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Editorial

Brig Gen (ret'd) Ioannis Galatas, MD, MA, MC

Editor-in-Chief
CBRNE-Terrorism Newsletter

Dear Colleagues,

April 2017 – a bloody month (as usual)... mostly due to terrorism, but there are also some promising good CBRN-related news:

Terrorism

Bad news

- ◆ UK: Westminster Bridge incident
- ◆ Russia: St. Petersburg subway incident; attack against artillery base in Chechnya; attack against FSB office in Khabarovsk
- ◆ Sweden: Stockholm truck incident
- ◆ Germany: Borussia Dortmund FC bus roadside IEDs incident
- ◆ Egypt: Coptic churches incidents in Cairo; attack near St. Catherine's monastery in Sinai
- ◆ Syria: Bus convoy incident near Aleppo
- ◆ Italy: Venice police arrested 3 Kosovo jihadists aiming to attack Rialto Bridge
- ◆ France: Attack against police van in Champs Elysees
- ◆ USA: Black Muslim terrorist killed 3 in Fresno, California
- ◆ Daesh is expanding in Trinidad, regrouping in Libya
- ◆ Possible collaboration between Daesh and al Qaeda?
- ◆ Piracy is back off-shore Somalia and so is illegal fishing by multinational companies
- ◆ ETA (Spain) disarmament in progress huge cache of weapons (3.5T) discovered
- ◆ Rise of terrorism in Africa – mainly Boko Haram, al Shabaab, al Qaeda
- ◆ Big cache of arms, IEDs (TATP) and a Daesh flag seized in Marseille, France
- ◆ Western mass media still afraid (?) to use the word terrorism in their articles...

Good news

- ◆ Norway – Sweden – Finland: It seems that they are getting out from their virtual peaceful bubble.
- ◆ Disabling a vehicle's engine from a distance using RF beams
- ◆ "Clever brakes" in big trucks might minimize the impact of terrorist attacks

CWAs

Bad news

- ◆ Chemical attacks in both Syria and Iraq (chlorine; sarin; mustard)
- ◆ Syria's hidden CWA stockpile estimated between 200 and 700 tons

Good news

- ◆ "Lab-on-a-glove" for the detection of nerve agents
- ◆ "Hydros mobile watermaker" – a good solution for the management of contaminated decon waste water
- ◆ New CAMEO_{fm} (3.3) and CAMEO *Chemicals* (2.7) versions
- ◆ Research: detoxifying enzymes from soil bacteria against nerve agents (VX)
- ◆ Research on long term effects of nerve agents on brain and heart



Bio news

Bad news

- ◆ How to set up your own DIY bio lab – warning!
- ◆ Brazil: Worst yellow fever outbreak among humans in decades threatening mega-cities Rio de Janeiro and Sao Paulo

Good news

- ◆ Phase 2 Zika vaccine begins in USA, central and south Latin America

Explosives

Bad news

- ◆ Laptop IEDs on commercial airplanes – a new (improved) threat?
- ◆ A first: US Mother-of-all-bombs (MOAB) dropped in Afghanistan. There is also a Russian “father” (FOAB) available

Good news

- ◆ Glowing bacteria can detect buried landmines and unexploded ordnance

Cyber

Bad news

- ◆ Hacking emergency numbers (911; 112) possible – a coming threat?
- ◆ Fake news on the Internet on the rise

Good news

- ◆ Hybrid Threats Center of Excellence opens in Helsinki, Finland

Take care First Responders and always keep on mind that the unexpected always happens and it might be in your shift!

The Editor-in-Chief



What will the wall look like? Trump administration unveils guidelines

Source: <http://www.csmonitor.com/USA/2017/0319/What-will-the-wall-look-like-Trump-administration-unveils-guidelines>

Mar 19 – On Friday, President Trump's administration released details from a division of the US Department of Homeland Security outlining the requirements for Mr. Trump's promised wall along the US/Mexico border. The details for the project, provided by Customs and Border Protection (CBP), are meant to serve as guidelines for contractors who will submit their proposals for the first phase of the structure on March 29.

The requirements for the wall actually come in two sets; the first includes guidelines for a [solid concrete structure](#) and the second set is for a wall with "see-through"

about **six feet underground** to discourage tunneling, be designed in such a way so that climbing the structure without a ladder would be impossible, and be able to withstand at least **an hour's worth of attempts to break through** from a "sledgehammer, car jack, pick axe, chisel, battery operated impact tools, battery operated cutting tools, Oxy/acetylene torch or other similar hand-held tools." The requirements also note that "The north side of wall (i.e. US-facing side) shall be **aesthetically pleasing** in color, anti-climb texture, etc., to be consistent with general surrounding environment," though no aesthetic suggestions were put forward for



components that would likely be more affordable or have other "[operationally advantageous](#)" components over its concrete counterpart.

"The wall design shall be physically imposing in height," the CBP outlines say, calling for a **nominal height of 30 feet**. However, the proposals also noted that designs as low as 18 feet would also be acceptable. The proposal also requires **25- and 50-foot automated gates** in certain parts of the wall's design to accommodate vehicles and pedestrians.

In addition to these height requirements, the CBP also states that the wall should continue

side facing Mexico.

The contract for the wall will be awarded based on 30-foot-wide prototypes and 10-foot by 10-foot mockups that will be built in San Diego.

"It's a way for the agency to identify designs," a CBP official told NPR. "We're looking for industry's designs, to take a fresh look at the wall. We'll have industry propose [and then we'll down-select](#)."

The border wall idea has been heavily criticized by Democrats and some Republicans for its intent as well as its projected cost.



Trump has said the wall would **cost around \$12 billion**, while Congressional Republicans tend to put the figure somewhere between \$12 and \$15 billion. Other cost estimates have been even higher, with a recent MIT study estimating a massive \$38 billion price tag for the structure. A [budget proposal](#) released earlier this week by the Trump administration would include a \$2.6-billion down payment on the wall, which would cover only a fraction of the most optimistic cost projections.

There are already some **700 miles** of extant fencing along the border that would have to be replaced by the new wall. Some of these structures are 15-foot steel posts placed inches apart, which are designed to keep humans from slipping through, and other portions consist of shorter structures designed to block cars from crossing the border. In total, the new wall would have to cover the entire US-Mexico border, which is about 2,000 miles long.



Halal meat: What is it and why is it so controversial



WARNING
GRAPHIC CONTENT

Halal slaughter of animals was conceived on the historical principle that it was one of the more humane methods available.



Yet now the RSPCA says that, when compared to methods that involve stunning the animal beforehand, it can cause unnecessary suffering, pain and distress.

With the issue of halal meat back in the news this week, we answer some of the questions you may have about the practice:

Q What does halal mean?

Halal is the Arabic word for “lawful” or “permitted”. It is a broad term covering what is allowed in the context of Islamic law, but is often used in conjunction with the issue of how meat is dealt with. The opposite of halal is haram, meaning “forbidden”.

Q What does halal slaughter involve?

Traditional halal meat is killed by hand and must be blessed by the slaughterman. Islam has strict laws on the proper method of slaughtering an animal. One, called dhabihah, requires a swift, deep incision with a sharp knife on the neck that cuts the jugular vein.



For meat to be considered halal the animal must be alive and healthy before it is killed, and all the blood must be drained from the body.

Q Are animals conscious when they are killed for halal slaughter?



For the majority, no. Between 84 and 90 per cent of animals killed for halal meat in the UK are processed by one of the large number of halal slaughterhouses which do use electric stunning beforehand.

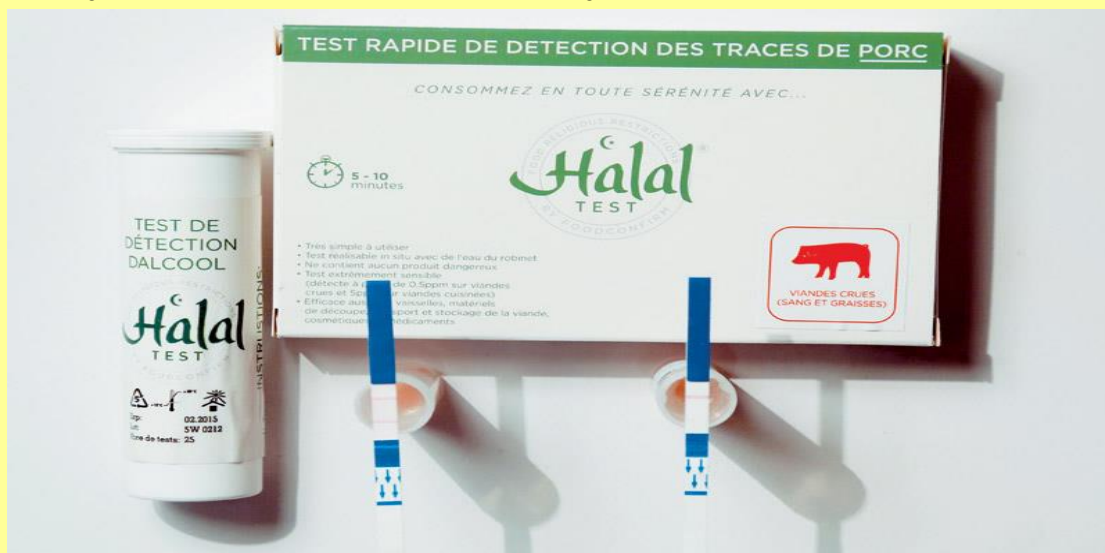
This does, however, leave a significant minority of animals which are killed without being stunned first, at one of a reported 12 slaughterhouses in the UK which still perform the more traditional practice, endorsed by Islamic scholars, of keeping the animal conscious when its throat is cut.



Q Do halal slaughterhouses in the UK face different regulations to non-halal ones?

No, with the single exception of whether or not stunning is used. For halal slaughter that includes pre-stunning there is no practical difference in the way the animal is treated.

While European law requires animals to be stunned before slaughter, the UK has an exemption in place for halal and kosher killing. In exchange there are actually more regulations in place governing the handling of animals that will not be stunned when slaughtered.

**Q Does halal slaughter without pre-stunning hurt animals more than other forms of slaughter?**

Yes, if British vets, the RSPCA and the Farm Animal Welfare Council (FAWC) are to be believed.

The British Veterinary Association (BVA) says it believes “all animals should be effectively stunned before slaughter to improve the welfare of these animals”, while the RSPCA says it causes “unnecessary suffering”.

A report from the FAWC said chicken and turkeys were likely to be conscious for up to 20 seconds after a transverse incision is made across their neck. “Such a large cut will inevitably trigger sensory input to pain centres in the brain,” the council said.



Halal chickens in Greece



Q What have governments done about the issue of halal slaughter without pre-stunning?

European regulations require animals to be stunned before they are slaughtered, but grants exemptions on religious grounds.

Earlier this year the Danish government decided to remove this exemption and said that “animal rights come before religion”. It joined Switzerland, Sweden, Norway and Iceland in banning the religious slaughter.

Last year politicians in Britain said they would not be outlawing halal slaughter without pre-stunning despite pressure from activists including the RSPCA, which has in the last week brought a new e-petition for them to do so.

Q How is halal meat labelled?

Currently, meat in the UK that is labelled as halal could be from pre-stunned slaughter or not pre-stunned slaughter – it is very difficult to guarantee either way. That is why campaigners are working to get clearer rules around labelling in place, and the industry body Eblex is currently consulting on introducing an assurance scheme to introduce “a level of transparency that it has been suggested is currently missing”. The European Parliament has approved a law change which would see compulsory labelling for all meat killed through halal slaughter without pre-stunning – but it could be years before this is implemented.

**Q How much is the halal meat industry worth?**

The halal meat market in the UK is estimated to be worth around £2.6 billion a year.

Eblex chairman John Cross described it as a “very important sector”, and said that assurances about the methods of slaughter were “vital for its future success”.





Any resemblance is purely coincidental... (Daesh slaughterhouse)



Pakistan Starts Building Fence Along Border With Afghanistan

Source: <http://www.aljazeera.com/news/2017/03/pakistan-starts-building-fence-afghanistan-border-170326081848483.html>

Mar 27 – Pakistan's military has begun fencing parts of its disputed northwestern border with Afghanistan to curb the movement of Pakistani Taliban fighters it says are based on Afghan soil, according to a statement.



Fencing started in the Pakistani Bajaur and Mohmand districts, which border the eastern Afghan provinces of Nangarhar and Kunar, Pakistan's Army Chief Qamar Javed Bajwa announced on Saturday.



Pakistan shares a mountainous and largely unpatrolled 2,500km-long border with Afghanistan, which the latter disputes. Previous attempts to fence or formally demarcate the border have met with resistance from Kabul.

In June, at least four people were killed when Pakistan and Afghanistan exchanged artillery fire over Pakistan building a formal border control complex at Torkham, the main border



crossing between the two countries.

The clash marked a continuing souring of relations between the South Asian neighbours.

Pakistan [sealed all border](#) crossings with Afghanistan in mid-February, during a wave of attacks on Pakistani soil that killed at least 130 people.

Those attacks were followed by frequent skirmishes between Pakistani Taliban fighters and Pakistan's military along the border in the Mohmand, Khyber and other districts.

In the latest such violence, on March 17, at least eight people, including two soldiers, were killed in a [Pakistani Taliban attack](#) on Pakistani border posts from the Afghan side of the border.

The border closure remained in place for more than a month, leaving thousands of visitors and tons of perishable goods stranded on either side of the border.

On March 20, Pakistan's Prime Minister [ordered the reopening](#) of the border for all traffic "on humanitarian grounds".

Addressing troops deployed on the border in Mohmand and Orakzai districts on Saturday, Bajwa said "technical surveillance means are also being deployed along the border besides regular air surveillance", a Pakistani military statement said.

Bajwa said that Pakistan was working with Afghanistan to develop a bilateral border security mechanism.



"A better managed, secure and peaceful border is in mutual interest of both brotherly countries who have given phenomenal sacrifices in war against terrorism," he said.

The Pakistan-Afghanistan border has been at the centre of accusations hurled by both governments against each other.

Pakistan and Afghanistan accuse each other of sheltering elements of the Pakistani and Afghan Taliban respectively.

Both sides deny the charges, although major leaders from both groups have been killed on the others' soil in the past.

Pakistan's military is now building more than 420 "small forts" along the border, and deploying radar sensors to detect cross-border movement, Pakistan's Dawn newspaper on Sunday.

Greece: Guns and ammunition confiscated in a mosque

Source: Greek web-media

Mar 28 – Hellenic security forces confiscated two pistols (one with silencer – could it be a Glock) and a rifle (Flober-type) along with a significant number of ammunition, in a mosque located in the village of Iliopetra (Topirou County) in the Xanthi Prefecture (Northern Greece). Guns were found in imam's house and in the mosque's minaret.



Against the Current: 'Persecuted' Norwegian Muslims Fleeing to Islamic Nations

Source: <https://sputniknews.com/europe/201703251051956656-norway-muslim-flight/>

Mar 25 – **While the influx of Muslims remains by far the dominant migration trend in Northern Europe, a current flowing in the opposite direction is also emerging, with hundreds of Norwegian nationals leaving for Muslim countries.**

Norway's recent succession of tougher immigration laws, which the Nordic country's growing Islamic diaspora perceived as chiefly "[anti-Muslim](#)," has spurred Norwegian Muslims to contemplate the perspectives of finding a new home, Norwegian newspaper Klassekampen reported. In recent years, hundreds of Norwegian nationals have relocated to Islamic countries, with more to follow.

Socialist Left ethnic equality spokesperson Somali-Norwegian Marian Hussein acknowledged that conservative Muslims feel the urge to emigrate due to a feeling of insecurity and the desire to give their children a stronger Muslim identity.

"Many minority Norwegians walk around with a creeping feeling of insecurity," writer Qasim Ali told Klassekampen.

According to Ali, Muslims are starting to suspect that they are no longer welcome in Norway and are considering emigration to a Muslim country.

"Many respond to a condescending approach and cultural arrogance from [ethnic] Norwegians that did not exist when they were growing up in the 1990s," Qasim Ali said.

According to Ali, a burgeoning colony of European Muslim emigrants has effectively established itself outside the Moroccan capital Rabat. He claimed to personally know a two-digit number of young Norwegian Muslims aged 20-30 years who traveled to Morocco



to remain there with their families. Lastly, Ali claimed Norwegians of Turkish origin resettling in Turkey to be another distinct group of émigrés.

In Islamic theology, the concept of Hijrah refers to Prophet Muhammad's flight from Mecca to Medina in 622, where he laid the foundation for the Islamic community. In a broader sense, it reflects a journey undertaken to avoid persecution or because of religious beliefs, especially with the ambition of building an Islamic alternative to "godless" societies. Incidentally, the very concept is used by so-called "foreign fighters," in effect jihadists, who left for the Middle East to join the terrorists' cause.

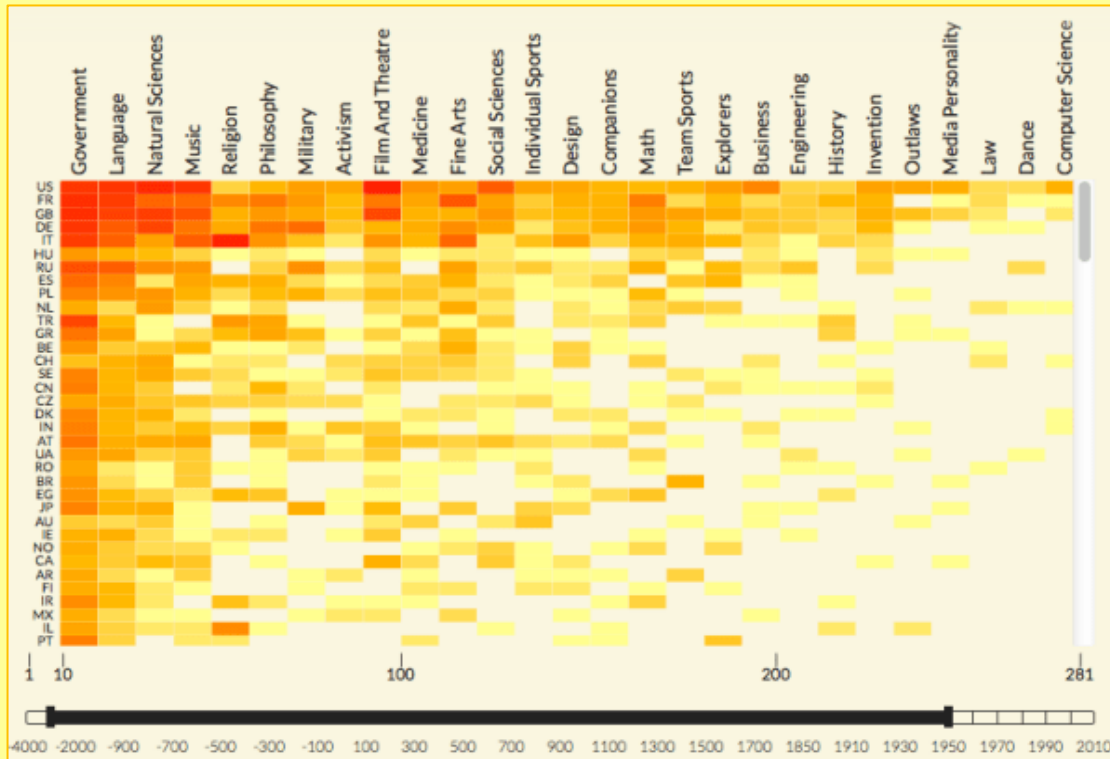
The exact percentage of Muslims in Norway remains a matter for debate, yet has been rising steadily since the late 1960s and is expected to hover at around 3.8 percent of the Norwegian population of 5.2 million. However, in Oslo County the percentage is creeping closer to 10 percent. In 2015, 395 Norwegian nationals relocated to four Muslim countries.

MIT Media Lab Maps History's Biggest Celebrities

Source: <https://www.fastcodesign.com/3027817/mit-media-lab-maps-historys-biggest-celebrities>

Mar 25 - How famous is Justin Bieber *really*? Sure he's on the [cover of Rolling Stone magazine](#) this month. And yeah, he gets a [seemingly endless stream of press](#) just for being alive. But according to [Pantheon](#), MIT Media Lab's attempt to map celebrities throughout history, Bieber is little more than a spiky-haired blip. Search Pantheon for the world's most famous singers over time, and he doesn't even rank in the top 10.

Celebrities are a window onto the ideas and enterprises cultures hold dear, and they always have been. The Pantheon project is, as César Hidalgo, director of Macro Connections group at the MIT Media Lab, says, "an effort for the first time to generate a global comprehensive map of famous connections," with world maps, treemaps, matrices, and scatterplots. People can be sorted by profession or country of origin, and you can create lists of celebrities during specific time frames. It's tons of [fun to play with](#). But more than that, it offers some remarkable insights into cultural values throughout history.



Did you know, for instance, that the United Kingdom has produced more chemists than France? And half the people on Brazil's list of famous people are soccer players? Celebrities



are a window onto the different ideas and enterprises cultures hold dear—and, if the Pantheon is any indication, they always have been.

To create Pantheon, Hidalgo's team first established a list of the most Wikipedia-d people, whose names appear in at least 25 languages. His team then "cleaned the data," by sorting the 11,000 or so names by place of birth, primary profession, and so on. They were also careful to delete what Hidalgo calls "a flavor of the month," like Psy, the K-Pop phenomenon behind Gangnam Style. "He didn't break the barrier of time. It was something very ephemeral," Hidalgo says.

So how do they determine who's more famous than the next person? The key, Hidalgo says, is whether a celebrity has had a lasting impact on the world. The world's most famous architect is Imhotep, for instance, because the Egyptian Pyramids have stood the test of time. (Steve Jobs, incidentally, is the most famous American designer.)

Hidalgo is quick to point out that Pantheon's take on who's more famous than whom is not really the point. "The rankings are not meaningful or significant," Hidalgo says. Instead, it's the broader strokes that are revealing: "If you look at mathematicians, Hungary and France have produced a disproportionately large



number of mathematicians. Argentina and Brazil are very much based on soccer players. In Chile, you have politicians and a nice group of writers." Such information could be useful for teachers and students, Hidalgo says, but also for a policymaker who wants to argue in favor of supplying a certain sector with more resources.



Pantheon also illuminates how communication technology has impacted culture over the years. “Science emerges after the printing press. Famous soccer players, after televisions. And certain musicians come after the development of the radio,” Hidalgo says, explaining why Bob Marley is ranked as the most famous musician, when the most famous person in other categories is usually from a much older time period. Consider the design category (which takes up a sliver of real estate compared with other professional categories seen in Pantheon). Will the era of famous designers finally take off now that more of the world has Internet access, and people are becoming more savvy about design? Hidalgo speculates this will happen once people become more data- and graphics-literate. “The development of the data visualization engines allows people to access information in a lot of ways,” he says. “It’s how you should present data to the global community.”

Most Famous People of the Past 6,000 Years are Greek Figures

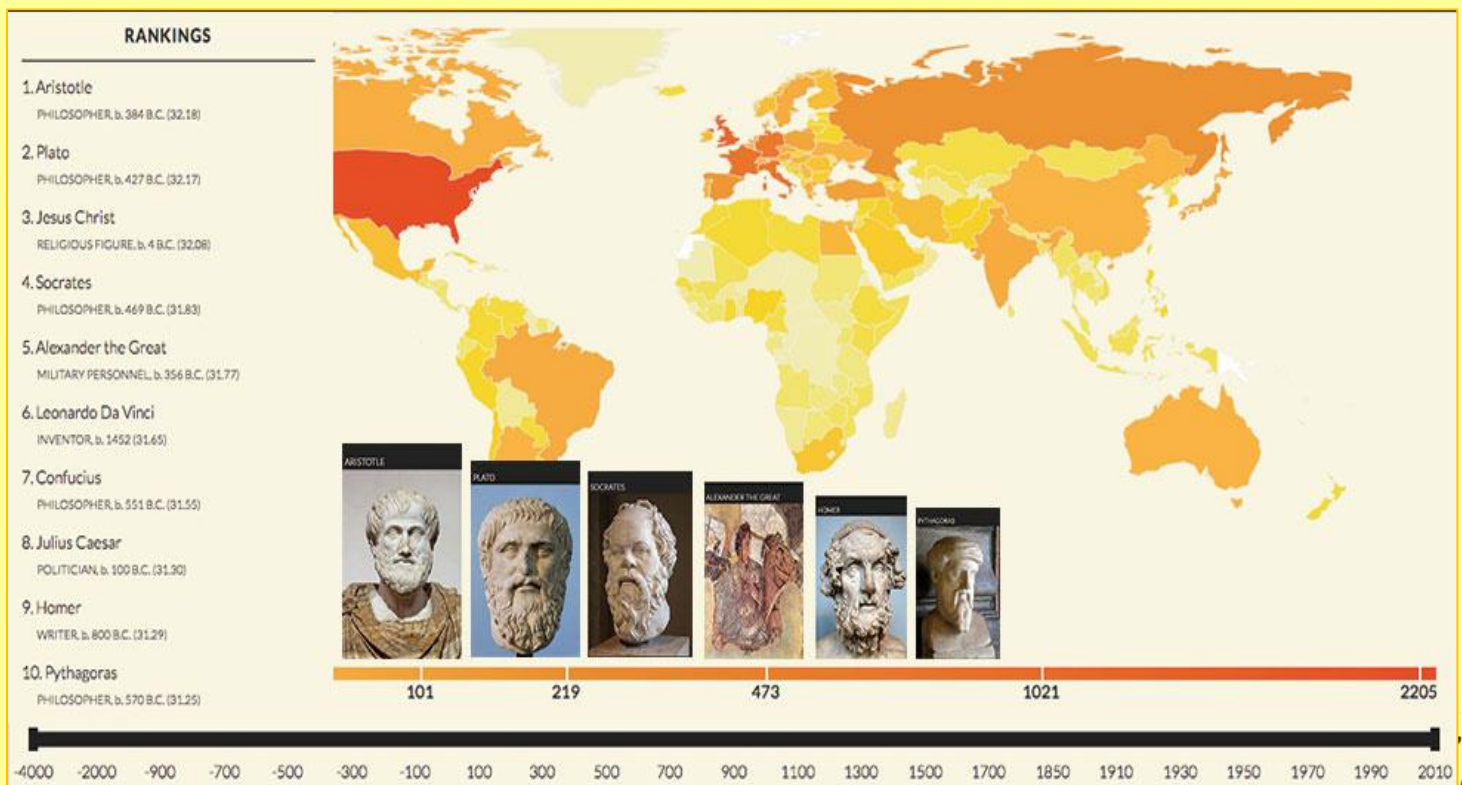
There are many ways of being a celebrity, but according to Australian writer Clive James, Jesus Christ for example, was the first to have succeeded it globally and without conquering the world by force. Yet he isn’t the most famous person of the last 6,000 years. According to MIT, Greeks are the winners in the world’s field of popularity.

The American University has been recently working on a project titled “Pantheon” which is essentially what its name predicates. Studying and analyzing data from 4,000 BC to 2010, the MIT formed a list of those whom they consider to be the most famous people of the past 6,000 years.

Aristotle crowns the list, but the Greeks don’t stop there as historic Greek personages have taken over most of the lists top spots.

In order to reach this conclusion, the MIT studied and evaluated the “cultural offer” of the great figures of history, paying special attention to data that topped the geographical boundaries as well as boundaries of time and language, thus conquering a special place in world culture.

According to MIT, the most famous people around the world over the last 6,000 years are the following:



Get lost in the maze that is Pantheon, [here](#).





The youngest Navy SEAL in Hellenic Navy: George, 13yo



ISIS Teaching U.S Military Some New Drone Developments

Source: <http://i-hls.com/2017/03/isis-teaching-u-s-military-new-drone-developments/>

May 27 – The U.S. military has been studying the drone threat from the Islamic State group in Iraq for some time now. The U.S. Army's Combined Arms Center (CAC) and the Training and Doctrine Command's (TRADOC) Asymmetric Warfare Group are both in Mosul at the tactical and operational level reporting back on observations from the fight, the CAC's commander, Lt. Gen. Michael Lundy, explained recently. He said: "The use of small UAS in Mosul by ISIS, has risen to an almost swarm-level capability in a couple of cases. That is a big area that we are learning."

While some capabilities and procedures of the Islamic State observed in the fight are seen as one-offs and unique to the specific fight, Gary Phillips, a senior intelligence advisor within TRADOC, said UAS threat capabilities are seen as worth incorporating in training as well as technology and capability development within the U.S. military.

Brig. Gen. William Cole, the program executive officer for simulation, training and instrumentation, told defencenews.com that his shop is introducing new enemy drone threats into Combat Training Center rotations as a direct result of what has been observed in the Middle East from Islamic State. The organization has rapidly developed an inexpensive drone, the Outlaw, normally used to simulate a target threat for air defense units and outfitted it with commercial cameras and sensors, quickly incorporating it into a National Training Center rotation, Cole said. "What really got me excited was to see how quickly the rotational units learned to react to this type of threat," he said. The first time the drone flew overhead, "the first unit just stood there and they kind of looked at it and, of course, they paid the price in the simulated battlefield," Cole said.

But it didn't take long, he added, before the units started providing better camouflage and shooting back. Finally, a unit saw the drone, tracked it back to its base where the unit destroyed the base and took out the drone for the rest of the rotation.

Intruder Recognition System – Security Robot's Added Value

Source: <http://i-hls.com/2017/03/intruder-recognition-system-security-robots-added-value/>



Mar 25 – A new generation of security robots will be showcased at the ISC West Conference in Las Vegas. MP Robotics Systems Corp., a manufacturer of autonomous mobile robots will present the updated SMP Robotics S5 HD Security Robot.

"We started to design robots in 2009 and today SMP Robotics remains a strong player in the space," said Leo Ryzhenko, CEO of SMP Robotics. "The company holds more than 10 patents in the field of mobile robotics."

"This innovation marks the next generation of robotics," said Steve Reinharz, Founder and CEO of Robotic Assistant Devices. "The intruder recognition system makes the ideal platform for the SMP autonomous robotic

systems, helping the robotic guards be more predictive, accurate, productive and easily reconfigured for a variety of tasks."





According to roboticstomorrow.com, the enhanced **S5 HD security robots** include the prototype of intruder recognition system that offers global security teams situational awareness tools to deliver deployment flexibility and operational productivity. Robots can learn from the environment around them to navigate safely, as well as identify and classify objects such as people, car plates and uniforms. SMP Robotics will begin testing the new S5 HD lineup with select customers in the beginning of the summer.

According to SMP website, The S5 HD restricted-area patrolling robot is designed for patrolling the secured area rather than its perimeters. The location of the equipment and the facilities of the critical infrastructure is a vital area and requires strong surveillance, due to the abundance of places where an intruder can hide after entering the site by ways other than negotiating the perimeter fence. These include, for example, hiding in the back of a truck and entering the secured area through the check-point. The S5 HD Robot can quickly move to an optimal location for overseeing the loading and unloading of the truck. This robot is perfect for use at construction operations in a secured area where it can watch over a contingent workforce.

Vehicles entering the secured area can be identified by an S5 Automatic License Plate Recognition (ALPR) Robot. This robot is capable of not only recording the license plate numbers of vehicles arriving through the check-point but also of patrolling the parking lot inside the restricted area.

While patrolling at night, the area security robot can detect people who are not involved in maintenance of the secured critical infrastructure site. Thanks to its ability to navigate without satellite signals, the S5 robot can carry out mobile surveillance inside large premises or in covered areas. These include, for example, warehouses and parking lots for heavy duty vehicles.

Hamas develops powerful new rockets, threatening Israeli towns near Gaza

Source: <http://www.homelandsecuritynewswire.com/dr20170328-hamas-develops-powerful-new-rockets-threatening-israeli-towns-near-gaza>

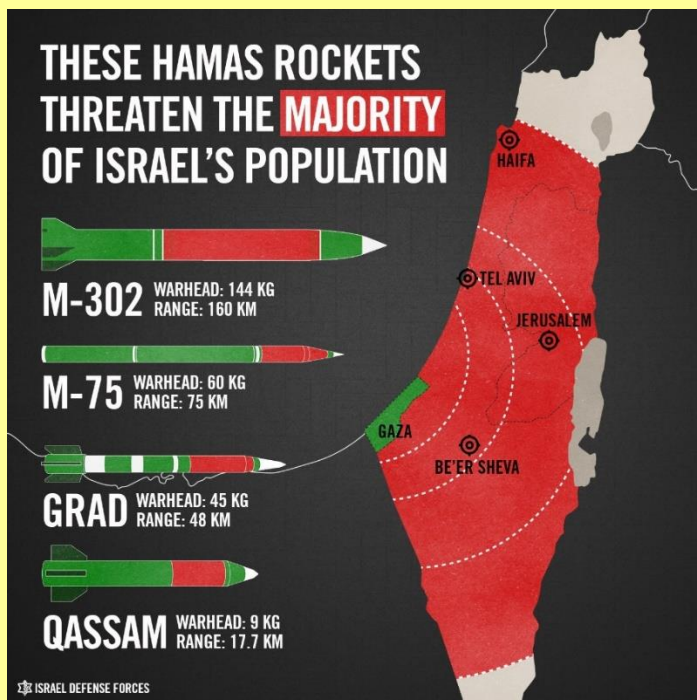
Mar 28 – **The Palestinian terrorist group Hamas has acquired new, more powerful rockets that could severely threaten Israeli towns near the Gaza Strip, Army Radio reported Tuesday.**

The rockets carry hundreds of kilograms of explosive material and have a short range of a few kilometers, similar to the range of mortar shells, according to an assessment by the



Israeli military. While the Iron Dome anti-missile system can shoot down short-range projectiles, it is not as effective against mortar shells and rockets with more limited ranges.

Hamas is believed to have manufactured dozens of these rockets since its 2014 war against Israel.



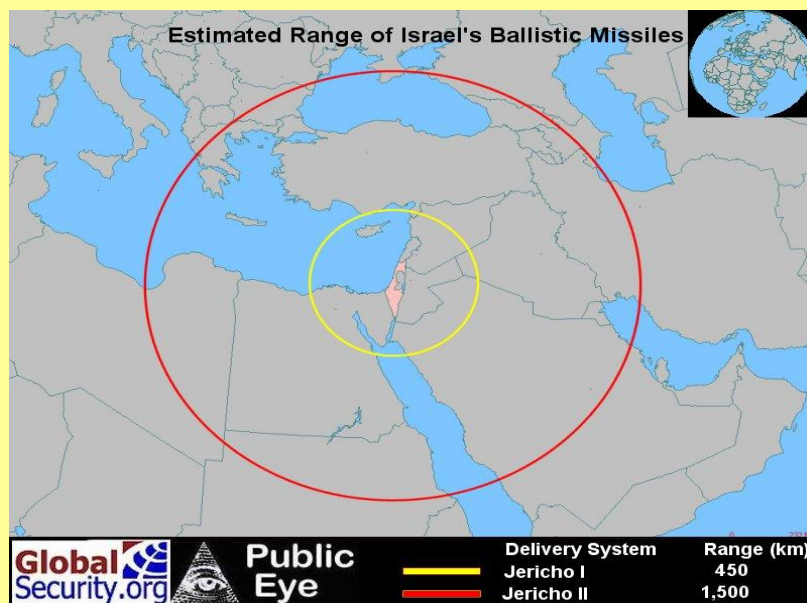
Last week, Israel's internal security agency [announced](#) that Hamas was seeking advanced targeting software in order to render their rockets more accurate. The Israel Defense Forces [assessed](#) in February that Hamas had succeeded in building fifteen tunnels into Israel.

Although the IDF discovered and destroyed at least [34 tunnels](#) during the 2014 Gaza war, Hamas has been pouring resources into rebuilding its terrorist infrastructure. The group is believed to [spend](#) some \$40 million of its \$100 million military budget on tunnel construction and [dig](#) around six miles of tunnels every month. A senior IDF official recently [told](#) Channel 2 that Hamas had rebuilt its tunnel infrastructure and rocket arsenal to pre-war levels.

Palestinian affairs correspondent Khaled Abu Toameh [pointed out](#) last year that Hamas has prioritized building up its terrorist infrastructure over rebuilding Gazan homes, writing that "the last thing Hamas cares about is the welfare of the Palestinians

in the Gaza Strip."

Gen. Yossi Kuperwasser, formerly the head of the research division of Israeli military intelligence and later the director general of the Ministry of Strategic Affairs, [told reporters](#) last May that the tunnels were a sign that Hamas is preparing for another war against Israel. "They definitely invest a lot in making the necessary preparations so that in the next round, when they decide to start it, they will be able to inflict the heaviest damage on



Israel, including through those tunnels," he said.

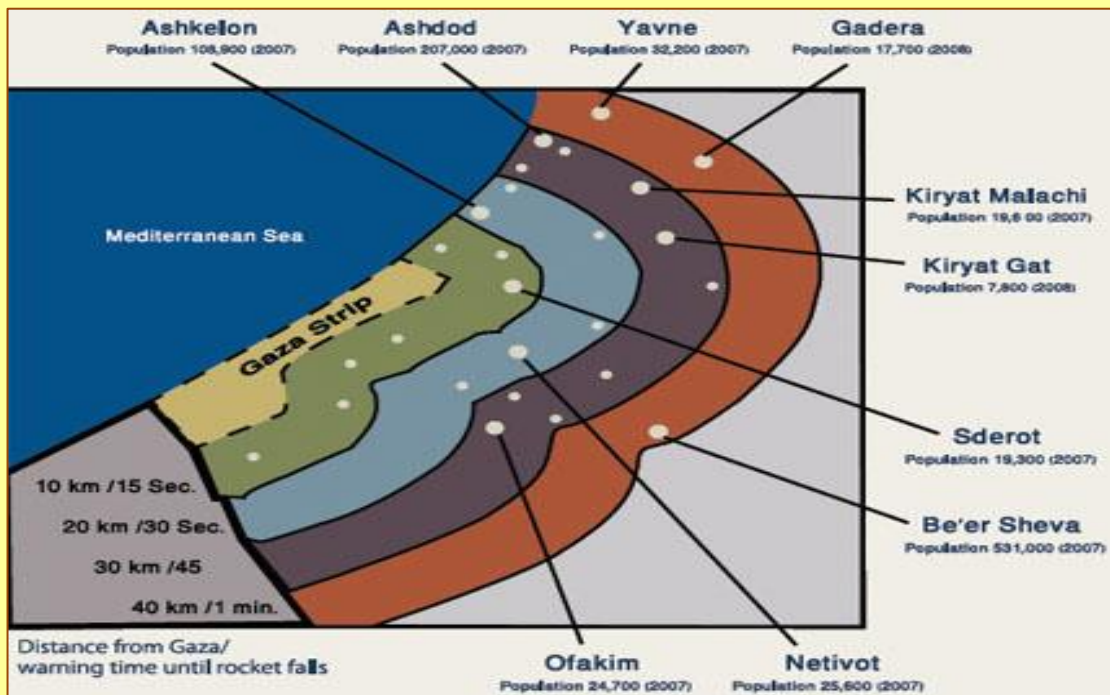
Hamas killed [several Israeli soldiers](#) in 2014 through its use of cross-border tunnels. The IDF [explained](#) at the time that Hamas intended to use the tunnels "to carry out attacks such as abductions of Israeli civilians and soldiers alike; infiltrations into Israeli communities, mass murders and hostage-taking scenarios."

Israel began constructing a \$530 million [underground barrier](#) along its border with Gaza in September to prevent more Hamas tunnels from breaching Israeli territory. IDF Chief of Staff Gen. Gadi Eisenkot described the barrier as "the largest project" ever undertaken in Israel's military history.



Veteran *Haaretz* military correspondent Amos Harel [assessed](#) last month that Hamas was fully capable of initiating attacks against Israeli communities near the Gaza border using its network of tunnels.

The "Color Red" system provides warning to civilians from the launch to the rocket strike



►► Read also: <http://www.globalsecurity.org/military/world/para/hamas-qassam.htm>

THE REAL MASS DESTRUCTION

Famine: Nearly 1.4 million children at risk of death in Nigeria, Somalia, South Sudan, and Yemen

Source: <http://www.homelandsecuritynewswire.com/dr20170328-famine-nearly-1-4-million-children-at-risk-of-death-in-nigeria-somalia-south-sudan-and-yemen>

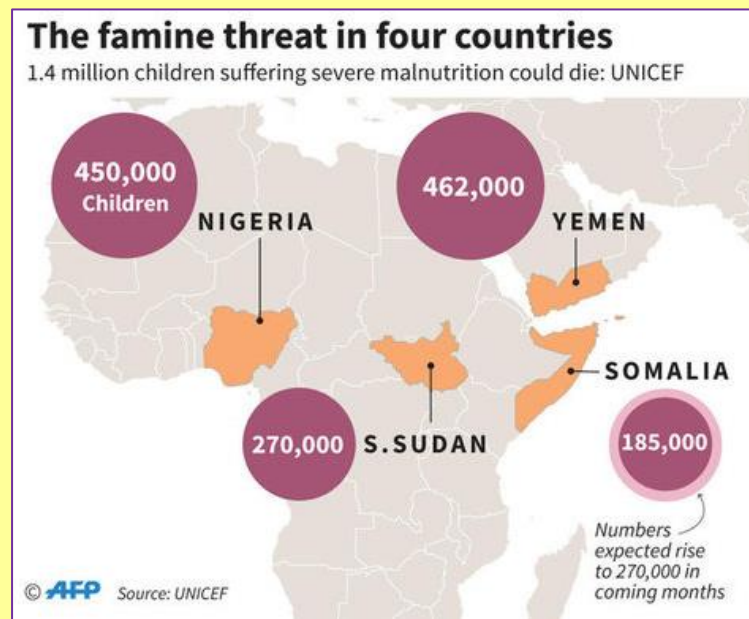
Mar 28 – **Famine is looming in north-east Nigeria, Somalia, South Sudan, Yemen, and beyond, as nearly 1.4 million children are at imminent risk of death from severe acute malnutrition this year. Some 22 million children are hungry, sick, displaced, and out of school due to war, conflict and drought.** They now face the risk of death from starvation, but also from preventable diseases like cholera and measles, which cause severe diarrhea and dehydration.

UNICEF [says](#) that the risk of famine is not limited to these four countries. As violence, hunger, and thirst force people to move within and across borders, malnutrition rates will continue to soar in neighboring countries as well.

This crisis is largely human-made. Scorched earth tactics by conflicting parties are destroying crops and critical infrastructure like health facilities. Heavy fighting is forcing farmers to abandon their fields, while blocking humanitarian access to people in desperate need of food aid and clean water. As families flee their homes, children have no access to health and nutrition services, clean water, or adequate sanitation and hygiene – putting them at greater risk of malnutrition. Diseases are spreading rapidly in crowded sites for displaced people. And drought is further exacerbating food crises in parts of Africa, particularly Somalia and the Horn of Africa.



“Six years ago, at least 100,000 children died of a famine in the Horn of Africa because the world did not



act soon enough,” UNICEF says. “Children cannot wait for yet another famine declaration – the time for action is now. We must reverse famine where it exists, and prevent famine where it looms.

“UNICEF calls on all parties to these ongoing conflicts to stop human rights violations and allow unconditional humanitarian access to all people in need.”

The relief agency notes that it currently has teams on the ground in all of the affected countries. Urgent funding is needed to enable our teams to scale up life-saving

interventions. “We need close to \$255 million to provide children with food, water, health, education and protection services for just the next few months,” UNICEF says.

North-east Nigeria

In north-east Nigeria’s conflict-affected states of Adamawa, Borno and Yobe, the number of children with severe acute malnutrition is expected to reach 450,000 by the end of the year. According to [FEWS Net](#), the famine early warning system that monitors food insecurity, famine likely occurred last year in previously inaccessible areas of Borno state, and it is likely ongoing in other areas that remain beyond humanitarian reach.

In January and February of this year alone, UNICEF treated nearly 14,000 children for severe acute malnutrition in Borno and Yobe states.



Somalia

In Somalia, drought is threatening an already fragile population battered by decades of conflict. Almost half the population, or 6.2 million people, are facing acute food insecurity and are in need of humanitarian assistance.

As the situation continues to deteriorate, malnutrition is expected to increase, and more than 270,000 children are expected to suffer from severe acute malnutrition if the famine is not averted.

Limited access to clean water contributes directly to malnutrition, as children are at risk of diseases like cholera and measles that induce severe diarrhea and dehydration. By April 2017, the number of people in need of [WASH assistance](#) will likely rise to 4.5 million.

UNICEF and partners have secured the pipeline of life-saving supplies through April, and are implementing a 45-day scale-up plan to prevent mass loss of lives. Teams are currently



responding in the hardest hit areas, monitoring displacements, cross-border movements, and sudden, life-threatening spikes in malnutrition and disease numbers.

South Sudan

In South Sudan, a country reeling from conflict, poverty and insecurity, nearly 300,000 children suffer from severe acute malnutrition. Famine has recently been declared in parts of Unity State in the northern central part of the country, and an additional one million people are on the edge of famine across the country.

If nothing is done to curb the severity and spread of the food crisis, the total number of food insecure people is expected to rise from 4.9 million to 5.5 million at the height of the lean season in July.

Since the declaration of famine, WFP and UNICEF have conducted eight emergency missions to affected areas in Unity State, delivering lifesaving supplies and services. As of March 2017, the joint missions – bringing assistance via plane and helicopter – have reached more than 133,000 people nationwide, including over 33,000 children under 5.

Yemen

In Yemen, where conflict has been raging for the past two years, severe food insecurity threatens more than 17 million people – a 21 percent increase since June 2016.

2.2 million children are acutely malnourished, and 462,000 children are suffering from severe acute malnutrition. Without additional support, the governorates of Taiz and Al Hudaydah risk slipping into famine. These governorates – which are home to almost a quarter of Yemen's population – were once the center of food production, but have seen intense violence since the current crisis escalated. They now have the highest rates of acute malnutrition in the country.



Meet the Hunter Troop: Norway's tough-as-nails female soldiers

Source: <http://www.bbc.com/news/world-europe-39434655>

Apr 01 – She's marched for miles carrying gear that weighs as much as she does, killed animals for food during survival training and practised jumping out of planes to get behind enemy lines.

But Jannike, a pony-tailed 19-year-old from northern Norway, will only concede that she's "pretty tough". She is part of the Hunter Troop, the world's first all-female special forces training programme.

"I wanted to do something bigger, the toughest the army could offer me," Jannike says. "I wanted to [see] how far I could push myself."

After six months, despite some "really low moments", she is determined to get through the course.

Next up on the training schedule is close-combat fighting and offensive driving.



Are these the world's toughest female soldiers?

The Jegertroppen, as it is known in Norwegian, was set up in 2014. Military commanders here say that the war in Afghanistan proved an "operational need" existed for highly-trained female soldiers who could gather intelligence and interact with women and children during deployments in conservative societies.

What began as a kind of experimental programme is now seen as a major success. More than 300 women applied in the first year, and about a dozen recruits are now passing the gruelling training annually, providing a pipeline of elite women soldiers that can be deployed at home or abroad.



The hardest part so far has been "hell week", says Jannike, a test of mental and physical strength involving long marches over several days with little time for rest, and minimum amounts of food and water.



"They just see if you can handle the pressure when you're down," she says.

The young women are today practising fighting their way out of an urban ambush. They work in teams of



two: taking cover behind burned-out tanks, providing suppressive fire with their H&K MP7 sub-machine guns and throwing smoke grenades so the team can get out safely.

Every time they hit one of the metal targets in the snow-covered expanse ahead, a clear "ding" rings out, to the approval of Captain Ole Vidar Krogsaeter, who oversees their training.

"To prepare them we try to give them the best training possible, as realistic as possible," the veteran special forces operator says. "We have them go through the exercises so many times that they are comfortable with it."

Norwegian Special Forces They go through the same training as male paratroopers

In between rounds, the women, who are all aged between 19 and 27, rest, and the dynamic changes completely.

They sing, and joke around. Three girls sprawl out on an equipment box, enjoying the brief downtime. Later they light a fire, and get a barbeque going.



Back in the mid-1980s, Norway became one of the first countries in Nato to allow women to serve in all combat roles, although the numbers actually doing so have remained low. Women were allowed to apply for the special forces, but none had got in.

The United States and Britain, in comparison, have only recently begun lifting restrictions on women officially enlisting in combat units.

Special forces soldiers in the US have shown particular resistance to the changes. A [2014 Rand Institute survey](#) of men in the US Special Operations Command found that 85% were against letting women do their specialised jobs, with 71% opposed to women joining their units.

The main concerns were that tough standards would fall and team cohesion could be affected.

But men [also complained](#) about the feared effects of pre-menstrual syndrome (PMS), dealing with their wives' complaints, and the effects of having segregated living quarters.

Magnus, a male Norwegian special forces soldier who has trained the Jegertroppen, doesn't have patience for what he calls "man-made" problems.

Male and female soldiers mostly share rooms in Norway, and PMS is "not an issue at all" in training, he said.

He recognises that there are some valid concerns: most pertinently, the ability of a female soldier to quickly carry a wounded male counterpart to safety.

Still, he adds: "I don't think you should view it as the girls are gonna do the exact same as the guys.

