918, when the population stood at approximately 105 million, according to census data, compared to 328 million people in 2019.

The U.S. currently has a coronavirus case fatality rate of 1.6%, compared to the 2.5% fatality rate for influenza in 1918, noted Mooney. Normally, the flu's fatality rate is less than 0.1%. And thus, the rate of death in the United States, due to COVID-19, remains significantly below the one attributed to the 1918 pandemic.

Ultimately, when compared on a per-capita basis, the pandemic of 1918 was far deadlier than this one, according to Christopher McKnight Nichols, associate professor of history at Oregon State University.

"The difference is that 1 in 500 Americans have died now, and about 1 in 152 died in 1918, although our number keeps going up," Nichols told ABC News.

### Vaccinations and traditional intervention methods key to protection

Although the two pandemics were at first comparable, the introduction of the coronavirus vaccine made the differences between the two "stark," said Nichols.



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"People were desperate for treatment measures in 1918. People were desperate for a vaccine," Nichols said. "We have effective vaccines now, and so what strikes me in the comparison, if you think about this milestone, this tragedy of deaths, is that same number but we have a really effective treatment, the thing that they most wanted in 1918 and '19, we've got. And for a lot of different reasons, we botched the response."

Similar to the beginning of the coronavirus pandemic, no vaccines or treatments were available to protect people against the 1918 influenza. Thus, protection through non-pharmaceutical interventions was critical, Mooney said.

"The same kinds of measures -- the so-called non-pharmaceutical interventions that were put on in 1918 -- were the same that we saw last year: lockdowns, social distancing, hygiene masks, limits on gathering places," Nichols said.

In fact, social distancing was also one of the great historical lessons learned from 1918, according to Markel, demonstrating that if done early, and for a long time, such measures can work.

### Millions of different communities and demographics affected

One fundamental contrast between the two pandemics, according to Markel, is that different age groups were most significantly impacted. A disproportionate number of those who succumbed to the disease in 1918 were in the 18- to 45-year-old age group. Young children and the elderly were also significantly impacted.

However, in the coronavirus pandemic, the age group that has been the most affected is over the age of 65, who make up 78.7% of virus-related deaths.

[MORE: FDA panel recommends Pfizer boosters for people 65 and older or high risk, votes 'no' for general population](#)

Historical evidence suggests that racial and ethnic disparities, which have [affected communities of color](#) throughout the coronavirus pandemic, were also present during the 1918 pandemic.

Black Americans had higher case fatality rates from influenza in 1918-19 than whites, according to [a 2019 study](#) in the International Journal of Environmental Research and Public Health.

Similarly, Black Americans account for nearly 14% of COVID-19 related deaths, despite the fact that Black Americans only account for 12.5% of the population.

### Becoming endemic

Domestically and globally, experts said, it will be crucial for vaccine uptake to increase, in order to blunt the impact of the coronavirus death toll. "I'm a little pessimistic going into winter, given the fact that there's such a large unvaccinated population that it is a lot like 1918," Nichols said, adding that it will ultimately be "some combination of getting more of the population immune, with vaccines and with infections." Ultimately, although "it's not the worst of all time, it's pretty darn close," Markel said of the COVID-19 pandemic. "It's the worst of our lifetimes, and it's changed our lives in so many ways."

## Droplets Loaded With Coronaviruses Last Far Longer Than Previously Thought

Source (+videos): <https://scitechdaily.com/droplets-loaded-with-coronaviruses-last-far-longer-than-previously-thought/>

Sept 19 – It is easier to get infected in winter than in summer — this is true for the Corona pandemic, for influenza, and for other viral diseases. Relative humidity plays an important role in this. Outdoors, it is much higher outside in winter than in summer, as can be seen from the fact that our breath condenses into droplets in the cold air.

