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*Dedicated to Global
First Responders*

October 2022

PART A



**Energy
crisis**

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**Be careful
when you give hope
you might
kill someone!**

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EDITOR'S CORNER





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

Editor-in-Chief
ICI C²BRNE Diary



Dear Colleagues,

The situation remains the same: war – pandemic – stupidity.

There is no reason to analyze further the 65 billion USD spend since the beginning of the war in Ukraine or the US commitment to deliver 1.5 billion USD per month to continue the proxy war. In addition, the obsession with a future nuclear holocaust continues supported and fomented by those opposing peace and prosperity.

During the pandemic years, we experience a whole army of health-related experts that took the right to speak about everything even without the proper background. Now we observe a similar phenomenon with “war experts” ranging from retired high-rank officers to geostrategic analysts and people who can predict the future. Of course, we learned that there are good nuclear weapons and bad nukes (Russia, Iran, China) but remains the big silly question of “why do countries possess nuclear weapons if not intend to use them one day?” Are they promoting research? Are they decorative? Are all of them real or there are many replicas amongst them? Is the first strike so important? Are modern nukes so accurate and selective that will affect only two countries by containing radiation in place? If only I could copy all the versions/opinions, I have read then the Diary would have changed into a sci-fi comedy edition.

Of course, on top of nuclear there is always a topping of CWAs but not the “real” ones; usually chlorine, phosphorus, and alike but the term “chemical weapons” is more impressive although rarely accompanied by solid proofs.

The only good thing about this awkward situation is that people return to their religions and pray day and night for a very mild winter and an early spring to survive the energy crisis. Of course, European citizens are aware that in governmental buildings temperatures will continue to be high because their leaders cannot operate in temperatures below 17°C! On the other hand, there are people in Africa that have no heating issues, but they have no food and water – but it is OK because that get used to this for decades. Can you imagine the life-changing relief that should have been delivered with 65 billion USD?

Compared with the above, it would be inappropriate to write again about the neighboring big mouth that has been turned into an annoying barking dog. All the countries in the world complaining about their problems they should consider how their life should have been if neighbored by an aggressive, obsessive, imperialistic, insulting, neighbor. But this local SE Mediterranean problem is proof that international organizations serve only the big and mighty and that in a real-life crisis there are only businesses and profits. Unfortunately, my country refuses to understand this and insists to invest on international loyalty, good neighboring status, and avoidance of provocation even when national sea and air borders are constantly violated insulting our glamorous ancient and modern history and national pride.

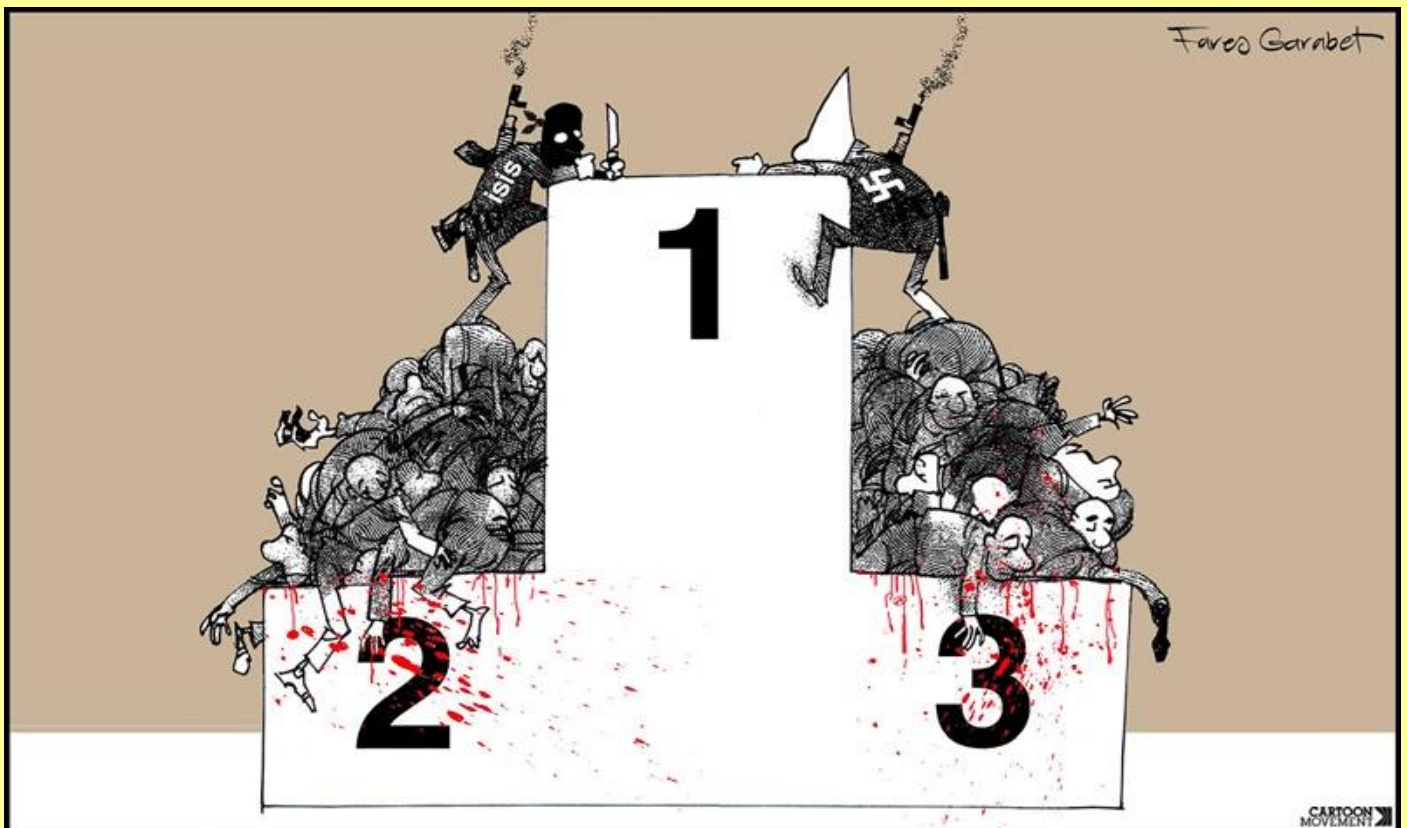
Only two months away from the end of 2022 and we will all wish for a better new year although we know that so far, every year is worse than the previous one.





And the most important and above all is the fact that we lack the will to fix things. We have surrendered to evil; something that even CBRN First Responders cannot fix because now the snake in the hole turned into a dragon!

The Editor-in-Chief



Brussels by night

Rome by night

Winter 2022

Berlin by night

Paris by night

Revealed: How Iran took over Syria's secret missile production operation

By Yoav Limor (journalist and defense analyst)

Source: <https://www.israelhayom.com/2022/09/23/revealed-how-iran-took-over-syrias-secret-missile-production-operation/>



A SSRC production facility before a strike | Photo: ISI

Sep 23 – It has become almost routine: Not a week goes by without some foreign media reporting on an alleged Israeli strike against Syria. Usually, these attacks are under the cover of darkness to help Israeli aircraft, but also so as to minimize the potential harm to non-combatants. But they do happen in broad daylight as well because sometimes the intelligence is actionable only if it is acted upon immediately or if it is determined that Syria would get the message much more resoundingly if it were carried out during the day.

The Israeli public has become used to these reports, some of which are no longer reported in the Israeli media or just get minimal coverage. But the other side is very much engaged on this issue. It is true for Syria, where the strikes take out many of its assets, and it is true for Iran, which is perhaps the only reason for Israel's intense involvement in the northern arena and in Syria in particular. The main objective of these reported attacks is to frustrate Iran's entrenchment in Syria through the militias it trains and arms, as well as to interdict the weapon shipments to its proxies in the region – chiefly Hezbollah. These weapon deliveries are carried out in a two-pronged fashion. The first, using arms that are manufactured in Iran and then transported to Syria by air, land, or sea, and from there to Lebanon. Israel has reportedly attacked these routes hundreds of times in recent years: through targeting Iranian naval vessels or by hitting the long overland route stretching from Iran to Syria; as well as by attacking aircraft, airfields, and hangars where arms were stored after arriving from Syria via official or disguised flights.

The systematic attacks have cost Iran dearly and derailed its plans to arm Hezbollah with a massive amount of precision-guided munitions to the point it would have been able to set up a Hezbollah-like military force within Syria that would challenge Israel's security from the Golan Heights. In order to overcome the difficulties posed by these strikes, Iran has adopted an alternative method: using Syria's indigenous production capabilities for its own benefit, thus manufacturing the arms it needs or that its proxies in the region need. This has made the conveyance route shorter, and saved a lot of money in the process.



This has not been lost on Israel, and it has reportedly led to dozens of strikes against Syrian infrastructure and installations that are, according to foreign reports, under the auspices of The Scientific Studies and Research Center – Syrian military industries – better known for the French name Centre d'Etudes et de Recherches Scientifiques. Defense Minister Benny Gantz hinted at this when he delivered a speech in New York recently in which he revealed that there are dozens of subterranean CERS centers that Syria has been using to manufacture advanced arms that could threaten Israel's security.

What he did not say in that speech, and which is now being revealed in this article, is that Iran has been engaged in this activity under Syria's nose, often without even coordinating it with the Syrian authorities. Senior members of the Revolutionary Guards have been paying CERS bigwigs and essentially have them work for Iranian projects to consolidate its presence on Israel's northern front. This has had Israel increase its strikes against this newly built Iranian apparatus. In fact, some of the most recent attacks attributed to Israel had several goals: to damage the manufacturing assets so that they are no longer usable or are rendered out of service for a long period; to make Syria stop Iran's activity on its soil or force it to scale it down; and to deter Iran. This campaign has reached the most intense point so far. Iran is determined to continue its course, despite the setbacks it had to endure in recent years in Syria and the loss of many of its assets; Syria has been continuously spineless and powerless in exercising its sovereignty, despite the heavy price of not countering Iran; and Israel is reportedly acting non-stop in order to preserve its qualitative edge in the region and reduce the threat posed on Israelis.

The institute that got French backing

CERS was built in the early 1970s as Syria's national scientific research body, which was tasked with the R&D and manufacturing of arms. It later got a special academy that trains engineers and scientists for its various fields. It is no coincidence that it got a French name; it's partially because of France's long-held influence over Syria but also because of Paris' direct involvement in establishing CERS and in personnel training in its infancy. Many of them were sent to France (as well as Russia) to get scientific proficiency and then returned home to Syria. It is doubtful that French officials knew what CERS was becoming or that they even cared. Today it is the body that can be described as having all of Israel's defense industries rolled into a single body. It deals with every aspect, from aerospace to electronics and computing and just regular arms. It is a massive entity that has thousands on its payroll in a variety of fields, whether as professional scientists or workers dealing with manufacturing.

CERS has come to the media spotlight because of its role in developing chemical weapons. Syria launched this effort in the hopes of offsetting Israel's strategic advantage over it with its alleged nuclear arsenal, intelligence capabilities, and air supremacy. Syria thought it could accumulate a massive amount of chemical warfare agents and mount them on a variety of weapon systems (from mortar bombs to missiles) with the hope that this would deter Israel from engaging in military adventures in the northern arena.

Chemical weapons were the crown jewel of CERS, especially nerve agents (including VX and sarin). These weapons were produced in a whole host of factories scattered across the country, both because this would increase production and as a means to protect them from foreign attacks. Israel monitored this project up close and considered it a strategic threat to its existence because Syria had accumulated more than 1,000 tons of chemical warfare agents that were a clear and present danger to the majority of Israelis.

This led Israel to successfully lobby the US to impose sanctions on CERS and some of its subsidiaries, but the Syrians stayed the course. Even as they continued with this project, CERS went on to manufacture a variety of weapon systems – from rockets and missiles to surface-to-air missiles and drones, ground warfare equipment and arms (including vests and helmets), and various electronic systems. The only area in which CERS was left in the dark was the atomic program. That was no coincidence: President Bashar Assad correctly assumed that Israel was keeping a watchful eye on CERS and that if it discovered that Syria was engaged in nuclear activity, it would attack it. That's why he chose a bypass route that was compartmentalized from CERS. This route was eventually exposed in 2007 and resulted in the Israeli strike that took out the secret nuclear reactor in Syria.

During its heyday, i.e. until the Syrian Civil War broke out, CERS could be found all over the country. It was considered a highly advanced body with very professional staff that dealt with matters with the know-how that only a handful of countries had. One of them was precision weaponry: It had the capacity to develop projectiles that could hit a target with a precision of a 10m (3 ft) radius. Israel has this knowledge too, and until a decade ago its enemies could only dream of such knowledge. Iran was very far away from this capability back then, but Syria was very close and was actively engaged in extending its ability to pinpoint every location in Israel with missiles.

When the civil war broke out in Syria in 2011, CERS had to divert its attention from the strategic buildup of weapons against Israel to arming the Syrian forces so that they could counter the rebels and protect the Assad regime. This turned the organization, its workers, and its facilities into a target for anti-Assad forces, who were of the belief that if they could disrupt its activities this would severely cripple Assad's war effort and create a major breach in its defenses.



As far as Israel was concerned, this was a welcome development. Rather than working on chemical warfare and long-range missiles that could hit with precision, CERS shifted to working on tactical weapons to cater to the immediate needs of the Syrian armed forces. The string of assassinations of its various senior officials also hampered its effectiveness, and the damage inflicted on its facilities forced Syria to introduce changes in how they operate, moving them closer together so that they could be more easily defended.

When the threat to the Assad regime became increasingly real, CERS began employing its know-how and capabilities in chemical warfare to help the regime fight the local population. Its began to manufacture chemical warfare agents in barrels, chlorine bombs, and other means that could kill many people all at once and terrorize the general public so that the regime is seen in awe. The Assad government carried out several attacks using these methods in 2013, especially by means of throwing agents from aircraft, all the while trying to hide this from the world so as to avoid sanctions.

The IDF Intelligence Directorate uncovered those attacks and tried to use them to convince the Obama administration to adopt a tough posture against the Assad regime. The US, which had warned that using chemical weapons would cross a red line that would get them involved in the war, dragged their feet and rolled their eyes. Then in August 2013, Syria used chemical weapons in an attack on rebels in Ghouta, on the outskirts of Damascus, killing some 1,800 people. The US had no choice but to get involved.

Under the threat of military force, Assad had to get rid of his chemical warfare capabilities almost entirely. Rockets and missiles were dismantled; various chemical substances were taken out of Syria and destroyed. Syria was left with only a fraction of what it had, but it retained the know-how, and the experts continued to get paid and work on R&D.

As far as Israel is concerned, dismantling Syria's chemical weapon stockpile was a dramatic development, as Israelis no longer had to be given gas masks and budgets no longer had to be allocated to defend the population as a whole. But in recent years, intelligence has picked up a renewed interest in resuming its chemical weapon program using the very experts and know-how it had back in the day under CERS. At least in two cases, this led to attacks on facilities aimed at producing and storing substances. One of the attacks was supposedly carried out by Israel, and the other by a coalition of forces from the US, the UK, and France.

"As far as we are concerned this event has strategic significance, we are watching it very closely," a senior defense official told me. "If Syria, God forbid, resumes its systematic production of large quantities of chemical warfare agents, this will force us to engage in various processes - including early detection systems and bolstering the preparedness of the home front and decontamination methods. It's best if we don't reach that point."

The attacks may have taken some of the vital systems related to chemical warfare manufacturing out of service, but the senior official admits that they did not destroy the entire project. "There is one decisive strike that could end this once and for all," the official said. "This is an ongoing effort and we have to keep those systems in check all the time because this will help us avoid a much bigger problem in the future."

Institutes in the thousands

CERS reports to the Syrian defense minister, Ali Abbas, who reports to Assad. The head of CERS is Khaled Nasri, who runs all of its operations. All the other institutes that manufacture various types of weapons, as well as the academy that trains the engineers, report to him.

Institute 1000 is responsible for developing and producing computer and electronic systems for Syria's chemical weapons program; Institute 2000 is responsible for mechanical development and production; Institute 3000 is responsible for the actual chemical and biological components, and Institute 4000 is in charge of developing aerospace and missile systems. The first three institutes are headquartered in the Damascus region, while the fourth operates out of two areas: Damascus and the coast, with a major concentration of facilities in the city of **Masyaf in northwestern Syria**, to where many Aleppo-based installations were relocated because the city had been captured by rebels during the war.

Institute 4000 is of particular interest to Israeli analysts because that is where the precision missiles are manufactured on behalf of Iran. For this reason, it has been the target of most of the attacks that Israel reportedly carried out against CERS in recent years, especially in the Masyaf area. In this institute, various projects are carried out, from the production of



missile engines to surface-to-air missiles, SCUD missiles, and M600 rockets, which pose perhaps the biggest threat to Israel. Over the past 15 years, Iran has transferred hundreds of such missiles to Lebanon, with warheads of varying sizes, in order to be able to inflict massive damage on Israel's heartland. However, over the past decade, the Iranian defense industries have made a quantum leap in terms of capabilities, especially on precision. The combination of technology that used to be only at the hands of superpowers but is not easily accessible as off-the-shelf products - such as GPS and drones - with the scientific breakthroughs the Iranians have achieved has allowed them to drastically bolster their capabilities on a host of fields, from precision-guided munitions and rockets to the production of cruise missiles and various drone, with ranges that could reach some 2,000 km (1242 miles).

The common thread to all this is the ability to carry a payload of explosives for a long distance and to strike the intended target with precision. As far as Iran and its underlings are concerned, this is a breakthrough. As far as Israel and the sane countries are concerned, this creates a headache of unprecedented proportions. Iran employed such drones during its 2019 attack on Saudi Arabia's oil installations. The precise hits of Iran's weapon systems surprised the West and made it clear that Iran has sophisticated know-how and that together with a daring operational posture, it can dramatically change the balance of power in the region.

Iran has been trying for years to share these capabilities with Hezbollah. At first, it shipped fully fabricated missiles to Lebanon, which were an easy target for Israel to take out. The next level saw Iran ship only the precision kits. These kits include a small guidance computer the size of an iPad that, together with flaps, get mounted on the M-600 missiles that Hezbollah already has, turning them into precision-guided munitions. Iran wanted to arm Hezbollah with thousands of such rockets so that it can strike every point in Israel. That would have been a seismic shift. Today most of the rockets Hezbollah has have statistical accuracy - they can strike the general area of Tel Aviv but not a specific target. If it got the precision Iran wants to give it, it would be able to inflict major damage on Israeli infrastructure, major buildings, airfields, and more.

Israel has viewed this as a strategic issue and that is why in recent years it has expanded so much effort to derail those shipments. Iran has realized that it has been exposed and compromised, and its efforts to transfer these kits to Lebanon have hit a snag. Looking for a solution it found an alternative method: it started employing the CERS rocket experts. The first stage involved Iranians producing the kits while the missile parts - the engine and the warhead - were manufactured for them by CERS. In other words, Iran manufactured the high-tech, while Syria produced the low-tech.

Israel has been able to pick up this process and since 2017 it has managed to strike CERS facilities – according to foreign reports - dozens of times. These attacks have been aimed less at the large amounts of weapon systems, but more against the actual infrastructure of CERS. They are mainly designed to target the facilities and machinery that Syria would find hard replacing due to the sanctions on the regime since the start of the civil war. Some of the targets that have been hit include factories for the production of engines, casting of warheads, manufacturing of propellants and engine casings for missiles, as well as the centers for research and development.

These attacks were not just any attacks. They are the product of pinpointed intelligence and rigorous analysis. The intelligence collection is conducted jointly by the IDF and Mossad in a variety of ways. The analysis it carried out almost exclusively by the IDF Intelligence Directorate, especially its Technology Section, where the experts study every aspect of the manufacturing and buildup of weapons in every arena. They are tasked with creating an intelligence picture that serves all security agencies and the IDF so that Israel can remove threats and preserve a strategic and military edge on all fronts. In others, to degrade the enemies and upgrade Israel.

Saving Assad

Assad Diab heads Sector 4 at CERS. Kheydar Hamdan is the chief of security at the Institute 4,000. The two have been forging ties with senior members of Iran's Qods Force (the organization within the Revolutionary Guards tasked with exporting Iranian influence, including through military means and terrorism). The Iranian official who used to run things with those two individuals, Aziz Asbar, was assassinated in 2018. His responsibilities are now handled by Ali Noruze, who is the head of the Technology and Logistics Division at the IRGC, and Abu Ali Masoud Nikhabat. The two are also directly engaged vis-à-vis Bassem Marej Hassan, Assad's close confidant.

Iran has been using their clout in Syria to its full. When the going got rough during the first few years of the Syrian Civil War, Iran and Hezbollah saved Assad. They invested billions of dollars and were willing to have many casualties on their side to further this goal, and now they seek their reward: a stake in rebuilding Syria's economy (where they are competing against the Russians), and access to Syria's facilities so as to consolidate their power through Shiite militias that could serve as a springboard to arm Hezbollah.

Syria is not too keen on granting Iran's wishes, but it is in a box. Assad and his cronies are indebted to Tehran and cannot easily free from its grip. They need the money Iran has been



pouring into Syria in its effort to influence Israel's northern front. It has found it even more difficult to counter the ties Iranian senior officials have forged with practically every Syrian power center.

According to Israeli officials, the ties between the Revolutionary Guards and CERS upper echelon have not been sanctioned by Assad and his defense ministers. "Iran knows how to close deals and secure understandings without the Assad regime's involvement," a senior Israeli official told me. "Assad is hardly aware of what is going on; he is being fed lies by his people. Sometimes I know more than him about what happens in his backyard. Even when he realizes what is unfolding, he is in a conflict of interest: On the one hand, he doesn't want it to happen, on the other hand, he needs Iran and has to pay them back. Syria is paying dearly for this. Had they not given Iran such free reign, their interests would not have been so badly hit (by alleged Israeli strikes – Y.L.).

Captain Nitzan, 30, is the head of the Northern Branch at the Technological Intelligence Department in the IDF Intelligence Directorate's Production and Analysis Division. He knows the projects in Syria like the back of his hand, as well as those run by Hezbollah in Lebanon. "There is a small group of directors and engineers at CERS who have been taking orders from Iran," he tells me. "They are lead by Assed Diab, the head of CERS' Sector 4, who is the direct liaison to Iran, even if this means engaging in activity that runs against the interest of CERS."

Some of the engineers, according to Nitzan, have two kinds of shifts: a day shift where they work for CERS and a night shift that is dedicated to serving the Iranians. "This is a local initiative on the part of Sector 4, carried out without approval from above. Diab gives the orders to his people and they carry them out. Some know what's going on, but others are left in the dark. We are talking about several dozen people that work with the Iranians, especially engineers, mostly people with military experience who want to get some extra sources of income."

The funds get transferred from Iran to Diab, who then pays his people for their work. Iran is mainly interested in missiles that are designed for precision kits, which get smuggled from Iran and mounted on them. Almost all the Hezbollah-held missiles have a Syrian serial number that indicates that they were manufactured by CERS. One such projectile hit the Haifa service station for Israel Railway during the 2006 Second Lebanon War, killing 8.

Several dozen missiles are produced on behalf of Iran each year, with each one designed to strike a high-profile target in Israel. A rough estimate suggests that the alleged Israeli strikes in recent years on CERS have probably destroyed several hundred of these missiles. The totality of the attacks attributed to Israel could imply that thousands of various weapon systems and arms, mainly rockets and missiles, were destroyed.

Hard work that requires professional training

First Lieutenant May, 22, is the head of the Surface-to-Surface Missile research unit in the Technological Intelligence Unit. Israel is probably the only country where you see such a young woman deal with such a complex issue that requires the processing of so much intelligence and knowledge, which ultimately lead to precision strikes by the air force to frustrate enemy plans. "Our mission is to understand every phase of this process: Where each component is produced; what critical bottlenecks would be hard to replicate; and then find a way to damage them."

The damage could be by striking a certain facility or a specific machine, and sometimes by targeting people who are believed to be sources of know-how. This requires meticulous work and a very clear understanding of the subject matter and sophisticated knowledge. Every success leads to the removal of potential threats on Israel, and every miss could lead to the dangerous buildup of capabilities by the enemy. After every attack there is a very rigorous analysis of the operation to conduct a battle damage assessment and try to gauge what the Syrians and Iranians could restore and how quickly. "Fortunately, they are struggling to get things up and running again [after an attack] and their industry is slow to move, but the threat still exists," Nitzan says.

This whac-a-mole between Israel and Iran – and by extension Syria - has recently seen a major development. After a series of alleged Israeli strikes that led to extensive damage to CERS-related facilities (especially in the missile project in Masyaf), the Iranians started building underground facilities that involved a tunnel system where the work could be relocated to. Israel has already made it clear (including in a recent speech by Defense Minister Benny Gantz) that they would also be on Israel's target list, even if that leads to more casualties and collateral damage in Syria.

As part of these concealment efforts, missile engine manufacturing has shifted to those tunnels, as has the production of warheads. "These processes have pulled Syria even more into Iran's orbit, as the latter has been funding most of this work, and therefore also controls it," Nitzan says.

"Syria wants to return to the glory days of having CERS be a leading and independently run institution, but today it is too shackled by Iran. Some 10 years ago, Iran was no match to Syria on precision technology, but today Damascus gets most of its know-how from Tehran," he continues.



Freeze for Ukraine



Starve for Ukraine



May notes that the attacks have severely crippled CERS. "The projects are being cut short, work is suspended because machines or people are hit. They have to work in a state of uncertainty. People arrive for work in the morning only to discover that their office or lab had been destroyed overnight. In case where projects continue, sometimes the quality is hurt and sometimes they have to cut corners in order to meet the demands stipulated by Iran in the contracts so that the missiles get delivered on time, and as a result, the weapon systems are not as effective."

Despite all this, Iran is determined to stay the course. According to intelligence obtained by Israel, Iran and CERS officials have already resolved to continue with the production efforts down the road. Some of these understandings have been cemented in contracts as well, others were concluded in a handshake agreement, but the goal is to manufacture dozens of missiles over the next few years and then have them transferred to Hezbollah in Lebanon.

Israel is worried that this collaboration will take off if a new nuclear deal is concluded between Iran and the West, which would open the spigot for massive amounts of cash to Iran from assets that are currently frozen due to sanctions. Iran also might rake-in windfall profit from exporting oil, which would allow it to invest heavily in its spheres of influence in the region, from Yemen to Iraq and Syria, as well as in Lebanon through Hezbollah and in Gaza through the Palestinian Islamic Jihad (and to a lesser extent Hamas)/.

Iran plans to arm its overseas militias with copious amounts of precision-guided munitions, from rockets and missiles to various types of drones that could have varying degrees of range. This, it hopes, would increase its regional influence and create deterrence against its rival - chiefly among them Israel. As far as Israel is concerned, this threat is real, and it's questionable if it can be successfully countered over the long haul. A senior official conceded that in light of the technological advancements the world is seeing, "Israel's challenge is on the same level as trying to deny a country cellular coverage." In other words, the official believes Iran would be able to get whatever sophisticated devices it needs on the free market, which would lead to a quantum leap in the capabilities of terrorist groups. "Iran has also been indigenously producing these systems and has its own advanced capabilities that it is determined to spread in large quantities," the official said.

The challenge for Israel is to try and have this threat kicked down the road as far away as possible before it could result in major damage to Israel in the next war. It includes targeting the entire supply network in Iran and in Syria to stall, prevent and disrupt the negative developments until such time as Israel has the means to counter them, such as a laser-based interceptor and other advanced technology. "We are playing for time," the official concluded. "We may not succeed in disrupting these efforts forever, but for the time being we have the upper hand, and our mission is to make sure this continues."

Fire breaks out at the world's biggest produce market in Paris

Source: https://www.washingtonpost.com/world/fire-breaks-out-at-worlds-biggest-produce-market-in-paris/2022/09/25/aef183a6-3ccd-11ed-8c6e-9386bd7cd826_story.html

Sep 25 — A billowing column of dark smoke towered over Paris on Sunday from a warehouse blaze at a massive produce market that supplies the French capital and surrounding region with much of its fresh food and bills itself as the largest of its kind in the world.

Firefighters urged people to stay away from the area in Paris' southern suburbs, as 100 officers and 30 fire engines battled the blaze at the [Rungis International Market](#).

Capt. Marc Le Moine, a spokesman for the Paris fire service, said no one was injured. The fire was brought under control and there was no risk of it spreading from the soccer field-sized warehouse, covering an area of 7,000 square meters (1.7 acres), he said.

The cause of the blaze was unknown but will be investigated, he added.





The sprawling wholesale market is a veritable town unto itself, with more than 12,000 people working there and warehouses filled with fruit and vegetables, seafood, meats, dairy products, and flowers from across France and around the world.

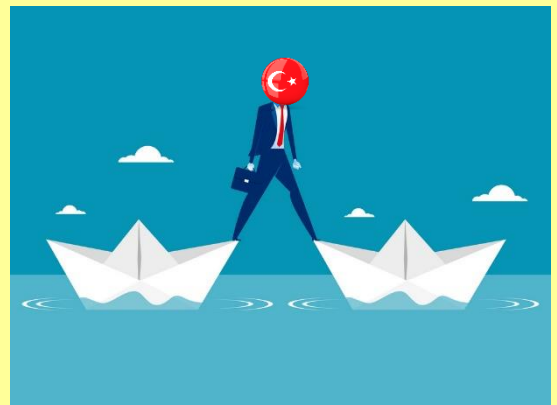
EDITOR'S COMMENT: There is something fishy in this incident! In the last two years, in the US alone and until the summer of 2022, 90 such incidents took place in corresponding food markets! Specifically, in the states of Georgia, Illinois, etc. millions of chickens and turkeys were destroyed on dozens of farms. Within a week two planes crashed into food processing plants! The incidents are too numerous to be considered random. It looks like a global orchestrated plan to seek price increases and nutritional shortages. Let's not forget that there is also an issue with grain from Ukraine and Russia, which is not guaranteed as long as the war lasts.

Erdoğan Takes NATO-Member Turkey into Russia's Orbit

By Burak Bekdil

Source: <https://www.meforum.org/63627/erdogan-takes-nato-member-turkey-into-russia-orbit>

Sep 23 – "Europe Should Be Grateful to Erdoğan": The quote is the [praise](#) Russian dictator Vladimir Putin bestowed upon Turkey's Islamist strongman Recep Tayyip Erdoğan. Translated into realpolitik, what Putin is saying is: "Russia is grateful to Erdoğan's anti-Western ideology." He is right. Erdoğan is bringing NATO member Turkey more and more into Russia's orbit.



Erdoğan is overtly challenging the alliance of which his country is a member. Here is a brief account of how Erdoğan steered Turkey further away from Western interests, in favor of his Eurasian adventurism, in just a couple of months:

- In early July, Erdoğan [told](#) a group of top party executives that Putin, during a meeting in Tehran, suggested a deal in which Turkish drone maker Baykar, whose chief engineer is Erdoğan's son-in-law, cooperates with Russia. "Putin told me that he wants to work with Baykar," Erdoğan said.
- At the end of July, a Russian state-owned company was caught [transferring](#) money to a subsidiary that is building a \$20 billion nuclear power plant on Turkey's Mediterranean coast, thereby alleviating concerns that the project could be delayed by war sanctions. Rosatom Corp. sent around \$5 billion to the Turkey-based builder, formally known as Akkuyu Nuclear JSC.
- The beginning of August. Putin proudly [announced](#) that the trade between Russia and Turkey doubled in the first five months of 2022, and had surged 57% in the last year.
- After a face-to-face meeting with Putin in the Black Sea resort of Sochi, Erdoğan [said](#) that Turkey would now pay Russia in rubles for its natural gas purchases. Meanwhile, Erdoğan happily accepted Putin's invitation to join the September meeting of the Shanghai Cooperation Organisation (SCO) in Uzbekistan. The SCO, launched in 2001, consists of Eurasian member states and declares its mission as combating radicalism and other security concerns in China, Russia and four ex-Soviet Central Asian republics.
- As part of the Sochi deal, Erdoğan [announced](#), five Turkish banks adopted Russia's Mir payments system, another blow to Western sanctions on Russia. Turkey had earlier abstained from joining the U.S. and Europe's sanctions on Russia after it invaded Ukraine.
- In a [joint statement](#) after the Sochi summit, Erdoğan and Putin "reaffirmed their determination to act in coordination and solidarity in the fight against all terrorist organizations in Syria." Shortly after that statement, the Turkish government stepped up its lethal drone attacks against U.S.-allied Kurdish forces in northern Syria ahead of a threatened full-scale invasion. A Turkish drone attack was reported to have killed four people in a town on the Syria-Turkey border.
- Dmitri Peskov, Putin's spokesman, [said](#) that "Military-technical cooperation between the two countries is permanently on the agenda, and the very fact that our interaction is developing in this sensitive sphere shows that, on the whole, the entire range of our interrelations is at a very high level."
- A few days after Peskov's opaque statement, Dmitry Shugayev, the head of the Federal Service for Military-Technical Cooperation, said that a contract had been signed to deliver a second shipment of the S-400 missile system to Turkey, with the production of some components to be localized [some parts made locally] in Turkey. Now that is a real challenge.

Turkey had earlier been expelled from the U.S.-led, multinational partnership that builds the F-35 fifth-generation fighter jet, and been taken under the scope of the Countering America's Adversaries Through Sanctions Act.

The Russians are talking about a second S-400 contract, but this may not exactly be what is taking place. The original contract involves two systems. There is no need for a second agreement for a second system. But the Russians would not be entirely fabricating fake news. The original S-400 contract, at \$2.5 billion, involves the Turkish acquisition of two systems. Turkey has so far received the first system but has abstained from activating it, fearing further U.S. sanctions. The second system has not been delivered yet. The TASS agency is reporting it as if it is a new deal but sources are telling this correspondent that the new deal is about the localization of some parts production for the second system. A senior defense procurement official also told Gatestone that "there is progress in talks for the localization of the second system." That is new news. It also has propaganda mission. Russians are happy to create a new crack, via Turkey, within the NATO alliance. And Turkey is once again [blackmailing](#) the U.S. that "it would further deepen its defense cooperation with Russia if Congress blocks its request to buy 40 F-16 Block 70 fighter jets from the U.S." This plan might make sense to Russia and Turkey, but it does not to the Western civilization to which Erdoğan claims Turkey belongs. To put it simply, more and more Erdoğan's Islamist Turkey simply does not belong where Erdoğan claims it belongs. **When will the West, please, wake up to this shift?**

[Burak Bekdil](#) is an Ankara-based political analyst and a fellow at the Middle East Forum.

War and peace: imagining a way from one to the other in Ukraine

By Aleksandr S. Kolbin

Source: <https://thebulletin.org/2022/09/war-and-peace-imagining-a-way-from-one-to-the-other-in-ukraine/>

Sep 28 – Seven months after Russia first invaded Ukraine, I understand that there is nothing more banal than war. The fighting parties have learned new routines of war. In conjunction with the deal that allows Ukrainian grain to be exported, they coordinate war and agricultural trade at the Joint Coordination Center in Istanbul and similarly coordinate war and energy at



the Sudzha gas metering station at the Russia-Ukraine border. They invite the International Atomic Energy Agency to monitor the safety of the nuclear power plant, even though it remains under regular artillery fire that both sides blame on one another. They both have long been accustomed to the fact that one of the oldest NATO members, while supplying game-changing Bayraktar combat drones to Ukraine, offers itself as the most active mediator for peace negotiations and as an important trade partner to Russia.

The routinization of war gradually turns the impossible into the ordinary, perpetuates narrow-mindedness, and ultimately postpones peace for months and years. So perhaps it is fair to put forward the following as a description of the current state of affairs: “The longer the war continues, the further the prospect of peace.” Unfortunately, realistic proposals for how the conflict can be ended are almost nonexistent, and attempts by doves to coo the way toward peace are met with accusations of betrayal or, at least, naivete, by hawks on both sides.

Nothing is more valuable, humane, and wise than peace among nations. But, unfortunately, this axiom is as bland as the war, and one that seems to have been wholly forgotten today. Clamped between two walls of ultimatums—one that says “we will get it back” and the other that “we will liberate it”—the parties to the war walk a narrowing corridor of escalation, no longer wanting to look back to where they’ve been and having almost stopped looking around at better options. The latest Russian move—to declare a partial military mobilization, organize referendums in already occupied regions, and threaten to use nuclear weapons while insisting the threat is “not a bluff”—only confirm that sad trend.

Those who say that no practical alternative to war has yet been proposed are probably right. Both sides now want victory, not compromise. Elites and societies on both sides are confident victory will be achieved (according to all the latest polls). Realizing that this impasse exists, however, should only motivate peace-seeking minds to help get out of it.

So let’s imagine for the few minutes it will take to read the text below that the parties to the war in Ukraine declared a ceasefire in the situation “as is” and ended up at the negotiating table (which is what most of the “mediators” propose) in Istanbul, Almaty, Minsk, or even in Portsmouth. What conditions or at least hypotheses should be set before their eyes to persuade them not to spit at one another at the first meeting, but to talk constructively?

Probably, we need to start by dividing the papers on the discussion table into four baskets: humanitarian issues (prisoner exchange, the fate of refugees, etc.); economic security issues (trade security and infrastructure restoration); military security issues (how in a post-conflict settlement to satisfy the military security interests of both sides and third countries); and territorial issues. Of course, the last basket will be the most difficult to discuss, but the first three sets of papers can be drafted, read, edited, and discussed right now. Moreover, some of these issues are already part of the meagre dialogue between the two belligerents.

Humanitarian issues, for instance, are discussed regularly even today, leading to real exchanges of prisoners and the bodies of dead soldiers. Other humanitarian issues may include the exchange of information about refugees from both sides (about their location and financial situation) or options for providing coordinated assistance (between Moscow and Kyiv, by their foreign consulates) for Russian-speaking and Ukrainian-speaking people who are outside their countries. The critical humanitarian issue requiring a long-lasting solution may be mechanisms for securing the protection of the Russian language on the territory of Ukraine and of the Ukrainian language and nationals in Russia. Tools for eliminating manifestations of radicalism and nationalism in both Russia and Ukraine in the future might also be discussed.

Some economic security issues are coordinated—almost hourly—through the aforementioned Joint Coordination Center in Istanbul. Kyiv has already proposed that the export of steel products become part of the grain exporting deal. Such a fate could be in store for a variety of critical raw materials from both countries, including titanium, nickel, and palladium, which fuel the global economy and high-tech industry. Another aspect of the economic security basket could involve the restoration of supply chains in Eurasia, destroyed after the closure of the most optimal routes for transport from Europe to Asia through the territories of Russia and Ukraine. The idea of a joint Russian-Ukrainian (and not just Western) “Recovery Fund” could serve the task of jointly restoring the infrastructure destroyed in the Donbas and on the already occupied territory of Ukraine.

In the first stage of discussion, questions of military security could probably be resolved through the centuries-old practice of creating demilitarized zones on the border between the two countries and, as is already being discussed, around nuclear power plants and other critical infrastructure facilities near the conflict zone. Such a solution, of course, would also imply a compromise on the Russian side, at least concerning the Kherson and Zaporizhzhia regions, where some form of joint civil administration with Kyiv may be required. Other important aspects of this basket can be the neutral status of Ukraine being enshrined in the country’s constitution (with the possibility of participation in the economic structures of the EU) or the case of a broadly agreed revival of the Treaty on Conventional Armed Forces in Europe. In the next stage, after a prolonged ceasefire, the questions of military security may be escalated to a broader level with the return to the more comprehensive discussion of security guarantees between the West (and Ukraine as its integral part) and Russia.





65.000.000.000 USD
given to Ukraine
since the
beginning of war



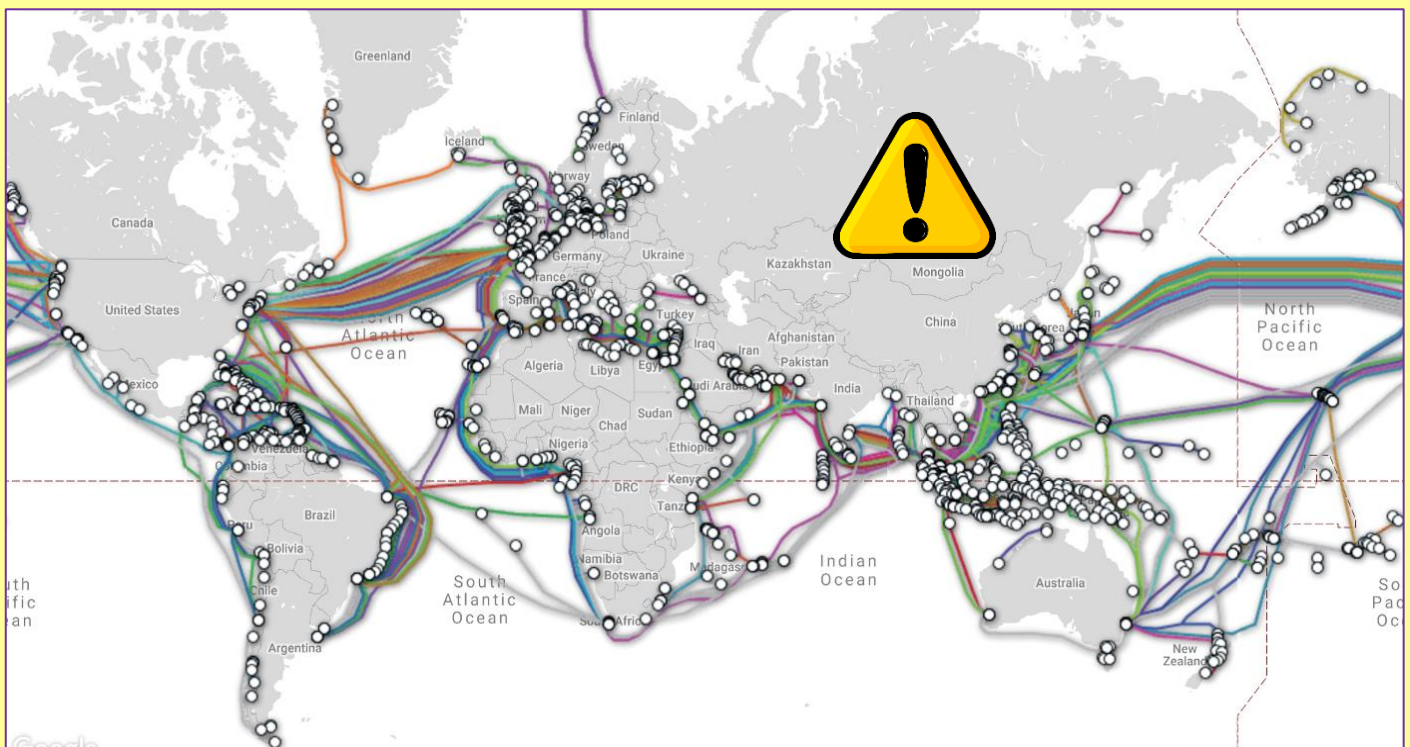
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The most complex and painful questions involve territory, and they will require the most extended discussion. Here, February 24, 2022 may serve as a starting point. But suppose the humanitarian issues and the military and economic security problems listed above were resolved. In that case, both countries may be open to discussion of compromises for dealing with the two countries' territorial tensions.

It is hard to believe in the possibility of such a prospect. Even the possibility of compromise may not be easy to accept. But remember that back in January, the possibility of a full-scale Russian invasion of Ukraine was just as difficult to imagine. The political will of elites in both countries has been enough to extend the war for more than half a year and very quickly convince the citizens of Ukraine and Russia of the possibility of a military victory over each other. I think that the same political will is quite capable of helping the same people regain hope for peace.

Aleksandr S. Kolbin is an international security expert from Moscow, Russia. Trained at King's College London, he works on Russia's nuclear policy and the role of tactical nuclear weapons in Europe. In 2013 he won the Doreen & Jim McElvany Non-Proliferation Challenge managed by the James Martin Center for Nonproliferation Studies.

What comes after Nord Stream attacks?



Underwater Internet cables

Trained Russian Navy Dolphins are Protecting Black Sea Naval Base, Satellite Photos Show

Source: <https://news.usni.org/2022/04/27/trained-russian-navy-dolphins-are-protecting-black-sea-naval-base-satellite-photos-show>

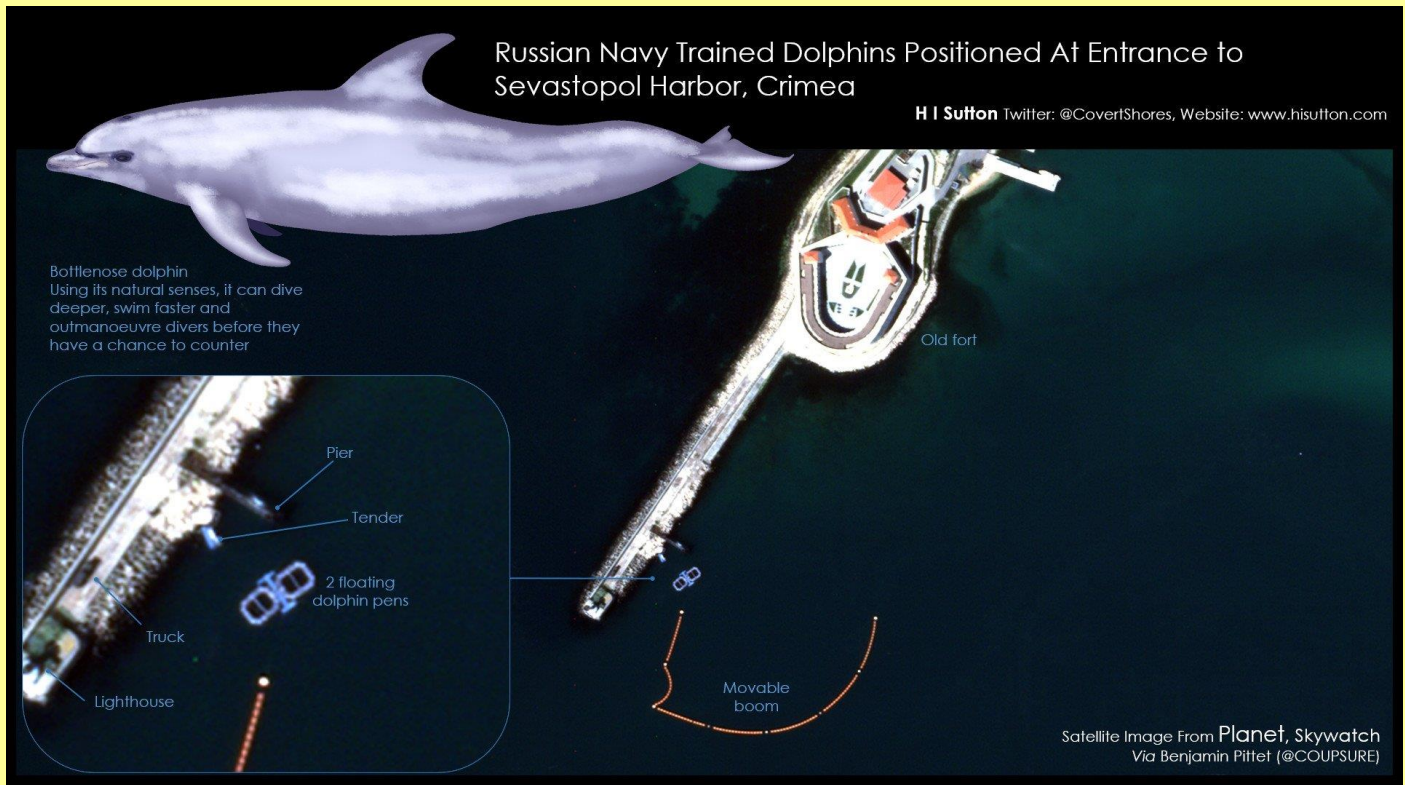
April 2022 – Russia has deployed trained dolphins during its invasion of Ukraine to protect a Black Sea naval base, USNI News has learned.

The Russian Navy has placed two dolphin pens at the entrance to Sevastopol harbor, sheltered just inside a sea wall. The pens were moved there in February, around the time of the invasion of Ukraine, according to a review of satellite imagery.

Sevastopol is the Russian Navy's most significant naval base in the Black Sea. The dolphins may be tasked with counter-diver operations — a traditional role both the U.S. and Russia



have trained marine mammals for. This could prevent Ukrainian special operations forces from infiltrating the harbor underwater to sabotage warships.



H I Sutton Illustration for USNI News

Inside the port, many high-value Russian Navy ships are arranged out of range of Ukrainian missiles but vulnerable to undersea sabotage, according to satellite photos. During the Cold War the Soviet Navy developed several marine mammal programs, including dolphin training in the Black Sea. The unit was based at Kazachya Bukhta near Sevastopol, where it still is today.

With the collapse of the Soviet Union in 1991, the unit transitioned to the Ukrainian military. Although there were attempts to keep it operational, it barely stayed open. With Russia's 2014 annexation of Crimea, the unit [came under Russian Navy control](#). Subsequently, the marine mammal programs have been expanded and returned to operational service.

This is part of the Russian military's wider reinvestment in marine mammal programs in the past 10 years. This has included the Black Sea Fleet's unit and a separate operation in the Arctic.

In the Arctic north, Russia's Northern Fleet uses different types of marine mammals. Beluga whales and seals, both with heavy layers of fat to keep warm, are better protected against the cold than the bottlenose dolphins used in the Black Sea.

The Arctic unit has also become more active in recent years. Beluga whale pens have now [also been established at Olenya Guba](#), the secretive naval base of GUGI (Main Directorate Of Deep Sea Research). The intelligence organization is believed to be responsible for key undersea espionage assets of the Russian military.