"They are not going to win hand-to-hand combat, but most of the time we use guns and a lot of the time they shoot better than the guys."

Could you pass the unit?

Requirements to complete the course:

- 15km (9 miles) speed march in full gear (22kg backpack, weapon, boots) through forests within two hours and 15 minutes
- Six pull-ups
- 50 sit-ups in two minutes
- 40 push-ups
- 3km run - maximum time 13 minutes
- 400m swim, first 25m underwater - maximum time 11 minutes

Most of the members of the Jegertroppen were elite high school athletes, but they bring other strengths to the table apart from their physical capability.

Venderla, 22, passed the course last year. "Women think outside the box," she says. "Men just do what they are supposed to do. Maybe we are more capable of seeing another solution, a better solution."

Although gender equality is well-entrenched in the Norwegian military - as it is in the country's society - just 11% of personnel are women, reflecting halting progress in recruiting and retaining females.

This compares with 10.2% in the UK and more than 15% in the United States.

Conscription was extended to Norwegian women last year and they made up about 25% of the 8,000 youngsters recruited, meaning the share should increase over time.

Venderla says she has not experienced sexism in the special forces, but has in another battalion.

She was told by some soldiers that she was weaker and less capable as a woman, and one man made sexual comments, she said. The problem stopped after she complained.

"I think he was maybe a little insecure. I knew I was good enough passing the tests so it's his problem."

Norwegian special forces are currently deployed in Jordan, helping to train Syrian rebels in the fight against so-called Islamic State.

None of the women who have passed through the Jegertroppen so far have been deployed on a special operation, but the commanders say that the important thing is that they are trained and ready should the need arise.

Jannike speaks calmly but with conviction. She says that in a peaceful country like Norway, it's difficult for her to keep in mind during training that they are actually "learning to kill".

"But I try to have that perspective, because that's what we're really training for."



Erdogan's War on the West

By Burak Bekdil

Source: <http://www.meforum.org/6606/erdogan-war-on-the-west>

Mar 22 – In 2005, the Turkish prime minister at the time, Recep Tayyip Erdogan, along with his Spanish counterpart, Jose Luis Rodriguez Zapatero, became the co-chairs of a United Nations-sponsored global effort that went by the fancy name "Alliance of Civilizations." Twelve years later, Zapatero is a retired politician, the Western world faces different flavors of Islamist-to-jihadist threats and Erdogan is at war with Western civilization.

Erdogan, who was [labelled](#) as the most virulent anti-Israeli leader in the world, once likened Israel's operations in Gaza to Hitler's: ("Those who condemn Hitler day and night have surpassed Hitler in barbarism.") Recently, Erdogan said that today's German practices -- presumably Germany's blocking Turkish politicians speaking at German rallies to support Erdogan's upcoming referendum in Turkey -- are "not different from the Nazi practices of the past." In another speech, he complained that "Nazism is alive in the West." [For Erdogan](#), the Dutch are "spineless and ignoble" and "remnants of the Nazi past and fascists;" and the Netherlands, which lost more than 200,000 of its citizens during the German occupation in WWII, is a "banana republic." To the European Union, which Turkey theoretically aspires to join, [he said](#): "If there are any Nazis, it is you who are the Nazis."

Ironically, the Turkish ire against the West, in a recent row between several European capitals and Ankara (over Erdogan's ambitions to hold political rallies across Europe to address millions of Turkish expats), reveals the unmistakable and deep-rooted anti-Semitism among Erdogan's fans. Hundreds of Turkish protesters in the Dutch port city of Rotterdam hurled stones at the police and shouted "Allahu akbar" -- Arabic for "Allah is the greatest." Then, some in the crowd, in a protest that was exclusively a dispute between Turkey and the Netherlands, shouted "cancer Jews."

"We saw again that the word 'Jew' and 'homo' are curse words in these groups," [said Esther Voet](#), the editor-in-chief of the *Nieuw Israelietisch Weekblad*.

Someone tweeted an embarrassing curse at François Hollande, the French president, mistaking his name for his nationality.

A gangster, who shot at a night club, defended himself by [saying](#) that he actually wanted to shoot at the Dutch consulate building.



"The Dutch Holstein cows have become very common in our country," says Bulent Tunc, the head of the Turkish Association of Red Meat Producers. "But this breed is starting to cause serious problems."

For the lighter side of the Turkish

ire, in another Dutch protest, Erdogan's fans cut, skewered and squeezed oranges -- orange



is the color of the Dutch royal family. The Turkish Association of Red Meat Producers "deported" 40 Dutch Holstein cows back to Holland. In a similar move, a member of a district city council in Istanbul said that he would butcher a cow that came from the Netherlands in retaliation against the Dutch.

One could simply laugh and ignore the way the Turks express their anger at the Dutch, who deported an [uninvited Turkish minister](#) who intended to make a speech to the Turkish community in the Netherlands. The official [rhetoric](#) in Ankara, however, unveils the irreversible incompatibility between the democratic cultures of Europe and Turkey. For Erdogan, "the spirit of fascism is running wild" in Europe. [According](#) to his foreign minister, Mevlut Cavusoglu, Europe is "heading toward an abyss." And it is not just the rhetoric.

Not quite knowing where best to direct its anti-Western campaign Turkey [blocked some military training](#) and other work with NATO-partner countries, thereby obstructing NATO's 2017 rolling program of cooperation with non-EU countries. "This is childish hostile," said one NATO state diplomat in Ankara. Meanwhile, Turkey, instead of embracing Europe as an ally and future partner, seems to think that it can tame Europe by blackmailing it. Erdogan threatened to terminate a controversial agreement with the EU, sealed in March 2016 to stem the flow of tens of thousands of refugees from Turkey to Europe in return for financial aid and visa-free travel for Turks. The EU could "forget about the deal," [Erdogan said](#) half a year ago. Echoing Erdogan's threat, his interior minister, Suleyman Soylu, [threatened](#) the EU that the rich club would be shocked "if Ankara were to send 15,000 refugees to it every month. Minister Soylu [said](#) that he would "blow the minds" of EU leaders by sparking a fresh refugee crisis.

Part of the inflammatory anti-Western Turkish rhetoric and exploits may be aiming at luring an increasingly isolated and nationalistic voter base ahead of a critical referendum on April 16 that aims significantly to broaden Erdogan's presidential powers. But it is also about the fact that Erdogan views and portrays himself as the global champion of an opaque "Muslim cause," under Turkish [read: Erdogan's] caliphate-like leadership against the "hostile" West. As Islamists know that they cannot defeat the West by using hard power, it is about "soft jihad."

It was not without a reason that Turkey's Foreign Minister Cavusoglu did not talk about a "dispute," or a "diplomatic crisis," or "negotiations for a solution." He did talk about "religious wars."

"Soon religious wars will break out in Europe," [he said](#). "That's the way it's going." But how do Turkish (and other) Islamists think they can win future religious wars? How do they think their primary warfare instrument, soft power, would work for an ultimate Islamic victory over an "infidel" civilization?

Erdogan has the answer: He [urged Muslims](#) across Europe to have big families to "fight the injustices of the West." And not just that:

Go live in better neighbourhoods. Drive the best cars. Live in the best houses. Make not three, but five children. Because you are the future of Europe. That will be the best response to the injustices against you.

Islamists like Erdogan do not dream of "conquering" infidel lands with fighter jets and tanks and bombs. In this "war of religion" their primary weaponry is demographic change in favor of Muslims.

It is time to recall the poem [Erdogan recited](#) at a public rally back in 1999: "The mosques are our barracks, the domes our helmets, the minarets our bayonets and the faithful our soldiers."

Burak Bekdil is an Ankara-based political analyst and a fellow at the Middle East Forum.

Ten 3D Printers that are Near Click-and-Print-Capable Right from the Box

Source: <http://beta.machinedesign.com/3d-printing/ten-3d-printers-are-near-click-and-print-capable-right-box>

There are a ton of 3D printers on the market that will cover just about any project aspect you have—some with high resolutions, others capable of using nearly any material, and still more offering a myriad of connection options and easy-to-use software packages. When it comes



to plug-and-play or “set it and forget it” options, the list dwindles down. Still, they can be found, and at nearly every price-point. However, there really should be “standards” across all of them that makes them as easy to use as a PC-connected laser printer. Onward, to a 3D printer-in-every-garage world.

►► Read the full article at source's URL.

Passenger Profiling / Behavioural Analysis

Source: http://www.avsec.com/passenger_profiling_behavioural_analysis/

Tactical Risk Assessment of People (T.R.A.P.®) is an effective way to upskill your security personnel through behavioural analysis education. The training courses provide participants with a methodology of identifying threatening or potentially disruptive individuals through observation and questioning techniques. Our solution is based on logical common sense-based risk assessment, baselining and a non-discriminatory profiling system that has been developed over 20 years. Green Light Ltd. has been appointed the Behavioural Analysis Subject Matter Expert at Airports Council International, and the T.R.A.P. ® programme has been delivered as specific training to employees at a number of European airports and sporting events.



An entry level, introductory half-day course covering: Threat Appreciation, the Basics of Behavioural Analysis and Suspicious Signs

An intermediate one-day course providing a deeper look into the basics of behavioural analysis, building on T.R.A.P. Door and including: Biology of Fear, Expectations of Behaviour and Basic Questioning Techniques.



Our advanced level, five-day course, specifically designed for the transportation industry includes role play scenarios designed to assess the ability of participants. The modules include all those covered in T.R.A.P. Door and T.R.A.P.eze as well as: Incident Reviews, Visitor Profiling, Terrorist Modus Operandi, Document Inspection, Advanced Questioning Techniques and Deception Indicators.

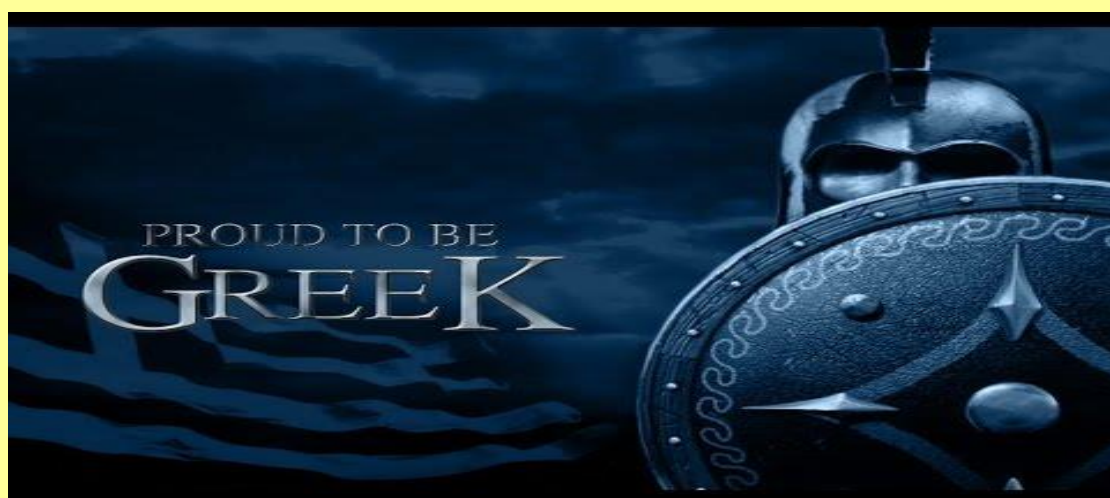


Multiculturalism in Greece



Some support the idea of multiculturalism and coexistence in Greece. When we all saw the Afghani girl holding the Greek flag during the March 25, 2017 National Day Parade (the best student in every school gain the right to hold the flag in parades), we thought that excellence is always rewarded despite race, color or religion. But the very same day, a Facebook comment written by the Pakistani Islamic Party of Greece (?) commented: *"We praise the fighting student who gave a punch against the monopoly and christianfacist system. She is a fighter who executed to the point her ideologic duties and this is why our party praises her."*

EDITOR'S COMMENT: Imagine the same school reqarding system in a Muslim country: the best student is a Christian who participated in the parade wearing her national traditional dress with a cross in her neck. Of this is a hypothetical scenario that could never take place nowhere on Earth. We all support hard work and excellence without discriminations of any kind but we all favor the fact that those who chose to come and stay in our country should follow our rules and behaviors. If not, they either stay home or return to their homelands. The "we are here and we are strong" message is not either welcomed or accepted. This message from ordinary people should be heard by both provokers and politicians that think they represent the majority of the people they serve.



News exposure linked to greater anger toward Muslims: Study

Source: <http://www.homelandsecuritynewswire.com/dr20170403-news-exposure-linked-to-greater-anger-toward-muslims-study>

Apt 03 – New Zealanders — whether liberal or conservative — show both increased anger and reduced warmth towards Muslims if they are more avid news consumers, a new scientific study has found.

The study, which appears in the international science journal *PLOS ONE*, is based on responses from 16,584 New Zealanders from the New Zealand Attitudes and Values Study (NZAVS), a 20-year longitudinal study led by co-author Professor Chris G. Sibley of the University of Auckland, who leads the project he created in 2009.

U Otago notes that researchers have long suspected that the news media fuels Islamophobia, but these ideas had never been tested on a nation-wide scale.

“People tend to interpret the news in ways that fit with their pre-existing biases, seeking affirmation of their beliefs while discounting conflicting information,” says University of Otago lecturer Dr. John Shaver, the article’s lead author. “New Zealand is a good test for speculation about media-induced Muslim prejudice because of its overall highly tolerant people. If anything, tolerant Kiwis might tend to reject intolerant stereotypes, reducing the effect of the media.”

“However, we find that the association of prejudice towards Muslims with media exposure holds across the political spectrum, and is specific to Muslims,” says Shaver. “This indicates that it is widespread representations of Muslims in the news that is contributing to lower Muslim acceptance, rather than any partisan media bias. The media, regardless of politics, tend to publish violent stories because violence sells.”

Professor Joseph Bulbulia of Victoria University of Wellington, also a co-author, notes, “Sadly, there may be real-world consequences for Muslims in this country, people who encounter prejudice across their daily routines, at the workplace, and in their children’s schools.” Despite the study’s bleak message the authors remain optimistic: “Though un-making prejudice is difficult, we hope these results challenge the media to present fairer representations of Muslims.”

— Read more in John H. Shaver et al., “News exposure predicts anti-Muslim prejudice,” *PLOS ONE* (31 March 2017).

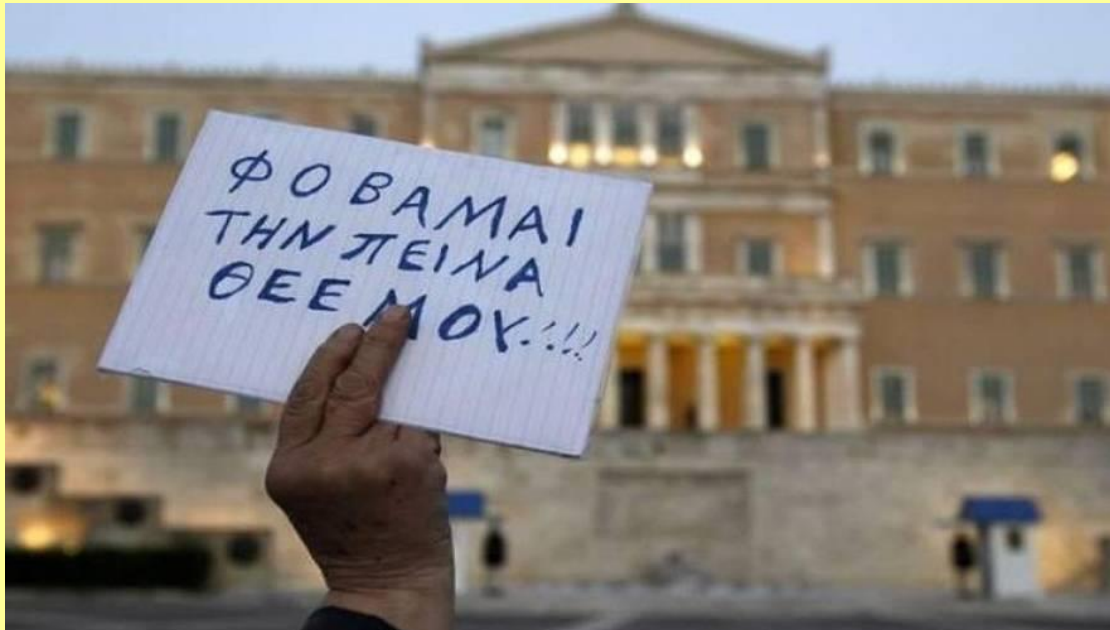
Turkey – EU candidate member state



April 19th, 2017 referendum: Turkish voter with Othoman costume, in Strasbourg, France...



2009-2014 Greek brain-drain: 20,000 scientists lost abroad



God, I am afraid hunger!!!



STOP BARBARIC BULL FIGHTING

Apr 04 – Madrid arena: 23y matador Daniel García Navarrete fights for his life



STOP CANADA'S CRUEL SEAL HUNT

Help Us Save the Seals

The Canadian seal hunt is the largest slaughter of marine mammals on Earth. More than one million baby seals have been killed for their fur during the past four years. You can help stop this atrocity.

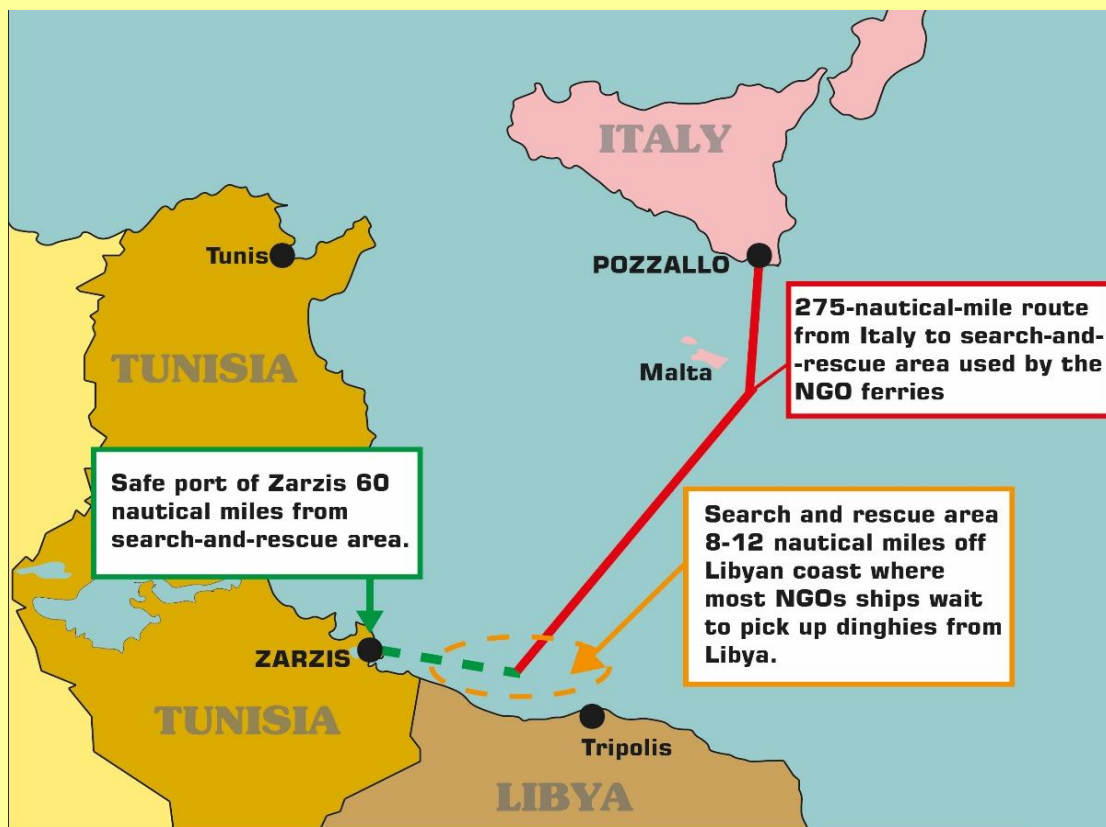




NGOs are smuggling immigrants into Europe on an industrial scale

Source: <https://gefira.org/en/2016/12/04/ngos-are-smuggling-immigrants-into-europe-on-an-industrial-scale/>

For two months, using marinetraffic.com, we have been monitoring the movements of ships owned by a couple of NGOs. Using data from data.unhcr.org., we have kept track of the daily arrivals of African immigrants in Italy. It turned out we were witness to a big scam and an illegal human traffic operation. NGOs, smugglers, the mafia in cahoots with the European Union have shipped thousands of illegals into Europe under the pretext of rescuing people, assisted by the Italian coast guard which coordinated their activities.



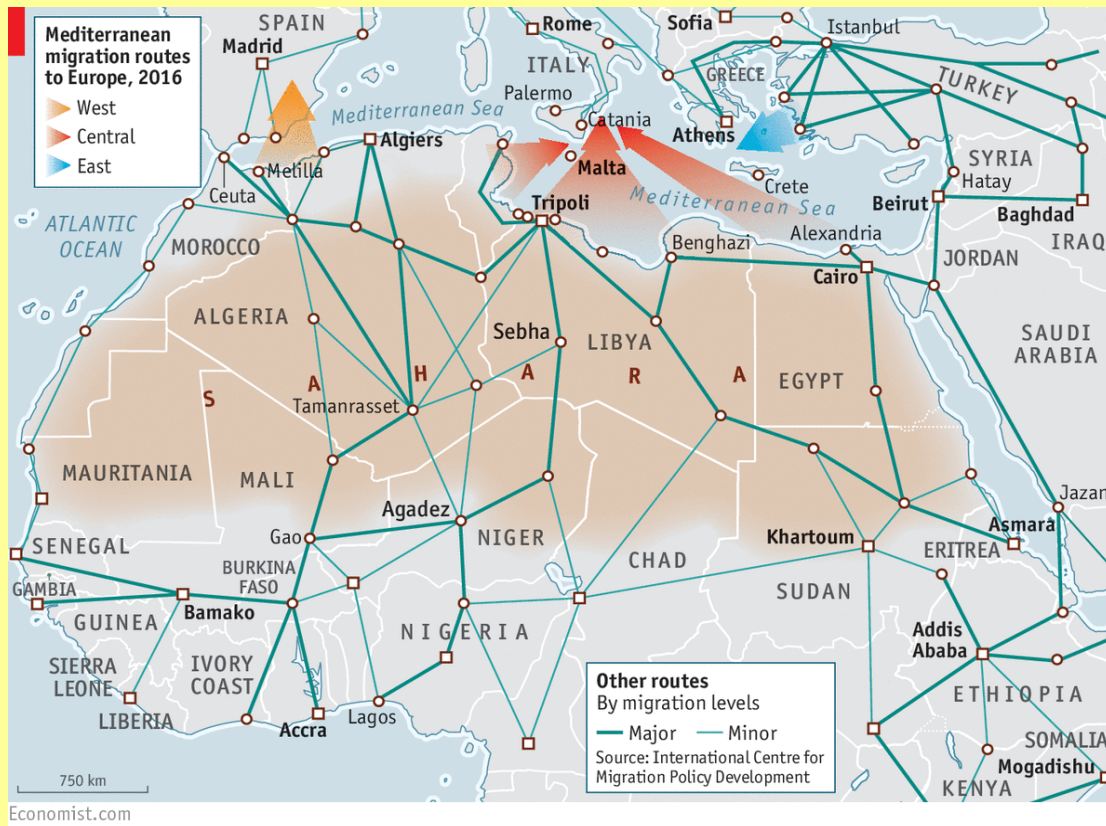
Human traffickers contact the Italian coast guard in advance to receive support and to pick up their dubious cargo. NGO ships are directed to the “rescue spot” even as those to be rescued are still in Libya. The 15 ships that we observed are owned or leased by NGOs have regularly been seen to leave their Italian ports, head south, stop short of reaching the Libyan coast, pick up their human cargo, and take course back 260 miles to Italy even though the port of Zarzis in Tunisia is just 60 miles away from the rescue spot.

The organizations in question are: MOAS, Jugend Rettet, Stichting Bootvluchting, Médecins Sans Frontières, Save the Children, Proactiva Open Arms, Sea-Watch.org, Sea-Eye and Life Boat.

The real intention of the people behind the NGOs is not clear. We would not be surprised if their motive were money. They may also be politically driven; the activities of the Malta-based organisation, MOAS, by trafficking people to Italy is the best guarantee that migrants will not show up on the Maltese shore. MOAS is managed by an Maltese Marine officer well known in Malta for his maltreatment of refugees ¹⁾. It is also possible that these organisations are managed by naive “do-gooders” who do not understand that offering their services they are



acting like a magnet to the people from Africa and thus they are willy-nilly causing more fatalities, not to mention that their actions are destabilizing Europe.



However high-minded the intentions of these organisations might be, their actions are criminal as most of these migrants are not eligible for being granted asylum and will end up on the streets of Rome or Paris and undermine Europe's stability raising racially motivated social tensions.



Brussels has created particular legislature to protect people traffickers against prosecution. In a dedicated section of an EU resolution entitled On Search and Rescue, the text states that "private ship masters and non-governmental organisations who assist in sea rescues in the Mediterranean Sea should not risk punishment for providing such assistance."²⁾

During the two months of our observation, we have monitored at least 39 000 Africans illegally smuggled into Italy, which was done with the full consent of the Italian and European authorities.

More information:

In October we discovered that four NGOs picked up people in Libyan territorial waters. We have proof that these smugglers communicated their action in advance with the Italian authorities. Ten hours before the immigrants left Libya, the Italian coast guard directed the NGOs to the "rescue" spot: Full account ["Caught in the act: NGOs deal in migrant smuggling"](#)



The MOAS organisation has close links with the famous US military contractor “Blackwater”, the US army and the Maltese navy. Full account: [“The Americans from MOAS ferry migrants to Europe”](#)
 There is a full account about the ships involved: [“NGOs Armada operating off the coast of Libya”](#) and how people are encourage to come to Europe: [“Death road to Europe promoted on the web”](#)

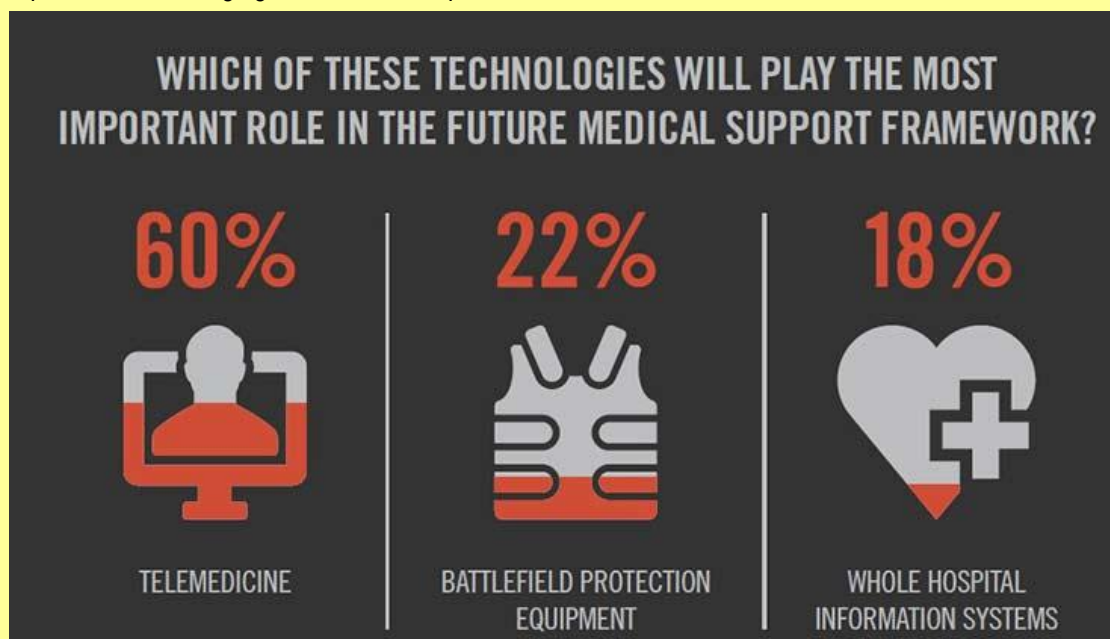
EDITOR’S COMMENT: With the modern surveillance technology available we can track these boats on their way towards Libya. Sunk a few of them when empty of human souls and see if this will put an end on trafficking.

Survey of medical support personnel finds lack of dialogue between militaries and civilian organisations

Source: https://www.crisis-response.com/events/event_article.php?article=107

Mar 30 – Industry survey results released reveals that 50 per cent feel there is a lack of dialogue between militaries and civilian organisations in the delivery of medical support

Defence IQ recently commissioned a wide-reaching survey of medical support personnel examining the state of today’s medical support operations. The findings have been condensed into an infographic that represents the changing face of crisis response.



Some key findings of the survey include:

- Extended field care and Medevac capability are equally crucial to delivering more effective medical support
- Disease outbreak poses the greatest challenges for humanitarian medical support operations
- Only 11 per cent of those surveyed felt that medical support operations are able to deploy quickly enough
- 60 per cent felt that telemedicine will be the most important emerging technology within the future medical support framework
- Respondents anticipate that the largest share of their medical support budget will be spent on training over the next 36 months
- 50 per cent feel there is a lack of dialogue between militaries and civilian organisations in the delivery of medical support
- View the full infographic [here](#)



All these challenges will be discussed at this year's Medical Support Conference, which is taking place in London between April 25-26, 2017. Organised with the official support of the UK MoD's Defence Medical Services, the conference will feature high-level strategic discussions on future threats to health, while case studies from US Airforce, NATO, ICRC, and German Red Cross will detail current attempts to improve both capability and interoperability. Innovations in clinical delivery, including telemedicine, will be crucial to a forum that recognises the need for rapid, cost-efficient and targeted medical care.

Machine Learning Based Translation Solution for Military Forces Abroad

Source: http://i-hls.com/archives/75890?mc_cid=46e9cf1ca2&mc_eid=521c0e089a

Apr 06 – A new digital system will supply translation services to US military expeditionary forces around the world. The US military recently revealed the Machine Foreign Language Translation System (MFLTS) system to 700 users. According to c4isrnet.com, commanders are planning this summer to deploy the software across the Project Manager Distributed Common Ground System.

Mike Doney, the product manager for MFLTS, explained that given the Army's expanding expeditionary role, "there is no way to train a sufficient number of linguists in so many relatively uncommon and obscure languages. So we're trying to augment the current two-legged capability with a modest level of capability to as many soldiers as possible."



The system combines voice recognition and a speech synthesizer to enable rapid translation. The new version will incorporate the ability to translate scanned text. Presently, the software can accommodate the two spoken languages most commonly encountered by Army personnel in the field, Iraqi Arabic and Pashto.

Although two users can converse fluently through the system, it wasn't designed to deliver a high level of sophistication. With conversational fluency defined on a zero-to-five scale, human linguists operate at a four, whereas MFLTS works at a one.

That may very often prove sufficient for soldiers' needs, said Tracy Blocker, MFLTS product director lead within Army Training and Doctrine Command's Capability Manager-Biometrics.

"At a checkpoint you can say: 'Do you have any weapons? Get out of the vehicle.' If the foreign language speaker complies with that, we consider that a success. Our currently released product meets those requirements," Blocker said.

"There is a lot of information that needs to get looked at. There are a lot of things intelligence analysts want to use to contribute to situational understanding of the operational environment," Doney said. "These might be papers captured in the field, or electronic documents taken from

web pages or social media. Whatever the source data is, the text to text translator will process that input and put it out in English."

The paper-translation capability has proven an engineering challenge. "The hard task was ingesting the hard copy document through some scanning or photographic process that yields a clear enough image that an optical capability could turn that image into text," Doney said. "We have not yet fully deployed that capability, but we are very close."



The translator relies on machine learning, a sub-discipline within the general field of big data analytics. The development team will be leaning heavily on that capability as it aims to roll out speech and text translation capabilities for more than 60 languages over the next several years. The end goal is a massive online downloadable database, which would enable soldiers to select from a portfolio of language packages, downloading from a web portal as needed.



Nano-UAV – ISR Capabilities Right from Combat Vest Pocket

Source: <http://i-hls.com/archives/75977>

Apr 11 – A new version of a military nano-UAV has been under development. FLIR's Prox Dynamics unit is in the process of developing a new version of its PD-100 Black Hornet nano rotary-wing unmanned aerial vehicle (UAV).



The new **PD-100 Black Hornet 3** will feature a larger air vehicle, weighing as much as 35 g compared to the 18 g all-up weight of the Black Hornet 2. **The new version nano-UAV has the class 0 UAV status which frees it from flight restrictions.** **The complete system fits into a pocket and is airborne within one minute. It requires little training and no pilot experience.**

According to janes.com, the system's primary role is as a soldier-borne close reconnaissance asset will be maintained, with a concept of operations that sees it carried on a combat vest.

Although he was unable to disclose specifics regarding the performance enhancements that will be brought into the new system, Ole Aguirre, director UAS business development for FLIR Systems, said that Prox Dynamics' acquisition by FLIR enables the air vehicle design to take advantage of a wider range of payloads and technologies – those already developed by FLIR and bespoke systems.

At present, Black Hornet 3 is slated to feature day/night video, a metadata and snapshot function, an advanced GPS-based autopilot, and functionality in GPS-denied environments.

The system will participate in the US Army's Maneuver Battle Lab's Army Expeditionary Warrior Experiment (AEWE) 2018 event, where it will take part in the live fire and force-on-force sections.

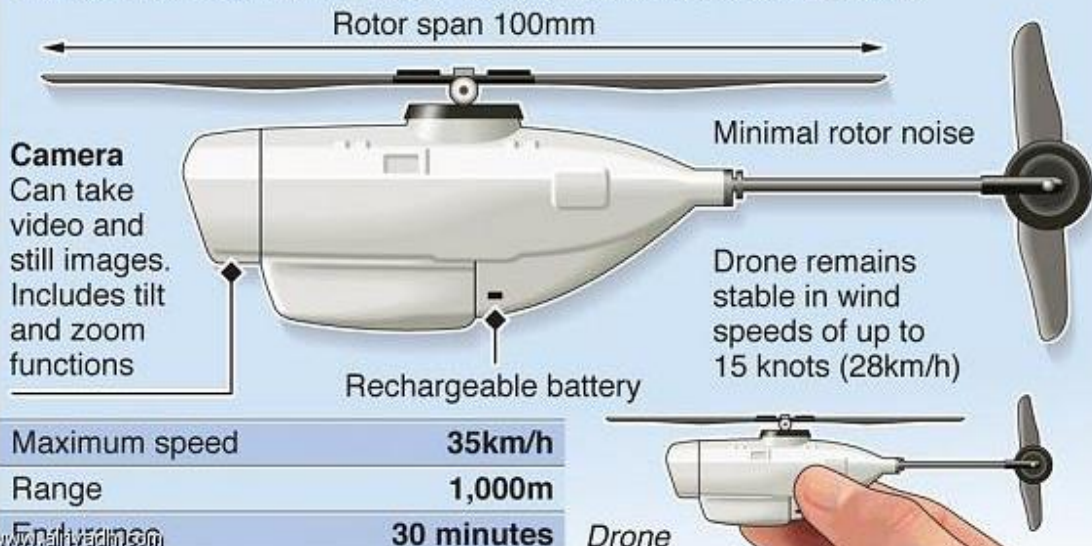
PD-100 systems have been sold to operators in 23 countries, Aguirre said.



UK sends mini helicopter drones to war zone

British soldiers in Afghanistan are using tiny spy helicopters to get a bird's-eye view of the battlefield. The Norwegian-designed *Black Hornet* is the world's first operational nanotechnology drone system

PD-100 BLACK HORNET PRS (Personal Reconnaissance System)



According to Prox Dynamics' website, the PD-100 has been the first airborne and commercially available Personal Reconnaissance System. It provides end users with a highly mobile sensor system providing an immediate Intelligence, Surveillance and Reconnaissance capability.

The series missions include search and rescue, reconnaissance in confined areas, look behind, between and below obstacles, bird's eye view for situational awareness, object identification, proximity surveillance, crowd control, nuclear installations inspections, and check of chemical plants after incidents and accidents.

Are refugees more criminal than the average German citizen?

Source: <http://www.dw.com/en/are-refugees-more-criminal-than-the-average-german-citizen/a-38371284>

Apr 11 – Nearly 1.2 million people have applied for asylum in Germany in the last two years. As the country struggles to integrate the newcomers, it faces another daunting task: tackling crimes committed by refugees.



Last weekend, an asylum seeker from Uzbekistan drove a truck into a department store in the Swedish capital of Stockholm, killing several people and injuring many others. A week ago in Bonn, the former capital of West Germany, an asylum seeker from Ghana raped a 23-year-old woman who was camping with her boyfriend.

The incidents, along with the mass sexual assaults

in Cologne in December 2016, have raised suspicions among people that the rising number of refugees has resulted in an increase in the incidences of crime in Germany. But how true is this notion?

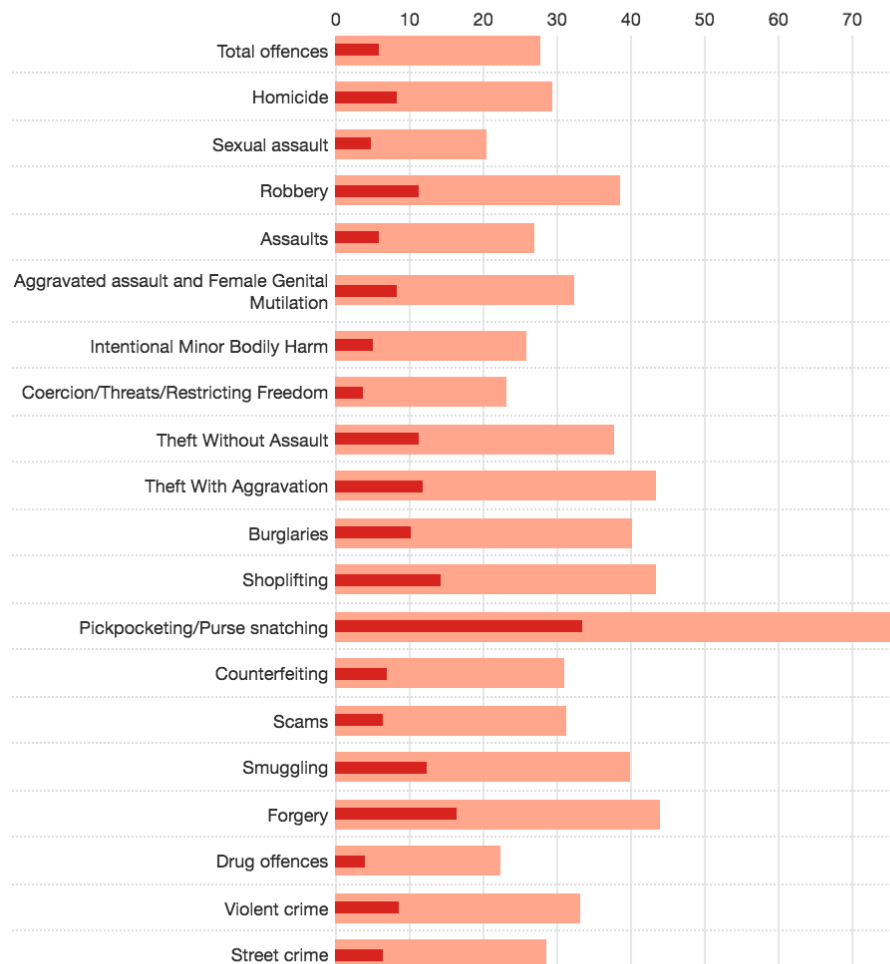


Crimes by refugees increasing

In its latest report on crime and migration, the Federal Criminal Police Office (BKA) defines an immigrant ("Zuwanderer") as a person who has

But it would still be difficult to make a direct correlation between refugees and the increase in criminal incidents, according to Christian Pfeiffer, criminologist and former justice minister

A Chart To Show % Of Crime Committed By 'Non Germans' And Illegal Migrants or Asylum Seekers



Source: [Breitbart London](#) [Get the data](#)

Created with [Datawrapper](#)

of the state of Lower Saxony. The behavior of refugees often depends on their chances of being allowed to stay, making some groups more prone to criminal activity than others. "There are, for example, the North Africans, who, soon after they reach Germany, learn that they don't have any chance of staying here. They are then frustrated and angry and behave like we witnessed in New Year's Eve in Cologne [December 2015]," Pfeiffer says. These people are also under pressure to stay in Germany and make money by working illegally or becoming criminals, he adds.

The real reason for rising crime

According to Pfeiffer, studies show that Syrian and Iraqi refugees tend to commit fewer crimes because they don't want to spoil their chances of obtaining legal permission to stay in Germany. A rejected asylum application consequently means no access to language or integration

a status as an asylum seeker; a protected person; a person who has been granted asylum; a person part of a refugee contingent or a victim of civil war; or people who are illegal ("unerlaubt").

According to the BKA, nearly 300,000 cases were registered in 2016 in which at least one immigrant was arrested on suspicion of committing a crime. Although the total number of incidents decreased in 2016, there was a clear increase in the number of crimes committed by refugees.

courses. "Thus, there is a kind of a class-based society that emerges among refugees - ones who have good prospects and those who don't," Pfeiffer explains.

Finally, even those who have a good chance of staying often get involved in criminal activities if they are forced to live with many people in temporary shelters and sometimes even with communities that they are in conflict with in their home countries, he adds.



In 2010, nearly 70 percent of the population in Germany consisted of people who were over the age of 30. A majority the refugees who came to Germany in 2015 were between 14 and 30 years of age - for Pfeiffer, the main group responsible for a majority of crimes committed anywhere.

"A small group is in every part of the world extremely dangerous - young men between 14 and 30. They commit 70 percent of most criminal activities. This group of males makes up for 37 percent of all refugees," making the crime rate among immigrants much higher, Pfeiffer says. "This explains why 100 Germans will have a lower crime rate compared to 100 refugees, because among Germans, the people are older and there are more women, he explains." This age group is also the reason why more sexual assaults are being reported, Pfeiffer adds.

Foreigners and natives

But could the connection between refugees and a rise in crime lead to a kind of racial profiling of refugees and of immigrants in general? A similar discussion cropped up earlier this year when Cologne police reported hundreds of North African men behaving in an aggressive manner at the city's central station. A year ago, on New

Year's Eve 2015, hundreds of women were sexually assaulted and robbed by immigrant men, believed to be of North African origin.

For Pfeiffer however, racial profiling is out of the question since that is not the intention. "The police need to deal with these suspects and naturally register the fact that they belong to these groups of people who are experiencing a severe crisis ... There is no racial profiling taking place," Pfeiffer says.

For him, the facts speak for themselves. "Refugees are not meaner people, but they are differently placed in the [social] structure. Police statistics only show what people have reported; very little comes from the police's own observations," he adds.

However, one needs to take into account the fact that the number of complaints against foreigners is always higher than complaints against people of one's own ethnicity.

"If Max is assaulted by Moritz, then the chances of registering a police report are 19 percent," says Pfeiffer, using two ethnic German names as an example. But if Max is assaulted by Mehmet - a typical name for a Turkish man - the chances of reporting the crime go up to 29 percent, he concludes.

United States' first female Muslim judge found dead in Hudson River

Source: <http://www.cnn.com/2017/04/13/first-female-muslim-american-judge-found-dead-hudson-river.html>

Apr 13 – A groundbreaking black jurist who became the first Muslim woman to serve as a U.S. judge was found dead in New York's Hudson River on Wednesday, police said.



Sheila Abdus-Salaam, a 65-year-old associate judge of New York's highest court, was found floating off Manhattan's west side at about 1:45 p.m. EDT (1545 GMT), a police spokesman said.

Police pulled Abdus-Salaam's fully clothed body from the water and she was pronounced dead at the scene. Her family identified her and an autopsy would determine the cause of death, the spokesman said.

Abdus-Salaam, a native of

Washington, D.C., became the first African-American woman appointed to the Court of Appeals when Democratic Governor Mario Cuomo named her to the state's high court in 2013.



"Justice Sheila Abdus-Salaam was a trailblazing jurist whose life in public service was in pursuit of a more fair and more just New York for all," Cuomo said in a statement.

The Princeton Encyclopedia of American Political History said Abdus-Salaam was the first female Muslim to serve as a U.S. judge.

Citing unidentified sources, the New York Post reported that Abdus-Salaam had been reported missing from her New York home earlier on Wednesday. Attempts to reach her family were unsuccessful.

A graduate of Barnard College and Columbia Law School, Abdus-Salaam started her law career with East Brooklyn Legal Services and served as a New York state assistant attorney general, according to the Court of Appeals website.

She held a series of judicial posts after being elected to a New York City judgeship in 1991.

In the hours after her body was found, the police said they were treating her death as a suicide. The judge, 65, had recently told friends and a doctor that she was suffering from stress. And tragedy had followed her closely: On Easter in 2012, her mother committed suicide at age 92, according to two law enforcement officials. Two years later, around the same holiday, her brother shot himself to death, the officials said. Judge Abdus-Salaam was a cancer survivor, two officials said, but was not currently under treatment. She had visited her doctor on Monday, one official said, and told the physician that she had been "stressed with the demands of work" and "not spending enough time with her husband."

Many related articles described Abdus-Salaam as the nation's first female Muslim judge but it appears that she never converted to Islam (according to NBC News).

History we are not aware of...

The Korean Thermopylae

Source: http://greekodyssey.typepad.com/my_greek_odyssey/2007/09/outpost.html

The Korean War is often referred to as "The Forgotten War." If it is, then certainly the exploits of the Greek Forces who fought there is a forgotten chapter in that war. One particular battle, the defense of



Outpost Harry, earned Company "P" of the Greek Battalion the Presidential Unit Citation (PUC). Outpost Harry was located in what was commonly referred to as the "Iron Triangle" in Korea. This was an area approximately 60 miles north of Seoul and was the most direct route to the South Korean capital. Outpost Harry's elevation was around 1280 feet high and positioned some 320 yards south of a larger landmass occupied by the

CCF (Chinese Communist Forces) called "Star Hill" and some 425 yards northeast of United Nations positions.

The outpost commanded an excellent view of the enemy positions as well as our own lines of defense. The elevation of the outpost was greater than any other friendly position within a mile. Since the Chinese did not have aerial observation, Outpost Harry was a strategic



"military Hot Spot" and dearly desired by the Chinese. Its defense and preservation was viewed as critical because it blocked Chinese Communist Forces observation down the Kumwha Valley and shielded that portion of the Main Line of Resistance (MLR) from enemy direct fire. If the UN forces lost the outpost, the U.S. Eighth Army would have had to withdraw approximately 10 kilometers to the next defensible line, as shown in the photo at right. Furthermore, a CCF victory at Outpost Harry would have whet the appetite for more war and dishearten the American public to a point where it might accept an armistice term less favorable than was eventually the case.

For those not familiar with the significance of a unit award like the PUC here is some background. The Presidential Unit Citation is awarded to units of the Armed Forces of the United States and co-belligerent nations for extraordinary heroism in action against an armed enemy occurring on or after 7 December 1941. The unit must display such gallantry, determination, and esprit de corps in accomplishing its mission under extremely difficult and hazardous conditions as to set it apart and above other units participating in the same campaign. The degree of heroism required is the same as that which would warrant award of a Distinguished Service Cross (second highest award for valor awarded to an individual American soldier). Extended periods of combat duty or participation in a large number of operational missions, either ground or air is not sufficient. This award will normally be earned by units that have participated in single or successive actions covering relatively brief time spans. It is not reasonable to presume that entire units can sustain Distinguished Service Cross performance for extended time periods except under the most unusual circumstances. Only on rare occasions will a unit larger than battalion qualify for award of this decoration.



DEPARTMENT OF THE ARMY Washington D. C., 10 March 1955

GENERAL ORDERS 18

Company P, Greek Expeditionary Forces Battalion is cited for extraordinary heroism and outstanding performance of duty in action against an armed enemy in the vicinity of Surang-Ni, Korea during the period 17 June to 18 June 1953. Assigned the defense of a vital outpost position (Harry), the company encountered a major enemy assault on the evening of June 17. After an intense concentration of enemy mortar and artillery





fire, the hostile forces, which had taken up an attack position on the northeast and northwest side of the outpost, moved rapidly through their own and friendly artillery fire to gain a foothold on the northern slope of the position. Refusing to withdraw, Company P closed in and met the attackers in a furious hand to hand struggle in which many of the enemy were driven off. The aggressors regrouped, quickly attacked a second time, and again gained the friendly trenches. Immediately, the Greek Forces launched a series of counterattacks, simultaneously dispatching a diversionary force to the east of the outpost which successfully channeled the enemy thrusts. After 2 hours of close in fighting, the aggressors were again routed and the friendly positions restored. The outstanding conduct and exemplary courage exhibited by members of Company P, Greek Expeditionary Forces Battalion, reflects great credit on themselves and are in keeping with the finest traditions of the military service and the Kingdom of Greece.



The following is a video originally shown on Greek television describing the events at Outpost Harry by some of the Greek survivors that fought there. It is from a five part documentary available at YouTube which covers the entire history of the Greek contribution to the UN effort in Korea. For more information including first hand accounts visit the Outpost Harry Survivor's Association [here](#).