Previous models assumed that only large droplets pose a relevant risk of infection because small droplets evaporate quickly. At TU Wien (Vienna), however, in cooperation with the University of Padova, it has now been shown that this is not true: Due to the high humidity of the air we breathe, even small droplets can remain in the air much longer than previously assumed. The study was published in the scientific journal *PNAS*.

### Simulations and plastic heads

Prof. Alfredo Soldati and his team at the Institute of Fluid Mechanics and Heat Transfer TU Wien are researching flows that are composed of different components — so called "multiphase flows." This includes the air that an infected person exhales when sneezing: the infectious viruses are in liquid droplets of different sizes, with gas in between.

This mixture leads to a relatively complicated flow behavior: Both droplets and gas move, both components influence each other, and the droplets can evaporate and become gas themselves. To get to the bottom of these effects, computer simulations were developed, in





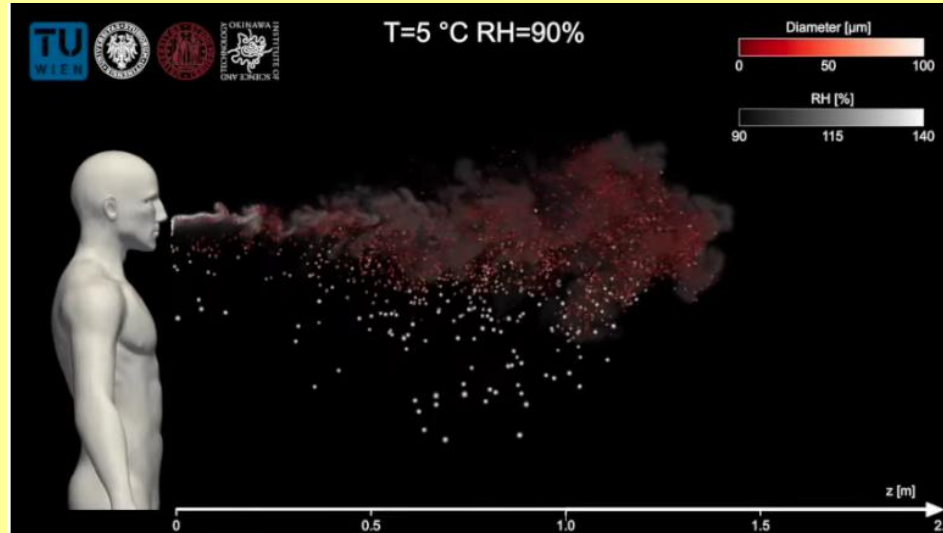
which the dispersion of droplets and breathing air can be calculated at different environmental parameters, for example at different temperatures and humidity.

In addition, experiments were conducted. A nozzle with an electromagnetically controlled valve was installed in a plastic head to spray a mixture of droplets and gas in a precisely defined manner. The process was recorded with high-speed cameras, so it was

possible to measure exactly which droplets remained in the air and for how long. Francesco Picano's team at the University of Padua was also involved in the research project.

### Humid breathing air makes droplets hover longer

"We found that small droplets stay in the air an order of magnitude longer than previously thought," says Alfredo Soldati. "There's a simple reason for this: the evaporation rate of droplets is not determined by the average relative humidity of the environment, but by the local humidity directly at the droplet's



location." The exhaled air is much more humid than the ambient air, and this exhaled humidity causes small droplets to evaporate more slowly. When the first droplets evaporate, this locally leads to higher humidity, further slowing down the further evaporation process of other droplets.

"This does mean that small droplets are infectious for longer than assumed, but that should not be a reason for pessimism," says Alfredo Soldati. "It just shows us that you have to study such phenomena in the correct way to understand them. Only then can we make scientifically sound recommendations, for example regarding masks and safety distances."

