

CBRNe World asked a panel from academia and responder based organisations what they thought 2024 would look like in the light of events in Ukraine and Gaza

Whether forecast

David Lasseter, founder of Horizons Global Solutions, former deputy assistant secretary of defense for countering weapons of mass destruction
What did you see as the greatest CBRNE challenge in 2023?

Would Putin decide to use chemical or biological weapons? While I currently do not believe he would conduct a nuclear attack of any magnitude I remained concerned throughout the past year that he might allow the use of chemical or biological weapons. To date none have been officially and publicly confirmed by the US government.

Has Hamas' attack on 7 October, and Israel's response, meant that we now need to be prepared for both state sponsored and religious fundamentalist attacks in 2024?

Yes. In my view state and non-state actor threats remain a concern and will only grow, based on the proliferation of information and technology.

What do you expect to be the most significant CBRNE challenge in 2024, and why?

The most significant challenge I see is nuclear proliferation, especially against

the backdrop of hardening global alliances. China continues unabated to mature the world's fastest growing nuclear arsenal while simultaneously lending a blind eye to Russian global transgressions. Russia threatens the use of nuclear weapons. North Korea builds and tests. Iran continues to improve its nuclear research and development while also providing aid, comfort, and arms to terrorist organisations. Global instability is key for these nuclear, and near nuclear, powers. Were they to have no nuclear weapons we wouldn't take them as seriously. And if they weren't singing from the same song sheet, be it through disinformation or regional hegemonic activities, perhaps concerns about a potential nuclear conflict would not persist in my mind. But they are and it does.

Brigadier General (Ret) William King, chairman, CBRN Div, National Defense Industry Association

What did you see as the greatest CBRNE challenge in 2023?

Taking Covid observations and implementing actions for change today,

for the next pandemic. Preparing for potential nuclear war, ranging from non-strategic nuclear weapons in Ukraine and potential expansion and global consequence management of threats against large capacity civil nuclear reactors. Preparing and responding for the next pandemic (new Covid variants/mutations and mpox). In terms of the US it has been publication and implementation of a host of new strategies and initiatives (National Strategy for BW Defense and Pandemic Preparedness; White House Office of Pandemic Preparedness and Response; DoD CWMD Strategy; DoD Biological Posture Review; Biological Defense Council).

Has Hamas' attack on 7 October, and Israel's response, meant that we now need to be prepared for both state sponsored and religious fundamentalist attacks in 2024?

We have always seen CBRNE threats coming from both state sponsored actors like Russia, China, North Korea and Iran as well as non-state sponsors like ISIL, ISIS, IRGRC-Quds Force, Hamas, Hizballah, AQAP, Yemen Houthi,



Drones and 3D printing offer as many positives as negatives. A future challenge and assistant ©DoE

etc. An October 2023 White House strategy and report of concerns of artificial intelligence also highlights the convergence and ease of access to these and greater deadly threats.

What do you expect to be the most significant CBRNE challenge in 2024, and why?

Most of the concerns of 2023 will continue to play out in 2024 as we globally work to implement Covid lessons learned, while concurrently dealing with additional emerging concerns and threats.

Working on military forces' and civil societies' preparation and readiness for potential nuclear war ranging from non-strategic nuclear weapons in Ukraine and potential expansion and global consequence management of threats against large capacity civil nuclear reactors as well as potential conflict in Taiwan and Korea

Preparation and response for the next pandemic due to continued Covid variants and mutations and emerging viruses of concern.

As published in my Defense News article (which referenced my July 2022 NDIA CBRN conference opening remarks), "The Joint Force and military industrial complex is at an inflection point during what will be a decisive decade. The US must meet this challenge with enthusiasm, discipline, and fortitude - the window to seize strategic initiative is now. To do so may require us to prioritise the future over the present in a careful deliberate balance. A careful balance between executing required current operations while rapidly building bold future warfighting advantage immediately to deter now and reduce future risks."

Professor Malcolm Dando, emeritus professor, University of Bradford.

What did you see as the greatest CBRNE challenge in 2023?

The Chemical Weapons Convention (CWC) states in article 1.5 that: "Each state party undertakes not to use riot control agents as a method of warfare". In 2023 there were reports that Russia had used riot control agents in the war in Ukraine. If true, this is a direct challenge to the convention.