A reunion was held in Crete in November of 2006 and is described in the Association's newsletter [here](#). A documentary film is currently in production by Director-producer **Christos Epperson** and writer-producer **Michael Epperson** dedicated to telling this inspirational story, through interviews with its American and Greek veterans and dramatic re-enactments



of key events of the battle. The project was inspired by executive producer **Mike Pagomenos**, whose father George, an Outpost Harry survivor, recently published his Korean War journal in the Greek language. It follows in the wake of critical acclaim for the Epperson brothers' recent World War II documentary, [The 11th Day](#). More information is available at the Outpost Harry Project website [here](#).

Why is the Dept. of Education Promoting Islam to School Kids?

By Dan Miller

Source: <https://clarionproject.org/u-s-dept-of-education-promoting-islam-to-schoolchildren/>

Apr 13 – The U.S. Department of Education has proselytized in our public schools on behalf Islam for many years through its **“Access Islam” program**. Federally funded, it is directed at children in grades 5 through 12. The [Christian Action Network](#) recently demanded that President Trump's recently confirmed Education Secretary, Betsy DeVos, terminate the program.

According to an article at [Breitbart](#), a predecessor program began during the Bush administration in 2005.

It “simply taught students about the traditions, culture, and holidays of Islam. Then, it became greatly expanded under the Obama administration. It has continued to develop, and now has had a greater, broader outreach.”

According to the linked Breitbart article, “Access Islam” is not only funded by DOE. It is also “being promoted on various websites,” Martin Mawyer, president and founder of CAN, told Breitbart News. [“PBS Learning Media](#) is one of the websites that is promoting it. The Smithsonian also promotes it, the Indiana Department of Education promotes it, and even the United Nations promotes it.”

The video (watch at source's URL), features prominently a Christian convert to Islam, who declares emotionally how he has found the true religion without any “intermediaries.”

The United States Department of Education has developed an Islamic indoctrination program for public schools called, “Access Islam.”

The lesson plans are written for grades 5 through 12. They include worksheets and videos to help students perform the 5 Pillars of Islam – prayer, fasting, alms giving, pilgrimage to Mecca and the proclamation of Muslim faith. [emphasis added].

This short video (watch at source's URL), contains excerpted clips taken from the “Access Islam” program which not only teaches children how to perform a Muslim prayer, but asks students such questions as: “What does a Muslim prayer sound like?” “What do the movements look like?” and “What are some of the things Muslims say during prayer?”

Children are also expected to memorize verses from the [Quran](#) and give the meaning of those verses.

Taken as a whole, the U.S. Department of Education's “Access Islam” program is nothing short of a Sunday school class on Islam.

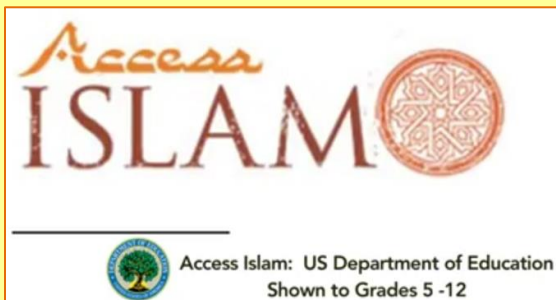
DOE provides no even remotely comparable promotion of any other religion. Nor should it, because for any federal (or for that matter state) agency to do so is inconsistent with the First Amendment to the U.S. Constitution.

Watch a video of an interview by Tucker Carlson of Fox News with the founder of the Christian Action Network on the DOE program:

Will any of the many major “civil rights” organizations with which America is “blessed” take legal action against state entities which use Access Islam? They have been quite active in opposing even the display of Nativity scenes and the Ten Commandments on public property.

When will Betsy DeVos, President Trump's recently confirmed Secretary of Education, repudiate the “Access Islam” promotion and insist that all video and other presentations of related materials it provided be returned? The DOE apparently remains a big swamp, very much in need of draining.

Dan Miller is a retired lawyer.



Underneath THIS tiny hut lies the 'Noah's Ark' for world's food supply: Vault deep beneath the coldest city on the planet to become home to massive stockpile of seeds and plants

Source: <http://www.dailymail.co.uk/news/article-2857114/Underneath-tiny-hut-lies-Noah-s-Ark-world-s-food-supply-Vault-deep-beneath-coldest-city-planet-home-massive-stockpile-seeds-plants.html>

December 2014 – In Siberia, there is an inconspicuous wooden hut that doesn't warrant a second glance. But this unremarkable building will be the entrance to a vault that could one day save the human race.



A storage facility dubbed the 'Noah's Ark' for



seeds' that will safeguard the planet's food supply and rare plants against Doomsday is about to be constructed underneath it.

The pioneering facility will use the natural cold of Siberia's thick permafrost to preserve samples for up to 100 years.

Being built at a cost of 227 million roubles (£3.2million), at least 1.5million seeds - from plants, vegetables, cereals and other food sources - will be housed in the special cryostorage unit in Yakutsk, the coldest city on the planet.

It will enable scientists to protect many of the world's important foods and endangered plant

life against climate change, war, and disaster, reported *The Siberian Times*.

In 2008 a similar vault was created in Norway, but the new facility in northern Siberia is the only one of its kind that solely uses the unique natural permafrost cooling system.

There is already a small unit containing 100,000 samples on the site, in the Sakha Republic, but



a new purpose-built extension will turn it into the largest anywhere on the planet.



Georgy Kuzmin, lead researcher of the Permafrost Institute - part of the Siberian Branch of the Russian Academy of Sciences - said: 'The project does not use any machinery or electricity or gas. 'It only uses natural cold and, respectively, the operating costs are minimal.'



The first part of the cryostorage facility in Yakutsk was opened in December 2012, some 35 years after Soviet scientists began an

were added to the vault along with some endemic, rare and endangered plant species. By the time the new facility opened in 2012,



experiment in a mine at the Permafrost Institute. At a depth of 12 metres they began the long-term storage of seeds from legumes at a temperature of about -7C using just the natural cold from permafrost.

there were 11,000 samples and there is now currently space for about 100,000 seeds from around Russia.

The unique building does not use any fans or pumps to keep the temperature under the ground cool and instead simply relies on the natural cold air.

The new phase will be able to accommodate 1.5million seed samples, and will be filled with collections from Russia and the rest of the world.

Scientists aim to preserve many of the most endangered species of plants as well as keep a stockpile of common seeds for up to 100 years that they won't need to replant.

They will be placed inside special sealed glass containers, with the freezing temperatures outside preserving them in a giant natural refrigerator.

There is a similar storage laboratory in Svalbard, in Norway, but it relies upon artificial cooling



Scientists were able to prove that seeds can be stored at that temperature, rather than colder, without losing any of their germinating capacity. Later, about 1,000 seeds from crops common in the Sakha Republic, also known as Yakutia,



measures as well as permafrost to lower temperatures to -18 degrees Celsius.

This, according to scientists in Siberia, makes it less safe because of the dangers of a power outage posing a risk to the ability to keep the facility cool.

Global warming may also raise the temperatures of the Norwegian ice fields and melt the permafrost, something that is not possible in the Sakha Republic.

Nikolai Goncharov, from the Institute of Cytology and Genetics in Novosibirsk, said: **"When**

global temperatures get warmer by five degrees, the glaciers on Svalbard will melt.

'To melt the permafrost in Yakutia temperatures need to rise by about 20 degrees.

'So we have quite a unique situation in which the permafrost can create storage in natural conditions that will keep the desired temperature.

'It is an eternal, and environmentally-friendly, system that cannot be affected by any disasters.'



EDITOR'S COMMENT: Could this be a target as well? The article provides the location and photos of the ground buildings. I am sure that there are hidden security measures other than the home fence but those with evil minds might find gaps in security. Same with the Norwegian Svalbard seed bank, some things have to be kept out of publicity. Terrorists have proved that are not stupid and vivid evil imagination is their greatest weapon.

Why Are Soccer Hooligans Wearing Niqabs?

Source: <https://clarionproject.org/why-are-soccer-hooligans-wearing-niqabs/>



Apr 06 – Soccer hooligans in Sweden have taken to [wearing niqabs](#), face veils mandated for women in some Islamist societies, to avoid detection from police, reported news website *Heat Street*.

Since fans were recently banned from wearing masks at games by the government, soccer fans have found a loophole that allows for the wearing of religious dress.

Pictures from a weekend game show fans with *niqabs* waving a banner mocking the new law saying, "Thanks for the loophole."

The law was intended to stop violence between fans from rival teams, which escalated last year when a fan wearing a mask charged the pitch and attacked a rival goalkeeper.





From guns that shoot around corners to mini spy-drones: The James Bond-style gadgets that are REAL that Q never dreamt of

Source: <http://www.dailymail.co.uk/sciencetech/article-4412712/The-real-life-gadgets-James-Bond-s-Q-never-dreamt-of.html>

- James Bond had an inventor named Q to create all his futuristic gadgets
- Real world researchers have been able to replicate a few of the weapons
- Jetpacks and fake fingerprints are just a few of the technologies used today
- Other sci-fi-like weapons are mini-drones, guns that shoot around corners
- Researchers have also revealed they are working on an invisibility cloak



Turkey's Vainglorious Referendum

By Daniel Pipes

[The Wall Street Journal](#)

Source: <http://www.meforum.org/6645/turkey-vainglorious-referendum>

Apr 14 – This Sunday (April 16), millions of Turks will vote to endorse or reject constitutional amendments passed in January by Turkey's parliament. An opinion piece published by the German news agency [Deutsche Welle](#) explains that the "crucial" amendments "give all the power to one person, with almost no accountability," eliminating what is left of democracy in Turkey. Virtually all observers agree that if the referendum passes, Turkey will be transformed into an authoritarian state.



[Istanbul has been plastered with signs urging Istanbul residents to vote "evet" \(yes\) on April 16 to constitutional changes proposed by President Recep Tayyip Erdoğan](#)

But I (along with a few [others](#)) disagree. Turkey's President Recep Tayyip Erdoğan years ago arrogated all the powers that the constitutional changes would bestow on him. He is already lord of all he sees for as long as he wants, whether through democratic means or by [fixing election results](#). If the referendum passes, it will merely prettify that reality.

Consider the nature of Mr. Erdoğan's power. The obsequious prime minister, Binali Yıldırım, tirelessly advocates for the constitutional changes that will eliminate his own office, historically the most powerful in the country. Criticism of the all-mighty president can get [even a child](#) thrown into jail. The most tenuous connection to a [\(possibly staged\)](#) coup d'état attempt last July means losing one's job—or worse. The state routinely jails journalists on the bogus charge of terrorism, and truly independent publications are shuttered.

If Mr. Erdoğan has no need for constitutional changes, which amount to a legislative triviality, why then does he obsessively chase them? Perhaps as added insurance against ever being [hailed into court](#) for his illegal actions. Perhaps to assure a handpicked successor the power to continue his program. Perhaps to flatter his vanity.



Whatever the source of Mr. Erdoğan's compulsion, it greatly damages Turkey's standing in the world. When his aides were not permitted to rally Turks living in Germany for the constitutional changes, he accused the Germans of "employing Nazi measures." He also compared the Netherlands to a banana republic after Turkish ministers were prevented from speaking in Rotterdam. This souring of relations has already led to a breakdown in [military ties](#) with Germany.

Implicitly [threatening street attacks](#) on Europeans hardly helped Mr. Erdoğan's international standing, nor did allowing one of his close allies to call for Turkey to develop its own [nuclear weapons](#). More damaging yet, the leader restarted a civil war with the Kurds in July 2015 as a gambit to win support of a nationalist party in parliament, a move that has already had dreadful human consequences.

This insistence on doing things his way fits a [pattern](#). Mr. Erdoğan could have won visa-free travel for Turks traveling to Europe, but he refused a meaningless change to the definition of terrorism in Turkey's criminal code. He harms relations with Washington by making the extradition of Turkish cleric Fethullah Gülen a personal fixation. He potentially disrupts relations with 35 countries by setting his intelligence

agencies to [spy on pro-Gülen Turks](#). Former Trump adviser [Michael Flynn](#) tarnished his reputation by hiding his registering work as a foreign agent representing Turkey.

Erdoğan greets Mahmoud Abbas under an honor guard of costumed Turkic warriors from 16 historical periods



This dictatorial narcissism increases the price of dictatorship by causing Mr. Erdoğan to make unwarranted mistakes. A once cautious and calculating leader now pursues baubles that only

generate enmities. This has [damaged the economic growth](#) that fueled his popularity. Mr. Erdoğan has turned into a self-parody, with his 1,100-room palace and [Ruritanian honor guard](#).

Where will it end? The president has two apparent objectives. First, Mr. Erdoğan seeks to reverse Kemal Atatürk's westernizing reforms to reinstitute the Ottoman Empire's Islamic ways. Second, he wants to elevate himself to the grand, ancient Islamic position of caliph, an especially vivid prospect since Islamic State resurrected this long-moribund position in 2014.

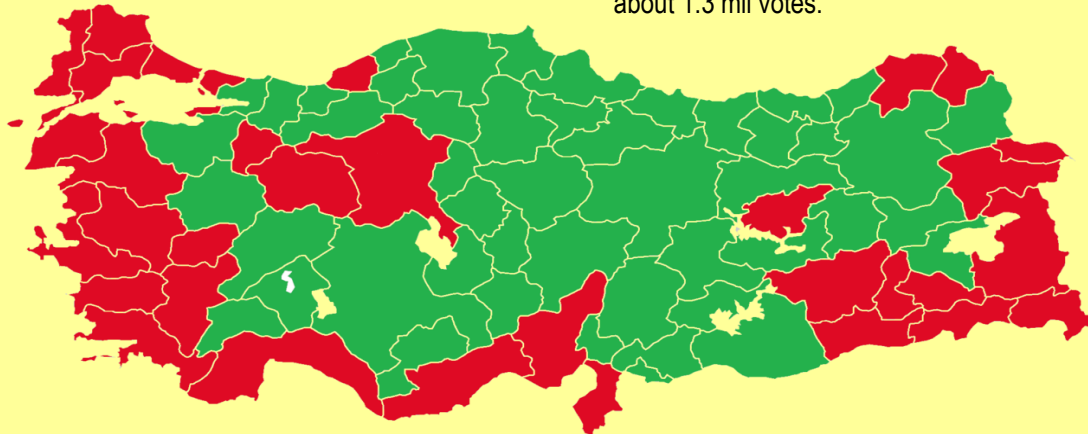
Those two ambitions could meld together exactly one hundred years after Atatürk abolished the caliphate, either on March 10, 2021 (by the Islamic calendar) or March 4, 2024 (by the Christian calendar). Either of these dates offers a perfect occasion for Mr. Erdoğan to undo the handiwork of the secular Atatürk and declare himself caliph of all Muslims.

No one inside Turkey can effectively resist Mr. Erdoğan's enormous ambitions. This leaves him free to continue in his erratic ways, stirring trouble at home and abroad. That is, unless he one day trips, likely over an external crisis. Meantime, Turks and millions of others will pay an increasing price for Erdoğan's vainglorious rule.

Daniel Pipes is president of the Middle East Forum.



UPDATE (on referendum – April 17): YES = 51.41%; NO = 48.59% (99.92% of votes) – difference: about 1.3 mil votes.



■ YES ■ NO

Sharp increase in number of non-criminal undocumented immigrants arrested by ICE

Source: <http://www.homelandsecuritynewswire.com/dr20170418-sharp-increase-in-number-of-noncriminal-undocumented-immigrants-arrested-by-ice>

Apr 18 – The number of immigrants with no criminal records arrested has more than doubled under President Donald Trump.

The *Washington Post* reports that **Immigrations and Customs Enforcement made 21,362 arrests from January to mid-March, which is an increase of roughly one-third compared to 16,104 during the same period last year. The number of non-criminals arrested doubled to 5,441**, suggesting Trump's administration is enforcing immigration laws more aggressively than the previous administration.

"As [Homeland Security] Secretary [John F] Kelly has made clear, ICE will no longer exempt classes or categories of removable aliens from potential enforcement," ICE spokeswoman Jennifer Elzea said in a statement.

"My sense is that ICE is emboldened in a way that I have never seen," Dan Satterberg, the top prosecutor in Washington state's King County, which includes Seattle, told the *Post*. "The federal government, in really just a couple of months, has undone decades of work that we have done to build this trust."

Trump previously issued executive orders putting all undocumented immigrants at risk of deportation, but he [told](#) CBS News' 60 Minutes that he would focus on criminals before deciding what to do with undocumented immigrants who had not committed crimes – immigrants he described as "terrific people." He has also said he would instruct DHS to publish a weekly list of crimes committed by immigrants.

The *Post* notes that since Trump took office, there has been a significant drop in the number of people arrested for crossing the Mexico border into the United States.

Fewer than 12,500 were caught at the southern border in March, which is the lowest monthly figure in at least seventeen years, and the second month in a row border arrests dropped sharply.

The face of Latin American migration is rapidly changing

By Jonathan Hiskey

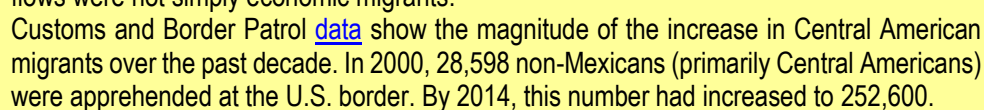
Source: <http://www.homelandsecuritynewswire.com/dr20170418-the-face-of-latin-american-migration-is-rapidly-changing-u-s-policy-isn-t-keeping-up>

Apr 18 – A fundamental shift in U.S. immigration patterns is well underway.

Recent rhetoric from President Donald Trump and the focus of U.S. immigration policies suggest that Mexicans entering the U.S. without authorization are the principal challenge



Second, there is a need to move beyond a view of those arriving at the U.S. southwest border as a monolithic group driven by purely economic motives. An increasingly nuanced decision-making process is driving men, women and children from different countries to leave their homes.



In an effort to understand what is driving this surge, my colleagues and I have carried out research on what leads a person to consider emigrating. In a [broad study](#) of more than twenty Latin American and Caribbean countries, we found that the decision to emigrate is far more nuanced and complex than often portrayed in political rhetoric and mainstream media.

In countries that have longstanding migration flows to the U.S., a person's personal economic situation, gender, age and connection to a network of other migrants all play key roles in whether or not he or she decides to emigrate. But we found that a person's experiences with crime and corruption, perceptions of insecurity and level of satisfaction with democracy were also significant.

We pursued this question in greater detail through analysis of [survey data](#) collected by Vanderbilt University's Latin American Public Opinion Project during the spring and summer of 2014 in El Salvador, Guatemala and Honduras. These three countries have experienced extraordinarily high levels of crime and violence in recent years.

We found that, for the most part, people in Guatemala who wanted to emigrate matched the profile of an economic migrant. In stark contrast, those seeking to emigrate from El Salvador and Honduras were not driven by economic factors, but by violence. The strongest predictor of someone having an "intent to emigrate" among Hondurans and Salvadorans was whether they had been the victim of crime multiple times in the previous twelve months. Standard [economic predictors](#) of emigration were largely insignificant.

For Hondurans, a person that has been the victim of a crime multiple times is nearly twice as likely to have an intention to emigrate. Even more striking, respondents' awareness of the heightened risk of migrating to the U.S. and the greater current probability of being deported compared to previous years had no significant impact on their emigration plans.

My colleagues and I concluded that the Obama administration's, and now the Trump administration's, attempt to "send a message" to Central Americans through an emphasis on detention and deportation may work for those considering emigration for economic reasons. It does not, however, appear to have any impact on those individuals seeking to flee the [warlike levels](#) of violence in Honduras and El Salvador.

Mexican migration in decline

Meanwhile, a widely cited [report](#) from Pew Research Center shows that between 2009 and 2014 the net flow of both authorized and unauthorized Mexican immigrants to the U.S. fell to negative 140,000, in contrast to a positive flow of 2.27 million between 1995 and 2000. Data from the U.S. Custom and Border Protection [on border apprehensions](#) also reveal an unprecedented drop in the number of Mexicans apprehended along the southwest border. In 2016, just over 190,000 were apprehended, compared to 1.6 million in 2000.

These numbers reflect demographic and economic changes in Mexico.

The first change, simply put, is that Mexico's baby boom is over. The boom peaked in the 1960s and 1970s, and that generation has now aged well beyond the typical migrant age range of 18 to 35 years old. The country's total [fertility rate](#) has fallen from a peak of 6.8 children per woman in the 1960s to 2.2 by 2010. This is approaching the minimal population [replacement level](#) of 2.1, the rate required to maintain a stable population. When countries fall below that level, such as Germany at 1.4, immigration is needed to sustain the population level beyond the current generation.

Second, Mexico's economy experienced a fairly robust recovery from the recession in 2009. This was particularly true in several states that historically are among the leaders in terms of the number of individuals migrating to the U.S. The Mexican states of Guanajuato and Jalisco – [ranked](#) third and fourth, respectively, in number of migrants going to the U.S. – recorded [growth rates](#) of 6.4 percent and 4.7 percent in 2015. Such robust economic growth, particularly in the context of a national economic downturn, will only further serve to diminish migrant flows from these states.

What these demographic and economic trends suggest is that a [steady decline](#) in Mexican [migration flows](#) to the U.S. is likely to continue for the foreseeable future.

Jonathan Hiskey is Associate Professor of Political Science and Director of Graduate Studies, Vanderbilt University.



Should Airlines Exempt Physicians From Getting Bumped?

By Robert Lowes

Source: http://www.medscape.com/viewarticle/878496?src=WNL_trdalrt170419_MSCPEDIT_int&uac=82598DG&impID=1330308&faf=1

Apr 11 – Disturbing videos of a **69-year-old physician** getting dragged off an overbooked United Airlines flight, with blood on his face, because he refused to surrender his seat raises obvious questions. Can't airlines handle overbooking without resorting to brute force, or abandon overbooking in the first place? And there's another question: As long as airlines persist in overbooking flights, should they automatically exempt physicians from getting bumped because of their profession?



Ethicists interviewed by *Medscape Medical News* tend to think not, even though they sympathize with the battered passenger, who said he was a physician with patients to see the next day.

"I do think that physicians have pulled rank and there has been a culture of pulling rank on a regular basis, just in the everyday routine of making patients wait, for example," said Linda Emanuel, MD, PhD, a medical ethicist and professor of medicine at Northwestern University in Evanston, Illinois. "None of that is really necessary and it is arrogant."

A blanket exemption for physicians would be unfair to other healthcare professionals such as nurses, and even first-responders such as firefighters, added Nancy Berlinger,

PhD, a research scholar at The Hastings Center, a bioethics think-tank in Garrison, New York. "Maybe you're the only pharmacist in a rural town," said Dr Berlinger. "We all have good reasons, and we tend to think our reasons are really good ones."

Being a physician wasn't a good enough reason, though, for United Airlines when it removed a passenger identified by *Reuters* as David Dao, MD, from United Flight 3411 on April 9 before it took off from Chicago O'Hare International Airport for Louisville, Kentucky. Statements issued by United and the Chicago Department of Aviation (CDA) as well as passenger accounts and videos on social media lay out a startling narrative.

United personnel told seated passengers on the fully boarded flight that they needed four volunteers to turn over their seats to a United flight crew required in Louisville. Despite offers of \$400 and later \$800 in compensation, no one raised their hand. Then United told passengers that the airline would select four passengers for involuntary removal. Dr Dao was one of them. He protested that he needed to see patients the next day. CDA police said he became irate and started yelling to "voice his displeasure."

CDA police were summoned, and one officer pulled a screaming Dr Dao from his window seat. In the process, according to police, Dr Dao fell, his head striking an armrest. As



captured on a smartphone camera, police then dragged him by his feet and on his back down the aisle and out of the plane while other passengers cried, "Oh my God!" Another video showed a dazed-looking and bloody-mouthed Dr Dao returning to the cabin, saying repeatedly "Just kill me," and "I want to go home." Police said he was taken to Lutheran General Hospital with injuries that were not life-threatening. The response by United to the incident quickly evolved.

In an email to employees yesterday obtained by news outlets, United CEO Oscar Munoz expressed regret, but said airline personnel "were left with no choice but to call Chicago aviation security officers to assist in removing the customer," whom he described as "disruptive and belligerent." In a statement issued to the publication *Business Insider*, the airline explained that "one customer refused to leave the aircraft voluntarily."

"We apologize for the overbook situation," the airline said.

Munoz expanded on that sentiment in a news release yesterday. "This is an upsetting event to all of us here at United," he said. "I apologize for having to re-accommodate these customers."

A stronger mea culpa came from the CDA.

"The incident on United Flight 3411 was not in accordance with our standard operating procedure and the actions of the aviation security officer are obviously not condoned by the Department," said the CDA in a statement issued to *Medscape Medical News*. The department said that one of the officers who removed Dr Dao from his seat had been placed on leave yesterday "pending a thorough review of the situation."

Today, United's Munoz turned up his company's apology.

"The truly horrific event that occurred on this flight has elicited many responses from all of us: outrage, anger, disappointment," Munoz said in a news release. "I want to apologize to the customer forcibly removed and to all the customers aboard. No one should ever be mistreated this way."

Days of Preferential Treatment for Physicians "Long Gone"

Overbooking, or selling more tickets to a flight than there are available seats, is designed to ensure full flights and maximum revenue. After all, not everyone who reserves a seat will claim it. Selling the seat twice, as it were, is likely to keep it occupied in that event.

But when every ticket purchaser on an overbooked flight shows up at the gate, the airline has to bump people. In 2016, the nation's 12 biggest airlines bumped roughly 475,000 passengers from overbooked flights, according to the US Department of Transportation. Of these, almost 41,000 were bumped involuntarily at a rate of 0.62 per 10,000 passengers on overbooked flights. United was on the low end of involuntary bumping rate — 0.43 per 10,000. ExpressJet Airlines led the airline industry with 1.51 per 10,000.

The so-called contract of carriage that governs an airline's relationship to a ticketholder gives the airline free rein in bumping passengers. United's contract states that the airline may prioritize passengers for involuntary bumping based on their fare class, itinerary, status in a frequent flier program, and time of check-in for a preassigned seat. The last to be involuntarily bumped — and therefore the most protected — are individuals with disabilities and unaccompanied minors aged under 18 years if losing their seat would create a hardship.

United and some other airlines, such as Southwest, do not mention passenger hardship in general as a factor in selecting someone to remove from an overbooked flight. One airline that does is American, which says in its contract of carriage that it will consider "extreme hardships."

United Airlines did not respond to a request to discuss its passenger bumping policies, or the Dr Dao incident.

Medical ethicists told *Medscape Medical News* that hardship would be a sound reason to exempt physicians from bumping. "There are occasions when physicians are the only ones who can take care of patients who are in great need," said Dr Emanuel, "and under those circumstances I would hope that people would be happy to stand back just as they should be happy to stand back to let an ambulance by in traffic."

A physician scheduled to operate on someone the next day is one example of a legitimate hardship, notes Dr Berlinger. However, ascertaining such facts on the spot before take-off isn't an easy task for airline crew members, she said. "And doctors



themselves would disagree about who in their profession should be exempt." **At the very least, she said, an airline ought to distinguish between physicians in patient care and physicians in administration.**

An airline trip can be critical for someone regardless of their job, said Stuart Youngner, MD, a professor of bioethics and psychiatry at Case Western Reserve University in Cleveland, Ohio. "What about the woman who says, 'My mother is dying. She may not make it until noon. I need to get there,' "

Dr Youngner told *Medscape Medical News* that when he graduated from medical school in 1970, physicians might have received more deferential treatment on an overbooked flight.

"Doctors were treated like gods," he said. "We didn't get speeding tickets. We stepped to the front of the line. We double-parked with an 'MD on call' sign in the car.

"Those days are long gone."

Robert Lowes is a journalist for Medscape Medical News. A former senior editor at Medical Economics magazine and contributor to numerous healthcare publications, Robert has covered medicine from almost every conceivable angle — public policy, managed care, education, ethics, medical malpractice, information technology, billing and collections, waiting-room design, and first-degree murder. His articles have won major awards such as first place in the annual journalism competition of the National Institute for Health Care Management, and several have been republished in books.

EDITOR'S COMMENTS:

(1) I recently experienced the issue of an overbooked flight when travelling from Vienna to Athens. They made the announcement (early next day morning flight + 400 euro compensation) but none responded. When on board, there were empty seats!

(2) I read nothing about airlines' overbooking penalties.

(3) When one is booking a flight there is a date recorded. Why do not choose those who cannot fly by booking date?

(4) Are (late) travelers informed that they might not travel due to overbooking?

(5) Comparison between doctors and nurses is unfortunate. They belong to the same professional group but have different responsibilities and duties.

(6) There is a unique bond between a doctor and a patient and this bond is not easy to be replaced by another doctor. Both private and hospital doctors see patients from all over the country (personal experience as an MD) or the state. If the doctor misses the flight not from his own responsibility, who will compensate the patient that might have to stay in a hotel for a day or more, depending on doctor's appointments?

(7) Doctors are not God but in everyday life they proudly hold the second position. And if you think this statement is arrogant recall the last time that you visited one and you were hanging with agony into his/her lips for your health condition or that of your beloved ones!

(8) Read also: http://www.medscape.com/viewarticle/849853_1



How Well Do You Know the United Nations?

Source: <https://clarionproject.org/how-well-do-you-know-the-united-nations/>

Apr 06 – The United Nations Security Council just saw heated scenes with Russia accused of protecting Syrian regime President Bashar al-Assad from facing justice over a chemical weapons attack that killed nearly 100 civilians, including children, in rebel-held Idlib.

Yet allegations of corruption in the U.N. date back decades.

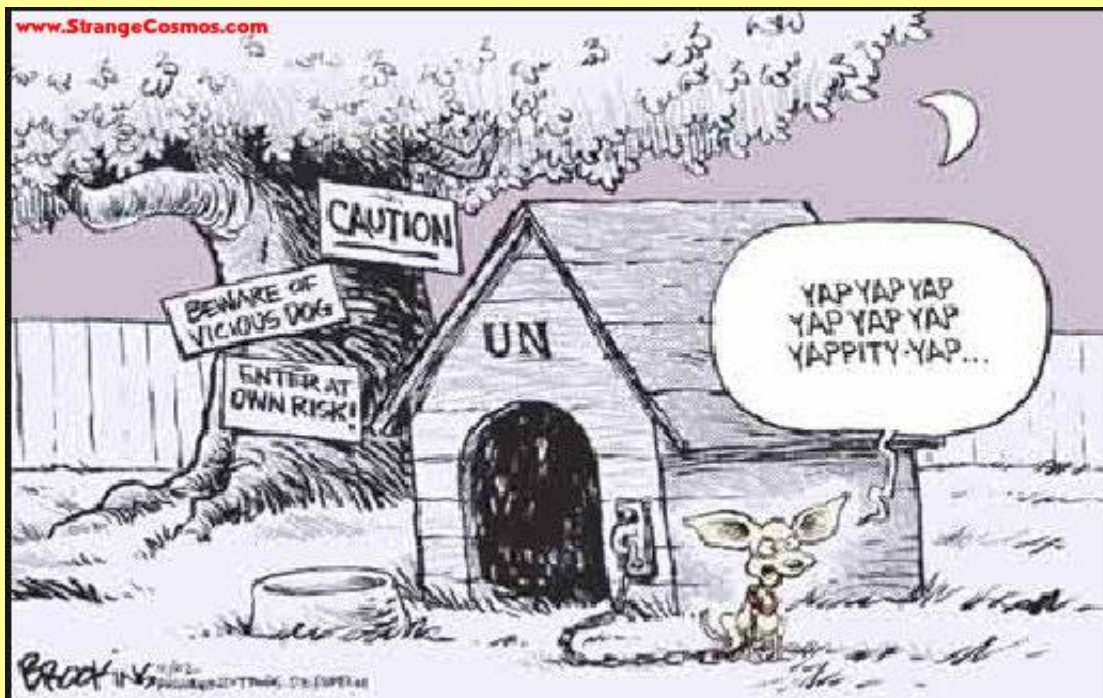
How well do you know the U.N.'s relationship with radical Islam?

Please take our quiz to find out (answers at the bottom of the page).



QUIZ

1. From 2012 to 2015 the 120 member non-aligned movement was headed by which country?
2. Which country, in 2015, was elected chair of the United Nations Human Rights Council panel that appoints independent experts?
3. What is the only country in the world to be a standing item on the U.N. Human Rights Council agenda, leading the UK to slam the body for “disproportionate focus” on that country?
4. Which terrorist organization stored weapons in U.N. schools?
5. In what year did the 57-nation Organization of the Islamic Conference voting bloc drop its longstanding campaign to censure “defamation” against religion in the U.N., instead switching to supporting resolutions targeting “intolerance, discrimination and violence” against religious people rather than the faith itself?
6. In what year did Islamic member states of the U.N. Human Rights Council reject language giving women “the right to control matters concerning their sexual lives as well as their reproductive health without coercion, discrimination or violence” in a resolution calling for the elimination of violence against women.
7. 2001 was the U.N. “Year of Dialogue Among Civilizations.” The President of which country came up with the idea of Dialogue Among Civilizations, and organized the initiative in collaboration with the U.N. and UNESCO?
8. Which United Nations body in 2016 passed a resolution denying the Jewish connection to the Temple Mount, the holiest site in Judaism, instead insisting the area only be referred to using its Muslim names?
9. How much money did Saudi Arabia give to the United Nations Counter-Terrorism Center, which has not investigated Saudi funding of extremism worldwide?
10. What is the name of the draft executive order put together in January 2017 by the Trump administration which would reduce the funding of any organizations within the U.N. which “is controlled or substantially influenced by any state that sponsors terrorism” by “at least 40%.”



Answers

1. [Iran](#)
2. [Saudi Arabia](#)
3. [Israel](#) is Agenda Item Seven at every [U.N. Human Rights Council Meeting](#).



4. Hamas stored rockets in schools run by the [UN Relief and Works Agency](#) in the Gaza strip.
5. [2011](#)
6. [2013](#)
7. [President Mohammed Khatami of the Islamic Republic of Iran](#)
8. [United Nations Educational, Scientific and Cultural Organization \(UNESCO\)](#).
9. In 2008 they pledged \$10 million, followed by a gift of [\\$100 million](#) to establish the center in partnership with the US in 2014.
10. The "[Auditing and Reducing U.S. Funding of International Organizations](#)" order

Abu Dhabi is the safest city on the planet with lowest crime rate

Source: <http://www.thenational.ae/uae/abu-dhabi-is-the-safest-city-on-the-planet-with-lowest-crime-rate-numbeocom>

Apr 21 – The capital is the safest city in the world, according to an online crime index. Compiled by [Numbeo.com](#), a database of user-contributed information, the **Crime Index Rate puts the capital in 288th place of 288 cities in terms of crime, meaning it is the safest city**

"Whether you are deep in deserts or the ocean, you feel safe. Even if you leave your family alone here and you travel somewhere, you feel they are very safe here. The Government invests in security for all."

The worst three cities for crime were all in

Select Region:

Africa

America

Asia

Europe

Oceania

Search:

Rank	Country	Crime Index	Safety Index
1	Venezuela	85.28	14.72
2	Papua New Guinea	82.38	17.62
3	Honduras	78.34	21.66
4	South Sudan	78.18	21.82
5	South Africa	75.72	24.28
121	United Arab Emirates	20.66	79.34
122	Austria	19.25	80.75
123	Taiwan	17.24	82.76
124	Singapore	16.58	83.42
125	Qatar	15.70	84.30

Showing 1 to 125 of 125 entries

on the planet. Dubai is in 279th place.

The finding is supported by the people who live in Abu Dhabi, who said that safety is one of the capital's biggest selling points.

"We don't deny that there is no crime – there is – and every society in the world faces it but the number of crimes is the lowest here," said Emirati Salem Al Qubaisi.

Central or South America, with Fortaleza in Brazil topping the list, followed by San Pedro Sula in Honduras, and Caracas, Venezuela.

"I appreciate the attentiveness of police and care for all the community," said Abu Dhabi resident Shankar Chauhan, from India.



284	Basel, Switzerland	16.70	83.30
285	Taipei, Taiwan	16.51	83.49
286	Doha, Qatar	16.30	83.70
287	Munich, Germany	16.26	83.74
288	Abu Dhabi, United Arab Emirates	14.29	85.71

Showing 1 to 288 of 288 entries

"If you want to indulge in crime [in Abu Dhabi], security people will stop you because always we are on security radar.

"In Abu Dhabi when we see police, we feel safe but, on the contrary, in India mostly we avoid going to police."

A spokesman for Numbeo said: "We consider crime levels lower than 20 as being very low; crime levels between 20 and 40 as being low; crime levels between 40 and 60 as being moderate; crime levels between 60 and 80 as being high; and finally crime levels higher than 80 as being very high."

Abu Dhabi's Crime Index score was 14.41, while Dubai's was 19.50, so both slip into the very low crime category.

According to statistics on Abu Dhabi Police's website, the number of crimes per 100,000 population in the UAE was 119.8 in 2011, a figure that decreased to 110.2 by 2013 and continued to fall to 90.6 in 2014 and 83.8 in 2015.

Sheikh Saif bin Zayed, Deputy Prime Minister and Minister of Interior, said the figures indicated that the UAE has the lowest level of violent crimes in the world.

German expatriate Sophia, who did not give her last name, said the reason she has lived in the capital for five years is because it is safe.

"I have never been harassed or felt awkward walking the streets here," she said. "Some

people just stare at us when we walk past on the streets, but harmlessly, even though it's awkward. But the rest is fine when you follow the rules."

Although rates are low, the crime that does exist are largely traffic offences, petty theft, scams, cyber crimes, assault, fighting, bounced cheques and wages going unpaid.

Last year, cyber crime cases were on rise. According to a survey by telecommunications company du, two out of five UAE residents have been victims of cyber crime.

Other cases often seen in Abu Dhabi are of sexual harassment, prostitution, drinking or possessing alcohol without a licence and public displays of affection, which are considered a crime in the UAE.

An Arab expatriate living in Abu Dhabi also agreed with the index results. Lebanese Gameel Abdullah said: "Safety is here because of strict rules, implemented equally on all.

"Such strict rules and fear of being deported and losing jobs prevent people from committing crimes."

Sudip Karki, from Nepal, said: "Data about the crime rate in Abu Dhabi is absolutely genuine and it's rarely seen anywhere. A woman can walk alone at midnight and nobody would bother her."

"A woman can walk alone at midnight and nobody would bother her."

EDITOR'S COMMENT: Visit the Numbeo website and click on "Crime" at the main menu. There are some many interesting facts but also many questions on rankings.





"Lab on a glove" could help hunt for deadly nerve agents

Source: <http://newatlas.com/lab-on-a-glove/48545/>

Mar 23 – When a terrorist attack happens, every second counts in terms of response time. A new rubber glove developed by the University of California San Diego (UCSD) and CSIRO Manufacturing in Australia could not only help first-responders detect dangerous nerve agents like sarin and VX, but it could also help ensure a safe food supply.

DNA is part of the chemical group known as organophosphates, but so are powerful insecticides used in farming and nerve agents used in chemical warfare and attacks. The second two categories are what concerned the UCSD researchers, who set out to find a quick, cost-effective and easy way to spot the chemical agents in the field. Working with CSIRO, Australia's largest patent holder, they designed a unique rubber glove.

The glove has highly stretchable sensors printed on the forefinger and a swab printed on the thumb. When an inspector is searching for organophosphate contamination either from a suspected attack or from cross-contamination on food products, he simply uses his thumb to swab the area. The thumb is then brought to the index finger where the sensors use an embedded enzyme to analyze the sample. If it contains the poison, the electrodes carry a signal triggered by a chemical reaction to a Bluetooth transmitter mounted on the glove, which is then beamed to a receiving device, like a smartphone.



Flexible glove biosensor: fabrication, design and performance. (A) Image of the serpentine stencil design employed for printing the glovebased stretchable device. (B) Schematic of (left) the biosensing scan finger (index finger) containing smiling face shape carbon-based counter (CE), working (WE) electrodes and Ag/AgCl-based reference electrode (RE), and (right) collecting thumb finger with its printed carbon pad; scale bar 10 mm. (C) Photographs of the biosensing index finger under 0% (left) and 50% (right) linear stretch; scale bar, 10 mm. (D) On-glove swiping protocol for sampling chemical threat residues from tomato and stainless steel surfaces. (E) On-glove sensing procedure by joining the index (scan) and thumb (collector) fingers to



complete the electrochemical cell. (F, G) Photographs of the wearable glove biosensor, consisting of a sensing finger, containing the immobilized OPH enzyme layer, and the collector/sampling finger. The electrodes are connected via an adjustable ring bandage to the portable potentiostat (attached to the back of hand) for on-site detection with wireless communication to a smartphone for rapid presentation of the voltammetric results. (Inset) Schematic of the interface between potentiostat and glove sensor. The connections consist of a (iii) velcro fabric containing (ii) the aluminum-tape based pins that are adjusted as a ring with the glove sensing connectors and (i) the wiring with the potentiostat.

The glove is disposable, so when handled properly, it can reduce the risk of spreading the dangerous chemicals.

In tests, the glove was able to identify the organophosphate pesticides methyl parathion and methyl paraoxon on a wide range of surfaces including glass, wood and plastic, as well as on produce.

The researchers say that future efforts will focus on shrinking down the electronics with a ring-based device as well as expanding the glove's ability to detect other harmful compounds. Their work appears in a paper published in the journal *ACS Sensors* ([PDF](#)).

New catalyst material quickly neutralizes nerve gas

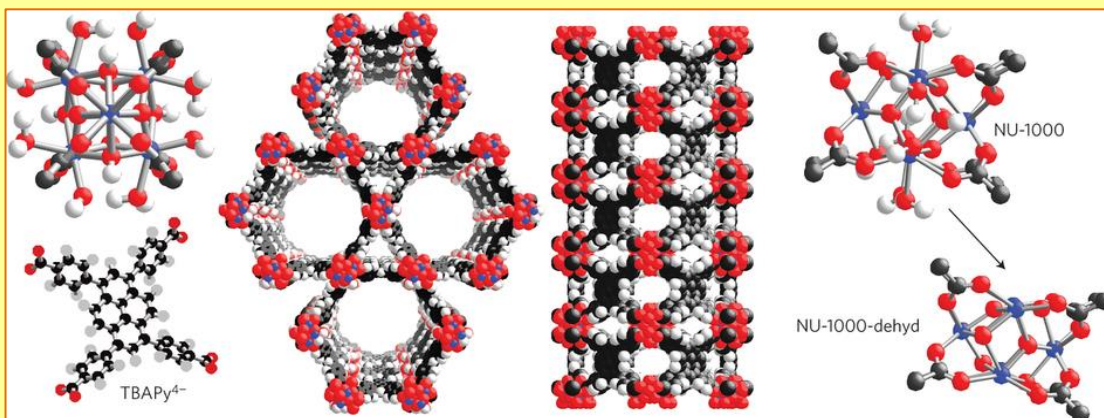
Source: <http://newatlas.com/nu-1000-nerve-gas-material/36576/>

Mar 2015 – While the Iran-Iraq war of 1981-1988 saw the only large-scale use of chemical weapons since WWII, in a world beset by rogue states, civil wars, and terrorism, protecting against nerve agents and disposing of them remains a major problem. One bright spot is a team from Northwestern University, which has developed a new material capable of neutralizing nerve gases. The zirconium-based Metal-Organic Framework (MOF) called NU-1000 is not only useful for disposing of stockpiles of such toxins, but also for use in gas masks and protective suits for soldiers and rescue workers.

by blocking acetylcholinesterase, which disrupts nerve transmissions to the organs.

Be it sarin (GB), VX, Soman (GD), or a host of other agents, the result is a frightening succession of symptoms, often starting with a runny nose and quickly escalating to convulsions and complete respiratory failure unless quickly treated. They are absorbed through the skin as well as inhaled and are so dangerous in such small quantities that whole-body protection suits are needed by soldiers and responders, and disposal of stocks of nerve gas involve burning in complex plasma furnaces.

According to Northwest, **NU-1000** simplifies



Nerve gas is one of the most frightening of chemical weapons. First developed in Germany in 1936, nerve agents, as they are also called, are chemically simple, but extremely deadly. They consist of phosphorus-containing organic chemicals called organophosphates and work

protection and disposal of such agents. The team claims that the material is capable of degrading somar, a more dangerous version of sarin, rendering it harmless in a matter of minutes, and works under a wide



variety of conditions, which makes it suitable for use on the battlefield.

"This designed material is very thermally and chemically robust, and it doesn't care what conditions it is in," says team-leader Omar K. Farha. "The material can be in water or a very humid environment, at a temperature of 130 degrees or minus 15, or in a dust storm. A soldier should not need to worry about under what conditions his protective mask will work. We can put this new catalyst in rugged conditions, and it will work just fine."

NU-1000 was inspired by a natural enzyme, phosphotriesterase, which is produced by certain bacteria and works on the weak points in the nerve agents called phosphonate ester bonds. While the enzyme is effective, natural enzymes tend to be specialized and work in a narrow range of conditions, so the Northwestern team had to develop something in the form of an inorganic catalyst that is more robust and capable of working on a wide range of molecular structures.

In NU-1000, metal-organic frameworks form a porous lattice structure that holds the agents to give the catalyst time to work. In the lattice are zirconium nodes, which form the catalyst. When the nerve agent is trapped in the lattice, it encounters the zirconium, which breaks the phosphate-ester bond in the molecule, changing it from a deadly poison to a harmless chemical in minutes through a process of hydrolysis. This means the reaction needs water to break the bonds, but the team says that humidity in the air is sufficient. Tests with a GD simulant chemical indicates that the lattice is important to the reaction. Using the zirconium alone proved to be much less effective.

According to the team, computer simulations indicate that NU-1000 should also be effective against other agents, such as VX. They are currently working on a broad-spectrum catalyst that can work on a wider variety of nerve agents. The team's results were published in [Nature Materials](#).

Avon Protection showcases HMK150 helmet-respirator



be both violence and toxic gases present.



chemical, fire, ballistic and fragmentation threats, and is used by many police forces.

The HMK150 is a new respirator-helmet from Avon Protection for chemical, biological, radiological and nuclear protection

Avon Protection showcased a new respirator-helmet combination at this week's Counter Terror Expo in London.

The HMK150 provides chemical, biological, radiological and nuclear (CBRN) protection. It is designed for use in situations such as riot control, where there may



Amongst the armored vehicles and bomb disposal units, a piece of headgear might easily have been overlooked, but the HMK150 is an innovative piece of kit. It combines Avon's HM50 face mask with the Schubert P100N helmet.

Schubert is a German manufacturer of safety helmets, described by Avon as "world leading." The company has produced protective helmets for Formula One drivers including Michael Schumacher, Felipe Massa and Fernando Alonso. The P100 range of helmets protects against blunt force, penetration,



The HM50 face mask is available in single or twin port models. The twin port model allows users to switch



between filtered air and an auxiliary source, such as an air canister. The mask is designed for prolonged use with a minimum of heat build-up, breathing resistance or carbon dioxide re-inhalation. It can be put on without having to remove the helmet, so as to maintain head protection at all times. It has a scratch and impact-resistant visor that is optically corrected to ensure judgement is not impaired.

By combining the two products into the HMK150, it has been possible to increase the

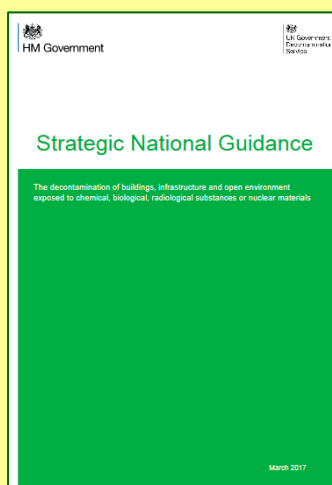
level of potential protection provided. "Its simple rapid donning connects the full face respirator to the helmet to deliver continuous head and respiratory protection," explained John Penton, Avon's sales director for Europe & Asia Pacific.

Avon supplies equipment to organizations including the UK Ministry of Defence, the US Army, Navy, Marines, Air Force and Special Operations Forces.

Strategic National Guidance: The decontamination of buildings, infrastructure and open environment exposed to CBRN materials

Updated: 17 March 2017

Source: https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/600715/SNG_5th_Edition_Final_March_2017.pdf



This guide has been produced for those in the public and private sector responsible for contingency planning. It gives basic information on the decontamination and remediation that may be required following a deliberate or accidental release in the UK as outlined below.

This document was revised and updated in March 2017. All links have been updated and recent changes to the names and structures of organisations have been reflected in the revised document. Various other changes have been made to improve the information provided within the guidance and ensure it is up to date.