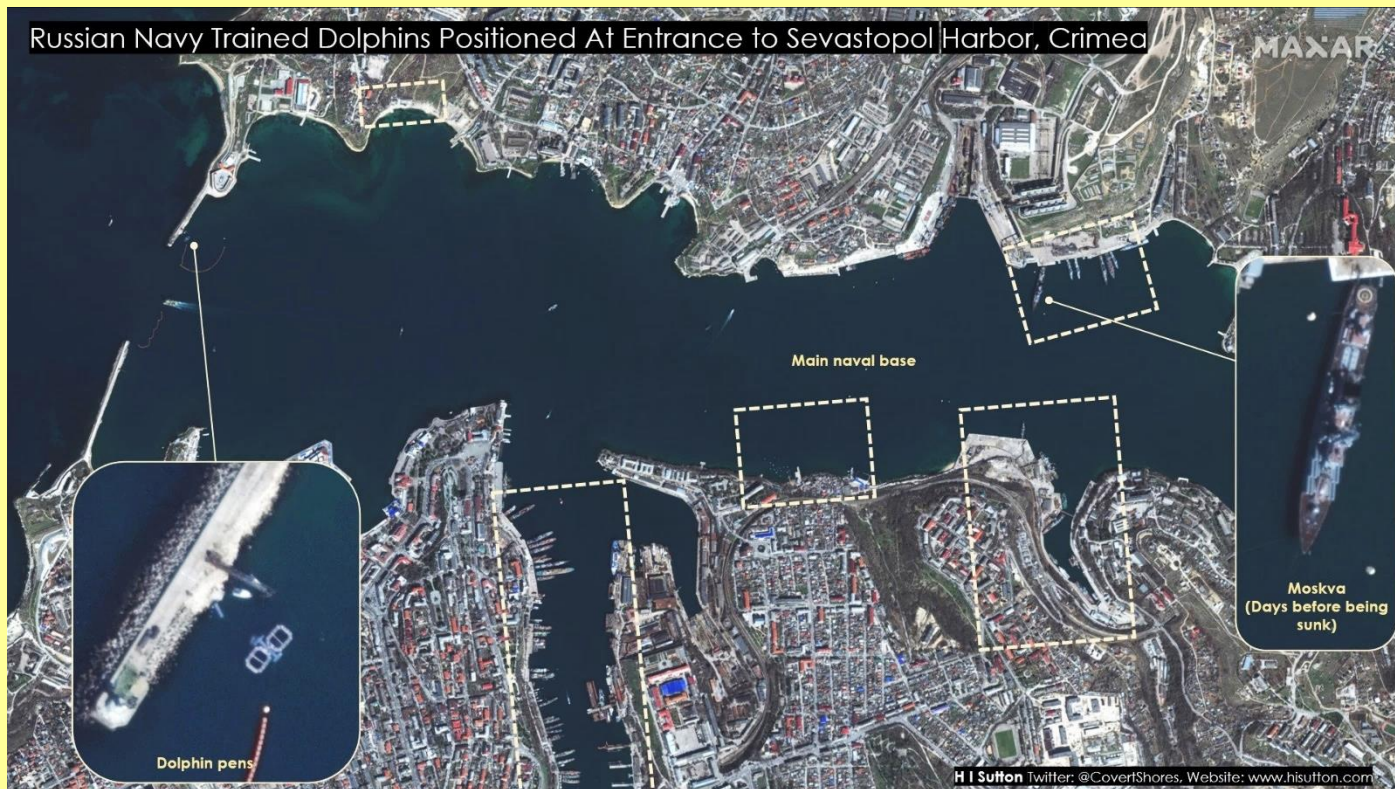
On April 23, 2019, a trained beluga whale turned up in northern Norway. Nicknamed 'Hvaldimir' by the locals, it is believed that this whale escaped from the Russian Navy program, according to the [BBC](#).

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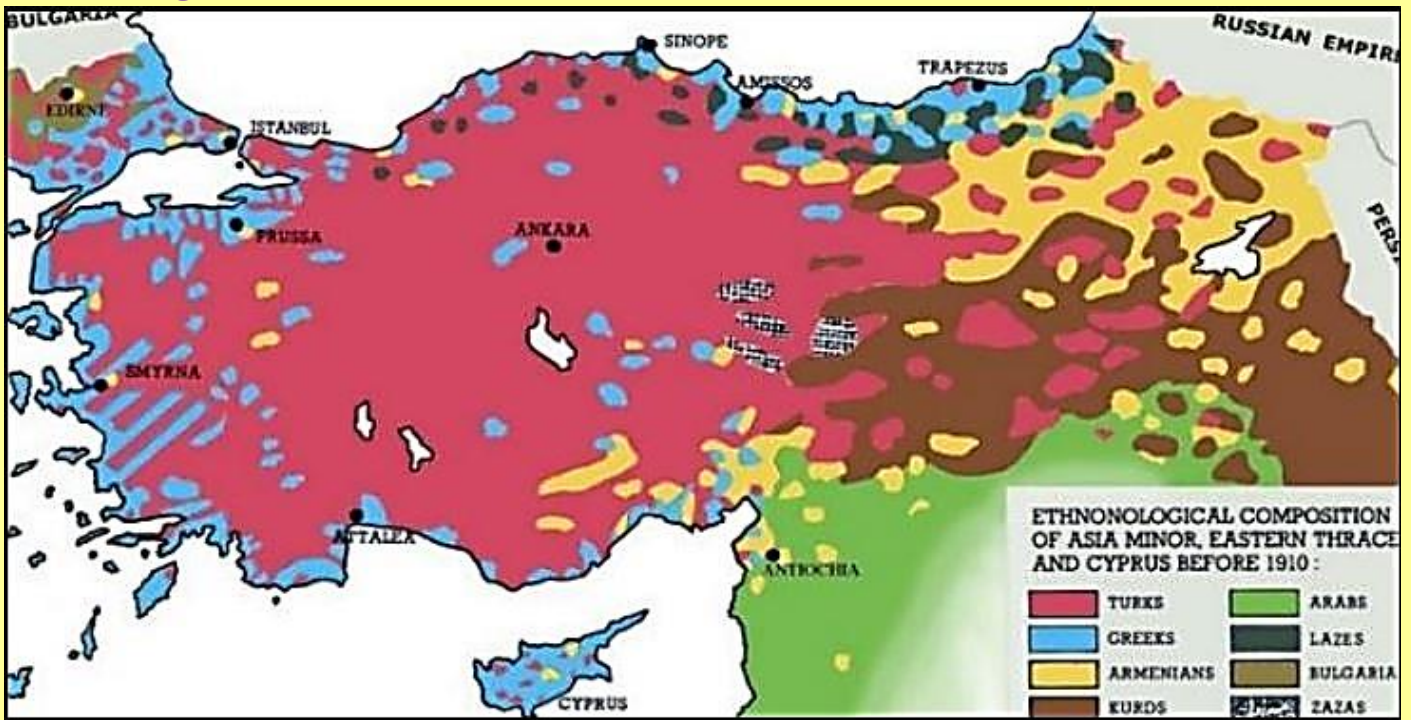
H I Sutton Illustration for USNI News Satellite image ©2021 Maxar Technologies Used with Permission



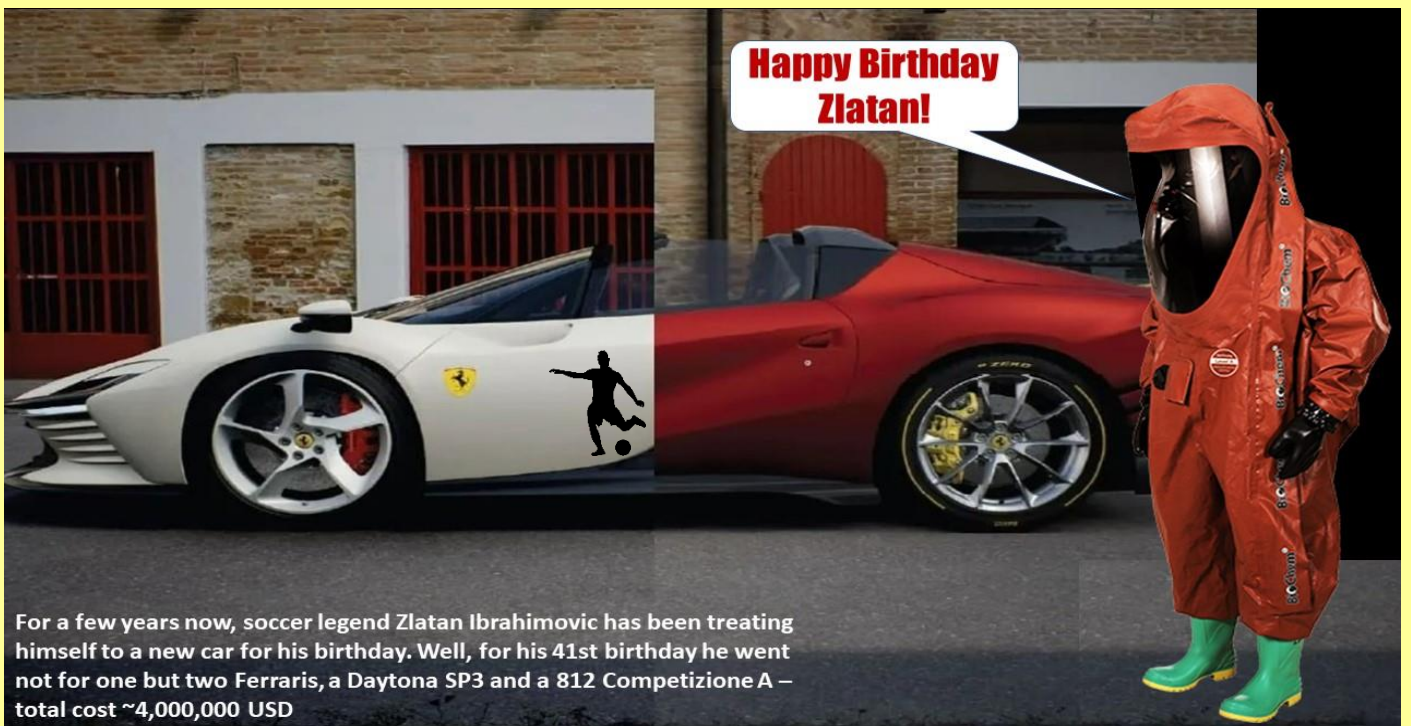
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On April 23, 2019, a trained beluga whale turned up in northern Norway. Nicknamed 'Hvaldimir' by the locals, it is believed that this whale escaped from the Russian Navy program, according to the [BBC](#). It's not just the Arctic that has shown signs of increased use of Russian marine mammals. In 2018 the Black Sea Fleet's dolphins were deployed for several months to Russia's Mediterranean Sea naval base in Tartus, Syria, [according to satellite photos](#). The mobile pens used for that deployment were very similar to the ones currently positioned in Sevastopol harbor. It is unclear whether Ukraine has planned any combat-swimmer operations against Sevastopol. But dolphins are widely considered by naval analysts a considered an effective defense against divers.

Something called "history"



Humanitarian attitude!



For a few years now, soccer legend Zlatan Ibrahimovic has been treating himself to a new car for his birthday. Well, for his 41st birthday he went not for one but two Ferraris, a Daytona SP3 and a 812 Competizione A – total cost ~4,000,000 USD





Weather Warfare

“He who controls the weather controls the world.” – Lyndon B. Johnson, 1962

Source [+video]: <https://www.globalresearch.ca/weather-warfare/5795319/5795319>



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Instances of Use of United States Armed Forces Abroad, 1798-2022

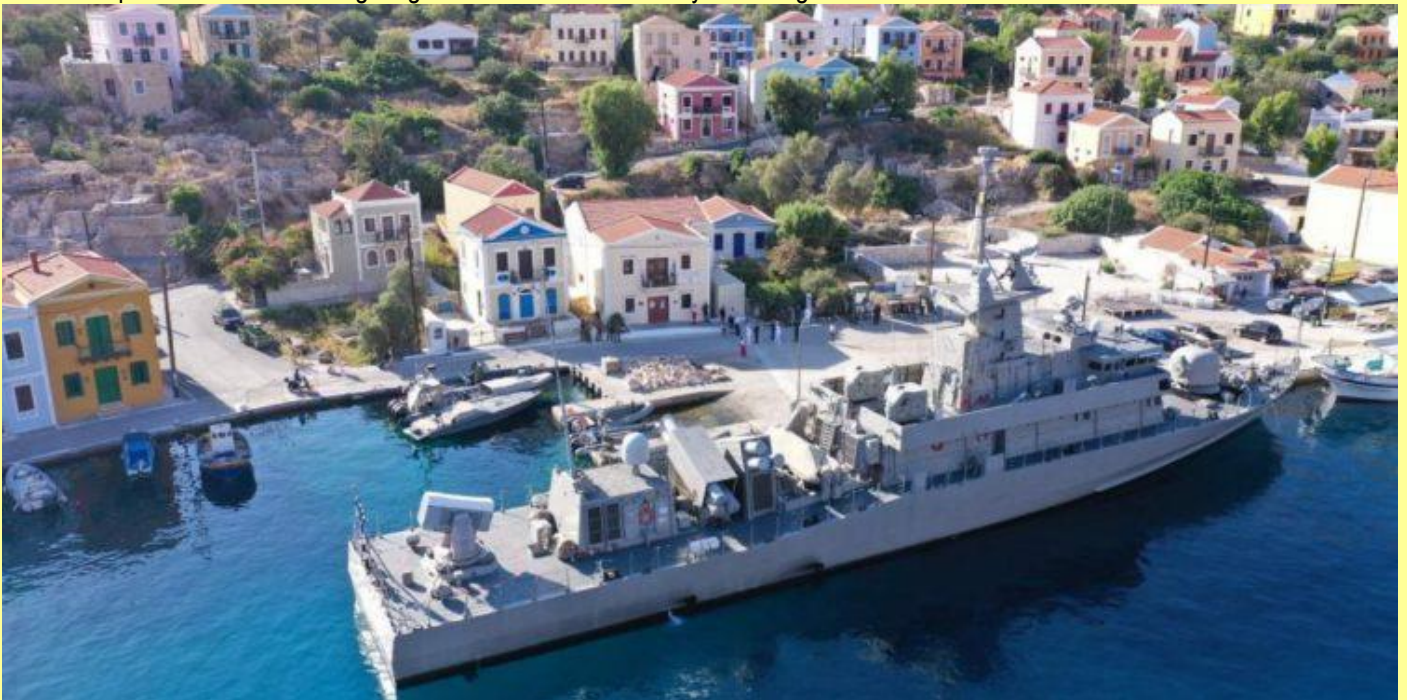
Updated March 8, 2022

This Could Be How Turkey Attacks Greece in 2023

Erdogan needs an excuse either to postpone elections or to distract Turks with nationalism. A conflict with Greece checks both boxes.

By Michael Rubin

Source: <https://nationalinterest.org/blog/buzz/could-be-how-turkey-attacks-greece-2023-205212>



Greek island Kastelorizo

Oct 06 – Turkey’s President Recep Tayyip Erdogan is no fool. He understands the deep trouble in which he finds himself. His interest rate gamble failed; Turkey is nearly bankrupt. Inflation approaches 100 percent and Turkey’s currency is in freefall. Turks are unhappy.



Meanwhile, elections loom. For years, such elections did not matter. Turkey's opposition leaders are lazy, uncharismatic, or in prison. Erdogan controlled the media and mechanisms enough that he could push things his way without too many questions, at least from inside Turkey.

That changed in 2019. The opposition Republican People's Party narrowly won municipal elections in Istanbul and Ankara. The results shocked Erdogan who ordered a do-over in Istanbul. Three months later, opposition candidate Ekrem Imamoglu increased his margin of victory to almost 10 percent, a result too great for even Erdogan's machine to paper over. Pushed down and abused, Turks had had enough. As Turkey approaches both its symbolically important centenary next year and heads to parliamentary and presidential elections, Erdogan is worried. He knows under normal circumstances, he cannot win.

Erdogan is no democrat. He cynically once liked democracy to a streetcar: he would ride it as far as he could and then step off. There are limits to his power, however. He needs an excuse either to postpone elections or to distract Turks with nationalism. A conflict with Greece checks both boxes.

Erdogan is not stupid, though. After Vladimir Putin bogged down in Ukraine, he must question Turkey's readiness. After all, after the [2016 "Reichstag Fire" coup](#), Erdogan purged the military. Turkish special forces might fight Armenians in Nagorno-Karabakh or attack Kurds and Yezidis in Syria and Iraq with drones and F-16 fighters but combat against a near-peer NATO member is a different issue entirely. Greece's military might be only one-quarter the size of Turkey's, but moral is higher, and the Greeks not spread as thin.

So how might Turkey precipitate the crisis? Erdogan will likely take a page from China's playbook. The People's Liberation Army has [seized](#) many rocks, reefs, and "features" in the South China Sea. It has not only transformed them into military bases, but has also used their possession to fortify Beijing's [illicit claims](#) to extend its exclusive economic zone over 90 percent of the South China Sea's waters. China has acted both slowly and deliberated with a so-called salami-slicing strategy, digesting pieces but never biting off so much in one go that it provoked neighbors or the United States to the point of war.

Erdogan and his defense minister, Hulusi Akar, [increasingly dispute Greek sovereignty](#) over [islands in the Aegean Sea](#), in effect seeking to [rewrite and reinterpret](#) the 1923 Treaty of Lausanne and subsequent conventions and agreements. It is in the Aegean that Erdogan will likely make his move, arguing that they are Turkish and do not belong to Greece.

Turkish jets previously [harassed residents](#) of Kastellorizo, just a mile and a half off Turkey's coast, but seeking to occupy an island with nearly 500 Greek residents would force a shooting war Erdogan hopes to avoid.

In an interview, Constantinos Filis, director of the Institute of Global Affairs, pointed out that, in recent months, Turkey has instead overflown Agathonisi, Farmakonisi, Kandeliousa, and Kinaros. The Turks utilize both manned fighter jets and drones in their overflights, usually probing the islands between three and five in the morning. Each is small. Agathonisi, the northernmost island of the Dodecanese, lies just eight miles off the Turkish coast and is home to fewer than 200 Greeks. The community of Farmakonisi, just under 14 miles to the south, is even smaller. A decade ago, it was home to just ten residents.

While Kandeliousa is uninhabited, it is strategic and part of the Nisyros (photo below) municipality, which has approximately 1,000 residents.



Because Kandeliousa is further west than many other Greek islands, a Turkish outpost would effectively leapfrog over Greek islands to the east, tightening a noose around them and enabling Turkey to blockade. Kinaros, also uninhabited, is still farther West, the second most western Dodecanese Islands after Astypalea.

Erdogan may land marines or special forces on the island and then dare Greece to remove them. That diplomatic crisis could reinvigorate Erdogan's religious base and Turkish



nationalists. Erdogan could simultaneously insist that any criticism of him or his record was treasonous. Should the crisis lead to a military skirmish, Erdogan could declare a state of emergency and cancel elections entirely.

Erdogan may also count on U.S. and European “bothsideism.” The State Department, for example, has chastised both sides for overflights even though Turkey is overflying Greek territory and not the reverse. If Turkey creates a fait accompli, Erdogan may hope that the United States, Europe, and the United Nations will allow him to bog down Greece in insincere negotiations while he establishes facts on the ground. Here, [Turkey's Cyprus playbook](#) comes to mind.

Too often, the United States and NATO allow themselves to be distracted, a tendency from which other aggressors seek advantage. It is essential that both Washington and Brussels be proactive: Any Turkish move on Greek islands will trigger a military response against the Turkish contingents on those islands that would humiliate Erdogan and hasten his downfall, elections or not. Erdogan may want to be embraced as a sultan and remembered as more consequential than Ataturk, but he must understand today that if he pursues this course of action, his legacy will be that of Argentine dictator Leopoldo Galtieri who fell from power and was imprisoned after failing to seize the Falkland Islands.

Michael Rubin is a senior fellow at the American Enterprise Institute.

Remember?

Μ Ο Λ Ω Ν
Α Β Γ Δ

[225b-10] Ξέρξου δὲ γράμμαντος αὐτῷ «Ἐξεστὶ σοι μὴ θεομαχοῦντι, μετ' ἐμοῦ δὲ τασσομένῳ τῆς Ἑλλάδος μοναρχεῖν» ἀντέγραψεν «Εἰ τὰ καλὰ τοῦ βίου γινώσκεις, ἀπέστης ἂν τῆς τῶν ἀλλοτρίων ἐπιθυμίας· ἐμοὶ δὲ κρείσσων ὁ ὑπὲρ τῆς Ἑλλάδος θάνατος τοῦ μοναρχεῖν τῶν ὁμοφύλων.» Πάλιν δὲ τοῦ Ξέρξου γράμμαντος «Πέμψον τὰ ὄπλα», ἀντέγραψε «μολὼν λαβέ.»

10. Όταν ο Ξέρξης του έγραψε: «Έχεις τη δυνατότητα να μην τα βάλεις με τους θεούς, να ταχθείς με το μέρος μου και να γίνεις μονάρχης στην Ελλάδα», του απάντησε με επιστολή: «Αν ήξερες τι είναι το καλό στη ζωή, θα απείχες από τα να επιθυμείς ξένα πράγματα. Για μένα, είναι καλύτερο να πεθάνω για την Ελλάδα παρά να είμαι μονάρχης στους ομόφυλούς μου». Όταν πάλι ο Ξέρξης του έγραψε: «Στείλε τα όπλα σου», απάντησε γραπτώς: «Έλα να τα πάρεις».

10. When Xerxes wrote to him: “You have the ability not to mess with the gods; take my side and become a monarch in Greece”, King Leonidas answered him with a letter: “If you knew what is good in life, you would abstain from desiring foreign things. For me, it's better to die for Greece than to be a monarch to my fellow men”. When Xerxes again wrote to him: “Send your arms to me”, he replied in writing: “Come and get them”.

Turkey's Antagonism of Greece Is Putting NATO to the Test

By Clifford Smith

Source: <https://www.meforum.org/63686/turkey-antagonism-of-greece-is-putting-nato-to>

Oct 09 – The [troubling events](#) in Ukraine are a direct threat to the interests of the US and its allies, but also an indirect threat by giving leverage to a wayward [Turkey](#) to strong-arm the US and its allies into ignoring its [non-stop abuses](#) simply to get Turkey to help Ukraine against [Russia](#). Turkish acquisition of advanced weaponry, most recently its attempts to purchase advanced F-16 fighter jets, is the issue where this dynamic has played out most clearly.

Senate Foreign Relations Committee Chair Bob Menendez (D-NJ) just [put this issue](#) front and center by introducing an Amendment that would condition Turkey's ability to buy advanced F-16s.

[Scholars have long](#) pointed to President Recep Tayyip Erdogan's "Pan-Islamist, Neo-Ottoman," ideology as a threat to regional stability. As such, Turkey was already on a downward slope in its relationship with the US. After Turkey's



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[purchase](#) of the S-400 missile from Russia, it became a downward spiral. Turkey was the subject of the Countering America's Adversaries Through Sanctions Act (CAATSA) due to its deal with Russia and was [removed from](#) the [F-35 program](#). Rather than reversing course, Ankara simply changed its request to purchase advanced F-16s to modernize its air force.

Ankara's assumption seemed to be that the US was forced to kick them out of the F-35 program, but that once that was done, things would go back to normal. They were in for a rude awakening. Congressional pushback was immediate, with a [pair of bipartisan letters](#), representing a bipartisan coalition of nearly 60 House members, opposing any sale of advanced F-16s to Turkey. Senator Bob Menendez (D-NJ), the Chairman of the Senate Foreign Affairs Committee, also [opposed the sale](#), and Ranking Member Senator Jim Risch (R-ID) was also [hesitant](#), saying "Until the issues surrounding [the S-400 missile] purchase are resolved I cannot and will not support weapon sales to Turkey."

Just as bad for Ankara: the Biden Administration was [lukewarm](#) and made no firm commitments. Current-US Ambassador to Turkey, Jeff Flake, [pledged](#) further CAATSA sanctions should Turkey buy more Russian weapons.



Russia's invasion of Ukraine gave Erdogan a new lease on life. Now portraying Turkey, [untruthfully](#), as a steadfast ally of NATO's position on Ukraine, or alternatively as a useful [arbiter](#) between Ukraine and Russia, Erdogan had newfound leverage.

Sen. Risch softened his stance, [saying](#) "The Turks have made a credible argument for why they should get the F-16s. I'm positively disposed in that direction, but I'm not completely there yet." Senator Marco Rubio (R-FL), usually a [critic](#) of Turkey, [said](#) "I support the sale. While we have differences with the Turkish government, Turkey is a NATO ally, and we need to strengthen that alliance."

This dynamic accelerated after Sweden and Finland petitioned to join NATO. Turkey's Foreign Minister Mevlüt Çavuşoğlu [immediately said that](#) "Countries supporting terrorism should not be allies in NATO," referring to Sweden and Finland's support for Turkey's oppressed Kurdish minority. Quickly, NATO countries worked to ensure Turkey wouldn't halt NATO enlargement.

Biden [announced](#) his support of the sale of F-16's. However, Biden personally stressed that "I need congressional approval to be able to do that."



I demand ...

Volodymyr Zelenskyy

ICI C²BRNE DIARY – October 2022

During the recent House side passage of the NDAA, Reps. Chris Pappas (D-NH) and Frank Pallone (D-NJ) offered [an amendment](#) that would bar the sale unless the administration certifies that it is necessary for U.S. national security and concrete steps have been taken to ensure they are not used for repeated unauthorized overflights of [Greece](#).

One would not naturally think that one NATO ally would be flying aggressive missions over another's airspace. But just last month, Turkey violated Greek airspace [110 times](#) in a *single day*, an issue that has become a "daily source of tension" [according](#) to Greek news outlets. The diplomatic strain between the two is severe. This is partly about the decades-old fight over the island of [Cyprus](#), but also [other items](#) such as an oil pipeline between Israel and Greece, among others. [Leaked documents](#) suggest Turkey even has ready-made plans to invade Greece. These are not trivialities.

So when the amendment [passed](#) with a comfortable bipartisan majority of 244 to 179, Turkey was put in a difficult spot. Çavuşoğlu [called](#) any such restrictions "unacceptable," a sentiment echoed by Turkish Defense Minister Hulusi Akar, who nonetheless [insisted](#) that the House Amendment could be overcome because of "work to be done in both the White House and the Senate." Erdoğan [threatened](#) to purchase jets from Russia, the United Kingdom, or France instead.

However, Senator Menendez is now [offering a similar amendment](#) in the Senate, something that is expected to be voted on in the coming weeks. A [coalition](#) of various ethnic groups and thinkers have signaled their support. This amendment will put the issue in focus. Will Turkey follow through and refuse to buy F-16s if they cannot use them against Greece?

The Biden Administration's position is nuanced. Given Biden's insistence on Congressional approval, when he [has the power to waive it in emergency situations](#), it's fair to ask if his statement is a face-saving way to deny Turkey the jets, while still gaining Turkey's cooperation on Ukraine.

The logic of the situation is clear: the US is willing to appease Turkey if it means NATO unity in opposition to Russia's reckless and criminal attack on Ukraine. But Turkey cannot credibly claim that the sale will provide that sort of unity if they are openly signaling they intend on using American jets to antagonize Greece.

Turkey is hoping that the Senate will overlook this contradiction. It should not. Erdoğan [privately disdains](#) NATO, and simply uses it as a tool to gain leverage. Erdoğan is all too ready to move closer to [Russia](#), to [Iran](#), and to coddle the most [radical Islamist](#) movements. Turkey needs to change its behavior, not its ask.

Until that time comes, the US should reject Turkish demands that it be allowed to use US technology to antagonize a fellow NATO member.

[Clifford Smith](#) is the director of the Middle East Forum's Washington Project.

EDITOR'S COMMENT: Turkey has a sick vision – the revival of the Ottoman Empire or even bigger. In that respect, Greece (and a few other countries) is an obstacle. On the other hand, when we say NATO we mean the United States a country with similar global ambitions and a long-lasting obsession with Russia and China. So far, Turkey is playing with NATO and the entire planet to achieve its goals ignoring alliances, international laws, good neighboring status, collaborating with the "enemy" (Russia) via strategic blackmailing, etc. and nobody is willing to do something about it. The only good thing is that now Greece is aware of the fact that in a future conflict or even war, it will be alone because national interests override collaborations and good relationships. My prediction: Turkey will get the F-16 requested and will use them against Greece if required. And if not, it will buy warplanes from Sweden or Russia, or China. And everybody will be happy again and will express tons of support, sympathy, and understanding to Greece which will continue to be civilized, democratic, and on the right side of history!

Famous Finnish humor!

⚡ The threshold for Russia's use of nuclear weapons is still considered high, but if Moscow does decide to do so, it will be the "last mistake," Finnish Defense Minister Antti Kaikkonen said on Yle TV channel.

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Ukraine's Zelenskyy accuses Russia of planning to destroy dam

Source: <https://www.aljazeera.com/news/2022/10/21/zelenskyy-calls-on-west-to-warn-russia-not-to-blow-up-dam>



A satellite image of the location of the Nova Kakhovka dam and the surrounding region in Kherson Oblast [European Union/Copernicus Sentinel-2 L2A/Handout via Reuters]

Oct 21 – Ukrainian President Volodymyr Zelenskyy has accused Russia of plotting to blow up a huge dam that would flood a swath of southern Ukraine, as his [forces prepare to push Moscow's troops](#) from Kherson in one of the war's most important battles.

In a television address late on Friday, Zelenskyy said Russian forces had planted explosives inside the huge Nova Kakhovka dam, which holds back an enormous reservoir that dominates much of southern Ukraine, and were planning to blow it up.

"Now everyone in the world must act powerfully and quickly to prevent a new Russian terrorist attack. Destroying the dam would mean a large-

scale disaster," he said.

Russia accused Kyiv earlier this week of rocketing the dam and planning to destroy it, in what Ukrainian officials called a sign that Moscow might blow it up and blame Kyiv. Neither side produced evidence to back up their allegations.

The vast Dnieper River bisects Ukraine and is several kilometres wide in places. Bursting the Soviet-era dam, controlled by Russia, would unleash a wall of devastating floodwater across much of the Kherson region, which Ukrainian forces hope to recapture in a major advance.



It would also wreck the canal system that irrigates much of southern Ukraine, including Crimea, which Moscow seized in 2014. Zelenskyy said cutting water supplies to the south could also affect the cooling systems of the [Zaporizhzhia Nuclear Power Plant](#), Europe's largest.

He called on world leaders to make clear that blowing up the dam would be treated "exactly the same as the use of weapons of mass destruction", with similar consequences to those threatened if Russia uses nuclear or chemical weapons.

Kirill Stremousov, a Russian-installed official in the occupied part of Ukraine's Kherson region on Friday rejected allegations that Russia has begun mining the dam as "false", state news agency RIA reported.



Who controls what in Ukraine?

'Difficult decisions'

One of the most important battles of the eight-month-old war is coming to a head near the dam as Ukrainian forces advance along the Dnieper River's west bank, [aiming to recapture Kherson city](#) and encircle thousands of Russian troops.

Ukraine has imposed an information blackout from the Kherson front, but Russia's commander Sergei Surovkin said this week that the situation in Kherson was "already difficult" and Russia was "not ruling out difficult decisions" there.

Ukrainian troops manning a section of the front north of Kherson on Friday said there had been a noticeable reduction in recent weeks in shellfire from Russian positions in a tree line that sweeps across an expanse of fallow fields, some 4km (2.5 miles) away. The drop-off in shooting and an absence of Russian armour movement in the sector, they said, indicated the Russians were short of ammunition and equipment. The only sign of fighting was the occasional crump of an



exploding shell in the distance. “They’ve been shooting less starting about three weeks ago,” said Myhailo, 42, who like other soldiers deployed with him withheld his last name. “And their drones are less active.”

“It’s probably been about a month there’s been less shelling,” agreed Sasha, 19. “This has to finish at some point. Their ammunition can’t last forever.” The Kremlin on Friday sidestepped a question about whether President Vladimir Putin had given an order for Russian forces to withdraw from Kherson. Ukraine’s armed forces general staff said up to 2,000 newly-mobilised Russians had arrived in the region “to replenish losses and strengthen units on the contact line”.

“The city of Kherson, like a fortress, is preparing for its defence,” Stremousov said on Telegram.

Russian-installed occupation officials have begun what they say is the evacuation of tens of thousands of civilians across the river from towns on the west bank. They accused Kyiv of shelling a ferry overnight, killing at least four civilians. Ukraine said it had fired at a barge but only after a curfew when no civilians should have been out.

As Russian forces have faced setbacks on the battlefield since September, Putin has escalated the war. Last month he ordered the call-up of hundreds of thousands of reservists, announced the annexation of Russian-occupied territory and repeatedly threatened to use nuclear weapons to protect Russia. This month, he began a campaign of attacks using cruise missiles and Iranian drones to knock out Ukraine’s power supply before winter. Kyiv and the West say that amounts to deliberate targeting of civil infrastructure and a war crime. Moscow has acknowledged targeting energy infrastructure but denies targeting civilians, saying the aim of its “special military operation” is to degrade Ukraine’s military. Since Thursday, Ukrainians have experienced countrywide calls to reduce electricity consumption and some blackouts, which the authorities say are necessary to fix power stations damaged in the attacks.

The Ukraine presidency said on Friday that Russian forces were continuing to shell sections along the entire front line of Donbas in east Ukraine and that two people were killed in the Donetsk region.

War In Its New Avatar!

By Colonel Rajinder Kushwaha (Retd)

Source: <https://missionvictoryindia.com/war-in-its-new-avatar/>

Oct 22 – In “War and Anti War”, Alvin Toffler postulates : “If war was ever too serious a business to be left alone to Generals, then, today , it is all the more serious to leave it to uninformed , uninitiated and unaware , whether in uniform or otherwise”.

Mind you this book came out in mid 90s when US was working out a doctrine for the synchronisation of Land - Air battle to fight OUTNUMBERED and win a limited nuclear war. Almost quarter of a century has gone, and technology driven weapon systems, characterising RsMA, has impacted war making in two ways:

a) Emphasis of Land warfare has shifted to WOM (War by other Means), where you exploit internal vulnerabilities of the enemy by making use of “Irregular Soldiers”. Land war will therefore be limited to “Designer Conflicts”, where there would be no more MONKEY DANCING by the armies across the borders. At best, it will be confined to border skirmishes. Therefore, there was a need for the armed forces to be structured and reorganised to deal with this kind of land war. “Smart weapons” and “irregular soldiers” would play an important role in the “Designer Land Wars” of the future. They would be protracted conflicts with “No Fronts” and “No Rears”.

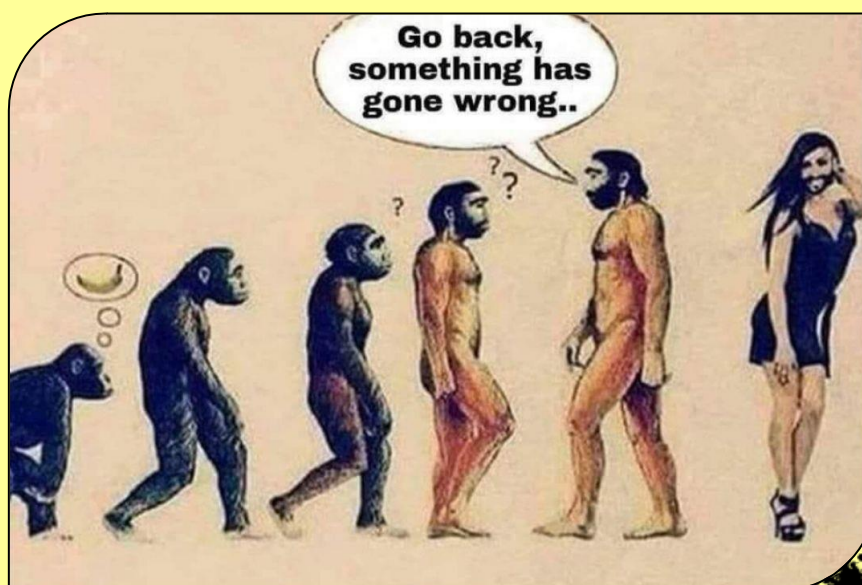
b) Driven by High tech and mass destruction weapon systems, mankind will upgrade from “Land wars” to “Space Wars”. Deep into the future, Battle Zones are going to be in the space. There will be rush for land grabbing on the moon and other planets. The focus of the modern conventional war is shifting to SEAS & SPACE. Therefore, Naval forces and Airforce get priority over the land forces. In view of this importance of STAND -ALONE weapon Systems attain significance. These are A- SAT, Anti- Missile systems such as Iron Dome or S-400, EMP guns, Laser Guns, Drones and anti- drone systems , Missiles (Ballistic, Supersonic and Hypersonic) ; SWARM weapon systems , Aircraft carriers , Nuclear Submarines , Laser Killers, long range artillery with perfect accuracy and deadly lethality, as well as 5th and 6th generation aircrafts .

Covid -19 and Ukraine war has brought out new aspects of emerging form of war. If Corona Virus was driving mankind to helplessness, it now turns out from Ukraine conflict that some countries were working on more dangerous “pathogens”. It was revealed by “Fox News” , sometimes back, that Washington has been funding laboratories in Ukraine for the investigation of "lethal pathogens" for the last 14 years or so . Weaponisation of the birds is a new way of WOM (War by other Means). It is alleged by Russia that in Ukraine, USA had been financing and funding to create “numbered migratory birds” , produced by biological and bacteriological laboratories in Ukraine. How do migratory birds get weaponised? After studying the routes of the migration of these birds and observing them through various seasons, the environmental specialists and zoologists understand the path these birds take each year on their seasonal journeys across the globe, which includes flying



over various nations and continents. Accordingly, these observations and records are used to select some migratory birds. They are then, captured, digitised and injected or loaded with a capsule of germs embedded into their body, along with a chip to be controlled through computers. They are then released again to join migratory birds in countries where damage is desired to be affected. The known places of origin of these birds are from the Baltic Sea and the Caspian Sea to the African continent and Southeast Asia. Besides there are two other paths followed by them from Canada to South America in varying seasons. The intelligence agencies then monitor their movement throughout their journey with the help of embedded chips. Now, in case the targeted nation, let us say, India or Iran or even Russia, the chip is destroyed when the bird flies over these countries. They Kill the bird that falls carrying the epidemic. Thus, diseases spread in this or that country. In this way, the enemy country is harmed at no military, economic and political cost. It is a new form of the war, the War by other Means (WOM), also called Hybrid or Fifth Generation warfare. The hybrid war seeks to implode your adversary by using "irregular soldiers" or the separatists, who have revolted against the Government of your adversary. In short it seeks to exploit internal weaknesses and vulnerabilities. This is followed by misinformation campaign in the media to undermine the authorities. A flurry of anti - India articles in USA, Canada and Europe are part of such a misinformation campaign, may be by China or Pakistan. A doctored report by GHI (Global Hunger Index), placing India at 107 ranks out of some 130 countries is aimed at discrediting the present regime. It is a joke that India has placed below Sri Lanka and Pakistan. Fifth columnists play a very important role in WOM. The aim of WOM is to subdue your adversary without "firing a bullet". Trade and Economic blockades are used to break the will of the targeted country. This is the new format of war now gaining momentum. In a way, engaging Russia in Ukraine in another way of WOM. USA had cleverly "outsourced" its fighting to Ukraine. No wonder ex Chief of Staff of US Army General Jack Keane said: "— We paid only 66 billion for Ukrainians to die for US interests in the war with Russia". Besides, war is now entering outer space. Race is on for the colonisation of outer space. This has heralded the coming of the Cosmic Age, where "cosmic space" would be more important than a piece of land on the planet Earth. It is NOT science fiction. Times are fast changing. Frontiers of space are no more VIRGIN. Message is: Join the race or cool your heels in the Ghettos of Earth. NASA scientists say that there was icy crystal of waters in the subsurface of Mars, suggesting that some kind of life might have existed on Mars in the distant past. Recently, a news has also come that Europa, one of Jupiter's moon has water and it could have some form of life. Some years back an earth like planet was discovered, called Earth -2, some trillion light years away from earth. Therefore, outer space and cosmos are now considered to be habitable by humans. Therefore, there is a race for colonisation of outer space, a new kind of Lebensraum. This race will lead to conflicts and wars in the outer space, may by the end of this century. War would then be entirely in its unrecognisable "Avatar".

Col. Rajinder Kushwaha is an ex-NDA, commissioned into 3 Bihar. He is a battle-hardened veteran who served in '71 War & has operated extensively in various insurgency environs across the country. He is a renowned author, and a highly respected defence & national security expert writing for several reputed publications such as 'Defence and Security Alert' (DSA), the 'Indian Defence Review' (IDR) among others.





T - NEWS

Will Iran turn to al-Qaeda to combat Islamic State?

By Fatemeh Aman

Source: <https://www.globalvillagespace.com/will-iran-turn-to-al-qaeda-to-combat-islamic-state/>



Sep 24 – As the security situation in Afghanistan deteriorates and the Taliban seem incapable of defeating Islamic State-Khorasan Province (ISKP) and protecting religious minorities, Tehran is alarmed about the potential outbreak of a civil war next door and the chances that such a conflict might spill over into Iran. Under these circumstances, Iran may look for more effective means of countering ISKP.

There are conflicting reports about Iran's engagement with al-Qaeda and other Sunni extremist groups. Some even [claim](#) Iran has become al-Qaeda's principal operating base. While this seems dubious, Iran has a long history of using one enemy against another. In 2015, when Tehran concluded that the previous Afghan government could not combat ISKP militants, Iran [expanded](#) its active engagement with the Taliban. With rising security concerns along Iran's eastern border, Tehran may try to take advantage of the rivalries among extremist groups. However, Iranian leaders might be missing a more effective weapon to fight ISKP and similar groups: winning the hearts and minds of Iran's own Sunni population.

The (exaggerated) links between Iran and al-Qaeda

Some U.S. officials, including former U.S. Secretary of State Mike Pompeo, have repeatedly called Iran a new stronghold for al-Qaeda. Al-Qaeda "is operating under the hard shell of the Iranian regime's protection," Pompeo [said](#) in 2021, labeling Iran as "a new Afghanistan" in reference to the period from the 1990s until 2001 when Afghanistan hosted al-Qaeda leaders. Iran [denied](#) this accusation, and Pompeo's claims do not seem to be consistent with the [judgment](#) of the intelligence community at the time that the relationship between Iran and al-Qaeda "is not one of terrorist collaboration."

Iran and al-Qaeda-like groups do not have compatible ideologies. Shi'a Iran and Sunni Wahhabi/Salafi organizations like al-Qaeda are implicitly at odds with one another. Supreme Leader Ayatollah Ali Khamenei once even [blamed](#) the United Kingdom, United States, Israel, and the Sunni Gulf states for supporting such groups in order to fight Iran and Shi'ism. "But these are not the main enemies, and the main enemy is the one who provokes them and gives them money," Khamenei said in 2013.

Nor has there been much evidence connecting Iran with the Sept. 11, 2001 attacks, as some [claimed](#). Iran cooperated and [provided](#) essential assistance to the United States and coalition forces regarding al-Qaeda and the Taliban. Relations between Iran and the United States soured when Iran, despite genuine cooperation with the United States, was [branded](#), along with Iraq and North Korea, as part of the "Axis of Evil" by then-President George W. Bush.



Many al-Qaeda members and their families fled to Iran after the fall of the Taliban in 2001. Some were imprisoned and the Iranian government denied there were any al-Qaeda members in Iran for many years. In 2013, when Canadian police [discovered](#) a terrorist plot and two suspects were charged with having received support from al-Qaeda inside Iran, Iran's then foreign minister, Ali Akbar Salehi, called it "the most laughable claim ever."

Iran's use of extremist groups

There is no evidence of direct Iranian government support for Salafi groups. Kurdish activists, however, [suspect](#) that these groups were tolerated by the authorities in Tehran. Kurdish activists claim that the government has promoted Salafist Wahhabi thinking in the past to prevent the expansion of Kurdish nationalist or leftist groups and NGOs. The Salafis reject any activities promoting civil society and they have generally fought all NGOs. They are also at odds with any organization or entity that promotes statehood, potentially making them an effective tool to combat Kurdish separatists and nationalists.

In the past, especially when there was a heightened threat perception of American military attacks across Iran's eastern or western borders, the government's support for Salafists seemed to be aimed at letting them fight the U.S. due to their strong anti-American sentiment. What else would explain the extremely harsh treatment of Kurdish leftist and separatist prisoners compared to Salafist Wahhabi ones, Kurdish activists ask?

The issue of the Salafi presence in Iran was discussed more broadly after two simultaneous terrorist attacks [occurred](#) in Tehran on June 8, 2017, against the Iranian Parliament building and the Mausoleum of the Founder of the Islamic Republic, Ayatollah Ruhollah Khomeini. The attacks, which killed 17 civilians, were carried out by ISIS.

Afghanistan: Iran's Achilles' heel

Concerns about the insecurity of its eastern borders have become Iran's number one priority, especially since the Taliban's takeover of Kabul in August 2021.

In early 2015, Tehran consciously worked to improve its relationship with the Taliban after it became convinced that the then-Afghan government was not strong enough to defeat ISKP. While portraying their engagement with the Taliban as an attempt to facilitate intra-Afghan dialogue — that is to say, negotiations between the Taliban and the Afghan government — Iranian leaders also tried to [increase](#) their influence within the group. Although Iran has had some success, it will not be able to compete with traditional Taliban supporters, such as Pakistan, Saudi Arabia, the UAE, or even Turkey and Qatar.

Iran may have some friends within the Taliban, but it is in the dark about the group's structure and has little influence over its leaders, many of whom have ties to Iran's regional rivals. The Taliban's takeover of Afghanistan has been, perhaps, one of Iran's most critical recent security challenges. Iran has been concerned about the return of a regime to power that has refused to be inclusive in any way. [Iranian leaders worry about the Taliban's treatment](#) of religious and ethnic minorities and their inaction in protecting these communities. Reports [indicate](#) that since the Taliban came to power in August 2021, at least 13 attacks against Hazaras by the ISKP have left many dead and hundreds injured. The April 21 [suicide bombing](#) at Seh Dokan Mosque in Mazar-e Sharif, one of the country's most prominent Shi'a mosques, which left 31 dead and 87 wounded, is but one such example. Tehran is also concerned over the Taliban's disinterest in its security priorities, including border security, smuggling, and refugees.

Iranian officials have had to explain to the public why they've adopted such a friendly tone toward a regime with which they nearly went to war two decades ago. Hardline Iranian media has [painted](#) a friendly picture of the Taliban. "The Taliban forces we know today are different from the Taliban we knew in the past and the Taliban that would conduct beheadings of the people," the hardline *Kayhan* newspaper wrote in an editorial on June 21, 2021. There was an outcry in Iran calling on the government to support Ahmad Massoud, the leader of the National Resistance Front of Afghanistan and son of the late Northern Alliance leader Ahmad Shah Massoud.

The confusion over Iran's official position toward the new Taliban regime was so intense that Gen. Esmail Qaani, commander of the Islamic Revolutionary Guard Corps (IRGC) Quds Force, [held](#) a closed-door meeting with parliament members on Sept. 7, 2021. He explained the IRGC's policies in Afghanistan and brushed aside speculation that Iran was confused over how to deal with the Taliban. Iran "has a good grasp on Afghanistan's issues ... and it is not as if the Islamic Republic of Iran has been surprised by the events," Qaani told the MPs.

Concerns about terrorist infiltration

Iran's official position toward the new Afghan regime was highly cautious, meant not to irritate the new rulers and, at the same time, to prevent a flood of refugees into the country. Hundreds of Afghan army personnel who fled to Iran upon the Taliban's takeover were deported back, for example. However, Iran could not prevent that flood of refugees, who



came not just from neighboring provinces with cultural and linguistic ties, such as Herat, but from all parts of Afghanistan. The number was so great that authorities had to hire Pashtun translators to communicate with the refugees.

Unregistered Afghan refugees have been one of Iran's most significant challenges since the Taliban takeover. There are no migrant camps in Iran like those in other countries, such as the Syrian camps in Turkey. Harsh treatment of migrants and a complicated registration process frequently encourage refugees to skip registration with the goal of passing through Iran to a third country. Consequently, many people may have entered Iran without proper records or any sort of monitoring. Iranian authorities are concerned that this group could include potential terrorists. There have been incidents, such as a knife attack on three Iranian clerics in Mashhad back in May, which was described as a "terrorist attack committed by Takfiri and Salafi" sympathizers.

Iran's challenges in dealing with the Taliban

Iran's primary challenge in dealing with the new Taliban-led Afghan government seems to lie in the realm of border security. Clashes along the Iran-Afghanistan border have grown more frequent since the Taliban takeover, including [recent](#) skirmishes in the border region of Nimroz Province in Afghanistan and Hirmand in Iran. One of the clashes was so profound that residents of the region left their homes out of fear of escalating violence. Each country blamed the other for the episode. Iranian officials have been conciliatory about these incidents, arguing that the Taliban is "new to the border-related regulations" and "[unfamiliar](#) with the international principles and laws." Similarly, the Taliban have called the border incidents "[misunderstandings](#)."

There is concern that the Taliban could misinterpret too much Iranian patience as a weakness. Some, including Mohsen Roohi-Sefat, former foreign minister and deputy chief for political and international studies, [warn](#) that "anti-Iran countries" could use their influence within the Taliban to harm Iran.

Conclusion

Border security appears to be Iran's greatest point of weakness when it comes to Afghanistan. The threat of ISKP or similar groups has made Iran more vulnerable than ever, and this concern could drive Iran to seek new alliances. The bitter lesson Tehran should draw from its previous attempts to use one extremist group against another is that this tactic has never produced a positive outcome. History, including that of the Islamic State, which emerged out of the remnants of al-Qaeda in Iraq, has shown that these groups often evolve and become more dangerous over time.

The Iranian government has put all its efforts into defeating militant Sunni groups using military means, neglecting the important task of winning the hearts and minds of Iran's Sunni population. Tehran's discrimination toward and harsh treatment of Iranian religious minorities have proven counterproductive. These policies have alienated those populations and, in the process, created a breeding ground for violent extremism. The Islamic Republic might be more successful in its fight against extremist Sunni groups if it tried to win the trust of Iranian Sunnis and provide them with fundamental religious freedom.

[Fatemeh Aman](#) is a non-resident senior fellow at the Middle East Institute. She has written on Iranian, Afghan, and broader Middle Eastern affairs for over 20 years. The article was first published by The Middle East Institute (MEI).

At least 11 children among dead after gunman opens fire at school in Russia

Source: <https://edition.cnn.com/2022/09/26/europe/izhevsk-school-shooting-russia-intl/index.html>

Sep 26 – At least 11 children were killed when a gunman wearing Nazi symbols opened fire at a school in the western Russian city of Izhevsk, Russian authorities said Monday.

Fifteen fatalities have been recorded so far. Among those killed was the school's security guard, head of the regional government Alexander Brechalov said in a video statement.

Investigators said 24 people, including 22 children, were injured.