Has Hamas' attack on 7 October, and Israel's response, meant that we now need to be prepared for both state sponsored and religious fundamentalist attacks in 2024?

Yes, of course we have to be prepared for both types of attack, but we have also to be careful that our responses are lawful and are not widely seen as disproportionate. Otherwise, we risk our responses being counterproductive and likely to cause more problems later.

What do you expect to be the most significant CBRNE challenge in 2024, and why?

Germany in an official note asked Russia two questions about the use of riot control agents as a method of warfare: had Russian armed forces used riot control agents in combat operations and had Russia investigate the reports of such use on its own TV First Channel?

In response Russia did not address these questions and instead accused the US of supplying Ukraine with incapacitants and munitions for such purposes.

Clarification of this issue is a major challenge for 2024 as is the related issue of the development of means of delivering riot control agents in larger quantities over wider areas. Moreover, while the CWC permits the use of riot control agents for law enforcement they are often dangerously misused in such situations. Their designation as not being harmful if properly used is based on decades-old research and a reassessment is needed using modern methods.

Milton Leitenberg, senior research associate at the University of Maryland's Centre for International and Security Studies

What did you see as the greatest CBRNE challenge in 2023?

For biological weapons, it is beating down General Kirillov's Russian BW disinformation allegation that "US" laboratories in Ukraine are producing disease agents, etc. For chemical weapons it is fighting off continued Russian efforts to undermine the Organisation for the Prohibition of Chemical Weapons (OPCW). In each case the Russian government is doing all it can to undermine the Biological Weapons Convention (BWC) and CWC,

the two international regimes intended to prevent nations from acquiring and using BW and CW.

Has Hamas' attack on 7 October, and Israel's response, meant that we now need to be prepared for both state sponsored and religious fundamentalist attacks in 2024?

No. The Israel/Hamas war has no relevance whatsoever to the question of whether states or non-state actors will use CBRN weapons in 2024.

What do you expect to be the most significant CBRNE challenge in 2024, and why?

The most significant CBRN challenges (excluding E) will continue to be Russia's efforts to undermine the BWC, OPCW and CWC. The reason is that the Russian government seems absolutely impervious to efforts to get it to end these damaging activities. There is no indication that Russia has any intention of ending its BW disinformation campaign, certainly not as long as its invasion of Ukraine continues. But since Russia has been attacking the BWC since 2007, and the CWC since 2013, we must expect this malicious and damaging behaviour to continue as long as Vladimir Putin governs. The Russian ministry of foreign affairs brazenly introduced fraudulent claims into the proceedings of the BWC's Ninth Review Conference in 2022 and the UN general assembly in November 2023 so as to pretend that this fraud concerned something real.

Given the degree of nuclear weapon threat mongering that has accompanied the Russian invasion of Ukraine, we should probably add some risk-of Russia using a nuclear weapon if its military forces face disastrous defeat. Nevertheless, the Russian nuclear threats are almost certainly provocations, and it is extremely unlikely that any nuclear weapon would actually be used. Russia has also engaged in dangerous activities at civilian nuclear reactor sites in Ukraine, which it has occupied, including placing mines at these sites.

Professor Maria Espona, co-director of information quality in Argentina

What did you see as the greatest CBRNE challenge in 2023?

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The two active military conflicts, Russia-Ukraine and Israel-Palestine/Hamas, are challenging the current prohibitions on the use of CBRN weapons.

There have been several reports of poisonings and intoxications, and the use of white phosphorous. Even when some of them are [correct] others have not involved CBRN weapons, but for the media and the public in general they are all the same, and that creates the perception that something even worse than a traditional war is ongoing.

Has Hamas' attack on 7 October, and Israel's response, meant that we now need to be prepared for both state sponsored and religious fundamentalist attacks in 2024?

Unfortunately, yes. I am not optimistic about limiting the conflict to the actors currently engaged, but I foresee the expansion of [the conflict] to other countries. This could be because of targets outside the region or the role played by international actors supporting the participants.

What do you expect to be the most significant CBRNE challenge in 2024, and why?

Next year will be challenging. Both active conflicts involve nuclear countries, and because of that, the possibility of nuclear weapon usage cannot be discarded. There is also participation by different countries, and other terrorist group, sponsoring the engaged parties, which will increase the opportunities to get either conventional or non-conventional weapons. Since the fight is taking place in an urban setting, we cannot discard the possibility of something similar to a CBRN attack due to the destruction of an industrial facility.