An incident, whether deliberate or accidental (Hazmat), involving chemical, biological, radiological or nuclear (CBRN) materials can potentially lead to the loss of life, contamination of the built and open environment, disruption of society and consequential damage to the UK

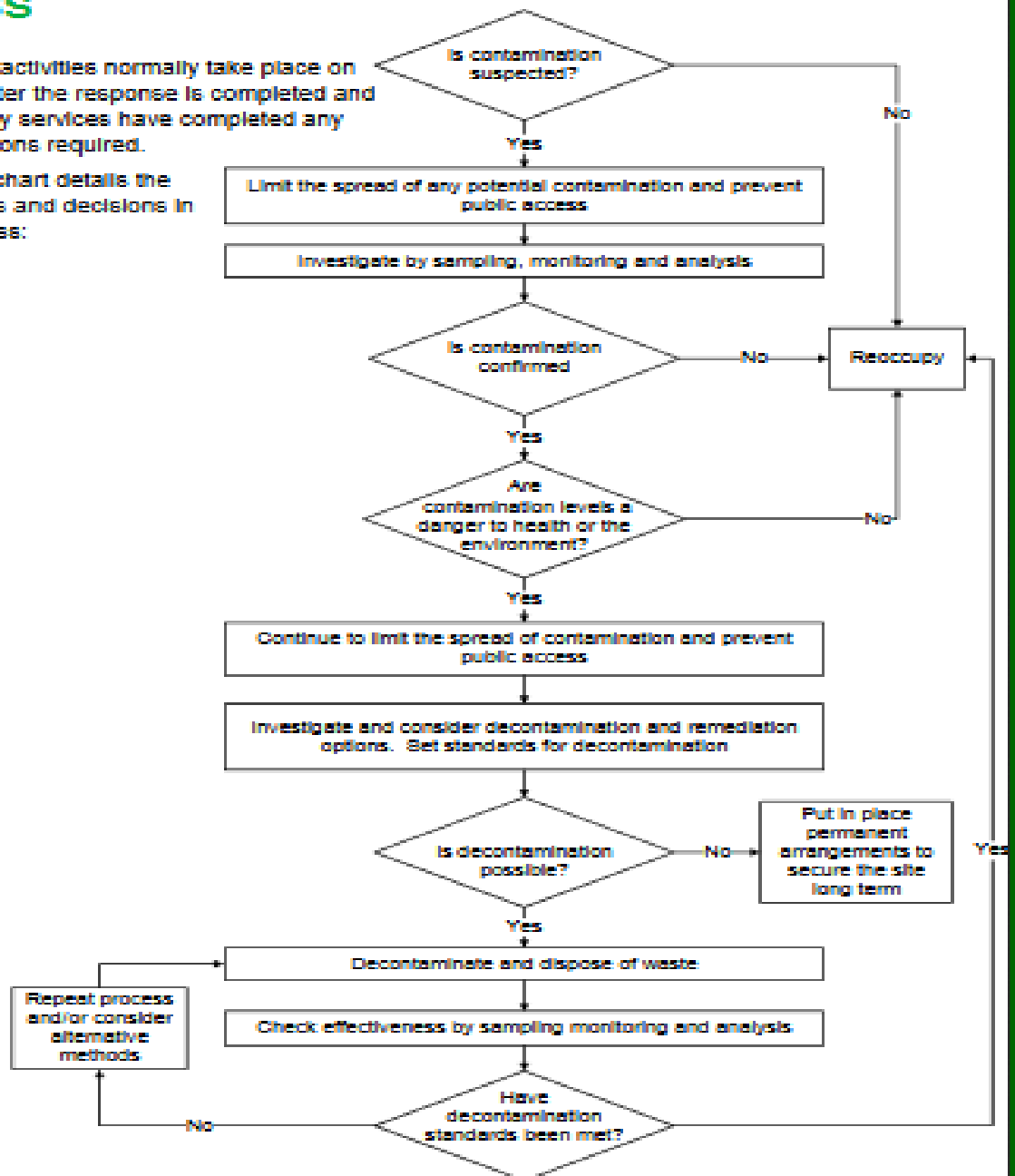


economy. It is therefore important that plans are in place to minimise the effects of such an event, and to plan for recovery following this type of incident.

Appendix D: Outline of decontamination process

D1. Recovery activities normally take place on the site after the response is completed and emergency services have completed any investigations required.

This flow chart details the key stages and decisions in this process:



This guidance covers key elements in the decontamination process following an incident - from developing the initial recovery strategy through to managing waste and returning things to normal. The principal roles and responsibilities of key organisations have been identified and listed, and planning and precautionary measures have been highlighted to promote better preparedness.

In view of the different types of potential incidents, and the variety of buildings, environments and infrastructure that could be affected, the guidance in this document is necessarily



generic. It provides a starting point for the development of more detailed contingency plans to deal with specific incidents. This document also describes the current legal powers available to local authorities in the event of such an incident.

The guidance is part of sensible contingency planning and does not mean that there is an increased risk of terrorist attack using CBRN materials.

GOOD NEWS FIRST RESPONDERS!!!

Period: 2016-2017

Ronaldo: 87,500,000 euro

Messi: 76,500,000 euro

Neymar: 55,500,000 euro

Source: France Football magazine



Hispano Vema sponsor of International CBRNe Institute

Source: <http://www.hispanovema.es/en/hispano-vema-sponsor-of-international-cbrne-institute.aspx>

The [International CBRNe Institute \(ICI\)](#), based in Brussels, Belgium, is considered one of the leading global references in knowledge applied to the management and prevention of chemical, radiological, biological and nuclear threats, incidents and attacks. ICI is a privileged forum to share knowledge and experiences about the protocols and procedures

of action in the detection, protection and decontamination in CBRNe. Providing expertise in training, R&D and testing CBRNE areas.



ICI maintains close relations with major international organizations in the field of Defense, such as NATO, the European Defense Agency (EDA), the Organization for the Prohibition of Chemical



Weapons (OPCW), the International Atomic Energy Agency (IAEA) and the United Nations and its agencies and organizations such as the United Nations Mine Action Service (UNMAS).

The ICI is organized into three main areas: Board of Directors and its Permanent Secretariat, and two ICI Knowledge Centers (CBRN KC Chemical, Biological, Radiological and Nuclear Knowledge Center and EKC Explosives Knowledge Center), and has an international activity that is spread all over the world, based on Seminars, Workshops, Conferences, Training, Academic Research, Publications, etc. serving as a link between the International Institutions, Governments, Emergency Units and military CBRN, Agencies and Industry.

Hispano Vema as a manufacturer of decontamination and collective protection equipment CBRN fully shares ICI Mission "to enhance CBRNe risk mitigation at the regional, national and international levels". In that sense, there is a clear convergence between Mission and Objectives of both ICI and Hispano Vema, so it is natural that Hispano Vema be incorporated as a sponsor to ICI.

In the words of Mr. Jose Navarro (CEO, Hispano Vema) "our desire is to actively collaborate with the International CBRNe Institute to bring all our experience and knowledge in the field of CBRN decontamination and collective protection for the growth and development of CBRN decontamination operational capabilities and competences to minimize and reduce the risks of biological, chemical or radiological attacks, threats or incidents."

HYDROS Mobile watermaker

Source: <http://www.hispanovema.es/en/portable-watermaker-hydros-bq.aspx>

HYDROS sets a new standard on Sustainable Mobile Watermakers for Rapid Deployment.

Thanks to its compact size, light weight, Plug&Play, energy supply alternatives and purification capacity (up to 1.000 liters per hour), HYDROS provides an ultimate solution for increasing demand of Onsite water purification in scenarios for Natural Disasters, Emergencies, Field Operations or any situation where a high and unexpected water supply is required.



Thanks to its filtration technology, HYDROS does not require use of chemical in the purification process, as well as eliminating the rejection of water. That brings a double benefit: an ultimate Sustainable solution for

water purification and a lower Total Cost of Ownership.

 [Technical Sheet](#)

HYDROS watermaker is based on filtration system, using Nanofiltration technology and Ultraviolet Light Sterilization.

With its 5-phase water purification process: Pre-filtration (thinning filter), Microfiltration, Sterilization by ultraviolet light, Active filtration (active carbon filter) and Nanometric filtration (ceramic filtration), obtaining drinking water in a complete range of operations.

Its water purification up to 1.000 liters per hour (without water rejection), brings an optimal capacity of drinking water supply.

Developed using Plug&Play concept, HYDROS is a quick and easy to use watermaker, without need of specialized personnel for operating or maintenance. In order to reinforce its easy to use approach, it can be supplied alternately by four power sources: Solar Power, Mains electricity (110/220 VAC), vehicle batteries (12/24V) and auxiliary internal LiFeO4 battery.



25 March 2017
National Day Military Parade – Athens, Hellas
Joint CBRN Platoon



Toxic Lance Joint Drill

03.20.2017

7th Mobile Public Affairs Detachment



A U.S. Soldier conducts a soil sample from the inside of a U.S. M1135 Nuclear, Biological, Chemical Reconnaissance Vehicle (NBCRV) at Training Center Lest, Slovakia during **Toxic Lance** March 20, 2017. Operation Atlantic Resolve provides to opportunity for U.S. and NATO Allies to make strides by continuously training together and implementing new solutions during combined operations. (U.S. Army photo by Sgt. Justin Geiger, 7th Mobile Public Affairs Detachment)



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ici-belgium.be/en/

Syrian Doctor Killed By Chemical Weapon While Operating On Patient

Source: <http://reliefweb.int/report/syrian-arab-republic/breaking-syrian-doctor-killed-chemical-weapon-while-operating-patient>



Mar 25 – A doctor was killed today by a chemical agent while operating on a patient. A barrel bomb with a chemical agent hit the front entrance of the Latamneh Hospital in Hama and entered causing severe respiratory and neurological injuries to many staff members. The gas attack killed **Dr. Ali Darwish, a specialist orthopedic surgeon**, while he was in the operating room. Dr. Darwish, aware



of the gas that had entered, refused to leave his patient and continued operating until he fell unconscious and succumbed to pulmonary edema. Victims showed symptoms consistent with chemical agents.

All the medical staff in the hospital, in addition to the ambulance staff (drivers and paramedics) were affected by inhaling the gas which spread into the hospital rooms. The hospital was not equipped with a suitable ventilation system, nor was there enough oxygen to deal with the large number of victims having trouble breathing. The affected staff and the patients were evacuated to nearby hospitals. Moderate cases were managed while five cases were so severe that they were referred to a more distant hospital where an ICU was available.



Hama Health Directorate declared that the hospital was completely out of service. This is the fourth hospital to be put out of service in the Hama governorate in the past month due to a heavy aerial bombardment, leaving hundreds of thousands of civilians without access to the health services.

Another hospital in Kafr Nobol, Idlib was attacked multiple times by airstrikes rendering it out of service. No casualties have been reported. The facility provides 1,600 consultations, 176 admissions, 150 major surgeries and 630 trauma cases.

"It is a repulsive act to target the most vulnerable people, patients in a hospital, with chemical weapons. Dr. Darwish is a true hero and we offer our deepest condolences to his family. His



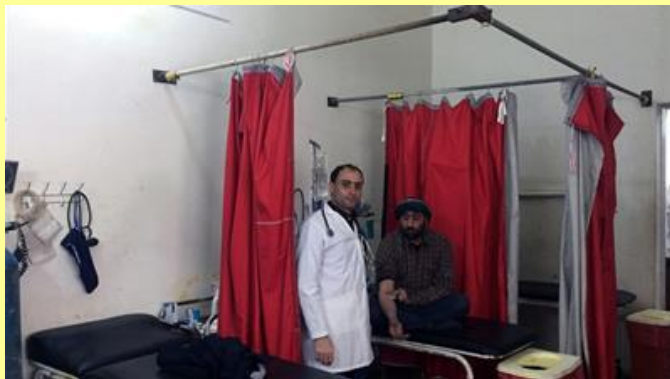
courage and commitment is consistent with all the healthcare workers in Syria who risk their lives every day to serve patients. The OPCW is failing it's mandate at investigating and preventing chemical weapons attacks in Syria. The targeting of healthcare workers must stop and perpetrators must be held accountable for war crimes. The inaction and impotence of the international community to protect healthcare workers is an embarrassment." Said Dr. Anas Al Kassem, Chairman of UOSSM Canada

How chlorine gas became a weapon in Syria's civil war

By Dorian Geiger

Source: <http://www.aljazeera.com/indepth/features/2017/03/chlorine-gas-weapon-syria-civil-war-170314110043637.html>

Mar 23 – Mohamed Tennari, a medical doctor (photo below), was visiting an electronics repair shop in the northwestern Syrian village of Sarmin to have a broken internet router fixed. The store was owned by



family friend Waref Taleb. Tennari left the router with Taleb and returned the following day to collect it. Taleb did not charge him for the fix. These were the last exchanges the two Syrian friends would ever have.

The next time Tennari saw Taleb was on March 16, 2015, a month or two later, following a chlorine chemical attack in Sarmin. This time, though, Taleb was on an operation table in the emergency room of the Sarmin field

hospital.

Tennari rushed into the emergency room to see Taleb, who was coughing, choking, foaming at the mouth, and barely clinging to life. That night, a helicopter had dropped a barrel bomb containing chlorine that exploded on Taleb's home.

"We couldn't help him because he inhaled a lot of chlorine," Tennari, 36, recalled, who has been working as a doctor in Syria since 2007.

Taleb's family scrambled into their basement to hide. The noxious gas seeped into the ventilation ducts of their house and killed Taleb and his entire family - his mother, wife, Ala'a Alajati, and their three children Aisha, three, Sarah, two, and Muhammad, one.

"They all died. It was so bad that we couldn't save them," he added. "[Taleb] was my friend and it was so sad."

Tennari suspected it was the Syrian regime that dropped the toxic gas cannister. He estimated that he and his staff treated about 120 patients who had been exposed to chlorine that night. The Taleb family, however, were the only casualties.

"They were in the basement and the chemical material was going down. People must go high. Because they were in the basement they really got a lot of this material, the chemical material."

Tennari described Taleb as a family man.

"He was friendly, quiet, [a] good person," he said. "He had a nice family. He loved his family."

On the anniversary of Taleb's death two years later, that night of chaos and terror still gives the Syrian doctor chills. "Helicopters were in the sky at all times and we hear sound at all times and we didn't know what second they would attack the hospital," Tennari said in between heavy sighs.

"We didn't know what to do. Patients were in chairs, on the ground, on the floor- everywhere. We didn't have enough time to stay with one patient. I was going from one patient to another patient every minute. It was so noisy."

This is a fleeting, but not uncommon snapshot of the destructive role chlorine attacks have played - and the fear the chemical has sown - in the country's civil war, which enters its seventh year this week.



Chemical weapons have been a recurring footnote in the bloody narrative of Syria's civil war, which has robbed [hundreds of thousands](#) of lives, and displaced roughly [11 million](#) more. But amid this troubling saga of chemical weapons use in Syria, it has been sarin nerve gas, and to a lesser extent mustard gas, that have punctuated this ongoing storyline.

Following the 1,300 tonnes of sarin nerve gas and its precursors being removed from Syria, chemical attacks persist there nearly four years later, but most notably in the form of chlorine, which has emerged as the most heavily used chemical weapon in the war.

"We saw chlorine appearing as a weapon in Syria for the first time in 2014," said [Ole Solvang](#), the deputy director of the emergencies division at [Human Rights Watch](#).

"The challenge is there are so many horrific things going on in Syria, that this one issue tends to perhaps be overshadowed sometimes by other attacks that are going on."

In February, Human Rights Watch and Solvang authored a [report](#) documenting at least eight instances of chlorine use by the Syrian regime in the battle for Aleppo between Nov. 17 and Dec. 13, 2016. The [human rights](#) watchdog verified the attacks through [video footage](#) analysis, phone, and in-person interviews, as well as by [social media](#).

The report indicated that the chlorine attacks killed at least nine people, including four children, and injured around 200 people. The attacks, according to the report, constituted war crimes.



[Human Rights Watch](#) have documented 24 chlorine attacks in Syria since 2014, of which 32 people were killed and hundreds were injured [Courtesy of Aleppo Media Centre/Al Jazeera]

"This is, of course, horrific because it is a violation of the Chemical Weapons Convention that Syria is a part of," Solvang

explained. "It's horrific for the victims, but also because it really undermines one of the strongest bans on any weapon in international humanitarian law and what we're really concerned about is that the government's continued use of chemical attacks will undermine this ban and lower the threshold for other countries to also use it [chlorine]."

The [Chemical Weapons Convention](#), which came into effect in 1997, is the first international treaty to prohibit the use, development, production, stockpiling and transport of chemical weapons. It is enforced by the [Organisation for the Prohibition of Chemical Weapons](#), an independent and international treaty-based organisation.

Following the sarin gas attack in Ghouta in August 2013 that [killed](#) more than 1,000 people - more than 400 of them children - according to a United Nations Security Council report, Syria joined the convention as part of an international agreement - and to subdue the Obama administration's threats of military action. It was the 190th country to sign on.

So to what role has chlorine played in Syria's complex and long civil war? And what has been the human toll?

Human Rights Watch have documented 24 chlorine attacks in Syria since 2014, of which 32 people were killed and hundreds were injured. However, Solvang acknowledged that this is likely a grave underestimate.

"It's a terrifying weapon to most people," Solvang said.

Chlorine is a choking agent. Its greenish-yellow clouds of gas cause shortness of breath, wheezing, respiratory failure, irritation in the eyes, vomiting, and sometimes death.

Chlorine's effects are also largely psychological: the chemical triggers fear, shock, and panic in a way that other conventional weapons don't. In the case of Aleppo, Solvang suspects the regime strategically used chlorine to force a mass exodus of the city.

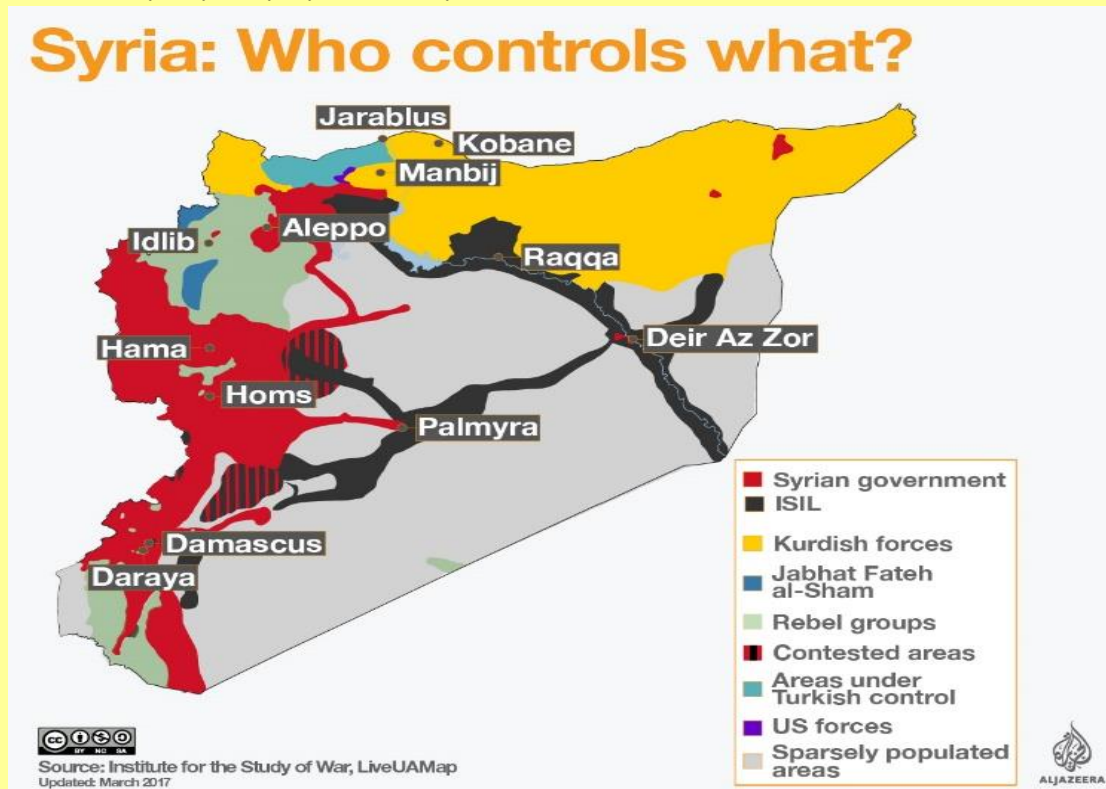
"Places that were relatively safe suddenly were not safe any more when chlorine started being used," Solvang said. "When people were trying to hide and shelter from explosive



weapons, regular rockets and bombs - they would go into a basement because that's the safest place to be. Chlorine is heavier than air so it sinks into those basements, so those basements can become death traps."

Solvang's statement, echoed the way in which the Taleb family died in Sarmin: overexposure to chlorine gas after mistaking their cellar as a safe haven.

"It is definitely very scary if you are a physician in a small hospital with dozens or hundreds of patients



that are suffocating and you don't know what to do with all of that," said Zaher Sahloul, a former president of [Syrian American Medical Society](#) (SAMS), who is originally from Homs, but who now practices in Chicago.

SAMS has also closely monitored chlorine attacks in Syria. The medical organisation has [documented](#) 109 chlorine attacks since the civil war began in 2011.

"The main reason chlorine was used in Syria was to cause panic and to force people to flee. And that's what it really did in most of the instances," Sahloul added.

Sahloul, a pulmonary specialist, [attended](#) medical school with President Bashar al-Assad between 1982 and 1988 at Damascus University. He knew Assad personally.

"[Assad] was collegial, humble and talkative," Sahloul recalled of his former classmate turned president, who he now accuses of war crimes.

"No one expected him to oversee the destruction of his country, target hospitals and doctors and use extreme brutality against civilians including torture, siege, collective punishment, and chemical weapons." Chlorine was first used [as a weapon](#) by the Germans on French, British, and Canadian troops in World War I on the battlefield in Ypres. A decade later, the [Geneva Protocol of 1925](#), the first constructive international laws banning the use of chemical weapons, was introduced.

But despite its deadly effects, chlorine isn't classified in the same league as sarin or mustard gas. It exists in somewhat of a grey zone under today's international laws and is only regarded as a chemical weapon when it's used maliciously. Chlorine's complicated status on the spectrum of chemical weapons raises tough questions about the definitions of chemical warfare.

For instance, why are some lethal chemicals internationally prohibited, while others aren't?



"The difference between chlorine and sarin is [that] chlorine is readily available," Sahloul explained. "Chlorine is used for many other beneficial ways, to clean water and so forth, in many industries but that's why the Syrian regime has been using it because it's easily done and weaponised easily."

[Tens of millions of tonnes](#) of chlorine are produced around the world each year. It's [used](#) to disinfect water supplies, in the manufacturing of pharmaceuticals, antiseptics, and drugs, in textile industries, the bleaching of paper, in the separation of metals such as gold, nickel, and copper from their ores, as well as such household chemicals like adhesives.

Its widespread industrial use makes controlling and regulating its use as a weapon all the more problematic, which has allowed its use to persist in Syria's civil war.

"Chlorine is used on a daily basis in all countries. It can be easily produced, in all of our countries, [regardless] of the development of the country, the materials are available," said [Ahmet Uzumcu](#), director general of the Netherlands-based [Organisation for the Prohibition of Chemical Weapons](#) (OPCW), the international organisation that verifies the destruction of existing global stockpiles of chemical weapons.

"It creates panic, of course, and terror especially among civilians [but] the difficulty to eradicate it - it's not declarable - so we cannot ask state parties to declare the chlorine stocks," added Uzumcu. "I believe that it is very difficult to contain it."

The OPCW, which led a fact-finding mission in 2014 to investigate chlorine attacks in Syria, were unable to confirm to Al Jazeera the exact numbers of confirmed attacks, but a [press release](#) on the missions stated there was "compelling" evidence that chlorine was used "systematically and repeatedly".

[Kelsey Davenport](#), the director nonproliferation policy at the [Arms Control Association](#), a non-profit organisation that promotes public understanding of arms control policies in Washington, DC, also echoed Sahloul and Uzumcu's assertions on the problematic nature of containing chlorine as a chemical weapon.

"Chlorine is particularly a problem because it has so many uses for industrial purposes that don't have anything to do with weaponisation," she said.

"It can be very easy for organisations to get their hands on chlorine and the necessary ingredients to create chlorine gas, using sort of other mechanisms or justifications for industrial purposes. That makes it much more difficult to control and much more difficult to prevent groups from using," Davenport added. The precarious situation on the ground makes it even more difficult, if not impossible for governments and NGOs, to verify each attack, and who exactly is on the delivering end: the regime, rebel forces, or ISIL.

Last August, the UN-led a joint investigation in Syria to pinpoint who is responsible for the flurry of reported chlorine attacks. The UN examined [nine cases](#) of alleged chemical weapons attacks. They found what they described as "sufficient evidence" of three instances of chemical weapons attacks between 2014 and 2015. Two of these were chlorine gas attacks on civilians by the Syrian air force. Another was a sulphur mustard gas attack by the Islamic State.

"It's hard - it's impossible to use the word 'verifiable'," said [Paul Walker](#), a chemical weapons expert and Director of Green Cross International's [Environmental Security and Sustainability programme](#).

Walker attributed the contrasting numbers of chlorine attacks recorded by [NGOs](#), media, and governmental bodies like the UN to the dangerous conditions on the ground in Syria.

"By looking at newspaper reports, you know there's an average alleged attack with chlorine probably every month and probably for the last several years," he said. "A ballpark figure is a dozen [chlorine attacks] a year. And I think that's a gross underestimate because it's very difficult to verify these attacks when you can't get to the site in a reasonable amount of time, you can't gather forensics, [and] you can't necessarily interview victims."

In response to the UN joint investigation, the United States [imposed sanctions](#) on 18 Syrian military officials in January, according to a Treasury Department statement.

And just last month, the US, [France](#), and Britain drafted a UN Security Council resolution that would have imposed further sanctions on Syrian military officials over the alleged use of chlorine. However, [Russia](#) and China [vetoed](#) it.

Prior to the veto, the UN Security Council unanimously adopted [Resolution 2209](#) on March 6, 2015, condemning the use of chlorine attacks in the civil war, threatening to take Chapter VII action – which could include sanctions and ultimately military force – if the attacks



continue. But that was two years ago; the attacks have persisted, UN sanctions have fallen flat, and the international community hasn't been able to effectively halt [Assad's](#) regime or the rebels' use of chlorine. With the emergence of the US President [Donald Trump's](#) administration, which seems open to allowing Russia, Syria's ally, operate more freely in the country, Assad's regime appears more insulated than ever. Military escalation against Assad, or the possibility his regime will be charged with war crimes in an international criminal court, at least in the near future, seems unlikely.

"The people and physicians, especially in Syria gave up on this issue," said Sahloul, the Chicago-based SAMS doctor, who has testified on chlorine attacks before the [UN Security Council](#) and the [US House Foreign Relations Committee](#).

Sahloul is frustrated by the international community's perceived indifference - and its inability - to solve the chlorine problem, and he, too, is sceptical anything will be accomplished in the near future to hold Assad's regime accountable.

"There was a lot of effort that at one point to document all of these issues," he added. "There were testimonies in the [UN] Security Council, there were resolutions, there were attributions, and then investigation teams, and then nothing happened. I think at this point, people gave up on Syria and talking about these issues."

Instead, Sahloul, appealed directly to Assad, his former classmate, to end the brutality of chlorine chemical attacks once and for all.

"I want him [Assad] to see the faces of the children who woke up choking in the middle of the night," he said, in reference to the chlorine attack that killed the Taleb family in Sarmin.



"I want him to imagine the panic in the faces of Taleb family in Sarmin [hiding] in a basement, when they were overwhelmed with the smell of bleach, and when their children - Aisha, Sarah, and Muhammad - started to suffocate; how they rushed to the field hospital and how they all ended up dead."

For other Syrians, like Tennari, the Syrian doctor in Sarmin, who have seen the gruesomeness of a chlorine attack first hand, justice is already too late. Tennari still agonises over the loss of his friend Taleb, and his family, who were all killed by the toxic substance two years ago.

"I'm praying to not be in this situation again: to see a friend choking in front of me and I couldn't do anything," said Tennari, who said he'll continue practising in Syria as long as the civil war continues.

"I'm so sorry that we couldn't help [the Taleb family]," Tennari said. "I feel bad all the time when I remember that we couldn't help them and they died. I feel weak because of that. I



wish that nobody would be in my situation and see what I see. It's horrific. I wish this war will finish one day."

Dorian Geiger is a Canadian journalist and an award-winning filmmaker based in Doha, Qatar and Queens, New York. He's a social video producer and a freelance features writer at Al Jazeera English.

Inside Gert Meyers' secret chemical lab: Dad denies terrorist link and doesn't fancy jail 'at all'

Source: <http://www.hulldailymail.co.uk/inside-gert-meyers-secret-chemical-lab-8203-dad-denies-terrorist-link-and-doesn-t-fancy-jail-at-all/story-30238789-detail/story.html>

Mar 31 – A chemist who sold lethal substances to terrorists from a 'lab' in his garden says he is not responsible for his customers' actions.



Gert Meyers, 55, a married father-of-one, faces the possibility of prison after admitting possessing a raft of "high risk" chemicals without a Home Office licence.

◀ [Watch video at source's URL](http://www.hulldailymail.co.uk/inside-gert-meyers-secret-chemical-lab-8203-dad-denies-terrorist-link-and-doesn-t-fancy-jail-at-all/story-30238789-detail/story.html)

Last August, officers - supported by an Army bomb disposal team - raided Meyers' mid-terrace in Oxford Street, Bridlington, in an operation costing the taxpayer £36,000.

The homes of people living within 200

metres of Meyers were evacuated, as quantities of nitric acid, hydrogen peroxide, potassium perchlorate and potassium chlorate were seized and later destroyed.

WHO alarmed by use of highly toxic chemicals as weapons in Syria

Source: <http://who.int/mediacentre/news/statements/2017/toxic-chemicals-syria/en/>

Statement

5 April 2017 | GENEVA - WHO is alarmed by serious reports of the use of highly toxic chemicals in an attack in Khan Shaykhun, southern rural Idlib, Syria. According to Health Cluster partners on the ground treating the patients, at least 70 people have died and hundreds more have been affected. Doctors in Idlib are reporting that dozens of patients suffering from breathing difficulties and suffocation have been admitted to hospitals in the governorate for urgent medical attention, many of them women and children. "The images and reports coming from Idlib today leave me shocked, saddened and outraged. These types of weapons are banned by international law because they represent an intolerable barbarism," said Dr Peter Salama, Executive Director of the WHO Health Emergencies Programme.

Reports first emerged of the use of chemical weapons agents in Syria in 2012 and have since occurred with disturbing frequency, including repeated allegations of **chlorine** use in and around Aleppo last year, especially from September to December 2016. This latest reported incident is the most horrific since Ghouta in August 2013.

The capacity of hospitals in the surrounding area is limited, especially as a number of facilities have been damaged as a result of the ongoing conflict. Soon after the reported use of the highly toxic chemical in rural Idlib Tuesday morning, after receiving the first patients, Al Rahma Hospital was rendered temporarily nonfunctional when it was damaged. Ma'ara



Hospital, one of the main hospitals in the area, has been out of service since last Sunday due to extensive damage to infrastructure.

Emergency rooms and intensive care units in Idleb are overwhelmed and reporting shortages in medicines required to treat injured patients. Many patients have been referred to hospitals in southern Turkey.

The likelihood of exposure to a chemical attack is amplified by an apparent lack of external injuries reported in cases showing a rapid onset of similar symptoms, including acute respiratory distress as the main cause of death. Some cases appear to show additional signs consistent with exposure to organophosphorus chemicals, a category of chemicals that includes nerve agents.

Medicines -- including Atropine, an antidote for some types of chemical exposure, and steroids for symptomatic treatment -- were immediately dispatched from WHO's partner warehouse in Idleb. WHO is shipping additional medicines from Turkey and is ready to provide more life-saving supplies and ambulances as needed. WHO experts in Turkey are communicating with health workers in Idleb to provide around-the-clock guidance on diagnosis and appropriate treatment of patients.



Editor's comment: Handling CWA (or TIC) victims like this? With bear hands and a mask on the face? Then why First Responders have to suffer in PPE and all???

Background

Since 2012, when the first reports emerged of the use of chemicals as weapons in Syria, WHO has been engaged in public health preparedness for the management of patients exposed to chemical or toxic gas. These actions have included issuing new clinical management protocols, preparing hospitals to receive and treat patients, distributing protective equipment to hospitals, and raising awareness amongst Syrians on how they can protect themselves against exposure and when to seek treatment. In 2016, WHO trained 200 clinicians on the initial management of chemical weapons cases including pre-hospital decontamination, referral, triage and treatment. An additional 65 doctors in northern Syrian were trained by WHO's field office in Gaziantep, southern Turkey. The majority of doctors trained were from Idleb, the governorate where today's attack took place. However, given the numbers of patients requiring treatment, available trained staff is insufficient.

WHO is in continuous contact with health partners in Idleb to monitor health impact and needs, and is working with cross-border partners to reduce morbidity and save lives.

The use of chemical weapons is a war crime and is prohibited in a series of international treaties. These include the Hague Declaration concerning Asphyxiating Gases, the 1925



Geneva Protocol, the Chemical Weapons Convention (CWC) and the Statute of the International Criminal Court (ICC).

U.S. strikes Syrian airbase from which Assad forces launched sarin gas attack

Source: <http://www.homelandsecuritynewswire.com/dr20170407-u-s-strikes-syrian-airbase-from-which-assad-forces-launched-sarin-gas-attack>

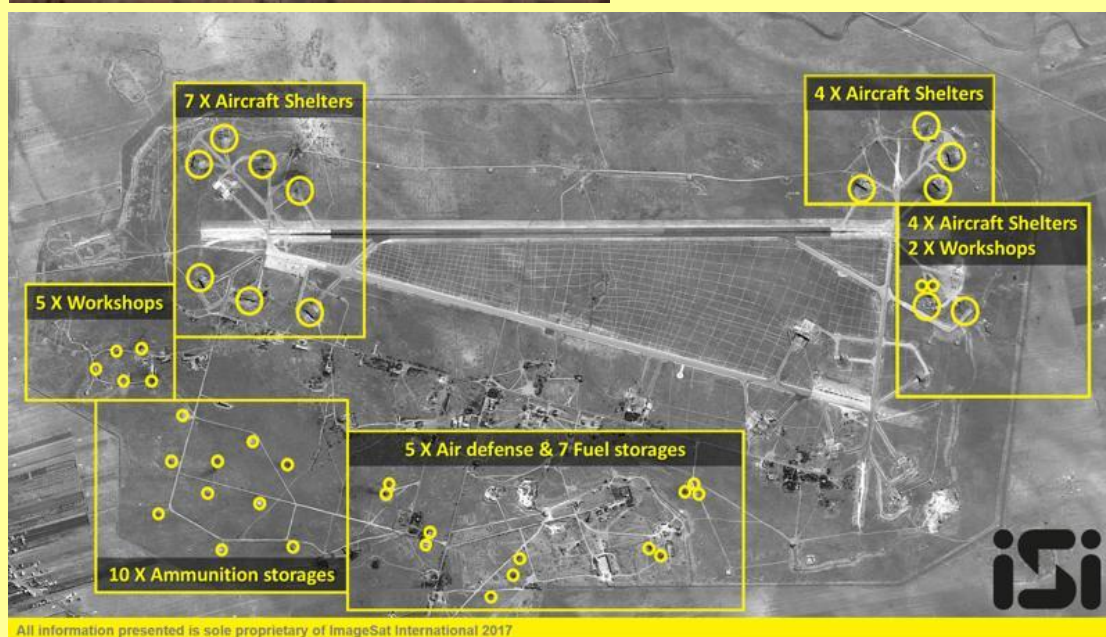
Apr 07 – The United States has launched fifty-nine Tomahawk cruise missiles on a Syrian airfield from which Syrian military planes three days ago flew to carry out a sarin gas attack against Sunni civilians in the rebel-held Idlib province.



Syria's Al-Shayrat airfield, target of U.S. missile attack

More than eighty people, including thirteen children, were killed in the attack – and in a subsequent attack by the Syrian Air Force which destroyed the hospital to which many of the victims of the gas attack were taken.

The cruise missiles were launched from the guided-missile destroyers USS Ross and Porter in the eastern Mediterranean.



15 or 16 (out of 58 or 60) cruise Tomahawk missiles still “orphan”

The United States has had military advisers and specialist on the ground in Syria for a while – it now has about 1,000 soldiers in Syria — advising the anti-regime rebels – especially the Syrian Kurds – but last night cruise missile attack marks the first time the United States has been involved as a combatant in the Syrian conflict.

Russia described the strike as an “aggression against a sovereign state in violation of international law.”



Russia has also said that it would suspend an agreement with the United States to share information about Russian and U.S. flights in the skies above Syria in order to avoid incidents.

Moscow said it would call on the UN Security Council to discuss the U.S. strike.

The *Independent* reports that Syrian officials said seven people were killed and nine wounded in the attack.



Both Syrian and Russian sources said that no Russians were killed or injured in the attack. Sergei Lavrov, Russia's foreign minister, currently on a trip to Uzbekistan, said the strike was launched on an "absolutely made-up pretext," adding: "It reminds me of the situation in 2003 when the United States and Britain, along with some of their allies, attacked Iraq."

Lavrov added that Russia would demand an explanation from the United States why the strike was launched. "I hope this provocation will not lead to irreparable damage [to U.S.-Russian ties]," Lavrov said.

The target of the attack was an airfield at al-Shayrat, near Homs, from which the Syrian military launched its sarin gas attack on Tuesday. To facilitate the attack, some of the U.S. cruise missiles were used to destroy Syrian air defense assets – but military analysts note that the damage to the Russian-built Syrian air defenses was limited, in keeping with the limited nature of the attack.

The Pentagon, in a statement, said, the U.S. military attacked "aircraft, hardened aircraft shelters, petroleum and logistical storage, ammunition supply bunkers, air defense systems, and radars" at the al-Shayrat airbase. The Pentagon added that the strike "was intended to deter the regime from using chemical weapons again."

News reports on Russian state TV said that nine Syrian air force jets had been destroyed in the attack. Lavrov's charges that the U.S. attack was carried out based on made-up excuses was echoed by Vladimir Putin's spokesman, Dmitry Peskov, who said that Putin believes the United States had carried out the strikes under a "far-fetched pretext."

Russia initially denied that the Assad regime was behind the chemical attack earlier this week, but then changed its line to argue that the death of civilians resulted from Syrian military inadvertently hitting a rebel chemical arsenal.

Military experts and specialists in chemical weapons said this argument was laughable.

Sources told the *Guardian* that U.S. intelligence agencies believe Russian military personnel were at the al-Shayrat airbase when sarin gas munitions were loaded on to a Syrian jet. It is not clear whether the Russians were aware of the nature of the munitions.

Pentagon spokesman Capt Jeff Davis said the U.S. military notified Russian forces before the strike, using the communications channel which was established last year to ensure U.S. pilots carrying out missions against ISIS targets in eastern Syria did not accidentally run into Russian planes.

"We are assessing the results of the strike," Davis said. "Initial indications are that this strike has severely damaged or destroyed Syrian aircraft and support infrastructure and equipment at Shayrat airfield, reducing the Syrian government's ability to deliver chemical weapons."

Davis noted the airbase had been used to store chemical weapons used by the regime until 2013, when the United States and Russia reached an agreement to remove Syria's chemical weapons and dismantle the country's chemical weapons production facilities. The



agreement was reached after the Syrian military, in August 2013, killed 1,200 Sunni civilians in a sarin gas attack.

Davis said the airbase hit last night was used to deliver the chemical weapons dropped on Khan Sheikhun, but could not confirm whether any chemical weapons were still at the site. He stressed that the targets were chosen carefully to avoid the risk of hitting those weapons.

"The places we targeted were the things that made the airfield operate. It's the petroleum facilities, it's the aircraft radar, what they use for takeoff and landing, as well as air-defense radar," Davis said. "It's the sites that are specific to making it operate, as well as hangars and aircraft themselves."

Davis also said that precautions were taken to avoid killing Russian personnel on their compound at al-Shayrat, citing the timing of the attack and the choice of targets unlikely to have people inside. All the aircraft attacked were Syrian, he stressed.

The attack marks a change of course for Trump. Russia has been one of Assad's staunchest ally, and Trump had criticized the Obama administration for making the removal of Assad from power a central goal of U.S. policy in Syria. During the presidential campaign, Trump pointed to Assad as someone with whom the United States should cooperate in the war against ISIS.

Only three days ago, both Secretary of State Rex Tillerson and UN ambassador Nicky Halley made statements indicating that Trump was prepared to allow Assad remain in power.

Two senators who consistently criticized Trump for his views on Assad — John McCain and Lindsey Graham — issued a joint statement supporting the attack.

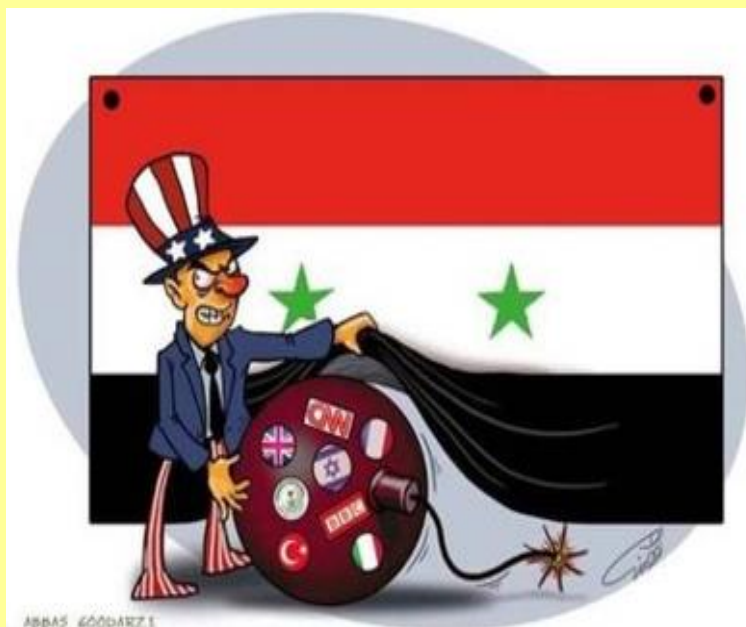
Trump and the military "sent an important message the United States will no longer stand idly by as Assad, aided and abetted by Putin's Russia, slaughters innocent Syrians with chemical weapons and barrel bombs", the two Republican senators said.

EDITOR'S COMMENT: 60 missiles X 1 mil USDs per missile = 60 mil USDs and all airfields remained intact?

Propaganda spin cycle: 'Syrian Observatory for Human Rights' is funded by US and UK governments

By Beau Christensen

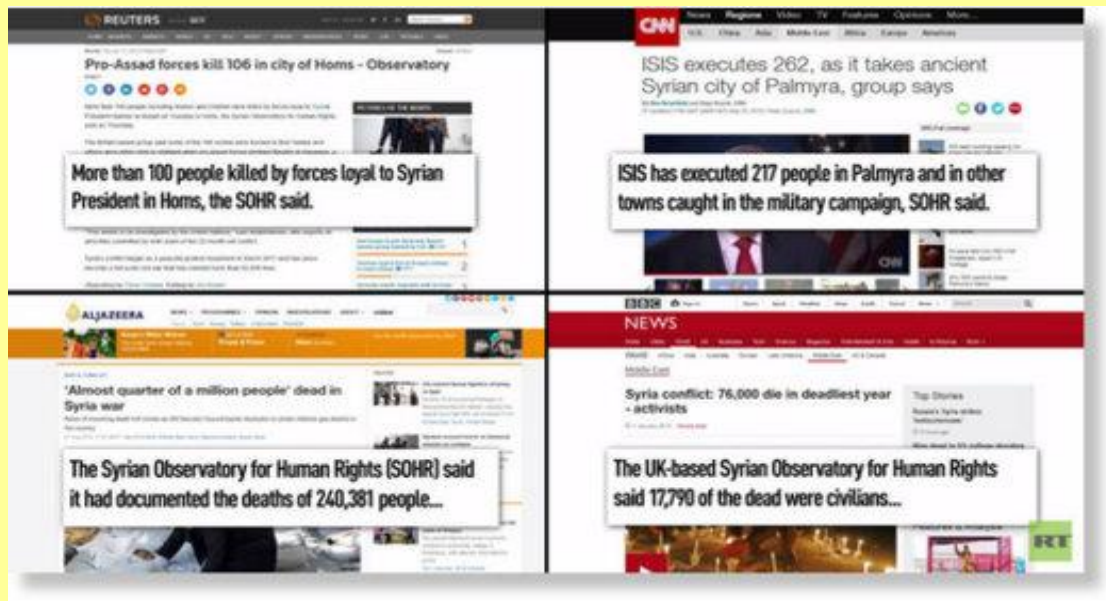
Source: <https://www.sott.net/article/329117-Propaganda-spin-cycle-Syrian-Observatory-for-Human-Rights-is-funded-by-US-and-UK-governments>



September 2016 – For 5 years, bloody mayhem has been going on in Syria, and in all that time only independent media has picked up on the really obvious flaw in the official narrative about the "Syrian civil war" ... Officially, the Syrian Observatory for Human Rights (SOHR) is a UK-based organization providing data to the Western press about troop movements, government policy and public sentiment in Syria. The Western press then reprints the information they are given - no questions asked:



What Western media editors conceal from the public however, is that the "Syrian Observatory for Human



Rights" is neither based in Syria nor is it an observer of what actually goes on there. It is essentially one man - Abdul Rahman, aka Rami Abdulrahman, aka Osama Suleiman - **a three-term convicted criminal in Syria**, [based out of a small house in Coventry, England](#), and his 'team of four activists in Syria'. Apparently all it takes to inform the entire Western media about everything that is happening on the ground in Syria is four people. Four people *could*, theoretically, provide reasonably objective reports, but only if they were open to receiving information from many sources, including ones supportive of the Syrian government. They might even be able to produce - using objective discernment - reliable statistics of casualties, refugees and terrorists/rebels. But SOHR has consistently reported the 'civil war' from *only* the perspective of the so-called 'rebels', discounting Syrian government reports out of hand, as well as reports from civilians that reveal rebels' crimes.

That fact alone makes SOHR about as reliable a source of information on the Syrian conflict as the US State Department and the British Foreign Office, who have a vested interest in spinning the war to produce one end: the death or removal of Syrian President Bashar Al Assad.

Rahman, by his own admission, is a [member of the 'Syrian opposition'](#) and seeks the ouster of Al Assad, so that clearly removes any semblance of objectivity in his 'reporting'.

But there's more. Rahman, and the SOHR that he runs, has long ago been exposed as a Western propaganda front. As Tony Cartalucci [writes](#) in his expose:

"One could not fathom a more unreliable, compromised, biased source of information, yet for the past two years, his "Observatory" has served as the sole source of information for the endless torrent of propaganda emanating from the Western media. Perhaps worst of all, is that the United Nations uses this compromised, absurdly overt source of propaganda as the basis for its various reports."

This man is as far from a 'human rights activist' as anyone can be. His funding [comes from the European Union](#) and "an unnamed European state," most likely the UK as he has direct access to former Foreign Minister William Hague, who he has been documented meeting in person on multiple occasions at the Foreign and Commonwealth Office in London and shares Rahman's enthusiasm for removing Assad from power. The *NYT* in fact reveals that it was the British government that first relocated Abdul Rahman to Coventry, England after he fled Syria over a decade ago because of his anti-government activities:

"When two associates were arrested in 2000, he fled the country, paying a human trafficker to smuggle him into England. The government resettled him in Coventry, where he decided he liked the slow pace."



"Hold the line, Jafar, I've got MI6 on another call..."

'Rami Abdulrahman', one-man lie factory

Et voila! What was once a criminal with subversive tendencies is now a 'human rights activist' (but really a British intelligence asset). Does anyone really think that any of these organizations would pay a convicted criminal to be anything other than their mouthpiece for seeding the lies printed in Western media? As [Joe Quinn and Niall Bradley noted last year](#), figures provided by the SOHR are routinely cited by Western media to generate public support for airstrikes and regime change in Syria.



figures provided by the SOHR are routinely cited by Western media to generate public support for airstrikes and regime change in Syria.

So who in the Western media uses such a biased propaganda source? (It would be easier to provide a list of who doesn't.) CNN, Reuters, Associated Press, BBC, Al-Jazeera, Huffington Post, Fox and Vice... just to name a few. These presstitute organizations apparently don't care that they're taking the word of someone who has a political interest in the outcome and who is funded toward that end by the British government. Are there any investigative journalists left in mainstream media? Those with two firing neurons are few and far between these days...

Western intelligence agencies set up the armed opposition/terrorist proxy forces in Syria, so they would obviously want to control the media narrative about what happens there. Rahman does his part by vacuuming up information reported by those same proxy forces. This information is then given out to the Western media with SOHR as source. The whole operation is so patently shady, it should scream 'spooks' to any real journalist. And to be honest, Western journalists really should know better.

What's that phrase that George Dubya Bush mangled: 'fool me once, shame on you, fool me twice, shame on me'. Mr. SOHR is basically a less sophisticated Syrian war version of the [Iraq war's 'Curveball' or Rafid Ahmed Alwan al-Janabi](#) (for those interested in his real name). Alwan was the guy that the US government used to back up their 'Saddam has WMDs' claim that justified the invasion and 10-year occupation of Iraq, and the murder of 1.5 million Iraqi citizens. To his friends, Alwan was a congenital liar who fled Iraq in 1999 when he was caught trying to embezzle state funds. When he fled to Germany in 1999, and told German intelligence that he graduated top of his chemical engineering class at Baghdad University and worked on a team that built mobile labs to produce WMDs, he became 'curveball'.