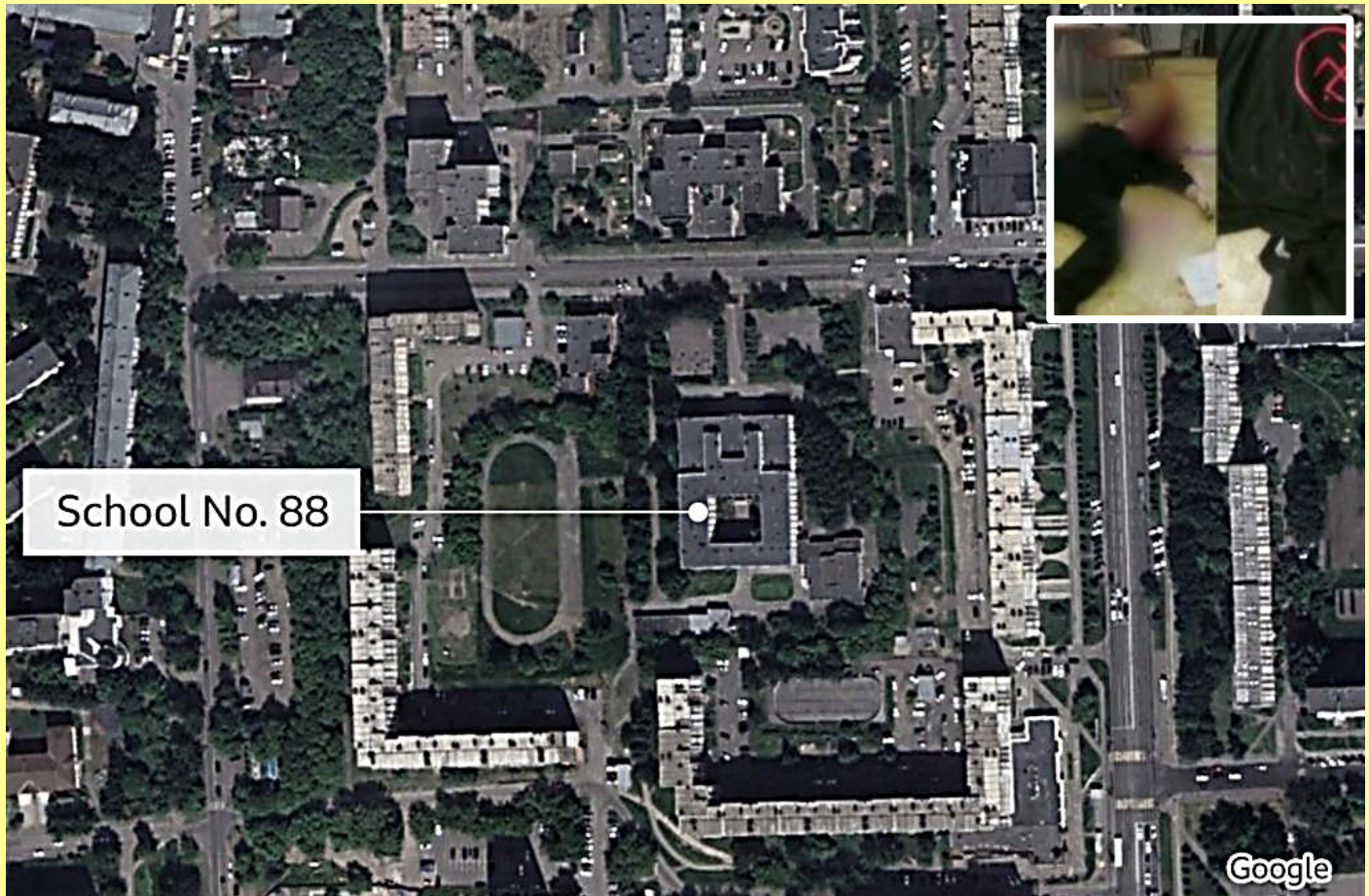
The shooter, who was reportedly wearing a black T-shirt with Nazi insignia and a helmet, died by suicide following the attack, according to Russian state news agency TASS. Russian officials named the shooter as Artem Kazantsev, a local resident born in 1988 who was an alumnus of the school where the shooting took



ICI C²BRNE DIARY – October 2022

place. The identification process was delayed because no documents were found on the body of the suspect, TASS reported. Investigators have started searching Kazantsev's residence and probing reports of his "neo-fascist views and Nazi ideology," Russia's Investigative Committee said. Kremlin spokesman Dmitry Peskov said the attacker was "a person who, apparently, belongs to a neo-fascist organization or group."

The attack took place at School 88 in Izhevsk, the capital of Russian region of Udmurtia. It has since been evacuated, Brechalovn said.



Russian President Vladimir Putin sent condolences to the victims, according to a statement released by the Kremlin on Monday. "The president deeply sympathizes with all those who lost their loved ones, their children in this tragedy, and wishes recovery to those who were injured as a result of this inhuman terrorist act," Peskov is quoted as saying in the statement. This is at least the third school shooting in Russia or territory controlled by the country in the past two years. [In May 2021](#), a gunman killed seven children at a school in Kazan, the capital of Russia's Tatarstan Republic. [Five months later](#), 20 people were killed when an assailant set off a bomb and started shooting at a college in Russian-occupied Crimea. Putin responded to the attack in Kazan by calling for new gun control measures, [which became law in June 2021](#). Peskov said Monday that authorities would take another look at just how effective those regulations were in light of the most recent shooting.

Russia has [in recent years](#) seen rising concerns that copycat criminals in the country could attempt the type of massacres that have plagued schools in the United States. Those fears were particularly acute in the aftermath of the [2018 school shooting in Parkland, Florida](#), in which 17 people were killed. The month before Parkland, three school attacks were reported throughout Russia. The teenage perpetrators in those incidents used air guns and knives, not semi-automatic weapons, and the victims suffered injuries, with no deaths reported, according to state media.

Izhevsk, scene of Monday's attack, is home to more than 600,000 people, making it one of Russia's 20 most populous cities. It was founded as a steelworks settlement in 1760 and remains a prominent industrial center. **The city is perhaps best known as the home of the AK-47 rifle and the longtime residence of the Soviet lieutenant general credited with its development, Mikhail Kalashnikov.**



Facial Recognition Technology and Counter-Terror Operations

By Akshat Upadhyay

Source: <https://www.homelandsecuritynewswire.com/dr20221004-facial-recognition-technology-and-counterterror-operations>



Oct 04 – The ‘Artificial Intelligence in Defense (AIDef)’ symposium and exhibition, the first of its kind held on 11 July 2022, showcased 75 products based on Artificial Intelligence (AI), in keeping with the theme of ‘Azadi ka Amrit Mahotsav’ celebrating 75 years of India’s independence. [Symposium to be held in New Delhi on July 11”, Press Information Bureau, Ministry of Defence, Government of India, 8 July 2022.](#)¹ The Armed Forces, as well as research organizations, industry, defense start-ups and innovators took part in the exhibition. The exhibition was a culmination of a four-year old process of initially introducing and subsequently leveraging AI and AI-based products in defense. The aim is to speed up decision-making processes, enhance cybersecurity, strengthen perimeter security, enable predictive maintenance and use natural language processing (NLP) algorithms for on-the-spot translation for troops, especially when facing adversaries along disputed borders.²

Ministry of Defense Initiatives on AI

An AI Task Force was set up under the Ministry of Defense (MoD) in February 2018, which came out with recommendations in less than six months in June 2018.³ The report identified five areas for developing AI-based solutions for the Indian Armed Forces. These included lethal autonomous weapon systems (LAWS), unmanned surveillance, simulated wargames and training, cyber and aerospace security and intelligence and reconnaissance.⁴

These recommendations were in addition to the proposals suggested by the Task Force on AI for India’s Economic Transformation of 19 January 2018, headed by Professor V. Kamakoti, which identified 10 domains where AI could be used.⁵ Pertaining to the sphere of national security, the four areas highlighted were related to autonomous surveillance and combat systems, adaptive communication systems, cyber-attack mitigation and counter-attack systems and multi-sensor data fusion based systems.

Based on these inputs, the Defense AI Council (DAIC) headed by the Raksha Mantri and the Defense AI Project Agency (DAIPA) headed by the Secretary (Defense Production) were formed in February 2019.⁶ While the DAIC has been established as a policy-making body, DAIPA is responsible for implementing DAIC’s policy decisions and has been tasked to come out with pragmatic solutions, in collaboration with the Defense Research and Development Organization (DRDO), academia and industry.⁷ An



AI-based defense roadmap was formulated for the Defense Public Sector Undertakings (DPSUs) in August 2019, based on which 40 AI products were developed by March 2022.⁸

In the AIDef symposium, out of 75 products, 15 were based on Command, Control, Communications, Computers, Intelligence, Surveillance and Reconnaissance (C4ISR), 10 on autonomous and unmanned robotic systems, 10 on intelligent monitoring systems, seven on manufacturing and maintenance, six each on process flow automation and NLP, four each on AI platform automation and perimeter security system, three each on internet of things (IoT) and operational data analytics, two on LAWS and one each on simulator/test equipment, logistics and supply chain management, block-chain based automation, cyber security and human behavioral analysis.⁹ Out of these, there were two projects based on Facial Recognition Technology (FRT), i.e., the iSentinel and the Silent Sentry system.¹⁰

The iSentinel notes that its capabilities will include 'historical tracking of people', detecting 'emotions, facial expressions and body language for patterns of argument, restlessness and sweating' and 'behavior analysis' for threat identification.¹¹ The Silent Sentry boasts of both 'human detection' and 'facial recognition'.¹² Both these products arguably use an AI-based technology known as FRT which is based on the quantification of distinctive features (80, as per one study) of a human face such as distance between eyes, distance from the forehead to the chin, etc.¹³ This data is then compared with a database to decipher the identity of the individual recorded by a camera.

Challenges of FRT in Counter-insurgency/Counter-terrorism Operations

Though a case can be made for the use of FRT by the Indian Army in counter-insurgency (CI)/ counter-terrorism (CT) operations in certain areas such as Kashmir or parts of the North East, there are some challenges that need to be surmounted. The basic principle behind use of FRT in a CI/CT environment is to identify threats to either an Army camp or a company operating base (COB). The AI solutions currently being marketed are for static installations, and provide an early warning for defense measures to get activated. The prerequisites of an effective FRT system are an exhaustive digital library or inventory of resident or terrorist facial data, excellent camera for capturing the images of individuals approaching the camp, secure and fast communications and strong processor for the mapping and matching algorithms to produce results in real time. Maintaining them in a CI/CT environment along with adequate power backup is a challenge, though these can still be taken care of.

The challenges of using FRT software in a CI/CT scenario, though, go beyond the prerequisites of a solid data set and hardware/software. Firstly, a decision needs to be made regarding the kind of identification required. If the intention is to 'negatively identify', i.e., any individual not matching with the resident database may be deemed to be an alleged militant and liable to be handled as such, the database and processing requirement is formidable. Increased urbanization and search for livelihood has resulted in migrations from rural to urban areas. There is an inherent population flux in the rural and semi-urban areas that needs to be accounted for in the picture library which cannot be limited to a particular area, but needs to be expanded to the entire Union Territory (UT) and maybe even beyond.

If the intent is to 'positively identify', i.e., confirm the identity of a terrorist, militant or an over ground worker (OGW), an exhaustive database of such terrorists needs to be maintained. Such efforts may be hampered by the lack of updated photographs of such terrorists. The legal implications of creating and maintaining this database also need to be understood in detail by the Army. As of date, only two FRT projects are being planned to run in the UT of Jammu and Kashmir (J&K). These include a project by the J&K Police which has collaborated with the Srinagar Municipal Corporation to install FRT across Srinagar to weed out terror threats. The second is by the Housing and Urban Development Department for authenticating identities of the applicants for residence.¹⁴

The use and maintenance of FRT across the country and by various state governments has also been challenged by activists in court. Add to this the challenges of poor visibility conditions, changes in surroundings, quality of photographs and finally the learning algorithm. False positives and false negatives are acceptable in any AI-based systems. However, in a CI/CT scenario, such outcomes may translate into a matter of life and death. FRT-based systems need to be test-bedded, vetted and analyzed before deploying them in real-life conditions.

Further, FRT broadly has two subsets when it comes to recognizing an individual. The first is the 'facial recognition', which identifies the individual. The other is the 'affect recognition', which attempts to decipher the emotions and thereby, the intentions of the individual. Affect recognition, though used by a number of FRT firms around the world, is based on shaky scientific understanding and may not be accurate or even correlated with the actual emotion of the individual.¹⁵ Applying dubious scientific standards in a CI/CT scenario may lead to cases of mistaken identities. Cyber security measures for the security of the recorded data also need to be robust, lest the recorded data be hacked, spoofed or changed.



All these challenges are formidable and need a careful and even cautious approach to operationalizing FRT. The Indian Army needs to consider these issues in detail before deploying AI-based systems in a CI/CT environment.

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Terrorists Use Humor in English-language Propaganda Magazines to Reinforce Identity

Source: <https://www.homelandsecuritynewswire.com/dr20221004-terrorists-use-humor-in-englishlanguage-propaganda-magazines-to-reinforce-identity>

Oct 04 – Humor is used in English-language jihadi terrorist magazines to reinforce identity and help groups bond, research suggests. The study shows Al-Qaeda, the Taliban, and Tahrik-e Taliban Pakistan (TTP) use humor in a similar way, using situational comedy, while humor in Islamic State (IS) magazines is dehumanizing and mocking.

Academics examined 82 jihadi magazines published in English. They found Al-Qaeda and the Taliban in particular use mockery and parody to galvanize the curious by placing emphasis on an “us versus them” mentality. This usually includes aggressive imagery of people or countries as animals. These groups repeatedly used the term ‘dog’ to describe President Bush, ‘donkey’ to describe Americans and vermin to describe US troops. ISIS labelled Joe Biden as ‘the Senile Crusader’. Former Israeli Prime Minister’s surname ‘Netanyahu’ was turned into ‘Rottenyahu’ by Al-Qaeda.

TTP is more likely than ISIS, the Taliban and Al-Qaeda to resort to ironic and sarcastic humor. Al Qaeda is less likely than any group to use sarcastic humor, usually to ridicule enemies. The research, published in the journal [Behavioral Sciences of Terrorism and Political Aggression](#), was carried out by [Dr Weeda Mehran](#) from the University of Exeter and her MA students [Megan Byrne](#), [Ella Gibbs-Pearce](#), [Archie Macfarlane](#), [Jacob Minihane](#) and [Amy Ranger](#).

Dr Mehran said: “Propaganda is used to encourage jihad but it serves a much bigger purpose and humor is a key part. We found the use of three different types of humor – de-humanizing, sarcastic/and situational. ISIS was more likely to use dehumanizing humor – portraying rivals as robots or animals and mocking them. This sets them apart from other groups who are more likely to use sarcasm and irony. “Situational humor is used strategically to enrich narratives of past events and develop a religious rationale for conducting jihad, as well as motivating individuals to carry out their own operations. This humor emphasizes the comradeship and brotherhood of carrying out ‘*istishhadi*’ missions and depict perilous and dangerous operations & efforts as peaceful, even joyful.

“Jihadi media strategy uses situational humor to create solidarity – these are in-jokes often-only understood by those who understand the jihadi ideology and political outlook so it helps create a shared identity. Shared humor creates an environment that fosters internal cohesion and creates social bonding.” The study says the regularity of dehumanizing humor in ISIS’s magazines reflects their overall aggressive and uncompromising stance on outsiders and opponents.

Violent Extremists, terrorists Targeting U.S. Critical Infrastructure

Source: <https://www.homelandsecuritynewswire.com/dr20221004-violent-extremists-terrorists-targeting-u-s-critical-infrastructure>

Oct 04 – The George Washington University’s Program on Extremism has just released a report — [Mayhem, Murder, and Misdirection: Violent Extremist Attack Plots Against Critical Infrastructure in the United States, 2016-2022](#), written by Ilana Krill and Bennett Clifford – analyzing plots by extremists against the U.S. critical infrastructure.

Here are the study’s Executive Summary, Introduction, and Conclusions:

Executive Summary

In the United States, critical infrastructure, or “assets, systems, and networks, whether physical or virtual, [that] are considered so vital to the United States that their incapacitation or destruction would have a debilitating effect on security, national economic security, national public health or safety, or any combination thereof,” are prime targets in violent extremist attack plots.(1) While a variety of violent extremist movements have attempted to assault American critical infrastructure throughout modern history, the Department of Homeland Security and other national security authorities have recently



sounded the alarm that U.S.-based violent extremists have developed “credible, specific plans” to attack critical infrastructure.(2) To understand the current dimensions of this threat, this paper reviews 94 cases of individuals charged in the U.S. federal court system from 2016 to 2022 with planning to conduct violent extremist attacks, 35 of whom attempted to attack critical infrastructure systems. 19 of these cases are associated with the Salafi-jihadist movement; 16 are associated with white supremacist groups. Evaluating these cases, the report finds:

- Salafi-jihadist attack planners were significantly more likely to consider critical infrastructure systems as targets for attack than their white supremacist counterparts.
- Salafi-jihadist and white supremacist attack planners attempted to target different critical infrastructure sectors, with the former focusing on the commercial facilities, government facilities, and emergency services sectors, and the latter predominantly focusing on the energy sector.
- Since 2019, white supremacist attacks plots against critical infrastructure systems have distinctly increased.
- Between 2016 and 2022, white supremacist plots targeting energy systems dramatically increased in frequency. 13 individuals associated with the movement were arrested and charged in federal court with planning attacks on the energy sector; 11 of these attack planners were charged after 2020.
- The rise of accelerationist ideology and doctrine during the past decade likely fueled the increased risk of attack plots within white supremacist milieus targeting critical infrastructure, and the energy sector in particular.

Introduction

In their attempts to use violent force against civilian targets to achieve political aims, violent extremists of all backgrounds frequently choose critical infrastructure systems as targets. Simply defined, critical infrastructure comprises facilities and assets that are essential for the normal functioning of day-to-day life within a country. In the United States, a wide-reaching swath of sectors of the U.S. economy are considered critical infrastructure, from energy and transportation to agriculture and public health. The logic of terrorism targeting critical infrastructure is almost self-explanatory. Because the disruption of critical infrastructure sectors would, by the very nature of the targets in question, impede “business as usual” for large parts of American society and the U.S. government, extremists who seek to accomplish this aim tend to view critical infrastructure as an attractive target.(3)

Following this logic, violent extremists and terrorist organizations of numerous ideological persuasions have conducted devastating attacks on critical infrastructure in the United States. Notably, this type of attack plotting is not the sole purview of any single individual, group, or extremist movement. Regardless of ideological persuasion, terrorist attacks on critical infrastructure are ordered towards three different (but not mutually exclusive) goals. Some see targeting critical infrastructure as an efficient means of generating mass casualties during the commission of the attack. Large groups of individuals gather at particular types of facilities associated with critical infrastructure sectors and can be targeted en masse, and some attackers perceive certain kinds of critical infrastructure as less protected than others, making them easy targets. Others, understanding that a potent hit to a critical infrastructure facility can generate a wide-reaching societal disaster, target critical infrastructure to induce panic, fear, or terror in society as a pretext for gaining further support for their cause. Finally, some attackers believe that the aftermath of a successful attack on critical infrastructure will force the government to redirect national security and emergency response resources, creating a diversion that can free up space for further attack planning.(4)

Today’s terrorism threat picture in the U.S. is incredibly fluid, dynamic, and dangerous, and under this backdrop authorities are increasingly worried about an uptick in terrorist plotting against critical infrastructure. The two types of actors at the forefront of these types of planning are domestic violent extremists (DVE) and homegrown violent extremists (HVE), and the Department of Homeland Security warns that these actors increasingly “[view] attacks against U.S. critical infrastructure as a means to create chaos and advance ideological goals.”(5) Because of this renewed focus and concern, this paper reviews white supremacist DVE and Salafi-jihadist HVE attack planning against critical infrastructure during the past six years, ascertaining the current trends and differences in how these actors plan their attacks and their motivations for doing so.(6) Salafi-jihadists and white supremacists are far from the only extremist movements operating in the U.S. who have demonstrated an interest in conducting attacks on critical infrastructure.(7) However, the report evaluates these two movements because according to the Office of the Director of National Intelligence (ODNI) they were the most lethal HVE and DVE groups, respectively, during the period of the study.(8) After an evaluation of previous studies on the terrorist threat to critical infrastructure, the report analyzes 35 cases from a dataset of 94 individuals charged in federal court with planning violent extremist attacks between 2016 and 2022, highlighting key trends and the potential future developments of violent extremist attack plotting against critical infrastructure.

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Conclusion

For the past twenty-five years, the protection of critical infrastructure from terrorist attacks has been a major homeland security priority across Presidential administrations. This correlates to waves of efforts by international and domestic terrorists to strike U.S. critical infrastructure sectors, with the goals of causing mass casualties through murder, societal chaos through mayhem, and/or obstruction of the U.S. counterterrorism mission through misdirection. Sadly, there are few signs in the American violent extremist landscape today that would suggest that reductions in vigilance or in efforts to improve the resiliency of critical assets are warranted. As new violent extremist movements, organizations, and threats come to the fore, the newest iterations of American HVE and DVE attack planners seem as interested as their predecessors in assaulting the systems and sectors that are necessary for the normal functioning of daily life in the U.S.

This report highlighted one of the reasons that American national security officials consider the current terrorism threat picture as one of the most combustible and deadly in decades, namely the continued efforts by American violent extremists of all stripes to attack critical infrastructure. Salafi-jihadist HVE and white supremacist DVE attack planners are placing critical infrastructure at the top of their respective target lists, with approximately one out of every two jihadist attack plotters and one out of three white supremacists arrested during the past six years considering attacks on infrastructure. In distinct ways, these groups have spread out their targeting across a growing range of the economic, political, and societal sectors that make up America's critical assets, although each have developed special areas of focus. Perhaps the most specific of these threats came in the form of white supremacist attack plots against energy infrastructure, with 13 cases of individuals connected to white supremacist movements attempting to conduct attacks on power lines, the energy grid, and even a nuclear reactor site.

This anomaly in the data is not a coincidence, as for the past several years, white supremacist propaganda and its associated online ecosystem have both honed in on energy facilities, encouraging supporters of the movement to conduct attacks on energy supply, in the hopes that it will trigger a cataclysmic confrontation in American society and collapse the country from within. The rise of accelerationism, which is responsible for much of this paradigm shift within American white supremacist circles, is at play in examining many of the individuals' alleged motivations for seeking to attack energy systems. There are two takeaways from this finding for American counterterrorism officials. First, from a protective standpoint, sector-specific efforts focused on energy infrastructure security and resilience against violent extremist attacks may be prudent. An increase in information sharing between the U.S. government and third-party ownership of energy facilities about violent extremist threats can aid greatly in this endeavor, as can intra-government collaboration between DHS/CISA, the Department of Energy, and federal law enforcement agencies.(112)

At a more strategic level, the rise in targeting of critical infrastructure inspired by accelerationist ideology should be broadly concerning, because at its core accelerationist doctrine is ideologically agnostic and has been an inspiration for a wider degree of domestic violent extremists beyond white supremacists. If accelerationism—or the view that violence should be ordered towards the collapse of American society—begins to influence other extremist milieus, a potential result is a growing number of plots targeting critical infrastructure as a way of achieving that goal. Already, there are concerns that far-left and anarchist groups in the U.S. are continuing their historical legacy of targeting infrastructure for attack and sabotage, albeit with a modern accelerationist twist.(113) For example, in 2018 the FBI arrested two self-proclaimed Ohio anarchists, **Elizabeth Lecron and Vincent Armstrong**, who were plotting several terrorist attacks on local targets of interest. One of these plots involved an attempt by the pair to construct an explosive device and bomb a local oil pipeline.(114)

Moving forward, more research is necessary to determine how the efforts of other violent extremists to target critical infrastructure—especially DVEs influenced by conspiracy theories like QAnon, militia violent extremists, single-issue violent extremists (especially pro- and anti-abortion violent extremists and animal rights groups), and anarchist/far-left violent extremists—compare to the movements examined in this report. In addition, as national



security officials consider the possibility of cyber-attacks targeting critical infrastructure, mainly from actors associated with foreign governments, risk assessments of violent extremist threat actors in this arena could add to the overall threat picture and provide a point of comparison between violent extremists' physical and virtual attacks on critical infrastructure.

Understanding the new violent extremist (white paper)

Source (download): <https://www.police1.com/police-products/police-technology/police-software/articles/understanding-the-new-violent-extremist-white-paper-SR7kTCLdeN5RmRBf/>



Oct 05 – An increase in mass shooting incidents incited by radical and extremist ideologies online has demonstrated the evolving and growing risk of domestic terrorism. In the half-century between 1950 – 2000, there were 85 mass casualty events with 526 total casualties. In the two decades since, there have been approximately 190 mass casualty events with 1,182 total deaths. When looking at the pattern of change between the late 20th and early 21st century, the main actor is undoubtedly the internet and its ability to influence at scale while also nurturing increasingly-niche groups of disaffected communities.

The internet offers an unparalleled and previously unavailable level of access and networking for violent extremists. Understanding how the “new violent extremist” is radicalized and encourages others in online platforms across the Surface, Deep and Dark Web is essential for law enforcement. Open-Source Intelligence (OSINT) widens the investigative lens into the patterns and behaviors of violent extremists and holds key insights into details before, during, and after mass casualty incidents.

In this white paper, experienced tradecraft professionals from Fivecast, a global leader in open-source intelligence, explore the evolution of domestic terrorism, the radicalization of lone wolf attackers and the insights uncoverable with AI-enabled risk analytics that can help protect communities.

Children among at least 34 killed in Thailand daycare centre gun attack

Source: <https://www.straitstimes.com/asia/se-asia/children-among-at-least-31-killed-in-thailand-daycare-centre-gun-attack>

Oct 06 – Thirty-four people were killed in Thailand on Thursday in a mass shooting at a day-care centre by a former policeman who killed his wife and child before shooting himself dead.

There were **22 children** – some as young as two years old – among the victims of the 34-year-old gunman, who police said was discharged from the service for drug-related reasons.

About 30 children were at the centre when the man came in at around lunchtime, district official Jidapa Boonsom told Reuters.

The gunman first shot four or five staff, including a teacher who was eight months pregnant, Ms Jidapa said.

“At first people thought it was fireworks,” she said.

Videos posted on social media showed sheets covering what appeared to be the bodies of children lying in pools of blood at the centre in the town of Uthai Sawan in the north-eastern province of Nong Bua Lamphu.

Reuters could not immediately authenticate the footage.

At least **12 people were injured** in addition to the 34 casualties, police said.

Police Colonel Jakkapat Vijitraithaya, from Nong Bua Lam Phu said the gunman then went home and killed his wife and child after the mass shooting.

Earlier, police said a manhunt was under way for the shooter, and a government spokesman said the prime minister alerted all agencies to catch the culprit.



UPDATE: Murderer finally committed suicide



The rate of gun ownership in Thailand is high compared with that in some other countries in the region, but official figures do not include huge numbers of illegal weapons, many of which



have been brought in across porous borders over the years from strife-torn neighbours.

Mass shootings are rare but in 2020, a soldier angry over a property deal gone sour killed at least 29 people and wounded 57 in a rampage that spanned four locations.

The Assassination of Shinzo Abe in Japan and the Threat from Primitive Homemade Weapons

Terrorism Monitor Volume: 20 Issue: 19

By Rueben Dass

Source: <https://jamestown.org/program/the-assassination-of-shinzo-abe-in-japan-and-the-threat-from-primitive-homemade-weapons/>



A police officer attempts to restrain Tetsuya Yamagami (Source: Reuters)

Oct 07 – On July 8, former Japanese Prime Minister Shinzo Abe was assassinated while delivering a speech in Nara, Japan ([The Japan Times](#), July 8). The suspect, 41-year-old Tetsuya Yamagami, who was an ex-member of the Maritime Self-Defense Force, shot the former premier using a homemade improvised gun ([The Japan Times](#), July 10). The fact that Yamagami successfully employed a fully homemade, but still crude, weapon using commercially available parts highlights the threat of such weapons and the ability of individuals to circumvent existing gun laws to manufacture their own.

The evolution of the threat from homemade weapons is two-fold: one that is modern and technologically driven through the ability to print 3D-weapons; and another that is more primitive as in the Abe assassination in Japan. Until Yamagami's attack, authorities worldwide had mostly been concerned about the technologically driven aspect of the threat. For example, in May 2022, both Europol and the Dutch National Police highlighted the increasing threat from 3D-printed weapons ([HSToday](#), May 28).



ICI C²BRNE DIARY – October 2022

Between 2019 and 2022, there have been at least nine known cases of violent actors possessing, attempting to make, and using homemade weapons in Europe and Australia. The October 2019 attack on a Jewish synagogue in Halle, Germany, in which two people were killed, was the first terrorist attack to have involved homemade weapons ([Independent](#), October 11, 2019). The attacker, moreover, had a cache of guns which employed 3D-printed components. The case in Japan was the only other known case of a homemade weapon being actively used in an attack since Halle.

The Murder Weapon

The weapon used in Abe's assassination was a 40 by 20-centimeter double-barrel homemade gun comprised of two metal plumbing pipes taped onto a wood mount. The firing component featured a basic electrical wiring circuit connected to commercial batteries ([The Straits Times](#), July 9). The ammunition and propellant used was likely procured commercially or self-made ([The Japan Times](#), July 10). On the whole, the pistol was constructed with commercially available, hardware store materials ([The Japan Times](#), July 10). The suspect had searched for assembly methods online, including on YouTube ([The Japan Times](#), July 11). The gun could have been manufactured in a matter of days with minimum knowledge and basic engineering skills ([The Straits Times](#), July 9; [The Japan Times](#), July 10). Yamagami was found to have made at least three more multi-barreled guns from a raid on his home ([Twitter/@PopularFront](#), July 8). It is unclear whether those guns were made for practice or to be used in other attacks.

Limitations of Homemade Weapons

Two main issues with homemade weapons are their durability and reliability. Due to their improvised nature, homemade weapons usually do not function for as long and as well as factory-made weapons. For example, 3D-printed guns (whose components are often made of plastic) suffer damage due to melting from heat exposure during firing and have a maximum capacity of a couple hundred rounds before it has to be cooled off ([YouTube/3D Media Research Group](#), December 16, 2021). The guns are also vulnerable to jamming and misalignment resulting from either printing defects or melting. In fact, the firearm used in the 2019 Halle attack had suffered from numerous malfunctions, which reduced the number of casualties ([The Times of Israel](#), October 10, 2019). As for Yamagami's weapon, while it was clear the gun was only meant for use on a targeted individual, whether it would have survived more shots and a longer duration is questionable. Based on the limitations and past cases, the use of these weapons in large-scale mass casualty attacks remains unlikely unless the weapon is produced with significant quality. However, these weapons are perfectly viable in smaller-scale, limited attacks as seen in Halle in 2019 and Japan most recently.

Conclusion

The significant point that the Japanese case highlighted was the fact that a simple, crude gun made from hardware store components was able to kill a high-profile individual. The weapon did not employ much technological sophistication and all that was required to manufacture the weapon was a basic understanding of high-school physics and engineering. The proliferation of resources online, including both instructions and manuals, and component materials to manufacture weapons has reduced the capability threshold for less-skilled individuals to manufacture these weapons and employ them in attacks. The case also shows that the threat posed from this type of crude weapon, as opposed to more sophisticated ones, may have been underestimated.

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Erdoğan Allows Iran's Ally Hizbullah to Operate in Turkey -- Monitoring NATO Installations

By Abdullah Bozkurt

Source: <https://www.meforum.org/63665/erdogan-allows-iran-ally-hizbullah-to-operate-in>

Oct 03 – Turkish authorities recently approved the reopening of an outlawed, Iranian-funded association with ties to designated Turkish terrorist group Hizbullah nearly a decade after a court ruled to ban the organization. The move is yet more evidence of how the Islamist government of President Recep Tayyip Erdoğan has been developing closer ties with Iran, which has been secretly funding Hizbullah and affiliated entities, providing intelligence and arms training to its militants.



The ceremony for the reopening of Mustazaf-Der (meaning "Those Oppressed," Mustazaflar ile Yardımlaşma ve Dayanışma Derneği



in Turkish) was held on September 11 in Diyarbakır's central Bağlar district where Hizbullah's political front, the Free Cause Party (HÜDA-PAR), is headquartered. The banning of Mustazaf-Der took place in 2012 after several cases launched by public prosecutors in Konya, Adana and Ankara between in 2008 and 2009 revealed that the organization was closely linked to Hizbullah. The investigations led to indictments and trials resulting in the conviction of dozens of Hizbullah militants with connections to Mustazaf-Der. Based on the convictions and evidence revealed during these trials, the public prosecutor in Diyarbakır drafted an indictment for Mustazaf-Der, seeking the closure of the association on terrorism charges. In 2012, after deliberations, the Diyarbakır No. 2 Court of

First Instance ruled that it be shut down.

Confidential documents obtained by Nordic Monitor show that Turkish police and military intelligence units had in the past mapped out the money trail leading to Mustazaf-Der and other Hizbullah-linked entities and individuals from Iran. The documents, incorporated into a terrorism investigation of the Islamic Revolutionary Guard Corps (IRGC) Quds Force, identified the transfer of half a million dollars from Iran to Hizbullah in February 2012 alone.

A report filed by the counterterrorism bureau of the Diyarbakır police department on May 9, 2012 stated that Hizbullah received \$100,000 every month from Iran in addition to lump-sum payments for special operations. It noted that Mehmet Hüseyin Yılmaz, the head of Mustazaf-Der; Mehmet Göktaş, the owner of Hizbullah's publication Doğru Haber; and Sait Gabari and Fikret Gültekin, Hizbullah propagandists, all received half a million dollars from Iran in February 2012. It also added that Iran sent \$10,000 to the family of Ubeydullah Durna, a Mustazaf member who was killed by the Kurdistan Workers' Party (PKK) in the town of Yuksekova near Turkey's border with Iran on May 5, 2011.

The report further revealed that Iran set up a special unit in Hizbullah for espionage and surveillance in Turkey to monitor military activities, especially around NATO installations. Members of this group were selected from people who work in government jobs and the media for easy access to sensitive sites and installations. It underlined that the unit ran surveillance of a NATO radar base in Malatya province, photographed and video-recorded the base and its surroundings and passed the results to its Iranian handlers. The Quds Force probe was hushed up by the Erdoğan government in 2014, and the investigating prosecutor was sacked before he had a chance to secure detention warrants for the suspects or file an indictment. The report on Hizbullah and other evidence in the case file were all buried by Erdoğan's people, who were in bed with Hizbullah.

The reopening of Mustazaf-Der is part of a secret deal made by Hizbullah with the government in exchange for its political endorsement of the ruling Justice and Development Party (AKP), led by President Erdoğan, in next year's elections. It follows an earlier pattern seen just before the March 2019 local elections, when the Erdoğan government, which had quietly released convicted members of Turkish Hizbullah, including notorious killers who were serving life sentences for the murder of 91 people in the 1990s and early 2000s in Turkey.

Hizbullah is a deadly group backed by Iran that seeks to establish an Iranian-style mullah regime in Turkey. It was set up in the '80s but made a name for itself in the '90s, when it recruited mostly Kurds in southeastern Turkey and was supported by some elements of the Turkish intelligence, military and police establishments against the outlawed PKK.

They were brutal in their murders, kidnapping moderate Muslims and executing them after torturing them in rooms built under safe houses.

It, however, faced a huge crackdown in early 2001 after the death of its leader, Hüseyin Velioğlu, in a clash with police during a raid on a safe house in Istanbul on January 17, 2000. Hizbullah then adopted a low-key profile and changed tactics to survive the clampdown. It had quietly been reorganizing itself under a number of foundations, associations and other entities during the Erdoğan government's first two terms in office. The group established the HÜDA-PAR political party in December 2012 with the support of the Erdoğan government, which green-lighted the party's entry into politics.

Hizbullah's lobbying efforts to rescue its members from prison bore fruit in the aftermath of corruption investigations that rattled the ruling party in December 2013 and incriminated



then-prime minister Erdoğan and his inner circle. The group struck a bargain with Erdoğan in exchange for political support before the local elections of March 2013. Some members of Hizbullah were released after the elections. The alliance became more important for Erdoğan when the AKP lost its majority in parliament in the June 2015 elections for the first time in its 13-year rule. To help Erdoğan's party, Hizbullah did not field independent candidates in the elections and instead supported AKP candidates in Kurdish regions. More jailed Hizbullah militants were released from prison, while some Hizbullah members were given key posts in government agencies, especially to fill the void in the bureaucracy after a massive purge of members of the Gülen movement, a government critic. Adding insult to injury, police chiefs, prosecutors and judges who were involved in investigating, prosecuting and trying Hizbullah members in the past were all removed by the Erdoğan government, and some were even imprisoned on bogus charges. For example, Dündar Örsdemir, the presiding judge of the Ankara 11th High Criminal Court, which heard the Hizbullah trial in 2009, was arrested by the Erdoğan government, while two judges on the same panel, Hakan Oruç and Kadriye Çatal, were slapped with criminal cases on Gülen-linked charges. Similarly, three judges — Bayram Demirci, Ayşe Bolaç Yalçın and İrfan Yıldız — on a panel that heard the Hizbullah case in 2008 at the Adana 6th High Criminal Court were all dismissed and/or jailed by the Erdoğan government in 2016. Now Hizbullah, with its political party, associations, foundations, media outlets, charity groups and other networks, has been rapidly expanding in Turkey, especially among Kurds, as well as in a number of European countries.

[Abdullah Bozkurt](#), a Middle East Forum Writing Fellow, is a Swedish-based investigative journalist and analyst who runs the Nordic Research and Monitoring Network and is chairman of the Stockholm Center for Freedom.

A very lucky little girl!



Three-year-old Emmy was napping next to her best friend at a day-care centre in northern Thailand when the attacker broke in, armed with a gun and a knife. The class of 11 children, all around three years old, had earlier been busy drawing and writing. At



around 10:00 local time, teachers sent photo updates to all the parents of smiling, happy children.

Two hours later, at nap time, former police officer Panya Kamrab stormed the building. Witnesses said he first shot staff, including a teacher who was eight months pregnant, before forcing his way into each of the three kindergarten classrooms.

He murdered all of Emmy's friends as they slept. It is unclear how she survived. She was found awake, curled up next to the bodies of her classmates. "She had no idea what was happening when she woke up," her 59-year-old grandfather Somsak Srithong tells me from the family home.

"She thought that her friends were still asleep. A police officer covered her face with a cloth and carried her away from all the blood."

Peace and Security in Africa: Financing of Armed Groups and Terrorists Through Illicit Trafficking of Natural Resources

Source: <https://www.securitycouncilreport.org/whatsinblue/2022/10/peace-and-security-in-africa-financing-of-armed-groups-and-terrorists-through-illicit-trafficking-of-natural-resources.php>

Tomorrow (6 October), the Security Council will convene for a debate on "Strengthening the fight against the financing of armed groups and terrorists through the illicit trafficking of natural resources" under the agenda item "Peace and security in Africa". The debate is one of the signature events of Gabon's presidency and is expected to be chaired by Gabonese Minister of Foreign Affairs Michael Moussa Adamo. AU Commissioner for Political Affairs, Peace, and Security Bankole Adeoye, Executive Director of the UN Office on Drugs and Crime (UNODC) Ghada Fathi Waly, and a representative of civil society are expected to brief.

Gabon has prepared a concept note for the meeting, which says that armed groups and terrorists can benefit from organised crime as a source of financing or logistical support through both the illegal trafficking of goods and commodities and the illicit trade in natural resources. The concept note also argues that there is an urgent need to better understand money laundering risks posed by armed groups and terrorists related to natural resources in Africa, as well as the legislative, institutional, and disruptive tools available to deny such groups access to funds derived from the illegal exploitation of natural resources.

According to the concept note, the debate is intended to provide an opportunity to reiterate that combatting illegal exploitation of natural resources in Africa is a critical aspect of conflict prevention, and can also address steps that can be taken to implement measures to hold accountable those who engage in the illicit trade of natural resources. It will provide a platform to highlight specific challenges and share experiences, lessons learned, and best practices that have been developed by Council members, the AU, and the UN to help equip national authorities with the necessary tools to disrupt the activities of terrorist groups and criminal networks in Africa.

The concept note invites member states to discuss several measures that can help tackle illicit trafficking in natural resources in Africa, including:

- integrating the investigation of financial crimes into natural resources and wildlife crime investigations;
- increasing the use of financial investigation techniques to investigate and prosecute illicit trafficking in natural resources by armed groups and criminal networks;
- strengthening the capacities of national institutions and providing the authorities who work on money laundering and countering the financing of terrorism with sufficient operational capacity to investigate and trace assets from environmental crime;
- encouraging international and regional cooperation with a view to facilitating the collection, sharing, and exchange of analysis, information, or evidence; and
- establishing and strengthening public-private partnerships, including with financial institutions, to share risk information and support initiatives to strengthen due diligence processes relating to natural resource supply chains.

Illicit trafficking of natural resources by armed groups and terrorists has received growing attention from the Security Council in recent years. For example, resolution [2195](#) of 19 December 2014, which addressed the role of transnational crime in supporting terrorism, expressed concern that terrorists benefit from the "illicit trade in natural resources including gold and other precious metals and stones, minerals, wildlife, charcoal and oil". In a similar vein, resolution [2462](#) of 24 March 2019 on combatting the financing of terrorism noted with grave concern that terrorist groups raise funds through the "exploitation of natural resources".

The issue was referred to in greater detail in resolution [2482](#) of 19 July 2019 on the nexus between terrorism and international organised crime, which encouraged states to continue their efforts to end the illicit trade in natural resources "as part of broader efforts to ensure that illicit trade in natural resources is not benefitting sanctioned entities, terrorist groups, armed groups, or criminal networks". In addition, resolution 2482 called on member states



to consider the ratification and implementation of relevant global instruments and their participation in national, regional, and global initiatives that aim to build capacity to prevent the illicit trafficking of natural resources.

The Council has considered the misuse of natural resources while discussing conflict prevention and the relationship between security and development, including during the February 2011 debate on the interdependence between security and development ([S/PV.6479](#)), the June 2013 debate on conflict and natural resources ([S/PV.6982](#)), the January 2015 debate on inclusive development ([S/PV.7361](#)), and the 2018 briefing on the role of natural resources as a root cause of conflict ([S/PV.8372](#)).

Illicit trafficking of natural resources by armed groups is an important issue in several African files on the Council's agenda, including the Democratic Republic of the Congo (DRC), the Central African Republic (CAR), and Mali. In some files, the Council has chosen to use sanctions as a tool to combat the illicit trade in natural resources. In the DRC, for example, individuals and entities can be designated under the [1533](#) DRC sanctions regime for "supporting individuals or entities, including armed groups or criminal networks, involved in destabilising activities in the DRC through the illicit exploitation or trade of natural resources, including gold or wildlife as well as wildlife products". In its most recent midterm report, the 1533 DRC Panel of Experts analysed the gold and coal mining activities of the Mai-Mai Apa Na Pale and its allies, noting that the armed groups have sold gold to informal dealers in Kalemie through smugglers and taxed "varying quantities of coal from artisanal miners' weekly production".

Council members are generally supportive of efforts to combat the illicit trade in natural resources. There are disagreements, however, regarding the use of sanctions to address the issue. These disagreements have existed among Council members for some time. During the 19 June 2013 open debate on conflict prevention and natural resources, for example, China and Russia both emphasised the importance of respecting state sovereignty and expressed scepticism regarding natural resource sanctions. Russia also blocked a proposed presidential statement arising from this meeting, apparently arguing that the topic falls outside the Council's mandate.

More recently, at the Council's 27 April briefing on the implementation of the 2013 Peace, Security and Cooperation Framework for the DRC and Great Lakes region, China argued that "the relevant sanctions measures of the Security Council must not be misused, let alone become a tool for suppressing other political and commercial players".

Euthanasia for Brussels attack victim

Source: <https://www.vrt.be/vrtnws/en/2022/10/08/euthanasia-for-brussels-attack-victim/>



Oct 08 – Six years after the events the Brussels attacks have claimed a further victim. Shanti De Corte, aged 23, underwent euthanasia, because of the insufferable mental pain she was in. At the time the bombs exploded at Brussels Airport Shanti was standing with other members of her class in departures ready to fly out to Italy.

Following the attacks, the girl continued to suffer from serious panic and anxiety attacks. She failed to overcome the distress and supported by members of her family she requested euthanasia.

Shanti was 17 when terrorists claimed 32 lives as a result of bomb attacks at Brussels Airport and the Maalbeek metro Station.

Today Shanti's mother Marielle is ready to tell her story: "That day broke her. After that she never felt safe. They took away her spirit and all her energy.

In the summer of 2016, we went on a trip to France. Shanti never left the hotel once. She didn't want to go to places where there were other people".

Shanti attempted suicide on several occasions, received support, but the panic attacks continued.





“She always hoped she could win her battle, but it was not to be. After a later serious suicide attempt, she ended up at the A&E. It was then that she first asked me why she needed to live. I told her I didn’t want to lose her but understood her request”. Shanti visited Rome with her family in 2016. It was a kind of last wish. “She wanted to see Rome together with us” says Marielle. “It was so important for her. She really loved it. She experienced it in such an intense way”.

Self-Identified “Incel” Plotted Mass Shooting of Women at OSU

Source: <https://www.homelandsecuritynewswire.com/dr20221012-selfidentified-incelel-plotted-mass-shooting-of-women-at-osu>

Oct 12 – A local, self-identified “incel” pleaded guilty in U.S. District Court for the Southern District of Ohio today to attempting to conduct a mass shooting of women.

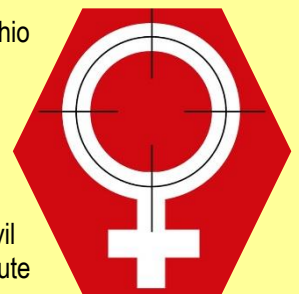
Tres Genco, 22, of Hillsboro, Ohio, admitted he plotted to commit a hate crime, namely, a plan to shoot women at a university in Ohio. He was arrested by federal agents in July 2021 and has remained in custody since.

“The gender-based hate and bias-motivated threat of violence exhibited by this defendant simply has no place in our society,” said Assistant Attorney General Kristen Clarke of the [Justice Department](#)’s Civil Rights Division. “The Department of Justice will remain steadfast in our efforts to investigate and prosecute those who carry out, or attempt to carry out, gender-based hate crimes to the fullest extent of the law.”

“Genco formulated a plot to kill women and intended to carry it out. Our federal and local law enforcement partners stopped that from happening,” said U.S. Attorney Kenneth L. Parker for the Southern District of Ohio. “Hate has no place in our country – including gender-based hate – and we will continue to work with our law enforcement partners to vigorously prosecute any such conduct.”

“Thankfully, law enforcement partners working closely together prevented a deadly killing spree targeting women,” said Special Agent in Charge J. William Rivers for the FBI Cincinnati Field Division. “Genco’s hate-filled beliefs and actions were extremely dangerous and could have resulted in irreparable harm to our community and many precious lives. We urge the public to report concerning behavior to the FBI and local police to help prevent future violence.”

Genco identified as an “incel” or “involuntary celibate.” The incel movement is an online community of predominantly men who harbor anger towards women.



ICI C²BRNE DIARY – October 2022

According to court documents, Genco maintained profiles on a popular incel website from at least July 2019 through mid-March 2020 and posted hundreds of times on the site.

In one post, Genco detailed spraying “some foids and couples” with orange juice in a water gun. “Foids” is an incel term short for “femoids,” referring to women. Genco compared his “extremely empowering action” to similar conduct by known incel Elliot Rodger. In May 2014, Rodger killed six people and injured 14 others, including shooting individuals outside a University of California, Santa Barbara sorority house. Prior to his mass attack, Rodger shot a group of college students with orange juice from a water gun. Genco also wrote a manifesto, stating he would “slaughter” women “out of hatred, jealousy and revenge...” and referring to death as the “great equalizer.”

As part of this investigation, law enforcement agents discovered a note of Genco’s that indicated he hoped to “aim big” for a kill count of 3,000 people with a reference to the same date as Elliot Rodger’s attack and intended to attend military training. The investigation revealed that the day he wrote his manifesto, he searched online for sororities and a university in Ohio.

In 2019, Genco purchased tactical gloves, a bulletproof vest, a hoodie bearing the word “Revenge,” cargo pants, a bowie knife, a skull facemask, two Glock 17 magazines, a 9mm Glock 17 clip and a holster clip concealed carry for a Glock.

Genco attended Army Basic Training in Georgia from August through December 2019. He was discharged for entry-level performance and conduct.

In January 2020, Genco wrote a document entitled “isolated” that he described as “the writings of the deluded and homicidal.” Genco signed the document, “Your hopeful friend and murderer.”

Genco’s court documents detail that he conducted surveillance at an Ohio university on Jan. 15, 2020. That same day, he searched online for topics including “planning a shooting crime” and “when does preparing for a crime become an attempt?”

On March 12, 2020, Highland County sheriff’s deputies responded to a call at Genco’s residence. At the residence, in the trunk of Genco’s vehicle, police officers found, among other things, a firearm with a bump stock attached, several loaded magazines, body armor and boxes of ammunition. Inside the residence, police officers found a modified Glock-style 9mm semiautomatic pistol, with no manufacturer’s marks or serial number, hidden in a heating vent in Genco’s bedroom. As part of his plea, Genco admitted that he possessed both firearms in furtherance of his plot.

Genco pleaded guilty to one count of attempting to commit a hate crime, which, because it involved an attempt to kill, is punishable by up to life in prison.