**Reference:** *"Short-range exposure to airborne virus transmission and current guidelines"* by Jietuo Wang, Mobin Alipour, Giovanni Soligo, Alessio Roccon, Marco De Paoli, Francesco Picano and Alfredo Soldati, 14 September 2021, *Proceedings of the National Academy of Sciences*. DOI: [10.1073/pnas.2105279118](https://doi.org/10.1073/pnas.2105279118)

## Potential COVID-19 Treatment Found in Llama Antibodies

Source: <https://www.genengnews.com/news/potential-covid-19-treatment-found-in-llama-antibodies/>

Sept 22 – A significant milestone in the COVID-19 pandemic was crossed this week. The number of deaths in the United States due to COVID-19—more than 675,000—has surpassed the number of deaths that occurred during the 1918 flu pandemic. In addition, there are still roughly 150,000 new cases every day. Eighteen months into the pandemic, the need for effective treatments against COVID-19 remains as great as ever.

One possible treatment, neutralizing single domain antibodies (nanobodies), has significant potential. The unique antibody produced by llamas is small, stable, and could possibly be administered as a nasal spray—an important characteristic as the antibody treatments currently in use require administration by infusion in the hospital. Now, new research shows that nanobodies can effectively target the SARS-CoV-2 virus.

The team from the Rosalind Franklin Institute found that short chains of the molecules, which can be produced in large quantities, showed "potent therapeutic efficacy in the Syrian hamster model of COVID-19 and separately, effective prophylaxis."

This work is published in *Nature Communications* in the paper, ["A potent SARS-CoV-2 neutralizing nanobody shows therapeutic efficacy in the Syrian golden hamster model of COVID-19."](#)

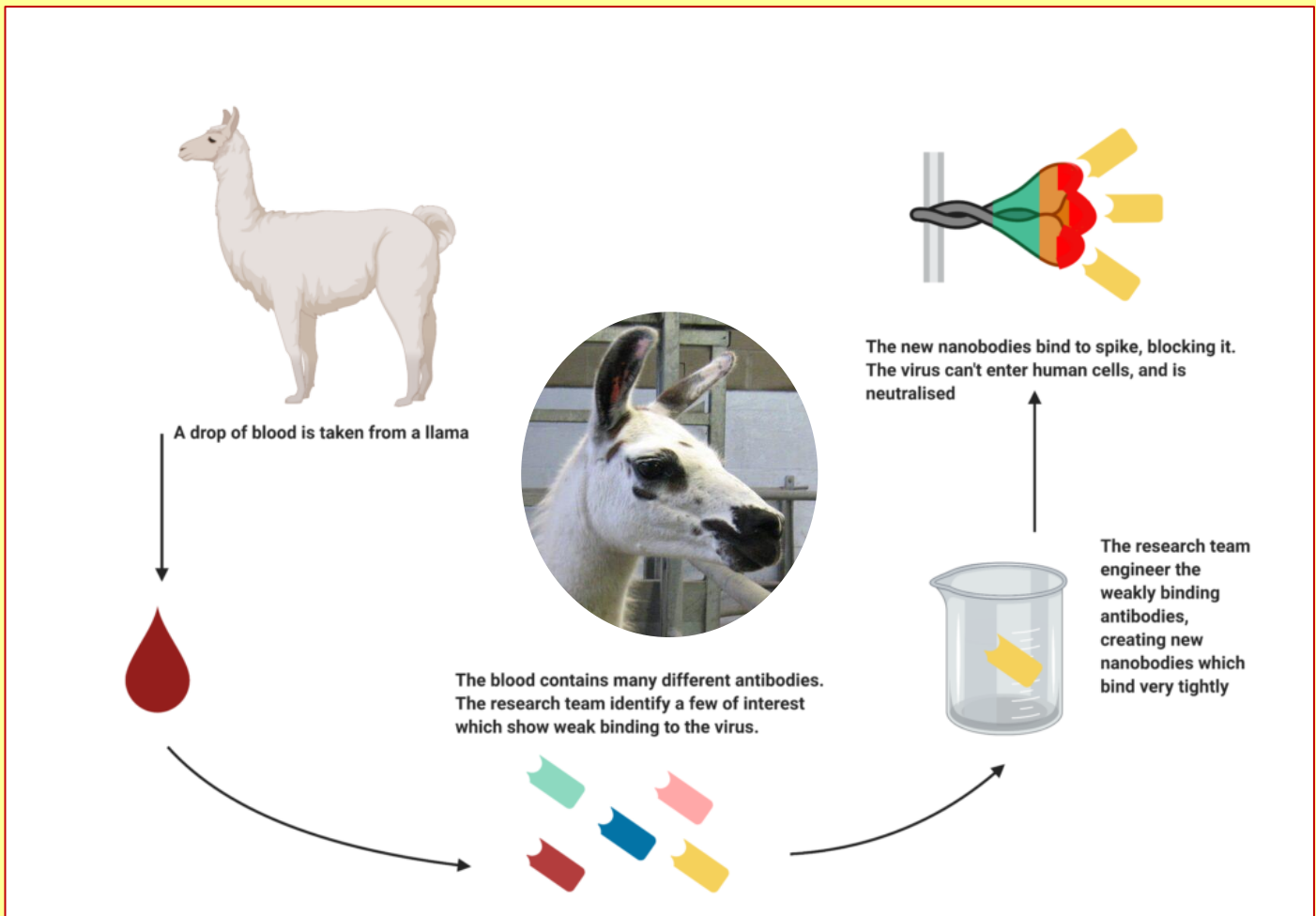
The nanobodies, which bind tightly to the SARS-CoV-2 virus, neutralizing it in cell culture, could provide a cheaper and easier to use alternative to human antibodies taken from patients who have recovered from COVID-19.