When this information was passed on to US intelligence, they conveniently ignored the evidence that he was a congenital liar and embezzler who placed *last* in his university class and drove a taxi for a living before fleeing to Germany, and decided that everything he was saying about Iraqi WMDs was true. To further prove his credentials, 'curveball' identified a particular Iraqi facility as a "docking station for mobile labs". When UN weapons inspectors visited the site on February 9, 2003, they found a warehouse used for seed processing.

So with this information, then Sec. of State Colin Powell decided to do the right thing, and ran to the UN and told them all about 'Curveball' and his damning 'evidence' of Iraqi WMDs. Why? Because US politicians had long before decided that they were going to invade and destroy Iraq and loot its resources. They were, as the saying goes, 'fixing the facts around a war policy' by using the bogus claims of known liars to justify their war. This is precisely what Mr. SOHR is doing for the US government today, and still, the media sucks it up and regurgitates it for the general public.

So this is what our media has become, a gaggle of morons brainlessly repeating lies vomited up by our psychopathic [reality-creators](#), thereby manipulating public perception of world events and making sure we all see the world the way they want us to see it, and not how it really is. One thing is certain: if you believe what Rahman and the SOHR is telling you about what's happening in Syria, you are believing in lies.



Beau Christensen, a Wisconsin native, has been a SOTT editor since 2006. A long-time non-believer in what we're told by the media and government, he is focused on exposing the lies and disinformation they feed us and studying the accompanying decline of civilization.

Exclusive/Graphic Video: The Truth Behind Syrian Gas Attacks, will Russia Back Down?

By Gordon Duff (Senior Editor Veterans Today)

Source: <http://www.veteranstoday.com/2017/04/05/exclusivegraphic-video-the-truth-behind-syrian-gas-attacks-will-russia-back-down/>

If you wondered why Turkey paid so much cash to General Flynn who is now "ratting out" Russia, the game will be exposed here:



[View video at source's URL](#)

Apr 05 – Editor's note: With the role of George Clooney's "White Helmets" along with the Syrian Observatory for Human Rights in exploiting what we believe to be the Turkish Sarin gas attack on Syria yesterday, both VT and Press TV have been under continual cyber attack. Ian's story yesterday had it right from the beginning and information is flowing in to VT from sources in Turkey, Syria and from Russia as well. With the role of the White Helmets in exploiting this story, we are ready to conclude the serious possibility that this was a planned terror attack and that some US based group, most likely CIA, had a role. We are increasingly suspicious of Clooney as his wife has ties, according to our sources, with Israeli intelligence. Amal Clooney has represented Yulia Tymoshenko, Julian Assange and Mohamed Fahmy, Qatars press puppet with Al Jazeera in Egypt. Clooney is clearly being groomed.

UN Security Council video commentary begins at 15:13 in the video below:

<https://www.youtube.com/watch?v=2clX-d5MXI4>

Trump is directly threatening Russia on Syria despite his confusing tweets and rambling and incoherent accusations.

President Trump has proven himself unsound in his reaction, with no evidence whatsoever, and his mixed messages, blaming President Obama for not attacking Syria the last time Turkey and Saudi Arabia used poison gas against the Syrian people. This was 2013 and we have proof American contracting firms took part in the Ghouta attack, as outlined by [Ian Greenhalgh yesterday](#).



The sense of Deja Vu is overwhelming, this story is a full repeat of the 'Assad used poison gas on civilians in Ghouta' fairytale of 2013.

VT has thoroughly debunked that story, we exposed the role of Israel, Turkey, Qatar, Saudi Arabia, the Ukraine, the CIA and the Russian Mafia, all of whom had a hand in the supply of the gas to the Syrian 'rebels' who were the ones who used it on innocent Syrian civilians.

The story that blamed it on Assad came from the Syrian Human Rights Observatory, a one man disinfo op in the suburbs of Coventry, England run by Rami Abdul Rehman. Once again, as in 2013, it is the tubby little liar Rehman and his SHRO that is behind the lies, once again the 'Assad did it' meme is being used to hide the true guilty party – the ISIS and FSA mercenaries.

VT received statements from Syrian intelligence sources and the Syrian Minister of Information today. The Syrian Information Ministry released this exclusively through VT:

"These accusations are not new and the Syrian gov got used to those allegations and claims after every and each military achievement of the Syrian army or before the convening of the UN Security Council or the meetings in Geneva. The aim of this fabrication is cheap political investment at the expense of the living of innocent civilians who are helpless and living in the terrorists controlled area in Idlib.

Before the UNSC is finished, we expect to hear that Syria has caused the holes in the ozone layer as well."

Real Reports, Not the Fake News

Over the past two weeks, first Damascus came under attack from forces brought in by the CIA and Saudi Arabia from Jordan. Bushels of cash bribed corrupt 2nd tier Syrian home defense forces to allow the terror teams and snipers into Damascus. When this failed, a huge combined operation was stated against the city of Hama by al Nusra.

Turkish convoys brought in arms including TOW and Stinger missiles and significant advances were made threatening this vital city. However, troops were brought down from the north, perhaps as the ploy intended, and Russian and Syrian planes killed well over 2000 al Nusra or al Sham as they call themselves, terrorists.

Then, three days ago, a convoy of new TOW missiles left Hatay, Turkey for Hama. Funny how they get through Syrian controlled areas, that is something we need to deal with. On the convoy were gas masks for up to 2000 and other protective gear including chemical warfare suits from Saudi stockpiles. It was clear a massive gas attack was planned.

We got his information from both Russian and Syrian sources. The attack was to hit Syrian Arab Army forces in Hama and to overrun them and enter the city of Hama. Russia may have planned, and I have to be careful here, to hit this convoy at some point. The convoy had no chemical weapons on it when it left Turkey.

There was a chemical weapons depot in Idlib that was to load shells onto trucks and join the convoy on the way to Hama.



What happened from here shows a lack of coordination between Russian and Syrian information services. Russia says that Syria bombed the storage facility and this bombing caused the civilian casualties when gas supplies of al Nusra were released. Syria says the facility exploded on its own and it sent planes afterward to do

reconnaissance. Russia's version of events is expressed in this SouthFront video:

https://www.youtube.com/watch?time_continue=2&v=qCE2Cm2q6Kk





Statement of Dr. Bassam Barakat: The statement below is from Dr. Bassam Barakat, of Veterans Today Damascus. As to his official standing in Syria, we are not at liberty to discuss. This is a machine translation from Arabic:

Every time a major and significant military achievement is achieved, the criminal terrorist gangs commit an operational order of their Saudi and Qatari financiers and their NATO leaders to commit a chemical weapons crime (now in Khan Sheikhan) against the poor of our people on a spot of their land that is free of the forces of evil and aggression.

After Ashous, the Syrian Arab army and its brave remnants, managed to repel the victory of the Nasserite and the Rahman Corps on the capital of our homeland.

These two terrorist forces were financed by Saudi Arabia and Qatar and armed by Britain, France and the United States of America. (terrorist classified UN Security Council resolutions), which is now moving under the name Sham Liberation Authority. (Formerly al Nusra though still al Qaeda according to the US) They are Saudi-funded with its allies from terrorist forces savage Islamic jihadist incitements significant losses represent the number of dead, which exceeded three thousand terrorists and The destruction of most of their booby traps and military equipment during their attack on the towns and villages of Hama. This attack was designed to stop the advance of the Syrian Arab Army and its allies under the command of Brigadier Suhail Hassan in the eastern Aleppo countryside on the axis of Tadeef Maskan and prevent him from going to control the airport of the military class and the Euphrates dam and its facilities to be special forces The United States and the United Kingdom to conduct an aerial landing near the Euphrates Dam and occupy and occupy the airport of the military class without coordination with the Syrian state and take its consent (this is a clear breach of international law and the United Nations) without any resistance from their daughter pampered.

After these two victories of the Syrian Arab army and its heroic Assyrians with the help of the heroic eagles of the Russian brothers, the terrorists have the taste of death in the countryside of Hama, where their losses to date exceed three thousand dead and the destruction of dozens of tanks containing the highly explosive C-4, flaring, dozens of tanks, rocket launchers, The cars loaded with Baldo_ka and 23 others and others and all this has been bought from NATO countries sponsoring terrorism funds Saudi Arabia and Qatar and passed through Turkey and its president with the consent of the terrorist and criminal murderer of the Syrian people who cry crocodile tears now.

Let's go back to the story of Khan Shaykhun to ask the following questions: 1 – How to ignore such as Muhammad Alush, who is currently in Turkey, who has a license in Islamic law (ie, lying and dabbling) and is taught by the Wahhabite sheikhs of the Saudi Arabian Beasts to know what gas is used and how to deal with But because of his life and his stupidity he talked about heart failure for five hours and this is impossible in the world of medicine because, by the fourth minute, brain cells begin to die, but it is possible to have a coma because of the inhalation of chlorine gas and other chemicals. Net Fares Karam before the day to know that there is a massacre Eimoi will occur in Khan Sheikhun and asked media coverage. The Syrian flight is likely to be based on intelligence that has bombed a weapons depot and manufactured shells and gas turbines containing the highly explosive and explosive C-4 to be placed on a Hellfire cannon to be fired at the positions of the Syrian Arab Army. Each time, when a major, by order of the criminal operational financiers and Saudis and their leaders from the two countries of NATO to commit a crime with chemical weapons (now in Khan Shaikhoun) against the poor people on the spot of his land Almstbahp to the forces of evil and aggression.

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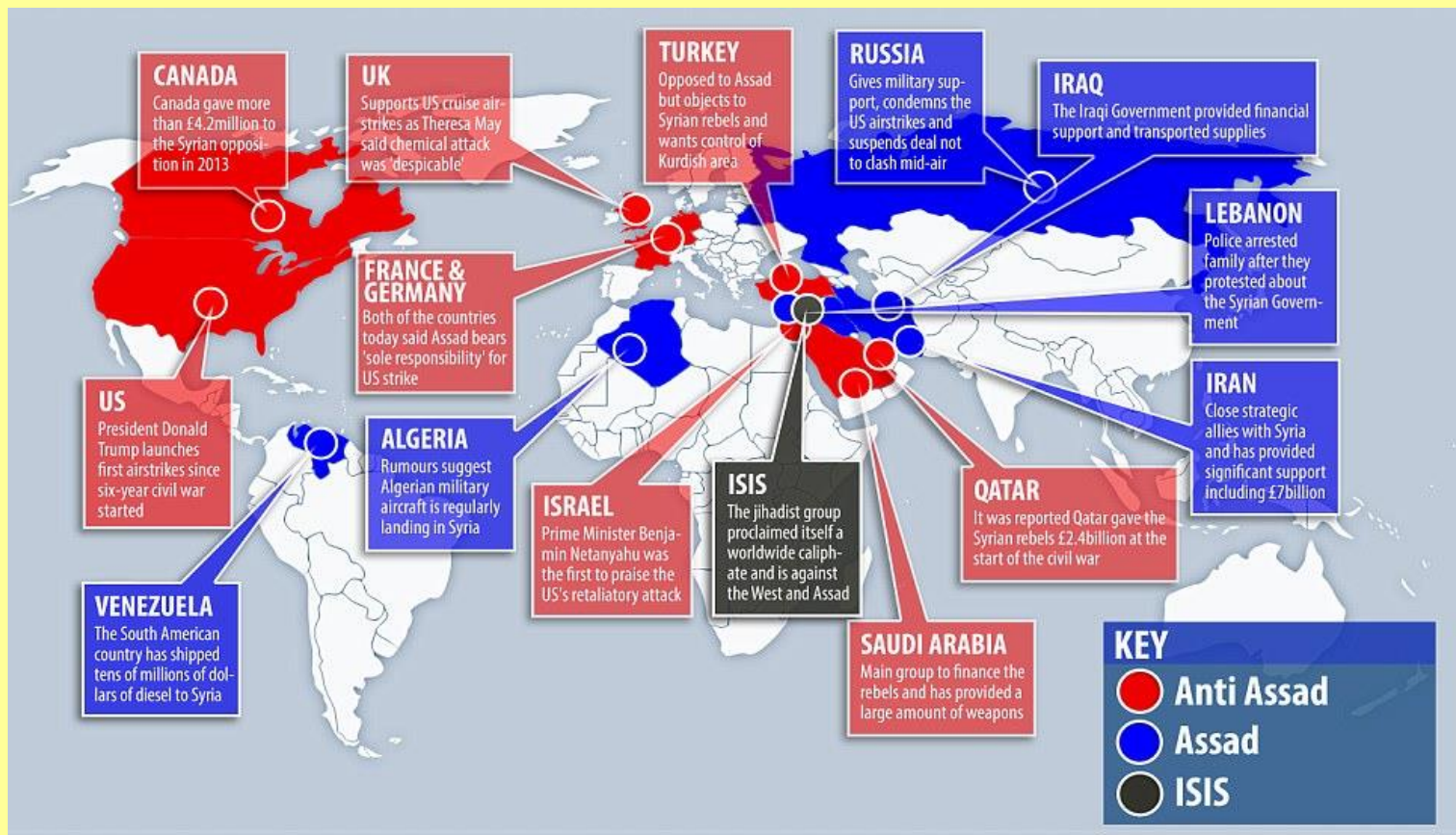
Are these the battle lines for World War Three?

Source: <http://www.dailymail.co.uk/news/article-4389248/Netanyahu-leads-worldwide-praise-Trump-s-airstrikes.html#ixzz4deYKX2nb>

Apr 08 – The US airstrikes on a Syrian regime airbase have hardened the dividing lines across the world in regards to the Assad regime.

MailOnline has set out world leaders' positions on the conflict, which clearly shows the split between pro and anti-Assad countries.

It suggests which side of the battle line countries would position themselves on should the escalating crisis turn into an all out global conflict.



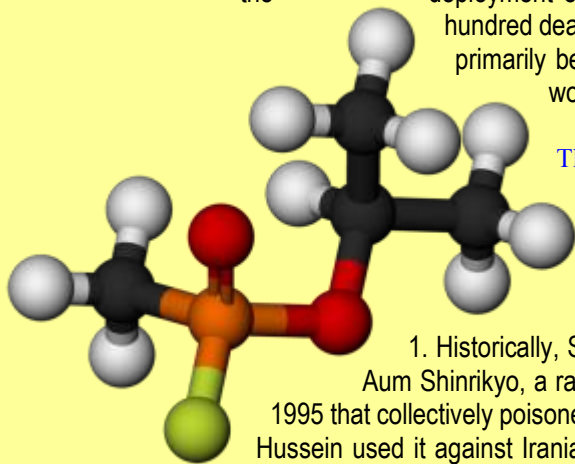
This map, created by MailOnline, shows who supports who in the battle for Syria - with the UK, France, Germany and the US belonging on the 'Anti Assad' side

10 facts about sarin gas

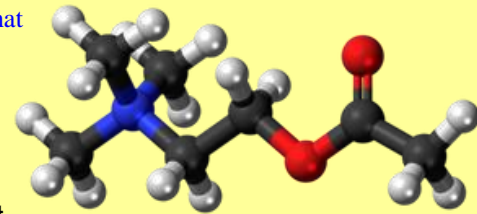
By Tanu S. Pandey, MD

Source: <http://www.kevinmd.com/blog/2017/04/bioterrorism-10-facts-sarin-gas.html>

Apr 08 – As the civil war in Syria shows no signs of de-escalating, worrisome evidence points towards the deployment of chemical warfare with banned agents recently, resulting in almost a hundred deaths with more than a quarter of them children. Chlorine and Sarin gas are primarily being implicated. Here are ten facts to know about Sarin gas and how it works.



The orange atom is a phosphorus; that's why these are all "organophosphates". Carbon is black, nitrogen is blue, oxygen is red, sulfur is yellow and fluorine is green. The phosphorus atom is the part of the molecule that reacts with acetylcholinesterase (right).



1. Historically, Sarin was used for bioterrorism by members of Aum Shinrikyo, a radical religious cult group in Japan, in 1994 and 1995 that collectively poisoned 6500 people on the subway. In 1998, Saddam Hussein used it against Iranians and Kurdish people. The Syrian government was implicated in an attack on civilians in 2013 that killed 1400 people.
2. Sarin is a clear, colorless, odorless, and tasteless liquid that transforms into gas and spreads insidiously over long distances to cause damage to the nervous system (thus the name nerve gas). It was accidentally discovered by Germans as a pesticide that seriously poisoned the four scientists who developed it. It is also [known as GB](#).
3. Sarin gas can get absorbed into the body from breathing the air and through the skin and eyes. Liquid Sarin can mix easily with drinking water. Food can get contaminated with Sarin. Occasionally it can linger in the clothes of those exposed and spread easily. The fact that Sarin can cause damage in so many different ways [adds to its lethality](#).
4. Sarin is heavier than air and sinks to lower levels over the ground. Children are more susceptible to Sarin because they are closer to the ground, have smaller bodies, faster breathing rates, immature organ systems, and [highly permeable skin](#).
5. Sarin gas is more potent than liquid and symptoms appear within seconds of exposure to the gas but may take hours with the liquid form. Since it is odorless, victims are unaware of its presence, just like carbon monoxide. Deaths are mostly due to respiratory failure from inhaling the gas.
6. The lethal dose of Sarin is about 0.5 mg. It is approximately 500 times more lethal than cyanide.
7. The effects of Sarin are quite similar to organophosphorus poisoning from other pesticides, though much more severe. It inhibits an enzyme in the body called acetylcholinesterase, which is responsible for the breakdown of certain stimulant neurotransmitters. This causes a cholinergic hyper-stimulation state with unopposed high levels of these neurotransmitters in nerves and muscles.
8. Symptoms include watering of the eyes, runny nose, excess sweating, drooling of saliva, cough, chest pain, rapid breathing, pain in the eye, nausea, diarrhea, and headache and can progress to altered mental status, muscle weakness and twitching, blood pressure changes, seizures, paralysis, and eventually death.
9. The treatment of Sarin poisoning is three-pronged: decontamination, respiratory support, and antidotes, [all three to be done simultaneously](#). Once exposure has occurred it is best to change clothes, wash eyes and body quickly with large quantities of soap and water, pack the clothes in double plastic bags to seal its spread, move out from the area, and go to the highest area possible (since Sarin sinks to the ground). Emergency medical care in a hospital is critical.



The best antidote is pralidoxime, but due to its cost and lack of easy availability, atropine can also be used. Pralidoxime was found to be effective even 6 hours after exposure and [recovery is quick](#). Supportive measures include aggressive intravenous hydration and diazepam. Personal protective equipment for the rescue units is fundamental and vital.

10. Long term and subclinical effects of Sarin are not clear. In the Japan attack 8 percent victims suffered from [post-traumatic stress disorder 5 years later](#). Psychological symptoms were common in victims of both attacks in Japan. Repeated small exposures [may or may not cause symptoms that are overt](#).

Tanu S. Pandey is an internal medicine physician.

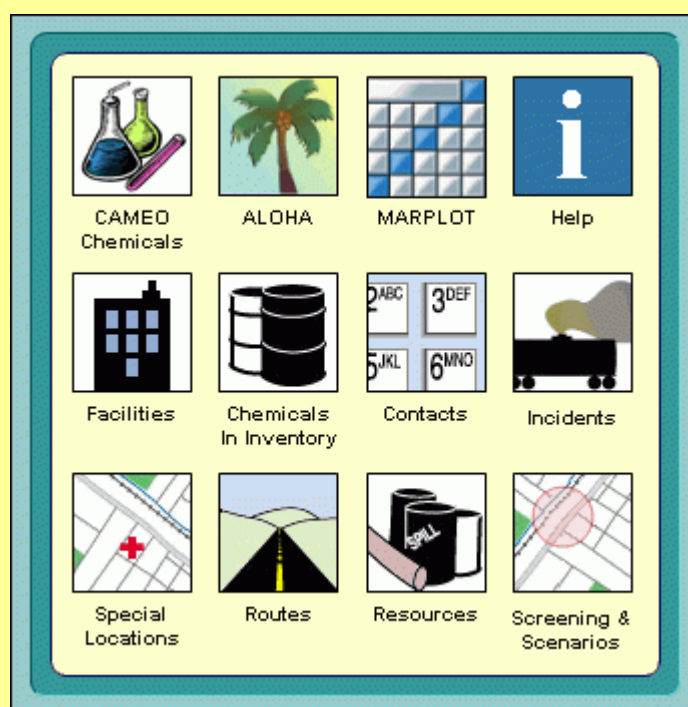
CAMEO Software

Source: <https://www.epa.gov/cameo/cameo-software#download%20cameo%20chemicals>

Since CAMEO_{fm} 2.0, the traditional CAMEO® functionality has been split into two programs that need to be downloaded and installed separately:

- CAMEO_{fm} is a database application where you can keep track of information (such as chemical inventories and contact information for facilities in your community) to assist in emergency response and planning. It is especially useful for managing data required under the Emergency Planning and Community Right-to-Know Act ([EPCRA](#)). You can enter information into the CAMEO database manually and/or by importing a [Tier2 Submit™ file](#) (if the facilities and/or planners in your state use that program to complete Tier II forms under EPCRA).
- CAMEO Chemicals has an extensive chemical database with critical response information for thousands of chemicals, and a tool that tells you what reactions might occur if chemicals were mixed together.

The programs can be used individually or in conjunction with other programs in the software suite, such as the ALOHA® hazard modeling tool and the MARPLOT® mapping program. [Learn more about the CAMEO software suite](#).



Downloading CAMEO_{fm}

[Download CAMEO_{fm} for Windows](#) (Version 3.3, Dec 2016, 33.0 MB EXE) (Updated January 6, 2017)

[Download CAMEO_{fm} for Mac](#) (Version 3.3, Dec 2016, 71.6 MB DMG); [additional Mac instructions](#)

The Windows version requires a Windows 7 (Service Pack 1), Windows 8.1, or Windows 10 operating system. The Macintosh version requires a Mavericks (10.9), Yosemite (10.10), or El Capitan (10.11) operating system. Operating systems not listed here have not been tested and are not supported.

Important Note for Current CAMEO_{fm} Users: Installing a new version of CAMEO_{fm} will overwrite the data in your current version of CAMEO_{fm}. To ensure that your data is successfully transferred to the new version, download and read the [instructions for transferring data from earlier CAMEO_{fm} versions](#).

Downloading CAMEO Chemicals

CAMEO Chemicals is available as a [website](#), [mobile website](#), [mobile app](#), and [desktop program](#). The mobile app and the desktop program formats can be used offline, and the desktop program can share information with other CAMEO suite programs.



[Download CAMEO Chemicals for Windows](#) (Version 2.7, Sept 2016)

[Download CAMEO Chemicals for Mac](#) (Version 2.7, Sept 2016)

[Get the CAMEO Chemicals app for iOS](#) (on App Store)

[Get the CAMEO Chemicals app for Android](#) (on Google Play)

Learning More About CAMEOfm and CAMEO Chemicals

For an overview of all of the suite programs, download the [CAMEO Suite fact sheet \(PDF\)](#) to learn how these tools can be used to assist first responders and emergency planners. (2 pp, 720 KB, [About PDF](#))

For a brief summary of the CAMEO Chemicals program and its capabilities, download the [CAMEO Chemicals fact sheet \(PDF\)](#). (2 pp, 815 KB, [About PDF](#))

What is new in latest version of CAMEOfm (3.3)?

- ✓ Modified import to also allow Tier II data to be imported using an XML file that adheres to the new national data standard
- ✓ Improved the error message that appears if you try to type in a text field without being in Edit mode
- ✓ Updated the Chemical Inventory links in the CAMEO-generated KML files
- ✓ Resolved an issue where large files could not be imported in Windows
- ✓ Updated to allow import of Tier2 Submit 2016 files
- ✓ Updated state-specific fields
- ✓ Revised helps
- ✓ Made additional minor changes and bugs fixes

What is new in the latest version of CAMEO Chemicals (2.7)?

- ✓ Added new feature to the UN/NA datasheets to allow you to see the 2016 Emergency Response Guidebook PDFs in English, Spanish, or French.
- ✓ Added new external website links on the chemical datasheets to NIOSH Pocket Guide pages and International Chemical Safety Cards.
- ✓ Updated data to include new toxic Levels of Concern (PACs and ERPGs), Hazmat Table (49 CFR 172.101) values, and DuPont Tychem suit fabric information.
- ✓ Updated list of ALOHA-selectable chemicals to match ALOHA 5.4.7.
- ✓ Added new Ionization Potential field to the chemical datasheets.
- ✓ Modified the Advanced Search to incorporate the three new chemical datasheet fields.
- ✓ Revised helps.
- ✓ Made additional minor changes and bug fixes.



►► Visit also: <https://www.epa.gov/cameo>

Intelligence agents return from Syria claiming Assad still possesses deadliest chemicals

Source: <http://www.jerusalemonline.com/news/middle-east/the-arab-world/assad-regime-stockpiling-weapons-of-mass-destruction-27657>

Ap 04 – Following the chemical weapons attack in Syria today (Tuesday) in which dozens — including children — were killed, officials from a Western intelligence source who returned from Syria told Channel 2 News that the threat posed by Syrian President Bashar al-Assad's regime is extremely grave. Despite his declarations, his army still possesses several of the most dangerous unconventional substances in existence.



According to these sources, the use of chemical weapons such as chlorine by Assad's army is not new. However, the airstrike that took place this morning in Idlib claiming dozens of lives utilized sarin nerve gas: a lethal gas that has been defined by the UN as a weapon of mass destruction and has been prohibited for use and collection by the Chemical Weapons Convention.

Chemical weapons have not been used in Syria since 2013, when Assad's army murdered more than 1,000 people in Damascus suburbs. Afterwards, the Syrian regime agreed to destroy the unconventional weapons in its possession following international pressure. However, according to the intelligence sources who spoke with Channel 2 News and from testimonies coming out of Syria, Assad apparently kept stockpiles of the deadly gas and other substances.

"We recognize an increased use of chemical substances in the fighting within Syria," the intelligence sources noted. "Inspectors check every complaint on the ground. The Syrian



army itself conducted several chemical airstrikes - mainly chlorine, usually by dropping from helicopters. But this time, nerve gas was used and this is extremely grave.”

At least 58 killed in Syrian army's chemical attack in rebel-held Idlib province

Source: <http://www.homelandsecuritynewswire.com/dr20170404-at-least-58-killed-in-syrian-army-s-chemical-attack-in-rebelheld-idlib-province>

Apr 04 – At least fifty-eight people were killed in a chemical attack the Syrian military launched by against a rebel-held Syrian town in Idlib



province. Medics rushed scores of injured civilians to a hospital – but the Syrian air force then bombed the hospital, reducing it to rubble. The London-based Syrian Observatory for Human Rights group said there were eleven children among the dead, although it was not clear whether the children were killed by chemical weapons, or in the attack on the hospital.

Mohammed Rasoul, the head of a Syrian ambulance service, told the [BBC](#) that first responders found people choking in the streets. The BBC [reports](#) that it was the third claim of a chemical attack in Syria in just over a week. The previous two were reported in Hama province, in an area not far from Khan Sheikhou, the site of Tuesday's attack.

Tuesday's reports came on the eve of a major international meeting in Brussels on the future of Syria and the region, to be hosted by the EU's High Representative Federica Mogherini.

The Syrian American Medical Society, which supports hospitals in opposition-held territory, said it had sent a team of inspectors to Khan Sheikhou before noon and an investigation was underway.

The Organization for the Prohibition of Chemical Weapons (OPCW) this morning issued this statement:

The Organization for the Prohibition of Chemical Weapons (OPCW) is seriously

concerned about the alleged chemical weapons attack reported by the media this morning in the Khan Shaykhun area of southern Idlib in the Syrian Arab Republic. The OPCW's Fact Finding Mission (FFM) is in the process of gathering and analyzing information from all available sources. The FFM will report its findings to the OPCW's Executive Council and States Parties to the Chemical Weapons Convention.

The OPCW strongly condemns the use of chemical weapons by anyone, anywhere and under any circumstances.

Witnesses said the chemical were spread by missiles fired from warplanes, but that they could not tell whether the planes were Syrian or Russian.

Many of those injured in the attack were transferred to a hospital in the town of Sarmin, located about thirty miles from the scene of the attack. Mohammed Hassoun, a media activist in the town, said the hospital there has the equipment to treat people injured in chemical attacks. NGOs helped the hospital get the equipment because the Assad regime has repeatedly used chemical weapons to attack rebel-held areas in the province.

“Because of the number of wounded, they have been distributed around in rural Idlib,” he told the AP by phone. “There are eighteen critical cases here. They were unconscious, they had seizures and when oxygen was administered, they bled from the nose and mouth.”

Hassoun is documenting the attack for a media group, and he said the doctors at the hospital have said it is likely more than one gas.

“Chlorine gas doesn't cause such convulsions,” he said, adding that doctors suspect sarin was used.

On several occasions in 2015 and early 2016, ISIS used make-shift mustard gas munitions against Kurdish forces in Iraq and Syria,



and on one occasions against Kurdish civilians in Iraq.

The symptoms of an attack by sarin gas are different from the symptoms of a chlorine attack. While both chemicals disrupt the body's respiratory system, leading to suffocation, sarin gas attacks the body's nervous system more generally, causing involuntary convulsions, foaming at the mouth, eyes which are not responsive to light, and other symptoms absent in a chlorine attack.

Since ISIS does not have access to sarin, or to airplanes and air-to-surface missiles, military analysts say that Tuesday's attack was carried out by the Syrian military.

Photos and videos posted on social media by activists and doctors on from the scene of the

attack and centers of treatment show limp bodies of children and adults foaming at the mouth. A doctor in one of the hospitals in Idlib posted a video on his Twitter account, showing of three victims, all with narrow, pinpoint pupils which did not respond to light.

Idlib province is largely controlled by anti-regime rebel groups, and it is also home to nearly one million Sunni refugees from other parts of Syria. A joint investigation by the United Nations and OPCW determined the Syrian government was behind at least three attacks in 2014 and 2015 involving chlorine gas, and that ISIS was responsible for at least one involving mustard gas.

Bolivia mercilessly trolls US over Iraq WMD lie in front of UN Security Council (VIDEO)

Source: <https://www.rt.com/viral/383979-bolivia-un-syria-us-wmd/>

Apr 07 – **Bolivia delivered an epic blow to the US at the emergency UN Security Council meeting Friday, reminding everyone of the disastrous weapons of mass destruction lie peddled by the US as a pretext to invade Iraq.**

Speaking at the emergency meeting to discuss the United States' missile strikes against Syria on



Thursday, Bolivian Ambassador to the United Nations, Sacha Llorenti, criticized the Trump's decision to take unilateral action against Syria, which he described as being *"an extremely serious violation of international law."*



Llorenti reminded the council of what transpired on Wednesday February 5, 2003, when then-US secretary of state Colin Powell “came to this room to present to us, according to his own words, convincing proof that there were weapons of mass destruction in Iraq.”

Llorenti held up a photograph of Powell taken on that day, when he held up a model vial of anthrax to demonstrate the dangers posed by Saddam Hussein and his alleged stockpile of weapons of mass destruction.

“I believe that we must absolutely remember these pictures and that we were told that there were weapons of mass destruction in Iraq and this was the motivation for an invasion,” he said. “After this invasion, there was 1 million deaths, and it launched a series of atrocities in that region.”

“Could we talk about ISIS if that invasion had not taken place? Could we be talking about the series of horrendous attacks in various parts in the world had that invasion, this illegal invasion not taken place?”

Bolivia’s bold statement served a blow to U.S. Ambassador to the UN, Nikki Haley, who rejected Llorenti’s request for a closed Security Council session to discuss the airstrikes, stating, “Any country that chooses to defend the atrocities of the Syrian regime will have to do so in full public view, for all the world to hear.”

Syria's 'chemical weapons' chief's son and brother are granted UK citizenship

Source: <http://www.mirror.co.uk/news/world-news/syrias-chemical-weapons-chiefs-son-10192745>

Apr 09 – **The son and brother of President Bashar al-Assad's alleged chemical weapons chief have been granted UK citizenship - even though he is under international sanctions.**

Amr Armanazi’s youngest son, Bisher (photo), and older brother, Ghayth, were handed British passports despite him being blacklisted in 2012 by the US government.



Armanazi’s eldest son, Zayd, a British citizen since 2009, works with his younger sibling at an investment bank in the City.

Officials accused Armanazi of running a facility in Syria allegedly involved in the production of sarin nerve gas and other weapons of mass destruction, like those used in last week’s atrocity.

He was placed under US sanctions because **he heads the Syrian Scientific Studies and Research Centre in Damascus, which intelligence agencies believe is the centre of Assad’s “non-conventional” weapons**

programme.

The US State Department said: “The SSRC also has a public civilian research function; however, its activities focus on the development of biological weapons, chemical weapons and missiles.

“During his tenure, Armanazi oversaw a facility that was involved in the production of sarin nerve agent.”

Armanazi, 72, was added to UK and EU sanctions lists in 2014.

His family in the UK, who deny he is involved in military activities, described last week’s massacre as a “heinous crime”, according to the Sunday Times .

Are Syria's Chemical Weapons Iraq's Missing WMD? Obama's Director of Intelligence Thought So

Who was the bigger liar on WMD? Bush or Obama?

By Mark Hemingway

Source: <http://www.weeklystandard.com/are-syrias-chemical-weapons-iraqs-missing-wmd-obamas-director-of-intelligence-thought-so/article/2007610>



Apr 10 - During the Bush administration, the popular protest refrain was "Bush lied, people died." It's true that a major justification for the Iraq war was eliminating Saddam Hussein's stockpiles of so-called weapons of mass destruction, a catch-all phrase for biological and chemical weapons, as well as ridding Iraq of attempts to start a nuclear program. Saddam Hussein previously used chemical weapons on the Kurds, so we know he had these weapons at some point. But they were nowhere to be found when we invaded.

One popular theory for what happened to them is that they were smuggled into Syria. In 2003, none other than James Clapper—who went on to be Obama's director of national intelligence—[said this is what happened to Iraq's WMD](#):

The official, James Clapper Jr., a retired lieutenant general, said satellite imagery showing a heavy flow of traffic from Iraq into Syria, just before the U.S. invasion in March, led him to believe that illicit weapons material "unquestionably" had been moved out of Iraq.

"I think people below the Saddam-Hussein-and-his-sons level saw what was coming and decided the best thing to do was to destroy and disperse," Clapper, who leads the National Imagery and Mapping Agency, said at a breakfast with reporters.

He said he was providing a personal assessment. But he said "the obvious conclusion one draws" was that there "may have been people leaving the scene, fleeing Iraq, and unquestionably, I am sure, material."

Clapper wasn't alone. Other credible reports from [international officials](#) and a [well-regarded Syrian journalist](#) and many [other sources](#) said that Iraqi WMD ended up in Syria as well. In 2005, the CIA's final report on the absence of WMD in Iraq called the transfer of chemical weapons to Syria "[unlikely](#)," but couldn't rule out the possibility that this is what happened.

However, given what we know now about Syria's chemical weapons use, it might be time to reassess whether the intelligence that Iraq had WMD was as faulty as we thought. And it's not just that WMD ended up in Syria, either. Though it was largely downplayed by the media, American troops in Iraq also stumbled across caches of chemical weapons—a handful of

soldiers were even exposed to chemical weapons in Iraq with serious consequences. Further, there are chemical weapons stores in Iraq unaccounted for in areas now controlled by ISIS. The *New York Times* [reported all of this in 2014](#), long after "Bush lied" was the settled line on WMD.

So settled, in fact, that our current Republican president [repeated the claim](#) in a primary debate last year: "They lied. They said there were weapons of mass destruction. There were none. They knew there were none. There were no weapons of mass destruction."

However, Trump has now looked at the chemical weapons problem through the eyes of a president who has seen intelligence reports and is bombing Syria in retaliation for Assad's repeated use of chemical weapons on his people. We now know that the Obama administration was [knowingly spreading falsehoods about removing chemical weapons in Syria](#). (Interestingly enough, the one person in the Obama administration who was admitting that the deal to get Syria to turn over its chemical weapons was unreliable was James Clapper. He told the Senate Armed Services Committee as much in February of last year, the same month as the primary debate where Trump accused Bush of lying about WMD.)

Now, there are still plenty of valid geostrategic reasons to oppose the Iraq war or think Saddam Hussein should have been handled differently. Further, there are still a number of things that Bush administration officials and their supporters did and said about WMD that were ill-advised.

However, it was always very far from a clear-cut conclusion that Bush knowingly lied us into war or that Iraq didn't have sizable WMD stockpiles. The WMD issue is sadly instructive in how domestic political imperatives can get in the way of important facts. Those on the left, along with the media, were heavily invested in the notion that Bush was lying, and undermining his credibility was necessary for improving their political fortunes. And being invested in the notion that Bush was lying meant denying the existence of chemical weapons in the region to an absurd degree. That has had serious consequences.



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The Assad regime's chemical-weapons kill chain

Source: <http://www.homelandsecuritynewswire.com/dr20170410-the-assad-regime-s-chemicalweapons-kill-chain>

Apr 10 –“There’s a long list of Syrian officials with blood on their hands — but the culpability goes all the way to the top,” Gregory Koblenz writes in one of the more

important analyses of the Assad regime’s strategic use of chemical weapons (“Syria’s Chemical Weapons Kill Chain,” [Foreign Policy](#), 7 April 2017). Koblenz, an Associate Professor and Director of the Biodefense Graduate Program in the Schar School of Policy and Government at George Mason University, is the author, among other books, of [Living Weapons: Biological Warfare and International Security](#) (Cornell University Press).

Here are the opening paragraphs of the article:

For the first time since President Barack Obama declared in August 2012 that the use of chemical weapons constituted a “red line,” the

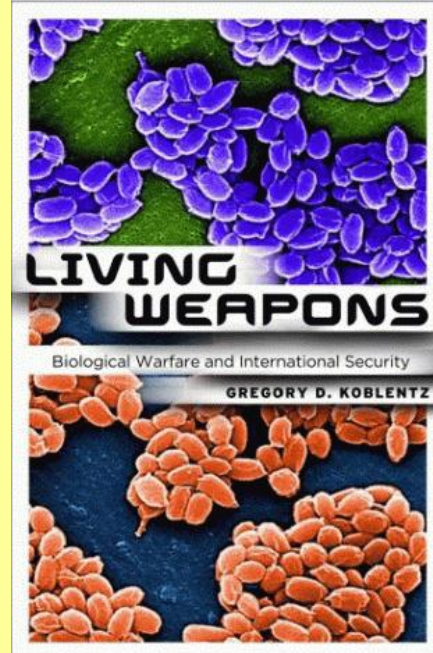


United States has responded militarily to the Syrian government’s use of these weapons. On the night of April 6, the U.S. military fired a salvo of 59 cruise missiles at Syria’s Shayrat air base, in response to a deadly chemical attack launched from that base earlier in the week. The chemical attack on the northwestern Syrian town of Khan Sheikhoun, according to first responders on the scene, [caused](#) at least 84 deaths and injured more than 500 more.

In announcing the strike, President Donald Trump [said](#), “It is in this vital national security interest of the United States to prevent and deter the spread and use of deadly chemical weapons.”

While the strike on Khan Sheikhoun was the deadliest chemical attack since the Syrian government launched rockets filled with sarin nerve agent into the Damascus suburb of Ghouta in August 2013 — killing more than 1,400 men, women, and children — it is far from the first attack since that massacre. Since 2014, rebel-held sections of Idlib, Hama, Aleppo, and elsewhere have been subjected to at least [120 chemical attacks](#), mostly by helicopters armed with barrel bombs filled with the toxic chemical chlorine. While these attacks were terrifying for the local populace, they rarely caused mass fatalities.

The attack on Khan Sheikhoun was significant not only for the high number of deaths but also for its use of a far deadlier type of chemical weapon. According to Secretary of State Rex Tillerson, the United States has “[very high confidence](#)” that sarin was used in the strike.



Although this has not yet been independently confirmed, the victims' [symptoms](#) and [autopsies](#) are consistent with poisoning by a nerve agent such as sarin.

If the chemical agent used in this attack was indeed sarin, it would either confirm [suspicions](#) that the Syrian regime did not destroy its entire chemical weapons stockpile as promised when it joined the Chemical Weapons Convention (CWC) in 2013 or that it has resumed production of these weapons in violation of the treaty. Either way, this latest attack vividly demonstrates that Syria, despite being a member of the CWC, maintains a well-organized capacity to conduct multiple types of chemical attacks in support of the regime's tactical and strategic objectives.

While the U.S. cruise missile strike targeted one link in the Syrian chemical weapons kill chain, it did not break the chain. National Security Advisor H. R. McMaster recognized as much when he [told](#) reporters in the aftermath of the strike: "Obviously, the regime will retain a certain capacity to commit mass murder with chemical weapons beyond this airfield."

Syria's chemical weapons attacks are not the work of a mere handful of people — an entire political, military, and scientific apparatus is responsible for orchestrating them. As Samantha Power, Obama's ambassador to the United Nations, [put it](#), "While their names may be unfamiliar, their brutality is infamous, so they should be as well."

Based on information released by the U.N., the Organization for the Prohibition of Chemical Weapons (OPCW), nongovernmental organizations, and the U.S. and European governments, it is possible to construct a picture of the Syrian government's entire chain of command involved in the research, production, weaponization, planning, and delivery of chemical weapons. The Syrian chain of command for chemical weapons is composed of four tiers: the senior leadership, which is responsible for authorizing the use of these weapons and providing strategic guidance on their employment; the chemists, who produce, transport, and prepare the chemical weapons for use; the coordinators, who provide intelligence on targets and integrate chemical weapons with conventional military operations; and the triggermen, who deliver the weapons to their targets. Together, these individuals and organizations form a chemical weapons kill chain that has so far [claimed](#) roughly 1,500 lives and caused more than 14,000 injuries.

Koblentz ends his article saying:

In the aftermath of the attack on Ghouta [in August 2013 – in which Assad forces used sarin gas to kill more than 1,400 men, women, and children], I co-wrote an article [arguing](#): "[A]n effective effort to reduce the long-term risk of chemical weapons ... must also include legal and economic steps to deter further chemical attacks, including by holding individual perpetrators accountable." In 2017, as in 2013, the use of military force is just one part of a comprehensive strategy to enhance deterrence, bring justice to the victims of chemical attacks, and reinforce the norm against chemical weapons.



QUESTION from the Editor



Whenever I travel abroad, I always carry an escape hood with me. Imagine now that I am involved in a bombing incident that among other things caused a fire and heavy smoke is covering the scene. I immediately don my escape hood and start moving to the closest exit together with other people involved. What do these people think of me wearing the hood? And when coming out from the burning building I was confronted by (highly sensitive on the occasion) Special Forces ready to enter the scene. What these police officers would think about a civilian with a hood and both his hands on the air? There is no doubt the escape hoods – sold on the Internet as well – is a good solution for both CBRN agents and smoke (cyanide). But are they really safe to be worn by citizens in public?

Syria chemical attack: Sarin gas was used in Khan Sheikhoun strike, says UK ambassador to UN

Source: <http://www.independent.co.uk/news/world/middle-east/syria-chemical-attack-sarin-gas-khan-sheikhoun-assad-strike-uk-ambassador-to-un-british-scientists-a7680556.html>

Apr 12 – **British scientists have found sarin in samples taken from the site of an alleged chemical gas attack in Syria.**

Britain's UN Ambassador Matthew Rycroft told the UN Security Council samples taken from the rebel-held town of Khan Sheikhoun and analysed by British scientists tested positive for sarin or a sarin-like substance.

"The United Kingdom therefore shares the US assessment that it is highly likely that the regime was responsible for a sarin attack on Khan Sheikhoun on 4 April," Mr Rycroft told the UN Security Council.

The majority of the international community has blamed the attack, which killed 87 people including many children, on Syria's President Bashar al-Assad.

Turkey has also claimed to have found evidence of sarin gas use after testing the bodies of the victims. The Syrian government has denied involvement in the toxic attack and blamed rebel groups.

EDITOR'S COMMENT: When a nation's representative claims such a serious accusation then he must also provide (in public) the details of the methodology used proving the presence of sarin (when blood [?] samples were taken; what identification method was used; what substances were identified etc.). I think that now it is quite easy to identify also the "chemical signature" of CWAs leading to who is the owner of the weaponized chemical. A British Ambassador + British lab and scientists might make us think that there is something fishy out there.

WH report: The Assad regime's use of chemical weapons on 4 April 2017

Source: <http://www.homelandsecuritynewswire.com/dr20170412-wh-report-the-assad-regimes-use-of-chemical-weapons-on-4-april-2017>

Apr 12 – The White House on Tuesday released a 4-page [report](#), prepared by the National Security Council, which contains declassified U.S. intelligence on the 4 April chemical weapons attack in Syria. The document calls Russia's claim that the source of the gas was a rebels' storage facility a "false narrative," accusing Russia of "shielding" a client state which has used weapons of mass destruction.

Senior White House officials, [speaking](#) to the *New York Times* on the condition of anonymity to discuss the declassified intelligence report, said Russia's goal was to cover up the Syrian government's responsibility for the chemical attack. The sources said that the Syrian government, lacking enough troops to respond to pressure from opposition forces around Syria, used the deadly sarin to target rebels who were threatening government-held territory.

Here is the released report in full:



The United States is confident that the Syrian regime conducted a chemical weapons attack, using the nerve agent sarin, against its own people in the town of Khan Shaykhun in southern Idlib Province on 4 April 2017. According to observers at the scene, the attack resulted in at least 50 and up to 100 fatalities (including many children), with hundreds of additional injuries.

We have confidence in our assessment because we have signals intelligence and geospatial intelligence, laboratory analysis of physiological samples collected from multiple victims, as well as a significant body of credible open source reporting, that tells a clear and consistent story. We cannot publicly release all available intelligence on this attack due to the need to protect sources and methods, but the following includes an unclassified summary of the U.S. Intelligence Community's analysis of this attack.

Summary of the U.S. intelligence community's assessment of the 4 April attack

The Syrian regime maintains the capability and intent to use chemical weapons against the opposition to prevent the loss of territory deemed critical to its survival. We assess that Damascus launched this chemical attack in response to an opposition offensive in northern Hamah Province that threatened key infrastructure. Senior regime military leaders were probably involved in planning the attack.

A significant body of pro-opposition social media reports indicate that the chemical attack began in Khan Shaykhun at 6:55 a.m. local time on 4 April.

Our information indicates that the chemical agent was delivered by regime Su-22 fixed-wing aircraft that took off from the regime-controlled Shayrat Airfield. These aircraft were in the vicinity of Khan Shaykhun approximately 20 minutes before reports of the chemical attack began and vacated the area shortly after the attack. Additionally, our information indicates personnel historically associated with Syria's chemical weapons program were at Shayrat Airfield in late March making preparations for an upcoming attack in Northern Syria, and they were present at the airfield on the day of the attack.

Hours after the 4 April attack, there were hundreds of accounts of victims presenting symptoms consistent with sarin exposure, such as frothing at the nose and mouth, twitching, and pinpoint pupils. This constellation of symptoms is inconsistent with exposure to a respiratory irritant like chlorine — which the regime has also used in attacks — and is extremely unlikely to have resulted from a conventional attack because of the number of victims in the videos and the absence of other visible injuries. Open source accounts posted following the attack reported that first responders also had difficulty breathing, and that some lost consciousness after coming into contact with the victims — consistent with secondary exposure to nerve agent.

By 12:15 p.m. local time, broadcasted local videos included images of dead children of varying ages. Accounts of a hospital being bombed began to emerge at 1:10 p.m. local, with follow-on videos showing the bombing of a nearby hospital that had been flooded with victims of the sarin attack. Commercial satellite imagery from April 6 showed impact craters around the hospital that are consistent with open source reports of a conventional attack on the hospital after the chemical attack. Later on 4 April, local physicians posted videos specifically pointing out constricted pupils (a telltale symptom of nerve agent exposure), medical staff with body suits on, and treatments involving atropine, which is an antidote for nerve agents such as sarin.

We are certain that the opposition could not have fabricated all of the videos and other reporting of chemical attacks. Doing so would have required a highly organized campaign to deceive multiple media outlets and human rights organizations while evading detection. In addition, we have independently confirmed that some of the videos were shot at the approximate times and locations described in the footage.

Further, the World Health Organization stated on 5 April that its analysis of the victims of the attack in Syria showed they had been exposed to nerve agents, citing the absence of external injuries and deaths due to suffocation. Doctors without Borders (Médecins Sans Frontières; MSF) said that medical teams treating affected patients found symptoms to be consistent with exposure to a neurotoxic agent such as sarin. And Amnesty International said evidence pointed to an air-launched chemical attack. Subsequent laboratory analysis of physiological samples collected from multiple victims detected signatures of the nerve agent sarin.