Russia's FSB arrests eight for Crimean Bridge bombing

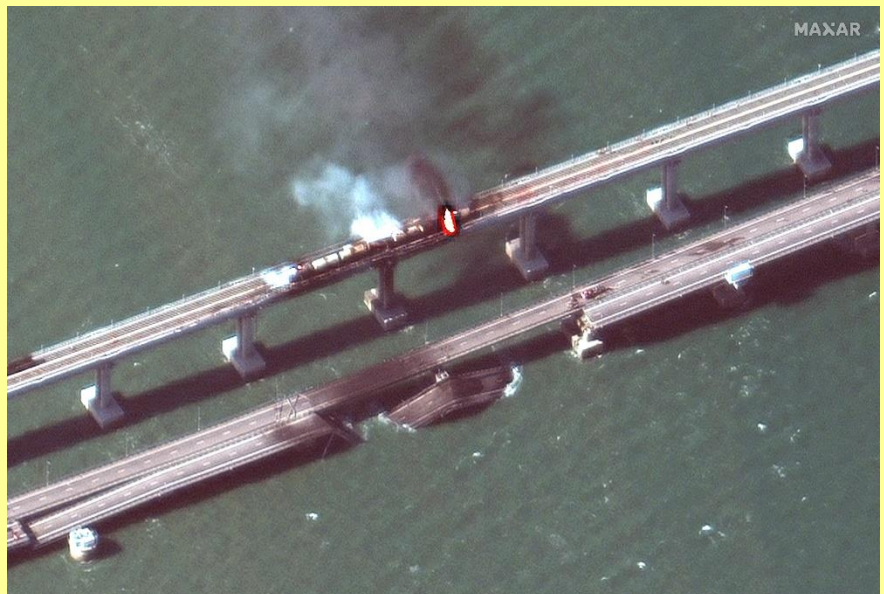
Source: <https://www.reuters.com/world/europe/russias-fsb-arrests-eight-crimea-bridge-blast-2022-10-12/>

Oct 12 – Russia’s Federal Security Service said on Wednesday that it had detained five Russians and three citizens of Ukraine and Armenia in connection with the bombing of a vital bridge to Crimea, an attack it said was masterminded by Ukraine.

A satellite image shows a close-up view of smoke rising from a fire on the Kerch bridge in the Kerch Strait, Crimea, October 8, 2022. Maxar Technologies/Handout via REUTERS

The FSB said the attack was organised by Ukrainian military intelligence and its director, Kyrilo Budanov - echoing accusations by President Vladimir Putin over what he has called a “terrorist attack” against critical civilian infrastructure.

“The organizer of the terrorist attack on the Crimean Bridge was the Main Intelligence Directorate of the Ministry of Defense of Ukraine, its head Kyrilo Budanov, its employees and agents,” said the FSB, the main successor to the Soviet-era KGB.



Ukraine has not officially confirmed its involvement in the bridge blast on Saturday, but some Ukrainian officials have celebrated the damage and an unidentified Ukrainian official told the New York Times that Kyiv was behind the attack.

The FSB said the explosive device was camouflaged in rolls of construction polyethylene film on 22 pallets with a total weight of 22.7 tonnes, and moved from Ukraine to Russia via Bulgaria, Georgia and Armenia.

"Control over the movement of the cargo along the entire route and contacts with participants in the criminal transportation scheme was carried out by an employee of HUR MO," the FSB said in a statement, using the acronym for Ukrainian military intelligence.

The 12-mile (19 km) road and rail bridge, a prestige project personally opened by Putin in 2018, had become logistically vital to his military campaign, with supplies to Russian troops fighting in south Ukraine channelled through it.

The explosion wrecked one section of the road bridge, temporarily halting traffic. It also destroyed several fuel tankers on a train heading towards the annexed Crimean peninsula from neighbouring southern Russia.

On Monday Russian forces launched mass missile strikes against Ukrainian cities, including power supplies, in what Putin said was retaliation for the bridge bombing.

The FSB, headed by Putin ally Alexander Bortnikov, also said that it had prevented Ukrainian attacks in both Moscow and the western Russian city of Bryansk.

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■ **Editor's Note:** Bulgaria [refused](#) that the truck went through the country.

What Is a Terrorist Movement?

Source: <https://www.homelandsecuritynewswire.com/dr20221018-what-is-a-terrorist-movement>

Oct 18 – The analysis of terrorism is plagued with definitional disagreements, and most of the definition in use suffer from gaps, ambiguities, and inconsistencies. Daniel Byman writes in [Lawfare](#) that even close allies [do not agree on definitions of terrorism](#) and which groups should be labeled as dangerous. He notes that, often, there is an "[I know it when I see it](#)" sense of what is good and bad, which in practice is little help for governments, financial institutions, social media companies, or others trying to stop violent extremists.

"Politics also heavily [shapes definitions](#)," Byman writes, "with some ideologies such as Islamic extremism receiving far more attention than white supremacy, anti-government extremism, or traditional civil strife. The result is poor discourse, uneven enforcement, different rules in different countries, and a general cynicism that definitions are simply [ways for the powerful to marginalize the powerless](#)."

He adds:

Most debates focus on what counts as terrorism, but there's another increasingly important definitional challenge presented by a seemingly obvious, but in fact quite difficult, question: What is a terrorist movement? Being formally labeled a terrorist "group" or "organization" is often tied to penalties under law, [deplatforming by technology companies](#), and the [denial of financial services](#), among other punishments. The U.S. Department of State [designates an array of foreign terrorist organizations](#) (FTO) every year. If a group is on the list, then providing money, arms, or other support to it—including volunteering to join it—becomes a criminal activity, and many successful prosecutions are based on this support. But the FTO designation requires an actual organization as well as terrorism. This leaves out individuals who are tied to broader movements and causes but are not part of formal groups. Similarly, [platforms like Facebook](#), which make an extensive effort to block extremists, also wrestle with the question of how to handle individuals who are part of dangerous movements but not tied to any particular group.

Answering this question is vital given the nature of terrorism today. In contrast to the jihadist world that had strong organizations, like al-Qaeda and the Islamic State, movements and networks, not groups and organizations, are at the heart of white supremacist and anti-government extremism today. Payton Gendron, who is [accused of killing 10 people](#) and wounding three others in the Tops Market mass shooting in Buffalo, New York, earlier this year, deliberately targeted Black shoppers. Gendron did not belong to a particular group—instead, he drew inspiration from informal online communities that circulated far-right conspiracy theories. Nor is he unusual: New Zealand mosques shooter Brenton Tarrant, Tree of Life synagogue shooter Robert Bowers, El Paso Walmart shooter Patrick Crusius (who deliberately targeted Latino shoppers), and other white supremacists acted without direction from above and in their own names, not on behalf of recognized organizations. Similarly, although groups like



the Oath Keepers and Proud Boys played vital roles in the Jan. 6 insurrection, the mass of participants either were not part of any group or were part of [“spontaneous clusters”](#) that came together at the last minute. Bruce Hoffman, a leading analyst of terrorism, notes this organizational ambiguity [in his definition of terrorism](#), arguing that terrorism can be conducted by an organization with a clear structure “or by individuals or a small collection of individuals directly influenced, motivated, or inspired by the ideological aims or example of some existent terrorist movement and/or its leaders.”

Byman writes that terms like “groups” and “organizations” imply defined membership and command structures – and these terms no longer apply to many who engage in terrorist activity.

But

The label [“lone wolf,”](#) however, is also misleading if it is taken to mean that the individuals existed wholly apart from others. These individuals were part of a broader ecosystem. Often linked via social media, they communicated with one another, sharing many ideas and recommended tactics, techniques, and procedures. Where these networks and connections begin and end is difficult to determine in practice, but they are there in reality.

If terms such as “groups,” “organizations,” or “lone wolves” do not have much purchase when we try to understand contemporary terrorism, which term does?

Network analysis can be another way to identify the contours of a dangerous movement. Many individuals are part of dense groups of interconnected individuals who share overlapping interests. Central nodes within the network might be identified, [with individuals ranked by various measures of affinity and proximity](#)—a difficult task in practice. Individuals with certain scores might then be considered part of the network.

Because so many of today’s terrorism challenges, particularly in the anti-government and white supremacist realm, are better characterized as movements or networks rather than as groups or organizations, it is valuable to explore how such amorphous concepts might be operationalized.

Byman concludes:

Because so many of today’s terrorism challenges, particularly in the anti-government and white supremacist realm, are better characterized as movements or networks rather than as groups or organizations, it is valuable to explore how such amorphous concepts might be operationalized. These definitions and their applications would be more subjective than assessments of groups and should be treated with more caution in moving from the analytic drawing board to consequences in the real world. Operationalizing movements, however, would also help law enforcement and others combating extremism to better identify potential dangers before they emerge, recognize connections among potentially dangerous individuals, prioritize their resources, and act more proactively against an elusive target set whose danger is quite real despite the difficulty inherent in categorizing their activities.

ISIS fighters terrorize Mozambique, threaten gas supply amid Ukraine war

By Sudarsan Raghavan

Source: <https://www.washingtonpost.com/world/2022/10/18/mozambique-isis-cabo-delgado-gas/>

Oct 20 — The boy’s scars streak under his ears and circle his neck, dark razor marks left by the Islamic State militants who overran his village. The fighters tried to recruit him. When he refused, the torture began. He was 13.

But the boy’s deepest trauma surfaces when he talks about what happened to his uncle. His eyes dim and his voice gets low, almost disappearing in the breeze.

“They beheaded my uncle that day, along with others,” recalled R.A., who is now 16 and living in a refugee camp. “He was begging for help, but I could do nothing. I was too scared. I could hear the machete striking him. I could hear his screams.”

In northern Mozambique, one of the Islamic State’s newest branches is fueling a brutal insurgency that has raged out of sight in small villages and remote forests since late 2017. Women are kidnapped and kept as sex slaves, boys are forced to become child soldiers, beheadings are weapons of terror. The conflict has claimed about 4,000 lives; nearly 1 million people have fled their homes, separating countless families.

Victims shared their stories with The Washington Post on the condition that they be identified only by their first names, and, in R.A.’s case, by his initials, because his first name is uncommon. They still live in fear of the militants.

The violence and instability also threaten one of the world’s most lucrative deposits of natural gas. As [Russia’s war in Ukraine](#) drives up [gas prices](#), fueling [fears of scarcity across Europe](#), northern Mozambique’s reserves of liquefied natural gas, or LNG — the third largest in Africa — are viewed as vital.



Even before the Russian invasion of Ukraine in February, the U.S. government approved nearly \$6 billion in [loans](#) and [risk insurance](#) to help get Mozambique's nascent natural gas industry off the ground. American and European oil and gas companies, including ExxonMobil and French giant TotalEnergies, have multibillion-dollar projects in the resource-rich province of Cabo Delgado, in the country's far north. But the five-year-old Islamist insurgency there has halted most production.



The U.S. and European governments are trying to help Mozambican forces fight the militants — and get the gas flowing.

“They have completely stopped LNG operations from moving forward,” said a U.S. Embassy official in the capital, Maputo, speaking on the condition of anonymity to discuss the situation freely. “There certainly is a new urgency for LNG with Ukraine.”

Africa has become a new frontier for Islamist militant groups in recent years, with al-Qaeda and the Islamic State spreading rapidly across the continent. Though the groups still claim global aspirations, they are engaged here in local conflicts, capitalizing on weak governments and exploiting old grievances and inequities.

Last year, the State Department [designated](#) the Islamic State of Mozambique, or ISIS-Mozambique, as a foreign terrorist organization, though the group is believed to have fewer than 500 fighters. The United States also imposed sanctions on the group's leader, Abu Yasir Hassan, though it's unclear whether he is still in charge, or is even still alive.

The Pentagon's Africa Command is training Mozambican troops to improve their counterterrorism capabilities. The European Union is spending \$89 million to train and equip 11 rapid-reaction units of the Mozambican army, in part because Portuguese and Italian oil companies also operate here alongside TotalEnergies.

The militants “are in a key area, so their influence has been quite large,” the U.S. official said. “In order to create terror, you don't need that many people.”

[ISIS-Mozambique](#) has always been small in relative terms, but the weakness of the Mozambican armed forces allowed the group to make rapid gains in recent years, seizing towns and cities, and exacting a terrible toll on communities across the north.

R.A. said the militants beheaded his uncle and other men in his village for not disclosing the positions of Mozambican forces. After the executions, two fighters beat him with the butts of their rifles as he sat in the sun, hands tied. When he refused to take up arms for them, he said, they brought out the razor blade.

“I was tortured for two hours,” recalled R.A., who is tall and slim, and wore cutoff blue jean shorts and red slippers. As he spoke, his words slowed and his eyes drifted to the ground.

R.A.'s ordeal could not be independently verified, but similar claims were made by other victims interviewed by The Post in northern Mozambique last month, and corroborated by accounts from aid workers and community activists. The Post also reviewed graphic social media footage showing the aftermath of militant attacks in the region.

When the extremists tired of torturing him, R.A. said, he was forced to walk several hours to their jungle base, the blood still running down his chest.

The roots of the rebellion

The insurgency began in October 2017, fueled by a complex and combustible mix of poverty, inequality and Islamist radicalization. In Cabo Delgado, residents have long felt politically and economically isolated, even after natural gas and minerals were discovered here.

“This is first and foremost a rebellion of local youth who have been frustrated and marginalized, the fishermen and local miners who saw their businesses extinguished,” said Dino Mahtani, former deputy Africa director for the International Crisis Group (ICG).

The economic exclusion dovetailed with growing Islamist extremism in the region.

“The war came from outside,” said Sheikh Nasrullahi Dula, a leader of Mozambique's Muslim community, pointing to ultraconservative clerics from Kenya and Tanzania who started madrassas here in 2010 that began to radicalize young men in Muslim-majority Cabo Delgado. “They taught the opposite of what we preached. They taught that women were nothing and the government is not to be respected.”



Militant local youths began to denounce more moderate religious leaders like Dula and pushed to ban alcohol and stop women from working. Their resentment grew as elites drawn from President Filipe Nyusi's Makonde ethnic group secured business deals in the province at the expense of the Mwani and Makua ethnic minorities, the ICG said in a [report](#) last year. The ethnic tensions have simmered since the Portuguese colonial era.

Local discontent deepened with the discovery of ruby and gas deposits. The government cleared many residents off their lands to make room for foreign concessions. Prices for rents and commodities soared. The extremists "found a very fertile place to recruit unemployed, frustrated youth," said João Feijó, a Mozambican sociologist who has studied the roots of the war.

In early 2017, the [government sent police](#) to eject thousands of artisanal miners from a commercial ruby mine. The police "burned houses, they raped women and men. They beat, they tortured," Feijó said. "Suddenly, they broke all these possibilities for the youth to get some earnings. But they didn't provide an alternative."

The Mozambican president's office, the Defense Ministry, Cabo Delgado's governor and other local officials did not respond to The Post's requests for comment or interviews.

When the uprising began months later, some of the first militant recruits were miners, according to Western diplomats and analysts.

By 2018, the Islamic State had embraced the militants, who now counted Tanzanians and other foreigners among their ranks, including defectors from al-Qaeda affiliates in East Africa, analysts said. Some Tanzanians are now leaders while the lower-level militants are largely Mozambicans, primarily Mwani and Makua youths.

It remains unclear how strong ISIS-Mozambique's ties are to the central Islamic State leadership in Syria and Iraq. The militants here carry the trademark black Islamic State flag and pledged allegiance to the terrorist network two years ago. On social media and in its online magazine, Islamic State leaders have lauded recent attacks in Mozambique, including some targeting Christians.

"There is communication going back and forth," the U.S. Embassy official said. "It is probably a more independent ISIS branch than others, but the links are real enough for us to declare it."

An international fight

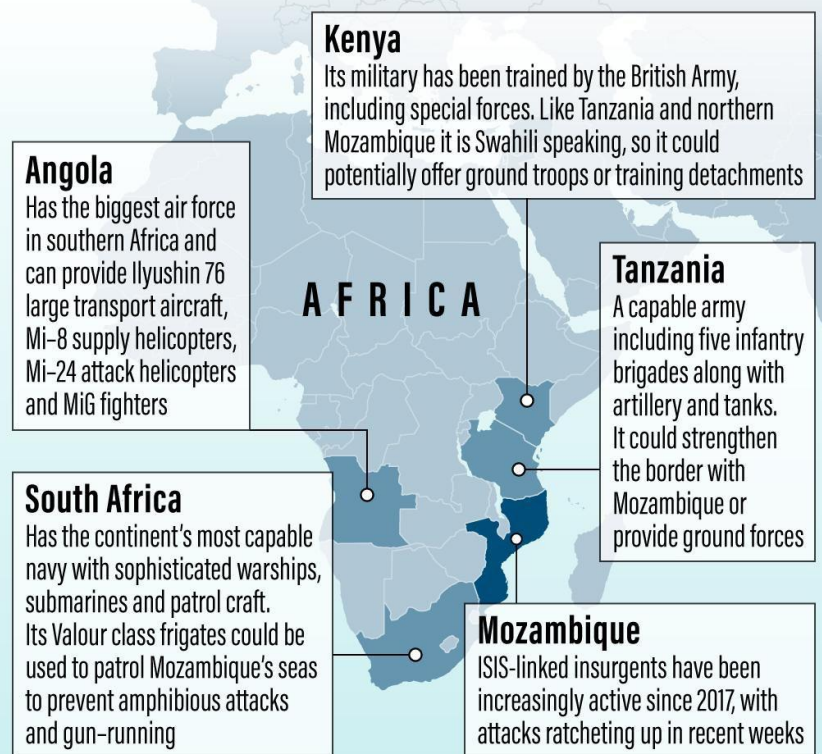
In 2019, desperate to stem the insurgency, the Mozambican government hired mercenaries from Russia's Wagner Group, which is run by an oligarch with close ties to [Russian President Vladimir Putin](#). But the infamous private military, which is now [fighting in Ukraine](#) and a slew of other African countries, departed several months later after suffering heavy casualties, according to Western diplomats and analysts.

Mozambique then turned to Rwanda and several southern African nations, whose forces entered the conflict last year. Regional leaders fear the violence could spill into their countries and further destabilize the coast of East Africa, which is already plagued by [other terrorist groups](#).

The joint African forces — better trained and equipped than their Mozambican counterparts — have pushed ISIS-Mozambique out of the northern cities and towns they seized last year, including Palma, the epicenter of natural gas exploration. But the insurgents have expanded to new areas, including the province's southern districts near the regional capital, Pemba, and have even conducted raids into Tanzania.

TAKING THE FIGHT TO ISIS IN AFRICA

Potential contribution from countries supporting Mozambique



They use guerrilla tactics, hiding within local communities or in the vast forests of Cabo Delgado, an area the size of South Carolina. In small groups, numbering no more than 10 fighters, they have staged a steady stream of hit-and-run attacks since May, when Islamic State leaders declared ISIS-Mozambique to be an autonomous branch operating in its own “province.”

“Right now, it is absolutely impossible for them to control a big city, populations, or even seize a little bit of land for more than 24 hours,” said Brig. Gen. Nuno Lemos Pires, until recently the European Union’s mission force commander in charge of training Mozambican army units. “That said, it doesn’t mean that things are under control.”

On a [visit](#) to Mozambique last month, the European Union’s foreign policy chief, [Josep Borrell](#), announced \$15 million in new funding for the joint African forces, just days after Islamist militants beheaded six civilians and killed an Italian nun in Nampula province.

Borrell said the attacks are “a stark reminder that the fight against terrorism is not over and that, unhappily, it is spreading.”

The violence has prevented aid organizations from assisting the tens of thousands of people who have fled their homes in recent months. Nearly 60 percent of the displaced are children. Scores of health clinics and schools are closed or destroyed. More than a million people are facing hunger, according to the United Nations.

“The situation is still volatile,” said Phipps Campira, operations director for Save the Children. “The sporadic attacks are destabilizing our efforts to reach out to displaced people.”

Compounding matters, the international focus on Ukraine has caused shortfalls in assistance here, [as in other parts of the world](#). Donors have provided less than 60 percent of the \$388 million sought by the United Nations this year, according to U.N. data, making it hard to help even those who have reached camps in safer areas.

“Some days, they go without food,” Campira said.

A long trail of terror

When the militants overran the city of Mocimboa da Praia in 2020, they arrived at Ulenca’s door. At gunpoint, they forced her and two female cousins into a car and took them to a base, where they joined other kidnapped girls and women. They were later separated and taken to other bases, she remembers. Ulenca never saw her cousins again.

After a three-day walk, she arrived at the second base. Thirty other women were there, and it soon became clear why. Ulenca said she was handed over to a 24-year-old Tanzanian, whose nom de guerre was Fawzani. Ulenca, who was 20 at the time, was to become his “wife.” That night, when she refused to have sex, Fawzani beat her with a bamboo stick and raped her.

“All the fighters were raping the women,” said Ulenca, now 22, her voice cracking. “After every rape, I prayed to God to stop my suffering and to get me back home and find my family.” She lived at the base for two years.

The fighters were mostly Mozambican, but the leaders were from Tanzania, she recalled. Many spoke Swahili, which she understood, as well as local languages. There were other foreigners, too.

Most of the fighters carried AK-47 rifles, Ulenca said. They carried out military drills every day and built deep trenches to take cover from helicopter assaults. Many fighters wore stolen Mozambican army uniforms.

“They would say ‘Islam is the only religion. We want to establish an Islamic state,’ ” she recalled some fighters telling her.

Ulenca said she witnessed more than 10 executions, including those of several women. Some had refused to fight. Others had tried to escape. The women were shot in the back of the head. The men were beheaded. “Everyone on the base was forced to watch,” Ulenca said. “It was a lesson to others not to commit mistakes.” Two other women held at different bases said they witnessed similar atrocities. Ana, 25, was forced to watch her husband’s beheading with her two small daughters. The only reason she wasn’t raped, she said, was because the fighters thought she had gone mad.

International forces may have arrested the momentum of the militants, but their brutality continues. Most people on the ground say there is no military solution to the conflict.

The United States and the European Union are [spending millions](#) to help develop Cabo Delgado — building schools and creating jobs to prevent young men from joining the militants. Under international pressure, the Mozambican government approved a reconstruction plan, tacitly acknowledging that its neglect contributed to the insurgency.

“Are the root causes of everything that has happened solved? Of course not,” Pires said. “That is a huge step that we still have to fight for for a long, long time.”

The victims will carry their trauma forever. When R.A. reached the jungle base, he said, he was tied up and beaten again. His tormentors were not much older than him. Most carried guns and machetes. On the third day, by his count, as the militants took a nap, two other abducted boys loosened the ropes around their wrists and freed R.A. as well.

“As we ran, we were always looking back to see if they were chasing us,” he remembered.

Ulenca escaped in May. By then, the militants had lost ground. During a bombing raid, she and another woman managed to get away. They walked for 17 hours until they reached a Mozambican army position, she said. Ana and her girls fled in April while they went to fetch



wood. Ancha, now 5, hardly remembers what happened to her dad. But Amina, who is 8, can't forget. "They killed my father," she said in a shy voice. "I still think about it when I sleep."

Sudarsan Raghavan is a correspondent at large for the Washington Post. He has reported from more than 65 nations on four continents. He has been based in Baghdad, Kabul, Cairo, Johannesburg, Madrid and Nairobi. He has covered the wars in Iraq and Afghanistan, the Israeli-Palestinian conflict, the 2011 Arab revolutions, as well as 17 African wars.

A New Approach is Needed to Deal With Islamist Terrorist Prisoners

By Ian Acheson

Source: <https://eeradicalization.com/a-new-approach-is-needed-to-deal-with-islamist-terrorist-prisoners/>

Oct 20 – Belgium, France, Spain, and the United Kingdom carry most of the convicted terrorist prisoners' burden in Europe. Between them, at the last count, this amounts to well over a thousand violent extremists scattered throughout dozens of jails, some with specialised units, and others warehoused in close proximity to other prisoners susceptible to their toxic ideologies.

Ideologically motivated offenders are a relatively recent phenomenon—in scale terms anyway—outside Spain and the U.K., who have been dealing with ethno-nationalist separatists using terrorist violence since the 1970s. Even with this long experience, neither country sought to challenge and modify the views of jailed extremists. But now, our high-security jails are filled with Islamist extremists who operate by markedly different standards. While the U.K. and Spain grappled with Irish and Basque separatists, these terrorists were not aiming for a worldwide caliphate that would subjugate all other faiths and make war on liberal democracy as such. Nor, despite their immense cruelty, did the Provisional Irish Republican Army (PIRA) or Basque Homeland and Liberty (ETA) operate under the pretext of divine permission to murder civilians. Should the criminal justice system concentrate on merely containing this threat behind high walls and razor wire, or should it at least attempt to reduce the dangerousness of such people? How would we attempt to intervene to get them to disengage or at least desist from such a lethal mindset? And while we try, should such extremist prisoners be left in the general population to expose them to ideas outside of their own cultic beliefs, or should they be isolated to prevent them recruiting? After all, in prisons, the extremists have a pool of easily-available, already-violent, and credulous young men to try to convert; it seems likely leaving extremists in the general population creates some additional risk to staff holding them, never mind the community at large once they are released.



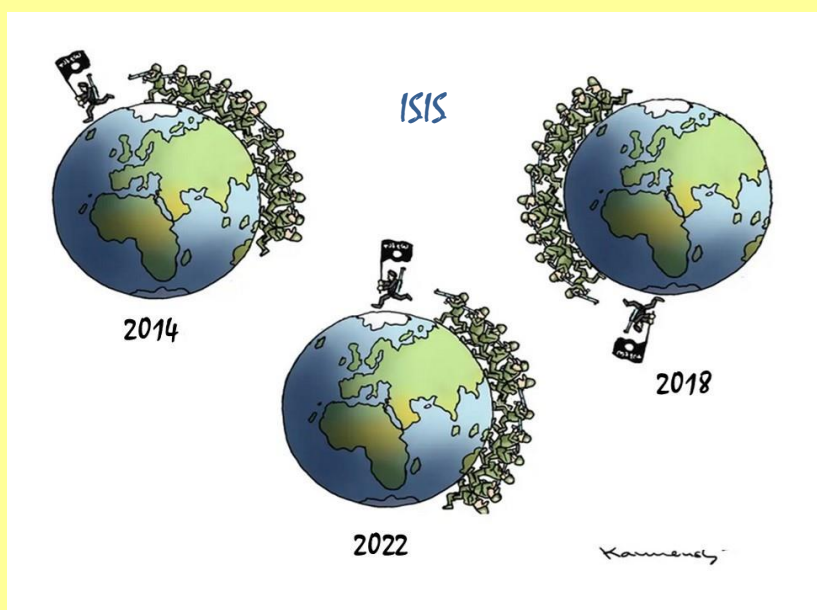
These are not easy challenges. It is unlikely a single answer exists that will be sustained over time and changing prison demographics. In the U.K. in 2016, I led [an independent government review](#) of Islamist extremism in our criminal justice system. My report which included field visits to prisons holding terrorists in the Netherlands, France, and Spain was stark. U.K. prisons were experiencing determined radicalization by subversive Islamist prisoners. The problem was not understood or acknowledged by senior officials and frontline staff were not equipped to identify and challenge toxic behaviours because of poor training and the fear of being accused of racism. Highly sectarian and incendiary literature, which supported and encouraged extremism, was freely available from prison chaplains. Many prison Imams did not have the capacity, and a few did not have the will, to confront Islamist extremism within the faith groups they led.

My solution was [the introduction of 'Separation Units'](#) to completely incapacitate terrorist offenders and other extremists who wanted to preach hate to a captive audience. These units were not to be punitive; they should be places where highly skilled staff could offer those isolated the chance to examine and change their behaviour as the route back to the normal prison wings. In doing so, I built on what I had seen in Europe. We cannot talk to dead terrorists. Live ones in prisons offer a unique opportunity for study and intelligence-gathering with the additional prize of possibly divesting the extremist of his lethal religiosity. It has taken years for these units to be accepted by the prison bureaucracy, but they are now working, and they do have a positive impact when the right subversives are removed from general circulation. Whether these people can ever be changed remains to be seen.



“Deradicalization” is a term that has become almost meaningless. I prefer to talk about “dangerousness”. One of the key dangers that prison authorities face is determining the sincerity of terrorist prisoners who convince their therapists that they have abandoned violence in the name of their religious beliefs while still, in fact, being committed to extremist violence. I have [written about this challenge extensively](#). “Disguised compliance”, where a determined terrorist has deceived authorities with lethal consequences, is not confined to the U.K., but some of the most awful examples are to be found here. They include the risk management of a convicted terrorist, Usman Khan, who deceived prison authorities into thinking he was reformed, a delusion that affected his surveillance after release and led to a situation where he was able to murder two students from a prison rehabilitation programme he was on in a celebratory event in London in November 2019. There are numerous other cases where the same deception has been employed by terrorists to allow them the space to continue their jihad. The interior minister in Austria admitted authorities had been “fooled” by an apparently repentant terrorist who went on a rampage in Vienna in November 2020 murdering four people and wounding 23. Two prison officers in France were stabbed by an Islamist extremist, Bilal Taghi, in 2016: Taghi had been regarded as a model prisoner, engaged in rehabilitation. Adel Kermiche, one of the Islamists who murdered a priest in his church in Normandy in 2016, obtained release from prison by [convincing magistrates he had abandoned violence](#). The list goes on. What can we do to reduce the chances that such atrocities do not continue to occur? Much depends on the culture and philosophical approach to managing terrorist risk. Unfortunately, many jurisdictions continue to use personnel and therapeutic approaches that are derived from working with non-ideological prisoners who commit offences for quite different reasons. This means that the traditional collusive approach between therapist and subject, which seeks to obtain rehabilitation as both the end and the measure of success, is open to manipulation. The various class and cultural differences—and a lack of religious competence—between many professionals and the terrorists they try to change is also problematic. Moreover, an approach that is overly concerned with collusion, prisoner rights, and “reclamation” may make it easier for sophisticated offenders to “game” the encounter and convince the therapist he has changed. Finally, a generic psycho-social approach to a terrorist offending pathology that is often intensely individualistic and seen through an “affirmatory” lens is unlikely to reveal, let alone treat, deviant thinking. We need a new generation of counter-terrorism specialists who have public protection as their priority, not the rescue of fallen citizens. While it is important to see and encourage the possibility of change and reform—one authentically reformed terrorist is worth a thousand police officers—it is equally important to be sceptical and questioning about overtly changed behaviour. The use of technology can assist here. There are many brave people who currently work across Europe with terrorist offenders, unseen and unrewarded. But too many of them operate with dangerously outdated approaches that cannot cope with the new generation of terrorists who are totalitarian in outlook and see deception as not only necessity, but divinely ordained. We can never eliminate the risk of deceptive terrorists killing again without doing their work for them and introducing a police state. But we can, and we should, do very much better.

Ian Acheson, a former prison governor and senior official in the U.K. Home Office, has more than 25 years of experience in counterterrorism and prison security. He is now a Senior Adviser to the Counter-Extremism Project (CEP).



ICI
International
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DIARY



CHEM NEWS



Kherson – The invaders used the K-51 chloropicrin grenade. There are no losses or critical states.

Source: <https://www.perild.com/2022/09/24/occupants-used-chemical-weapons-in-kherson-region-ok-yug/>

On September 23, the military of the Russian Federation dropped containers with a poisonous substance onto the combat positions of the Armed Forces of Ukraine. About it [informs](#) Operational Command South.

“Probably, a K-51 chloropicrin grenade. Combat medics worked well, there were no casualties or critical conditions,” the report says. Earlier it was reported that Germany will transfer to the Armed Forces of Ukraine systems for the decontamination of hazardous substances.

Recall that the Ministry of Health announced the algorithm of actions in the event of a chemical attack.

Chloropicrin

P. Raman, in [Encyclopedia of Toxicology \(Third Edition\)](#), 2014

Chloropicrin has strong lacrimatory properties and is a potent skin irritant. Thus, dermal and eye exposures are the most common routes of chloropicrin toxicity. It is also an inducer of vomiting, bronchitis, and pulmonary edema in humans. As a fumigant, the respiratory tract is the principal target of chloropicrin toxicity. The primary lesion following ingestion of chloropicrin is manifested by corrosive effects on the forestomach tissue. The intraperitoneal LD₅₀ in mice is 25 mg kg⁻¹. Human exposure to chloropicrin also occurs from trace levels in drinking water disinfected by chlorination.

It's a Bad Idea to Dump Mustard Gas Into a Lake

Source: <https://www.popularmechanics.com/military/weapons/a32904116/mustard-gas-lake/>

June 2020 – A man described as a “wartime memorabilia hunter” was sentenced to five years in prison for dumping chemical weapons in a lake. Martyn Tasker was convicted of digging up World War II-era mustard gas bombs on a training ground in the United Kingdom and then, once he, his wife, and a second accomplice, realized what they had found, they dumped the weapons in a lake on public property. Tasker and his wife sustained injuries from exposure to the weapons.

In September 2017 Tasker visited Roughton Woods, a location the British government [describes](#) as “historically requisitioned by the Ministry of Defense for military training.” Tasker asked a friend who had served in the British Army reserves what the items were but never received a response.

Ten days later, the three returned to the site and dug up a half-buried box of sixteen mustard gas canisters and three earthenware bottles. Tasker’s reservist friend finally replied, stating the containers were used to store mustard gas and advising him to contact the authorities.

By that time, Tasker had brought ten canisters of mustard gas home and had emptied the three bottles of their contents, which he described as a “really smelly oil.” The trio took the ten canisters and dumped them in a public lake.

Within 24 hours, Tasker and his wife began to suffer the effects of mustard gas exposure. Tasker sought treatment for “blisters on his forearms” while his wife Michaela experienced breathing difficulties. The three lied about the nature of their injuries but eventually their story unraveled and the authorities realized the extent of the problem. The U.K.’s Environment Agency used fish finder sonar to locate the bottles on the lake bottom and Royal Navy divers retrieved them. The bottles were then taken to Porton Down, a government facility [described in 2004](#) as the “oldest chemical warfare research installation in the world.”

According to local news, the mustard gas was part of a group of 150 bottles that the British Army had inadvertently left behind after World War II. The site of the bottles had been an army camp during the war, and the bottles had been used to expose troops to very small amounts of the gas to familiarize them with mustard gas’s unique smell. Fortunately, chemical weapons were never used in the European Theater in World War II.

Mustard gas (Cl-CH₂CH₂S), also known as sulphur mustard and the military designations H, HT, and HD, is a chemical agent designed to incapacitate enemy troops on the battlefield. [According to the U.S. Centers for Disease Control and Prevention](#), mustard gas can smell like garlic, onions, mustard, or have no odor at all. Exposure may cause irritation of the skin, eyes, respiratory tract, digestive tract, and bone marrow. Mustard gas can even damage a victim’s DNA, but symptoms may not manifest until 12 to 24 hours after exposure.





Canisters of mustard gas involved in the incident. U.K. government.

Mustard gas and other chemical agents were used extensively during World War I, resulting in terrible, indiscriminate injuries. In 1925, a conference of nations met in Geneva, Switzerland, and signed the [Protocol for the Prohibition of the Use in War of Asphyxiating, Poisonous or Other Gases, and of Bacteriological Methods of Warfare](#). This is not the first time chemical weapons have been discovered on public land. In 2009, mustard gas was [found](#) on the grounds of American University. In 2019, the Belgian government [discovered traces of mustard gas](#) among 35,000 tons of World War I munitions dumped into the North Sea. Just three days ago, a beachcomber on a beach in the United Kingdom [discovered a rusted mortar round](#) that might have once held mustard gas. Tasker received 16 months in jail for breaching the government's [Chemical Weapons Act](#), and was the first person charged under the 1996 law. He also received an additional five years for possession of two working World War II-era Bren machine guns.

Belgium improves CBRNe preparedness through monitoring

By Barend Cochez, Franck Limonier, Laura Demullier, et al.

NCT Magazine 5/16 | September 2022

Source: <https://nct-magazine.com/nct-magazine-september-2022/belgium-improves-cbrne-preparedness-through-monitoring>

Belgium has not been spared from terrorist attacks, the most heinous onslaught being the attacks on the 22nd of March 2016 at Zaventem airport and in the Maelbeek metro station, which left a total of 32 dead and hundreds injured. These attacks on our nation occurred relatively soon in the wake of the terrorist attacks in Paris (November 2015). Although no chemical, biological, radiological or nuclear (CBRN) substances were used in these strikes, it became imperative to have an operational plan ready in case terrorists make use of such substances, whether their dispersion is facilitated by explosives or not (CBRNe). After all, there have been a number of CBRNe incidents in Europe and the UK in recent years. For instance, the novichok attack



on Sergei Skripal and his daughter had a severe impact on the relief and crisis management and showed the need for improved resilience against CBRNe threats.

In Europe, the 2017 "[Action Plan to enhance preparedness against chemical, biological, radiological and nuclear security risks](#)" called for a closer cooperation at EU level, including the setting of cross-border support mechanisms such as the European Civil Protection Mechanism (UCPM). Importantly, the timely onset of such mechanisms relies on early warning systems and effective monitoring, from which the collected information should be promptly shared across sectors and across Member States. The different existing rapid alert and information systems should be also reviewed and linked to each other, in order to improve the situational awareness and de facto the incident management.

In this context, a CBRNe Expertise Center was created within the Belgian National Crisis Center of the Ministry of the Interior. This center is a multidisciplinary platform coordinated by the Crisis Center's Emergency Planning Service, where experts on CBRNe matters from different sectors collaborate in an integrated manner for preparing for CBRNe emergency situations and providing crisis management support in the event of real CBRNe emergency situations. In this perspective, the Center tries to gather and share to the relevant stakeholders the data collected through existing national early warning and monitoring systems. Among these, TELERAD, RAG-RMG and BE-Alert are considered as important systems used in Belgium to raise the resilience to CBRNe risks.

TELERAD – radioactivity measuring, monitoring and early warning

In Belgium, radioactivity is continuously measured and monitored by the Federal Agency for Nuclear Control (FANC) via its TELERAD network. Over 250 stations scattered across the Belgian territory measure radioactivity levels in the air and in rivers.

The stations are connected to a central system. As soon as an alert threshold is exceeded, an alarm is triggered and the FANC, which is also represented at the CBRNe Expertise Center, examines the situation. Anyone can consult the automatic telemetry network's data [on this website](#).

●► [Read the full article at the source's URL.](#)

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National Security Experts Warn of Mass Causality Chemical Disaster

Source: <https://www.randomlengthsnews.com/archives/2022/09/30/chemical-disaster/41919>

Sep 30 – Torrance Refinery Action Alliance or TRAA Sept. 29 released a report detailing reactions by national security experts and environmentalists on the Environmental Protection Agency or EPA draft rule to prevent chemical disasters, and it's not good.

TRAA noted, after 9/11, EPA was designated the lead agency for reducing vulnerability to deliberate attacks on the nation's chemical facilities.

National Security experts led by former Governor and EPA Administrator Christie Todd Whitman submitted their third letter, warning of terrorist attacks on refineries and chemical facilities using chemicals that can cause mass casualties and called for conversion to commercially proven safer alternative technology.

Joining scores of environmental and chemical disaster prevention organizations and more than 100 speakers in the course of the three-day EPA public comment hearings ending Sept. 28, the experts that included General Russel Honore of Katrina recovery fame stated "as individuals with extensive experience in national security and environmental protection, we must tell you that the rule is not nearly strong enough to protect Americans from chemical disasters."

The EPA rule, "Safer Communities by Chemical Accident Prevention Proposed Rule," released in August, 2022 for public comment, fails to make communities safer and will not prevent accidents involving chemicals that can cause mass casualties.

The EPA correctly recognized Hydrofluoric Acid or HF, and other lethal chemicals, capable of causing mass casualties, as major concerns requiring an analysis of safer alternative technology. The recently proposed rule would allow the continued use of HF in large quantities in the 42 refineries still using it.





The confirmation of the definite existence of commercially proven alternatives was repeatedly cited by witnesses as an important improvement over past rules. Unfortunately, The EPA rule makes conversion to a safer alternative — voluntary.

Many of the speakers at the EPA Hearings, highlighted HF as an exceptionally hazardous risk for low income and communities of color already facing high environmental justice burdens. Speakers ranged from the New York State attorney general to the United Steelworkers and to residents living in close proximity to these facilities. Combined, these individuals made urgent appeals for relief from these life-threatening risks as well as long-term impacts to health.

National environmental organizations like Earthjustice and Union of Concerned Scientists, as part of the Coalition to Prevent Chemical Disasters, presented powerful data. They warned of the threat of an inevitable release from increasing climate change events and earthquakes as demonstrated by the newly discovered fault lines running near California HF refineries.

Ignoring the previous warnings from National Security Experts on the extreme danger from HF, the EPA rule ignores both the terrorist threat and the threat from climate change natural disasters. Focusing only on past accidents. Barack Obama called them “Stationary weapons of mass destruction.” Joe Biden who lives in the Trainer, Pennsylvania refinery “circle of risk” stated “Inherently safer technology is critically connected to homeland [security](#).”

The EPA cited 1,500 chemical releases causing 17,000 injuries and 58 deaths between 2004 and 2013 with hundreds more each year since.

The Department of Homeland Security noted in its proposed Chemical Facilities Anti-Terrorism Standards: “The consequences of a security event at a facility are generally expressed in terms of the degree of acute health effects (eg fatality, injury), property damage, environmental effects, etc...The key difference is that they may involve effects that are more severe than expected with accidental risk.”

Acknowledging there are “commercially proven alternatives” (American Petroleum Institute), the EPA rule incomprehensibly leaves the decision of whether to convert to a vastly safer alternative “to the owners and operators” most of whom have shown that they have no intention of upgrading their facilities.



When released to the air, HF can create a toxic ground-hugging cloud that can move on the wind and injure or kill those in its path as seen in this impactful and [chilling video](#) produced by Channel 10 in Philadelphia.

According to the Los Angeles County Board of Supervisors, “A significant release of HF from refinery operations as a result of accident, natural disaster or intentional acts, could be catastrophic, resulting in severe health effects and mass casualties.” There are more than 40 communities in the US under this threat. These communities are typically underserved, environmental justice burdened communities, as well as communities containing critical and irreplaceable workforces such as dock workers in New Orleans, soldiers on military bases and scientists at aerospace centers.

TRAA continues to call for conversion where it is practical from chemicals that can cause mass casualties to commercially proven safer alternative technologies with all due haste.

Chemical Sector Perspectives

By Patrick Coyle

Source: <https://www.domesticpreparedness.com/resilience/chemical-sector-perspectives/>



Oct 05 – Section 1016 of the USA Patriot Act (codified at [42 USC 5195e](#)) provides the current definition of critical infrastructure, describing systems and assets that are “so vital to the United States that the incapacity or destruction of such systems and assets would have a debilitating impact on security, national economic security, national public health or safety, or any combination of those matters.” With the diversity of chemical facilities across the country, it is easy to see why the chemical sector is one of the 16 critical infrastructure sectors outlined in [Presidential Policy Directive #21](#).

What makes this sector critical to the nation and what possible effects does it have on states and local communities?

Chemistry has long been known as the [central science](#) because it connects the physical sciences.

Similarly, the chemical manufacturing, transportation, and storage industry could be considered the central sector as it provides key materials for each of the 16 critical infrastructure sectors. With sprawling chemical facilities like petrochemical refineries, it is easy to see that the gasoline, diesel, and other fuels they produce play an essential role in



the commerce of state and local communities. But even those fuel-producing giants produce hundreds of lesser products used as raw materials in other chemical manufacturing concerns across the country. Those chemical facilities, in turn, produce chemicals that keep all parts of the economy moving forward.

The Chemical Sector is one of 16 sectors identified as critical infrastructure under the Cybersecurity & Infrastructure Security Agency. An interesting class of chemicals manufactured at large, medium, and small chemical facilities across the country is [monomers](#). These are self-reactive chemicals used to form repetitive chains of molecules known as polymers. When most people hear the word polymer, they think about the bottles and food containers that create so much of the plastic pollution seen along roads and waterways. But a more important use of polymers is in treating drinking water and wastewater. Those polymers remove particles of dirt and debris found in most water sources. Without their use, there would be no safe drinking water, and human wastes would pollute the rivers and lakes to the point that they would not be safe to approach, much less swim in or boat upon.

Another critical use of polymers is in the blades of the massive wind turbines that are becoming an increasingly important part of this country's electric power generation mix. Lightweight polymers form the skin of those blades that catch the wind and change it into the rotational energy used to produce electricity. Failure to produce those blades would impact the expansion of wind power or keep existing turbines from being replaced when damaged.

Most of these polymers are manufactured at medium-sized chemical facilities. Smaller chemical facilities typically blend operations that mix and package chemicals to perform specific functions in various [manufacturing operations](#). Many of these products were specifically designed for a particular niche, with only a single manufacturer producing that specific chemical blend. Interruptions to the supply of those chemicals can have an effect further down the supply chain.

A special group of very small chemical manufacturers supports the pharmaceutical sector. First, they make small batches of critical chemicals used to manufacture new drugs in small volumes for various parts of the drug testing and approval process. Then, as drugs are approved for use and sale, these often one-room manufacturing facilities can grow into small manufacturing plants that are sole-source suppliers for those same chemicals to the pharmaceutical companies to chemically assemble into the drugs headed to market.

What are this sector's key assets and interconnected/interdependent systems (physical or cyber)?

The chemical sector is, in essence, a manufacturing sector. Consequently, it depends on many of the same supporting structures found in any manufacturing system: raw material, power, water, transportation, waste treatment, and manufacturing facilities.

As noted earlier, a significant source of chemical raw materials comes from petrochemical refineries, which come from [crude oil](#) and natural gas producers. But a large variety of chemical raw materials come from mineral mining operations. Some materials are used as mined (common salt or sodium chloride is an important example), but others are processed via physical or chemical means to produce raw materials for multiple chemical processes. Another increasingly important source of [chemical raw materials](#) is the agricultural sector.

Power for chemical manufacturing comes in two primary forms: electrical energy from the national grid and chemical energy from burning fuels. Electrical energy is typically used to power the production facility's process equipment and administrative machinery. However, in many cases, it is directly applied to raw materials as part of the manufacturing process. [Natural gas](#) is the common fuel used for heating in chemical manufacturing. Seldom are flames used directly to heat chemical process equipment. Typically, boilers are used to generate low- or high-pressure steam to provide heat for chemical manufacturing. Where higher heat levels are required, electrical resistance heating is frequently used.

Water is an essential part of many chemical manufacturing processes. It is commonly used (and typically recycled) as a heat transfer fluid for heating and cooling chemical processes. Water is also a common solvent used in many processes. While that solvent water may be included in the finished product, more frequently, some or all of that water is removed from the process. That extracted water may be recycled in the same or similar processes at the facility. Still, it is typically processed on-site as non-hazardous waste, sent off-site to be processed as hazardous waste, or shipped (via industrial sewers) to a local wastewater treatment facility.

Transportation of raw materials and supplies to chemical manufacturing facilities and the transportation of products to customers take many of the same forms seen in typical production facilities. Truck and rail transportation are the most common forms of transportation, but many facilities also use pipelines or waterborne transportation assets for incoming and outgoing materials. While many chemical products can be packaged in small containers that are boxed for transportation, the most common chemical packaging is done in drums of various sorts and sizes or intermediate bulk containers of a few hundred gallons. Larger bulk containers are shipped by truck, rail, or vessel.

Waste treatment is an integral part of the chemical sector. As previously discussed, water is used as a solvent, but many other chemicals are used as solvents in various stages of many chemical manufacturing processes. As with water, many of these solvents form an essential



part of the final product, but more of it is removed from the process. Every effort is made to [recycle such solvents](#) on-site, but large amounts of them need to be sent to specialized outside facilities for retreatment or disposal. Since many solvents are hazardous, they are treated as hazardous waste.

The manufacturing facilities used by chemical process industries vary with the processes used. There are three common types of [chemical manufacturing processes](#): continuous process, batch process, and blending. In continuous process facilities, raw materials enter a series of process vessels in a continuous stream. Each processing zone's heat, pressure, and catalysis conditions remain nearly constant during the active process, changing only during start-up and shutdown. In a batch process facility, the raw materials are sequentially added to a single process vessel, with the process conditions being changed as needed for each step of the production process. Blending operations are the simplest chemical manufacturing process, with two or more materials being added to the mixing vessel with no chemical reactions. Many chemical facilities have multiple types of processing on-site.

What are this sector's dependencies (physical, cyber, geographic, and logical) and interdependencies with other critical infrastructures?

Power, water, and transportation are the three most obvious areas where chemical manufacturing facilities depend on other sectors for continued operations. Therefore, interruptions or even reductions in the supply of raw materials adversely impact the continued operations of these facilities.

Chemical manufacturing is power intensive, and any electricity supply interruption would disrupt operations. While some facilities have limited on-site power production capabilities, it is generally for short-term operations to carry over through short-term power outages or emergency shutdown processes. However, longer-term shutdowns place many facilities in potentially dangerous situations as many chemicals require automated environmental controls to keep them from energetically decomposing or undergoing exothermic self-reactions.

Consistent supplies of water are essential for many low-level cooling operations. Many facilities use freshwater flow as an emergency backup for refrigerated cooling systems. While not as effective as electrically powered refrigeration for maintaining environmental controls to prevent decomposition or self-reaction, drinking water supplies can provide a cooling bridge for short-term interruptions in electrical power.

Interruptions of the supply of raw materials and operating supplies are an obvious problem for the continued operation of chemical facilities that transportation issues would cause. High-volume transportation by pipeline, rail, or barge is typically a sole-source transportation mode for critical raw materials. It is challenging to replace if that transportation mode is damaged. Batch operation facilities can frequently switch production to alternative products during short-term supply problems. Continuous operation facilities faced with unexpected supply outages would be forced to conduct emergency shutdowns. Such unplanned shutdowns are typically the most dangerous operation conducted at such facilities.

Raw material supply issues can also arise when suppliers experience problems interfering with their operations. For example, although alternative suppliers may be available, high-volume raw materials may be difficult to obtain when a supplier has an unexpected shutdown. Even when alternative suppliers are available, minor differences in product quality can cause process problems that require additional work to ensure the smooth production of quality products. This is a particular problem when the raw material is based on the processing of natural products. The complex blend of organic chemicals in plant or animal products may vary significantly due to local agricultural production conditions.

What are this sector's current and emerging vulnerabilities, hazards, risks, and threats?

The variety of supply chain issues currently affecting the broader U.S. economy is impacting the chemical sector. Chemical manufacturers in China and East Asia have increasingly become suppliers of chemical intermediates to American manufacturers. The ocean-going shipments of those chemicals have been interrupted by the same issues facing other products shipped from Asia. Some of those products have no domestic sourcing available.

The railroad shipping issues identified in a recent hearing before the Surface Transportation Board affect many chemical manufacturers. Delays and interruptions in both the shipping of finished goods and the receiving of raw materials are having ongoing impacts on chemical manufacturers. Many chemical manufacturers see this problem on their operations' shipping and receiving sides. Even when manufacturers are not using rail transportation, the upstream interruptions of raw materials can still have supply impacts.