"Nanobodies have a number of advantages over human antibodies," said Ray Owens, PhD, head of protein production at the Rosalind Franklin Institute. "They are cheaper to produce



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and can be delivered directly to the airways through a nebulizer or nasal spray, so can be self-administered at home rather than needing an injection. This could have benefits in terms of ease of use by patients but it also gets the treatment directly to the site of infection in the respiratory tract.”



Credit: Rosalind Franklin Institute

The research team was able to generate the nanobodies by injecting a portion of the SARS-CoV-2 spike protein into a llama called Fifi, who is part of the antibody production facility at the University of Reading. They were able to purify four nanobodies capable of binding to SARS-CoV-2. Four nanobodies (C5, H3, C1, F2) engineered as homotrimers had pmolar affinity for the receptor-binding domain (RBD) of the SARS-CoV-2 spike protein. Crystal structures showed that C5 and H3 overlap the ACE2 epitope, while C1 and F2 bind to a different epitope.

Regarding their effectiveness against variants, the C1, H3, and C5 nanobodies all neutralized the Victoria strain, and the highly transmissible Alpha (B.1.1.7 first identified in Kent, U.K.) strain. In addition, C1 neutralizes the Beta (B.1.35, first identified in South Africa).

When one of the nanobody chains was administered to hamsters infected with SARS-CoV-2, the animals showed a marked reduction in disease, losing far less weight after seven days than those who remained untreated. Hamsters that received the nanobody treatment also had a lower viral load in their lungs and airways after seven days than untreated animals.

“Because we can see every atom of the nanobody bound to the spike, we understand what makes these agents so special,” said James Naismith, PhD, director of the Rosalind Franklin Institute. If successful and approved, nanobodies could provide an important treatment around the world as they are easier to produce than human antibodies and don’t need to be stored in cold storage facilities, added Naismith.





“Having medications that can treat the virus,” noted Naismith, “is still going to be very important, particularly as not all of the world is being vaccinated at the same speed and there remains a risk of new variants capable of bypassing vaccine immunity emerging.” The researchers also hope the nanobody technology they have developed could form a so-called “platform technology” that can be rapidly adapted to fight other diseases.