Refuting the false narratives

The Syrian regime and its primary backer, Russia, have sought to confuse the world community about who is responsible for using chemical weapons against the Syrian people in this and earlier attacks. Initially, Moscow dismissed the allegations of a chemical weapons attack in Khan Shaykhun, claiming the attack was a “prank of a provocative nature” and that all evidence was fabricated. It is clear, however, that the Syrian opposition could not manufacture this quantity and variety of videos and other reporting from both the attack site and medical facilities in Syria and Turkey while deceiving both media observers and intelligence agencies.

Moscow has since claimed that the release of chemicals was caused by a regime airstrike on a terrorist ammunition depot in the eastern suburbs of Khan Shaykhun. However, a Syrian military source told Russian state media on April 4 that regime forces had not carried out any airstrike in Khan Shaykhun, contradicting Russia’s claim. An open source video also shows where we believe the chemical munition landed—not on a facility filled with weapons, but in the middle of a street in the northern section of Khan Shaykhun. Commercial satellite imagery of that site from April 6, after the allegation, shows a crater in the road that corresponds to the open source video.

Moscow has suggested that terrorists had been using the alleged ammunition depot to produce and store shells containing toxic gas that they then used in Iraq, adding that both Iraq and international organizations have confirmed the use of such weapons by militants. While it is widely accepted that the Islamic State of Iraq and Syria (ISIS) has repeatedly used sulfur mustard on the battlefield, there are no indications that ISIS was responsible for this incident or that the attack involved chemicals in ISIS’s possession.

Moscow suggested this airstrike occurred between 11:30 p.m. and 12:30 p.m. local time on April 4, disregarding that allegations first appeared on social media close to 7:00 a.m. local time that morning, when we know regime aircraft were operating over Khan Shaykhun. In addition, observed munition remnants at the crater and staining around the impact point are consistent with a munition that functioned, but structures nearest to the impact crater did not sustain damage that would be expected from a conventional high-explosive payload. Instead, the damage is more consistent with a chemical munition. The Syrian regime has used other chemical agents in attacks against civilians in opposition held areas in the past, including the use of sulfur mustard in Aleppo in late 2016. Russia has alleged that video footage from 4 April indicated that victims from this attack showed the same symptoms of poisoning as victims in Aleppo last fall, implying that something other than a nerve agent was used in Khan Shaykhun. However, victims of the attack on 4 April displayed tell-tale symptoms of nerve agent exposure, including pinpoint pupils, foaming at the nose and mouth, and twitching, all of which are inconsistent with exposure to sulfur mustard.

Russia’s allegations fit with a pattern of deflecting blame from the regime and attempting to undermine the credibility of its opponents. Russia and Syria, in multiple instances since mid-2016, have blamed the opposition for chemical use in attacks. Yet similar to the Russian narrative for the attack on Khan Shaykhun, most Russian allegations have lacked specific or credible information. Last November, for instance, senior Russian officials used an image from a widely publicized regime chemical weapons attack in 2013 on social media platforms to publicly allege chemical weapons use by the opposition. In May 2016, Russian officials made a similar claim using an image from a video game. In October 2016, Moscow also claimed terrorists used chlorine and white phosphorus in Aleppo, even though pro-Russian media footage from the attack site showed no sign of chlorine use. In fact, our Intelligence from the same day suggests that neither of Russia’s accounts was accurate and that the regime may have mistakenly used chlorine on its own forces. Russia’s contradictory and erroneous reports appear to have been intended to confuse the situation and to obfuscate on behalf of the regime.

Moscow’s allegations typically have been timed to distract the international community from Syria’s ongoing use of chemical weapons—such as the claims earlier this week—or to counter the findings from the Organization for the Prohibition of Chemical Weapons (OPCW)-United Nations (UN) Joint Investigative Mechanism (JIM), which confirmed in August and October 2016 reports that the Syrian regime has continued to use chemical weapons on multiple occasions long after it committed to relinquish its arsenal in 2013. Russia has also questioned the impartial



findings of the JIM—a body that Russia helped to establish—and was even willing to go so far as to suggest that the Assad regime should investigate itself for the use of chemical weapons.

Moscow's response to the April 4 attack follows a familiar pattern of its responses to other egregious actions; it spins out multiple, conflicting accounts in order to create confusion and sow doubt within the international community.

International condemnation and a time for action

The Assad regime's brutal use of chemical weapons is unacceptable and poses a clear threat to the national security interests of the United States and the international community. Use of weapons of mass destruction by any actor lowers the threshold for others that may seek to follow suit and raises the possibility that they may be used against the United States, our allies or partners, or any other nation around the world.

The United States calls on the world community in the strongest possible terms to stand with us in making an unambiguous statement that this behavior will not be tolerated. This is a critical moment— we must demonstrate that subterfuge and false facts hold no weight, that excuses by those shielding their allies are making the world a more dangerous place, and that the Syrian regime's use of chemical weapons will not be permitted to continue.

We must remember that the Assad regime failed to adhere to its international obligations after its devastating attacks on Damascus suburbs using the nerve agent sarin in August 2013, which resulted in more than one thousand civilian fatalities, many of whom were children. The regime agreed at that time to fully dismantle its chemical weapons program, but this most recent attack—like others before it—are proof that it has not done so. To be clear, Syria has violated its obligations under the Chemical Weapons Convention and the UN Charter, and no drumbeat of nonsensical claims by the regime or its allies can hide this truth. And while it is an embarrassment that Russia has vetoed multiple UN Security Council resolutions that could have helped rectify the situation, the United States intends to send a clear message now that we and our partners will not allow the world to become a more dangerous place due to the egregious acts of the Assad regime.

EDITOR'S COMMENT: Same as for previous article – report is describing current situation not evidence proving that sarin was deployed. A more informative article is the one that follows although Turkish involvement in the overall Syria's problem weakens a bit the proof presented.

Medical evidence confirms sarin gas was used in Syria chemical attack

Source: <http://www.homelandsecuritynewswire.com/dr20170411-medical-evidence-confirms-sarin-gas-was-used-in-syria-chemical-attack>

Apr 11 – **Turkey's health minister said that traces of sarin gas have been detected in blood and urine samples from victims injured in the town of Khan Sheikhun in Syria on 4 April, offering "concrete evidence" of its use in the attack.** Doctors and aid workers who had examined those who were injured in last week's attack by the Syrian military, said the victims exhibited symptoms of exposure to a nerve agent similar to sarin, as well as a second chemical that may have been chlorine. Many of the victims of last week's attack were taken to Turkey for treatment because the Assad regime and Russia, as part of their war

strategy, have destroyed many of the medical facilities in the Sunni areas of Syria. The BBC [reports](#) that the medical tests and autopsies in Turkey thus offer the first scientific information about the toxins used in the attack which killed more than eighty people.

The Turkish health minister Recep Akdağ said isopropyl methylphosphonic acid, a chemical which sarin degrades into, was found in the blood and urine samples taken from the patients who arrived in Turkey. Some thirty victims were brought across the border following



the attack last Tuesday, and a number of them have died.

Turkish physicians, monitored by scientists from the World Health Organization (WHO), performed autopsies on the victims who died in Turkey shortly after the attack. The autopsies found evidence of exposure to sarin in each of the bodies on which autopsies were performed.

The BBC notes that results of the tests in Turkey will support the charges by Western powers that the Assad regime deployed sarin in violation of the 2013 U.S.-Russia agreement which stipulated that Syria would hand over all of its chemical weapons arsenal, and in violation of the Chemical Weapons Convention, which Syria joined in 2014.

Russia, Assad's staunchest backer, has said the Syrian military's air raids targeted a rebel warehouse which contained chemical weapons – and that these chemicals then leaked out to the surrounding area.

Military analysts dismissed this claim. They note that in the event of chemical weapons being destroyed by powerful explosions in a depot or a warehouse, most of the chemicals are destroyed in the blast and consumed by the heat which follows. Some dispersal of chemicals may

occur, but if it does, it covers only a small area adjacent to the depot.

The victims in the 4 April attack were hit over a large area, consistent not only with an aerial attack – but with a sophisticated attack at that: the bombs carrying the chemicals had pressure or timer mechanisms to trigger an explosion at a pre-determined altitude to ensure the broadest and most effective dispersal of the toxic chemicals.

Chemical agents are quick to vaporize and they tend dissipate quickly, so the military personnel preparing the chemical weapons for use must determine at what altitude the bombs should explode. The determination is based on weather information, especially wind patterns and the amount of moisture in the air at the site of the targeted area.

The *Guardian* [reports](#) that a visit by its journalists to the site of the chemical attack found no evidence to back the Russian claim.

The site which the Russians claimed was the rebels' chemical weapons storage facility was found to be empty, abandoned warehouse and grain silos which were empty except for soil and animal feed. There was also no sign that the site was ever bombed.

Enzymes versus Nerve Agents: Designing Antidotes for Chemical Weapons

Source: <https://www.scientificamerican.com/article/enzymes-versus-nerve-agents-designing-antidotes-for-chemical-weapons/>

Apr 11 – A chemical weapons attack that killed more than 80 people, including children, triggered the Trump administration's recent missile strikes against the Syrian government. The use of illegal nerve agents – apparently by the Assad regime – violated international law; President Trump said he was moved to act by images of the victims' horrible deaths.

But there's another path to mitigate the danger of chemical weapons. This route lies within the domains of science – the very same science that produced chemical weapons in the first place. Researchers in the U.S. and around the world, including here at the University of Washington's [Institute for Protein Design](#), are developing the tools needed to quickly and safely destroy nerve agents – both in storage facilities and in the human body.

Nerve agents, a class of synthetic phosphorous-containing compounds, are [among the most toxic substances known](#). Brief exposure to the most potent variants can lead to death within minutes. Once nerve agents enter the body, they irreversibly inhibit a vitally important enzyme called acetylcholinesterase. Its normal job within the nervous system is to help brain and muscle communicate. When a nerve agent shuts down this enzyme, classes of neurons throughout the central and peripheral nervous systems quickly get overstimulated, leading to [profuse sweating, convulsions and an excruciating death by asphyxiation](#).



Chemical weapons are often associated with wars of the previous century – mustard gas in WWI, Zyklon B in WWII. But the worst variety, nerve agents, were [never deployed in the world wars](#), though Nazi scientists developed the first generation of these compounds. Gerhard Schrader, the so-called [father of nerve agents](#), didn't begin life as a Nazi scientist – he was developing new pesticides to combat world hunger when he accidentally synthesized the first organophosphorus nerve agent. Later, he led the research team that produced sarin, or GB, the most toxic of the all the so-called G-series nerve agents. The U.S. government stated with [“very high confidence” that sarin was used](#) in the recent attack near Idlib, Syria.

Beginning in 2013, teams from the Organization for the Prohibition of Chemical Weapons went to Syria and, with help from the Danish, Norwegian, Russian, Chinese and [U.S. government](#), [destroyed all declared stockpiles](#) of Syrian chemical weapons. It seems that either not all of Assad's stockpiles were in fact [declared and destroyed, or that new nerve agents arrived](#) in Syria – either via the black market or chemical synthesis – in the intervening years.



Empty sarin containers at Pine Bluff Arsenal. Credit: U.S. Army [Wikimedia](#)

Clearing chemical weapons

Twenty-first-century chemists, biochemists and computer scientists are working right now to sap chemical weapons of their horrifying power by designing counter agents that safely and efficiently destroy them.

Sarin sitting in a container – as opposed to in a human body – is relatively easy to destroy. The simplest method is to add a soluble base and heat the mixture to near-boiling temperatures. After several hours, the vast majority – more than 99.9 percent – of the deadly compound can be broken apart by a process called hydrolysis. This is how [trained specialists](#) dispose of chemical weapons like sarin.

Nerve agents that make their way inside the body are a different story. For starters, you clearly cannot add a near-boiling base to a person. And because nerve agents kill so quickly, any treatment that takes hours to work is a nonstarter.

There are chemical interventions for warding off death after exposure to certain chemical weapons. Unfortunately, these interventions are costly, difficult to dose properly and [are themselves quite toxic](#). The chemical antidotes pralidoxime and the cheaper atropine [were](#)



[deployed](#) after recent attacks in Syria, but [doctors in the area worry](#) their dwindling supplies offer little protection against possible future attacks.

For a medical intervention to work after nerve gas exposure, it has to work fast. If a first responder administers a sarin-destroying molecule, each therapeutic molecule must be capable of breaking down through hydrolysis [hundreds of nerve agent molecules per second](#), one after another.

Enzymes, the genetically encoded catalysts of biology, are up for such a task. Famous enzymes include lactase, which breaks down milk sugars in those who are lactose tolerant. Another known as RuBisCO is vital to the process of carbon fixation in plants. The most efficient enzymes in your body can perform [a million reactions per second](#), and do so under chemically mild conditions.

Aside from their astonishing speed, enzymes often display an equally impressive selectivity. That is, they react with only a small number of structurally similar compounds and leave all other compounds alone. Selectivity is useful in the context of the chemical soup that is the cell but problematic when it comes to xenobiotics: those compounds which are foreign to one's biology. Man-made organophosphates such as sarin are xenobiotics. There are no enzymes that hydrolyze them well – or so we thought.

When farmers spray pesticides, much of it ends up on the ground. Soil bacteria living nearby are challenged by high doses of these potent foreign chemicals. It turns out that [efficient detoxifying enzymes have recently evolved](#) inside some of these microbes as a result.

Scientists have identified and isolated a small number of these enzymes and tested them on a range of nasty compounds, including nerve agents, which are structurally similar to some pesticides. A select few did indeed show hydrolytic activity.

Improving on the discovery

Researchers have taken these naturally occurring enzymes as raw material. Then, using [computer modeling and controlled evolution in the lab](#), we've bolstered the efficiency of the originally found anti-nerve agent enzymes. Enzymes that initially showed only modest activity have been turned into potential therapeutics against VX – a chemical cousin of sarin and the most toxic nerve agent of all.

In a proof-of-concept study conducted jointly by researchers in Germany and Israel in late 2014, guinea pigs under anesthesia were exposed to lethal doses of VX, followed by optimized VX-destroying proteins. Low doses of the protein drug, even after a 15-minute delay, resulted in survival of all animals and only moderate toxicity.

Despite these promising advances, no enzyme yet exists which is efficient enough for lifesaving use in people. Scientists are [refining these microscopic machines](#), and [new paradigms in computer-aided protein engineering](#) are unlocking the door to this and other applications of biomolecular design. We may be only a few years away from developing the kind of therapeutics that would make chemical weapons a worry of the past.

As the world grieves over the latest attacks in Syria, it is worth keeping in mind the awesome and often complex power of science. In trying to combat hunger, one might accidentally invent liquid death. In studying soil microbes, one might discover a tool to prevent atrocities.

EDITOR'S COMMENT: This article provides some important info about medical management of nerve agents. But why articles like this should start with a hidden adverse comment on new US President. Political correctness? Fashion?

Post-exposure treatment of VX poisoned guinea pigs with the engineered phosphotriesterase mutant C23: A proof-of-concept study

Toxicology Letters. Volume 231, Issue 1, 18 November 2014, pp. 45–5

By Franz Worek^a, Thomas Seeger^a, Georg Reiter^a, Moshe Goldsmith^b, Yacov Ashani^b, Haim Leader^{c,d}, Joel L. Sussman^d, Nidhi Aggarwal^d, Horst Thiermann^a, Dan S. Tawfik^b



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Source: <http://www.sciencedirect.com/science/article/pii/S0378427414013241>

Abstract

The highly toxic organophosphorus (OP) nerve agent VX is characterized by a remarkable biological persistence which limits the effectiveness of standard treatment with atropine and oximes. Existing OP hydrolyzing enzymes show low activity against VX and hydrolyze preferentially the less toxic P(+)-VX enantiomer. Recently, a phosphotriesterase (PTE) mutant, C23, was engineered towards the hydrolysis of the toxic P(-) isomers of VX and other V-type agents with relatively high *in vitro* catalytic efficiency ($k_{cat}/K_M = 5 \times 10^6 \text{ M}^{-1} \text{ min}^{-1}$). To investigate the suitability of the PTE mutant C23 as a catalytic scavenger, an *in vivo* guinea pig model was established to determine the efficacy of post-exposure treatment with C23 alone against VX intoxication. Injection of C23 (5 mg kg^{-1} i.v.) 5 min after s.c. challenge with VX ($\sim 2\text{LD}_{50}$) prevented systemic toxicity. A lower C23 dose (2 mg kg^{-1}) reduced systemic toxicity and prevented mortality. Delayed treatment (i.e., 15 min post VX) with 5 mg kg^{-1} C23 resulted in survival of all animals and only in moderate systemic toxicity. Although C23 did not prevent inhibition of erythrocyte acetylcholinesterase (AChE) activity, it partially preserved brain AChE activity. C23 therapy resulted in a rapid decrease of racemic VX blood concentration which was mainly due to the rate of degradation of the toxic P(-)-VX enantiomer that correlates with the C23 blood levels and its k_{cat}/K_M value. Although performed under anesthesia, this proof-of-concept study demonstrated for the first time the ability of a catalytic bioscavenger to prevent systemic VX toxicity when given alone as a single post-exposure treatment, and enables an initial assessment of a time window for this approach. **In conclusion, the PTE mutant C23 may be considered as a promising starting point for the development of highly effective catalytic bioscavengers for post-exposure treatment of V-agents intoxication.**

Some articles on long term effects of sarin

Study links Gulf war sarin gas exposure to brain damage

Source: <http://www.nytimes.com/2007/05/17/world/americas/17iht-sarin.4.5758115.html>

May 17, 2007 – Scientists working with the Department of Defense have found evidence that **low-level exposure to sarin nerve gas** - the kind experienced by more than 100,000 U.S. troops in the Gulf war in 1991 - **could have caused lasting brain deficits.**

Though the results are preliminary, the study is notable for being financed by the government and for being the first to make use of a detailed analysis of sarin exposure performed by the Pentagon, based on wind patterns and plume size.

The report, to be published in the June issue of the journal *NeuroToxicology*, found **apparent changes in the brain's connective tissue - its so-called white matter** - in soldiers exposed to the gas.

The extent of the brain changes - less white matter and slightly larger brain cavities - corresponded to the extent of exposure, the study found.

Previous studies had suggested that exposure affected the brain in some neural regions, but the evidence was not convincing to many scientists. **The new report is likely to revive the long-debated question of why so many troops returned from that war with unexplained physical problems.**

Many in the scientific community have questioned whether the so-called **Gulf war illnesses** have a physiological basis, and far more research will have to be done before it is clear that those illnesses can be traced to exposure to sarin. The long-term effects of sarin on the brain are still not well understood.

But several lawmakers who were briefed on the study say the Department of Veterans Affairs now should provide increased neurological care to veterans who may have been exposed.



In March 1991, a few days after the end of the Gulf war, U.S. soldiers exploded two large caches of ammunition and missiles in Khamisiya, Iraq. Some of the missiles contained the dangerous nerve gases sarin and cyclosarin. Based on wind patterns and the size of the plume, the Department of Defense has estimated that more than 100,000 U.S. troops may have been exposed to at least small amounts of the gases.

When the roughly 700,000 deployed troops returned home, **about one in seven began experiencing a mysterious set of ailments, often called Gulf war illnesses, with problems including persistent fatigue, chronic headaches, joint pain and nausea.** Those symptoms persist today for more than 150,000 of them, according to the Department of Veterans Affairs, more than the number of troops exposed to the gases.

The study, financed by the Department of Veterans Affairs and the Centers for Disease Control and Prevention, is the first to use Pentagon data on potential exposure levels faced by the troops and **magnetic resonance imaging to scan the brains** of military personnel in the exposure zone. It found signs of brain changes that could be the result of exposure, showing that troops who had been exposed at higher levels had **about 5 percent less white matter than those who had little exposure.**

White matter volume varies by individual, but studies have shown that significant shrinkage in adulthood can be a sign of damage.

The study was led by Roberta White, chairman of the department of environmental health at the Boston University School of Public Health. White and other researchers studied 26 Gulf war veterans, half of whom were exposed to the gases, according to a Department of Defense modeling of the likely chemical makeup and location of the plume.

In a companion study, the researchers also tested 140 troops believed to have experienced differing degrees of exposure to the chemical agents to check their fine motor coordination, and found a direct relation between performance level and the level of potential exposure. **Individuals who were potentially more exposed to the gases had a deterioration in fine motor skills.**

White said this study and the results of research from other studies provided "converging evidence that some Gulf war veterans experienced nervous system damage as a result of service, and this is an important development in explaining Gulf war illnesses."

Phil Budahn, a spokesman for the Department of Veterans Affairs, said the research required further examination.

"It's important to note that its authors describe the study as inconclusive," Budahn said.

White said she did not describe her study as inconclusive, though she said it would be accurate to call it preliminary.

For more than five years after the explosions at Khamisiya, the Pentagon denied that any U.S. military personnel had been exposed to nerve gas.

Confronted by new evidence in 1996 and in 1997, it acknowledged that up to 100,000 troops might have been exposed. In 2002, it released a report saying the exposures were too low to have caused a long-term adverse effect on health.

Now, the government is straining to handle the health and rehabilitation needs of soldiers returning from the current wars in Iraq and Afghanistan, and lawmakers say they are concerned that facilities for veterans will need to provide brain scans and treatment to soldiers from the 1991 war who learn of the new research.

Sarin experiences in Japan: acute toxicity and long-term effects

J Neurol Sci. 2006 Nov 1;249(1):76-85. Epub 2006 Sep 7.

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Source: <https://www.ncbi.nlm.nih.gov/pubmed/16962140>



Abstract

Two terrorist attacks with the nerve agent Sarin affected citizens in Matsumoto and Tokyo, Japan in 1994 and 1995, killing 19 and injuring more the 6000. Sarin, a very potent organophosphate nerve agent, inhibits acetylcholinesterase (AChE) activity within the central, peripheral, and autonomic nervous systems. Acute and long-term Sarin effects upon humans were well documented in these two events. Sarin gas inhalation caused **instantaneous death by respiratory arrest** in 4 victims in Matsumoto. In Tokyo, two died in station yards and another ten victims died in hospitals within a few hours to 3 months after poisoning. Six victims with serum ChE below 20% of the lowest normal were resuscitated from cardiopulmonary arrest (CPA) or coma with generalized convulsion. Five recovered completely and **one remained in vegetative state due to anoxic brain damage**. EEG abnormalities persisted for up to 5 years. Miosis and copious secretions from the respiratory and GI tracts (muscarinic effects) were common in severely to slightly affected victims. Weakness and twitches of muscles (nicotinic effects) appeared in severely affected victims. **Neuropathy and ataxia were observed in small number (less than 10%) of victims, which findings disappeared between 3 days and 3 months**. Leukocytosis and high serum CK levels were common. Hyperglycemia, ketonuria, low serum triglyceride, hypopotassemia were observed in severely affected victims, which abnormalities were attributed to damage of the adrenal medulla. Oximes, atropine sulphate, diazepam and ample intravenous infusion were effective treatments. Pralidoxime iodide IV reversed cholinesterase and symptoms quickly even if administered 6 h after exposure. Post Traumatic Stress Disorder (PTSD) was less than 8% after 5 years. However, psychological symptoms continue in victims of both incidents. In summary, both potent toxicity and quick recovery from critical ill conditions were prominent features. Conventional therapies proved effective in Sarin incidents in Japan.

What Does Sarin Do to People?

Source: <https://www.theatlantic.com/health/archive/2013/05/what-does-sarin-do-to-people/275577/>

May 06, 2013 – President Obama has said that chemical weapons would be a "red line" that would warrant U.S. intervention in Syria. U.N. independent commissioner Carla Del Ponte said yesterday that Syrian *rebels* have used sarin gas. Free Syrian Army leaders deny that.

In terms of human rights and all not being fair in love or war, understanding sarin may help a bit in framing discussions of morality as the U.S. considers putting more lives into the fray.

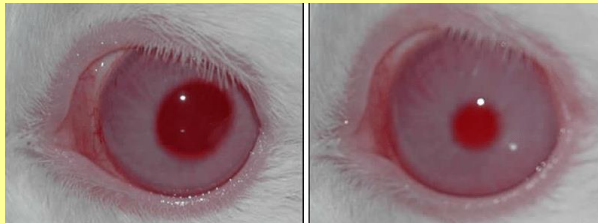
Broadly, it's war-legit to land a bullet in someone's spine or genitals, but not to poison them. Meanwhile the U.S. is [force-feeding Guantanamo detainees with tubes down their noses](#). What makes sarin a red line?

On April 22, 1915 in Belgium, the German army killed or injured 5,000 Allied soldiers by releasing 150 tons of chlorine gas. That is regarded as the first modern use of large-scale chemical warfare, though the concept goes back to snake-venom-tipped arrows in the Stone Age. By 1937, German chemist Gerhard Schrader had developed an insecticide that the Nazis soon realized was a more toxic agent than chlorine gas: sarin. They did not use it in World War II, though, reportedly because they understood its potential and feared retaliation in kind.

In 1988, around 5,000 Kurds died at Halahbja after Iraq used both sarin and sulfur mustard. Sarin further became a household name after the 1995 Tokyo subway attack in which the religious cult Aum Shinrykio used sarin to kill 12 people and harm thousands more.

So, what does sarin do to our bodies?





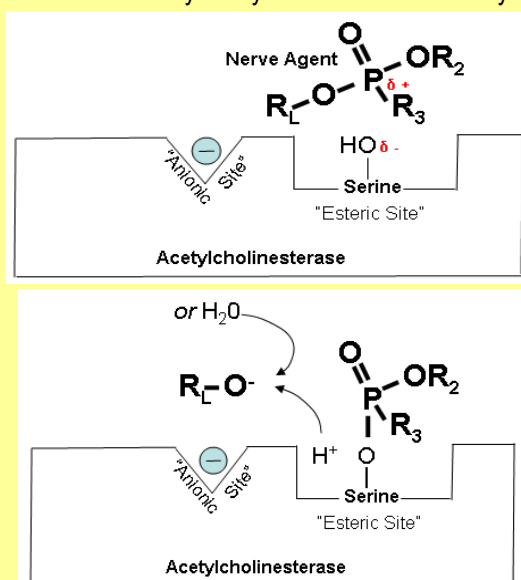
Effect of sarin on the left eye of a rabbit (pupil constriction) [[Journal of Medical, Chemical, Biological, and Radiological Defense](#)]

Sarin is unique in potency but not in mechanism. There are other drugs, pesticides, and plants that work the same way.

They are called cholinesterase inhibitors.

Our nerves talk to each other by releasing chemicals called neurotransmitters. The amount of a particular neurotransmitter helps determine whether a nerve fires or not. What so-called nerve agents do is alter those neurotransmitters. **They kink the signaling between our nerves, telling them to do things they normally do, but with altered frequency.**

After a neurotransmitter has done its job, delivered its message, an enzyme usually comes along and demolishes it. **But nerve agents block those enzymes.** The enzyme can't break down the neurotransmitter, so the neurotransmitter stays around and keeps giving its message. If that message was, say, to release a little water onto your eye because your eye was dry, now the repeated message becomes "make your eyes water uncontrollably."



Here is a drawing of that reaction, just like in organic chemistry class (still a requisite for all U.S. doctors). The big block is the enzyme (acetylcholinesterase). In the **top image**, it's working normally: breaking down the neurotransmitter (acetylcholine) into smaller parts. In the **bottom image** you can see how the "nerve agent" (sarin in our case) just kind of hangs out in the "esteric site," so then the enzyme cannot do its job.

[CDC / Agency for Toxic Substances and Disease Registry. Case Studies in Environmental Medicine](#)

The action seems pretty benign on paper. But as acetylcholine builds up in our bodies, we become extremely uncomfortable and die. We are killed by the accumulation of our own normal neurotransmitter telling our own nerves to do the normal things they

normally do, just in excess. One could draw an analogy to cancer. In this case, though, neurotransmitters live and die on an order of milliseconds, so it happens in a flash.

Within seconds of exposure to sarin gas (or liquid, which evaporates easily), we start to notice the immediate effects of acetylcholine buildup. First, our smooth muscles and secretions go crazy. The nerves



to those areas keep firing, keep telling them to go. The nose runs, the eyes cry, the mouth drools and vomits, and bowels and bladder evacuate themselves. It is not a dignified state.

[Federation of American Scientists](#)

Since sarin has no smell or taste, the person may very well have no idea what's going on. Their chest tightens, vision blurs. If the exposure was great enough, that can progress to convulsions,

paralysis, and death within 1 to 10 minutes.

If the exposure was not enough to kill them, though, the person should recover pretty quickly and completely. It is not the sort of agent that leaves people blind and infertile and glowing



green. The U.S. military also has a lotion that can be applied immediately after exposure, [Reactive Skin Decontamination Lotion](#), to good effect, among other antidotes. Most people exposed to sarin do not die. A large exposure is not a death sentence.

This is all chilling. Chemical weapons have connotations of being unnatural and disturbing in ways beyond the mechanical brutality of guns, tanks, and bombs. Deploying sarin in a civilian setting or on massive scales can be catastrophic. In war, though, where there is already so much horrifying violence, should this weapon in itself necessarily be a red line that escalates international involvement?



Sarin (big article with lots of info)

Source: <https://toxnet.nlm.nih.gov/cgi-bin/sis/search/a?dbs+hsdb:@term+@DOCNO+6382>

Why Being Gassed by Sarin Might Be the Worst Way to Die

By Sébastien Roblin

Source: <http://nationalinterest.org/blog/the-buzz/why-being-gassed-by-sarin-might-be-the-worst-way-die-20079>

Apr 08, 2017 – The residents of Khan Sheikhoun probably thought they were in for just another ordinary day of civil war when they woke up early in the morning of April 4 to the whine of approaching Syrian Air Force Su-22 attack jets. The town of around fifty thousand people was situated west of Aleppo in Idlib Province, long a stronghold of rebel groups opposing the government of Bashar al-Assad since 2011. Artillery and air attacks were a horribly routine aspect of daily life there, as they are in many parts of Syria, divided by numerous warring factions.

Residents later reported that the munitions dropped by the jets released clouds of poisonous gas. Even this was hardly unheard of in Idlib Province. Even while Assad handed over his stockpiles of mustard gas and deadly nerve agents, government helicopters launched at least a dozen [chlorine-gas attacks](#) on communities in Idlib Province alone in 2014 and 2015. However, while chlorine gas causes horrifying respiratory problems, particularly in children and the elderly, it usually killed “only” a handful of people per attack, if any.

However, rescuers arriving from outside Khan Sheikhoun beheld an unexpectedly nightmarish sight: more than six hundred civilians lying paralyzed in their homes or helpless on the ground, **limbs convulsing, saliva foaming from their noses and mouths as they gasped for breath.** Local first responders—the lucky ones that hadn’t died or fallen violently ill when arriving on the scene—**were frantically spraying the twitching bodies with hoses (→ improvised wet decontamination)**

These symptoms correspond to the effects of sarin, a colorless, odorless nerve agent that disrupts acetylcholinesterase, an enzyme that helps a muscle relax once it has completed an action. By blocking the enzyme, sarin has the effect of continuously *triggering* those muscles, making breathing effectively impossible as well as causing the breakdown of other bodily functions, and leading to the discharge of bodily fluids.

Though inhalation of the vapors is the primary vector of the agent, even skin contact can transmit a fatal dose of sarin to victims, who may die within one to ten minutes of exposure due to asphyxiation and the loss of bodily functions. **Those surviving initial exposure may suffer permanent brain damage if they do not receive swift treatment.** Even worse, particles of the gas cling to clothing, food and water, and can remain lethal for up to thirty minutes. That was why responders were washing the victims with hoses.

Reports currently suggest that eighty to one hundred of the residents were killed, and over six hundred injured. On Thursday, a Turkish hospital [claimed](#) its examination of the victims confirmed the use of sarin gas.



Chemical weapons are often collectively labeled weapons of mass destruction, but many of them—fortunately—have a low fatality rate, serving principally as weapons of terror rather than attrition.

Sarin and other nerve agents are a notable exception. **Only thirty-five milligrams of sarin per cubic meter are necessary to kill a human being after two minutes of exposure, compared to nineteen thousand milligrams for chlorine gas, or 1,500 for phosgene gas, the deadliest chemical weapon used in World War I.**

The latter invisible gas often killed those affected the day *after* exposure, meaning it was not especially practical for achieving battlefield objectives. Mustard gas, which was highly visible and widely feared, caused horrible blistering injuries on contact with the skin, but killed only two percent of those it scarred.

The first nerve agent was accidentally discovered by German scientist Gerhard Schrader in 1938, who had to be hospitalized for three weeks after exposing himself to a partial dose of tabun. Realizing the gas's potential as a weapon, Nazi Germany developed four different "G-Series" nerve agents and produced tens of thousands of tons of the deadly poisons—at the cost of a dozen workers, killed by contact with the deadly liquid despite the use of protective suits.

Fortunately, Hitler ultimately shied away from using nerve agents. This wasn't because of some deeply buried shred of decency. When Hitler inquired about using sarin against the Allied powers, he was told by IG Farben chemist Otto Ambrose—who himself had tested the gas on human subjects—that the Allies probably had nerve agent stocks too, and would likely retaliate on an even greater scale. This was a fortunate misperception, as the Allies did not possess any nerve agents at all and were completely unaware the Germans had them.

After World War II, both the Soviet Union and Western nations studied up on the German poisons and developed even deadlier "V" series nerve agents, most notably the VX gas rather inaccurately depicted in the 1996 film [The Rock](#). However, the taboo against using lethal chemical weapons on the battlefield was *mostly* respected—with some notable exceptions.

Egypt [dropped mustard and phosgene gas](#) from Il-28 bombers over villages in North Yemen between 1963 and 1968, killing an estimated 1,500 people. Nerve agents may also have been used by Vietnamese troops in Cambodia, Cuban troops in Angola and the Pinochet regime in Chile. Iraq unleashed mustard and sarin gas during the Iran-Iraq War on poorly armed Iranian militias executing human wave attacks. Then on March 16, 1988, Iraqi aircraft bombed the Kurdish town of Halabja with a mixture of both gasses, massacring between three and five thousand people in just five hours.

As my colleague Paul Iddon [pointed out in a recent article](#), there's a common thread in the use of chemical weapons since World War I: they're nearly always used by governments against victims that lack the ability to retaliate in kind.

Even as far back as World War I, the opposing armies successfully phased in training and equipment that limited the effectiveness of chemical weapons. Whenever one side employed a new type of gas, the other soon copied it and retaliated. Chemical attacks failed to change the outcome of a single major battle, despite their horrifying effects. Even worse, unpredictable winds frequently blew the poisonous clouds back onto friendly troops or towards civilians, who were much less well prepared to deal with them. That explains why many armies otherwise bristling with more and more deadly weapons aren't begging to bring gas warfare back.

As early as 1925, the Geneva Protocol banned the use of chemical weapons in international conflicts, and was succeeded in 1993 by the Chemical Weapons Convention, which further forbade their stockpiling and production. (Syria is a signatory to the former but not the latter.) The United States renounced first use of chemical weapons in 1969 under Nixon, and then committed itself to destroying its stockpiles under George H. W. Bush in 1991—a process which was reportedly 89 percent complete in 2012.

Syria came to the brink of war with the United States after a sarin gas attack on August 2013 that killed hundreds of Syrians in Ghouta, a rebel-held suburb of Damascus. It was a clear violation of the international taboo against chemical weapons (which Syria denied even possessing at the time), and more specifically, the "red line" threat made by President Obama. However, Russia brokered a deal in which Assad pledged to give up his military-grade chemical arms in order to avert a U.S. attack. The process of destroying nearly six hundred tons of mustard,



sarin and VX gas was officially completed in August 2014, and involved many international observers and contractors.

However, this did not bring a halt to government [air attacks using chlorine gas](#) to terrorize rebel-held communities. Because of its broad civilian applications, there is no way to “ban” chlorine. Syrian rebels—mostly, but not exclusively, belonging to ISIS—have also occasionally launched rockets laden with chlorine or mustard gas on government-held territory in Syria and [even Iraq](#).

Meanwhile, there were persistent [rumors](#) that the Syrian army’s destruction of its chemical stocks was less than comprehensive, and that the Assad regime had hidden away small quantities to serve as a future deterrent. International inspectors also reported [discovering trace quantities](#) of sarin, VX and ricin in facilities that had not been listed as storing chemical weapons by the Syrian government.

Damascus admitted to launching the airstrike on Khan Sheikhoun with Su-22 fighter-bombers, but maintains its warplanes did not use chemical munitions. Predictably, Moscow claimed the chemical attack was the *opposition’s* fault, alleging Syrian bombs had hit a rebel chemical-weapons workshop. This was far from the first time the allied governments have advanced some variant of the classic “they bombed themselves” defense in regards to chemical attacks that mostly land in rebel territory.

However, [chemical-arms experts don’t buy it](#), pointing out that even if opposition fighters had somehow managed to produce and store sarin agents with the [binary precursors](#) side by side for rapid use, blowing them up with a bomb would simply not have dispersed the gases to such murderous effect. They argue that such a deadly attack could only have been carried out by properly deployed chemical munitions.

It is vital that the Syrian Civil War not lead to a further breakdown in international norms against chemical warfare, resulting in their more frequent use in conflicts across the world. Chemical weapons have repeatedly proven to be inherently indiscriminate terror weapons, and have killed far more civilians than combatants in the Syrian conflict.

However, the vast majority of civilian deaths in Syria occur due to [bombardments by conventional artillery, mortars](#) and aerial bombs—including those dropped by [Russian](#) and [American](#) warplanes as well as the Syrian Air Force. Even without the use of chemical weapons, the suffering experienced by Syrians on all sides of the conflict will continue for some time if a viable political solution does not silence these “conventional” death machines.

Sébastien Roblin holds a master’s degree in conflict resolution from Georgetown University and served as a university instructor for the Peace Corps in China. He has also worked in education, editing and refugee resettlement in France and the United States. He currently writes on security and military history for [War Is Boring](#).

Low-dose exposure to chemical warfare agent may result in long-term **heart** damage

Source: <https://www.sciencedaily.com/releases/2010/10/101013164705.htm>

Oct 14, 2010 – New research has found that the pattern of heart dysfunction with sarin exposure in mice resembles that seen in humans. Sarin is a chemical warfare agent belonging to class of compounds called organophosphates -- the basis for insecticides, herbicides and nerve agents. As an inhibitor of the nervous system enzyme acetylcholinesterase, sarin can cause convulsions, stoppage of breathing and death.

Aiming to determine the delayed cardiac effects of sarin, researchers studied mice injected with sarin -- at doses too low to produce visible symptoms -- 10 weeks after the exposure.

"The two-month period was used to simulate the late onset effect of sarin/nerve agents in gulf war veterans," said Mariana Morris, director of the research program. "There are suggestions that gulf war illness; in which symptoms are long-lasting, may be related to exposure to low-dose chemical warfare agents."

Cardiac damage detected in sarin-exposed mice at 10 weeks, but not earlier, included:



- Left ventricular dilation, meaning the heart's left ventricle is larger.
- Prolonged ventricular repolarization, an electrical conduction anomaly that could lead to heart rhythm abnormalities.
- Reduction in contractility, the extent of ventricular contraction and hence the amount of blood pumped from the ventricle when it contracts.

"These results have implications for the military in times of conflict and for civilian populations in cases of environmental or occupational exposure," Morris said.

The research is being presented at the American Heart Association's High Blood Pressure Research 2010 Scientific Sessions, being held in Washington, D.C., Oct. 13-16, 2010.

Engineering a protein to prevent **brain** damage from toxic agents

Ching-Yao Yang, P. Douglas Renfrew, Andrew J. Olsen, Michelle Zhang, Carlo Yuvienco, Richard Bonneau, Jin Kim Montclare. **Improved Stability and Half-Life of Fluorinated Phosphotriesterase Using Rosetta**. *ChemBioChem*, 2014; DOI: [10.1002/cbic.201402062](https://doi.org/10.1002/cbic.201402062)

Source: <https://www.sciencedaily.com/releases/2014/07/140731095134.htm>

2014 – Research at New York University is paving the way for a breakthrough that may prevent brain damage in civilians and military troops exposed to poisonous chemicals -- particularly those in pesticides and chemical weapons.

An article in the current issue of the journal *ChemBioChem* outlines the advancement in detoxifying organophosphates, which are compounds commonly used in pesticides and warfare agents. The patent-pending process was developed by NYU School of Engineering Associate Professor of Chemical and Biological Engineering Jin Kim Montclare, along with Richard Bonneau, an associate professor in NYU's Department of Biology and a member of the computer science faculty at NYU's Courant Institute of Mathematical Sciences.

Their work centers on proteins called phosphotriesterases, which have the unique capability of degrading chemicals in a class known as organophosphates, which are found in everything from industrial pesticides to the sarin gas used in chemical warfare. **Organophosphates permanently bond to neurotransmitters in the brain, interfering with their ability to function and causing irreversible damage.** The ability of phosphotriesterases to detoxify organophosphates has been previously documented; however, applications using the protein for this purpose have been limited by its short half-life and instability at high temperatures.

Montclare and her colleagues devised a method of re-engineering phosphotriesterases by incorporating an artificial fluorinated amino acid and computational biology. The result: a thermo-stable protein with a longer half-life that retains all the detoxification capabilities of the original version.

"Organophosphates pose tremendous danger to people and wildlife, and sadly it's not unusual for humans to come into contact with these compounds, whether through exposure to pesticide or an intentional chemical warfare attack," explained Montclare. "We've known that phosphotriesterases had the power to detoxify these nerve agents, but they were far too fragile to be used therapeutically," she said.

In a process that married computational biology and experimentation, the collaborators used Rosetta computational modeling software to identify sequences in the fluorinated phosphotriesterase protein that could be modified to increase its stability and make therapeutic applications a reality.

The possibilities for this reengineered protein are considerable. Montclare explained that in addition to therapeutic formulations, which could prevent nerve damage in the event of a gas attack or pesticide exposure and would likely be developed first for military use, **the proteins could be critical when stores of toxic nerve agents need to be decommissioned.**

"Oftentimes, chemical agent stockpiles are decommissioned through processes that involve treatment with heat and caustic chemical reagents for neutralization, followed by hazardous materials disposal," she said. "These proteins could accomplish that same task enzymatically, without the need for reactors and formation of dangerous byproducts."



Plans are under way to begin developing therapeutic applications for this modified phosphotriesterase, and the research team believes that its methodology -- using computational biology to identify potentially beneficial modifications to proteins -- could point the way to future breakthroughs in engineered proteins. The initial idea for this work was broached by Michelle Zhang, a co-author of the paper and, at the time, a high school intern in Bonneau's lab. Zhang is now a student at Cornell University. Other collaborators include NYU School of Engineering doctoral students Andrew J. Olsen, Ching-Yao Yang, and Carlo Yuvienco; and P. Douglas Renfrew, a postdoctoral scholar in the Bonneau Laboratory at NYU. Research was supported by a grant from the U.S. Army Research Office and the National Science Foundation.

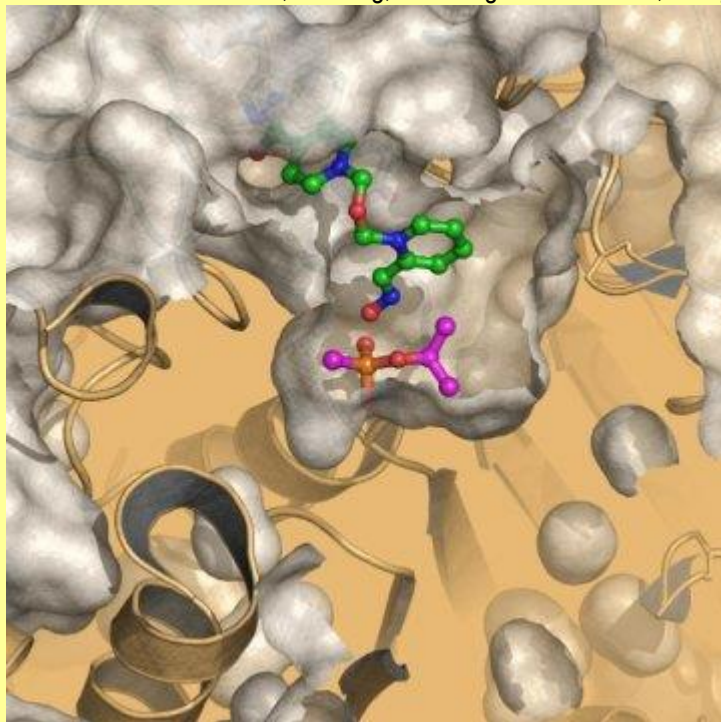
New drug against nerve agents in sight

Anders Allgardsson, Lotta Berg, Christine Akfur, Andreas Hörnberg, Franz Worek, Anna Linusson, Fredrik J. Ekström. **Structure of a prereaction complex between the nerve agent sarin, its biological target acetylcholinesterase, and the antidote HI-6.** *Proceedings of the National Academy of Sciences*, 2016; 201523362 DOI: [10.1073/pnas.1523362113](https://doi.org/10.1073/pnas.1523362113)

Source: <https://www.sciencedaily.com/releases/2016/05/160503072241.htm>

May 2016 – The nerve agent sarin causes a deadly overstimulation of the nervous system that can be stopped if treated with an antidote within minutes of poisoning. Today, a ground-breaking study has been published in *PNAS*, which in detail describes how such a drug works. Researchers at the Swedish Defence Research Agency, Umeå University and in Germany are behind the study.

Sarin is a colourless, odourless liquid fatal even at very low concentrations. Serious sarin poisoning causes visual disturbance, vomiting, breathing difficulties and, finally, death.



A model of how sarin and HI-6 are positioned in the protein acetylcholinesterase just before HI-6 removes sarin and restores the function of the protein. The model was developed by a combination of X-ray crystallography and quantum chemical calculations. Sarin in magenta, HI6 in green, oxygen in red, phosphorus in orange and nitrogen in blue.

Credit: FOI, Swedish Defence Research Agency

"Nerve agents are dreadful weapons, and our hope is for these results to lead to improved drugs against them," says Anders Allgardsson, Biochemist at the Swedish Defence Research Agency (FOI).

Nerve agents destroy the function of a very important protein in the nervous system called acetylcholinesterase. As long as the nerve agent is bound to the protein, the breakdown of an important signal substance is prevented. The **antidote HI-6** removes the nerve agent and restores the function of the nervous system. Drugs against nerve agent poisoning have been used for a long time, still it has been unclear how they actually work.

After years of hard work, chemists from FOI and Umeå University are now presenting a three-dimensional structure that depicts the HI-6 moments before the bond between the



nerve agent and the protein is broken. The structure gives a high-resolution image that, in detail, describes the individual positions of atoms and provides an understanding of how the bond breaks.

The scientific breakthrough was enabled by combining three-dimensional structural depictions with advanced calculations and biochemical experiments.

"With the help of X-ray crystallography, we could see weak traces of the signal we were looking for. As the signal was weak, we decided to integrate the data with quantum chemical methods. After demanding calculations on the supercomputer at the High Performance Computing Center North (HPC2N) at Umeå University, we finally succeeded," says Anna Linusson, Professor at the Department of Chemistry at Umeå University.

The calculations supported the theory that the weak signal in the X-ray crystallography data actually came from HI-6 and sarin. Important knowledge also fell into place after experiments where the system was disturbed by mutating the protein or by introducing isotopes.

"After seven years of work using many different techniques, we have finally been able to bring this to a successful close and can show a uniform picture of how HI-6 approaches sarin. It opens up for new opportunities in finding antidotes to sarin and other nerve agents by structure-based molecular design," says Anders Allgardsson.

SEIZURE DURATION AND BRAIN PATHOLOGY FOLLOWING EXPOSURE TO THE NERVE GAS-SARIN: THE EFFECT OF ANTI-INFLAMMATORY TREATMENTS

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Source: <http://www.comtecmed.com/cony/2015/Uploads/Editor/Chapman%20Epilepsy.pdf>

Abstract

Sarin, an organophosphate (OP) nerve agent inhibits acetylcholinesterase and causes upon exposure a cholinergic crisis that includes **tremors, hyper-salivation, seizures, and if not treated promptly death.** Cholinergic overstimulation, a well-established model for seizures, is commonly used to screen promising drugs. **We have previously shown that seizures following sarin cause an inflammatory state in the brain characterized by prolonged elevation in the level of the inflammatory markers PGE2, IL1- β , IL-6 and TNF- α followed by specific brain pathology.** In the present study we measured the effect of various anti-inflammatory drugs on the duration of seizures, the level of inflammatory markers and brain pathology following sarin exposure. Rats were pretreated with the carbamate pyridostigmine and the oxime HI-6 to ensure survival and 20 minutes later were exposed to sarin followed by atropine sulfate 1 minute later. All animals developed acute seizures that lasted up to several hours. Anti-inflammatory drugs were screened as neuro-protectants in two paradigms: early 5-30 minutes and late, starting at 4 hours and administered twice daily for 48h. Ibuprofen, minocycline, dexamethasone and methylprednisolone enhanced the seizure intensity and the ensuing brain injury when administered immediately following sarin. Late anti-inflammatory treatments had no demonstrable beneficial effect on the extent of the brain damage some of the drugs had partial effect in reducing the levels of inflammatory markers. It is suggested that the elevation in the levels of inflammatory markers following seizures has a beneficial effect in the resolution of the seizures and the attenuation of the brain damage.