Philipp Bleek, nonproliferation and terrorism studies, Middlebury Institute of International Studies

What did you see as the greatest CBRNE challenge in 2023?

We are experiencing some of the most dangerous times we've seen in the nuclear age, and things seem more likely to get worse, not better, anytime soon. The risk of near-term nuclear catastrophe does not appear high, but it

is uncomfortably high relative to the severe consequences that even limited, and more so widespread, nuclear weapons use would entail.

Has Hamas' attack on 7 October, and Israel's response, meant that we now need to be prepared for both state sponsored and religious fundamentalist attacks in 2024?

Religious fundamentalism - and Islamist fundamentalism in particular - will remain a particularly prominent source of non-state political violence. I expect the vast majority of terrorism of all

kinds will carry on without involving CBRN, since most terrorists continue to lack either much motivation or much capability for it. We cannot rule out the emergence of outliers with greater motivation and capability, however, so we should continue to devote some resources to defending against, interdicting and preparing for CBRN terrorism. State sponsorship of terrorists, and specifically, Iranian sponsorship, will remain a challenge; I don't expect it to support CBRN plots, but I won't be shocked if it does.



Russia, and specifically Putin, seems to match every correspondent's idea of a 'threat.' ©Kremlin



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What do you expect to be the most significant CBRNE challenge in 2024, and why?

Russia is the source of so many of our CBRN-related headaches these days. At the high end, I worry about the risks of nuclear brinkmanship by Putin if he fears defeat and/or humiliation in the Ukraine war. Mid range, I worry about a Russia that is less invested in impeding the flow of CBRN-related capabilities to others, and perhaps even willing to aid proliferation in the pursuit of its own narrow perceived interests. I also worry that chemical and biological attacks may tempt the Russians in certain limited contexts, for example to impair the flow of materiel to Ukraine. At the low end, I worry about the apparent Russian addiction to CBR-enabled targeted assassinations as a form of state terrorism, ie as a way to send a message to and terrorise a broader audience.

**Markus Binder, project manager,
National Consortium for the Study of**

Terrorism and Responses to Terrorism/UMD

What did you see as the greatest CBRNE challenge in 2023?

The year's greatest CBRNE challenge may be the ongoing meltdown of nuclear arms control. In addition to the failure to revive the Iran nuclear deal, we can see Russia, China and the US all modernising and/or expanding their nuclear arsenals with no mechanisms in place for rival powers to agree on limits or minimise misunderstandings.

Has Hamas' attack on 7 October, and Israel's response, meant that we now need to be prepared for both state sponsored and religious fundamentalist attacks in 2024?

The events surrounding the attacks are likely to provide a significant focus for mobilisation and radicalisation, which will grow stronger the longer the Israeli campaign, and any associated resistance, continues. The likelihood of small-scale 'self-starter' attacks on Israeli interests, or Jewish communities around the

world has probably increased significantly. Larger scale extra regional attacks are less likely in the near term, though propaganda surrounding operations that were already in progress may get recast to reflect this new focus.

What do you expect to be the most significant CBRNE challenge in 2024, and why?

The Russian government's disinformation campaigns targeting international arms control, nonproliferation institutions, and global biosecurity and health response, are likely to continue or even intensify in 2024. Although the campaigns have loudly targeted Ukraine, their scope is much broader, revisiting and expanding upon Soviet tropes intended to portray western global health outreach, particularly in Africa, as intrinsically sinister. Combined with actively disruptive efforts in international bodies, Russian disinformation is undermining trust, and the shared understanding of common benefit and

After only two years Western support for Ukraine is waning, what will this mean for the conflict and Russia? ©Ukrainian MoD

purpose, that enable efforts to limit proliferation and bolster global public health.

Going forward, this campaign has the potential to paralyse international responses to CBRN incidents, which is likely one of the objectives, while having increasingly disruptive impacts on programmes to identify and mitigate emerging diseases. Equally, sustaining the effectiveness of nonproliferation institutions in the face of efforts to sow uncertainty, doubt, and disagreement is likely to become much more difficult.

**Dr Donell Harvin, visiting scientist,
Harvard T H Chan School of Public
Health**

What did you see as the greatest CBRNE challenge in 2023?