## Moderna chief executive sees pandemic over in a year - newspaper

Stéphane Bancel thinks COVID-19 could be over in a year as increased vaccine production ensures global supplies, according to a newspaper

**EDITOR'S COMMENT:** 2021 Q2 total revenue of \$4.4 billion, net income of \$2.8 billion and diluted earnings per share of \$6.46. Not bad!

## Hospital Reports a Scary Effect of Severe COVID-19 Is Far More Common Than Thought

Source: <https://www.sciencealert.com/severe-cases-of-covid-19-are-very-often-followed-by-delirium>

Sept 23 – Patients with [COVID-19](#) who have been admitted to the intensive care unit are very likely to experience **unusually persistent delirium**, according to emerging research.

Delirium is a medical term used to describe confused thinking and reduced awareness of surroundings - a not uncommon state of mind for the sickest hospitalized patients.

As it turns out, severe cases of COVID-19 are enough to trigger something similar. In fact, initial investigations have suggested delirium occurs [in up to 80 percent](#) of ICU patients with COVID-19, possibly as a result of loss of oxygen to the brain or widespread inflammation.

Now a new analysis of critically ill COVID-19 patients at a single hospital in Michigan has found even more evidence that delirium is a very common symptom of the disease - one that could possibly slow patient recovery if it's not addressed.

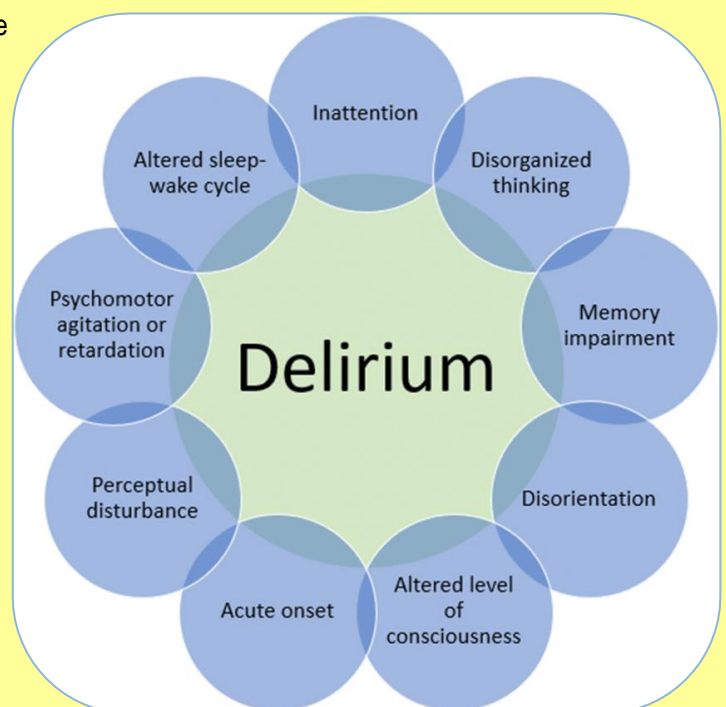
Using medical records and discharge surveys from 148 patients checked into the ICU between March and May 2020, researchers have found more than 70 percent of the cohort experienced a prolonged disturbance in their mental abilities. In most cases, the delirium lasted for days. But nearly a third of participants left hospital without demonstrating they'd fully recovered from their delirium.

[Nine key characteristics of delirium captured by the confusion assessment method](#)

Of those who were discharged with signs of cognitive impairment, nearly half required skilled nursing care to get by at home. Their persistent confusion reduced their ability to look after themselves, according to follow-up phone surveys conducted between month one and month two of being discharged.

"These results align with previous data demonstrating a high incidence of delirium in critically ill patients with COVID-19," the authors [conclude](#).

"Moreover, the median duration of delirium (10 days) is relatively long compared with other critically ill populations."



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It's not yet clear whether these severe impairments are a result of the [SARS-CoV-2 virus](#) itself, which [seems to cause an unusual number of neurological symptoms](#) that [can persist for six months or more](#), or if it's a sign of critical illness more broadly.