The shipping problems also extend to the backbone of chemical shipping, the trucking sector. As the number of available truck drivers continues to decrease nationwide, fewer trucks are available to handle bulk and packaged chemical loads. Bulk chemical drivers are frequently required to unload chemicals at customer locations, reducing the number of



drivers interested in handling such loads. Further, a significant percentage of bulk chemical loads are hazardous chemicals and require a special endorsement to the driver's commercial driving license to handle such chemicals. The background check requirements for that [Hazardous Materials Endorsement](#) even further reduce the number of available truck drivers.

Industrial control systems and industrial internet of things (IoT) devices are becoming increasingly ubiquitous in chemical manufacturing facilities. These electronic systems allow for closer control of process variables, increase product quality, and decrease manufacturing costs. They also move the ability to monitor and control chemical processes out of the sole purview of the control room, allowing process engineers and production managers more remote access to process data and process control than ever before. Additionally, remote access increases the potential for criminals, nation-state actors, and competitors via cyberattacks to gain process access.

The threats from cyberattacks span a wide variety of potential types and scopes of attacks on both the [industrial control systems](#) and administrative computer systems at manufacturing facilities. Commercially driven attacks could include competitors' theft of process design or process control data to bootstrap their operations or even process manipulation by those competitors to increase processing costs or decrease product quality to gain a commercial edge. Criminal attackers could use ransomware to drive high payments to release administrative or control system access/control back to the manufacturing organization. Nation-state actors could use cyberattacks to provide a low-cost method of disrupting the national economy or even interfering with the timely delivery of military supplies. Larger chemical facilities can afford a robust cybersecurity operations center to protect their systems, but this option is not economically viable for smaller operations.

A yet unrealized threat is an attack of the killer drones. While there is a long history of the U.S. military using sophisticated unmanned aerial vehicles (UAV) in the War on Terror, the current military operations in Ukraine are pointing out that a lower level of sophistication in drone operations can be very effective. Combined with the use of armed drones by the Mexican drug cartels, chemical facility owners should be concerned about the potential for terrorist attacks using these readily available aerial delivery systems. Currently, facility owners are prohibited by law from interfering with the operation of UAVs over their facilities. The Federal Aviation Administration has yet to issue regulations allowing critical infrastructure to request registration as a no-fly zone. Interfering with a drone is still a violation of [18 USC 32](#).

How would a human-caused, natural, or technological disaster impact this sector's preparedness, response, and recovery efforts?

In the summer of 2017, flooding caused by rains from Harvey inundated large portions of the Texas and Louisiana coast. During that time, a relatively small (for Texas) organic peroxide manufacturing facility outside Crosby, TX, became the focus of the chemical process and emergency response community when the refrigeration systems and their backups began failing at the facility. Unusually high flood waters compromised the safety and backup safety systems that protected the storage of various organic peroxides manufactured and stored on-site. The [Chemical Safety Board](#) reported that the facility's "safeguards could likely provide adequate protection for a 100-year flooding event." Preparing for a 100-year flood event has been a standard technique for emergency flood planning, but it is increasingly becoming clear that relying on such historical standards is no longer adequate.

As climate change increases the intensity of rain events and the average strength of winds and storm surges associated with tropical storms and hurricanes, coastal and riverine chemical facilities must adapt their emergency planning to deal with new realities. And the larger these storms get, the wider the affected area, which means restoring utilities at these facilities would take longer. Thus, these chemical facilities must plan for more prolonged outages and have more backup power systems to support critical services.

Since so much of the crude oil and chemical refinery capacity in this country is located on the Gulf Coast, these extended storm-related outages have a downstream impact on many other chemical facilities outside of the storm-damaged areas. In addition to shortages of fuel and natural gas, a wide variety of hydrocarbon feedstocks from these refineries serve as raw materials for facilities across the country, which in turn use those simple hydrocarbons to make more complex molecules that feed even more chemical facilities. Thus, facilities that use fuel, natural gas, hydrocarbons, and other chemicals from Gulf Coast facilities need to have plans in place to deal with such longer-term shortages.

There remains a potential long-term threat of terrorist attacks on chemical facilities. These could take the form of attacks on facilities to cause the release of toxic chemicals on local neighborhoods or fires and explosions at such facilities that would adversely impact those same communities. These neighborhoods are often comprised of populations that could be targeted for hate crimes and are already particularly [vulnerable to environmental hazards](#). Another type of attack would be stealing toxic chemicals, chemical weapon precursors, or explosive precursors for use in terrorist attacks on entirely different targets. The U.S. Department of Homeland Security maintains two chemical security-related regulatory programs that address these vulnerabilities: the Cybersecurity & Infrastructure Security Agency's ([CISA](#)) Chemical Facility



Anti-Terrorism Standards ([CFATS](#)) program and the Coast Guard's Maritime Transportations Security Act ([MTSA](#)) program. In addition, CISA has recently started a second voluntary (non-regulatory) chemical security program, the ChemLock program, for facilities not covered by the other two programs.

Finally, with an increase in frequency of [gun violence](#) in this country, the possibility of encountering an active shooter incident is becoming more likely, which could impact a chemical facility. Although many guidance documents are available for responding to active shooter incidents, none have dealt with the unique hazards associated with gunfire. In an environment where the muzzle flash from a handgun can ignite chemicals in the air or stray bullets fired by either the gunman or responders can penetrate chemical storage tanks and release toxic or flammable chemicals into the atmosphere.

What else do emergency preparedness, response, and recovery professionals need to know about this sector?

Such professionals must first remember that each chemical manufacturing facility is unique. Even facilities built by the same company that produces the same products have design differences – including safety and security measures – built upon production lessons learned and changes in the regulatory environment since earlier plants were designed. Further, each facility evolves in different directions as time progresses. This evolution affects emergency preparedness, response, and recovery planning. Since no two plans are identical, they must be updated as the facility adds new chemicals and changes process layouts or equipment.

The next thing to understand is that all chemicals are potentially dangerous. Even water in a sealed container is subject to becoming a bomb if heated to its boiling point in a facility fire. The simple reading of a Safety Data Sheet (the document each facility must have for each chemical on-site) explaining the hazards of that chemical seldom provides a complete understanding of the hazards associated with that single chemical. Given that a small chemical manufacturing facility may have hundreds of chemicals on-site in large and small containers, no one can understand all the hazards at a facility. Emergency planning can only concentrate on the most dangerous chemicals on-site in significant volumes. Less hazardous chemicals in smaller containers still can seriously injure or even kill first responders at the site during emergencies. Therefore, training emergency response personnel in [basic chemical safety](#) is required.

Another common hazard at chemical manufacturing facilities is high voltage electric systems. These systems are used to power pumps, vacuum systems, and mixing motors, to name a few types of high-energy process equipment. During emergency response situations, responders must be aware of this potential danger and where to find the facility shutoff for such power to reduce those hazards. Finally, emergency response planning needs to address runoff, specifically during firefighting operations at the facility. For many safety reasons, a standard method that fire departments use in fighting fires at chemical facilities is to flood the area with water to help keep unaffected storage containers cool and stop spreading flames to other parts of the facility. Frequently, facility sprinkler systems have automated deluge systems in process areas of the facility designed to do the same thing. With high volumes of water flowing out of the facility, water contaminated with an unknowable combination of chemicals would be released during the incident. Incident commanders must have plans to contain that water to prevent it from entering public waterways. Facility owners must have plans in place for post-incident collection and disposal of that contaminated water, water that is frequently hazardous waste.

The chemical sector is a vast and diverse part of the U.S. economy. Its products help support and even drive the successes of the other 15 critical infrastructure sectors. The way the sector is internally and externally integrated, failures at even small chemical facilities can have a cascading impact on other chemical and non-chemical product manufacturing. Understanding that integration is an essential part of the job of any professional responsible for emergency preparedness, response, and recovery planning.

Patrick Coyle is a 15-year veteran of the U.S. Army and has worked for 26 years in the chemical process industry – including 16 years as a process chemist and four years as a quality assurance manager. He also has taught industrial safety and has been a freelance writer since 2006. For the past sixteen years, he has used his unique background to write a chemical security blog, the "Chemical Facility Security News."

Nobel Clickbait: Bertozzi, Meldal, and Sharpless Win for Click Chemistry

The Nobel Prize in Chemistry 2022 was awarded jointly to Carolyn Bertozzi, PhD, professor at Stanford University and a Howard Hughes Medical Institute investigator, Morten Meldal PhD, professor of chemistry at the University of Copenhagen, and Barry Sharpless, PhD, of Scripps Research Institute. The three investigators received the award (Sharpless for the second time) for "the development of click chemistry and bioorthogonal chemistry." [+ MORE](#)



Gas Gas Gas NATO forces strengthen CBRN skills

Source: <https://www.dvidshub.net/news/430621/gas-gas-gas-nato-forces-strengthen-cbrn-skills>



Photo By Pfc. Jayden Woods | Soldiers from 39th BEB and Bulgarian Soldiers from 38th Chemical Battalion take a group photo at the end of their joint training Sept. 28, Novo Selo Training Area, Bulgaria. During the training, both countries taught classes on each step of their process in a CBRN situation. Going through classes of each step from mounted reconnaissance with Bulgarian vehicles to medical first-aid.

Sep 29 – Chemical, Biological, Radiological, and Nuclear Specialists (CBRN) Soldiers with the 39th Brigade Support Battalion conducted joint training with the Bulgarian Army's 38th Chemical Battalion to show the CBRN capabilities and help grow for the future at Novo Selo Training Area, Bulgaria (NSTA) Sept. 20-29, 2022.

"I know from the outside looking in, it looks like we are just a bunch of crazy people running around in suits," said Spc John Netherland, a CBRN Specialist in 39th BEB. "We are chemical, biological, radiological, and nuclear specialists. Our job is to locate, mitigate, decon (decontaminate), and control areas that have had chemical warfare agent attacks or are of high risk because of these possibilities. What we do is we go in, mark off the area, take samples exploit the site, whether it be cell phones, actual liquid samples, or solid samples, take care of any casualties down on site, and bring back as much information we can back to higher up so we can show what our NATO allies should be on the lookout for."

During the training, both countries taught classes on each step of their process in a CBRN situation. Going through classes of each step from mounted reconnaissance with Bulgarian vehicles to decontamination. Netherland was one of the U.S soldiers who taught how the U.S. runs decontamination lanes to the Bulgarians.

"This type of training will help us tremendously improve our skills for the future training and events coming up" Maj. Ilian Krastev, commander of the Bulgarian 38th chemical battalion.

This joint training helps prepare both countries to help NATO in any real-world scenario.

"They're training us up on their equipment and what their capabilities are and we're doing the same in return to get an overall picture of what we could handle on a battlefield."



ICI C²BRNE DIARY – October 2022

Netherland continued, “So overall, we mainly focused on radiation, but we have trained them on chemical and biological threats as well. We’re getting a good view of their equipment, their vehicles and their mounted capabilities, versus our dismounted, more technical side of sampling and everything like that.”

During this training, even with a translator, this gave both countries the challenge of working with a language barrier.

“It has been very cool working with the Bulgarians, having a translator out here is helpful, but it’s also kind of a hindrance, not having the same language.” Netherland continued, “trying to explain the more technical side of our job, through a translator, back over to them gets a little hairy sometimes because they don’t have the same words and meanings to everything that we have, but it’s been amazing. They are very knowledgeable. They’re very eager to learn and train with our equipment and we love seeing theirs.”

The CBRN issue

Source: <https://www.edmagazine.eu/the-cbrn-issue>



Definitely an issue in peer-to-peer conflicts, the CBRN field is another of FLIR’s specialties, Dr. Dave Cullin, the company VP of Global Business Development-Detection Systems, detailing the use of such sensors in MDOs. The dream of all soldiers, a small box providing all kind of information, will unfortunately remain a dream; “the reality is that physics tells us that we will not be able to get that box, and if we really want to detect and to identify the current threat, would it be chemical or biological, we must collect samples into a device and do point sensing, that is really state of the art where you get identification capability from CBRN sensors.”

Radiological detectors can work at a few meters distance, but when dealing with chemical and biological threats it is still necessary to collect the samples in order to get accurate and reliable results. “Sensors working at distance proved not to have sufficient fidelity, therefore to maintain distance the solution is to integrate those detectors in some unmanned platform and project the point sensor kilometres away to detect threats that are in the air, using UAVs, or on the ground, using UGVs, checking i.e. that routes a unit wants to take are not contaminated with some sort of area denial weapon,” Dr. Cullin states. This is what FLIR is



doing within the [NBCRV Sensor Suite Upgrade](#) (SSU) programme, where i.e. an IBAC biological sensor has been integrated into a SkyRaider UAV carried on board the 8×8 CBRN reconnaissance vehicle.

But getting the data is not enough, presenting them to the user in an appropriate intuitive way is the follow-on step, so FLIR is developing decision-support tools that aggregate information collected at distance, presenting a video-game style picture to the user, “as we must remember that all our future users will be digital native,” Dr. Cullin points out, therefore showing results in that way might be the better option, especially for threats that cannot be seen or felt physically by the user. That said providing relevant data in the right way is based on some clear rules. “It is very important to nest the data that you share and the way you are sharing it inside the mission objective, so there is frameworks, there is protocols, there is C4ISR infrastructures that provides the place and the visualisation structure where to put all those data, and that is a great way to keep the focus on the mission without risking to turn it into a video game,” David Proulx points out, its comment extending of course to all other domains and not only to the CBRN one.

CBRN recce: at speed and at stand-off distance

Source: <https://www.edmagazine.eu/cbrn-recce-at-speed-and-at-stand-off-distance>



FLIR is very active in the CBRN field, which is not immune to the paradigm shift from awareness to understanding, as Dr. Dave Cullin, VP of Global Business Development-Detection explains, talking about the NBCRV Sensor Suite Upgrade (SSU) programme won by the company in 2018 with the US DoD, a further contract having been awarded to FLIR in October 2020 for add-on capabilities. “This programme really embodies what our company is doing from sensors, to unmanned systems, to data integration, to algorithms that can help doing threat classification, and NBCRV can exploit all those pieces of capability to create a new piece of kit for the US Army which will take them into the future, providing an unprecedented set of speed and accuracy in measurement.”

The US Army currently fields 294 NBCRVs (Nuclear Biological Chemical Reconnaissance Vehicles) based on the Stryker 8×8 platform, equipped with ageing technology and point sensors, which operate at slow speed, as those sensors require to drive the vehicle in the middle of the threat to understand what is going on. The Army wants to change the way of operating, keeping soldiers out of harms way. “What we are doing is replacing old sensors with new ones that carry out detection at stand-off distance, increasing operational speed,” Cullin says adding that, “We are developing the system in a modular way so that we can do vehicle-agnostic or vehicle-adaptable integration.” FLIR already built a kit that was



demonstrated in 2019 on a Polaris vehicle and in its next iteration, which is being developed, will be installed on a Grizzly vehicle. “The package will include some 11 different kinds of sensors, which information will be integrated into a Common Operational Picture, utilising those information collaboratively, that provided by one sensor driving the action of other sensors. We don’t want our soldiers to figure out what is happening within the system, we want to provide them only information needed to decide how to respond to the environment they are being exposed to,” he continues.



FLIR is also integrating sensors on airborne and ground unmanned platforms, which will be used in collaborative and in many cases automated fashion; “We may have a stand-off sensor that detects the presence of aerosol clouds which may be indicative of a biological warfare element, such as anthrax, and this may drive to launch a drone with a high fidelity sensor that will fly into the cloud to carry out measurements at stand-off distance, allowing to keep soldiers out of WMD threat.” The same might apply to the launch of a UGV also fitted with adequate sensors. All this will result in speed of action and in avoiding contamination of the vehicle, which will permit the Brigade to operate at the speed planned by the commander, reducing the effectiveness of enemy’s CBRN threats, guiding the formation through the operational area while avoiding contaminated zones. This will be possible as the system will provide actionable information to the soldiers, keeping them away from the dangerous areas allowing them to make decisions before getting close to the danger. “We will go through a serious set of test and evaluation in 2021, with the next generation of those capabilities,” David Cullin concludes. Some issues are still to be solved, i.e. the decontamination of unmanned systems after they performed their mission into a contaminated area; although during the mission there will be no physical contact between the operators and the unmanned systems, a problem might arise when redeploying back to base. How much this will lead to hardening requirements in order to allow their decontamination is to be seen, concepts of operation (CONOPS) as well as tactics, techniques and procedures (TTPs) being still under discussion with the customer, according to FLIR officials.

Developing serious games for CBRN-e training in mixed reality, virtual reality, and computer-based environments

By Burak Altan, Servet Güner, Ali Alsamarei, et al.

International Journal of Disaster Risk Reduction | Volume 77, July 2022, 103022

Source: <https://www.sciencedirect.com/science/article/abs/pii/S2212420922002412>

Abstract

In the last decade, chemical, biological, radioactive, nuclear, and explosive (CBRN-e) attacks have become severe risks to countries, prompting connected parties to prioritize CBRN-e training. CBRN-e training is typically performed as physical exercises, and although such training is necessary and beneficial, repeating the same training program can be time-



consuming and costly. In this study, newly developed versions of two previous serious games—Hospital and Biogarden— and a new mining serious game were developed for training purposes in Virtual Reality (VR), Mixed Reality (MR), and personal computer (PC) environments. The Hospital and Biogarden games' scenarios were based on the joint activities held in 2018 in France and Belgium as part of the EU H2020 European Network Of CBRN Training Centers (eNOTICE) project, while the mining game was created over a replica of a training mine at a university in Turkey. Sixteen CBRN-e experts from the eNOTICE project, who took part in the physical training programs in France and Belgium, evaluated the games. For evaluation and extensive feedback, presence, system usability scale, [technology acceptance](#) model questionnaires, and open-ended questions were conducted. The findings revealed that serious games have a vast potential in CBRN-e training, and the comparisons of different environments provided invaluable testbeds giving hindsight to develop a future training program.

Hospital Decontamination – High Costs & Limited Benefits

By Craig DeAtley

Source: <https://domprep.com/healthcare/hospital-decontamination-high-costs-limited-benefits/>



2013 – The primary reason why the Emergency Department of almost any U.S. hospital or other healthcare facility should be ready and able to respond to a hazardous material release is to protect patients, staff, and the hospitals' own facilities from avoidable contamination. However, unlike many other patient-care procedures that are performed elsewhere in the hospital that – not incidentally – generate revenue, decontamination drills and exercises are rarely scheduled except for the training considered to be absolutely mandatory.

A recent healthcare system exercise was conducted on 19 April 2013 in Washington, D.C., where eight acute care hospitals responded to the notional release of an insecticide called malathion. That exercise was a reminder to local hospital and public health officials throughout the National Capitol Region about the high costs of patient decontamination training drills.

The “Wally’s Warehouse” Incident

The two-day exercise centered on a scenario involving high winds and heavy rain, which culminated in a tornado striking a gas line that subsequently ruptured and ignited. The ensuing fire – at “Wally’s Pesticide Emporium,” a fictional warehouse containing the malathion – caused the pesticide to be released into the air as well as the ground areas adjacent to the warehouse. The fire itself caused more than 100 injuries – including many from pesticide poisoning – in the warehouse and surrounding neighborhood.

The local fire department provided preliminary care by performing a notional “gross decontamination” of many of the patients before transporting them to the hospital; some of the patients, though, were “rescued” and taken to the hospital in other vehicles. The eight hospital emergency departments participating in the exercise thus received patients who had been either partially or not at all decontaminated.

Some of the patients also had been administered initial doses of Duodote – an antidote for nerve agents – by the emergency medical systems units participating in the exercise. The MEDSTAR Washington Hospital Center (MWHC) was one of three hospitals that set up their own decontamination system and actually decontaminated 35 of the patients who had been transported to the Center.

Decontamination – Who Does What?

Once it had been determined at the Center that decontamination of some type was needed, the hospital’s disaster and hazardous material response plans were quickly activated, and orders were issued that resulted in two types of staffing being mobilized to carry out the patient decontamination. The first group included three nurses and one technician from the emergency department who were given the assignment. Because they were already on duty, no additional costs were incurred. In some hospitals, other staff members within the same hospital who had completed the required site training would also have responded, with no additional costs incurred. For the Wally’s exercise, the hospital also activated its “Team Decon,” a select group of 45 well-trained personnel – with varying skills and hospital assignments – who had agreed beforehand not only to assist but also to respond from home when off duty. These on-call personnel are compensated at a set rate of \$30 per hour. For the exercise, 10 team members responded, as requested, and participated in the four-hour exercise – at a total initial cost of \$1,200. In real-life situations, though, the cost undoubtedly would be much greater because more personnel probably would have been needed.

Pop-Up Tents & Other Decontamination Areas

Most hospitals have at least one or more settings in which to conduct patient decontamination. Tents are a common setting used for this purpose and offer several



ICI C²BRNE DIARY – October 2022

operational advantages as well. They can quickly be set up in several locations, for example, and used in different but complementary ways. Each tent, though, usually requires the presence of at least two or more staff members – and the set-up time itself varies considerably, depending on the size and type of tent used. During the Wally's exercise, the MWHC itself used three, each with two lanes, at a cost of \$18,000 per tent (2009 prices). To add heated water as well as internal heating and/or air conditioning – and in some cases a conveyor system that could be used for non-ambulatory patients – all would incur relatively high additional costs.

Some facilities use trailers that are pre-plumbed and are equipped with two or more shower stations. The advantages provided by the use of trailers include not only their mobility but also the fact that they usually can be operational very quickly. Their disadvantages include the space required for set up, various equipment and other storage requirements, and routine as well as emergency maintenance costs. Most trailers range in price – depending on their size and operational capabilities – from a minimum of \$65,000 to \$200,000 or higher.

Many hospitals, of course, including the MWHC, already possess the indoor spaces, and associated capabilities, that also cost hundreds of thousands of dollars or more. Once again, the decontamination costs will vary considerably depending on the number of showerheads needed, the type of drainage system employed, and other design and/or operational considerations.

The principal advantage of using such facilities is that the room is always ready and very little, if any, additional preparation is needed to prepare them for the arrival of one or more patients. The MWHC's current indoor shower area, for example, is part of a \$2.5-million-dollar room designed as a multipurpose disaster response area. The Ready Room contains a decontamination shower area equipped with four fixed shower heads and a floor drain; however, there is no in-ground storage tank – probably because the cost of installing and maintaining one would be a large additional expense.

Equipment/Supplies & Other Costs

To meet OSHA (the Labor Department's Operational Safety & Health Administration) "First Receiver" personal protection requirements, hospitals must use Level C ensembles consisting of chemical-resistant boots (\$75-\$110 a pair), inner and outer gloves (\$8), a protective suit (\$75-\$90 each), and a power air-purifying respirator (PAPR, which cost \$1,100 each). Rather than buy all such items individually, some facilities purchase commercially prepared PPE (personal protective equipment) sets at a cost of about \$125 each.

Depending on the operational situation involved, a personal radiation dosimeter also may be issued to each decontamination team member to wear, at an additional cost of several hundred dollars each. During the Wally's exercise, MWHC used 14 of its 50 PAPRs and 14 Chem Pak Response kits (\$1,750 each). The long-range plans of most U.S. hospitals project a future inventory that allows for multiple PPE change-outs during a response – resulting, therefore, in additional inventory expenses.

The most important variable cost involved in these same projections, obviously, involves the patients who are going through the decontamination process, who must: (a) first have their own clothing and valuables bagged and tagged; and (b) later, during the decontamination process itself, will be using a bar or bag of soap, followed by towels and a gown. The kits containing these items, plus flip-flops for foot protection, cost about \$15 each; the MWHC used 35 during the Wally's exercise, for a cost of \$525.

The symptoms caused by malathion – and/or other nerve agents – can be treated with the antidotes atropine and 2Pam, which are packaged individually as a Mark I kit or mixed together as Duodote. For the Wally's exercise, more than 100 notional doses of Duodote were administered at a cost of \$50 each (more than \$5,000).

Bullhorns & Brushes; Sump Pumps & Trash Cans

The hospitals involved in the decontamination process also incur several other costs. One such cost, not easily calculated, is for the water used during the response. In many cases, the water runs continuously and the costs can add up very quickly depending on the number of shower positions being used. Portable basins collect the runoff (the cost varies by size, but can be several hundred dollars), which may be moved by a sump pump (\$100) into a bladder (again, varies by size, but is usually several hundred dollars) and then sucked up by a hazardous waste hauler, at a significantly greater cost.

Nighttime operations require lighting – whether fixed on overhangs, erectable (halogen lights on stands cost \$79 each), and/or headlamps (\$20-\$59 each) worn by members of the decontamination team. Among the many other medical/sanitation and/or operational items commonly needed are: radios equipped with throat or ear microphones (\$300-\$500 each); bullhorns (\$100); white boards (\$35); large trash cans (\$75 each); liquid soap containers (\$6 per bottle); buckets (\$5); and brushes (\$7-\$15 each).

The costs associated with a hospital being fully prepared to deal with contaminated patients will vary, of course, depending on the response capability desired or needed. In an era where positive bottom lines are becoming harder to meet, justifying these important, unique, and usually nonrecoverable costs is becoming an increasingly greater challenge. But then again, it takes only one major warehouse fire to fully justify all of the costs involved.



Craig DeAtley, PA-C, is director of the Institute for Public Health Emergency Readiness at the Washington Hospital Center, the National Capital Region's largest hospital; he also is the emergency manager for the National Rehabilitation Hospital, administrator for the District of Columbia Emergency Health Care Coalition, and co-executive director of the Center for HICS (Hospital Incident Command System) Education and Training. He previously served, for 28 years, as an associate professor of emergency medicine at The George Washington University, and now also works as an emergency department physician assistant for Best Practices, a large physician group that staffs emergency departments in Northern Virginia. In addition, he has been both a volunteer paramedic with the Fairfax County (Va.) Fire and Rescue Department and a member of the department's Urban Search and Rescue Team. He also has served, since 1991, as the assistant medical director for the Fairfax County Police Department.

EDITOR'S COMMENT: In my long CBRN involvement I always hated the question "How much does it cost?" and this article is not an exception although it is quite informative regarding the costs that accompany the CBRN preparedness of a hospital. Nevertheless, there is one cost missing and that is the cost of single human life! Of course, when comes to cost there is always a very simple solution: do nothing and enjoy the surprise! And if you are the director of the hospital, for the rest of your life.

It is not CWA but equally toxic!

Something Toxic Flourishes in Your Brain After Too Much Hard Work

By Zoltán Molnár & Tamas Horvath

Source: <https://www.sciencealert.com/something-toxic-flourishes-in-your-brain-after-too-much-hard-work>



Oct 20 – A long day in the office can leave you empty of energy and overcome with desire for TV and a takeaway.

But you've been sitting down all day. So why do you feel as tired as your friends who have physical jobs?

Struggling through your list of essential tasks feels ever more grueling as the clock ticks down for home-time. Worse still is bumping into a colleague on your way out who "just wants a quick minute".

It might seem obvious that you are more likely to make impulsive decisions at the end of a long day, but people often power through anyway.

A [recent study](#) that scanned people's brains at different points in their workday found high-demand tasks which require intense, constant concentration can lead to build-up of a potentially toxic chemical called **glutamate**.

Normally used to send signals from nerve cells, in large quantities glutamate alters the performance of a brain region involved in planning and decision making, the lateral prefrontal cortex (LPFC).

Science has shown time again that mental fatigue has real effects. There are numerous studies which show that court decisions can depend on how fatigued the judge is.

For example, after a long day in court, [judges are more likely to deny parole](#) (which is considered the safer option). Studies show that [clinicians are more likely to prescribe](#) unnecessary antibiotics at the end of a tiring clinical session.

The new study, from Paris Brain Institute (ICM), investigated whether cognitive functions such as focus, memory, multitasking, and problem-solving can cause fatigue of the LPFC, which influences the decisions we make when we cross things off our list.

Opportunity cost

The brain is the command centre of the body, regulating circulation, breathing, motor function, and the nervous system. The brain coordinates these activities at the [expense of huge energy use](#).

Nerve cells break down nutrients to release energy (metabolism). But this process accumulates byproduct molecules known as [metabolites](#). [Glutamate](#) is a type of metabolite. The brain clears this toxic waste chemical [in your sleep](#).

The authors of the Paris study wanted to see whether prolonged cognitive tasks exhaust the brain's supply of nutrients. They also tested whether this type of high-focus demand builds up a greater concentration of toxic substances in the LPFC than other parts of the brain.

In this case, the authors compared LPFC to the primary visual cortex, which receives and processes visual information.

To test their hypothesis the authors divided their 40 participants into two groups. Both groups sat in an office in front of a computer for six and a half hours. One group had to do difficult tasks that called on their working memory and constant attention.

For example letters were displayed on a computer screen every 1.6 seconds and participants had to sort them into vowels and consonants or, depending on the color of the letter, upper



or lowercase. The second group did similar but much simpler tasks. Both groups managed an average 80 percent correct response rate.

The scientists used magnetic resonance spectroscopy (MRS) to scan participants' brains and measure levels of metabolites. The authors took readings at the beginning, middle, and end of the day.

They found fatigue markers, such as increased glutamate concentration, but only in the high-demand group. The build-up of toxic chemicals was only observed in the lateral prefrontal cortex (lPFC) and not the primary visual cortex.

After the high and low-demand cognitive tasks, the two groups had decision tests. This included choices about their willingness to exert physical effort (whether to ride a bike at different intensities), cognitive effort (whether to perform harder or easier versions of the cognitive control tasks) and patience (how long they were willing to wait to receive a larger reward).

The rewards ranged from €0.10 to €50 (about US 10¢ to \$50). Delays for receiving the reward ranged from immediate cash after the experiment or bank transfer after one year.

Rethinking the workday

The authors found that the high-demand group, which had an elevated level of metabolites in the lPFC, preferred choices that were less taxing. These participants' pupils were less dilated (dilated pupils suggests arousal) and took less time to make decisions, which indicates they experienced this part of the experiment as undemanding.

So [the Paris study](#) also raises questions about whether the working day is structured in the best format.

According to the results of the study we should break up high-demand cognitive control tasks that need working memory and constant attention and take into account the fact that performance takes a hit at the end of the day. Some professions may need very different structuring considering these results.

During their shift, air traffic controllers only guide aircraft for up to two hours, followed by a half-hour break. But bus drivers, clinicians, and pilots would benefit from regular, compulsory rests too.

Our brains have many different areas that are active during different tasks, such as speaking, hearing, and planning. So not all of our decisions can be explained by the Paris study findings.

Considering the interactions across the entire body, a [2006 study](#) from the USA suggested that new information may be best processed in a state of hunger. But hunger makes it harder to store newly learned information. Satiety means fuels are available to build neuron circuits to [store long-term memory](#).

Decisions about a third party, for example a judge delivering a verdict on a defendant, may be better in a state of satiety while tasks that involves fine motor functions, such as surgery, may be compromised. This is because after a meal, self interest in survival is diminished because we do not need to search for food.

This allows us to more objectively judge our environment. But satiety is a time when the body needs to rest to process food, which is why complex fine motor skills aren't at their best in this state.

Next time you have to make a difficult decision at the end of a long day, be aware you will be inclined towards low-effort actions with short-term rewards.

If possible, you should sleep on it.

[Zoltán Molnár](#) is a Professor of Developmental Neuroscience @ University of Oxford.

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Allegations of chemical attack on PKK: Who says what?

Source: <https://m.bianet.org/english/militarism/268801-allegations-of-chemical-attack-on-pkk-who-says-what>

Oct 20 – Türkiye's government has dismissed the allegations that it carried out a chemical attack on the Kurdistan Workers' Party (PKK) in Iraq's Kurdistan Region.

On Tuesday (October 18), the Fırat News Agency (ANF) released a video clip of two PKK members allegedly exposed to chemical weapons.

The video shows a man having a seizure, and a woman showing delirious behavior, which the report claims was caused by toxic gasses. Both people eventually died due to the exposure, according to the report.

Citing a statement from the PKK, the ANF report said Türkiye had used chemical weapons at least 2,476 times in the last six months during its military operations in Kurdistan.



Türkiye has intensified its [cross-border operations](#) targeting the PKK since 2019. The latest operation, dubbed as the "[Operation Claw-Lock](#)," has been going on in the mountainous regions of Metina, Zap and Avasin-Basyan since mid-April.

The PKK, which has been waging an armed insurgency against Türkiye since 1984, has long accused it of using chemical weapons.

Calls for an investigation

The Peoples' Democratic Party (HDP) on Tuesday [released](#) a written statement, demanding the Organization for the Prohibition of Chemical Weapons (OPCW) and the United Nations investigate the claims.

"There are serious reports and allegations that Turkey has been using chemical agents in its military operations in the territories of the Kurdistan Regional Government in Iraq since 2021, which, according to international law, constitutes a war crime," it said.

Meanwhile, the OPCW [said](#) on Twitter yesterday that such an investigation can only be triggered by a member state of it.

Selahattin Demirtaş, the imprisoned former co-chair of the HDP, also said the claims should be investigated.

"The parliament of Türkiye and the opposition cannot keep silent in the face of these images. Keeping silent means giving approval to a crime," he wrote on Twitter yesterday. Meral Daniş-Beştaş, deputy chair of the HDP parliamentary group, submitted a parliamentary question to Minister of Defense Hulusi Akar, asking him to clarify the allegations.

Sezin Tanrikulu, an MP for the main opposition Republican People's Party (CHP) was among those calling for an investigation of the claims on Twitter.

Comment from Turkish Medical Association head

Commenting on the video in question for Medya Haber TV, Şebnem Korur-Fincancı, head of the Turkish Medical Association (TTB), said, "Obviously, toxic gasses that directly [affect] the nervous system have been used." "Even though these gasses are banned, we, unfortunately, see that these are used in conflict," she remarked, adding that an independent investigation should be carried out in the region. The Ankara Chief Public Prosecutor's Office today opened an investigation into Korur-Fincancı for "propagandizing for a terrorist organization" and "publicly degrading the Turkish Nation, the state of the Republic of Türkiye and its institutions."

Response from government officials

Government officials and the Ministry of National Defense firmly denied the claims.

In a Twitter post today, Presidential Spokesperson İbrahim Kalın said, "Chemical weapons lie is the futile effort of those who try to justify and aestheticize terrorism." Ruling Justice and Development Party (AKP) Spokesperson Ömer Çelik also dismissed the allegations on Twitter, saying, "Those who accuse the Turkish Armed Forces of using chemical weapons are part of a vile slander network. "These people try to show the murders of the terrorist organization innocent.


"Those who praise the murders of the PKK are attacking the TSK [Turkish Armed Forces] in the name of dirty groups."

The ministry statement

The Ministry of National Defense rejected the allegations in a written statement today.

"The allegations that 'chemical weapons' are used by the Turkish Armed Forces, which are periodically brought to the agenda by circles who want to tarnish the fight against terrorism... and to cast a shadow on the success of the Turkish Armed Forces, are completely baseless and unrealistic," the statement said. The Turkish Armed Forces do not use ammunition "prohibited by international law and agreements," and does not have such ammunition in its inventory, according to the ministry.

"[The TSK] targets only terrorists and shows utmost care and sensitivity to ensure that civilians, historical, religious and cultural assets and the environment are not harmed. "All these disinformation efforts are the futile struggles of the terrorist organization and its allies, who have come to the point of collapse as a result of the determined struggle of our heroic Turkish Armed Forces and are seeking a way out with false and immoral means to get out of the difficult situation they are in." (VK/PE)



Read in the November 2022 issue

**Artificial intelligence and Robotics meet
CBRN preparedness and planning**

By the Editor

2022-23 CBRNe-related conferences



NCT Events 2022

<https://nct-events.com/>

NCT is back! After the stop imposed on us by the pandemic, we have a large calendar of events coming up in 2022. We will start in Abu Dhabi, February 7th and 8th. We will then reach almost every continent: NCT is scheduled for Brazil, Germany, Thailand, Croatia, the United States, and South Korea. [Visit our website](#) for the latest news regarding dates and locations!

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It is always good to have a Plan B.

Dear colleagues,

I am pleased and honoured to invite you to participate in the first edition of the Cannes International Resilience Forum (CIRF). CIRF is an international conference dedicated to crisis management and resilience, which will take place at the Palais des Festivals et des Congrès in Cannes from Sunday 23rd to Wednesday 26th, October 2022.

IsraTeam Ltd., established in Israel in 1988, has a renowned expertise in the field of emergency management and mitigation, particularly during times of war, natural disasters or terrorist attacks. Its team is comprised of highly qualified experts, including high ranking personnel in the Israel Defence Forces (IDF) and Ministry of Health.

Regarding the prevention and management of major risks, Cannes is a pioneer city as it was certified in 2018 by the Ministry of Europe and Foreign Affairs for its expertise in “preventing terror risk during the organisation of events”. In March 2021, the City of Cannes obtained an enlargement of this labelling to “sanitary and natural risk”, as part of the Ministry program meant to highlight the expertise of local authorities.

The first edition of the Cannes International Resilience Forum will focus on building resilience strategies to face the consequences of Covid-19 pandemic as well as on sanitary crisis management.

Main issues to be discussed at the conference will be - Building the Resilience today to be ready for the next generation and will dive into such topics as:



ICI C²BRNE DIARY – October 2022

1. "COVID-19" – LESSONS LEARNT.
2. "POST – COVID-19 ERA" Health Systems Preparedness.
3. CLIMATE CHANGE EFFECTS ON EMERGENCY PREPAREDNESS
4. The Mayor leadership
5. RADIOLOGICAL DISASTER MANAGEMENT
6. BUILDING RESILIENCE.
7. "THE CYBER WORLD" Threats and responses.
8. The Financial Challenge in a Disaster
9. The Functional Continuity in the Supply of electricity and Water
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11. "THE WORLD TERRORISM" Counter terrorism and responses
12. Multidisciplinary Simulation Exercise Simulation systems to emergencies and crises events
13. TECHNOLOGICAL INNOVATION FOR BETTER RESILIENCE
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More details will follow in due time

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www.exchangemonitor.com/go/nuclear-deterrence-summit-2023/

4-11 March: NCT Middle East

Riyadh, KSA

<https://nct-events.com/event>

21-24 March: DSI Joint Civil and DoD CBRN Forum

National Harbor, Washington DC.

dsigroup.org

21-26 May: International CBRN Commandants and Commanders Conference (ICCC) 2023

Rotterdam, The Netherland

25-27 July, NDIA Annual CBRN Symposium and Exhibition

Baltimore Civic Center, Baltimore, MD

www.ndia.org/events

04-08 September: NCT USA

Aberdeen Proving Ground, Edgewood MD

04-11 November: NCT Asia

Kuala Lumpur, Malaysia



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BIO NEWS



11 dead in suspected and confirmed Ebola cases in Uganda

Source: <https://edition.cnn.com/2022/09/23/africa/ebola-deaths-uganda-intl/index.html>

Sep 23 – In the last 24 hours, Uganda has recorded four confirmed cases of Ebola, bringing the cumulative number of confirmed cases to 11, the country's health ministry reported Friday in a statement. The Ugandan Health Ministry considers a "probable case" as any person who died from suspected EVD (Ebola) and had an epidemiological link to a confirmed case but was not tested and did not have lab confirmation. The ministry considers "confirmed cases" for those with positive lab results.

Around 25 patients are being admitted at a health facility in the East African country's **Mubende district** where the Ebola outbreak was detected, the ministry said, while also stating that six of the cases had **been** confirmed to be infected while 19 were suspected of having the virus.

Providing more details on the spread, the ministry said a total of 58 contacts of the confirmed cases had been traced.

Uganda declared an Ebola outbreak on Tuesday after a case of the rare Sudan strain was detected in the country. The patient, now deceased, was a 24-year-old man in the Mubende district.

One of the probable Ebola-related casualties was a 1-year-old child, health authorities said in an earlier statement.

Uganda has experienced four Ebola outbreaks. The deadliest left [over 200 people dead](#) in 2000.

[According to the WHO](#), vaccination against the rare Sudan strain hasn't been tested for efficacy. However, the Ervebo (rVSV-ZEBOV) vaccine has been found to be effective in protecting against the Zaire variant of the Ebola virus. Uganda borders the Democratic Republic of the Congo, which is experiencing [an Ebola resurgence](#) following outbreaks this year.



Is the Pandemic Over? If Only It Were That Simple

Source: <https://www.medscape.com/viewarticle/981236>

Sep 22 – President Joe Biden [says the pandemic is over](#). The World Health Organization says the [end is in sight](#). Many of us would rather talk about almost anything else, and even New York City has dropped most of its COVID protocols.

Biden's claim (made to reporter Scott Pelley on Sunday on [60 Minutes](#)) has caused the debate over COVID-19 to explode yet again, even though he's twice now tried to soften it. It has roiled the already divided public, fueled extensive coverage on television news, and led pundits to take sides.

But to many, a pandemic can't be declared "over" when the U.S. alone is averaging more than 71,000 new cases and more than 400 deaths a day, and there are 500,000 cases and nearly 2,000 deaths each day around the world.

Biden's comment has split experts in medicine and public health. Some adamantly disagree that the pandemic is over, pointing out that COVID-19 remains a public health emergency in the United States, the World Health Organization still considers it a global pandemic, and most significantly, the virus is still killing over 400 people a day in the U.S.

Others point out that most of the country is protected by vaccination, infection, or a combination, at least for now. They say the time is right to declare the pandemic's end and recognize what much of society has already decided. The sentiment is perhaps captured best in a [controversial new](#) COVID health slogan in New York: "You Do You."

In fact, a new poll from media site Axios and its partner, Ipsos, released Sept. 13, [found that 46% of Americans](#) say they've returned to their pre-pandemic lives — the highest percentage since the pandemic began. Meanwhile 57% say they're still at least somewhat concerned about the virus.



A Balancing Act

"How can one country say the pandemic is over?" asked Eric Topol, MD, executive vice president of Scripps Research and editor-in-chief of Medscape (WebMD's sister site for medical professionals).

It's far from over, in Topol's view, and there has to be a balance between protecting public health and allowing individuals to decide how to run their lives based on risk tolerance.

"You can't just abandon the public and say, 'It's all up to you.'" He sees that approach as giving up responsibility, potentially causing an already reluctant public to forget about getting the latest booster, the bivalent vaccine that became available earlier this month. Topol coined the phrase "COVID capitulation" back in May when the U.S. was in the middle of a wave of infections from the BA.2 variant of the coronavirus. He used the phrase again this month after the White House said COVID-19 vaccines would soon become a once-a-year need, like the annual flu shot.

Topol now sees hope, tempered by recurring realities. "We are on the way down, in terms of circulating virus," he says. "We are going to have a couple of quiet months, but then we are going to cycle back up again." He and others are watching emerging variants, including the subvariant BA.2.75.2, which is [more transmissible](#) than BA.5.

The White House acknowledged as much back in May [when it warned](#) of up to 100 million infections this fall and the chance of a major increase in deaths. The Institute for Health Metrics and Evaluation at the University of Washington projects that about 760,000 people are now infected with COVID-19 in the U.S. That number will rise to more than 2.48 million by the end of the year, the group warns.

A New Phase?

"From a public health perspective, we are clearly still in a pandemic," says Katelyn Jetelina, PhD, a health policy expert who publishes Your Local Epidemiologist, a newsletter on science for consumers. "The question is, 'What phase of a pandemic are we in?' It's not an emergency, where the Navy [is rolling in the ships](#) [as it did to help hospitals cope with the volume of COVID patients in 2020.]"

"The biggest problem with that comment [by Biden] is, are we normalizing all those deaths? Are we comfortable leaving SARS-CoV-2 as the third leading cause of death? I was disappointed by that comment," she says.

Even if people shift to an individual decision-making mode from a public health perspective, Jetelina says, most people still need to consider others when determining their COVID-19 precautions. In her personal life, she is constantly taking into account how her activities affect those around her. For instance, she says, "we are going to see my grandpa, and everyone is doing antigen testing before."

While younger, healthier people may be able to safely loosen up their safeguards, they still should be aware of the people around them who have more risk, Jetelina says. "We cannot just put the onus entirely on the vulnerable. Our layers of protection are not perfect."

Like Topol, Jetelina suggests taking circumstances into account. She recommends small steps to collectively reduce transmission and protect the vulnerable. "Grab the mask" before you enter a high-risk setting, and "get the antigen test before going to the nursing home."

Worst Behind Us?

"It's not mission accomplished yet," says William Schaffner, MD, an infectious disease expert and professor of preventive medicine at Vanderbilt University in Nashville. If he could rewrite Biden's comments, he says, "He could have said something like 'The worst is behind us,'" while mentioning the new vaccine to increase enthusiasm for that and pledging to continue to make progress.

Schaffner, too, concedes that much of society has at some level decided the pandemic over. "The vast majority of people have taken off their masks, are going to concerts and restaurants again, and they want to function in society," he says.

He understands that, but suggests one public health message should be to remind those people who are especially vulnerable, such as adults over age 65 and those with certain illness, to continue to take the extra steps, masking and distancing, especially as flu season gears up.

And public health messages should remind others of the vulnerable members of the population, Schaffner says, so those who continue to wear masks won't be given a hard time by those who have given them up.

A Focus on the Most Vulnerable

Biden's statement "could have been phrased better," says Paul Offit, MD, an infectious disease expert and director of the Vaccine Education Center at Children's Hospital of Philadelphia. But, he says, things are different now than in early 2020.



"We are in a different place. Now most of the population is protected against severe disease [either by vaccination, infection, or a combination]."

The effect of that protection is already playing out in requirements, or the lack of them, Offit says. At the pandemic's start, "we mandated the COVID vaccine at our hospital [for employees]" Now, the hospital won't mandate the new bivalent vaccine.

The focus moving forward, he agrees, should be on the most vulnerable. Beyond that, he says people should be making their own decisions based on individual circumstances and their risk tolerance.

One important and looming question, Offit says, is for scientists to find out how long people are protected by vaccination and/or previous infection. Protection against hospitalization and severe disease is the goal of vaccination, he says, and is the only reasonable goal, in his view, not elimination of the virus.

Biden "Is Right"

Taking the opposite view is Leana Wen, MD, an emergency medicine doctor, health policy professor at George Washington University, and frequent media commentator, who says Biden should not be walking back his comment that the pandemic is over. "He is right."

She says the U.S. has entered an endemic phase, as evidenced by social measures — many people are back to school, work, and travel — as well as policy measures, with many locations relaxing or eliminating mandates and other requirements.

There is disagreement, she says, on the scientific measures. Some say that over 400 deaths a day is still too high to call a pandemic endemic. "We are not going to eradicate the coronavirus; we need to live with it, just like [HIV](#), [hepatitis](#), and [influenza](#). Just because it's not pandemic [in her view] doesn't mean the level of disease is acceptable or that COVID is no longer with us."

Wen doesn't see taking a public health perspective versus a personal one as an either-or health choice. "Just because something is no longer a pandemic doesn't mean we stop caring about it," she says. But "I think [many] people live in the real world. They are seeing family and friends have returned to play dates, going to restaurants, not wearing a mask. COVID has become a risk just like many other risks they encounter in their lives."

The tension between public health and individual health is ongoing and won't go away, Wen says. And it applies to all health issues. The shift from the broad public health concern to individual decisions "is what we expect to happen and should happen."

She noted, too, the cost of measures to fight COVID, including closed schools and businesses and their effect on mental health and economics, plus another less-discussed cost: The effect on trust in public health

Continuing to demand measures against COVID-19 when cases are declining, she says, may weaken trust in public health authorities even further. With New York state recently declaring [a public health emergency](#) after finding the polio virus in sewage samples, Wen wondered: "What happens when we say, 'Get your kid immunized against polio?'"

EDITOR'S COMMENT: My logic-based evaluation dictates that the pandemic will be over only when monthly/seasonal cases and Covid-related deaths come down to numbers matching similar viral diseases and when a "real" vaccine is manufactured — one that fulfills the "old" definition of CDC (the one that changed in support of mRNA vaccines).

CRISPR Technology Turns 10, Rises to New Challenges

CRISPR excites ambition. Just consider a few CRISPR applications: gene drives (showing promise as a way to prevent malaria); ex vivo and in vivo gene therapies (entering clinical trials); and diagnostic tests (gaining momentum now that two assays have secured EUA for a raging pandemic disease-COVID-19). Ever since CRISPR technology arrived, it has been refining its capabilities and tackling increasingly difficult problems-including problems of global scope. [+ MORE](#)

Mild COVID increases risk of many neurological problems for millions

Source: <https://newatlas.com/health-wellbeing/mild-covid-risk-brain-neurological-problems/>

Sep 22 – New research from the Washington University School of Medicine in St. Louis presents the most comprehensive investigation to date into the long-term neurological problems associated with COVID-19. Tracking more than 150,000 COVID patients for 12 months the research found infections led to a 42% increase in risk of several brain disorders. Ziyad Al-Aly, an epidemiologist at Washington University, has been working with the US Department of Veterans Affairs since the pandemic



began. The research uses massive healthcare databases to garner novel insights into the long-term effects of COVID-19. Earlier in 2022, Al-Aly and colleagues published several studies [reporting increases in cardiovascular problems](#) and [mental health disorders in COVID-19 patients](#) up to 12 months after an initial infection. This new study, published in *Nature Medicine*, broadly looks at a variety of neurological problems in the year following mild and severe infections.

“Our study provides a comprehensive assessment of the long-term neurologic consequences of COVID-19,” explained Al-Aly. “Past studies have examined a narrower set of neurological outcomes, mostly in hospitalized patients. We evaluated 44 brain and other neurologic disorders among both nonhospitalized and hospitalized patients, including those admitted to the intensive care unit.”

The investigation included cerebrovascular events such as stroke, episodic disorders including migraine and seizure, and cognitive conditions like Alzheimer’s. Overall, the findings showed COVID survivors were 42% more likely to experience some kind of neurological problem in the year after an infection, compared to uninfected controls.

More specifically, the study reported COVID survivors faced a 77% increased risk of memory problems, 50% increased risk of stroke, 80% increased risk of seizure, and a 30% increased risk of eye problems. Echoing [some prior studies](#), the researchers also saw small increases in Alzheimer’s diagnoses in COVID patients relative to uninfected controls.

“It’s unlikely that someone who has had COVID-19 will just get Alzheimer’s out of the blue,” Al-Aly stressed. “Alzheimer’s takes years to manifest. But what we suspect is happening is that people who have a predisposition to Alzheimer’s may be pushed over the edge by COVID, meaning they’re on a faster track to develop the disease. It’s rare but concerning.”