It was violent non-state actors' (VNSAs) aspirations for the acquisition or synthesis of CBRN agents. This year, UNITAD, the UN team investigating crimes committed by Da'esh/ISIL, issued several reports to the security council detailing extensive evidence of Da'esh/ISIL's development of biological weapons. UNITAD has "collected and preserved substantial volumes of forensic and documentary evidence" related to the development of biological and chemicals weapons by Da'esh as well as "the precise delivery systems

employed by the group".¹ The knowledge ISIL gained has assuredly has been passed onto other VNSAs in pursuit of WMD. This fear was brought into sharp focus as militants took over and occupied the national laboratory in Sudan, sparking a stark warning from the WHO.²

Has Hamas' attack on 7 October,, and Israel's response, meant that we now need to be prepared for both state sponsored *and* religious fundamentalist attacks in 2024?

The conflict in Israel and Gaza has renewed calls by foreign terrorist organisations to launch attacks on the US and the west.³ This new conflict has revitalised the terrorist ecosystem, in terms of renewed interest, increased online radicalisation⁴ and has been a boon for fundraising.^{5,6} Furthermore, reports from Israel of a Hamas operative found with instructions for synthesising a cyanide weapon are of concern, and



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are consistent with terrorist intent to secure WMDs in furtherance of apocalyptic violence.⁷

What do you expect to be the most significant CBRNE challenge in 2024, and why?

The threats we now face are around the convergence of CBRN and advanced technology with the potential of producing hybrid threats. They include:

- **AI-CBRN convergence:** In 2022 a demonstration by researchers to prove the power of artificial intelligence (AI) created 40,000 novel chemical weapons compounds in six hours.⁸ The researchers were taken aback at the proficiency of the process and the potential lethality of new compounds described as more toxic than VX.⁹
- **Cyber-biological or cyber-chemical threats** against critical infrastructure pose an immediate and emerging threat with the proliferation of cyberattacks and increase in cyberthreat actors' capabilities, combined with poor cybersecurity for critical infrastructure. In 2021 a hacker attempted to poison the fresh water supply of a small city in Florida, by drastically increasing the concentration of sodium hydroxide. Fortunately, the attack was unsuccessful, yet it represents the very first documented hybrid CBRN-cyber incident.¹⁰

As we look towards the challenges of 2024, the threat landscape for CBRNE is as complex and fraught as it has ever been. But unlike the 2000s and 2010s, the acquisition and synthesis of CBRNE materials is no longer aspirational; it is achievable.

Dr Brett Edwards, senior lecturer, politics, languages & international studies, Institute for Policy Research, University of Bath

What did you see as the greatest CBRNE challenge in 2023?

In the UK, recent discussion of the risks of AI facilitated chemical or biological weapon production at the AI Safety Summit, suggested we are reaching the peak in AI hype. While some commentary on this issue is overblown, it is noteworthy that entities like Open AI appear to be taking certain concerns quite seriously. Efforts are already well underway to insert ethical standards



US relations with Russia, Iran and China are extremely stressed, it's hard to see a path where they get better ©DoD

into the best-known, and widely used, generative AI systems, as we saw previously with search engines. It seems likely that it will be the more specialist AI enabled technologies, within the pharmacological and biotechnological sectors, which will have a more significant and lasting impact on non-proliferation. But it is important to remember that the challenge of the design, production and use of the most destructive CBW weapons, has always been multi-staged and involved a wide range of operational and technical challenges, creating bottlenecks that AI alone will not overcome.

Has Hamas' attack on 7 October, and Israel's response, meant that we now need to be prepared for both state sponsored and religious fundamentalist attacks in 2024?

Conflict in the Middle East contributes to the global terrorism landscape. The Ukrainian conflict, while currently in a bloody stalemate, adds to the geopolitical complexities that often give rise to terrorism by states or other groups. The use of toxic materials, as part of improvised weapon systems remains a recurring, if marginal, facet of modern conflict and terror. The threat of mass casualty events is also on the rise, prompting concerns about the potential escalation of chemical or biological terrorism against western

states. Concerns about the prospect of further state sponsored assassinations involving poison seem reasonable.

What do you expect to be the most significant CBRNE challenge in 2024, and why?

Despite these ominous trends, the relationship between the proliferation of chemical and biological weapons and escalating conflict is intricate and challenging to decipher. Factors influencing the acquisition and deployment of such weapons are complex and multifaceted, however three areas of concern have been at the forefront of my mind in recent months.