Generally, cognitive impairment is seen in about 20 percent of patients in acute care facilities, so it's expected to a certain extent. But the current [pandemic](#) seems to have at least tripled that number.

While the mechanism behind COVID-19 delirium remains a mystery, researchers in Michigan say it is clear that ICU patients infected with the [coronavirus](#) are experiencing "considerable neuropsychological burden" both during their hospital stay and after being discharged.

"Overall, this study highlights another reason why getting vaccinated and preventing severe illness is so important," [says](#) anesthesiologist Phillip Visides from Michigan Medicine.

"There can be long term neurological complications that perhaps we don't talk about as much as we should."

Early on in the pandemic, for instance, checking patients for symptoms of delirium was not commonplace.

Even when delirium was observed, exercise regimes and other novel strategies for improving cognitive performance, like face-to-face time with family or breathing trials, were rarely introduced, possibly because protective equipment was not easily available at the time.

The likely result is that many patients with severe cases of COVID-19 have been discharged from hospital with serious cognitive impairments, which were not addressed properly.

And that's a big problem. Delirium is generally associated with prolonged hospitalization and illness recovery.

In the new Michigan study, for instance, those patients experiencing delirium had longer stays at the hospital and ICU. They also spent more time relying on mechanical ventilation.

"Whatever creative ways we can implement delirium prevention protocols is likely to be very helpful," [says](#) Visides.

"That includes consistent communication with family members, bringing in pictures and objects from home, and video visits if family cannot safely visit."

As it turns out, those patients disproportionately vulnerable to severe forms of COVID-19, like those from racial and ethnic minority communities, are also the most likely to experience delirium while hospitalized.

In fact, researchers in Michigan found half the patients in the delirium group were African American - a damning reflection of ongoing disparities in US healthcare.

Further research at more acute care facilities and among larger and more diverse cohorts will be needed before we can say with any certainty who is most at risk of experiencing delirium when hospitalized with COVID-19.

While the study in Michigan found female patients are more likely to fall in the delirium group, other initial studies suggest male patients in the ICU are more susceptible to cognitive impairment. If it turns out that delirium really is such a common experience for those with severe COVID-19, we need to start to recognize and treat the symptoms as early as possible. Otherwise, it could prove much harder for the sickest COVID-19 patients to get back on their feet.

►► The study was published in [BMJ Open](#).

## New R.1 Covid Variant Detected in U.S. Outbreak; First Identified In Japan

Source: <https://www.yahoo.com/entertainment/r-1-covid-variant-detected-215842238.html>

Sept 22 – While the [Delta variant](#)'s dominance in the [United States](#) is nearly universal, news of another spreading strain of [Covid-19](#) has recently surfaced.

Known as [R.1](#), the new variant was first found stateside in Kentucky which, according to Governor Andy Beshear, is among the three states with the highest infection rates. R.1 was first identified via an outbreak at a skilled nursing facility there.

According to a CDC [report](#), among 83 residents and 116 healthcare workers, 26 residents and 20 workers tested positive for Covid. Twenty eight specimens were subjected to whole genome sequencing and, on March 1, found to have mutations that aligned with the R.1 lineage. (The outbreak reportedly began with an infected staffer.) "Attack rates were three to four times as high among unvaccinated residents and [workers] as among those who were vaccinated," according to the findings.

Roughly 90% of the facility's residents and 52% of the staff had received 2 vaccine doses. Among those, 25.4% of the residents and 7.1% of the workers were infected. That, according the CDC analyses, raises concerns about reduced protective immunity to R.1 from vaccines.