ACUTE EXPOSURE TO SARIN INCREASES BLOOD BRAIN BARRIER PERMEABILITY AND INDUCES NEUROPATHOLOGICAL CHANGES IN THE RAT BRAIN: DOSE RESPONSE RELATIONSHIPS

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Source (full text): <http://www.aerotoxic.org/wp-content/uploads/2013/12/2002-Sarin-pathol.pdf>

Abstract

We hypothesize that a single exposure to an LD50 dose of sarin induces widespread early neuropathological changes in the adult brain. In this study, we evaluated the early changes in the adult brain after a single exposure to different doses of sarin. Adult male rats were exposed to sarin by a single intramuscular injection at doses of 1, 0.5, 0.1 and 0.01ULD50. Twenty-four hours after the treatment, both sarin-treated and vehicle-treated (controls) animals were analyzed for: (i) plasma butyrylcholinesterase (BChE) activity; (ii) brain acetylcholinesterase (AChE) activity, (iii) m2 muscarinic acetylcholine receptor (m2 mAChR) ligand binding; (iv) blood brain barrier (BBB) permeability using [H3]hexamethonium iodide uptake assay and immunostaining for endothelial barrier antigen (EBA); and (v) histopathological changes in the brain using HpE staining, and microtubule-associated protein (MAP-2) and glial ϕ brillary acidic protein immunostaining. In animals treated with 1ULD50 sarin, the significant changes include a decreased plasma BChE, a decreased AChE in the cerebrum, brainstem, midbrain and the cerebellum, a decreased m2 mAChR ligand binding in the cerebrum, an increased BBB permeability in the cerebrum, brainstem, midbrain and the cerebellum associated with a decreased EBA expression, a diffuse neuronal cell death and a decreased MAP-2 expression in the cerebral cortex and the hippocampus, and degeneration of Purkinje neurons in the cerebellum. Animals treated with 0.5ULD50 sarin however exhibited only a few alterations, which include decreased plasma BChE, an increased BBB permeability in the midbrain and the brain stem but without a decrease in EBA expression, and degeneration of Purkinje neurons in the cerebellum. In contrast, animals treated with 0.1 and 0.01ULD50 did not exhibit any of the above changes. However, m2 mAChR ligand binding in the brainstem was increased after exposure to all doses of the sarin. **Collectively, the above results indicate that, the early brain damage after acute exposure to sarin is clearly dosedependent, and that exposure to 1ULD50 sarin induces detrimental changes in many regions of the adult rat brain as early as 24 hours after the exposure. The early neuropathological changes observed after a single dose of 1ULD50 sarin could lead to a profound long-term neurodegenerative changes in many regions of the brain, and resulting behavioral abnormalities.**

From the full text

Like soman and other lipophilic organophosphorus compounds, sarin can cross the blood brain barrier (BBB), and cause brain damage leading to neurological symptoms (Veronesi et al., 1990; Marrs, 1993; Taylor, 1996).

- Veronesi, B., Jones, K., Pope, C., 1990. The neurotoxicity of sub chronic acetylcholinesterase (AChE) inhibition in rat hippocampus. *Toxicol.Appl. Pharmacol.* 104, 440-456.
- Marrs, T.C., 1993. Organophosphate poisoning. *Pharmacol. Ther.* 58, 51-66.
- Taylor, P., 1996. Anticholinesterase agents. In: Hardman, J.G., Limbird, L.E. (Eds.), *The Pharmacological Basis of Therapeutics*, 9th edn. McGraw Hill, New York, pp. 161-176.



Hackney nightclub acid attack leaves at least 12 injured

Source: <http://www.bbc.com/news/uk-england-london-39618490>

Apr 17 – **At least 12 people suffered burns after a man sprayed acid inside a club in east London.**

Hundreds of revellers were evacuated from Mangle E8 in Sidworth Street, Dalston, after police were called at about 01:10 BST.



Officers believe a man threw acid at two men after a dispute between two groups inside the venue.

Two men in their 20s remain in a serious but stable condition in hospital. Ten other people were treated for minor injuries, the Metropolitan Police said.

A London Fire Brigade

spokesperson said: "The only information that we have is that it was an unknown corrosive substance thrown within the nightclub.

"It was identified by a pH paper test as a strong acidic substance."

It is understood about 600 people were at an event in the club.

Officers said 10 people were taken to hospital by ambulance, while a further two sought treatment at A&E.

They said no arrests had been made and officers were continuing to investigate.

The police added there was no evidence to suggest the attack was gang related.

A woman who lives in a block of flats overlooking the nightclub described a scene of confusion as crowds were moved up the street away from the venue.

The tenant, who asked not to be named, said: "It happened so fast - they rushed people out. I thought it was a stabbing because all I heard was 'move, move, move - move out of the area'."

She added: "The security were telling the crowd to go down that way - people on this side were waiting to go home but they couldn't go home because the road was closed.

"People were confused."

Witness Phie McKenzie tweeted: "Scary scenes tonight, we have heard reports of chemical burns of people in the building here".

London Ambulance Service said it sent a number of ambulance crews and a hazardous area response team to the venue.



EDITOR'S COMMENT: Attack with everything you can put your hands onto – that was the overall directive from Daesh some time ago. Perhaps this is the first time acid was used for a terrorist attack or the beginning of a series of copycat attacks in Europe. Not a single word in the BBC article – but this is not surprise! **Be alert!**



France: We have proof Assad ordered chemical attack on Khan Sheikhun

Source: <http://www.homelandsecuritynewswire.com/dr20170419-france-we-have-proof-assad-ordered-chemical-attack-on-khan-sheikhun>

Apr 19 – Jean-Marc Ayrault, France's foreign minister, said Wednesday that France's intelligence services have evidence that the Syrian government carried out the chemical weapons attack on a Sunni village earlier this month. "There is an investigation underway... it's a question of days and we will provide proof that the regime carried out these strikes," Ayrault [told](#) LCP television.

Waiting

Syrian defector: Assad still has hundreds of tons of chemical weapons stockpiled

Source: <http://www.homelandsecuritynewswire.com/dr20170419-syrian-defector-assad-still-has-hundreds-of-tons-of-chemical-weapons-stockpiled>

Apr 19 – Syrian President Bashar al-Assad circumvented a 2013 deal to dismantle his chemical weapons stockpile by failing to declare the full extent of his arsenal, Syria's former chemical weapons research chief told the *Telegraph* on Saturday.

Brigadier-General Zaher al-Sakat, who served as the head of chemical warfare in a top Syrian military unit before defecting in 2013, said that Assad had not declared large amounts of sarin and its precursor chemicals. Sarin is the toxic nerve agent believed responsible for the deaths of scores of Syrian civilians in a chemical attack earlier this month.

While Syria claimed that it had turned over its entire chemical weapons stockpile to the Organization for Prohibition of Chemical Weapons (OPCW), per the terms of a deal brokered by Russia, **"they [the regime] admitted only to 1,300 tons, but we knew in reality they had nearly double that," Sakat said. "They had at least 2,000 tons. At least."**

Sakat, 53, said he defected after being ordered to use chemical weapons on Syrian civilians. He had loaded warheads with water and diluted bleach instead of phosgene, a chemical that attacks the lungs and causes death by suffocation. When his son was arrested and he felt that the Assad regime was suspicious of his activities, Sakat fled to Jordan and then Turkey, where he joined the opposition Free Syrian Army.

"I couldn't believe at the beginning that Assad would use these weapons on his people," Sakat explained. Syria began developing chemical weapons in the 1980s with the aim of using them against enemy states, including its neighbor Israel. But when Assad used the chemicals on his own citizens, Sakat declared, "I could not stand and watch the genocide. I couldn't hurt my own people."

Hamish de Bretton-Gordon, a former commander of the British military's chemical weapons unit who is currently assisting Syrian NGOs, said that he estimated that Assad retained 200 tons of chemical weapons, but felt that Sakat's estimate of 700 tons was "plausible."

Another expert, John Gilbert, a senior science fellow at the Centre for Arms Control and Non-Proliferation, said that the general's estimate is "fully possible" if two chemicals that produce sarin when combined – fluorine-phosphorous and isopropyl – were part of the undeclared stockpile.

According to Sakat, the Assad regime moved around its chemical arsenal when OPCW inspectors came to Syria to inventory the stockpiles as part of the 2013 agreement. **They were brought to fortified mountains not far from Tartus,** where Syria and Russia have a major military base, according to the general.



While the amounts of chemical weapons Assad kept weren't known, OPCW continued reporting on the use of chemical weapons by the regime, even some which Assad had pledged to surrender.

Sakat, who has stayed in touch with members of the regime since his defection, says that he doesn't



believe that Assad manufactured additional chemical weapons since the deal was agreed to because "they don't need any more, they have all they need already." He spoke to the *Telegraph* from an undisclosed location in Europe. Using chemical weapons earlier this month in the town of Khan Sheikhoun, in Syria's northern Idlib province, was a "strategic" decision geared towards discouraging the rebels. "If you can take Khan Sheikhoun, or force its residents to surrender, you can take the road that connects them," Sakat said. Chemical weapons can terrify rebels into surrendering, the general explained.

The *Wall Street Journal* reported in July 2015 that American intelligence officials confirmed that Assad remained in possession of chemical weapons,

despite the agreement. One of the factors given for the deal's ineffectiveness was Syria's ability to control the sites that inspectors could visit.

Hisham Melham, a columnist for the Lebanese paper *Annahar*, [observed](#) in the *Atlantic* last week that "it seems that U.S. officials knew for some time that Assad had squirreled away a secret reserve of sarin agents and was waiting for the right moment to use them."



FLIR Announces Educational Resource, "FLIR PRIMED" for CBRNE and Hazmat Responders

Source: <https://www.domesticpreparedness.com/updates/flir-announces-educational-resource-flir-primed-for-cbrne-and-hazmat-responders/>

Apr 13 – This week FLIR announced the launch of its new educational resource, FLIR PRIMED – Prepare, Recognize, Input, Monitor, Experience, Decision – a free, online tool that provides First Responders with best practices for HAZMAT accidents and Chemical, Biological, Radiological, Nuclear and/or Explosives (CBRNE) attacks.



Throughout FLIR PRIMED's video series, Grant Coffey, retired Portland Fire & Rescue Hazmat Team Coordinator and CBRNE expert for nearly 40 years, delivers industry insights and real-life experiences, plus each episode will conclude with a free field checklist, or downloadable guide, to increase subject knowledge for a safer and more successful response.

The first three episodes of FLIR PRIMED, along with free downloadable checklist and guidebooks, is available NOW at www.flir.com/PRIMED

- **Episode 1:** PRIMED – A tool you can use right now to stay prepared
Grant introduces you to PRIMED – a tool responders can use right now to stay prepared.
- **Episode 2:** STOP – What are the cues and clues
When responding to a scene, STOP! Grant discusses the cues and clues responders should pay attention to.
- **Episode 3:** RAD – Turn it on and put it on



Radiation is not well understood. Grant covers the important safety basics responders need to know. The next seven episodes of FLIR PRIMED will air between April 17 – June 26 on the [FLIR PRIMED page](#). An additional 20 videos will be released into the second half of 2017, featuring guest appearances by other industry leaders.

Australian soldiers caught up in Islamic State chemical attack in Mosul

Source: <http://www.abc.net.au/news/2017-04-19/australian-medics-treated-iraqis-hit-by-is-chemical-attack/8452144>

Apr 20 – Australian soldiers have been caught up in an Islamic State group chemical attack in Mosul but were not harmed, officials say.

The Pentagon said it was aware of what it said was a **"low grade" chemical attack** on an Iraqi unit in



west Mosul, which has been the scene of heavy fighting as Iraqi forces and their allies battle Islamic State militants for possession of the city.

A Defence official has told the ABC Australian and US advisers were with the unit at the time.

Australian medics provided first aid to Iraqi counter-terrorism soldiers after the attack, the Department of Defence says.

"No Australian personnel were exposed during the gas attack on Iraqi Counter-Terrorism Service soldiers in Mosul," the spokesperson said.

"The failed gas attack highlights Daesh's [Islamic State's] desperation as Iraqi ground forces continue operations to liberate Mosul."

It is not known what chemical weapon was used, but IS is believed

to have access to chlorine and mustard gas.

"My advice right at the moment is no Australian troops were affected but Australian forces did provide assistance following the attack. That's my current advice received in last few minutes," Prime Minister Malcolm Turnbull told AM on Wednesday.

In a statement the Pentagon labelled the attack as largely ineffective.

Defence officials say IS's chemical weapons are "rudimentary".



Battle of Mosul – CWA protection. Really???

(A collection of photos from fighting troops)

AMAZING!







EDITOR'S COMMENT: It seems that combat experience from ongoing battle of Mosul teaches us that personal protective equipment is **not** really necessary to survive CWAs! A gas mask is more than enough! Either we have to reform our SOPs or those in the field should read existing SOPs at least once! Luck does not last for ever

Children evacuated from Venezuela hospital hit by tear gas as death toll in protests rises to nine

Source: <http://www.telegraph.co.uk/news/2017/04/21/children-evacuated-venezuela-hospital-hit-tear-gas-death-toll/>

Apr 21 – More than 50 children were evacuated from a Caracas hospital after it allegedly came under attack during a night of clashes across the Venezuelan capital, as another fatal shooting brought the death toll from three weeks of protests to at least nine.



Emergency services pulled 54 children from the maternity and children's hospital in the impoverished neighborhood of El Valle in the early hours of Friday morning, after what the opposition said was a bombardment by tear gas but the government claimed was a targeted attack by armed opposition groups.

On Friday authorities said they were investigating another 11 deaths overnight in El Valle, some of the

victims reportedly killed by electrocution while looting. A firefighter said eight people had died in an electrocution incident after breaking into a bakery in the neighbourhood.

El Valle was the scene of fierce overnight battles between security forces and anti-government protesters, with streets blocked, barricades set ablaze and business attacked as riot police fired tear gas and helicopters hovered overhead.



Delcy Rodriguez, the Venezuelan foreign minister, insisted that “armed groups hired by the opposition” had attacked the hospital.



But Freddy Guevara, vice-president of the opposition-led National Assembly, denounced her as “irresponsible”, adding that “everyone knows that the maternity and children’s hospital was evacuated because of the tear gas bombs of the dictatorship”.

Rosalinda Prieto, the hospital director, was quoted by local media as saying the facility was under assault for almost three hours.

“We were attacked by violent groups who launched a rain of stones and blunt objects at us. Afterwards, they burned a great quantity of rubbish in front of the hospital and the smoke got inside the facility. There were recently born babies there in the emergency area, some in observation.”

She said the attackers then tried to enter the hospital, at which point they called the authorities for help. The children have been relocated to other medical facilities in Caracas.



Ebola vaccines provide immune responses after 1 year

Source: <http://www.medicalnewstoday.com/releases/316403.php>

Mar 19 – Immune responses to Ebola vaccines at one year after vaccination are examined in a new study appearing in *JAMA*.

The Ebola virus vaccine strategies evaluated by the World Health Organization in response to the 2014-2016 outbreak in West Africa included a heterologous primary and booster vaccination schedule of the adenovirus type 26 vector vaccine encoding Ebola virus glycoprotein (**Ad26.ZEBOV**) and the modified vaccinia virus Ankara vector vaccine, encoding glycoproteins from Ebola, Sudan, Marburg, and Tai Forest viruses nucleoprotein (**MVA-BN-Filo**). These vaccines both used a 'viral-vector' approach, where a benign virus is modified to safely express key proteins of the target virus, in this case Ebola. This schedule has been shown to induce immune responses that persist for eight months after primary immunization, with 100 percent of vaccine recipients retaining Ebola virus glycoprotein-specific antibodies. A vaccine that provides durable immune responses is important in maintaining sustained protection against disease, both during outbreaks and outside of an outbreak for at-risk populations.

Matthew D. Snape, M.D., of the University of Oxford, United Kingdom, and colleagues conducted a trial that was performed in Oxford and enrolled healthy participants ages 18 to 50 years, who were randomized to four groups, each with 18 participants (3 placebo and 15 active vaccine).

Of 75 active vaccine recipients, 64 attended follow-up at day 360. No serious adverse events were recorded from day 240 through day 360. All of the active vaccine recipients maintained Ebola virus-specific immune-globulin G responses at day 360. To the authors' knowledge, this is the longest duration follow-up for any heterologous primary and booster Ebola vaccine schedule.

"Immunity after heterologous primary and booster vaccination with Ad26.ZEBOV and MVA-BN-Filo persisted at 1 year. Although no correlate of protection has yet been established, Ebola virus glycoprotein-specific antibodies appear to play an important role in immunity. A strategy of preemptive use of an AD26.ZEBOV followed by MVA-BN-Filo immunization schedule in at-risk populations (where durability of immune response is likely to be of primary importance) may offer advantages over reactive use of single-dose vaccine regimens," the authors write.

The researchers note that a limitation of the study is that it was conducted in a European population. "Immune responses may differ in a sub-Saharan African population; these vaccine candidates are being assessed in this region.

Additional research is also warranted to explore the persistence of immunity beyond 1 year following immunization and response to booster doses of vaccine."

Article: [*Immune Responses to Novel Adenovirus Type 26 and Modified Vaccinia Virus Ankara-Vectored Ebola Vaccines at 1 Year*](#), Rebecca L. Winslow, MRCP; Iain D. Milligan, MRCP; Merryn Voysey, MBIostat; Kerstin Luhn, PhD; Georgi Shukarev, MD; Macaya Douoguih, MD; Matthew D. Snape, MD, *JAMA*, doi:10.1001/jama.2016.20644, published 14 March 2017.

The Real Threat to National Security: Deadly Disease

By Michael Osterholm and Mark Olshaker

Source: <https://www.nytimes.com/2017/03/24/opinion/the-real-threat-to-national-security-deadly-disease.html>

Mar 24 – While the Trump administration is proposing significantly increased military spending to enhance our national security, it seems to have lost sight of the greatest

national security threat of all: our fight against infectious disease.

We already spend far more on our military than any other country in



the world. To help pay for the increases, President Trump wants to cut back many federal programs, including those that prepare us to wage war against microbes, the greatest and most lethal enemy we are ever likely to face. This is where “defense spending” needs to increase, significantly.

President Trump’s budget would cut funding for the National Institutes of Health by 18 percent. It would cut the State Department and the United States Agency for International Development, a key vehicle for preventing and responding to outbreaks before they reach our shores, by 28 percent. And the repeal of the Affordable Care Act would kill the billion-dollar Prevention and Public Health Fund, which provides funding for the Centers for Disease Control and Prevention to fight outbreaks of infectious disease. (While the budget also calls for the creation of an emergency fund to respond to outbreaks, there is no indication that it would offset the other cuts, or where the money would come from.)

Those cuts will not protect American citizens. They will diminish research and vaccine development and our ability to respond to the growing threats of antibiotic resistance and new infectious diseases.

Those agencies are already falling short, as we saw last year, when they couldn’t effectively respond to the Zika threat. What will they do when we face a real pandemic? With 7.4 billion people, 20 billion chickens and 400 million pigs now sharing the earth, we have created the ideal scenario for creating and spreading dangerous microbes. Trade and travel have connected most points on the globe in a matter of hours. More and more people are living in the microbe-rich megacity slums of the developing world.

By some estimates, the 1918-19 “Spanish” influenza killed more people than all the wars of the 20th century combined. Today, an influenza pandemic could be more devastating than an atom bomb. We are already witnessing an outbreak of influenza in birds — the H7N9 strain, in China — that could be the source for the next human pandemic. Since October, over 500 people have been infected; more than 34 percent have died. Most victims had contact with infected poultry, yet three recent clusters appear to be from person-to-person transmission. Will H7N9 mutate to become easily transmitted between humans? We don’t know. But without

sufficient supplies of a vaccine, we are not prepared to stop it.

The spread of antibiotic-resistant microbes also continues at an ever faster rate. Last year a comprehensive [review](#) predicted that, if left unchecked, drug-resistant infections will kill more people worldwide by 2050 than cancer and diabetes combined. Without a global effort led by the United States to halt the spread of this resistance and support for development of new antibiotics, we are in danger of returning to a pre-antibiotic world in which a cut could prove deadly and surgery would not be worth the risk of infection.

Yellow fever, a mosquito-borne disease that can kill up to 50 percent of those who get seriously sick, is on the cusp of a major outbreak in some of Brazil’s largest cities, while MERS — Middle East Respiratory Syndrome — continues to infect people on the Arabian Peninsula. If an effective vaccine is not developed, it will continue to be transmitted around the world and cause fatal outbreaks like the one that closed Samsung Medical Center in Seoul to new patients for weeks. A similar outbreak could occur at the Mayo Clinic or Johns Hopkins Hospital.

And three years after the 2014 Ebola crisis, we still have no licensed vaccine or a plan for how to deploy one to prevent future outbreaks.

Finally, there is the danger of diseases deliberately spread by terrorists. Bill Gates, who has put much of his sizable financial resources as well as his brainpower into public health, wrote in the *New England Journal of Medicine* in 2015: “Of all the things that could kill more than 10 million people around the world, the most likely is an epidemic stemming from either natural causes or bioterrorism.” More recently, at this year’s Munich Security Conference, on the possibility of terrorist-engineered viruses he noted: “They are probably the only thing that can kill a billion.” For example, the science exists to reconstruct the smallpox genome from readily available lab materials, with the added possibility of altering the virus just enough that our existing vaccine would be ineffective.

The military has figured out how to convince congressional funders that the only way to maintain defense is to appropriate money before a crisis. You don’t start



building the weapons and training all the soldiers after the first shot has been fired. The only way we can win the inevitable microbe wars is to do the same — to have new vaccines and antibiotics and trained personnel ready before the crisis hits. We cannot rely on pharmaceutical companies to create drugs and vaccines for

markets that do not yet exist. Only the government can do this. The additional expenditures would be truly economical in terms of lives saved.

We are talking about national security on the most existential level.

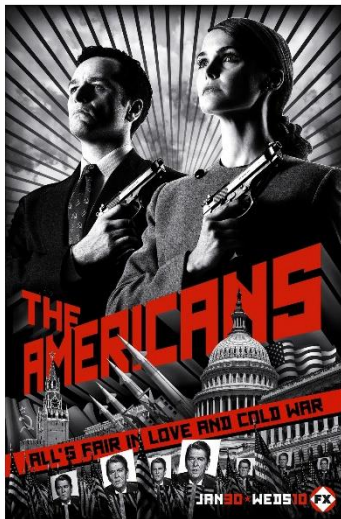
Michael T. Osterholm is an epidemiologist and director of the Center for Infectious Disease Research and Policy at the University of Minnesota.

Mark Olshaker is a documentary filmmaker. They are the authors of “Deadliest Enemy: Our War Against Killer Germs.”

The Insect Warfare On 'The Americans' Isn't All That Outlandish

Source: http://inhomelandsecurity.com/insect-warfare-americans/?utm_source=IHS

Mar 24 – This season on the spy drama **“The Americans,”** the Cold War hinges on a few insects. Just



as the shelves in Soviet grocery stores are becoming barren, Russian agents Elizabeth and Philip Jennings (Keri Russell and Matthew Rhys) stumble onto a terrifying American plot. It looks like the United States is breeding an insect capable of either destroying Russia's wheat supply or poisoning the wheat the U.S. exports to the Soviets. Either way, it would be a devastating blow to Elizabeth and Philip's motherland, so the pair get to work thwarting lab experiments (and killing some innocent bystanders along the way).

So how realistic is any of this? It's hardly plucked from thin air.

University of Wyoming professor Jeffrey Lockwood wrote a book about entomological warfare, **“Six-Legged Soldiers: Using Insects as Weapons of War,”** and he weighed in on where the story line might have come from.

The U.S. was indeed accused of entomological warfare during the Cold War — but not by Russia.

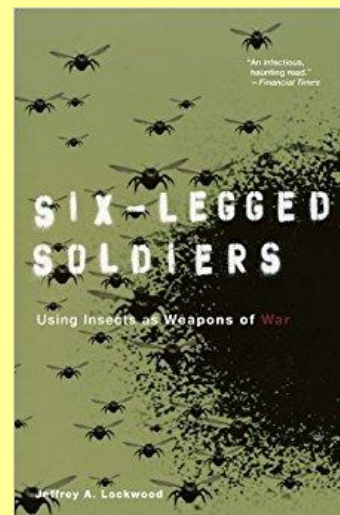
“There were a number of accusations made by the Cubans that we had used insects to spread dengue fever and a whole bunch of crop pests,” Lockwood said. But the accusations, which were mainly lobbed during the 1960s every time Cuba had an issue with its crops, were never proved.

North Korea and China also accused the U.S. of spreading germs using flies and mosquitoes during the Korean conflict, but no documents ever turned up to support the claim.

And decades later, in 1996, Russia filed charges on Cuba's behalf — Cuba wasn't a signatory to the Biological Weapons Convention, which is why Russia got involved — and a committee investigated. But it couldn't confirm nor deny the charges. The truth is entomological warfare is pretty difficult to prove.

“You don't really notice the infestation until it's well underway,” Lockwood said. “Distinguishing accident from intention, especially with something like a crop pest, is darn near impossible.”

Speaking of crop pests, the U.S. was on the receiving end of an infestation in 1986, but no foul play was proved. Russian wheat aphids did considerable economic damage, though the bugs were apparently imported accidentally along with the wheat.



So those are some events that most closely align with this season's Russia-vs.-America story arc on "The Americans." But the United States' history of entomological warfare since the 1950s is fascinating in general, especially considering the country started out as an underdog.

During World War II, the United States lagged behind Japan, which was a powerhouse in the field, in part because it wasn't above experimenting on humans. The Japanese army killed hundreds of thousands of Chinese by dropping bombs that unleashed cholera-infected flies on the population, and the mastermind was Japanese surgeon general Shiro Ishii. He managed to avoid being charged with war crimes by agreeing to divulge his research to the American government. And just like that, the U.S. caught up to its former enemy.

In the years that followed, the U.S. conducted insect research at Fort Detrick, and developed powerful weapons, including yellow fever-carrying mosquitoes that could infect on a massive scale. (A test using noninfected mosquitoes was even conducted on American citizens.)

It could have been devastating, but the public wasn't really concerned, preoccupied as it was with the threat of a nuclear attack.

"We had the impression in the U.S. at that time that we had pretty much mastered disease-carrying insects," Lockwood said. This was the era of DDT, when yellow fever and malaria had been eradicated in the States, and Lyme disease and Zika hadn't yet become an issue.

Whether or not the United States government knew it, the Soviet Union wasn't particularly invested in entomological warfare at the time. According to Lockwood, they were more interested in using aerosols to deliver pathogens.

"The idea coming out of World War II into the '50s was technology was going to master the day," Lockwood said. "Using insects kind of seemed primitive compared to stainless steel vats filled with bacterial pathogens that you could load up in a bomb or spray out of an airplane."

Entomological warfare eventually fell out of fashion. Under the Biological Weapons Convention, signed in 1972, the U.S. is prohibited from developing those kinds of offensive weapons.

"But it doesn't preclude small scale biological warfare or entomological warfare methods as a way of defending ourselves," Lockwood said. "In other words, you have to figure out what the enemy is capable of in order to defend yourself. And that line between defensive research and offensive production is pretty blurry."

And, as we saw with the biological weapons story line on last season's "The Americans," defensive research can be just as deadly.

Predicting Zika hot spots in the U.S.

Source: <http://www.homelandsecuritynewswire.com/dr20170328-predicting-zika-hot-spots-in-the-u-s>

Mar 28 – **Where in the continental United States is Zika most likely to occur?**

An early online article in the *American Journal of Public Health* by Saint Louis University researchers puts the bulls-eye of Zika transmission on the Mississippi delta.

Researchers also predicted the virus, which is spread sexually and by bites from the *Aedes aegypti* mosquito, is likely to be transmitted in southern states extending northward along the Atlantic coast and in southern California.

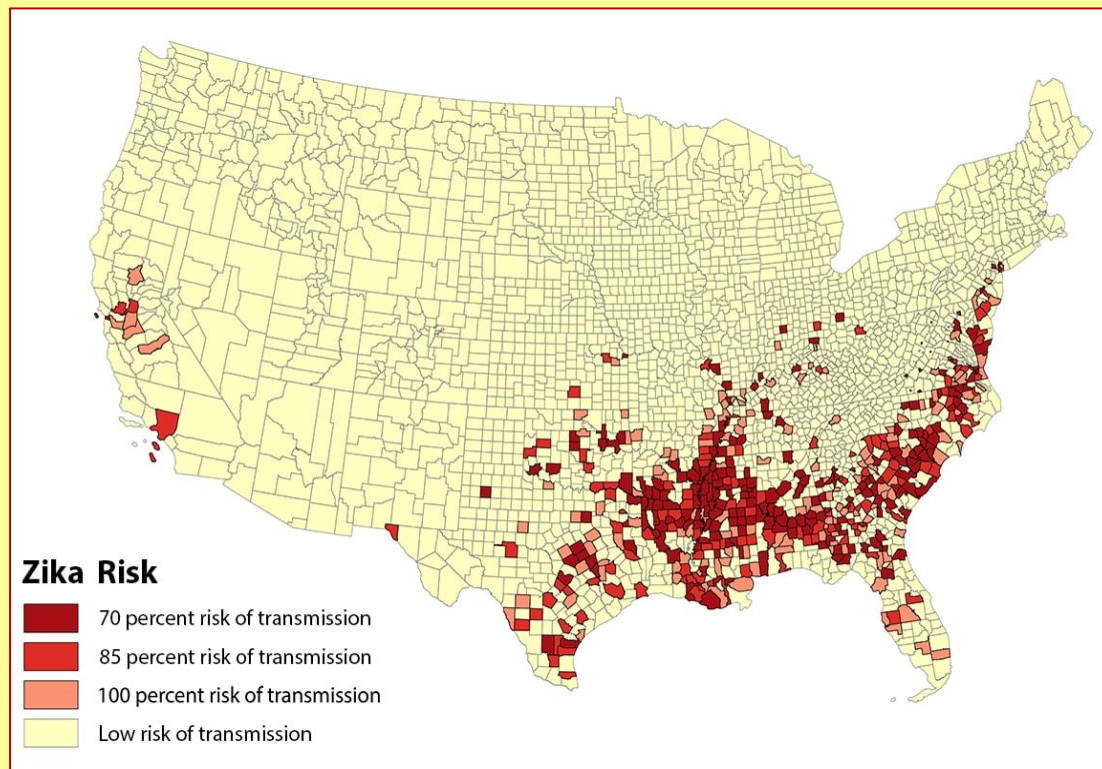
"The purpose of this study was not to create unwarranted alarm, but rather to enhance Zika prevention methods such as mosquito control, effective prevention message dissemination, and treatment and care preparation, in advance of a Zika epidemic in the contiguous U.S.," said

Enbal Shacham, Ph.D., M.Ed., associate professor of behavioral science and health education at Saint Louis University and the lead author of the study.

"We need significant planning and prevention in areas and populations most likely to experience the highest burdens from Zika infection. Timely strategies to communicate risk, control mosquito populations, and prevent disease transmission are imperative to preventing a large-scale Zika epidemic in the United States."

Zika poses the most serious threat to unborn babies who may die or develop devastating birth defects, such as brain damage, after their mothers contract Zika during pregnancy.





Saint Louis University [notes](#) that Shacham and her collaborators studied 3,108 counties in the U.S. They determined 507 “high risk” areas for Zika transmission based on several factors: the presence of *Aedes aegypti* mosquitoes; high rates of sexually transmitted infections, which is an established surrogate marker for unprotected sex; number of women of child-bearing age; and an estimate of birth rates for each county.

“Recent reports suggest that the Zika virus can survive within semen for significant amounts of time, and thus, the sexual transmission route of infection may be significantly underestimated,” Shacham said.

“The sexually transmitted route is also concerning because sexually transmitted infections tend to cluster geographically and occur disproportionately in areas with higher concentrated disadvantage.”

About 80 percent of those who contract Zika have no symptoms, which means they may engage in sexual activity without any indication they are at risk of transmitting the virus, she added.

It is unclear if sexual transmission of Zika occurs 100 percent of the time, therefore, the researchers projected three different models of transmission risk: 70, 85, and 100 percent risk based on the data-driven model.

Assuming that Zika is transmitted in 70 percent of the cases of STIs, the researchers estimate between 300,000 to 41.7 million people from high-risk counties could be more likely to contract Zika than individuals who live in other counties in the U.S. Of those at potential higher risk, between 3,700 and 632,000 may be pregnant women, the highest at-risk group.

“Our results also show that complications from the Zika virus are likely to overlap with impoverished counties with large minority populations where resources are more likely to be scarce to combat a large-scale Zika virus outbreak,” Shacham said.

Shacham suggested developing intensive interventions to prevent infection as well as treatment and care plans for families with affected newborns in higher risk areas.

“Enhanced vector control, Zika surveillance, and clinical management in these higher-risk areas will be critical for reducing the impact of a sustained Zika virus outbreak that may potentially occur particularly among economically challenged populations and communities that are least equipped to handle an outbreak.”



Invasive species as a form of biological weapon

Source: https://www.researchgate.net/publication/278029302_INVASIVE_SPECIES_AS_A_FORM_OF_BIOLOGICAL_WEAPON

Mar 30 – The purpose of this research was to explore evidence that invasive species (aka Non Indigenous Species-NIS) could be used as a biological weapon (BW). **The five important attributes of a BW agent are: High virulence coupled with high host specificity; high degree of controllability; lack of timely countermeasures to the attacked population; ability to camouflage the agent with relative ease; and high degree of resistance to adverse environmental forces.** NIS fits most of these criteria as they are a non-native species introduced into a foreign ecosystem that successfully flourish and damage the abiotic or biotic factors of that ecosystem. Previous historical events have suggested a NIS-BW application by ecoterrorists, but this research paper explores this process based on methods using ecological niche modeling (ENM) that could be used to determine NIS success and target selection. This research is significant as it describes a threat to biosecurity and biodefense by using NIS in BW attacks by hostile actors (e.g. aggressor nation, bioterrorists, or lone individual) as well as the various BW targets (e.g. public health, ecosystems, agricultural commodities, biofuel feed stocks). The vulnerability of nations to NIS-BW introduction as well as the risk factors favoring NIS-BW are also examined. **The use of the ENM tool GARP (Genetic Algorithm for Rule-set Prediction) has found promise in predicting the range and effective invasiveness of an organism prior to the actual invasion.** Two models are presented to describe the process of NIS-BW by hostile actors- one using a single invasive species and one leading to an invasion meltdown of the targeted area.

Four examples of potential NIS-BW are discussed with supportive evidence for their effectiveness and invasive potential on targets. These examples are: **Feral pigs** can be used to carry the Nipah virus and spread the disease to humans, cattle and wildlife; the Heartwater pathogen, **Ehrlichia ruminantium**, a microbe that causes cardio and pulmonary edema that is carried by the tropical bont tick, can kill deer, cattle or other wildlife, and potentially be transmitted to humans; **Striga**, a plant parasite that can



destroy corn crops, and devastate agricultural commodity markets and bio-fuel production; and **Barberry plants** seeds that are eaten by birds whose droppings spread Wheat Stem Rust-Puccinia graminis, which can cause destruction of wheat harvests resulting in food shortages and wheat export boycotts. The methods to detect a NIS-BW attack as well as discern an accidental NIS introduction from a deliberate attack are described.

Methods to determine a deliberate NIS-BW attack include uncommon routes of entry; extremely high rates of NIS propagules found; or evidence of NIS genetic alternation (e.g. enhancement of invasiveness or colonization traits) as well as human intelligence of a planned NIS-BW attack or evidence of NIS culturing by a nation state or terrorist facility. The NIS-BW countermeasure recommendations, either as prevention or remediation, include; expansion of NIS databases, database development of known predators of NIS organisms (i.e. biocontrol), and enhancements of NIS research in field trials.

Another counterstrategy is to expand research on potential NIS organisms using enhancements to ENM software and data processing to improve the predictive potential of these tools. Another countermeasure, the expansion of NIS genomic maps, would serve several purposes. **First**, it would expand understanding of the role that genetic variability and how selective genes play in invasion survival and colonization of naïve niches. **Second**, genomic maps would accelerate the development of gene-based diagnostics for NIS-BW detection. **Third**, NIS genomic maps would help in the detection of genetically engineered NIS organisms. **The detection of genetically altered NIS would strongly indicate that a NIS-BW attack had occurred.**



Practicing what to do in bioterrorism attack

Source: http://www.heraldbulletin.com/news/local_news/practicing-what-to-do-in-bioterrorism-attack/article_94904b38-45e0-5fbb-8385-8d7d90a66d54.html

Mar 29 – However unlikely, the Madison County Health Department now knows just how well it and the community would respond to a bioterrorism attack.

It is happy with what it learned.

The health department and United Way of Madison County organized a community mock medicine distribution exercise in which about 70 volunteers helped simulate Monday what the response to a bioterrorism event could be like.

Bioterrorism is the deliberate release of viruses, bacteria, toxins or other harmful agents to cause illness or death in people, animals, or plants.

“We’re so efficient and everyone was so good that we put more people through in 25 minutes than what we expected to in an hour,” said Stephenie Grimes, preparedness coordinator at the health department.

About 40 of the volunteers acted as patients and moved through the simulation as people who had been exposed to the threat within the past 48 hours. About 30 health professionals, coming from Madison, Fayette, Delaware and Tipton counties, helped get “patients” through the process.

Patients first filled out paperwork, which asked questions about height, weight, allergies and other information that went into dosing antibiotics. Once their forms were screened, medication — in the form of three different colored M&M candies — were dispensed based on their needs.

Grimes said she was proud to say that a family of four, including a small child, got through the simulation from start to finish in about 5 minutes. United Way assisted in providing volunteers to work as staff and finding volunteers to act as patients. Todd Harmeson, deputy director and public information officer of Madison County

Emergency Management Agency, said having an adequate amount of volunteers was key.

“That’s what it takes,” Harmeson said.

“Emergency response personnel practice regularly, but if we don’t have the patients to simulate it, we don’t know whether we were successful. In this case, we were.”

The health department completes a simulation similar to Monday’s once every five years as part of a grant the department receives. Grimes said Marion County and the surrounding counties will be completing similar simulations this week.

But aside from meeting the requirement of the grant, it is important to be prepared, even for events that are unlikely to happen, such as a bioterrorism attack.

Grimes said that even though she’s completely walked through emergency vaccine simulations before, she forgot just how long it takes to get set up. Grimes and others spent about six to seven hours on Sunday setting up everything from where tables and ropes would be positioned to making sure the workers in the simulation are treated before infected patients went through the simulation.

Part of the preparation time was deciding how to set up the area in Madison Park Church of God since it was the first time a department did a simulation there. Typically, the Wigwam Complex in Anderson had been used.

Health professionals weren’t the only professionals involved. Harmeson said representatives of law enforcement, fire departments, Red Cross and United Way were needed to complete a strong response to the simulated situation.

“It takes the whole community of emergency response and citizens to pull something off like this,” he said.

EDITOR’S COMMENT: While taking the medical history, I hope that somebody also asked: “Did you travel abroad recently?” – remember Ebola in Texas? Then, once in 5 years? Was antibiotic



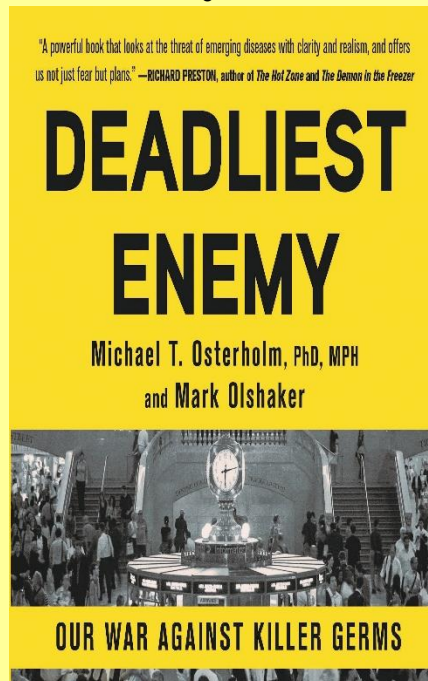
distribution plan tested as well? When the drill is well preplanned, everything goes smoothly and all the participants know what to do. What if the drill was conducted today without prior notice? Yes, I do know the answer! But why we always stay inside the box? I know this answer as well...

Author: How the Mall of America could become 'as toxic and uninhabitable as Chernobyl'

Source: <https://www.mprnews.org/story/2017/03/28/books-deadliest-enemy>

Mar 29 – Our deadliest enemies are the ones we can't see — not without a microscope, anyway.

That's the message at the heart of Michael Osterholm and Mark Olshaker's new book, **"Deadliest**



Enemy: Our War Against Killer Germs."

Osterholm is the former state epidemiologist for Minnesota, a job that earned him the title "Bad News Mike." (Given his specialty on diseases, he wasn't a guy you wanted to hear from.)

Osterholm joined MPR News host Tom Weber to discuss his new book, and the public health threats the world may soon need to confront.

The most important thing, Osterholm said, is to understand that we now "have more vulnerability to infectious disease than almost any other time in our history."

It might seem counterintuitive, given our scientific advancements, but think about the sheer number of people on the planet now: roughly 7.6 billion.

"It's not the mere number that's important, but that so many live in the megacities of the developing world, where the potential for not only starting infectious disease problems but *spreading* infectious disease problems is very real."

Then, think about all the advancements we've made in shipping and travel: We've created superhighways for germs.

"We live in a world where it's a just-in-time delivery system, where we've eliminated oceans, mountain ranges, political boundaries, any kind of way of stopping infectious diseases from moving from one part of the world to another," Osterholm said.

And globally, we're not set up to respond to an infectious disease event should there be an outbreak.

"Today, if we look at the fragile state status of so many governments around the world, it's unclear who is in charge, and what kind of infrastructure is available to even respond to a public health problem," Osterholm said. "So when you add this all together, and on top of it, you look at the lack of funding from many governments to actually do public health work, we really have some major challenges."

"Deadliest Enemy" explores the public health emergencies — past, present and potentially future — that have threatened the planet. Malaria. AIDS. Tuberculosis. SARS. Ebola. Zika. Influenza. The list goes on. In one chapter, Osterholm delves into the issue of bioterror and the devastating possibilities of an intentionally-released outbreak. He imagines a scenario: An anthrax attack at the Mall of America. Below is an excerpt:

An excerpt from "Deadliest Enemy"

Twenty years ago there were five class A agents of greatest concern for bioterrorism: anthrax, smallpox, plague, tularemia, and hemorrhagic fever viruses such as Ebola. Today, I worry primarily about anthrax, smallpox, and any microbe that we can change through our new

hyperslab tools to be readily transmissible to people or animals and resistant to current treatments or vaccines.

Anthrax — *Bacillus anthracis* — is a particularly effective biosweapon. It doesn't transmit person-to-person, but when dried



out, the bacteria preserve themselves as tiny, virtually weightless spores that are hardy enough to last for decades or longer. Archeologists have even found evidence of them in Egyptian tombs. When those spores are inhaled and reach the moist, comfortable environment of the lungs and gastrointestinal tract, they germinate, reverting back to their active form and releasing three deadly protein toxins. Inhalation of anthrax in the lungs causes pneumonia that kills between 45 and 85 percent of untreated victims. In dried form, anthrax can be hidden in any white powder and will not arouse the suspicion of airport security workers or anyone else.

Back in 1993, the congressional Office of Technology Assessment produced a report entitled "Proliferation of Weapons of Mass Destruction: Assessing the Risk," comparing the potential impact of chemical, biological, and nuclear weapons on Washington, DC. It concluded that a small airplane dispersing only 100 kilograms (about 220 pounds) of anthrax spores would kill more people than a Scudclass missile carrying a hydrogen bomb. The Hsbomb would kill between 570,000 and 1.9 million in a 300ssquaremile area, depending on such factors as weather and exactly where it was dropped. The anthrax dispersal would kill between 1 and 3 million under similar circumstances.



The late William "Bill" Patrick was a brilliant scientist and a friend to both Mark and me. He used to head up the American bioweapons program at Fort Detrick. Bill made a habit of carrying around a vial containing 7.5 grams of a harmless bacterial culture that looks just like

anthrax under a microscope. In March 1999, testifying on Capitol Hill before the House Permanent Select Committee on Intelligence, he pulled out his vial, explained what it was, and declared, "I've been through all the major airports and security systems of the State Department, the Pentagon, even the CIA, and nobody has stopped me." Seven and a half grams, by the way, would be just about the exact amount needed to kill everyone in a structure the size of a Senate or House office building. Anthrax can be treated with certain broadsspectrum antibiotics like ciprofloxacin (Cipro), but quick diagnosis is essential and treatment can take weeks or months. And experimental lab work has already proved how easy it would be to develop antibioticsresistant strains.

Bioweapons are unlike any other of their brother weapons of mass destruction, and our response strategies for other WMDs will not work against them. As horrific as it is to think of two jetliners hitting and bringing down the World Trade Center towers, that was a readily "survivable" tragedy for New York City and the nation. At the end of the day on September 11, 2001, the terrorist act was over and the recovery could commence. With a bioterror event, the end of the day would be only the beginning, and no one would even know it yet. We likely wouldn't recognize it for a week, by which time the initial victims would have carried their deadly infection to all parts of the United States and much of the world.

Even with biologic agents that are not transmissible personstosperson, the challenge is daunting. The **Mall of America** in Bloomington, Minnesota, not far from where I live, is the largest shopping center in the United States, with **an average of more than 100,000 visitors a day from all over the world**. If **anthrax** were efficiently dispersed throughout the sprawling mall, there would easily be many thousands of cases and thousands of deaths as local healthcare systems were overwhelmed. The victims wouldn't even know they'd been targeted until several days had passed and fever, chills, chest pain, shortness of breath, fatigue,



vomiting, and nausea set in. For many of them, recognition would come too late.

It would be an event of historic proportions that could never be forgotten, not only because of all the death and disease and the almost unimaginable panic that would ensue, but also because it would simply be too big and complex a task to decontaminate the entire mall complex. And you couldn't just tear it down, either. The AMI building in Florida was closed off for more

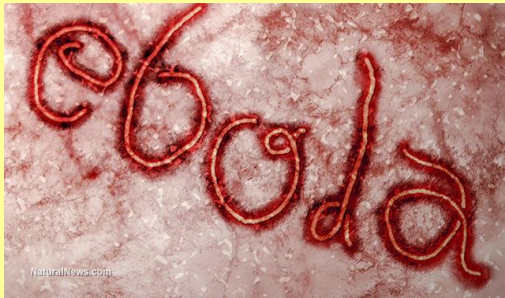
than five years because of the risk of spreading the anthrax spores to the surrounding community. After a monumental cleanup effort it was finally declared anthrax-free in 2007.

A contaminated Mall of America — many times larger than the AMI building — would just sit there as an abandoned, hulking mass on the Minnesota prairie — as toxic and uninhabitable as Chernobyl.

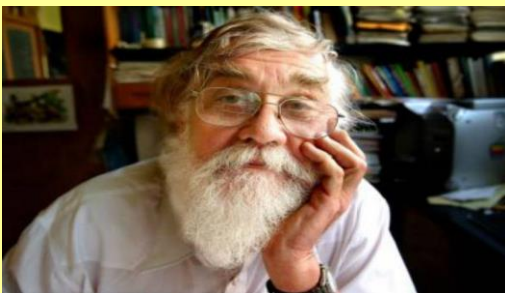
Liberal “science” on parade: Kill off 90 percent of the world population to save the planet

Source: <http://evil.news/2017-02-07-liberal-science-on-parade-kill-off-90-percent-of-the-world-population-to-save-the-planet.html>

Feb 07 – A University of Texas professor says he is eager to see mass carnage on Planet Earth



to help remediate what he sees as the problem of human overpopulation. In the opinion of [Eric R. Pianka](#), [an evolutionary ecologist and professor of integrative biology](#), at least 90



percent of the world's population needs to go, and his preferred method, at least according to a speech he made at a meeting of the Texas Academy of Sciences, is the highly deadly Ebola virus.

The earth simply can't survive when it is faced with the current level of human growth, Pianka told a crowd of listeners, many of them students. So to save it, he added, “drastic measures” need to be taken, including utilizing the fastest and most efficient way to kill off billions of people

over a very short period of time: communicable disease.

According to *The Citizen Scientist*, Pianka showed visual slides depicting the Four Horsemen [of the Apocalypse](#) — the deliverers of various modes of human judgment including through conquest, war, famine, and death. War and famine, in Pianka's view, cannot achieve the amount of human death that he believes the world needs to recover, so he contrasted these slides with his own assessment of Ebola as the real solution.

“[Pianka's] favorite candidate for eliminating 90 percent of the world's population is airborne Ebola (Ebola Reston), because it is both highly lethal and it kills in days, instead of years,” reads an article written by someone who attended the meeting, as quoted by *Prepper Fortress*. “After praising the Ebola virus for its efficiency at killing, Pianka paused, leaned over the lectern, looked at us and carefully said, **‘We've got airborne 90 percent mortality in humans. Killing humans. Think about that.’**”

Abortion fits right into Pianka's obsession with human death

Pianka's morbid predictions and expectations are hardly isolated to just this one event. At another meeting that took place at St. Edward's University in Austin, Pianka gave another “doomsday talk” in which he told students and others that, should they happen to survive a catastrophic extinction event like the one he hopes will occur, each



survivor will be responsible for burying nine other people.