There are several caveats to these findings that are important to note. The cohort used in the research is old, with an average age of 61. And due to the long 12-month follow-up almost all of these initial infections were in unvaccinated subjects.

So it is possible these increased risks could be lessened in younger and/or vaccinated populations. However, Al-Aly does note some risks of specific neurological conditions were higher in younger people.

“Risks of memory and cognitive disorders, sensory disorders and disorders including Guillain–Barré and encephalitis or encephalopathy is stronger in younger adults,” Al-Aly said on Twitter. “... the effects of these disorders on younger lives are profound and cannot be overstated.”

It’s also crucial to stress the actual absolute increases in cases of these conditions were small. Overall, the study found seven extra cases of any neurological problem for every 100 COVID cases.

So, in real terms, these are small numbers, and potentially even smaller if age and vaccination make any kind of difference. But the researchers do make clear in the study that because this pandemic is so widespread, even tiny absolute numbers add up to a large volume of affected people.

“Given the colossal scale of the pandemic, and even though the absolute numbers reported in this work are small, these may translate into a large number of affected individuals around the world – and this will likely contribute to a rise in the burden of neurologic diseases,” the researchers reported in the study.

According to the researchers, if the numbers in this study were extrapolated to the amount of COVID cases reported in the US more than six million people will have experienced some kind of neurological problem in the year after infection. Even conservatively cutting that number in half still leaves millions of people facing brain challenges after COVID.

“The results show the devastating long-term effects of COVID-19,” said Al-Aly. “These are part and parcel of long COVID. The virus is not always as benign as some people think it is.”

●► The new study was published in [Nature Medicine](#).

Is the next pandemic brewing on the Netherlands' poultry farms?

By Paul Tullis

Source: <https://thebulletin.org/2022/09/is-the-next-pandemic-brewing-on-the-netherlands-poultry-farms/>

Sep 26 – Roy Slaterus has been birdwatching since he was 7 or 8, and now, at 44, he says he can recognize nearly all of the 200-plus species of birds that are endemic to his native Netherlands by their calls. On a cool May morning just north of Amsterdam, under skies such as [Albert Cuyt](#) might have painted, he identifies a black-tailed godwit flying behind him by its [warning sound](#). “He’s showing off nicely,” Slaterus says of the godwit, his country’s national bird, “saying to us that it has chicks and doesn’t want us around.”

Slaterus is an environmental planner by training and a researcher with Sovon Bird Research Netherlands, a nonprofit that monitors bird populations in the country for management and policy development. He had set out at dawn to walk through one of many set areas, counting



breeding birds on a tablet computer loaded with custom-built software with which he records every sighting of each species seen. Birds move around a lot, so to avoid counting migrants or itinerants along with the breeders, for this project he or a colleague will walk each zone six times during the spring months, including once at night. Then they use their gathered observations to determine the number of territories for all the breeding species.

“Bird-watching is still a thing that nerds do,” he says. “Always people make jokes about it, but that’s not my problem.”

Stepping out of his car, across the street from a row of houses, he dons a bright green vest identifying him to owners of any property on which he might trespass—“I count birds for research,” it reads in Dutch—then straps his binoculars around his neck and crosses through a gate into fields bordering pastureland but owned by a nonprofit that acquires land in the Netherlands to conserve it for nature. The nonprofit’s territory holds a considerably wider variety of grasses and wildflowers than the monoculture pasture on the other side of the fence, and the grass is varied enough to suit ground-nesting birds like the godwit.

Waterbirds like the barnacle goose, greylag goose, and black tailed godwit are reservoirs for avian influenza.

Slaterus points out a Eurasian tree sparrow in the grass. “That’s not the normal house sparrow you see in Amsterdam,” he makes sure to elucidate. Next come two families of graylag goose with nearly fully-grown chicks. Later, an exciting find: “Meadow pipits! I thought maybe they were missing here, but I don’t think so.”

About an hour into his stroll, though, Slaterus encounters something he would rather not. “Oh, I see a sick barnacle goose,” he exclaims.

The species, distinctive for its black neck, white face, and striped back, summers mostly in the Arctic, but winters and breeds in northwestern Europe. Here, several families had built nests in the tall grass. (Fun fact: Since geese carry material on their bodies that is well known for its insulating properties, they often construct nests from nothing but their own down; in all his years of birdwatching and bird-counting, Slaterus has never seen a goose carrying a stick or other nesting appurtenance.)

The apparently sick bird is congregating with the families, probably for security. “When they’re sick, there comes a moment they can’t keep up with the flock anymore,” Slaterus says, so while the other singles have set out for the Russian Arctic, the ill one has lagged behind. It is unsteady on its feet and holds its head and chest in a strange way. Then it falls over on its side.

These neurological symptoms are consistent with highly pathogenic avian influenza (HPAI), and though it is late in the season for the virus to be circulating, Slaterus and his colleagues have noticed a disturbing number of sick and dead birds during their counts this year (and last year, too). “With the experience of the last months, I would take a bet” that the oddly behaving barnacle goose is so afflicted, Slaterus says. In that time, “We’ve seen things we’ve never seen before.”

HPAI used to be a disease that almost exclusively affected poultry, but in 2004 it spread to wild birds in China. Like humans who unwittingly carried SARS-CoV-2 on airplanes from Wuhan to Seattle and from Wuhan and Italy to Belgium and soon from virtually everywhere else to virtually everywhere else in early 2020, infected wild birds are often asymptomatic, so they can migrate carrying the virus. By 2005 it was in Europe. Wild birds stop over or winter in watery areas (which describes most of the Netherlands), gathering in large numbers. “That enables amplification and spillover to other species,” says Arjan Stegeman, a research veterinarian and professor of farm animal health at Utrecht University.

Between October 2021 and late September 2022, the UN’s Food and Agriculture Organization counted [9,604 HPAI "events" \(including outbreaks, cases, and other disease detections\) on four continents](#), the most ever. In December, for the first time, HPAI crossed from Europe to North America. A virus brought from across the Bering Strait led to the worst bird flu outbreak ever in the US in 2015; this season’s, begun with the introduction in Newfoundland, is [approaching](#) 2015’s in severity. In June, HPAI was detected in the Arctic for the first time, on an archipelago about halfway between Norway and the North Pole, exposing new and vulnerable species to the disease who can now bring it to their breeding grounds and spread it to yet more species and populations.

Die-offs of vulnerable species are now alarming ecologists around the world: They have hit great skuas in Scotland, which hosts 60 percent of that species’ breeding population; more than one-sixth of the wintering population of cranes in Israel; and 20 percent of the flyway population of barnacle geese. Hundreds of dead cormorants washed up on beaches in Massachusetts in June, and in July, the virus was rampant in the United Kingdom’s Farne Islands, an important breeding site for 200,000 birds across 23 species, including puffins, each summer, according to [The Guardian](#). An entire colony of thousands of sandwich terns died in the Netherlands. In previous outbreaks, HPAI had died out by the time the terns arrived in summer, but this year’s virus hung around long enough to put them at risk, too. Since it’s novel to the species, like SARS-CoV-2 was to humans in 2020, they’re particularly vulnerable. “This population has no immunity, because they’ve never encountered it before,” says Nancy Beerens, head of the national reference laboratory for avian flu at Wageningen Bioveterinary Research in the Netherlands.

With such broad distribution this year, there is now a very real concern that the spread of a virus that originated with human activity—mass poultry farming—is now coming around to bite humans back.



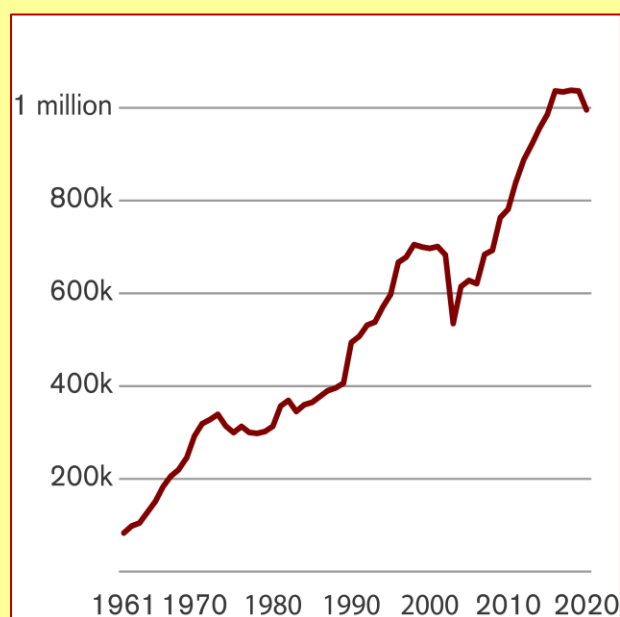
Transcontinental spread allows viruses to circulate in larger avian metapopulations. That provides the pathogens' genetic material, RNA, more opportunities to reassort and mutate, becoming perhaps more fit for sickening different species of birds or mammals. Another risk multiplier is the greater variety of HPAI than in years past. "This year is special because there are so many different genotypes involved, both viruses that have remained in Europe since last year and several new introductions from the east," says Thijs Kuiken, a professor of comparative pathology in the department of viroscience at Erasmus Medical Centre in Rotterdam. "That is very different from all other HPAI outbreaks, which start on a single poultry farm and spread from there."

Climate change is exacerbating the situation. Birds today migrate farther north, so when autumn comes, they sometimes go south down a different longitudinal line—which converge the closer they come to the pole—than the one they followed up in the spring.

While there have been a couple of thousand [instances](#) worldwide of people getting sick from the HPAI varieties [now circulating](#), through [contact with poultry](#) or domesticated birds, so far these are not capable of community transmission among humans. But human flu viruses do have that capability. As HPAI reassorts and mutates in various wild bird species, their constituents deposit novel viral RNA through their droppings into poultry farms. (In birds, flu is a gastrointestinal as well as a respiratory disease.) These reservoirs of virus hosts are in contact with humans and their flu viruses. While the receptors that avian flu viruses latch onto are in a different position in the respiratory tract than in humans, hindering infection, research conducted at Erasmus Medical Centre in 2012 showed that it takes just five steps for a common HPAI to develop the capability—"gain of function," in the field's parlance—of making a mammal sick, and of passing the novel virus to another of its species. The potential for weaponizing this research, intended to develop better understanding of the risk HPAI presents to humans, so alarmed a number of other scientists that they called for publication to be halted; in the end, the US National Science Advisory Board for Biosecurity allowed redacted versions to be published, without "methodological and other details that could enable replication of the experiments by those who would seek to do harm."

"From the human perspective, it could be that it's worse if you have more reassortment, because this makes it a completely different makeup of the virus," Stegeman says.

The influenza virus that swept the globe in 1918-1919, infecting one-third of humanity and killing more than 2 percent, was avian in origin. In 2009, a novel variety of the flu virus H1N1 infected as many as 1.4 billion people (almost two-and-a-half times as many as SARS-CoV-2); its vanishingly low death rate saved us. But H7N9, another avian flu, has killed 39 percent of the 600-plus people it infected; fortunately, it doesn't pass person-to-person. Last year, in Russia, a virus that struck the Netherlands in 2020-21 and again in 2021-22, H5N8, infected humans for the first time. The WHO calls the risk of human-to-human transmission of H5N8 at this point "low," but Russia's public health minister, Anna Popova, told a press conference, "Time will tell how soon subsequent mutations will allow it to cross this barrier as well."



[Tonnes of annual chicken meat production in the Netherlands, 1961–2020. \(OurWorldInData\)](#)

Flu viruses are categorized according to their two surface proteins, hemagglutinin (H) and neuraminidase (N). There are 18 subtypes of H and 11 of N, hence H1N1, H5N8, etc. When a cell becomes infected with, say, H1N1 and H5N8 at the same time, there's a chance of reassortment of the proteins occurring such that an H1N8 or H5N1 subtype develops. This new subtype could have new properties for infection that might include the ability to sicken different species—the 2021-2022 flu season afflicted a different set of species than those that

became sick during 2020-21.

Spread usually occurs through water, but on chicken farms, the birds are typically kept so closely together that the virus can spread between them directly. The Netherlands is the world's top exporter of eggs and third largest of chicken meat—from a nation one-quarter the size of Alabama, making it home to some of the planet's most intensive poultry farming. The country hosts six times the number of poultry birds per acre as the European Union average—18 times, in one province—producing 10 billion eggs and 1 million tonnes of meat a year from just 2,000 farms. By one count, about 120 farms keep 120,000 chickens each, and 34 have more than 220,000.



As the virus spreads into each new host, it replicates, and as it replicates, it mutates. Like reassortment, mutation can drive cross-species transmission because when genes copy themselves, they sometimes make mistakes. Mutations are necessary to make a virus deadly. So the more replication, the more opportunities for such errors—one of which could produce a virus with the combination of RNA that sickens humans and passes between them.

“The more viruses are circulating, the more contact,” says Beerens. “You need these mutations, but the more transmissions there are, the more potential for transmission to humans, the more risk there is.”

China and the United States host plenty of intensive poultry farming, but between 1959 and 2015, the most mutations of mild avian flu virus into a subtype deadly to birds occurred in Europe. Outbreaks of HPAI on Netherlands poultry farms this year are the worst since the European Food Safety Authority started tracking outbreaks in 2016, requiring culls of approximately 3,973,097 birds on about 66 farms in the attempt to limit further spread. EFSA reported in December that because of “the continuous risk ... that these viruses may adapt further to mammals ... the high level of reassorted viruses currently circulating in Europe are of concern for public health.”

With more types of HxNy virus circulating in birds, greater numbers of species involved in their spread, and more replication and hence mutation on poultry farms, there are more opportunities for a virus to develop into a novel pathogen capable of community transmission. The novel pathogen SARS-CoV-2, which causes the disease COVID-19, has so far killed more than six million people worldwide, caused a global recession, roiled stock markets, killed caregivers of more than 140,000 children in the United States alone, [stunted the education](#) of untold millions more, and caused physical and mental health traumas [whose effects won't be known for years to come](#).

The high density of Netherlands' poultry farms means they present the chance of “development of HPAI variants with pandemic potential,” Kuiken says. Risk can be defined as the chance that something will happen multiplied by the consequences if it does. So even if the likelihood is small, with such possible ramifications, the risk is nonetheless very high.

Ten minutes before Slaterus saw the sick barnacle goose, he received a text message from a colleague doing the same work 45 kilometers to the southeast. “Still bird flu in Arnhem,” it read. “Freshly dead widgeon and sick barnacle geese.”

“You get overwhelmed when you see these sick birds,” Slaterus says. When Sovon staff comes across a group of three or more, those that appear to have died recently, and therefore are more likely to still carry live virus, are reported to the Dutch government, which, if not overwhelmed with reports, will send a specially trained team in hazmat suits to collect specimens and bring them to the Biosafety Level 4 facility at Wageningen Bioveterinary Research, a university-affiliated lab, for testing by Beerens' team. About half the time, they are found to be infected with HPAI; WBVR has confirmed HPAI in some 765 wild bird specimens since October.

The lab, in Lelystad, is one of about 50 Biosafety Level 4 labs in the world. Level 4 is the highest designation, with special requirements to safely handle dangerous microbes with a high risk for aerosol transmission, and of killing people. The permit for its construction stipulated that no poultry or livestock farming would be allowed within 10 kilometers; to keep out wild animals, electric fencing and a moat surround the entire campus.

After acting on reports from Slaterus or others involved with the Netherlands' passive monitoring program—recreational birdwatching groups have been instructed on what to do if they come across a sick animal—the hazmat team delivers samples through a locked gate under a protocol according to the suspected pathogen. “As long as we don't know what it is, we fear the worst,” says Jacqueline Wijbenga, the lab's press liaison. (Beerens was on vacation when I visited.) “You don't want to be the organization that causes another pandemic, so every sample is treated as if it's the pandemic virus.” If one tests positive for HPAI, the lab informs the government. If the sample came from a farm, the response is strict: All poultry within one kilometer are culled; samples of birds on all farms within three kilometers are tested; and no live poultry is allowed in or out of a 10-kilometer radius for 30 days, except through defined corridors to a government-approved slaughterhouse. (Culling wild birds would be ineffectual and environmentally damaging, experts say.)

Staff must change clothes upon arrival at the building that houses the BSL 4 lab, a windowless steel and brick edifice that is about the size of two basketball courts. The color of their garb indicates their level of access, and the programming on their key cards provides it. A system of airlocks and pressurization prevents exchange of air with the surroundings, and except for the employees, everything that goes in BSL 4, stays in BSL 4. (This creates procurement challenges for the organization; replacement parts for every piece of equipment must be ordered and brought inside with each new item.) Eyeglasses are an exception. All employees have a phone and laptop that remain inside the facility, their digital lives like the characters on the TV show [Severance](#) who have separate identities at home and at work. (If you accidentally bring your personal cell phone in, you better hope it's backed up because it must immediately be destroyed). At the end of the day, everyone must shower for five minutes. With very few exceptions, only trained personnel are allowed inside.



In the BSL 4 lab, after testing for HPAI, viruses are broken apart (so to speak) and deactivated (so to speak), so as to be stripped of their infectiousness. Then their genomes can be sequenced.

One sample studied earlier this year was found to have gained a function characteristic of a pandemic virus—it spread to animals besides birds. This avian flu season has seen “an unprecedented genetic variability” of viruses, the World Organization of Animal Health reported in November 2021.

“What was surprising this year is for the first time we saw other animals [besides birds] become infected—foxes and ferrets,” Beerens says. (The 2012 gain-of-function research at Erasmus was conducted using ferrets, a common model for human immune systems when experimenting with flu viruses.) “We saw one mutation that we know is a zoonotic mutation; it’s needed to adapt to the lower body temperature of mammals.” More adaptations will be needed for this or any other HPAI to replicate within and pass between humans, of course, but this one, while not sufficient, was necessary, and indicative of what nature can do when given enough chances, like the billion typing monkeys who eventually produce the works of Shakespeare. “That is one step,” Beerens says.

European and Netherlands regulators have so far failed to take steps experts recommend to slow spread of bird flu within and between poultry operations. An expert group that included Stegeman and Kuiken, which the Dutch government commissioned, produced a report on zoonotic diseases in June 2021; its advice on how to prevent another zoonosis-induced pandemic was both general (education, preparedness, international collaboration) and specific.

One idea the group supported is to offer flu shots for poultry workers, so they are less likely to become a host for a human flu virus reassorting with an avian strain. (Some experts, including Stegeman, see vaccines as “the only way out” of recurring bird flu outbreaks.) “If they become infected with both the HPAI virus and human influenza virus, a reassortant virus could be generated that could cause a new influenza pandemic in the global human population,” Kuiken says. But medical culture in the Netherlands is notoriously low-intervention (doctors generally only provide flu shots to the elderly and immune-compromised). Despite the [huge number of farms where HPAI has appeared in 2021-22](#), and correspondingly large number of farmworkers who have likely been exposed, the government, which was [quick to respond](#) to some public health needs during COVID but slower in other areas, has so far failed to act.

Vaccination of the birds themselves is another policy the expert group recommended. It would be labor-intensive for businesses, certainly, to give thousands of tremulous chickens a jab every six weeks (the approximate lifespan of a broiler), but the shots are effective and cheap. Kuiken says that “vaccinating poultry is not possible against future HPAI viruses because we do not know which variant will appear, and there is no vaccine that is effective against all variants,” but most experts maintain that something is better than nothing.

The European Commission (the EU’s executive branch) has taken the opposite approach, however, instead banning poultry vaccination in most cases because the shots would make the poultry unsuitable for export: An infected but asymptomatic animal—like humans vaccinated against COVID-19 who can nevertheless spread SARS-CoV-2 to others—could bring a virus across a border, which nobody wants.

France held the presidency of the European Council, which sets the Union’s political priorities, through June, and it pushed to change this policy and said it would be testing new and presumably better vaccines. But all that could be agreed upon was “to continue working on this subject,” French Agriculture and Food Sovereignty Minister Marc Fesneau [reportedly said](#) as the Council’s quarterly session drew to a close.

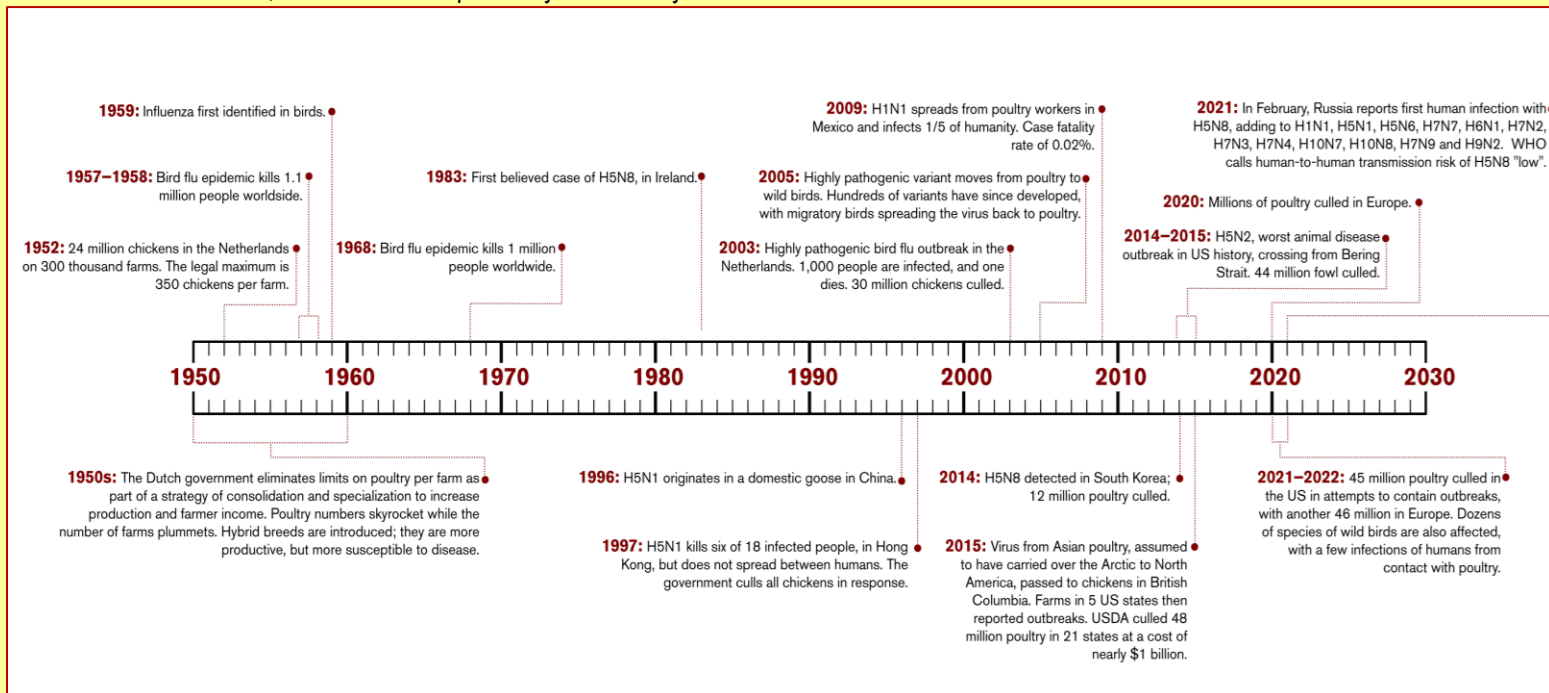
There is irony—and danger—in the decision not to vaccinate chickens. Shuttling chickens across borders, the Dutch expert group warned, “expands the regions of origin of potential infections, and the risk of infection is increased when animals from different regions and farms mix.” Regulators are instead pinning their hopes on some low-paid farmworker or trucker noticing a sick or dead bird, which seems like asking the guy who mops the floors in a hospital’s intensive care unit to keep an eye out for flatlining monitors. Highlighting the possibility that one or another of the highly pathogenic avian influenza viruses now circulating could develop into a pandemic virus, the group called for a new system for hospitals to report symptoms consistent with zoonotic diseases. Taken together, the recommendations support its topline—that prevention adhere to the “One Health” approach, a paradigm that aligns animal, environmental, and human health measures and goals.

The poultry sector provides as good an illustration as anything of how these concerns are connected: While the close confinement of intensive operations can sicken birds, fine particulate matter from such large farms contributes to cardiovascular and respiratory disease in humans living nearby, and clearing land to cultivate chicken feed destroys habitat for wild animals. To follow a One Health approach, Kuiken says, “[t]he poultry sector would need to be redesigned to be much less intensive, and the rest of human society would need to adapt accordingly.” Multisectorial coordination on health issues does not have a great track record, though, even when people are already dying: To cite just one example, antimicrobial-resistant bacteria killed more people worldwide than malaria or AIDS, according to an analysis published in *The Lancet*



ICI C²BRNE DIARY – October 2022

earlier this year, yet while governments, pharma, and healthcare delivery have been working for years to combat it, “a lot of learning needs to be done,” USAID officials passively wrote last year.



A timeline of Avian Flu

Poultry farming in the Netherlands is concentrated in the southeast, a rural appendage of the oddly shaped country sandwiched between Belgium and Germany. It’s part of the Dutch “Bible Belt,” and both more religious and more Catholic than the rest of the nation—factors involved in it being the region of the country most heavily struck by COVID in early 2020, as Carnival celebrations in February and, later, church services became superspreader events.

During World War II, the south was liberated from German occupation sooner than the rest of the country, as the Allied Operation Market Garden freed villages and towns in the Netherlands but failed to cross the Waal River, an extension of the Rhine, and drive on into Germany in the autumn of 1944. Outside Ysselsteyn in January, 20 kilometers from the German border and two kilometers from a cemetery of German war dead, a man hosed down a driveway at the Jenniskens Turkey Farm. The Dutch government doesn’t name farms where outbreaks occur, but a December 20 outbreak announcement had indicated a turkey farm, and the Jenniskens address is at the center of its map of the quarantine area that had resulted. The family’s Christmas lights were still up. Across the street, an egret stood in drenched fields.

The man in the drive declined an interview, and current regulations proscribe visiting farms, to prevent the spread of HPAI when humans step on infected droppings and carry them to another farm, or to the wild.

Dutch poultry farmers are now paying seven times as much for insurance as they were last year, because of all the culls, according to Jan Verhoijzen of LTO Nederland, the Dutch agricultural trade association. “We have had a lot of flu this year, and it costs a lot of money, but we don’t want to have the problem that people get sick,” he says. “So consumption stays on a normal level, and that for us is more important—better to pay more than the problem is going over to our consumer.”

Beerens and Stegeman praised Dutch farmers’ biosecurity practices, such as maintaining a tray of disinfectant liquid which anyone entering a farm or barn must first step through and disinfecting the wheels of vehicles entering or leaving the farm. Each farm must undergo a biosecurity check at the beginning of autumn, regardless of whether an outbreak is already underway. Indeed, instances of transmission between farms have been few this season.

A veterinarian by training, Stegeman would like to see prophylactic measures go further, such as designing farmyards so they’re unattractive to wild birds—by, for example, filling in ponds and cleaning up loose straw—and requiring workers to change clothes on the way in, like the scientists at a BSL 4 lab. Researchers are investigating new methods to prevent or limit outbreaks, including lasers that discourage wild birds from flying over farms and improved air filters at poultry facilities.



“The big difficulty for biosecurity is that it has to be 24-7-365,” Stegeman says. “You can’t fail once.”

The Dutch expert group noted that reducing farm density and the number of animals raised on each farm would ameliorate zoonotic risk. “Spreading out these farms geographically and making farms smaller, that should reduce the likelihood of zoonosis,” Stegeman says. That land-use change could be managed through policy, and ideally new farms would be placed in less water-rich areas and hence away from large congregations of wild birds. But Verhoijzen dismisses these ideas, citing the low level of between-farm transmission as evidence that intensive poultry farming is not the prime contributor to HPAI spread. (In August, though, it was found on a farm within 10 kilometers of 235 other poultry farms, a situation that the Minister of Agriculture, Nature and Food Quality at the time, Henk Staghouwer, [reportedly](#) called “extremely worrying.” Within two weeks, two farms inside the 10-kilometer quarantine zone were stricken.)

“It’s the wild birds that fly in the air, that is what we think makes the biggest problems,” he says. “Our government wants more and more nature, and more water where birds can live, but we say that is also getting more risk for bird flu for our farmers.”

Ultimately, as Kuiken suggested, the only solution may be for everyone to just eat less poultry and fewer eggs. Even that might not be enough now that HPAI might be endemic in wild birds, according to EFSA. “[Reassortment events will continue and zoonotic transmission of avian influenza viruses cannot be fully excluded in general when avian influenza viruses are present in birds,](#)” EFSA noted in a March report.

Meanwhile, swine can host both human and avian flu viruses, making them a vessel for dangerous reassortment, and influenza is now endemic in Dutch pig barns because of the high rate of production of piglets; researchers worried when 18 people in Ohio and Michigan became ill from H3N2 in 2016, and early information seemed to indicate person-to-person transmission, though it was later ruled out. The Netherlands conducts almost no surveillance of swine flu.

American and European officials assert that their inspection and culling programs are sufficient to keep HPAI-infected poultry out of the food supply, and that people won’t become ill from eating properly prepared poultry, anyway. But in Indonesia and elsewhere in Asia, programs to reimburse chicken farmers for culling flocks when bird flu is detected simply don’t exist. So they sell their sick birds, still living, for consumption.

The Strategic National Stockpile failed during COVID and monkeypox. Will it come through next time?

By Matt Field

Source: <https://thebulletin.org/2022/09/the-strategic-national-stockpile-failed-during-covid-and-monkeypox-will-it-come-through-next-time/>



Sep 29 – In 1997, the bestselling author of a nonfiction page-turner that included the tale of an Ebola outbreak at a Virginia research center, had a new book out. This time he’d written a novel—a story about a madman who engineers a virus called “brainpox” before unleashing it on New York City.

By some accounts, the author, Richard Preston, had awkwardly tacked a thriller onto a scaffold of “explanatory exposition” about bioweapons. His book even had a glossary. One reviewer said *The Cobra Event* was full of “[molecule deep](#)” characters. “Sermons,” *The New York Times* [wrote](#), “are for Sundays.” For all the critical reception, however, at least one high-profile reader was a fan: Bill Clinton.

At a retreat in Hilton Head, South Carolina, where the then-president was [gathering](#) with other high-fliers to ring in 1998, Clinton asked the tech entrepreneur J. Craig Venter a question: Could a terrorists engineer a worse version of the smallpox virus? Yes, Venter said, according to Clinton’s memoir. The “flamboyant” businessman recommended



ICI C²BRNE DIARY – October 2022

Preston's thriller to the president. Clinton was impressed. The "[a]cknowledgements included more than 100 scientists, military, and intelligence experts and officials in my own administration," Clinton wrote in *My Life*. "I urged several cabinet members and [US House] Speaker Gingrich to read it."

Clinton and his staff went on to hold a tabletop exercise involving a smallpox attack and to meet about the bioweapons threat. "Everything I heard confirmed that we were not prepared for bio-attacks," Clinton wrote. He [announced](#) a revival of an idea that had long-since fallen out of favor in the US government: a civilian medical stockpile that would contain antidotes and vaccines that authorities could distribute after an attack with weapons of mass destruction. Congress set aside [\\$51 million](#) in 1998 to make such a stockpile happen. Preston's book may have been fiction, but the events it helped set in motion were not.



The Stepnogorsk biological weapons complex in Kazakhstan, which was once part of the Soviet Union. Credit: US Department of Defense.

More than two decades after Clinton created it, the threats the stockpile was originally designed to address haven't really materialized. By 2020, there hadn't been [a fatal bioterrorist attack](#) in the United States since a government scientist allegedly sent [letters tainted with anthrax](#) to political and media figures in 2001, according to a terrorism tracking database. What there have been plenty of are outbreaks and epidemics of emerging diseases, like [SARS](#), the coronavirus outbreak that began in China in 2002. Despite this historical record, observers widely [consider the stockpile to have failed](#) in the first crucial months of the COVID pandemic. Health authorities couldn't get what they needed from a resource loaded with anthrax and smallpox countermeasures but few N95 masks. Earlier this summer, as experts worried that monkeypox was [gaining a toehold](#) in the United States, the stockpile again had little to offer. Although it held doses of a vaccine that works safely against both smallpox and monkeypox, the government had [far too little of it](#) and instead maintained a glut of a more dangerous, older smallpox jab.

The stockpile has weathered its share of criticism in the past few years, and its managers pledge that it will change, but there are questions about whether the necessary supplies will really be available for the next pandemic.

"Empirically ... most of what the stockpile managers have been spending their funds on is still a bioterrorist attack," [Andrew Lakoff](#), a professor at the University of Southern California who has written about the stockpile, said.

Bioweapons fears

As the Cold War wound down with the dissolution of the Soviet Union, threats other than nuclear annihilation became more salient. In 1992, Boris Yeltsin, the first president of the Russian Federation, [acknowledged](#) that the former Soviet Union had maintained a massive germ warfare program. US officials began to fear that out-of-work "bioweaponers" were at [risk of selling](#) their know-how to rogue states or groups. Adding to these fears in the 1990s were a series of shocking terrorist attacks on



the World Trade Center, the Oklahoma City federal building, the Tokyo subway system, and US embassies in Africa.

In 1998, Clinton began to ramp-up of government efforts to confront weapons of mass destruction, in part by [re-creating](#) a medical stockpile, an idea the US government had previously employed to deal with the aftermath of a nuclear attack. The threat of bioweapons, he [told](#) an interviewer, kept him “awake at night,” and from its inception, the stockpile was geared toward addressing such an attack.

Following Clinton’s lead, George W. Bush accelerated spending on biodefense priorities. In 2001, letters tainted with anthrax spores were mailed to senators and media figures, a bioattack that killed five and sickened 17 others. The so-called “Amerithrax” attacks [raised](#) the level of official anxiety over bioterrorism, and in fiscal year 2005, the Bush administration requested \$7.6 billion for [civilian biodefense](#), 18 times more than was spent in 2001.

Clinton once said he hoped that biological and chemical weapons would be “[the dog that didn’t bark](#).” But preparation was necessary, he argued. In the decade-and-a-half after the anthrax letters, the public health threats that the country faced did not involve bioweapons, but natural disease outbreaks: SARS, highly pathogenic avian influenza in 2005, and swine flu in 2009, to name a few. Another dog, as it turned out, was barking, but the officials in charge of the stockpile never seemed to listen, at least for more than a moment. An effort to align the country’s biodefense efforts to focus on natural threats as well as deliberate attacks never fully trickled down to the stockpile. Masks were [put in](#) after the avian flu scare in 2005, but the government distributed 85 million N95s during the H1N1 pandemic in 2009 and didn’t replenish them in time for COVID.

The stockpile benefited from the focus on bioterrorism, with the government funding it to the tune of about \$500 million per year beginning in 2004, much of that dedicated to bioweapons countermeasures. Between 2010 and 2018, *The New York Times* found, [40 percent of the stockpile budget](#) was spent on anthrax vaccine alone.

The government continued to splurge on these countermeasures even during the Obama administration, which watchers viewed as representing a “shift in thinking” [toward](#) the idea of “biosecurity,” a mindset that meant preparing for both naturally occurring disease outbreaks as well as deliberate attacks. Then, under the Trump administration, the tendency to emphasize bioterror over emerging diseases grew even stronger. The head of the stockpile, a bioweapons expert, had a reputation for being most concerned with the threat of deliberate attacks.

Robert Kadlec made buying bioweapons countermeasures a “priority over preparing for a natural pandemic,” [according](#) to a *Washington Post* investigation about his ties to biodefense contractors. In his role as assistant secretary of preparedness and response for Trump, Kadlec cut an Obama-era imitative to manufacture N95 masks, for instance, while instead agreeing to pay billions for smallpox vaccines, even though smallpox was [declared eradicated](#) as a naturally occurring disease in 1980.

“The bio preparedness world tended to be focused on bioterrorism,” Lakoff said. “Even though you can certainly make the case, and many public health people and scientists made the case, that a much more serious threat was coming from zoonotic disease emergence than from some possible terrorist group that had gotten hold of anthrax.”

COVID and monkeypox

When the COVID pandemic began, there were [35 million](#) N95 masks in the stockpile—a seemingly large amount that was [entirely insufficient](#) in the face of a national public health emergency. Supply chains shut down, and states, local governments, and hospitals desperately tried—and in the pandemic’s early months, [often failed](#)—to source these goods on their own. The stockpile had been set up to provide what the market couldn’t—there aren’t many buyers, or for that matter, suppliers, of the bioweapons antidotes the stockpile specializes in—but during the early days of the pandemic, the private market ground to a halt, and the stockpile was of little help. [Media reports](#) and expert [analyses](#) about the shortcomings were abundant. “We were always kind of talking about terrorism type events. And when you’re thinking about a terrorism type event, you’re probably not thinking a national event,” Dan Gerstein, a former official in the Department of Homeland Security and a disaster response scholar, said. “One of the things to happen is that, right away, your stockpile isn’t scaled to meet a national event; it’s scaled to meet maybe a series of localized events.”

When monkeypox began [spreading](#) rapidly in countries outside of Africa this spring, the stockpile did have something to offer. Although smallpox, a deadly cousin of monkeypox, had been [eradicated](#) by the time Clinton created the stockpile, officials still feared its potential as a bioweapon. The Soviet Union’s massive bioweapons program, after all, had included smallpox as a major component. The disease even gets [specific mention](#) in the legislation authorizing the stockpile. But a smallpox attack has yet to happen. “Seems unlikely,” at this point, Lakoff said. “Interestingly, and totally strangely, and contingently, we have all the smallpox vaccine, and it sort of works ... for monkeypox. Eighty-five percent efficacy.”

Most of the government’s vaccine, however, is of an older variety. ACAM2000, which contains live replicating vaccinia, a mild relative of the smallpox virus, [isn’t suitable](#) for people with HIV or other immune-system problems because it can cause infections, which can also spread to others. Since the September 11 attacks, the government has stockpiled more than



100 million doses of ACAM2000. To compensate for this, authorities also funneled hundreds of millions of dollars into a newer vaccine now called Jynneos.

At one point, the government had some 20 million doses of Jynneos, which doesn't contain replicating virus, making it much safer for immunocompromised patients. But when the monkeypox outbreak began in the United States, the government [had fewer](#) than 3,000 Jynneos vaccine doses on hand, according to *The New York Times*. It had let millions of doses expire as officials waited for a new freeze-dried version of the product. Few officials seemed to feel a sense of urgency as those Jynneos doses expired. Monkeypox, after all, wasn't a priority threat for the stockpile, smallpox was. "In fairness, I'm not sure anybody in their right mind would have thought we needed more smallpox vaccine," Nicole Lurie, who directed the stockpile under former President Barack Obama, told the newspaper. The government has since acquired more Jynneos vaccine, but shortfalls [continued](#) throughout the summer. Many experts began to fear the country had lost its chance to contain monkeypox and were allowing it to become yet another endemic virus that sickens large numbers of people and strains the health care system.

Can the stockpile change?

Officials say the future medical stockpile will be much more suited to dealing with a pandemic than the one on hand in early 2020. A Biden administration [vision statement](#) on the public health supply chain calls for a "larger, broader, and smarter Strategic National Stockpile ... so that the US is prepared for intentional, natural, and emerging pandemic threats." Historically, the document says, the stockpile, geared toward weapons threats, has been "underfunded for pandemic response and needs clear, long-term, stockpiling goals for pandemic preparedness aligned with annual appropriations to successfully prepare for the next pandemic." Whether the stockpile will be prepared for another pandemic like COVID, or monkeypox, remains to be seen. The government is still on the hook for big orders of bioterror antidotes going forward. In 2019, Emergent Biosolutions, a contractor with ties to Kadlec, the Trump-era stockpile chief, won a \$2 billion contract for 10 years to supply [its old](#) smallpox vaccine, the kind likely too risky for use against monkeypox. Two years later, under the Biden administration, the company [won](#) a \$400 million contract modification to supply anthrax vaccine until 2023. Similarly, there are signs that the country is losing some of the gains it made in bolstering domestic manufacturing of pandemic supplies, supplies which could feed the stockpile. US mask makers, propped up when foreign supplies dwindled, have, once again, been [shutting down](#) their operations. "Health care providers have gone right back to the Chinese masks, because there's so much less expensive than the American-produced domestic masks," [Rob Handfield](#), a supply chain expert at North Carolina State University, said, "We didn't learn anything from that situation."

After World War II, the government began storing penicillin doses, blood transfusion kits, and radiation monitors, mainly in the event of a nuclear war. But as the Cold War dragged on, and its weapons became ever more powerful, the prospect of surviving a thermonuclear exchange began to seem unlikely. After letting supplies decay for years, the government shuttered the stockpile in 1974. After all, what would be the point, [Americans figured](#), of a stockpile in a city hit by a "[Tsar Bomba](#)"—the Soviet weapon more than 3,000 times as powerful as the bomb dropped on Hiroshima?

The federal government's task today is to make sure that when another pandemic crops up, when transit and trade are shut down and the whole world is scrambling for medical supplies, that the stockpile has what people will likely need. Officials have talked and written about doing better, in [congressional hearings](#), strategy papers, and even obscure intra-governmental budget communiques. A document meant for congressional funders [refers](#) to the "challenges at the beginning of the COVID-19 response," and "modernization efforts" that will "ensure the [stockpile has the] breadth and depth to meet any future pandemic or public health emergency." [Another pandemic](#) may put these pledges to the test in the coming years. We may soon find out whether officials have turned lessons learned into action—whether their pledges reflect genuine change, or whether, in fact, they're just pleasant stories.

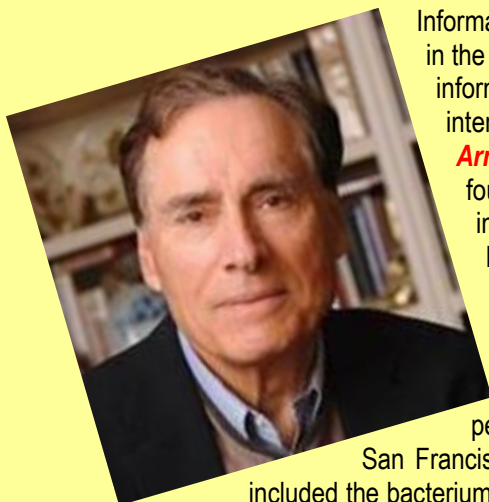
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Leonard Cole Investigated Germ Warfare Tests on Public

Source: <https://www.newser.com/story/326073/he-investigated-armys-germ-warfare-tests-in-public.html>

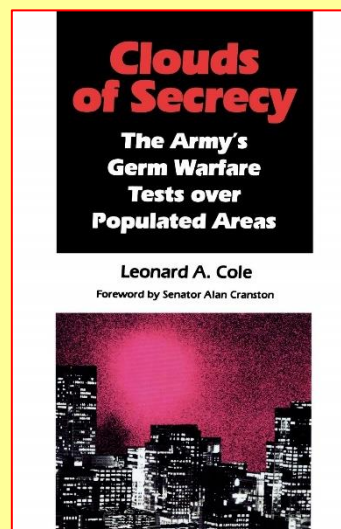
Sep 30 – Leonard Cole, a bioterrorism expert who shed light on the Army's secret germ warfare tests conducted in public places, has died. He was 89 and died in Ridgewood, New Jersey, the [New York Times](#) reports. Cole was a dentist when he decided to become a political scientist and began investigating the Army program, which lasted from 1949 to 1969.





Information about the open-air tests had been leaked to reporters in the 1970s, and a Senate hearing followed in 1977. Cole used information from the hearing and his own investigative work and interviews in writing the 1988 book, *Clouds of Secrecy: The Army's Germ Warfare Tests Over Populated Areas*. He found the Army had conducted 239 tests, which employed inert chemicals and bacteria that researchers thought to be harmless in the New York subway, the San Francisco skies, and other public spaces.

The goal was to learn how biological and chemical weapons might spread during a real attack, and the Army said no one was harmed. But Cole found a dozen people had been hospitalized with a rare pneumonia after San Francisco had been sprayed with an aerosol combination that included the bacterium *Serratia marcescens*, per the *Times*. One of the patients died. There was no finding that the illnesses were linked to the Army's spray, but Cole was bothered by the fact that the program didn't check for effects on the people caught in its tests. Some thought Cole exaggerated the risks to the public, while others praised his work. (Read the [full story](#).)



Bus and Urban Transit Workers Have Highest COVID-19 Risk

JAMA. 2022;328(12):1173

Source: <https://jamanetwork.com/journals/jama/fullarticle/2796671?resultClick=1>

Sep 27 – Workplace COVID-19 outbreaks were about 5 times more common and nearly twice as deadly in the bus and urban transit industry than all industries combined in California, found an [analysis](#) led by the California Department of Public Health.

Using state data collected between January 2020 and May 2022, the authors identified 340 confirmed workplace outbreaks, 5641 outbreak-associated COVID-19 cases, and 537 worker deaths. Overall, public transportation industries had about 1.4 times as many COVID-19 outbreaks as did all sectors combined. But certain workers and types of transit work were disproportionately affected. Workplace outbreaks were 5.2 times more common in bus and urban transit and 3.6 times more common in the air transportation industry than in all industries combined. Mortality was also 1.8 times higher in the bus and urban transit industries than in all industries combined.

“Workers in public transportation industries are at higher risk for COVID-19 workplace outbreaks and mortality than the general worker population in California and should be prioritized for COVID-19 prevention strategies,” the authors wrote. Workplace protection measures may include targeted vaccination efforts, access to antiviral treatment, public health messaging for workers, improved ventilation, and use of well-fitted masks or respirators by workers and public transit riders, the authors wrote.

Long COVID Is Still Raising More Questions Than Answers, Say Researchers

Source: <https://www.sciencealert.com/long-covid-is-still-raising-more-questions-than-answers-say-researchers>

Oct 02 – Millions of people around the world are believed to suffer from long COVID yet little remains known about the condition – though research has recently proposed several theories for its cause.

[Between 10 to 20 percent of people](#) who contract [coronavirus](#) are estimated to have long COVID symptoms – most commonly fatigue, breathlessness, and a lack of mental clarity dubbed brain fog – months after recovering from the disease.

The US-based Institute for Health Metrics and Evaluation (IHME) [estimates that nearly 145 million people worldwide](#) had at least one of those symptoms in 2020 and 2021.

In Europe alone, 17 million people had a long COVID symptom at least three months after infection during that time, [according to IHME modeling](#) for the [World Health Organization](#) (WHO) published earlier this month.

These millions “cannot continue to suffer in silence”, WHO Europe director Hans Kluge said, calling for the world to act quickly to learn more about the condition.

Researchers have been racing to catch up but the vast array – and inconsistency – of symptoms has complicated matters.



More than 200 different symptoms have been ascribed to long COVID so far, according to a [University College London study](#).

'Fatigue in the background'

"There are no symptoms that are truly specific to long COVID but it does have certain characteristics that fluctuate," said Olivier Robineau, the long COVID coordinator at France's Emerging Infectious Diseases research agency.

"Fatigue remains in the background," he told AFP, while the symptoms "seem to be exacerbated after intellectual or physical effort – and they become less frequent over time".

One thing we do know is that people who had more severe initial cases, including needing to be hospitalized, are more likely to get long COVID, [according to the IHME](#).

Researchers have been pursuing several leads into exactly what could be behind the condition.

[A study published in the journal *Clinical Infectious Diseases*](#) in September found that COVID's infamous spike protein – the key that lets the [virus](#) into the body's cells – was still present in patients a full year after infection.

This suggests that viral reservoirs may persist in some people, potentially causing inflammation that could lead to long COVID-like symptoms, the researchers said.

If they are right, a test could be developed to identify the spike, potentially leading to one of the great and elusive goals of long COVID research – a clear way to diagnose the condition.

However, their findings have not been confirmed by other research, and several other causes have been proposed.

'Data not very solid yet'

One leading theory is that tissue damage from [severe COVID cases triggers lasting disruption to the immune system](#).

Another suggests that [the initial infection causes tiny blood clots](#), which could be related to long COVID symptoms.

However, "for each of these hypotheses, the data is not very solid yet", Robineau said.

It is most likely that "we are not going to find a single cause to explain long COVID", he added.

"The causes may not be exclusive. They could be linked or even succeed each other in the same individual, or be different in different individuals." A way to treat the condition also remains elusive. For the last year, the Hotel-Dieu hospital in Paris has been offering long COVID patients a half-day treatment course. "They meet an infectious disease specialist, a psychiatrist, then a doctor specializing in sports rehabilitation," said Brigitte Ranque, who runs the protocol dubbed CASPER.

"In the team's experience, a majority of the symptoms can be attributed to functional somatic syndromes," she said. These are a group of chronic disorders such as chronic fatigue and fibromyalgia that have no known cause.

Cognitive behavioral therapy, a psychological approach often used for those syndromes, is used to treat long COVID alongside supervised physical activity, Ranque said. "The patients are brought back in three months later. The majority of them are better. More than half say they are cured," she told AFP. "But about 15 percent did not improve at all."

The new science that could help spot the next pandemic before it begins

By Yong-Bee Lim

Source: <https://thebulletin.org/2022/09/the-new-science-that-could-help-spot-the-next-pandemic-before-it-begins/>

Sep 30 – A cough, fever, pain, weakness, and difficulty breathing—those were the 41-year-old's symptoms when he was admitted to a Wuhan hospital in late December 2019. The previously healthy man had fallen ill six days earlier, [according](#) to a paper in the journal *Nature*, but tests for influenza and other infections were turning up negative. Scientists had a mystery on their hands. Solving it by identifying the cause of the man's disease would be a first step toward taming the outbreak cropping up in Wuhan that winter. And thanks to cutting edge genome sequencing technology, researchers completed that task with remarkable speed.

A team in Shanghai [analyzed](#) the sample from the Wuhan patient in less than two days, using "the latest high-throughput sequencing technology," to parse out unknown pathogens from a stew of genetic material in a sample. What they found: a genetic sequence highly similar to a bat SARS-related coronavirus, the pathogen that we now know of as the virus that causes COVID-19.