- **Improvised use of dual-use toxic chemicals:** This continues to be a marginal but perennial concern on the modern battlefield. It includes the battlefield improvised use of riot control agents, which for example, may have already been dropped by drones in the Ukrainian conflict.
- **New tropes in domestic terrorism:** Emerging patterns in domestic terrorism, akin to the rise of acid violence and white powder incidents, may shock societies, presenting unforeseen challenges for security forces. Such innovations travel quickly today and can create new types of challenges for responder communities.
- **Increased use of riot control agents:** The deployment of riot control agents,

in scenarios of internal social disorder and military occupation, raises human rights concerns in addition to concerns about the way this could erode the chemical weapon prohibition norm.

- I am almost certain, that 2023 will not receive much attention in future histories of CBW, but clearly that it is part of a broader decade or so of transition, which will have its own distinctive historical significance.

Michael Armistead, hazmat specialist, Nashville Fire Department

What did you see as the greatest CBRNE challenge in 2023?

For the world as a whole the advancement of AI, the use of drones, and fire as a weapon seemed to be the 'feel good hits' of the summer. CBRNE, is an evolving and moving target with blurred and porous borders, which has the potential for an orgy of CBRNE terror.

Has Hamas' attack on 7 October, and Israel's response, meant that we now need to be prepared for both state sponsored and religious fundamentalist attacks in 2024?

Historically, the threats have continued to grow over 70 years, and if presented on a chart you'd see an ever rising graph. Since February 1993, from the US perspective it continues to grow. Technology, information sharing and AI all contribute to the boldness of not just groups but lone wolf visionaries.

What do you expect to be the most significant CBRNE challenge in 2024, and why?

Intelligence, and training (or lack thereof). Human intel has always been the gold standard. It's one thing to get data or information but another to have intel from those wanting to inflict some form of terror or hits on critical infrastructure and quickly funnel that info through a fusion centre to reach all the people the threat may affect. No secret that there is a play in progress to shift power around the globe. Posturing in the far east, Russia and the Middle East has a lot of people on edge with WMD and CBRNE capabilities. Wherever you are in the world and regardless of where your home is, CBRNE can land at your doorstep, or local pizza parlour. Training will always be critical, no

different from a football team or hazmat team. You need resources to fund it, competent staff to deliver it and repetition to sharpen it.

Colonel Stephan Saalow, commander of the Bundeswehr CBRN Defence Command

What did you see as the greatest CBRNE challenge in 2023?

It was the new Russian modus operandi of full spectrum CBRN operations, from information campaigns on all media channels to lawless active engagements against industrial sites including nuclear power plants and chemical production facilities. The challenge was not WMD per se, but the development and implementation of counter WMD strategies in response to an unscrupulous opponent.

Has Hamas' attack on 7 October, and Israel's response, meant that we now need to be prepared for both state sponsored and religious fundamentalist attacks in 2024?

Yes, we need to be prepared. The challenge is even more significant because of the connection (or cooperation) between state actors with unlimited resources and tremendous know-how in developing and producing WMD, and non-state actors (ie terrorists, proxies) that are willing and capable of engaging overtly, covertly or even hybrid. This requires a tailored response and a common intelligence picture. The risk of escalation must be assessed in conjunction with the options state and non-state actors have to use WMD.

What do you expect to be the most significant CBRNE challenge in 2024, and why?

The alliance is facing an increased WMD threat from an opponent who clearly stated and proved his willingness to engage and challenge the alliance's resilience. We need to prepare our forces to fight dirty and to be ready to win every battle even within a CBRN environment. This does not only apply for troops in contract in the Joint Operational Area but more than ever - from a hybrid threat point of view - for the alliance's territory as a whole. For me, 2024 will not so much be a year of

significant change in CBRN challenges. It will show us how much the threat perception is the nerds' view or how much we as a community will be able to educate, and convince decision makers, to invest in CBRN defence on all levels, including an increase of qualified CBRN forces and hardening the current and future equipment of our force.

Dr Antonella Cavallo, technical lead for the development of EU CBRN capabilities under rescEU at the European Commission

What did you see as the greatest CBRNE challenge in 2023?

Preparing for the potential consequences of nuclear power plants being used as theatres of war.