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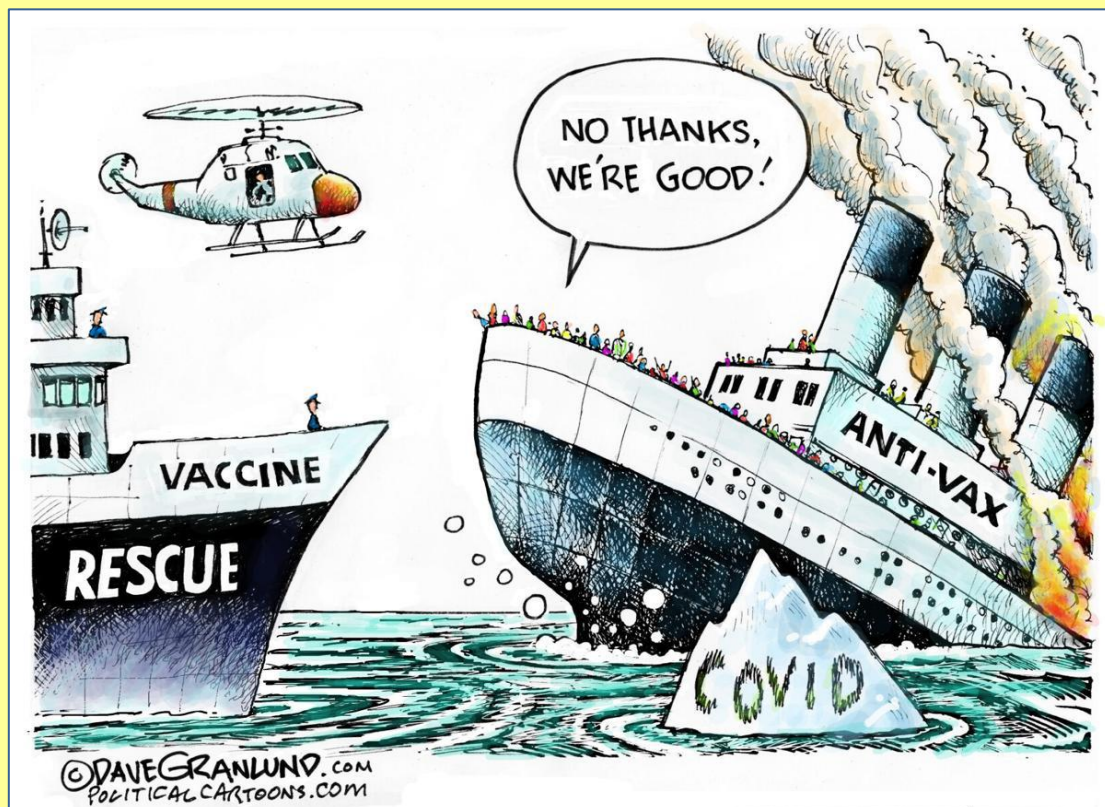
What's more, four possible reinfections were identified, "providing some evidence of limited or waning natural immunity to this variant," per the report. All of those people experienced symptomatic illness. One of them died.

While the CDC does not define R.1 as a variant of concern or interest yet, the strain does have several "mutations of importance." One of those "demonstrates evidence of increasing virus transmissibility," according to the agency. Others have also been seen in variants of concern which, according to the CDC, "show evidence of reduced neutralization by convalescent and postvaccination sera. Another mutation seen in R.1 might reduce the effectiveness of neutralizing antibodies."

The good news is that, despite the breakthrough infections, vaccination was associated with decreased likelihood of infection and symptomatic illness among both patients and staff. Furthermore, R.1 does not seem to be outcompeting — and thus be more transmissible than — Delta. As of April 22, the CDC indicated just 1,125 cases of R.1 in the U.S. According to Forbes, there are [now](#) over 10,000 recorded instances of the variant. But those numbers pale in comparison to the millions of Delta cases.

R.1 was first identified in Japan in January 2021 among three members of one family. One of those infected was in their 40s and the other two were under 10 years old. "These three patients were living in Japan and had no history of traveling abroad," according to an NIH [report](#).

As of April 22, 2021, the NIH analysis states that "the percentage of SARS-CoV-2 isolates belonging to the R.1 lineage in Japan increased more rapidly" than it did in the U.S.



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