Thanks to evolving technologies like the kind used to identify SARS-CoV-2, scientists have increasing abilities to spot pathogens involved in outbreaks sooner and to track them as they progress. The speed with which researchers pegged the pathogen responsible for COVID-19 stands in stark contrast to that of the first SARS outbreak in 2002, when researchers [identified](#) a coronavirus by first isolating it from cell cultures. A [CDC timeline](#) of the outbreak says a novel coronavirus wasn't identified as the suspected culprit behind SARS until late March 2003, four months after cases of



unexplained pneumonia emerged in China and nearly a month-and-a-half after Chinese health officials alerted the WHO of the outbreak. For COVID-19, it took [a little](#) over a week from when Chinese authorities alerted the WHO for researchers to sequence SARS-CoV-2 and widely publicize their findings. Advances in bio surveillance and characterization methods and a deeper understanding of how pathogens interact with human hosts mean that governments have more capabilities than ever to detect novel pathogens before they cause pandemics. That's important because [climate change](#), [ecological degradation](#), and [geopolitical tensions](#) mean we'll likely have to confront more new disease threats as these factors intensify.

Going from the known to the unknown

Currently, the United States and the global community [use lists](#) of known pathogens and biologically derived toxins to help prioritize defensive research, counterterrorism, and law enforcement efforts. While this has helped countries and organizations allocate scarce resources towards targeted research on pathogens that are highly lethal, exceptionally infectious, or exhibit other traits that cause immense concern for public health and national security, there is growing worry that a focus only on the known realm of biological threats does not account for biological events that may emerge from [unknown](#) organisms that may be circulating in nature, be worked on in labs, or be engineered by state or non-state actor adversaries. Therefore, researchers and policymakers are trying to find ways to identify and characterize novel pathogens and better understand how disease agents affect biochemical pathways in humans and animals. These technologies could accelerate public health and defense capabilities to detect, identify, and respond to both known and unknown biological threats. Ideally, using them would allow us to detect and respond swiftly enough to mitigate or even prevent a disease from emerging at all. Detecting a potential pathogen of concern is the first key component of this approach. We can already do this somewhat reliably for known pathogens using detection assays—tests that help identify a known pathogen in a sample. Assays fall under two main categories, which include [immunoassays](#) (checking a human sample's antibody response to specific antigens) and [molecular assays](#) (amplifying specifically identified viral genomic material found in a sample, if it exists in the sample, through methods such as PCR tests). In the case of a novel pathogen, the above options would not necessarily work, because novel pathogens are, by definition, unknown. Fortunately, advances in the life sciences and computational capabilities now allow us to understand and identify the genetic building-blocks of pathogens in new ways. One well-discussed method, known as [metagenomic next generation sequencing](#), can sequence all nucleic acids—DNA and RNA—in a sample and use this information to “simultaneously identify genetic material” across entirely different types of organisms. This approach not only identifies known pathogens, but also potentially novel pathogens by matching them for similarity with databases full of pathogen genomes. Portions of a new coronavirus in a sample might, to some extent, match with catalogued portions of previously identified and sequenced coronaviruses in a database, like how the RNA in the Wuhan patient's sample was found to largely match a bat SARS-like coronavirus. After researchers identify a novel pathogen, they need to characterize it. Characterization is the process of understanding how the genetic structure of a pathogen affects its physical characteristics. It allows scientists to identify key attributes, which then offer unique clues or targets to apply towards diagnostics and treatments for the pathogen. Historically, scientists grew pathogens in different environments in a lab, ranging from cell cultures to animal studies, to discover observable, detectable physical traits, including the presence of toxins or antibiotic-resistance genes. However, these methods can be both [time-consuming and expensive](#). During the COVID-19 pandemic, [supply chains for animals](#) became snarled, complicating lab efforts. Progress in biotechnology and computational biology offers alternatives to more traditional approaches. One such approach relies, again, on applications of sequencing technology—this time to characterize parts or the entirety of a pathogen's genetic material. This can yield significant insights into how the [genetic information of an organism](#) (its genotype) and the organism's interaction with its environment contribute directly to a [pathogen's observable physical properties](#) (its phenotype) and falls within an area of biological and information studies known as bioinformatics. Combined with ever-more thorough and accurate techniques such as [whole-genome sequencing](#), scientists have tools that can characterize the entire genetic code of an organism in a streamlined process. In this way, they may gain an understanding of what the pathogen is capable of—and what methods might work to thwart it—without extensive laboratory testing. Whole-genome sequencing has [significantly matured](#) thanks to progress in computational power and the rapidly diminishing economic costs necessary to sequence an entire genome. Used historically as a research tool, scientists and researchers have started using whole-genome sequencing for clinical applications in areas such as [cancer research](#), as well as in public applications such as the CDC's [PulseNet](#) network to help “detect and investigate food-borne outbreaks.” However, characterization is still limited to geographic areas that have significant technological capabilities and those countries that can afford [whole-genome sequencing costs](#), which ran close to \$1,000 per run in 2016. While identification and characterization are two necessary capabilities in addressing novel pathogens, scientists have also realized that focusing on pathogens is not the only way to bolster defenses to new diseases. An alternate method is gaining traction: understanding the characteristics of various infections within a host, regardless of whether a pathogen is known— an idea called [“threat-agnostic”](#)



[biodefense](#). According to researchers at the Pacific Northwest National Laboratory, if health officials using this method encountered a disease threat, instead of referencing a list of harmful pathogens like the US Government’s Select Agent List, and asking “what is it,” they would ask, “is it harmful, and how harmful is it?” Threat-agnostic biodefense focuses on using cutting-edge techniques to measure, analyze, and identify “common patterns of infection and disease” within animal and human hosts, according to the national lab. If scientists can [identify](#) the signals of infection with viruses or bacteria on a cellular level, they could develop countermeasures or diagnostic and surveillance methods for novel pathogens. The method rests on identifying so-called “bioagent-agnostic signatures”—for example, say, molecules that indicate the presence of bacteria. These signatures would include various data “that describe host characteristics and responses or broadly identify the presence of a class of pathogen,” the national lab researchers wrote in 2021. While there is much more work to be done to understand the biochemical changes within a host to the degree necessary to make threat-agnostic biodefense a broadly applicable approach, there have already been advances that highlight its potential. In 2021, for example, [Israeli researchers won](#) Food and Drug Administration approval for a test to differentiate between bacterial and viral infections—an important distinction for clinicians to make in determining how to treat a disease.

The advantage of threat-agnostic biodefense is that it effectively shrinks the near-infinite landscape of biological threats by narrowing the focus to specific pathogen-host interactions—interactions that allow only a limited number of ways for pathogens to enter a host’s cells, hijack cellular machinery, replicate within cells, and escape from cells to propagate further. However, a significant amount of basic research needs to be done to systematically map, understand, and identify bioagent-agnostic signatures. Even as knowledge on bioagent-agnostic signatures grows through further research, hosts may differ significantly in their response due to different biochemical profiles arising from conditions such as past infection exposures, as well as health conditions that may change an individual’s immunological response. Therefore, a generalizable model may be difficult to achieve in the near-term.

As the world continues to face biological event after biological event, significant action must be taken to curtail the worst potential outcomes. New and evolving technologies leveraged towards pathogen-agnostic approaches to biodefense and public health may offer new ways to detect, characterize, and mitigate the risks associated with the emergence of novel pathogens in a wide variety of settings, from farm fields and cities to overseas military bases and hospitals. Some useful technologies and ideas—like pathogen agnostic biodefense—are still in their infancy, others, [like](#) whole-genome sequencing remain costly and out of reach, especially in poorer countries. Taken together, these new methods and technologies for identifying and characterizing novel threats have a significant way to go before they can begin to fulfill their potential promise, but the US government and others should invest in them. Fighting the next potential pandemic pathogen could depend on doing so.

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ECDC: On Air

Attó: European Centre for Diseases...

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Outbreak of Ebola virus disease (*Sudan ebolavirus*) in Central Uganda

Source: <https://emergency.cdc.gov/han/2022/han00477.asp>

Oct 06 – On September 20, 2022, the Ministry of Health of Uganda officially declared an outbreak of EVD due to Sudan virus (species *Sudan ebolavirus*) in Mubende District, Central Uganda.

The first confirmed case of EVD was a 25-year-old man who lived in Mubende District and quickly identified as a suspect case of viral hemorrhagic fever (VHF) and isolated in the Mubende Regional Referral Hospital. Blood collected from this patient tested positive for Sudan virus by real-time reverse transcription polymerase chain reaction (rRT-PCR) on September 19, 2022, at the Uganda Virus Research Institute (UVRI). The patient died the same day, and a supervised burial was performed by trained staff wearing proper personal protective equipment (PPE). Further investigation into this case revealed a cluster of unexplained deaths occurring in the community during the previous month. As of October 6, 2022, a total of 44 confirmed cases, 10 confirmed deaths, and 20 probable deaths of EVD have been identified in Uganda.

CDC is working closely with the Ministry of Health of Uganda, the World Health Organization (WHO), and other partners to support the response to this outbreak.

This is the fifth outbreak of EVD caused by Sudan virus in Uganda since 2000. The current outbreak is in the same area as Uganda's most recent EVD outbreak caused by Sudan virus, which occurred in 2012. During the 2012 outbreak, limited secondary transmission was reported, and the outbreak was effectively contained.

As of October 6, 2022, no suspected, probable, or confirmed EVD cases related to this outbreak have been reported in the United States or other countries outside of Uganda. The geographic scope of this outbreak in Uganda is currently limited to five districts in central Uganda and not the capital Kampala or the travel hub of Entebbe. While there are no direct flights from Uganda to the United States, travelers from or passing through affected areas in Uganda can enter the United States on flights connecting from other countries. As a precaution, CDC is communicating with public health departments, public health laboratories, and healthcare workers in the United States, and educating travelers, to raise awareness of this outbreak. **It is important for clinicians to obtain a detailed travel history from patients with suspected EVD, especially those that have been in affected areas of Uganda. Early consideration of EVD in the differential diagnosis is important for providing appropriate and prompt patient care, diagnostics, and to prevent the spread of infection.** Healthcare providers should be alert for and evaluate any patients suspected of having EVD, particularly among people who have recently traveled to affected areas in Uganda.

Ebola Virus Disease

A person infected with EVD is not contagious until [symptoms](#) appear (including fever, headache, muscle and joint pain, fatigue, loss of appetite, gastrointestinal symptoms, and unexplained bleeding). Sudan virus is spread through **direct contact** (through broken skin or mucous membranes) with the body fluids (blood, urine, feces, saliva, droplet, or other secretions) of a person who is sick with or has died from EVD, infected animals, or with objects like needles that are contaminated with the virus. EVD is **not** spread through airborne transmission.

There is currently no FDA-licensed vaccine to protect against Sudan virus infection. The Ebola vaccine licensed in the United States ([ERVEBO® Ebola Zaire Vaccine, Live, also known as V920, rVSVΔG-ZEBOV-GP or rVSV-ZEBOV](#)) is indicated for the prevention of EVD due to Ebola virus (species *Zaire ebolavirus*), and based on studies in animals, it is not expected to protect against Sudan virus or other viruses in the *Ebolavirus* genus. Also, there is currently no FDA-approved treatment for Sudan virus.

In the absence of early diagnosis and appropriate supportive care, EVD is a disease with a high mortality rate; occasional outbreaks have occurred mostly on the African continent. With intense supportive care and fluid replacement, mortality rates may be lowered. EVD most commonly affects humans and nonhuman primates (such as monkeys, gorillas, and chimpanzees). The genus *Ebolavirus* is known to comprise the following six species:

- Ebola virus (species *Zaire ebolavirus*)
- Sudan virus (species *Sudan ebolavirus*)
- Tai Forest virus (species *Tai Forest ebolavirus*, formerly *Côte d'Ivoire ebolavirus*)
- Bundibugyo virus (species *Bundibugyo ebolavirus*)
- Reston virus (species *Reston ebolavirus*)
- Bombali virus (species *Bombali ebolavirus*)

Of these, only four (Ebola, Sudan, Tai Forest, and Bundibugyo viruses) are known to cause EVD in humans. Infection with any Ebola species presents as clinically similar disease. Previous outbreaks of Sudan virus have had a mortality rate of approximately 50%.



Recommendations for Public Health Departments and Clinicians

Clinicians who evaluate patients with clinical symptoms such as fever, headache, muscle and joint pain, fatigue, loss of appetite, gastrointestinal symptoms, and unexplained bleeding should suspect possible VHF or EVD on the differential diagnosis and clinicians should be prompted to immediately take a travel history. Healthcare providers should be alert for and evaluate any patients suspected of having VHF or EVD, particularly among people who have recently traveled to affected areas in Uganda, and place in a private room while performing clinical evaluation. If performing an aerosol generating procedure, conduct in an Airborne Infection Isolation Room (AIIR) when feasible. Testing for diseases in returning travelers which may present similarly to EVD, such as malaria, should be considered, but clinical consultation should be pursued if there is still a high index of suspicion for EVD.

U.S. clinicians with concerns about a patient with suspected EVD should contact their state, local, tribal, or territorial health department immediately ([24-hour contact numbers for state and large jurisdiction health departments](#)) and follow jurisdictional protocols for patient assessment. Early recognition and identification of a suspected EVD [patient under investigation \(PUI\)](#) is critical. If a diagnosis of EVD is considered, clinical teams should coordinate with [state/local public health officials](#) and CDC to ensure appropriate precautions are taken to help prevent potential spread of EVD.

As a resource for public health departments, CDC's Viral Special Pathogens Branch (VSPB) is available 24/7 for consultations regarding suspected VHF or EVD cases by calling the CDC Emergency Operations Center at 770-488-7100 and requesting VSPB's on-call epidemiologist, or by e-mailing spather@cdc.gov.

Healthcare personnel can be exposed to Ebola virus by touching a patient's body fluids, contaminated medical supplies and equipment, or contaminated environmental surfaces. Splashes to unprotected mucous membranes (for example, the eyes, nose, or mouth) are particularly hazardous. Procedures that can increase environmental contamination with infectious material or create aerosols should be minimized. CDC recommends a combination of measures to [prevent transmission of EVD in hospitals including PPE](#).

Eight laboratories within the [Laboratory Response Network \(LRN\)](#) are able to test using the [Biofire FilmArray NGDS Warrior Panel](#), with more LRN laboratories working toward the ability to test. The Warrior Panel can detect Ebola, Sudan, Tai Forest, Bundibugyo, and Reston viruses.

Clinical and Laboratory Biosafety Considerations

All personnel handling specimens from patients with suspected EVD (especially patients with travel history to Uganda three weeks before symptom onset) should adhere to recommended [infection control practices](#) to prevent infection and transmission among laboratory personnel. As a component of the Occupational Safety and Health Administration's (OSHA's) Bloodborne Pathogens Standard, laboratories handling blood and body fluids must have an [Exposure Control Plan](#) in place to eliminate or minimize employees' risk of exposure to pathogens.

Laboratories should conduct [extensive risk assessments](#) to identify and mitigate hazards associated with handling Ebola specimens to create the safest environment.

The [proper PPE](#) needs to be identified, available, and staff trained to properly don and doff their PPE. Staff need to be specially trained, have passed [competency testing](#), and attended drills to safely receive, handle, and process these specimens.

A laboratory should have dedicated space, equipment for handling and testing specimens from ill patients, and plans for minimizing specimen manipulation. A [waste management plan](#) needs to be in place for lab reagents and Category A waste, including PPE and sample material. If a facility does not have the appropriate risk mitigation capabilities, then the specimen should be forwarded to another facility that does.

A Virus Poised to [Jump Species to Humans](#)

Is Another COVID-19 Booster Really Needed?

Source: <https://www.medscape.com/viewarticle/981614>

Oct 05 – Many countries around the globe are starting to roll out another booster of the COVID-19 vaccine but, with public interest waning and a sense of normalcy firmly installed in our minds, this may prove an ill-fated effort, unless authorities can provide a coherent answer to the question "Is another jab really needed?" (The short answer is a firm "yes," of course.)

In what we could call the "chronic" phase of the pandemic, most countries have now settled for a certain number of daily cases and a (relatively low) number of complications and deaths.



It's the vaccines that have afforded us this peace of mind, lest we forget. But they are different to other vaccines that we are more familiar with, such as the [MMR](#) that we get as kids and then forget about for the rest of our lives. As good as the different COVID-19 vaccines are, they never came with the promise of generating lifelong antibodies. We knew early on that the immunity they provide slowly wanes with time. That doesn't mean that those who have their vaccination records up-to-date (which included a booster probably earlier this year) are suddenly exposed. Data suggest that although people several months past their last booster would now be more prone to getting reinfected, the protection against severe disease still hangs [around 85%](#). In other words, their chances of ending up in the hospital are low.

Why worry, then, about further boosting the immune system? The same studies show that an additional jab would increase this percentage [up to 99%](#). Is this ~10% improvement really worth another worldwide vaccination campaign? Well, this is a numbers game, after all. The current form of the virus is extremely infectious, and the Northern Hemisphere is heading toward the cold months of the year, which we have seen in past years increases COVID-19 contagions, as you would expect from any airborne virus. Thus, it's easy to expect a new peak in the number of cases, especially considering that we are not going to apply any of the usual restrictions to prevent this. In these conditions, extending the safety net to a further 10% of the population would substantially reduce the total number of victims. It seems like a good investment of resources.

We can be more surgical about it and direct this new vaccination campaign to the population most likely to end up in the hospital. People with concomitant pathologies are at the top of the list, but it's also an age issue. On the basis of different studies of the most common ages of admission, the cut-off point for the booster varies from country to country, with the [lowest being 50](#) and in other cases hovering around 65 years of age. Given the safety of these vaccines, if we can afford it, the wider we cast the net, the better, but at least we should make every effort to fully vaccinate the higher age brackets.

The final question is which vaccine to give. There are confounding studies about the importance of switching to Omicron-specific jabs, which are finally available. Although this seems like a good idea, since Omicron infections elicit a more effective [range of antibodies](#) and new variants seem to [better escape](#) our defences, recent studies suggest that there actually [may not be so much difference](#) with the old formula.

The conclusion? Vaccinate the elderly (and some middle-aged too, if possible) and the frail as soon as possible with any version of the booster you have available, if you want to keep hospital pressure to the minimum and save a fair number of complications and deaths over the next months. This regimen of yearly boosters for some may be the scenario for the upcoming years, similar to what we already do for the [flu](#), so we should get used to it.

Salvador Macip, MD, PhD is a doctor, researcher and writer. He obtained his MD/PhD at the University of Barcelona (Spain) in 1998, then moved to do oncological research at the Mount Sinai Hospital (New York). Since 2008, he has led the Mechanisms of Ageing and Cancer Lab at the University of Leicester (UK). Macip has published over 30 books, including *Where Science and Ethics Meet* (2016) and *Modern Epidemics* (2021).

Antiviral effect of cetylpyridinium chloride in mouthwash on SARS-CoV-2

By Ryo Takeda, Hirofumi Sawa, Michihito Sasaki, et al.

Scientific Reports volume 12, Article number: 14050 (2022)

Source: <https://www.nature.com/articles/s41598-022-18367-6>

Abstract

Cetylpyridinium chloride (CPC), a quaternary ammonium compound, which is present in mouthwash, is effective against bacteria, fungi, and enveloped viruses. This study was conducted to explore the antiviral effect of CPC on SARS-CoV-2. There are few reports on the effect of CPC against wild-type SARS-CoV-2 at low concentrations such as 0.001%–0.005% (10–50 µg/mL). Interestingly, we found that low concentrations of CPC suppressed the infectivity of human isolated SARS-CoV-2 strains (Wuhan, Alpha, Beta, and Gamma) even in saliva. Furthermore, we demonstrated that CPC shows anti-SARS-CoV-2 effects without disrupting the virus envelope, using sucrose density analysis and electron microscopic examination. In conclusion, this study provided experimental evidence that CPC may inhibit SARS-CoV-2 infection even at lower concentrations.



Why this Ebola outbreak in Uganda might be more worrisome than others

By Matt Field

Source: <https://thebulletin.org/2022/10/why-this-ebola-outbreak-in-uganda-might-be-more-worrisome-than-others/>

Oct 07 – Experts and government officials in Uganda and around the world are watching nervously as a rare strain of Ebola causes a widening outbreak in the East African country. The death toll from the highly lethal virus has grown to perhaps 30 people since the first confirmed case in early September, when a man fell ill in the Mubende district in central Uganda. A subsequent investigation [revealed](#) a cluster of deaths in the month before the 25-year-old died, according to the US Center for Disease Control (CDC).

Unlike the strain of the virus that killed more than 11,000 people between 2014 and 2016 in several West African countries, the so-called Sudan strain causing the Ugandan outbreak has no approved vaccines or treatments. It's caused several outbreaks before, including one that killed 17 people in Uganda in 2012. With the confirmed and probable cases now above 60, experts are worried about where this outbreak will end up. "It's definitely concerning," an expert told *Nature*. "The slope of that curve is pretty sharp." Several experimental shots are [in development](#) and trials could begin this month in Uganda, according to the journal.

This isn't Uganda's first bout with Ebola, and previous preparation, officials say, is already [bolstering](#) the country's response, including the setting up of treatment centers and mobile testing facilities. Still, though, officials say that the country needs more help, as the outbreak continues to spread. "Uganda is responding well & is improving every day," Yonas Tegegn Woldemariam, the WHO representative to the country, said in [a post](#) on a WHO twitter feed. "The country needs more support from partners to improve response efforts."

As the outbreak a decade ago showed, Ebola can spread far and wide and sicken an enormous number of people. The West African Ebola outbreak primarily affected Guinea, Sierra Leone, and Liberia, but the disease turned up in several other countries, including the United States. To reduce the chances of that happening again, the US government is [requiring passengers](#) who've spent time recently in Uganda to travel through one of five designated US airports for screening. That may stop Ebola from reaching the United States, but some say more international resources are needed in Uganda.

"What I've heard so far really worries me," Craig Spencer, a doctor in New York [who recovered](#) from Ebola in 2014 [wrote](#) on Twitter Thursday. "We have a history of responding slowly and imperfectly to Ebola outbreaks. ... We've learned over & over that fires are best put out at the source."

Matt Field is editor, biosecurity at the Bulletin of the Atomic Scientists. Before joining the Bulletin, he covered the White House, Congress, and presidential campaigns as a news producer for Japanese public television. He has also reported for print outlets in the Midwest and on the East Coast. He holds a master's degree in journalism from Northwestern University.

Russia's alleged bioweapons claims have few supporters

By Jez Littlewood and Filippa Lentzos

Source: <https://thebulletin.org/2022/10/russias-alleged-bioweapons-claims-have-few-supporters/>

Oct 11 – For the fourth time this year, Russia accused the United States and Ukraine of being in non-compliance with the Biological and Toxins Weapons Convention (BTWC)—and once again found little support for its allegations. At the conclusion of the Article V Formal Consultative Meeting in September, no other state formally accused these two nations of non-compliance. Russia stands alone in its allegations, with limited support from eight other states. In contrast, more than five times as many backed the United States and Ukraine in rejecting the allegations; the meeting ended with a [procedural report](#) that noted no consensus regarding the outcome.

Since the treaty's adoption in 1975, this is only the second time that a formal meeting was called to consult and cooperate on an alleged violation. The first was in [1997](#) when [Cuba asserted that the United States had disseminated insects](#) to attack its agriculture. The latest meeting may have ended without a decision, but it left little doubt about how isolated Russia is in making these claims.

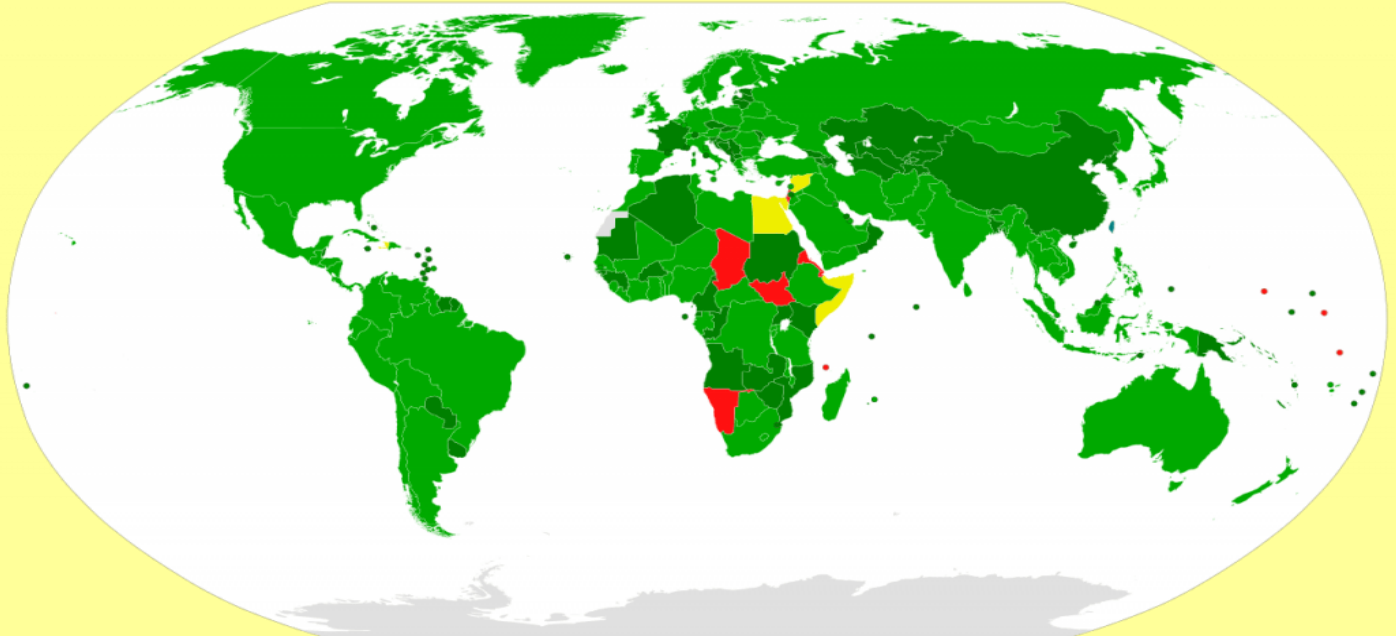
[Reporting](#) on the meeting emphasized that 35 states backed the United States in rejecting the allegations, while few states backed Russia. (It's important to note, however, that those other states provided limited support and largely only endorsed the consultation process, the





legitimacy of Russia's right to request the meeting, and repeated some of the questions Russia was asking about the United States and Ukraine.) None joined Russia in formally alleging non-compliance.

Triggering Article V represented an escalation of Russia's [years-long disinformation campaign](#) on biolabs and what it portrays as nefarious "US military biological activities." After its failure to gain traction at the United Nations Security Council meetings earlier this year, Russia initiated bilateral consultations with the United States in June. But [just two weeks later](#) it requested a formal consultative meeting.



Participation in the Biological Weapons Convention as of August 2019

The closed-door nature of the meeting meant that it risked becoming an opaque process. But states could request national positions and other documents be published as official working papers. Many have since done so; consequently, there are more than 70 working papers currently available, including documentation related to Russia's allegations, the rebuttals of the United States and Ukraine, and national statements about the process and the allegations themselves. Compared to the 1997 meeting, which officially has only its [procedural report](#) and a follow-up letter available, the 2022 meeting was significantly more transparent.

At the meeting, Russia decided to focus on four issues—two directed at the United States and two at Ukraine. Russia claimed that a patent issued in the United States involved potential applicable usages for biological warfare and that the funding provided to Ukraine by the United States was carried out in violation of the Convention. Regarding Ukraine, the allegations revolved around claims that collections of bacterial cultures in Ukrainian laboratories were of little relevance to the predominant endemic diseases in the country and that a licensing request to acquire a particular Turkish drone that Russia suggested could be fitted with spray tanks posed "a real threat of large-scale use of biological weapons on the territory of the Russian Federation."

The United States and Ukraine refuted the claims through statements and presentations, while other states expressed their views based on what they heard in statements and read from available documents. In total, 65 states expressed a view: Russia, the United States and Ukraine whose positions were clear before the start of the meeting and 62 states in national or joint statements.

Eight states—Belarus, China, Cuba, Iran, Nicaragua, Syria, Venezuela, and Zimbabwe—stopped short of claiming non-compliance but supported Russia's right to use the consultation process and indicated Russia's allegations left questions for the United States and Ukraine to answer. China went further than most, implying that the United States should recognize Russia's concerns, set an example of compliance, make more comprehensive efforts to respond to posed questions, and provide a clear answer to the international community. Appended to its statement, China listed additional questions for the United States.

Furthermore, **China** was at the forefront of supporting Russia's call for follow-up actions that might include lodging a non-compliance complaint with the UN Security Council under Article VI of the Convention. **Belarus** was the other supporter, focusing its questions on the patent issue for a delivery system. Its view is that possible non-compliance may arise around this



patent. As the United States representatives noted, this issue had been explored in 2019 bilateral discussions with Russia and granting an individual patent in the United States does not mean the government has any interest in such systems, nor does it circumvent US law that prohibits manufacture of a delivery system to use biological weapons.

Compared to China and Belarus, others were more circumspect. Russia has vigorously defended Syria in the Security Council over its use of chemical weapons and in the Organisation for the Prohibition of Chemical Weapons, but Syria returned the favor only with a fawning response about the professionalism of Russia's presentations and the technical details of the documents. Its only substantive claim was that the United States and Ukraine had made no serious attempt to answer the questions. [Iran](#) could only muster support for Russia's right to request the meeting and suggested that the United States should provide clarifications in a transparent manner. Iran's support was so lukewarm that it did not even align itself with the [joint statement](#) by Belarus, China, Cuba, Nicaragua, Russia, Syria, Venezuela and Zimbabwe, which indicated there remain unresolved questions and called for a follow-up process.

Another category of responses emerged from [42 states](#) that unambiguously rejected the allegations. Sweden called for Russia to "cease their unfounded allegations and stop its disinformation campaign" and Ireland urged an end to the misuse of consultation procedures that undermine multilateral disarmament and non-proliferation agreements. The Czech Republic spoke on behalf of all European Union member states and others who asked to be aligned with it, to categorically reject the Russian claims. Others, such as Norway, "heard nothing—or read nothing—that even comes close to substantiating such allegations." The collective message of these states was encapsulated by Switzerland in a statement noting "a firm view that the allegations made have not been substantiated; that the conclusions drawn are neither convincing nor credible; and allow in no way to draw the conclusion that the obligations of the United States and Ukraine under the BWC have been violated."

[A group of 12](#), including Armenia, Brazil, Chile, India, Mexico, Nigeria, South Africa and Uzbekistan, neither supported nor rejected the allegations. Some, such as South Africa and Chile, hinted at the misuse of the process and emphasized that peaceful cooperation to build the capacity of health systems help states identify and manage disease outbreaks. This muted criticism was likely a signal that Russia's claim that the United States was using peaceful cooperation as a guise to support weapons programs was unwelcome and risked contaminating all cooperation in the biological field. The emphasis on peaceful cooperation in biology under Article X of the BWC was also a signal of support for both the United States and Ukraine. Prior to the meeting, the United States, Armenia, Georgia, Iraq, Jordan, Liberia, Philippines, Sierra Leone, Uganda and Ukraine had issued [a joint statement](#) highlighting their collective contribution to reduce global health security threats.

States in this category also used the meeting and its challenges as a platform to reiterate their support for biological disarmament and their preference for a verification mechanism. In their view, only a verification mechanism is capable of resolving the issues Russia's questions purported to address. This support for verification will have implications for the ninth review conference in November and December of this year.

Finally, [30 states](#) were physically present but not engaged in the process via national statements or other available documents. This group, which comprised one-third of attendees, may have made their views known privately and chose to avoid expressing them publicly out of realpolitik concerns. As both Germany and Russia stated, for different reasons, this silence matters: Russia interpreted it as meaning only the allies of the United States rejected its claims, whereas Germany asserted states cannot remain silent and on the sidelines if they want to uphold the authority of the Convention.

Taken together, the statements reveal how little traction Russia's allegations have with others. Even among those aligning with Russia some of the support is simply a convenient intersection with other issues. China's interest in the US Defense Department's funding to laboratories escalated after the outbreak of the pandemic as a way to shift the narrative on the origins of COVID-19. For Syria, the biolabs narrative is an opportunity to support its most vocal defender (Russia) and criticize its more vocal adversary (the United States) with regards to its multiple uses of chemical weapons. Based on [voting in the United Nations](#) regarding Russia's invasion of Ukraine and how [states voted on key decisions](#) around Syria's violations of its obligations under the Chemical Weapons Convention, it was expected that some combination of Belarus, China, Cuba, the Democratic People's Republic of Korea, Iran, Venezuela, and Syria would back up Russia's claim. North Korea did not attend the meeting, but Nicaragua offered some procedural support to Russia and Zimbabwe aligned itself with the Russian-led [joint statement](#) calling for a follow-on process.

What does it all mean?

The outcome of the meeting has procedural and substantive meanings and knock-on effects. In procedural terms, the consultation meeting process worked as intended: it enabled states to formally share views on the allegations. In addition, despite being a closed meeting, the release of tens of documents provided a degree of transparency few expected when the meeting was announced in July. In 1997, when Cuba's allegation was addressed, it took four



months to find out that 13 states submitted views and that a definitive conclusion on Cuba's allegation was not possible due to the technical complexity of the matter and the time between the incident and the consultative meeting. This time, the views of more than 60 states and detailed information about the allegations and the rebuttals to the accusations were accessible within days. Whether intended or not, Russia, the United States and Ukraine have set a benchmark for release of information and evidence that substantiates and rebuts claims to a wider audience.

This approach will have implications for any future allegations and how states respond to questions around certain activities. It is in stark contrast to Syria's response to questions around its non-compliance with the Chemical Weapons Convention, Russia's [obfuscation](#) around its use of chemical weapons for assassinations, Iran's [unwillingness to address remaining questions](#) from the International Atomic Energy Agency and other states on possible military dimensions of its nuclear activities and China's [rejection of the World Health Organization](#) plans for further investigation into the origins of the COVID-19 pandemic.

Despite Russia's isolation, the formal consultative meeting will probably not be the end of the allegations. Russia is not likely to be dissuaded by its lack of support or the fact that during the three Security Council meetings on this topic earlier this year, the head of disarmament at the UN repeatedly noted that there are no [signs of biological weapons in Ukraine](#). There is a high likelihood that Russia will pursue a follow-up process at the Security Council, possibly with the support of China and others based on the joint statement, perhaps just weeks or days before the review conference. The knock-on effect is that Russia's rejected allegations may continue to prevent necessary focus on strengthening the Convention.

A final implication of the meeting is an impression that most states parties very clearly prefer to avoid discussion of compliance issues. Less than half of eligible states attended the meeting and a third of the participants were silent. This level of non-involvement with serious issues, even when most consider Russia's allegations to be broad, vague, and generally viewed as [lies and outlandish](#) attempts to shift attention from its illegal invasion of Ukraine, suggests that the majority of states are simply uninterested in the hard work of keeping the world free of biological weapons. Such disinterest is a boon for disinformation and a real challenge for anyone seeking to strengthen the Convention.

Jeze Littlewood is a policy analyst in Alberta. He previously worked at Carleton University (Ottawa) and the University of Southampton (United Kingdom); served under secondment to the UK Foreign and Commonwealth Office, and worked at the United Nations in Geneva. His areas of expertise include biological weapons, arms control, and national security issues.

Filippa Lentzos is a Reader (Associate Professor) in Science & International Security at King's College London, where she is jointly appointed in the Department of War Studies and the Department of Global Health & Social Medicine. A biologist and social scientist by training, Lentzos' research critically examines biological threats, health security, biorisk management and biological arms control, and she has written widely on these issues. Lentzos serves as the Director of the King's MA in Science & International Security. She is also an Associate Senior Researcher at the Stockholm International Peace Research Institute (SIPRI), a Non-Resident Scholar at the James Martin Center for Nonproliferation Studies (CNS), and she serves as the NGO Coordinator for the Biological Weapons Convention.

Peer Reviewed Study: 94 Percent of Vaccinated Patients with Subsequent Health Issues Have Abnormal Blood

Source: <https://nationalfile.com/peer-reviewed-study-94-percent-of-vaccinated-patients-with-subsequent-health-issues-have-abnormal-blood/>

Oct 05 – Physicians in Italy evaluated the blood of 1,006 patients who had received at least one dose of an mRNA COVID-19 vaccine and found “foreign matter” long after vaccination, according to a new study. Their results were published in the International Journal of Vaccine Theory, Practice, and Research in August 2022, [the Epoch Times reported](#).

The three surgeons who conducted the study — Franco Giovannini, M.D., Riccardo Benzi Cipelli, M.D., and Giampaolo Pisano, M.D.— **examined freshly drawn blood of over 1,000 patients** using direct observation under microscopes in order to evaluate the blood.

In the study, Italian doctors used optical microscopy, or regular light microscopes, to examine the blood. According to the *Epoch Times*, light microscopy provides a direct image of what is under the lens. This is not the case with electron microscopy. With optical microscopy, doctors are able to better understand a patient's health by examining blood cell shape, as well as whether they are aggregated (clumped together), in order to make determinations.



In their [60-page, peer-reviewed study](#), the Italian physicians detailed case studies based on their observations. Of the 1006 patients, 426 were men and 580 were women. 141 subjects received just one dose of an mRNA COVID-19 vaccine, 453 received two doses, and 412 had received a booster shot (three doses in total) at the time of the blood draw. The patients ranged in age from 15 to 85, with an average age of 49. All 1,006 patients were seeking medical treatment because they were not feeling well, presenting with a wide variety of health issues. On average, the patients whose blood was examined had been vaccinated about one month prior. Of the 1,006 patients, just five percent — or 58 individuals — had blood that looked normal and healthy. The doctors were able to examine the blood of 12 of the patients before they had received any COVID-19 vaccine injections. At that time, prior to vaccination, all 12 of those patients were found to have normal, healthy blood, the researchers reported. Side-by-side pictures of a patient's blood before and after vaccination revealed stark differences. Prior to vaccination, the red blood cells are separate from each other and are round, while the blood drawn after vaccination revealed red blood cells that are deformed. Furthermore, the cluster in coagulation around visible "foreign material" that was not present before. The foreign material appeared to collect into structures, at times forming crystals, while other times forming long tubes or fibers, researchers reported.

Two shapes repeatedly noticed by the Italian doctors were "crystal-like chunks and tube-like lengths."

The researchers could not confirm that what they were seeing was [graphene](#), though they did point out that graphene can aggregate into shapes similar to those they observed. If graphene was indeed assembling into structures within the bloodstream, it could be a cause of clotting.

Graphene is a form of carbon that occurs when the atoms are arranged in hexagons, making a flat crystal, like a sheet. In this form, carbon behaves chemically like a metallic compound.

Graphene has been used in nasal-delivery flu vaccines, though it has not been listed as an [ingredient](#) in Pfizer and Moderna's mRNA vaccinations. The researchers were unable to test for graphene, and while they could not determine the cause of the abnormal blood observations, they felt their findings needed to be shared with the medical community.

The Marked **Contrast** in Pandemic Outcomes Between Japan and the United States

Future Army medics will lean hard on new tech to help mass casualties

By Todd South

Source: <https://www.armytimes.com/news/your-army/2022/10/13/future-army-medics-will-lean-hard-on-new-tech-to-help-mass-casualties/>



Idaho National Guardsmen from the 116th Cavalry Brigade Combat Team conduct medical evacuation training at the Orchard Combat Training Center, Idaho, March 30, 2022. (Master Sgt. Becky Vanshur/Army)

Oct 13 — As the Army modernizes for large-scale, high-casualty combat, its medical branch must keep up with the pace of battle. Army medical leaders have three main tasks: get wounded [soldiers back in the fight](#), clear the battlefield of resource-intensive casualties and get [medical resources](#) to the frontlines amid contested logistics from fort to port.

How they get there, top officers explained Tuesday at the annual Association of the U.S. Army conference will require technologies not yet invented and a series of experiments that started this year and will run over the next

two years. Col. James Jones, director of medical capability development and integration at Army Futures Command, painted a picture of what future commanders will face.



ICI C²BRNE DIARY – October 2022

“We’re going to need autonomous resupply, autonomous systems, AI-enabled to optimize evacuation and maximize return to duty rates,” Jones said. In the scenario Jones shared during the panel on Army medicine in multidomain operations, 1st Armored Division is in the fight, running defensive maneuvers.

They’re hit by an enemy precision strike attack with long-range rockets and self-propelled artillery. The division takes 500 critical casualties.

In this 2030 scenario, Jones explained, a combination of pre-battle work and technology is now being developed to serve medics and surgeons.

Each vehicle is equipped with casualty evacuation kits, all non-medical troops have received advanced Tactical Combat Casualty Care training and autonomous robotic ground and air systems are moving the wounded off the battlefield.

Medics in the field and surgeons in the rear, or as far away as Walter Reed National Military Medical Center, are advising treatment through telemedicine.

“When you look at just the dispersion of our formations in the future operating environment, we can’t get a surgeon to every place where there’s an injury. You can’t get them in the foxhole,” said Maj. Gen. Michael Talley, commander of the Army Medical Center of Excellence.



Soldiers at an Army field hospital prepare simulated casualties for transport at Sierra Army Depot, California, during an exercise, Oct. 29, 2019. (Spc. ShaTyra Reed/Army)

As this flurry of activity moves across the battlefield, all the data is being swept into an artificial intelligence-driven system that gives commanders minute-by-minute updates. That same system tells commanders what medical supplies they need, as well as when and where they need them.

Information both from the front lines and from pre-operation planning is key to successful treatment. “You can’t do contested logistics if you don’t know what you’re treating,” said Brig. Gen. Tony McQueen, commanding general of the Army’s Medical Research and Development Command.



ICI C²BRNE DIARY – October 2022

The system, McQueen said, will automatically detect what medical product soldiers are using and begin replenishing those stocks as they're used and flow more material to the front line.

To get to that demanding but necessary future for Army medicine, officials stressed that medicine, even seemingly simple tasks like rehearsing casualty evacuations in every exercise, will be necessary.

That's why Army medicine has embedded experts into a series of standard Army and joint exercises, starting this year. They're also kicking off some of their own, medicine-focused experimentation to find out what works and what doesn't.

Over the next two years, there are plans for a mass casualty evacuation simulation exercise, prolonged care experiments and arctic medicine experiments, Jones said.

Increasingly, Army medics and battlefield surgeons are expected to rely on a cloud-based system to store and transmit medical data. That information will be pulled from soldier-worn sensors and aerial drone scans of battle-damaged areas and then sent back to experts in the United States.

Talley shared another scenario in which a combat medic on the battlefield could use the network and, while wearing the Army's mixed reality goggle — known as Integrated Visual Augmentation System — have a surgeon at Walter Reed talk them through a difficult procedure, such as cutting open a soldier's abdomen to treat internal wounds.



Soldiers from the 82nd Airborne Division test out IVAS goggles during a training exercise in October 2020 at Fort Pickett, Virginia. (Bridgett Siter/Army)

That surgeon would see and be able to guide the medic with augmented reality tools that the soldier can see overlaid on the patient. Tasks like that will require a higher level of training for future combat medics and a robust network to support such data sharing.

Those medics must be able to triage patients quickly and provide advanced medical care in the fight, while also sometimes sustaining the patients with prolonged care that wasn't the

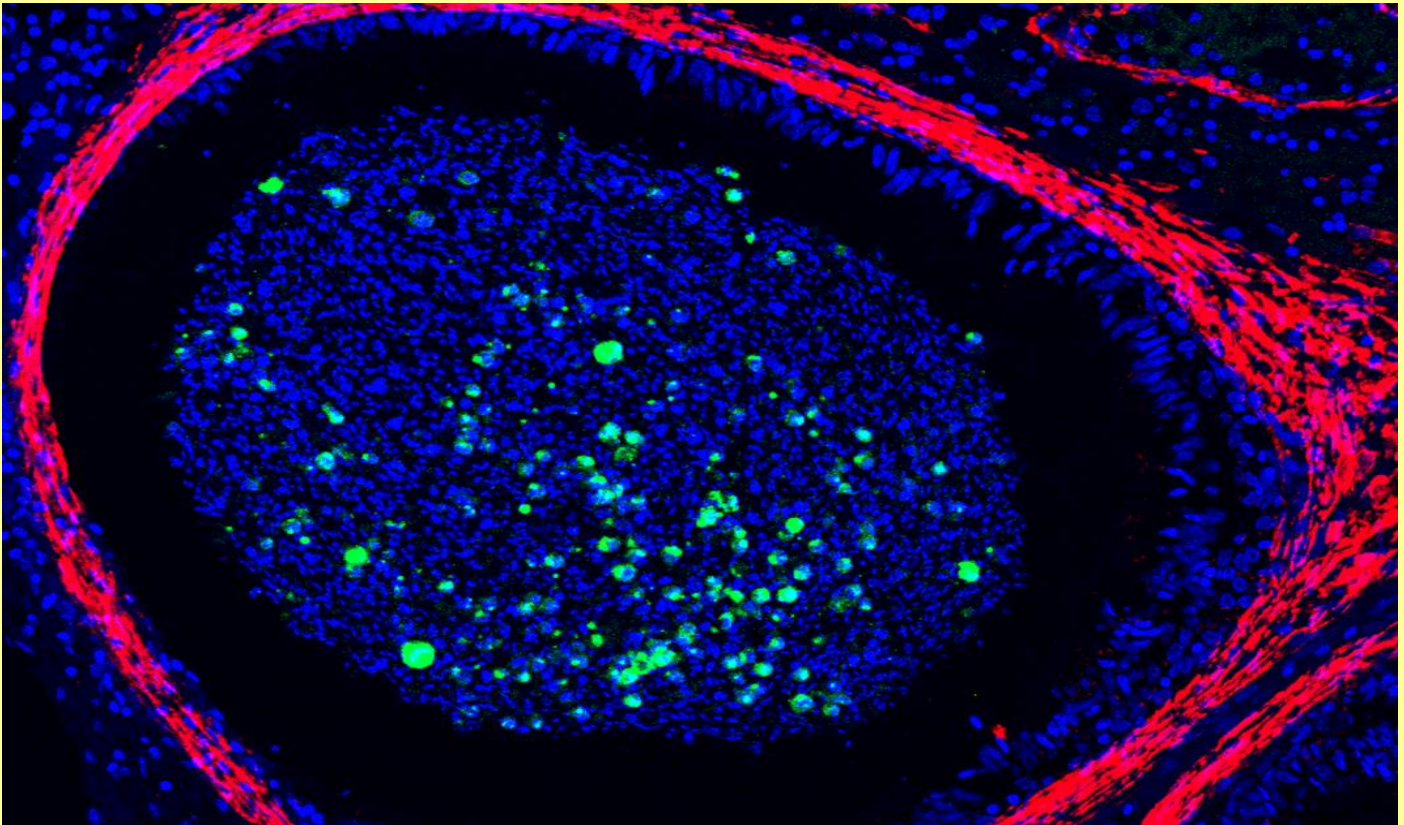


norm in recent wars. Getting the wounded out of combat and back to advanced treatment won't be as easy as it has been in Iraq and Afghanistan. Air evacuation will be contested and sometimes soldiers will have to rely on ground systems or be forced to wait, keeping patients alive longer. And the Army doesn't want to tie up its limited number of human pilots or drivers in dangerous recovery missions. They're going to lean on robot ground and air vehicles to pull wounded from combat. "We're looking at all kinds of evacuation platforms that we don't have today that we will have in the future," Jones said. Army Times recently reported on work being done at the [Maneuver Battle Lab](#) at Fort Benning, Georgia, that has demonstrated an autonomous aerial drone carrying a 70-pound mannequin over 2.5 miles in under four minutes. Also, at AUSA this week, one of the xTechSearch competition winners, a program that seeks out tech solutions from small businesses, displayed a "[smart shirt for wound detection](#)." The shirt features a woven lattice of sensors inside a combat shirt or jacket that can instantly report a puncture over 2 mm in width. The company developing the shirt, Legionarius, is adding "bladders" to the shirt that could immediately compress wounds to staunch bleeding.

Todd South has written about crime, courts, government and the military for multiple publications since 2004 and was named a 2014 Pulitzer finalist for a co-written project on witness intimidation. Todd is a Marine veteran of the Iraq War.

Monkeypox Found in Monkey Testes Highlights Potential for Sexual Transmission

Source: <https://www.genengnews.com/virology/monkeypox-found-in-monkey-testes-highlights-potential-for-sexual-transmission/>



Immunofluorescence staining demonstrates monkeypox virus (**green**) can be detected in the epididymal lumina (**red**), the site of sperm maturation and storage, of a crab-eating macaque with acute monkeypox infection. Nuclei were counterstained **blue**. [Xiankun (Kevin) Zeng, USAMRIID]

Oct 18 – According to the Centers for Disease Control and Prevention (CDC), monkeypox can spread through close, personal, skin-to-skin contact. This includes direct contact with monkeypox rash, scabs, or body fluids from a person with monkeypox, touching objects that have been used by someone with monkeypox, and contact with respiratory secretions.

The ongoing 2022 monkeypox outbreak has been linked to sexual contact in patients with laboratory-confirmed infection. However, it remains unclear whether monkeypox replicates



in the testes or is transmitted via semen to produce an active infection. Because the virus is transmitted through direct contact with bodily fluids and skin lesions, understanding the biology of monkeypox infection of the testes, and virus shedding in semen, is important to inform public health guidance.

Now, for the first time, scientists have detected the monkeypox virus in the testes of macaques during the acute phase of infection. In addition, the team found preliminary evidence of persistent infection in two animals that survived challenge with the virus. Their results highlight the potential for sexual transmission of the virus in humans.

This work is published in *Nature Microbiology* in the paper, "[Retrospective detection of monkeypox virus in the testes of nonhuman primate survivors](#)." Investigators at the U.S. Army Medical Research Institute of Infectious Diseases (USAMRIID) performed a retrospective analysis of monkeypox virus infection in archival tissue samples from crab-eating macaques—a widely used nonhuman primate model for studying monkeypox and evaluating the efficacy of medical countermeasures, such as vaccines and treatments, against the infection. "We examined tissue samples obtained during both the acute phase of the disease, when infection is at its peak, and the convalescent phase, when infection is gradually subsiding," explained Xiankun (Kevin) Zeng, PhD, of USAMRIID. "We detected monkeypox virus in interstitial cells and seminiferous tubules of the testes, as well as the epididymal lumina, which are the sites of sperm production and maturation."

Importantly, said Zeng, the team also found preliminary evidence of persistent monkeypox virus infection in two convalescent crab-eating macaques that survived challenge with the virus. Using histological analysis to microscopically analyze the disease course in tissue samples, the USAMRIID team discovered that while monkeypox virus was cleared from most organs—and from healed skin lesions—during convalescence, it could be detected for up to 37 days post-exposure in the testes of the macaques.