Has Hamas' attack on 7 October, and Israel's response, meant that we now need to be prepared for both state sponsored and religious fundamentalist attacks in 2024?

We need to be prepared for all scenarios. Whether they are caused by accident or deliberate attacks, religious or state sponsored, CBRN events are likely to have major repercussions across various sectors.

What do you expect to be the most significant CBRNE challenge in 2024, and why?

From a threat perspective, we need to be prepared for the unknown. This means that beyond being prepared for identified threats, we need to create systems that can withstand unexpected shocks and be resilient in the face of unspecified threats. Importantly, this approach can better prepare us to face CBRNE hybrid threats such as cyber attacks on industrial sites. To this end a more integrated approach to the challenge of public communication is required. We need to communicate more about CBRN. We need to engage with the media to achieve a united front in the face of potential disinformation campaigns following CBRN attacks. This is also to be better prepared for the psychological impact a CBRN event could have on us all.

Dr Christina Baxter, Emergency Response Tips

What did you see as the greatest CBRNE challenge in 2023?

Whether forecast



Two years of war have tested Ukraine militarily, and shown the West that the concept of 'just in time' deliveries is dead
©Ukrainian MoD

The biggest challenges in 2023 were threefold - supply chain, alternative energy and disinformation. From an operational perspective, supply chain issues remain, affecting the supply of everything from PPE to sensors. Alternative energy incidents, especially those involving lithium-ion batteries, increased significantly and the response environment continues to evolve. These challenges are reflected when digging through the available information to determine what is real and what is disinformation. It's hard enough for a trained person and virtually impossible for civilians, yet, it is essential so we can prevent and prepare for emerging threats. **Has Hamas' attack on 7 October, and Israel's response, meant that we now need to be prepared for both state sponsored and religious fundamentalist attacks in 2024?**

The current state of the world requires us to always be prepared for both state sponsored and terrorist attacks. It is important to remember that terrorist groups, both domestic and international, can be motivated by many things including religion, politics and race. We must refrain from focusing on who they are and continue to focus on what they may do, to prevent attacks and be better prepared.

What do you expect to be the most significant CBRNE challenge in 2024, and why?

The biggest challenge we will see in 2024 will be in true operational preparedness. The core challenge is capability development and sustainment within the current political and financial environment. To develop and sustain a capability, we need the appropriate equipment, policies and training. We

must ensure that we always remain a step ahead of our adversaries.

One example of capability development is the need to integrate and leverage existing approaches for gas and vapour phase threats to detect and identify aerosolised threats. While responders are still most likely to encounter gases and vapours in their operations, there has been a transition to aerosolised threats in the CBRNE realm over the past decade with the emergence of pharmaceutical based agents and fourth generation agents, or novichoks. Modern PPE utilised in a potential CBRNE environment must be particulate tight and frontline detectors must be able to collect, detect and identify aerosolised threats at operationally relevant levels (nanograms) and time profiles (seconds).

¹ <https://documents-dds-ny.un.org/doc/UNDOC/GEN/N23/360/73/PDF/N2336073.pdf?OpenElement>

² <https://www.cnn.com/2023/04/25/africa/sudan-evacuations-ceasefire-intl/index.html#:~:text=The%20World%20Health%20Organization%20warned,a%20fragile%20US%2Dbrokered%20ceasefire.>

³ <https://www.voanews.com/a/hamas-attack-galvanizing-terror-groups-worldwide-warn-us-officials/7335141.html>

⁴ <https://www.latimes.com/opinion/story/2023-11-06/israel-hamas-gaza-jihadist-counterterrorism>

⁵ <https://home.treasury.gov/news/press-releases/jy1982>

⁶ <https://www.fatf-gafi.org/content/dam/fatf-gafi/reports/Crowdfunding-Terrorism-Financing.pdf.coredownload.inline.pdf>

⁷ <https://thehill.com/policy/international/4270818-israeli-president-says-hamas-operative-had-instructions-for-cyanide-chemical-weapon/>

⁸ <https://www.nature.com/articles/s42256-022-00465-9.epdf>

⁹ <https://www.theguardian.com/commentisfree/2023/feb/11/ai-drug-discover-nerve-agents-machine-learning-halicin>

¹⁰ <https://www.cnn.com/2021/02/10/us/florida-water-poison-cyber/index.html>