USAMRIID investigators, led by Zeng, had previously demonstrated that Ebola, Marburg, Nipah, and Crimean-Congo hemorrhagic fever viruses can persist in certain organs of nonhuman primate survivors where the immune system is suppressed. These immune privileged sites, which are similar in humans, include the eyes, brain, and testes. While close contact through sexual activity has been associated with the spread of monkeypox virus in the current global epidemic, it was unclear whether the virus replicated in the testes or was transmitted via semen. "Our data provide evidence that monkeypox virus may be shed into semen during both acute and convalescent stages of the disease in crab-eating macaques," said Zeng. "It seems plausible, therefore, that human transmission in convalescent male patients might occur via semen." The authors also noted that persistent virus may be cleared over time.

Because this was a retrospective study using archival tissues, virus isolation in semen was not possible, said USAMRIID's Jun Liu, PhD, co-first author. Further studies are now needed to understand the origins, dynamics, and implications of viral DNA shed in semen, as well as to confirm whether semen from convalescent monkeypox patients contains infectious virus—especially after skin lesions heal.

In addition, according to the authors, the crab-eating macaque model may not fully reflect monkeypox in humans. The animals demonstrate a more severe and lethal disease than that observed in humans, and the incubation period in the animals is shorter. Furthermore, this study used samples from animals exposed to different viral isolates than the strain currently circulating.

USAMRIID has decades of experience working with monkeypox and related high-threat pathogens; it is the only laboratory in the Department of Defense equipped to safely study highly hazardous viruses requiring maximum containment at Biosafety Level 4.

Among the Institute's many contributions to the field are a novel respiratory model for monkeypox that closely approximates human exposure and clinical disease; the Phase III clinical trial supporting FDA licensure of the JYNNEOS (Bavarian Nordic) vaccine for preventing smallpox and monkeypox in humans; and initial screening and preclinical efficacy testing of TPOXX (SIGA Technologies), the first drug approved for treatment of smallpox. USAMRIID continues to develop monoclonal antibodies and other approaches to protect against orthopoxviruses.

Nanoparticles Plus mRNA as Basis for "Universal" COVID-19 Treatment

Source: <https://www.insideprecisionmedicine.com/topics/patient-care/coronavirus/nanoparticles-plus-mrna-as-basis-for-universal-covid-19-treatment/>

Oct 18 – A new study has produced a proof of principle for a new "universal" means of treating [COVID-19](#). Using messenger RNA packaged in lipid nanoparticles, scientists showed in a mouse model that host cells can produce a "decoy" enzyme that binds to coronavirus spike proteins, meaning the virus shouldn't be able to latch onto cells in the host's airway and start the infection process.

"Rather than messenger RNA as a vaccine, this shows that mRNA can be used as a universal therapy against different coronaviruses," said Gaurav Sahay of Oregon State University (OSU) and senior author. "Despite mass vaccination, there is an urgent need to



develop effective treatment options to end this pandemic. Several therapies have shown some effectiveness, but the virus' high mutation rate complicates the development of drugs that treat all variants of concern."

The group's most recent findings were published in [Advanced Science](#).

Next steps involve showing that the protein prevents infection in mice, said Sahay, who added that the mRNA treatment is possibly "a couple of years" away from being available to human patients.

In their study, Sahay and collaborators showed that, in a mouse model, it's possible to prompt production of a protein that can block multiple variants of the SARS-CoV-2 virus from entering cells and causing respiratory disease.

Breathing in the virus is the primary way to contract COVID-19, blamed for 6 million deaths globally since the pandemic began in late 2019. The virus' envelope is covered in spike proteins that bind to an enzyme produced by cells in the lungs.

The study involved messenger RNA that was administered intravenously and also through inhalation, which would be the preferred delivery method for humans.

hACE2—short for human angiotensin-converting enzyme 2—is an enzyme of the airway cells. It is also expressed in the heart, kidney and intestine, and has a hand in numerous physiological functions.

Simply giving a COVID-19 patient hACE2 would have limited effectiveness in treating the disease, Sahay said, because the soluble form of the enzyme, the kind that can circulate throughout the body, has a short half-life—less than two hours, meaning it wouldn't stay in a person's system very long.

But lipid nanoparticles (LNPs), containing mRNA that orders production of the enzyme, can overcome that problem.

In this study, the researchers engineered synthetic mRNA to encode a soluble form of the enzyme, packaged the mRNA into lipid nanoparticles and delivered it to cells in the liver with an IV; within two hours, the enzyme was in the mice's bloodstream, and it stayed there for days.

The scientists also delivered the loaded LNP via inhalation, prompting epithelial cells in the lungs to secrete soluble hACE2.

"The soluble enzyme effectively inhibited live SARS-CoV-2 from infecting host cells," said OSU postdoctoral researcher Jeonghwan Kim. "The synthesis of mRNA is fast, affordable and scalable, and LNP-delivered mRNA can be repeated as necessary to sustain protein production until the infection subsides. Once treatment stops, the no-longer-needed soluble hACE2 clears the system in a matter of days."

White House Aims for Bio-Defense 'Moonshots' In New Strategy

By Patrick Tucker (Technology Editor, Defense One)

Source: <https://www.defenseone.com/threats/2022/10/white-house-aims-bio-defense-moonshots-new-strategy/378554/>

Oct 18 – The Biden administration on Tuesday announced a new biodefense strategy intended to help protect the United States from future biological threats and mitigate the effects of pandemics and communicable diseases.

As part of that strategy, the administration is requesting \$88 billion in pandemic preparedness over the course of the next five years, in part to fund new research to predict outbreaks before they become pandemics, accelerate rapid testing to get ahead of where viruses are moving, and to bring the timeline for developing vaccines down to three months.

Some of the strategy's goals include things like detecting the spread of pathogens before patients even begin to show symptoms like fever, developing a way to easily diagnose new pathogens within 12 hours of an outbreak, and scaling up the number of diagnostic tests kits by tens of thousands within a week and rapid tests within 90 days. One particularly lofty goal is to be able to develop a new vaccine in 100 days, and to have enough for the entire U.S. population after 130 days.

A senior administration official speaking to reporters before the announcement described it as a series of "moonshots" and acknowledged that "the science and technology goals layout timelines that are not possible today, but these capabilities can be achieved and are within our reach with the right resources over the next five to 10 years."

Meeting some of those targets will require scaling up data collection efforts at research facilities around the globe.

The ability to monitor a small outbreak before it becomes a pandemic would require pathogen researchers to collect and structure massive amounts of data on emerging pathogens, particularly in birds, to [predict the leap to humans](#) as well as further mutations.

New approaches to RNA research could deliver [therapeutic aids](#) (that boost antibodies) to ease pandemics in a fraction of the time it takes to create a vaccine that meets FDA emergency use criteria. And new forms of plant-based vaccines

could also allow for the scaling up of [vaccine production by orders of magnitude](#). The administration official did not specify exactly what technologies they will invest in to meet the strategy's goals.



But while it is technically feasible to reach these goals, the government has had a hard time meeting even mundane needs related to pandemics, such as having enough protective gear on hand for healthcare workers. In addition to funding new science and technology, the strategy also seeks to ensure the government is “not stuck with just a few [protective gear] providers, that we have a steady state and market supply, that we have the ability to manufacture surge capacity ... that we have storage and inventory capacity.”

The strategy also aims to boost the number of local healthcare workers—including lab technicians, epidemiologists, veterinarians, and community-based health workers—in all 50 states.

But with an estimated shortage of 29,400 nurse practitioners [by 2025](#) and shortages of other healthcare workers looming, it's not clear how the government can overcome current trends.

The senior official said bringing in more traditional frontline healthcare workers is a key focus, but many of the positions the strategy seeks will be related to research and data collection. That will require expanding the CDC's epidemiology field officer program, bringing more epidemiologists to every state, and “trying to ensure we expand state public health veterinarians and staff in all 50 states and then, you know, really trying to see if we can do better on this front going forward.”

Researchers' Hybrid COVID-19 Virus Isn't as Deadly as You May've Heard

Source: <https://www.sciencealert.com/researchers-hybrid-covid-19-virus-isnt-as-deadly-as-you-mayve-heard>

Oct 19 – Boston University scientists have created a hybrid version of the [coronavirus](#) that causes [COVID-19](#).

Their experiments sparked controversy, with heated headlines claiming that the researchers made the [virus](#) more lethal and university officials denouncing these claims as “false and inaccurate.”

The new Omicron spike-carrying [virus](#) – built by attaching the spike protein from an Omicron version of the virus to the original [SARS-CoV-2](#) virus – killed 80 percent of lab mice infected with it, making it more severe than the original Omicron variant which didn't kill any infected mice.

Yet the hybrid virus was still less deadly than the original Wuhan variant of the virus, which killed 100 percent of infected lab mice. Scientists at Boston University's National Emerging Infectious Diseases Laboratories (NEIDL) created the chimeric virus to study how Omicron versions of the virus, which first appeared in 2021, evade immunity built up against past strains and yet cause a lower rate of severe infections.

After exposing mice either to the chimeric virus or to the naturally-occurring Omicron BA.1 virus, the researchers found that the mutated spike protein of the Omicron virus did enable it to dodge immunity, but that the mutated spike wasn't responsible for making Omicron less severe.

The researchers published their findings October 14 on the [preprint database bioRxiv](#), so it has yet to be peer-reviewed.

“Consistent with studies published by others, this work shows that it is not the spike protein that drives Omicron pathogenicity, but instead other viral proteins. Determination of those proteins will lead to better diagnostics and disease management strategies,” lead author Mohsan Saeed, an assistant professor at NEIDL, said in a statement, according to STAT.

Although the research was conducted properly in a biosecurity level 3 laboratory and approved by an internal biosafety review committee and Boston's Public Health Commission, controversy is swirling around the study because the researchers did not clear the work with the National Institute of Allergy and Infectious Diseases (NIAID), which was one of its funders, [STAT](#) reported.

The scientists also didn't divulge to NIAID if their experiments could create an enhanced pathogen of [pandemic](#) potential (ePPP), according to STAT.

To be awarded federal funding for research on [viruses](#) with pandemic potential, proposals have to pass through a committee process, called a P3CO framework, that assesses the pros and cons of the work.

“What we would have wanted to do is to talk about exactly what they wanted to do in advance, and if it met what the P3CO framework defines as enhanced pathogen of pandemic potential, ePPP, we could have put a package forward for review by the committee that's convened by HHS, the office of the assistant secretary for preparedness and response,” Emily Eberling, director of NIAID's division of microbiology and infectious diseases told STAT.

“That's what the framework lays out and that's what we would have done.”

Eberling said that NIAID would have “conversations over upcoming days” with the researchers.

The mistake may have emerged from an ambiguity in the P3CO framework's rules. For a virus to be defined as an ePPP, it has to be reasonably expected to produce pandemic potential results in humans.



The mice used by the researchers for the study, however, might not have seemed to them to be a close enough analogue. Boston University has pushed back against media reports, most notably an article published by the UK's *Daily Mail*, which claimed the research had created a more dangerous variant.

"We want to address the false and inaccurate reporting about Boston University COVID-19 research, which appeared today in the *Daily Mail*," Boston University [said in a statement](#).

"First, this research is not gain-of-function research, meaning it did not amplify the Washington state SARS-CoV-2 virus strain or make it more dangerous. In fact, this research made the virus replicate less dangerous." (The "Washington state SARS-CoV-2 strain" refers to a sample of the original Wuhan strain gathered in Washington in the early pandemic.)

[Ronald B. Corley](#), the director of NEIDL, said in the statement that the *Daily Mail* report "sensationalized the message" and misrepresented "the study and its goals in its entirety."

"The animal model that was used was a particular type of mouse that is highly susceptible, and 80 to 100 percent of the infected mice succumb to disease from the original strain, the so-called Washington strain," Corley said. "Whereas Omicron causes a very mild disease in these animals."

'Insane': Boston Researchers Create 'More Lethal' Strain of COVID, Prompting Calls to Shut Down Risky Gain-of-Function Research

By Michael Nevradakis, Ph.D.

Source: <https://childrenshealthdefense.org/defender/new-covid-strain-risky-gain-of-function-research/>



Oct 19 – A team of 14 scientists at Boston University's [National Emerging Infectious Diseases Laboratories](#) (NEIDL) developed a [new strain of COVID-19](#) that killed 80% of the mice infected with the virus in a laboratory setting, according to a [preprint study](#) published Oct. 14.

Following the announcement, numerous news stories about the study's results focused on the [fatality rate](#) observed in the laboratory mice used in the study.

However, behind the headlines, some scientists and others raised concerns about the nature of the research and the fact that it was partially funded by the [National Institute of Allergy and Infectious Diseases](#) (NIAID), headed by [Dr. Anthony Fauci](#).

The research was conducted using what some scientists called "[gain-of-function](#)" research, raising concerns that this type of research — which some theorize led to the [creation and](#)



[escape of the original Wuhan strain](#) of COVID-19 — is still being done, despite concerns that it could lead to [more lab escapes and more pandemics](#).

Gain of function refers to the [“manipulation of pathogens](#) to make them more dangerous,” in the hope of “getting ahead of a [future outbreak](#).”

Commenting on the researchers’ announcement, Robert F. Kennedy, Jr., [Children’s Health Defense](#) chairman of the board and chief legal counsel, remarked on the potential danger of such research — and its federal funding:

“What could be more insane than Anthony Fauci funding more of his gain of function experiments to soup up coronavirus lethality in the middle of a pandemic caused by a juiced-up coronavirus that has killed millions?

“All of horrified humanity is watching Lord of the Flies play out at National Institutes of Health and praying for the adults to appear.”

Rachel Lapal Cavallario, Boston University’s associate vice president for public relations and social media, told the media the research conducted was not gain-of-function research and that, “In fact, this research made the virus [replication] less dangerous.” However, others disputed that claim.

Sen. Roger Marshall (R-Kan.), a doctor, said the research involved “lethal gain of function virus research” that creates the [“potential to kill more people](#) than any singular nuclear weapon.”

“Viruses have managed to escape even the most secure labs,” Marshall said, adding that this type of “research must stop immediately while the risks and benefits can be investigated.”

[Jessica Rose, Ph.D.](#), commenting on the NEIDL research on Substack, wrote: “What they have done in this work, as described by their own methods and results, is akin to madness.

“It is akin to madness because ... they basically created and published a recipe for a deadly pathogen (80% mortality rate in the subjects of their experiments) of their own construction in their lab.

“By the way, this is precisely gain-of-function research. It couldn’t be more descriptive.”

Boston University today issued the following statement, downplaying the risks of the research:

“The research was reviewed and approved by the Institutional Biosafety Committee (IBC), which consists of scientists as well as local community members. The Boston Public Health Commission also approved the research.

“Furthermore, this research mirrors and reinforces the findings of other, similar research performed by other organizations, including the FDA. Ultimately, this research will provide a public benefit by leading to better, targeted therapeutic interventions to help fight against future pandemics.”

Efforts to prevent construction of NEIDL BSL-4 lab failed

NEIDL describes itself as “a Boston University Center dedicated to research on emerging and re-emerging [infectious diseases and the pathogens that cause them](#),” and “a major step forward in [advancing public health](#)” that “provide[s] the necessary information and understanding to develop diagnostic tests, treatments, and vaccines.”

NEIDL also claims that it “will not conduct any secret or classified research” and that “the public will have access through several channels to information about any and all research before it even begins” — making NIAID’s claims that it was unaware of the spike protein research project all the more perplexing.

According to the Daily Mail, NEIDL is one of 13 [biosafety level 4](#) (BSL-4) labs in the U.S.

However, this particular research took place under BSL-3 precautions, although according to STAT, “There is no evidence the work ... was conducted improperly or unsafely,” noting that an internal biosafety review committee and the Boston Public Health Commission approved the work.

The journal Nature described the difference between [BSL-3 and BSL-4](#) as follows:

“BSL-3 laboratories are designed so that scientists can safely work with potentially lethal and inhalable pathogens in a contained environment. Experiments are conducted in sealed workspaces in which the air is filtered and not recirculated, and the entrance to the facility is typically secured by self-closing doors.

“BSL-4 facilities, in which researchers work with fatal pathogens that can spread through aerosols, and for which vaccines or treatments are lacking or limited, require extra security measures.”

University of Illinois international law professor Francis Boyle, J.D., Ph.D., said the dangers of BSL-4 facilities have long been known, which is why he participated in efforts to stop the construction of the NEIDL facility.

Boyle, a bioweapons expert who drafted the [Biological Weapons Anti-Terrorism Act of 1989](#), told The Defender:

“Years ago, there was a lawsuit to prevent and [stop the building](#) of this BSL-4 [facility] at Boston University that I did work on, and we failed.





“At that time we argued that the BSL-4 would engage in existentially type dangerous biological warfare research, and that was even before ... gain-of-function.

So, we knew from the get-go how dangerous this lab was going to be and tried to stop it. We tried, we failed, and now this Nazi biowarfare death science dirty work is going on.”

However, the Boston University facility was completed with [\\$128 million in NIH funding](#).

Commenting on gain-of-function research in general, Boyle said:

“You’ll note it was funded by NIH and NIAID under Tony Fauci.

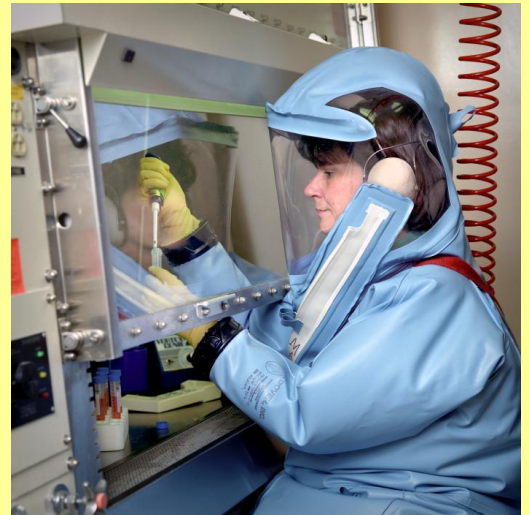
“The New York Times has pointed out that about 94% of all this Nazi biowarfare death science dirty work has been funded by NIH and NIAID since Reagan put him in charge of NIAID.”

According to Boyle, this has resulted in more than \$100 billion in federal bioweapons spending since Sept. 11, 2001.

Boyle said the federal government “doesn’t rein in or prosecute” scientists working on such projects, “because the federal government is paying for this type of Nazi biowarfare death science dirty work.”

Such research, and the facilities in which it is performed, also pose a risk to surrounding communities and the world at large, Boyle said, suggesting a Wuhan-like leak could occur at any similar facility in the U.S.:

“This is another catastrophe waiting to happen, and that Boston University BSL-4 [facility] should be shut down immediately.





“They know full well how existentially dangerous this is, certainly for the metropolitan Boston area ... and especially for the African American community in Dorchester surrounding that Boston University BSL-4 lab.”

For Boyle, “It’s not enough to ban gain-of-function.” He also called for BSL-3 and BSL-4 facilities, including the Boston University facility, a CDC facility in Atlanta and a new facility in Kansas where the federal [Plum Island Animal Disease Center](#) is being relocated, to be shut down.

“The only remedy here is to shut down all BSL-3s and BSL4-s in the U.S.A., immediately and effectively,” Boyle said. “Otherwise, there is going to be another leak.”

Notably, the [Wuhan Institute of Virology](#) where research involving “engineered novel bat coronaviruses” took place is said to have been performed in BSL-2 and BSL-3 facilities.

Rose questioned the lower safety conditions under which the NEIDL researchers created the hybrid strain, while also raising broader security concerns and calling for gain-of-function work to be “banned” and its products “destroyed immediately.”

She said: “This paper reveals more than the successful creation of a deadly new virus. It [gives] this recipe in the methods to anyone with a decent lab to recreate it.

“They don’t even mention what the hell they are planning to do with this new virus! They don’t say a bloody word about the fact that they created a virus that for all intents and purposes, is a Level IV pathogen, so why the hell are they playing with it in a Level III [laboratory]?”

NIH claims it didn’t know what it was funding

According to NEIDL, grants from the NIH “provide the support for [research at NEIDL](#).”

In September, the study’s lead author, Mohsan Saeed, Ph.D., received a five-year, \$2 million [grant from the NIAID](#), and a separate five-year, \$2 million grant from the National Institute of General Medical Sciences, to “explore novel aspects of clinically important viruses and human defense mechanisms.”

[Nancy J. Sullivan](#), NEIDL’s new director previously was chief of the Biodefense Research Section at NIAID’s [Vaccine Research Center](#).

Following the publication of the preprint study — and the controversy that ensued — the NIAID appeared to distance itself from the research. According to STAT, “The research team did not clear the work” with the NIAID, leading the agency to look “for some answers as to why it first learned of the work through media reports.”

[Dr. Emily Erbeling](#), M.P.H., director of the NIAID’s Division of Microbiology and Infectious Diseases, told STAT that the research team’s “original grant applications did not specify that the scientists wanted to do this precise work. Nor did the group make clear that it was doing experiments that might involve enhancing a pathogen of pandemic potential in the progress reports it provided to NIAID.”

Erbeling said the NIAID is “going to have conversations” with the research team in the coming days, adding that “we wish that they would have” informed NIAID of the “intent of the research.”



According to Erbeling, this would have likely resulted in a committee being convened “that would assess the risks and benefits” of the research involving “enhanced pathogens of pandemic potential.”

What the NEIDL researchers did

According to STAT, the NEIDL researchers set out “to determine if the mutations in the Omicron spike protein were responsible for this variant’s increased ability to evade the immunity to SARS-2 that humans have built up, and whether the changes led to Omicron’s lower rate of severity.”

The research involved extracting the Omicron variant’s spike protein and attaching it to the original strain.

Put differently, the scientists took the deadliest COVID-19 strain and combined it with the spike protein from the most infectious strain. They then infected laboratory mice and human cells with the new hybrid strain.

The results showed that while the Omicron variant’s spike protein was responsible for the variant’s ability to evade immunity developed via infection, vaccination or both, it is not responsible for the decrease in the severity of the Omicron strain.

[According to the Daily Mail](#): “The researchers looked at how mice fared against the new hybrid strain compared to the original Omicron variant.

“When a similar group of rodents were exposed to the standard Omicron strain, however, they all survived and only experienced ‘mild’ symptoms. ...

“[The researchers] found the hybrid strain produced five times more viral particles than the original Omicron.”

According to the MetroUK, “The scientists also infected human cells with the hybrid variant and found it was [five times more infectious](#) than Omicron.”

In the preprint, the researchers wrote:

“We generated chimeric recombinant SARS-CoV-2 encoding the S gene of Omicron in the backbone of an ancestral SARS-CoV-2 isolate and compared this virus with the naturally circulating Omicron variant.

“The Omicron S-bearing virus robustly escapes vaccine-induced humoral immunity, mainly due to mutations in the receptor-binding motif (RBM), yet unlike naturally occurring Omicron, efficiently replicates in cell lines and primary-like distal lung cells.

“In K18-hACE2 mice, while Omicron causes mild, non-fatal infection, the Omicron S-carrying virus inflicts severe disease with a mortality rate of 80%. This indicates that while the vaccine escape of Omicron is defined by mutations in S, major determinants of viral pathogenicity reside outside of S.”

In a statement remarking on the outcome of the study, NEIDL’s Saeed, who is also an assistant professor of biochemistry at Boston University, said:

“Consistent with studies published by others, this work shows that it is not the spike protein that drives Omicron pathogenicity, but instead other viral proteins.

“Determination of those proteins will lead to better diagnostics and disease management strategies.”

Media focuses on study’s findings, but critics more concerned about the research itself

Some media outlets focused on the researchers’ findings that 100% of the mice infected with the engineered virus died.

Others, however, downplayed the study’s findings. According to Fox News, for example, [one of the study’s limitations](#) was that the specific breed of mice used may not provide an accurate model for the risk posed to humans, “as other types [of mice] are more similar to humans.”

In a blog post, commentator [Alex Berenson](#), a former writer for The New York Times, also addressed the sensationalism surrounding the study’s findings, pointing out that while an 80% fatality rate in lab mice sounds bad, 100% of the mice that previously were infected with the wild variety of COVID-19 had died.

He wrote:

“[The research] says the Omicron/wild-type Sars-Cov-2 combination the researchers created is more lethal than Omicron.

“However, it ALSO says the Omicron/wild type virus is LESS lethal than [the] original wild type. Neither of those findings should be a surprise. Omicron is much less dangerous than the original Sars-Cov-2, so blending the two together produces a virus with intermediate lethality.

“What’s with the 80 percent mortality rate then? It’s in mice, people. And guess what? The wild-type had a 100 percent mortality rate in mice. Yes, all the mice infected with the original Sars-Cov-2 died. I think we can agree that Sars-Cov-2 does not have a 100 percent mortality rate in humans.”

Specifically addressing the probable risk to humans, Berenson added:

“Nor did the researchers provide any evidence that the blended Omicron/wild-type coronavirus is able to defeat antibodies in people who have been infected with and recovered



from Omicron. Which is basically all of us. (They did show that both the original Omicron and their variant beats the mRNA vaccines, but that fact is not a surprise either.)” Erbelding shared similar remarks, stating, “That 80% kill rate, that headline doesn’t tell the whole story, because Wuhan” — the original strain — “killed all the mice.” In turn, behind its headline, the Daily Mail wrote, “The scientists admit the hybrid virus is unlikely to be as deadly in humans as it was in mice,” adding, “This is because the specific breed of lab mice used are very susceptible to severe COVID disease. Mice and humans also have very different immune responses to the virus.” STAT also remarked on this point, writing: “The fatality rate seen in this strain of mice when they were infected with these viruses raises questions about how good a model they are for what happens when people are infected with SARS-2. The Wuhan strain killed less than 1% of people who were infected.” But Boyle and Rose and others, like [David Livermore, Ph.D.](#), a professor of microbiology at the University of East Anglia, and Shmuel Shapira, an Israeli government scientist, said the news coming out of NEIDL was less about the study’s results and more about the research itself. Livermore told the Daily Mail, “Given the strong likelihood that the COVID pandemic originated from the escape of a lab-manipulated coronavirus in Wuhan, these experiments seem profoundly unwise.” Shapira also condemned the research. “This should be totally forbidden, it’s playing with fire,” he said.

[Michael Nevradakis, Ph.D.](#), based in Athens, Greece, is a senior reporter for The Defender and part of the rotation of hosts for CHD.TV’s “Good Morning CHD.”

Black Death Selected for Immune-Related Genes, Affecting Disease Susceptibility Today

Source: <https://www.genengnews.com/bacterial-diseases/black-death-selected-for-immune-related-genes-affecting-disease-susceptibility-today/>



Researchers extracted DNA from the remains of people buried in the East Smithfield plague pits, which were used for mass burials in 1348 and 1349. [Image courtesy of Museum of London Archaeology (MOLA)]

Oct 20 – The Black Death was the single greatest mortality event in recorded history. Caused by the bacterium *Yersinia pestis*, the bubonic plague pandemic swept through North Africa, Europe, and Asia nearly 700 years ago, wiping out up to 30-60% of the population. Newly



reported research now suggests that the pandemic placed a significant selective pressure on the human population, changing the frequency of certain immune-related genetic variants and affecting our susceptibility to disease today.

Scientists headed by teams at the University of Chicago (UChicago), McMaster University, and the Institut Pasteur, analyzed centuries-old DNA from victims and survivors of the bubonic plague, and identified key genetic differences that determined who lived and who died, and how those aspects of our immune systems have continued to evolve since that time. The results indicated that the same genes that once conferred protection against the infection are today associated with an increased susceptibility to autoimmune diseases such as Crohn's and rheumatoid arthritis.

"This is, to my knowledge, the first demonstration that indeed, the Black Death was an important selective pressure to the evolution of the human immune system," said Luis Barreiro, PhD, Professor of Genetic Medicine at UChicago and co-senior author of the team's published paper in *Nature*. "There is a lot of talk about how pathogens have shaped human evolution, so being able to formally demonstrate which pathways and genes have been targeted really helps us understand what allowed humans to adapt and exist today. This tells us about the mechanisms that allowed us to survive throughout history and why we're still here today."



The findings are the result of seven years of work by first authors, graduate student Jennifer Klunk, formerly of McMaster's Ancient DNA Centre, and postdoctoral fellow Tauras Vigylas, PhD, and are reported in a paper titled, "[Evolution of immune genes is associated with the Black Death](#)." In their paper the authors say the studies provide "empirical evidence for the role played by past pandemics in shaping present-day susceptibility to disease."

Researchers extracted DNA from the remains of people buried in the East Smithfield plague pits, which were used for mass burials in 1348 and 1349. [Image courtesy of Museum of London Archaeology (MOLA)] Infectious diseases have presented one of the strongest selective pressures in the evolution of humans and other animals, the authors wrote. "Not surprisingly, many candidates for population-specific positive selection in humans involve immune response genes, consistent with the hypothesis that exposure to new and/or re-emerging pathogens has driven adaptation. Clarifying the dynamics that have shaped the human immune system is key to understanding how historical diseases contributed to disease susceptibility today."

The Black Death killed up to 50% of the Europeans, who likely represented "immunologically naïve populations with little or no prior adaptation to *Y. pestis*," the authors continued. "The high mortality rate suggests that genetic variants that conferred protection against *Y. pestis* infection might have been under strong selection during this time."

For their research Barreiro and colleagues aimed to identify genetic signatures of natural selection imposed by the plague. To do this they searched for signs of genetic adaptation related to the plague, and focused on a 100-year window before, during and after the Black Death, which reached London in the mid-1300s. "This was a very direct way to evaluate the impact that a single pathogen had on human evolution," said Barreiro. "People have speculated for a long time that the Black Death might be a strong cause of selection, but it's hard to demonstrate that when looking at modern populations, because humans had to face many other selective pressures between then and now. The only way to address the question is to narrow the time window we're looking at."

Using targeted sequencing for a set of 300 immune-related genes, the investigators identified four genes that, depending on the variant, either protected against or increased susceptibility to *Y. pestis*. They homed in one gene in particular, ERAP2, which demonstrated a particularly strong association to susceptibility. Individuals who possessed two copies of one specific genetic variant, dubbed rs2549794, were able to produce full length copies of the ERAP2 transcript, producing more of the functional protein, when compared with another variant that led to a truncated and non-functional version of the transcript.

The team even went so far as to test how the rs2549794 variant affected the ability of living human cells to help fight the plague, determining that macrophages expressing two copies of the variant were more efficient at neutralizing *Y. pestis* compared to those without it. "We suggest that this protein increases the presentation of Yersinia-derived antigens to CD8+ T cells, stimulating a protective immune response against *Y. pestis*," they wrote in their paper. "Furthermore, we show that macrophages from individuals possessing the selected ERAP2 allele engage in a unique cytokine response to *Y. pestis* infection and are better able to limit *Y. pestis* replication in vitro."





Researchers extracted DNA from the remains of people buried in the East Smithfield plague pits, which were used for mass burials in 1348 and 1349. [Image courtesy of Museum of London Archaeology (MOLA)]“When a macrophage encounters a bacterium, it chops it into pieces for them to be presented to other immune cells signaling that there’s an infection,” said Barreiro. “Having the functional version of the gene, appears to create an advantage, likely by enhancing the ability of our immune system to sense the invading pathogen. By our estimate, possessing two copies of the rs2549794 variant would have make a person about 40% more likely to survive the Black Death than those who had two copies of the non-functional variant.” And while Europeans living at the time of the Black Death were initially very vulnerable because they had had no recent exposure to *Yersinia pestis*, as waves of the pandemic occurred again and again over the following centuries, mortality rates decreased.

“Examining the effects of the ERAP2 variants in vitro allows us to functionally test how the different variants affect the behavior of immune cells from modern humans when challenged with living *Yersinia pestis*,” said Javier Pizarro-Cerda, PhD, head of the *Yersinia* Research Unit and director of the World Health Organization Collaborating Centre for Plague at Institut Pasteur. “The results support the ancient DNA evidence that rs2549794 is protective against the plague ... “This highly original work has been possible only through a successful collaboration between very complementary teams working on ancient DNA, on human population genetics and the interaction between live virulent *Yersinia pestis* and immune cells, Pizarro-Cerda stated.

Barreiro continued, “The selective advantage associated with the selected loci are among the strongest ever reported in humans showing how a single pathogen can have such a strong impact to the evolution of the immune system.”

“More broadly, our results highlight the contribution of natural selection to present-day susceptibility towards chronic inflammatory and autoimmune disease,” they wrote. “... the selectively advantageous ERAP2 variant is also a known risk factor for Crohn’s disease, and ERAP2 variation has also been associated with other infectious diseases ... Likewise, another of our top candidate loci (rs11571319 near CTLA4) is associated with an increased risk of rheumatoid arthritis and systemic lupus erythematosus, such that retaining the putatively advantageous allele during the Black Death confers increased risk for autoimmune disease in present-day populations.”

Understanding the dynamics that have shaped the human immune system is key to understanding how past pandemics, like the plague, contribute to our susceptibility to disease in modern times, noted Hendrik Poinar, PhD, Professor of Anthropology at McMaster University and co-senior author on the study. “Diseases and epidemics like the Black Death leave impacts on our genomes, like archeology projects to detect. This is a first look at how pandemics can modify our genomes but go undetected in modern populations. ... Even a slight advantage means the difference between surviving or passing. Of course, those survivors who are of breeding age will pass on their genes.”

Such genes are thus under balancing selection, and what provided tremendous protection during hundreds of years of plague epidemics has turned out to be autoimmune related now, continued Poinar, who is director of McMaster’s Ancient DNA Centre, and a principal investigator with the Michael G. DeGroot Institute for Infectious Disease Research and McMaster’s Global Nexus for Pandemics & Biological Threats. “A hyperactive immune system may have been great in the past but in the environment today it might not be as helpful.”

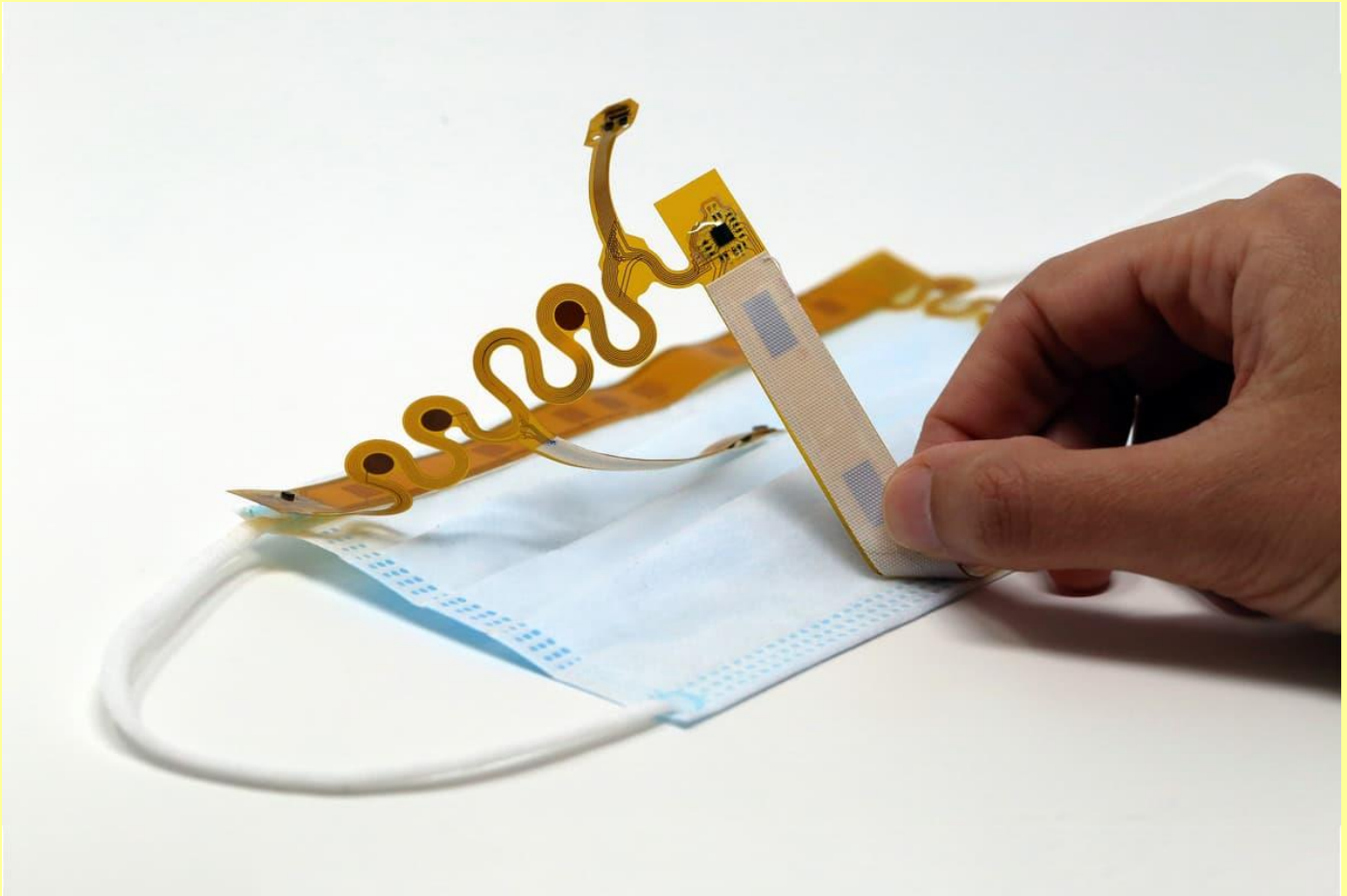
Future research will scale the project to examine the entire genome, not just a selected set of immune related genes; and the team hopes to explore genetic variants that affect susceptibility to bacteria in modern humans and compare them to these ancient DNA samples to determine if those variants were also a result of natural selection.

Commenting on the newly released research in an accompanying [News & Views](#), David Enard, PhD, at the University of Arizona, said, “it is worth noting that such rapid and strong selection is highly unlikely to occur for human traits other than immune defense. No other set of traits is under such strong evolutionary pressure ... Going forward, more studies of ancient DNA could also enable a better understanding of the evolutionary origins of autoimmune diseases.”



MIT's cMaSK tech will tell you if your face mask fits properly

Source [+video]: <https://newatlas.com/health-wellbeing/mit-cmask-face-mask-fit/>



Oct 21 – While it's still important to wear a face mask in many situations, that mask won't be fully effective if it doesn't fit properly. That's why a team at MIT has designed a device to assess how well a mask fits an individual user, quickly and easily.

Known as **cMaSK** (conformable multimodal sensor face mask), the tool was designed to be a less expensive, more accessible alternative to the mask fit testing machines that are typically only found in facilities such as hospitals. The latter evaluate mask fit by comparing the concentration of airborne particles inside and outside of the mask in question.

cMaSK takes a different approach.

It's basically a flexible rectangular frame made of a biocompatible polymer called polyimide, which is temporarily adhered along the inside edges of a mask. Embedded within that polymer are 17 capacitive sensors, two temperature/humidity sensors, and one air pressure sensor. The device also incorporates an accelerometer and a Bluetooth module.

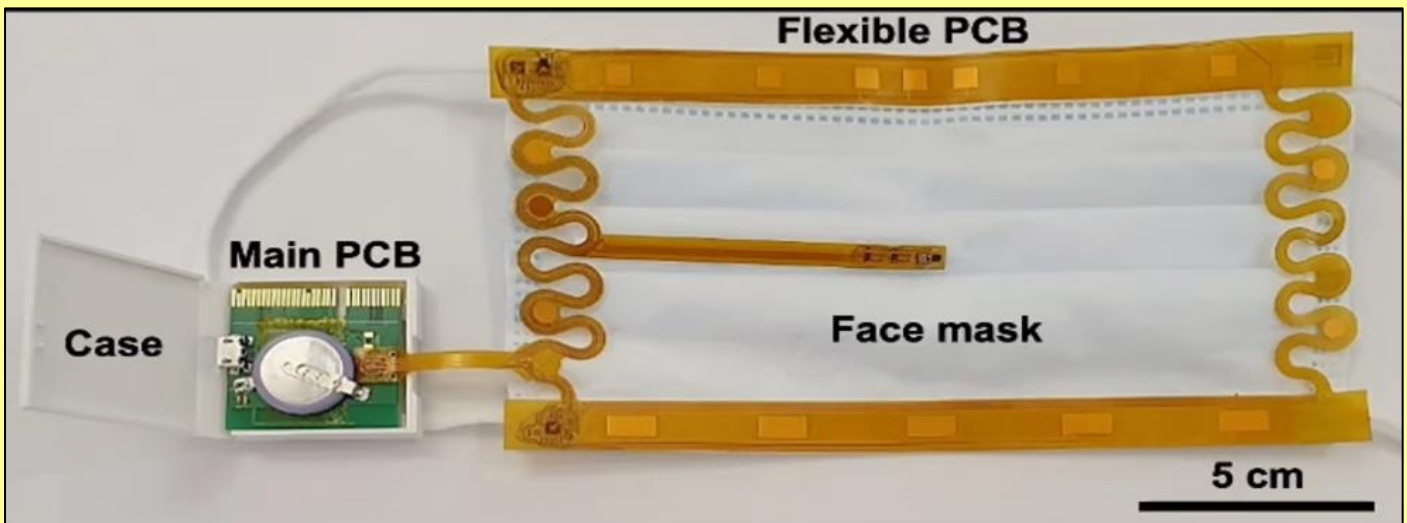
When the user initially puts the mask on their face, the capacitive sensors detect which parts of the frame (and thus the mask) are making contact with the skin, and which parts aren't – for an ideal seal, they should pretty much all be touching the skin.

The temperature, humidity and pressure sensors, meanwhile, detect user activities such as speaking and coughing – the accelerometer detects body movements such as walking and running.

All the information is transmitted via Bluetooth to an app running on a mobile device, which in turn accesses a server to analyze the data utilizing a machine-learning algorithm. The app then tells the user how well the mask fits, and how the different activities and movements affect that fit.

When cMaSK was tested on five men and five women, its fit data was found to correspond closely to data that was manually gathered by trained personnel from MIT's Environment, Health, and Safety Office. It should be noted that overall, the tested masks were found to fit the men better than the women.





The various components of the cMaSK setup

It is now hoped that the technology could be used not only to help people select reusable masks that fit them well, but also to guide manufacturers in designing better-fitting masks. A paper on the research – which was led by Canan Dagdeviren, Siqi Zheng, Tolga Durak and Jin-Hoon Kim – was recently published in the journal [Nature Electronics](#). cMaSK is demonstrated in the video below.

Uganda: Ebola Outbreak - Sep 2022

Source: <https://reliefweb.int/disaster/ep-2022-000315-uga>

So far, seven cases, including one death, have been confirmed to have contracted the Sudan ebolavirus – one of the six species of the Ebolavirus genus. Forty-three contacts have been identified and 10 people suspected to have caught the virus are receiving treatment at the regional referral hospital in Mubende, the district where the disease was confirmed this week, making it the first time Uganda has detected the Sudan ebolavirus since 2012. ([WHO, 22 Sep 2022](#)) On 19 September 2022, the Uganda Virus Research Institute released results of a confirmed Ebola Sudan case. This is a 24-year male from Mubende district. Preliminary investigations of this event conducted by the National Rapid Response Team between 17-18 September revealed six other suspected deceased cases recorded between 1-15 September in the same district. As of 25 September, a total of 36 cases including 18 confirmed and 18 probable cases have been reported, with 23 deaths (CFR 64%). Three districts have so far been affected: Mubende, the epicentre (32 cases), Kyegegwa (3 confirmed cases) and Kassanda (1 confirmed case). Almost 67% of cases are females and 37% are aged below 20 years. Thirty-five patients are currently in admission including 22 suspected and 13 confirmed cases. A total of 399 contacts have been listed with a 26% follow-up rate in the past 24hrs. ([WHO, 25 Sep 2022](#))

Since the Ebola outbreak was declared by the Ministry of Health on 20 September 2022, the country has so far recorded 64 cumulative confirmed cases and 25 deaths, with a case fatality rate of 39% as of 19 October 2022. ([WHO, 21 Oct 2022](#))

Spread of the SARS-CoV-2 Omicron variant sub-lineage BQ.1 in the EU/EEA

Source: <https://www.ecdc.europa.eu/en/publications-data/spread-sars-cov-2-omicron-variant-sub-lineage-bq1-eueea>



Oct 21 – European Union/European Economic Area (EU/EEA) countries have detected the circulation of SARS-CoV-2 variant sub-lineages BQ.1 in levels ranging from 0–19% during week 40. This variant originates from the BA.5 Omicron Variant of Concern (VOC).

Executive summary

- BQ.1, including its sub-lineages, has been designated as Variant of Interest (VOI) by ECDC as of 20 October 2022. Based on modelling estimates, it is expected that by mid-November to beginning of December 2022, more than 50% of SARS-CoV-



2 infections will be due to BQ.1/BQ.1.1. By the beginning of 2023, more than 80% of SARS-CoV-2 cases are expected to be due to BQ.1/BQ.1.1.

- The observed increase in the growth rate of BQ.1 is probably driven mainly by immune escape. This variant and its sub-lineages will probably contribute to a further increase in cases of COVID-19 in the EU/EEA in the coming weeks and months. The extent of the increase in COVID-19 cases will depend on various factors, including immune protection against infection influenced by the timing and coverage of COVID-19 vaccination regimes, and the extent, timing and variant landscape of previous SARS-CoV-2 pandemic waves. Based on limited available data, there is no evidence of BQ.1 being associated with a greater infection severity than the circulating variants BA.4/BA.5.
- Countries should remain vigilant for signals of BQ.1 emergence and spread; maintain sensitive and representative testing and genomic surveillance with timely sequence reporting and strengthen sentinel surveillance systems (primary care ILI/ARI and SARI).
- Countries should continue to monitor COVID-19 case rates - especially in people aged 65 years and older - and severity indicators such as hospitalisations, ICU admissions, ICU occupancy and death.
- Improving COVID-19 vaccine uptake of the primary course and first booster dose remains a priority for all eligible individuals that are not up to date with the recommended schedule. For the time being, for current autumn/winter vaccination campaigns, an additional booster dose should also be offered, prioritising individuals who are at risk of progression to severe disease, such as older adults (e.g., above 60 years of age), immunocompromised individuals and those with underlying medical conditions, and pregnant women. Residents and staff in long-term care facilities, as well as healthcare workers should also be considered among priority groups.

Is Another COVID-19 Booster Really Needed?

To jab or not to jab -- that is the question

By Salvador Macip, MD, PhD

Source: <https://www.medscape.com/viewarticle/981614>

Oct 05 – Many countries around the globe are starting to roll out another booster of the COVID-19 vaccine but, with public interest waning and a sense of normalcy firmly installed in our minds, this may prove an ill-fated effort, unless authorities can provide a coherent answer to the question "Is another jab really needed?" (The short answer is a firm "yes," of course.)

In what we could call the "chronic" phase of the pandemic, most countries have now settled for a certain number of daily cases and a (relatively low) number of complications and deaths. It's the vaccines that have afforded us this peace of mind, lest we forget. But they are different to other vaccines that we are more familiar with, such as the [MMR](#) that we get as kids and then forget about for the rest of our lives. As good as the different COVID-19 vaccines are, they never came with the promise of generating lifelong antibodies. We knew early on that the immunity they provide slowly wanes with time. That doesn't mean that those who have their vaccination records up-to-date (which included a booster probably earlier this year) are suddenly exposed. Data suggest that although people several months past their last booster would now be more prone to getting reinfected, the protection against severe disease still hangs [around 85%](#). In other words, their chances of ending up in the hospital are low.

Why worry, then, about further boosting the immune system? The same studies show that an additional jab would increase this percentage [up to 99%](#). Is this ~10% improvement really worth another worldwide vaccination campaign? Well, this is a numbers game, after all. The current form of the virus is extremely infectious, and the Northern Hemisphere is heading toward the cold months of the year, which we have seen in past years increases COVID-19 contagions, as you would expect from any airborne virus. Thus, it's easy to expect a new peak in the number of cases, especially considering that we are not going to apply any of the usual restrictions to prevent this. In these conditions, extending the safety net to a further 10% of the population would substantially reduce the total number of victims. It seems like a good investment of resources.

We can be more surgical about it and direct this new vaccination campaign to the population most likely to end up in the hospital. People with concomitant pathologies are at the top of the list, but it's also an age issue. On the basis of different studies of the most common ages of admission, the cut-off point for the booster varies from country to country, with the [lowest being 50](#) and in other cases hovering around 65 years of age. Given the safety of these vaccines, if we can afford it, the wider we cast the net, the better, but at least we should make every effort to fully vaccinate the higher age brackets.

The final question is which vaccine to give. There are confounding studies about the importance of switching to Omicron-specific jabs, which are finally available. Although this

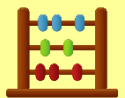


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seems like a good idea, since Omicron infections elicit a more effective [range of antibodies](#) and new variants seem to [better escape](#) our defences, recent studies suggest that there actually [may not be so much difference](#) with the old formula. The conclusion? Vaccinate the elderly (and some middle-aged too, if possible) and the frail as soon as possible with any version of the booster you have available, if you want to keep hospital pressure to the minimum and save a fair number of complications and deaths over the next months. This regimen of yearly boosters for some may be the scenario for the upcoming years, similar to what we already do for the [flu](#), so we should get used to it.

Salvador Macip, MD, PhD is a doctor, researcher and writer. He obtained his MD/PhD at the University of Barcelona (Spain) in 1998, then moved to do oncological research at the Mount Sinai Hospital (New York). Since 2008, he has led the Mechanisms of Ageing and Cancer Lab at the University of Leicester (UK). Macip has published over 30 books, including *Where Science and Ethics Meet* (2016) and *Modern Epidemics* (2021).

Pandemics by numbers (as of October 24, 2022)



	CASES	DEATHS	COUNTRIES & TERRITORIES	MOST AFFECTED COUNTRIES
COVID-19	(619,681,453) 632,700,308	(6,539,016) 6,582,238	228	USA, India, Brazil, France, Germany, S. Korea
MONKEYPOX*	64,703 No change	15**	114	USA, Spain, UK, France, Germany

* Outside Africa | ** Outside Africa (Spain 2; India 1; Brazil 2; Peru 2; Ecuador 1; Mexico 1; USA 2; Belgium 1; Cuba 1; Czech Republic 1; Jamaica 1) – numbers in parenthesis are those of August 2022



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