After this occurs, Pianka believes the world will start over and go back to a barter system — something he eagerly anticipates. Insisting that what he portends is positive rather than negative, Pianka reiterated that people should be happy about their potential deaths rather than sad, because everyone is eventually going to die anyway.

“This is really an exciting time,” Pianka is quoted as saying amid warnings of an apocalyptic future. “Death. This is what awaits us all. Death.” Pianka’s collective death wish for humanity fits right into the current eugenics plan of limitless abortion, which has become a rallying cry of the political left. Just recently, millions of women marched on Washington, D.C., to demand that

they continue having access to abortion clinics where they can murder their unborn babies on a whim — because this is supposedly their right as women.

Such evil is exactly the type of thing that Pianka seems to embrace as good in his distorted worldview. Killing off humans is a *good* thing in his demented mind, and this message of human destruction is continually being spread to impressionable young men and women attending college who likely never thought they would encounter this toxic message while trying to get an education.

After making his initial statements in front of a diverse crowd at the Texas Academy of Sciences, Pianka was later approached by the Federal Bureau of Investigation (FBI) after being reported as a potential terrorist.



EDITOR'S COMMENT: A potential terrorist??? Childen and adults who torture or kill animals in many instances have a criminal record later on in their lives. So why “potential” and not a “terrorist” that should be “removed” from the social web? Prevention has always been better than treatment! We love democracy; why die for democracy and the right to express our opinions freely. But not for these kind of people and their sick/evil dreams.

Can Bill Gates rescue the Bioweapons Convention?

By Gregory D. Koblentz and Paul F. Walker

Source: <http://thebulletin.org/can-bill-gates-rescue-bioweapons-convention10665>

Apr 03 – Global efforts to combat bioterrorism and strengthen international health security face a major crisis: The [1972 Biological Weapons Convention](#) is in dire financial straits.

The convention provides the foundation for international efforts to prevent states and terrorists from acquiring bioweapons. It is the world’s only forum for governments, academics, scientists, nongovernmental organizations, and the private sector to develop strategies for preventing and responding to the threat of bioweapons. But due to the funding crisis, the convention’s ability to continue in that role is in serious jeopardy. Meanwhile, as the recent use of chemical weapons by [North Korea](#), [Syria](#), and the [Islamic State](#) demonstrates, dictators and terrorist groups remain interested in unconventional weapons.

The need for international cooperation on bioweapons is greater than ever. But a shocking number of treaty members have not

been paying their fair share of the budget, leaving the treaty almost [\\$400,000 in debt](#). Brazil in particular has been delinquent. It has hardly paid anything over the last decade and it accounts for nearly three-quarters of the total outstanding amount. On March 21, the three official depositaries of the convention—Russia, the United Kingdom, and the United States—issued an [unusual joint letter](#) to the treaty’s members, warning that the funding crisis threatened two devastating effects: a shutdown of the treaty’s implementation body and the cancellation of a key meeting on the convention’s future, scheduled for December. Here’s the good news: One individual alive today has the means, and potentially the inclination, to redress the convention’s immediate funding crisis. This individual, through a charitable foundation, has already poured tens of billions of dollars into global health. He has also warned



that bioterrorism could kill 30 million people in less than a year. This individual, of course, is the [world's richest man](#) and its [most generous philanthropist](#), Bill Gates.

What's at risk

The first potential casualty of the funding crisis is the convention's already modest capacity for implementation. Unlike the Nuclear Non-Proliferation Treaty and the Chemical Weapons Convention, which operate with the support of large international organizations, the Biological Weapons Convention relies on just a tiny organization to collect annual confidence-building and compliance reports; organize annual meetings; conduct public outreach; and promote universalization of the treaty. This organization — the Geneva-based [Implementation Support Unit](#) (ISU)—operates on a shoestring budget of roughly \$1.4 million a year. The contracts of its *three* staffers are set to expire by the end of April. If these dedicated individuals are not retained, the convention will lose institutional memory regarding both the treaty itself and the treaty's successes in building an international network to tackle issues at the nexus of health, science, and security.

The second potential impact of the budget crunch is the cancellation of a meeting, scheduled for December, that is intended to overcome the political gridlock that led to a [meltdown](#) at the convention's review conference last November. The review conference [ended ignominiously](#)—Iran blocked consensus on a reasonable agenda of new activities that would have countered bioterrorism and strengthened global health security over the next four years. The meeting this December is the treaty members' only chance to establish a new round of cooperative activities until the next review conference in 2021. Given the rate at which biotechnology is advancing, four years is too long to wait.

The solution?

Just weeks before Russia, the United Kingdom, and the United States issued their unprecedented letter, Bill Gates had [warned](#) at the Munich Security Conference that an outbreak of manmade or natural disease could kill 30 million people and cost the global

economy more than \$500 billion. "Imagine if I told you," Gates said, "that somewhere in this world, there's a weapon that exists—or that could emerge—capable of killing tens of thousands, or millions, of people, bringing economies to a standstill, and throwing nations into chaos. You would say that we need to do everything possible to gather intelligence and develop effective countermeasures to reduce the threat. That is the situation we face today with biological threats."

Gates, ever the businessman, pointed out that this dire outcome could be avoided by spending an estimated \$3.4 billion a year on pandemic preparedness. To his great credit, Gates and his foundation have already contributed vast sums to global health. Most recently, the Bill and Melinda Gates Foundation provided \$100 million to help launch a public-private initiative called the [Coalition for Epidemic Preparedness Innovations](#), with the goal of accelerating the development of new vaccines. More active engagement by civil society and high-level political attention from governments—of which this new coalition is only the latest example—have contributed to major advances in global health in recent years.

While global health has experienced a renaissance, the international effort to combat bioweapons has fallen far behind. Global efforts to combat bioterrorism need an infusion of the same resources, fresh ideas, and new approaches that the Gates Foundation has brought to global health. Even a modest investment by the Gates Foundation—which provided [\\$1.2 billion in 2015 alone](#) to global health efforts—could allow the ISU not only to weather its current financial crisis but to dramatically increase its activities across the board. With increased funding the ISU could conduct more robust outreach to the scientific community and private sector, help more states improve their capacity to implement the treaty, and more closely monitor emerging biotechnologies that might be used to make biological weapons. The publicity generated by a donation from the Gates Foundation would also bring much-needed attention to the treaty and might galvanize embarrassed members to pay their debts.



The global health community has achieved great gains over the decades, but a single bioweapon attack could reverse all that. Now

more than ever, an ounce of prevention is worth a pound of cure.

Gregory D. Koblentz is director of the Biodefense Graduate Program at the Schar School of Policy and Government at George Mason University.

Paul F. Walker is international director of security and sustainability at Green Cross International.

Monitoring the emergence of infectious diseases

Source: <http://www.homelandsecuritynewswire.com/dr20170403-monitoring-the-emergence-of-infectious-diseases>

Apr 03 – Zoonotic diseases that pass from animal to human are an international public health problem regardless of location — being infected with *Campylobacter* from eating undercooked chicken in the U.K. is not uncommon, for example — but in lower-income countries the opportunities for such pathogens to enter the food chain are amplified.

Professor Stephen Baker from Oxford University's Center for Tropical Medicine and Global Health, Nuffield Department of Medicine, says that where he currently works in Vietnam, and across the region, humans have a very different way of interacting with animals being bred for food than would be familiar to those in the United Kingdom. If one were to travel to the Mekong Delta region (in the south of Vietnam) it would not be uncommon to see people who keep a large variety of farm animals in, or in close proximity to, their houses. It comes as little surprise that in a country where raw pig blood and pig uterus are commonly consumed, the number one cause of bacterial meningitis is *Streptococcus suis*, a colonizing bacterium of pigs.

The major problem of researching emerging infections is predicting how they arise and how we respond to them once they do.

Given the complexity of zoonotic disease emergence and transmission, it is very rare that an outbreak can be traced back to the first identified human or animal case — known as the “index case” — and this remains a substantial challenge. A lack of effective health and surveillance infrastructures in many lower income countries compounds this issue, as we are wholly reliant on individuals entering the

healthcare system and getting diagnosed, which seldom happens.

The ideal scenario is that we can identify new pathogens with zoonotic potential in animals prior to them spilling over into humans. However, if we cannot achieve this we need to be aware of their existence and be able to respond by treating people effectively once they are infected. This means rapidly identifying patients with a particular infection, assessing the severity of their condition and diagnosing the agent. Therefore, having sentinel hospitals with well-trained clinical staff, good diagnostics and microbiology facilities is the best opportunity we are going to have to detect diseases.

The most recent example of this is a case of *Trypanosoma evansi* infection — a protozoan disease of animals and, rarely, humans — that we identified in a woman attending our hospital with an atypical disease presentation. Ultimately, we were able to trace this infection back to her cutting herself when butchering a buffalo in her family house during New Year celebrations — this was the first reported human case of *T. evansi* in Southeast Asia. Our ability to interact with animal health authorities permitted access to sampling bovines in the proximity of the patient's house. We found a very high prevalence of the parasite in the blood of cattle and buffalo close to where the woman lived, highlighting a new zoonotic infection in the region and likely a sustained risk.

Diagnostic information has also been vital in data we published detailing an outbreak of fluoroquinolone-resistant *Shigella sonnei*. The reason we found this organism was that one of my clinical colleagues was culturing organisms from children with



severe diarrheal disease, and realized that these samples had come from children who had been admitted to hospital with a more persistent form of the infection, and several appeared to relapse with the same syndrome. When we investigated the antimicrobial susceptibility profile of the isolated *Shigella*, we observed that the bacteria were highly resistant to fluoroquinolones – the antimicrobials that are used routinely to treat this infection in Vietnam (and indeed globally). We then conducted more clinical and laboratory investigations and found more cases in Vietnam and further afield. Through genome sequencing and a group of international collaborators, we could accurately piece together the emergence of this novel strain into Vietnam, other parts of Asia, Europe and Australia.

These findings were largely serendipitous, but if you are not looking then you cannot find. Unfortunately, this approach is not a long-term

strategy for monitoring and preventing the emergence of such pathogens. Sadly, the infrastructure improvements and long-term health studies that are needed to achieve a more sustainable model in lower income countries are an expensive undertaking, but without them healthcare improvements and changes to infectious disease policy will be difficult to achieve.

Bakers says that Vietnam has changed beyond recognition since his arrival in 2007. Huge economic investment and political stability has had positive effects on healthcare in the country, and across the region. However, many challenges remain; a growing population, increasing demands for animal protein, and the looming cloud of antimicrobial resistance in everyday pathogens suggest that Southeast Asia will continue to be a key region in driving global health security.

— Read more in Stephen Baker, “Emerging infectious diseases in Asia,” *Microbiology Today* (February 2017).

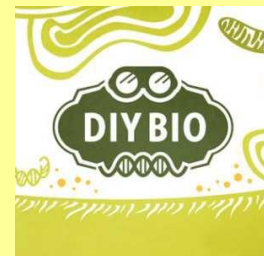


Find a Biohacking Makerspace Near You

Source: <http://makezine.com/2017/04/05/biohacking-spaces/>

Apr 05 – DIYbio was founded in 2008 with the mission of establishing a vibrant, productive and **safe** community of DIY biologists. They believe that biotechnology and greater public understanding about it has the potential to benefit everyone.

Want to get hands-on with science? Check out this extensive list of [DIY biolabs](#) and meet-up groups around the world. Look closely, there may be a lab or meet-up in your area where you can get started on your biohacking project.



USA-EAST

[Asheville DIY Bio Meetup](#) – Asheville, NC
[Baltimore Under Ground Science \(BUGSS\)](#) – Baltimore, MD
[Capital Area BioSpace \(CABS\)](#) – Bethesda, MD
[Boston Open Science Lab \(BosLab\)](#) – Boston, MA
[Genspace](#) – Brooklyn, NY
[MIT DIYbio](#) – Cambridge, MA
[Open Bio Labs](#) – Charlottesville, VA
[DIYbio South Carolina](#) – Columbia, SC
[Cap City Biohackers](#) – Columbus, OH
[Ronin Genetics](#) – Durham, NC
[Great Lakes Biotech Academy](#) – Indianapolis, IN
[Tri Sci](#) – Kansas City, MO
[DIYbio Madison](#) – Madison, WI
[MN DIYbio](#) – Minneapolis, MN
[Harlem Biospace](#) – New York City, NY



[Biologik Labs](#) – Norfolk, VA

[FamiLAB](#) – Orlando, FL

[Triangle DIY Biology](#) – Research Triangle Park, NC

USA-WEST

[Berkeley BioLabs](#) – Berkeley, CA

[Bio, Tech and Beyond](#) – Carlsbad, CA

[Denver Biolabs](#) – Denver, CO

[La Jolla Library Bio Lab](#) – La Jolla, CA

[Biodidact](#) – Los Alamos, NM

[TheLab](#) – Los Angeles, CA

[Counter Culture Labs](#) – Oakland, CA

[PortLab](#) – Portland, OR

[DIYbio San Diego](#) – San Diego, CA

[Wet Lab](#) – San Diego, CA

[Indie Bio](#) – San Francisco, CA

[HiveBio Community Lab](#) – Seattle, WA

[BioCurious](#) – Sunnyvale, CA

CANADA

[Brico.Bio](#) – Montreal, QC

[Nelson-BC-DiyBio](#) – Nelson, BC

[BioTown](#) – Ottawa, ON

[DIYbio Toronto](#) – Toronto, ON

[Open Science Network](#) – Vancouver, BC

EUROPE

[ABiohacking](#) – Albacete, Spain

[Waag Society's Open Wetlab](#) – Amsterdam, Netherlands

[DIY Bio Barcelona](#) – Barcelona, Spain

[Biotinkering Berlin](#) – Berlin, Germany

[Open BioLab](#) – Brussels, Belgium

[Bio.Display](#) – Budapest, Hungary

[Biomakespace](#) – Cambridge, UK

[Biologigaragen](#) – Copenhagen, Denmark

[Bio Art Laboratories](#) – Eindhoven, Netherlands

[Bioscope](#) – Geneva, Switzerland

[ReaGent](#) – Ghent, Belgium

[Open BioLab](#) – Graz, Austria

[DIYbio Groningen](#) – Groningen, Netherlands

[Biotop Heidelberg](#) – Heidelberg, Germany

[L'Eprouvette](#) – Lausanne, Switzerland

[Hackuarium](#) – Lausanne/Renens, Switzerland

[London Biohackspace](#) – London, UK

[London Hackspace](#) – London, UK

[BioChanges](#) – London, UK

[Symbiolab](#) – Maribor, Slovenia

[Biohacking](#) – Moscow, Russia

[Biogarage](#) – Munich, Germany

[DIYbio Belgium](#) – Namur, Belgium

[OpenGenX](#) – Nottingham, UK

[La Paillasse](#) – Paris, France

[Project Biolab](#) – Prague, Czech Republic



[BioNyfiken](#) – Stockholm, Sweden
[Hackteria](#) – Switzerland/Slovenia
[Be.In.To](#) – Turin, Italy

ASIA

[F.lab](#) – Bangkok, Thailand
[DIYio Hong Kong](#) – Hong Kong, China
[BioRiiDL](#) – Mumbai, India
[DIYbio Singapore](#) – Singapore
[DIYbio Israel](#) – Tel-Aviv, Israel
[BioHubIL](#) – Tel-Aviv, Israel
[BioClub](#) – Tokyo, Japan

LATIN AMERICA

[DIYbio Mexico](#) – Guanajuato, Mexico
[Biomakers Lab](#) – Lima, Peru
[SyntechBio Network](#) – Sao Paulo, Brazil
[Garoa Hacker Club](#) – Sao Paulo, Brazil
[Synbio Brasil](#) – Sao Paulo, Brazil

OCEANIA

[BioHackMelb](#) – Melbourne, Australia
[DIYbio Perth](#) – Perth, Australia
[BioHackSyd](#) – Sydney, Australia

EDITOR'S COMMENT: Too much freedom is bad for citizens' health! No "surprised faces" on TV will be accepted after the next epidemic/pandemic!

How to Set Up Your Own DIY Bio Lab

Source: <http://makezine.com/2017/04/11/how-to-set-up-your-own-lab/>

Apr 11 – So you would like to try your hand at some biohacking. Professional labs cost hundreds of thousand of dollars to build from scratch, but you can get started for around \$500 or less with a little improvisation and patience.

Large Equipment

Let's start with the pieces that will take up the biggest chunk of space in your lab: refrigerator, freezer, autoclave, and incubator. If you are just planning to run through an educational biotech kit at home, you can probably get away with clearing some space in your kitchen fridge. However, if you are planning to do more than just a weekend project, then invest in a dedicated fridge and freezer for your experiments. The vast majority of educational kits out there are perfectly safe, but the average novice might not realize that some classical experiments (like isolating unknown bacteria) can be hazardous to your health if stored near food. Plus, you will eventually need the extra space anyway, and it will protect your experiments and edibles from cross-contamination.

Mini fridges can often be found on Craigslist for less than \$50 — or free on [Freecycle](#). If possible, avoid the kind that has a tiny freezer compartment at the top — they get iced over and are too small for practical use.



Instead, try to find a mini freezer that is the same size as your fridge or get a 2-door fridge/freezer combo. Many modern household freezers have an auto-defrost feature that briefly warms up the cooling coil a few times a day to keep ice from building up. The resulting temperature fluctuations can be detrimental to sensitive biological materials such as restriction enzymes. Check if there is a way to disable the auto-defrost circuitry or simply put your enzymes inside a styrofoam box in the freezer.

An autoclave is essentially a big pressure cooker that heats growth media or equipment above the boiling point of water in order to sterilize them. Guess what — a regular pressure cooker makes for a fine autoclave as well. In a pinch, you can even use a microwave oven to sterilize growth media — just watch out for flash boiling! When you are ready to upgrade, professional autoclaves are surprisingly easy to find on Craigslist. Aim for one that is at least 7" in diameter so you can fit decent-sized flasks, and expect to pay a few hundred dollars.



Flasks in a microwave. Photo by Patrik D'haeseleer

An incubator is used to grow cells at a carefully controlled temperature. You might be able to score an old egg incubator or yogurt maker at your local thrift store. You could also simply build your own by putting a heating pad with a thermostat in an old cooler. Pet stores sell heating pads intended to keep pet reptiles nice and toasty.

Benchtop Tools

A centrifuge is really useful for concentrating cells out of a liquid culture, separating DNA, proteins, and soluble components in complex mixtures, and more. Biohacker extraordinaire [Cathal Garvey \(@onetruecathal\)](#) designed [a 3D-printable "dremelfuge"](#) that can be chucked into a Dremel power tool to turn it into a centrifuge. However, unless your 3D printer is well tuned, they are prone to shattering at high speeds. You can order a high quality dremelfuge from [Shapeways](#), but for that price you can also buy a cheap centrifuge on eBay. Inexpensive Chinese models running around 4000rpm can be had for \$50–100, or 10,000rpm models for around \$150. (You can also [3D print your own centrifuge using these instructions](#)).

A centrifuge. Photo courtesy of Sparkfun



A commercial gel electrophoresis rig can cost a few thousand dollars, but it is essentially just a DC power supply and a plastic box with two electrodes. You

can make a dirt-cheap electrophoresis power supply using a hardware store dimmer switch and a bridge rectifier. The gel box itself can easily be made out of dollar store plastic containers and a stainless steel or platinum wire for the electrode (check out [this \\$21 gel box design by Cheapass Science](#)).

You may also want a PCR (Polymerase Chain Reaction) machine. Again, commercial gear can cost thousands of dollars, but there are several DIY designs available online, and [OpenPCR even sells an Open Source Hardware PCR kit](#) for \$599. Like most biotech hardware, a lot of used gear from professional labs eventually winds up on eBay or Craigslist.



The independent online biohacker store [The Odin](#) has been buying up inexpensive, used PCR machines and reselling them after refurbishing.

You will need some way to generate a sterile field in which you can manipulate microorganisms without fear of contamination. An open flame from an alcohol lamp or Bunsen burner will do for starters. A simple laminar flow hood, often used for mushroom cultivation or plant tissue culturing, blows ultrapure HEPA-filtered air over the cultures. If you want to get really serious, you could upgrade to a biosafety cabinet instead. Professional labs often leave their biosafety cabinets behind when they move, so if you cultivate the right contacts and are willing to put in some serious elbow grease, you may be able to score one for free.

Lab Supplies

To manipulate small but very accurate amounts of liquids, you will also need a set of adjustable pipettes.



Cheap Chinese pipettes can be bought from [The ODIN](#) and a few other places for around \$40 a piece — you will want at least two or three different sizes to transfer anything from single-digit microliter droplets, to several milliliters.

Other smaller items you will need include digital thermometers, a few small digital scales with a resolution of 0.01g or better, boxes of nitrile gloves, and a variety of glassware and plasticware (check your local dollar stores!).

Happy hacking!

Botulinum toxin and Bioterrorism

By Sandra Schmidt

Source: <http://outbreaknewstoday.com/botulinum-toxin-bioterrorism-72178/>

Apr 12 – It is not just a matter of time when the biological terrorism will hit our world with no mercy. It is also a matter of choice what agent we will be attacked with. There are no right or wrong pathogens but there are always victims. **The Civilian Biodefense is definitely in trouble because from 10 very well known microbes; the modern bio warriors could try to kill us with the forgotten 11th one.** Bioterrorism is simply unpredictable so are the outcomes of the asymmetric biological war. In the age of terrorism challenges, dreaming about ensured Biosafety sounds like utopia. There is no magical key to lock our fears and unlock our hopes. The terrorists nowadays are

capable to crawl into the jaws of non-conventional weapons and to use all their imagination to fight their goals and to keep the states and people in the permanent panic. That is the typical modus operandi of terrorism, the theater atmosphere with the horror background. The world we live in is the Hotel California in its best.

Among so many available options for terrorists to make biological weapons, I believe that Botulinum toxin is one of the most attractive micro killers. First of all, it is very lethal but also very easy to be produced. The fact that small amount of this toxin can cause the



fatal illness is more than enough inviting and thrilling for bioterrorists to start digging for more. This toxin comes from bacteria *Clostridium botulinum* that is generated in the soil. How we usually get infected by this agent? It happens when we eat contaminated food or by absorbing the bacteria through the skin cuts or other wounds. However, the disease is very rare in the natural environment and only about 200 cases are reported in the USA annually. What makes a great concern is capacity of this toxin to be abused for contamination of the food supplies, or even delivered throughout the aerosol dissemination on the targeted area or population.

The governments have really never given up working on the militarization of the Botulinum toxin. If we recall the memories from the unstable international political climate during the Cold War, we will be aware of the efforts of the U.S. and former Soviet Union and Iraq to aggregate this toxin and make it useful for war strategies. Who will be sure that Biological Weapons Convention keep states obligated to be away from the Biological Weapons Program when the same one is so tempting?

The bacteria is not a new one, it is very well famous to the mankind for centuries, especially the disease it causes. Botulism is considered as neuromuscular illness based on the activity of potent Botulinum neurotoxins (BoNTs). If the affected one is without treatment, the death is ultimate through the severe stages of pain and paralysis of respiratory muscles. But, on the other side, this neurotoxin is also available to be used as licensed drug for the neurological disorders. It is more than fascinating how one natural segment could be used as a cure and abused as a poison. This is the collage of life and death.

The terrorists, obsessed with idea to harm the system they hate, usually do not think about the legendary **Botox injections for erasing the wrinkles.**

Their strategy is to cause the panic because the disease is often misdiagnosed and thus, the time lacks. The toxin attacks very fast the central nervous system and blocks the acetylcholine that helps the exchange among cells. The process is ended up with the paralysis. If the real indicator is not recognized,

the therapy will fail and the patient will die. The clinical picture is very dark and bioterrorism sees its own potential in this agent. Even if the antitoxin is given, the recovery will be slow and mechanical ventilation will be necessary so the victim could be able to breathe.

The botulinum neurotoxin is the most poisonous substance in the world; it is six million times more toxic as the rattlesnake venom but to work and produce it is not the easiest job. The good thing about the bioterrorism is absence of KNOW and HOW and the existence of professional ignorance when it comes to the biotechnology. The fanatical terrorists or lone wolf system haters cannot learn from the book how to make the dangerous botulinum neurotoxin. One must be a maestro to link all crucial steps and to start the process of production. The molecule is very complex while it consists of very toxic protein and the temperature must be appropriate, with the total absence of the oxygen. In any other case, the botulinum spores will die. The average terrorists do not know the standards for it and if they play too much, they could be having boomerang. All they can do is to order the instant botulinum toxin from the real expert. Let's say that someone is a professional in microbiological field and he doesn't have sympathy for system and he is willing to sell his master work to other haters. The ideological chain could bring into the life our neurotoxins and all of us into the death. Then, the terrorists will have an opened highway for their bio war. They could find vulnerable targets, particularly the food supplies or the fabrics that make canned food.

According to some experts, the botulinum neurotoxin that is once exposed to the air loses its potency so it is not so effective on the battleground. Nevertheless, it is ideal for the sabotage.

The mentioned neurotoxin deserves our respect, preventive and preemptive thoughts and strategies. The ability of this agent to be beneficial for human health

and also so deadly

for each

individual puts

the BoNTs among the top ten most dangerous molecular sharks. The



possibility to be misused by some of the anti-system and terrorist subjects should be additionally analyzed and covered with the responsive working defense standards. The laboratories must be secured so the personal that is skilled to deal with this issue. The channels of biomaterial trade should be

monitored by the state authorities. The channel that is out of regular lines must be observed by the security professional and measured by biological safety advanced parameters. Only in that case, we could be enough lucky to prevent any damage that would cost us too much, that would cost us our lives.

Sandra Maksimovic-Sara, has an MA in Biological Counter Terrorism Studies, with special interests of researching and writing about Biological Weapons, Biosecurity and Biodefense. Sandra hails from Serbia.

MERS-like coronavirus identified in Ugandan bat: New viruses not likely to spread to humans

Source: <http://www.medicalnewstoday.com/releases/316742.php>



Apr 05 – A team of researchers in the United States and Uganda has identified a novel coronavirus in a bat from Uganda that is similar to the one causing Middle East Respiratory Syndrome (MERS) in people, giving further credence to the theory that such viruses originate in bats. The work, part of the United States Agency for International Development's (USAID's) Emerging Pandemic Threats PREDICT project, was described in *mBio*, an online open-access journal of the American Society for Microbiology.

Laboratory experiments with the **virus, named PREDICT/PDF-2180**, indicate that while its overall genetics appear similar to MERS-coronavirus (MERS-CoV), there are significant differences in part of its spike gene - the segment of the virus responsible for invading cells. Therefore, in its current state it is unlikely to pose a threat to humans, said lead study author Simon J. Anthony, Ph.D., an assistant professor of epidemiology at Columbia University's Mailman School of Public Health and its Center for Infection and Immunity. By contrast, MERS-CoV itself has been shown to spread from animals such as camels to humans and between humans.



MERS, first reported in Saudi Arabia in 2012, is an illness marked by severe acute respiratory disease with symptoms of fever, cough and shortness of breath. About 4 of every 10 patients with the condition have died, according to the Centers for Disease Control and Prevention. The PREDICT project, led by the University of California, Davis (UCD), is a multicenter global initiative for surveillance and discovery of viruses that could pose a pandemic threat through animal-human transmission of pathogens.

For the study, Anthony and colleagues at the UCD One Health Institute and with the non-profit organization Gorilla Doctors sequenced the genome of the PDF-2180 virus found in a rectal swab taken from a bat trapped in February 2013 in southwestern Uganda. Overall, the virus was 87 percent identical to MERS-CoV and 91 percent identical to NeoCoV, another coronavirus found in a bat from South Africa. However, part of the spike gene was only 46 percent identical to the one belonging to MERS-CoV.

Next, to test the ability of the virus to spread to humans, researchers at the University of North Carolina constructed an infectious MERS-CoV clone expressing the PDF-2180 spike protein. Viruses derived from the clone could reproduce themselves but could not enter cells expressing DPP4, the receptor normally used by MERS-CoV, or establish new infections either in Vero cells derived from monkeys or in human airway cells from healthy lung donors.

"In its current form, evolution notwithstanding, this virus is probably not going to be a threat to human health," Anthony said. The team plans to repeat the experiments with other viral samples to get a better grasp of what animal-borne viruses pose a risk to human health.

The discovery of the virus adds to the growing number of coronaviruses identified in bats, Anthony said, including NeoCoV from South Africa; Mex_CoV-9 from Mexico; BatCoV/KW2E from Thailand; P.pipi/VM314 from the Netherlands; H.sav/206645-40 from Italy; and BetaCoV/SC2013, HKU4 and HKU5, from China.

"Collectively, these examples demonstrate that the MERS-related coronaviruses are highly associated with bats and are geographically widespread," Anthony said.

The study was supported by the USAID Emerging Pandemic Threats PREDICT project and by the National Institute of Allergy and Infectious Disease.

Article: [*Further Evidence for Bats as the Evolutionary Source of Middle East Respiratory Syndrome Coronavirus*, S. J. Anthony et al., mBio, doi: 10.1128/mBio.00373-17, published 4 April 2017.](#)

Phase 2 Zika Vaccine Trial Begins in U.S., Central and South America

Source: <https://www.domesticpreparedness.com/updates/phase-2-zika-vaccine-trial-begins-in-u.s-central-and-south-america/>

Apr 07 – **Vaccinations have begun in a multi-site Phase 2/2b clinical trial testing an experimental DNA vaccine designed to protect against disease caused by Zika infection.** The vaccine was developed by government scientists at the National Institute of Allergy and Infectious Diseases (NIAID), part of the National Institutes of Health (NIH). NIAID is leading the trial, which aims to enroll at least 2,490 healthy participants in areas of confirmed or potential active mosquito-transmitted Zika infection, including the continental United States and Puerto Rico, Brazil, Peru, Costa Rica, Panama and Mexico. The two-part trial, called VRC 705, further evaluates the vaccine's safety

and ability to stimulate an immune response in participants, and assesses the optimal dose for administration. It also will attempt to determine if the vaccine can effectively prevent disease caused by Zika infection.

Most people with Zika infection have either no or only mild symptoms, such as fever, rash, joint pain and conjunctivitis (red eyes). However, when Zika infection occurs during pregnancy, the pregnant woman can pass the virus to her fetus, which can result in a range of fetal defects known collectively as congenital Zika syndrome. Currently there is no licensed vaccine to prevent disease caused



by Zika infection, which is mainly transmitted via the bite of infected *Aedes aegypti* mosquitoes but also can be transmitted sexually.

"We are pleased to have advanced rapidly one of NIAID's experimental Zika vaccines into this next stage of testing in volunteers. We expect this study will yield valuable insight into the vaccine's safety and ability to prevent disease caused by Zika infection," said NIAID Director Anthony S. Fauci, M.D. "A safe and effective



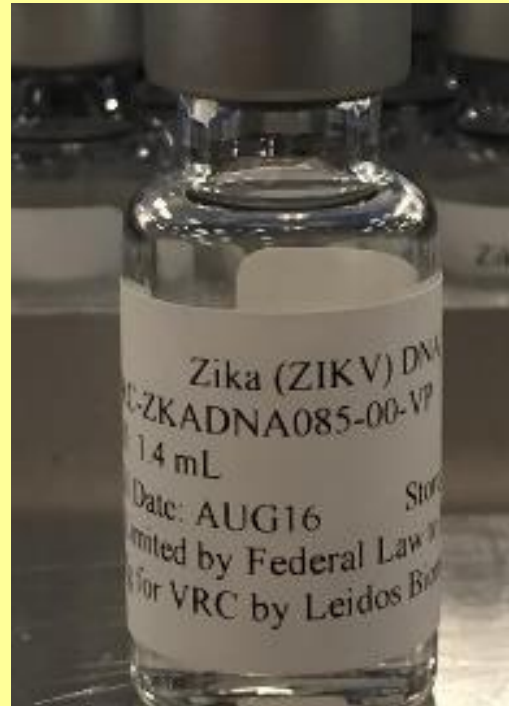
Zika vaccine is urgently needed to prevent the often-devastating birth defects that can result from Zika virus infection during pregnancy. Evidence also is accumulating that Zika can cause a variety of health problems in adults as well. This trial marks a significant milestone in our efforts to develop countermeasures for a pandemic in progress."

Scientists at NIAID's Vaccine Research Center (VRC) developed the NIAID Zika virus investigational DNA vaccine. It entered early-stage human testing in 2016 following extensive testing in animal models. Initial findings indicate the vaccine is safe and able to induce a neutralizing antibody response against Zika virus. The Phase 2/2b trial aims to gain more safety and immune response data and determine if this immune response protects against disease caused by natural Zika infection.

The Zika vaccine platform is based on a strategy VRC scientists used previously to develop a West Nile virus vaccine candidate. The Zika vaccine candidate being tested in this study contains a small circular piece of DNA called a plasmid into which scientists have inserted genes that encode two proteins found on the surface of the Zika virus. Once injected into muscle, the encoded proteins assemble into particles that mimic Zika virus and trigger the body's immune system to respond. The vaccine

does not contain infectious material, so it cannot cause Zika infection.

The trial is being led by protocol co-chairs Julie E. Ledgerwood, D.O., chief of VRC's Clinical Trials Program, and Grace L. Chen, M.D., deputy chief of the same program.



The trial consists of two studies: part A and part B. Part A will build on ongoing Phase 1 trials to further evaluate the vaccine's safety and ability to stimulate an immune response, specifically in populations where Zika could be endemic. It will also help determine the optimal dose and injection sites for administration. Part A will enroll 90 healthy men and non-pregnant women ages 18-35 years at three sites in Houston, Miami and San Juan, Puerto Rico. All participants will receive the investigational vaccine intramuscularly at three separate clinic visits each four weeks apart. Participants will be randomly assigned to receive either a standard dose or a high dose of the investigational vaccine at all three visits, and will be followed for about 32 weeks total.

Part B of the trial will enroll at least 2,400 healthy men and non-pregnant women ages 15-35 years. This part of the trial aims to determine if the vaccine can effectively protect against Zika related disease when someone is naturally exposed to the virus.



Sites will include the three locations from part A (Houston, Miami and San Juan) as well as two additional sites in San Juan, two sites in Costa Rica, and one site each in Peru, Brazil, Panama and Mexico. Additional sites might be added in the future. Participants will be randomly assigned to receive either the investigational vaccine or a placebo at three separate clinic visits each four weeks apart. The trial is double-blind, meaning neither the study investigators nor the participants will know who receives the investigational vaccine.

Part B participants will be followed for nearly two years, during which time they will undergo assessments for adverse events and symptoms of Zika infection. Trial participants in both parts will be counseled on

how to protect against Zika infection. Investigators will compare the rates of confirmed cases of Zika in the placebo group and the vaccinated group to determine if the investigational vaccine protects against disease caused by Zika infection.

Each site will have a principal investigator responsible for ensuring daily review of safety data as they become available. A protocol safety review team that includes the protocol chairs and other medical officers at NIAID will review safety data reports weekly. The NIAID Intramural Data and Safety Monitoring Board will also review cumulative study data at least twice per year.

The study is currently expected to be completed by 2019.

Cross-Border Biological Threat Screening – a Priority

Source: http://i-hls.com/archives/75875?mc_cid=46e9cf1ca2&mc_eid=521c0e089a



Apr 06 – The US has been promoting cross-border threat screening for biological agents. The Department of Homeland Security (DHS) Science and Technology Directorate (S&T) announced \$35 million in funding opportunities for a new DHS Center of Excellence for Cross-Border Threat Screening and Supply Chain Defense (CBTS).

Accredited United States colleges and universities may submit proposals as the Center lead or as an individual partner to work with the lead institution in support of the Center's activities.

According to the DHS S&T announcement, the DHS intends to fund this new Center of

Excellence for 10 years through a cooperative agreement.

The overarching goal of the Center will be to research and develop solutions, protocols, and capabilities to support the identification of potential biological threats within the DHS operational environment that could disrupt critical infrastructure supply chains and the operational activities conducted at ports of entry, land borders, and other critical nodes within the supply chain.

DHS encounters persistent and emerging biological threats while working at ports of entry, land borders, and airports. Biological



and chemical agents, novel biological agents, invasive species, infectious human and zoonotic diseases, and counterfeit or adulterated goods are a key focus for this Center of Excellence.

These biological and chemical threats can affect infrastructures directly, halt their productivity, disrupt DHS operations, and damage health and economy.

Potential approaches to address these threats include the use of innovative technologies (e.g., screening physical cargo and passengers and data analysis), optimizing operational procedures, and developing a skilled workforce trained in the latest methods to identify

biological threats. DHS must protect its workforce from these threats by providing tools and knowledge that can assist in reducing risk.

Therefore, the DHS is aiming at working closely with multi-disciplinary research teams from various academic disciplines, including engineering, scientific, and mathematics sub-disciplines to develop successful innovations.

The S&T centers of excellence are university consortia that work closely with DHS operating components to conduct research, develop and transition mission-relevant science and technology, and educate the next generation of homeland security technical experts.

Expert Views on Biological Threat Characterization for the U.S. Government: A Delphi Study

By Crystal R. Watson, Matthew C. Watson, Gary Ackerman and Gigi Kwik Gronvall

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Source: <http://onlinelibrary.wiley.com/doi/10.1111/risa.12787/abstract>

Abstract

Biological threat characterization (BTC) involves laboratory research conducted for the purpose of biological defense. BTC research is important for improving biological risk assessment and informing resource prioritization. However, there are also risks involved in BTC work, including potential for escape from the laboratory or the misuse of research results. Using a modified Delphi study to gather opinions from U.S. experts in biosecurity and biodefense, this analysis explores what principles and safeguards can maximize the benefits of BTC research and ensure that it is conducted safely and securely. Delphi participants were asked to give their opinions about the need for BTC research by the U.S. government (USG); risks of conducting this research; rules or guidelines that should be in place to ensure that the work is safe and accurate; components of an effective review and prioritization process; rules for when characterization of a pathogen can be discontinued; and recommendations about who in the USG should be responsible for BTC prioritization decisions. The findings from this research reinforce the need for BTC research at the federal level as well as a need for continued review and oversight of this research to maximize its effectiveness and reduce the risks involved. It also demonstrates the need for further discussion of what would constitute a “red line” for biothreat characterization research—research that should not be performed for safety, ethical, or practical reasons—and guidelines for when there is sufficient research in a given topic area so that the research can be considered completed.

Deep inequities exist in US States' preparedness for public health emergencies, 2017 INDEX shows

Preparedness Index assesses all 50 states & District of Columbia for health security and preparedness

Source: <http://nhspi.org/2017-index-released/>

Apr 20 – **An annual assessment of the nation's day-to-day preparedness for managing community health emergencies improved slightly over the last year—though deep regional inequities remain.** The Robert Wood Johnson Foundation (RWJF) released the results of the 2017 National Health Security Preparedness Index, which found the United States scored a 6.8 on a 10-point scale for preparedness—a 1.5 percent improvement over the last year, and a 6.3 percent improvement since the shows Index began four years ago.



The Preparedness Index analyzes more than 130 measures—such as hazard planning in public schools, monitoring food and water safety, wireless 9-1-1 capabilities, flu vaccination rates, and numbers of paramedics and hospitals—to calculate a composite score that provides the most comprehensive picture of health security and preparedness available.

“Improving health security and preparedness is important for all communities across the country. In our highly mobile country, national emergency preparedness depends on having high levels of protection in every state, city, and region,” said Alonzo Plough, PhD, MPH, chief science officer and a vice president at RWJF. “These data highlight where strengths and gaps in preparedness lie, and can inform approaches to improve health security throughout America.”

Despite improvements in nearly two-thirds of states, significant inequities in preparedness exist across the nation: a gap of 32 percent separates the highest state (Vermont, 7.8) and the lowest state (Alaska, 5.9). Generally, states in the Deep South and Mountain West regions—many of which face elevated risks of disasters and contain disproportionate numbers of low-income residents—lag behind Northeast and Pacific Coast states.

“Equal protection remains an elusive goal in health security, as rural and low-resource regions have fewer and weaker protections in place,” said Glen Mays, PhD, MPH, who leads a team of researchers at the University of Kentucky in developing the Index. “Closing the gaps in preparedness among states and regions remains a national priority.”

Eighteen states achieved preparedness levels that significantly exceed the national average in 2016, and 20 states are significantly below the national average. A total of 33 states increased their overall preparedness levels between 2015 and 2016, while 14 remained level and four states declined.

“Health security and preparedness have wide-ranging impact in our communities,” said Stephen C. Redd, MD, RADM, director of the U.S. Centers for Disease Control and Prevention (CDC’s) Office of Public Health Preparedness and Response. “The Index can help us see where investments are producing returns, and where more work is needed to build public health emergency response capacity.”

Based on a model informed by experts in public health, emergency management, government, academia, health care, and other sectors, researchers collect, aggregate, and measure preparedness data from more than 50 sources. The final measures fall into six categories, each of which is assessed independently, and cover topics such as:

Topic	2017 National Average	Improvement (Decline) Since 2013
The ability to mobilize and manage resources during a health incident	8.2	2.5%
The ability to collect and analyze data to identify possible threats before they arise	7.9	9.7%
The ability to mitigate harm from biologic, chemical, or nuclear agents	7.0	7.7%
The ability to prevent health impacts from environmental or occupational hazards	7.0	(1.4%)
How communities mobilize stakeholders to work together during times of crisis	5.8	16.0%
The state of health care systems during everyday life and emergencies	5.3	3.9%

Source: 2017 National Health Security Preparedness Index

Originally developed by the CDC as a tool to drive dialogue to improve health security and preparedness, the Index remains a collaborative effort involving more than 30 organizations. State health officials, emergency management experts, business leaders, nonprofits,



researchers, and others help shape the Index each year through its National Advisory Committee and expert workgroups.

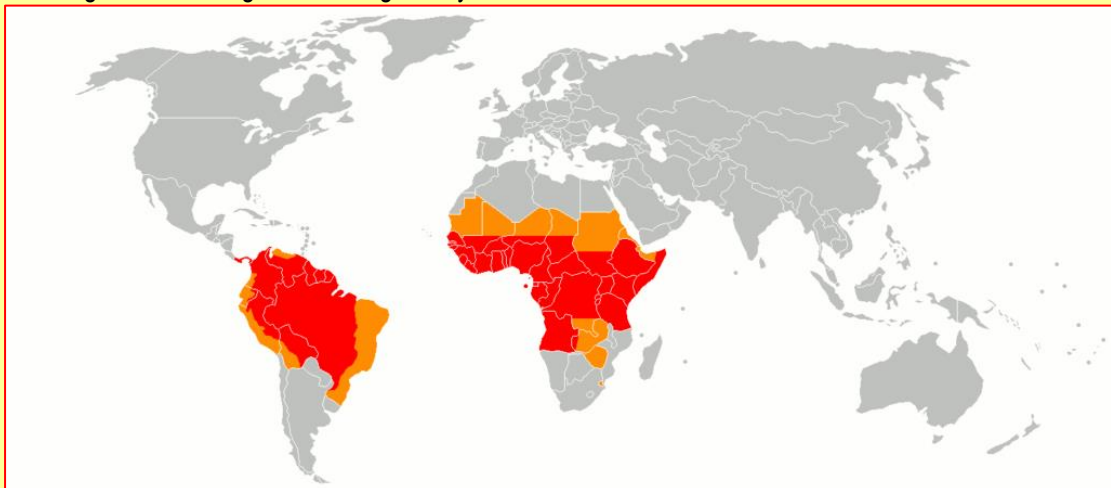
The National Health Security Preparedness Index has launched a *Preparedness Innovator Challenge* to collect and spread best practices for using the Index to improve preparedness. Through July 31, users will submit their stories about how they used Index findings as a tool to focus efforts and, ultimately, improve health security in their communities.

Preventing **yellow fever** resurgence

Source: <http://www.homelandsecuritynewswire.com/dr20170420-preventing-yellow-fever-resurgence>

Apr 20 – Many people might not have heard of the *Aedes aegypti* mosquito until this past year, when the mosquito, and the disease it can carry – Zika – began to make headlines. But more than 220 years ago, this same breed of mosquito was spreading a different and deadly epidemic in Philadelphia and just like Zika, this epidemic is seeing a modern resurgence, with Brazil at its epicenter.

It was August of 1793 and Philadelphia – the nation's capital and the busiest port in the United States – was experiencing a remarkably hot and dry summer. Water levels in streams and wells were low, creating an excellent breeding ground for mosquitos, which seemed to overtake the city. Along with the mosquitos also came an influx of thousands of refugees from the Caribbean seeking to escape political turmoil. But the refugees also brought something else: yellow fever.



This global map represents endemic areas of Yellow Fever Virus (red) and areas where the virus may be present (orange).

The conditions in Philadelphia created the perfect storm for an outbreak. Symptoms start with head, back, and limb pain and a high fever. Sometimes after a few days, the initial symptoms would subside, giving its victims a false hope of recovery. But within a few days, the disease would return with a vengeance, bringing with it an even higher fever, bleeding, vomiting and eventually turning a person's skin a ghastly shade of yellow – hence the disease's name – and ultimately leading to death.

Philadelphia's medical community was mystified. Benjamin Rush, MD, the city's leading physician advised citizens to flee. A large portion of Philadelphia's citizens, along with members of Congress, President Washington, and his Cabinet, all abandoned the city. By the time the epidemic finally ended in November of that same year, more [than 10 percent of the city's population](#), approximately 5,000 people, had perished.

Rush, and his protégé, Philip Syng Physick, MD, worked with the few other doctors who stayed behind to try and root out the cause of the outbreak. At that time, little was understood about infectious diseases, especially those that are transmitted via a vector, like a mosquito. Rush and his colleagues tried many unsuccessful techniques that were common at the time,



including bloodletting, “purifying” the city’s air with smoke, and finally quarantining the sick. None of it worked.

UPenn says that it took more than a century for physicians and public health experts to discover the true culprit behind yellow fever: the mosquito. Yellow fever is not transmitted by contact with another sick person, but instead by contact with the mosquitoes itself. The mosquito serves as a vector transmitting disease when it bites a person who is infected with yellow fever and then bites a healthy person.

With this discovery, public officials also worked to improve water and sanitation efforts, create drainage systems in densely populated areas, and educate the general public about how the disease is transmitted.

The last reported yellow fever outbreak in North America was in [New Orleans in 1905](#).

“Actually, the initial steps to stop yellow fever are not so very different than the recommendations we made locally last summer to combat Zika,” said Pablo Tebas, MD, a professor of Infectious Diseases in the Perelman School of Medicine. “We told residents here in Philadelphia to avoid standing water and places where there are a lot of mosquitos—the same advice we were giving people 100 years ago.”

But with climate change, deforestation, and other environmental challenges, there is concern that yellow fever could again be on the rise.

Brazil has been battling an [unusually high number of yellow fever cases](#) since December 2016, with at least 326 confirmed cases, including 220 deaths, and hundreds of additional cases under investigation – making it Brazil’s [worst yellow fever outbreak](#) among humans in decades according to the World Health Organization (WHO). And cases are creeping closer to two of the country’s largest cities — Rio de Janeiro and São Paulo — sparking fears that the disease could spread to other regions in the Americas.

“The challenge with diseases like yellow fever and Zika is that the conditions that foster an outbreak are not always avoidable, especially in tropical climates, and therefore a vaccine is needed to prevent infection,” Tebas said.

Fortunately, a vaccine for yellow fever is readily available and effective. First issued widely in 1939, WHO recommends the yellow fever vaccine for anyone living in an area where the disease is endemic. Health officials in Brazil have requested millions of doses of the vaccine from an international emergency stockpile in order to be prepared if the virus continues to spread.

“The yellow fever vaccine is actually highly successful,” Tebas said. “It’s 99 percent effective and usually only needs to be administered once. Researchers, including our team at Penn, are using it as a foundation for developing vaccines for other mosquito-borne illnesses like Zika and Dengue.”

UPenn notes that at Penn, two different Zika vaccine candidates are in various stages of development. A phase I clinical trial for a Zika vaccine which began in August 2016 in partnership with the Wistar Institute and Inovio/GeneOne Pharmaceuticals aims to discover the safety and effectiveness of a DNA vaccine for Zika. And [an mRNA-based Zika vaccine](#) showed great promise in pre-clinical trials, protecting mice and monkeys against the virus with a single dose.

“We are optimistic that we will make progress in creating an effective vaccine to stop Zika from spreading and by using innovative technology like DNA and mRNA, we can hopefully get these vaccines to market faster than traditional vaccines,” Tebas said.

Currently, WHO is recommending the yellow fever vaccine to anyone who plans to travel to Brazil or the surrounding areas as a precaution.

Assessing the United States’ Bioterrorism Preparation

By Sam Klein

Source: <http://cimsec.org/assessing-united-states-bioterrorism-preparation/32137>

Apr 23 – While the United States funds by far the most biomedical research in the private and public sectors, its investment in this space has declined in recent years, as has its share of the total global investment.¹ This decrease stands in stark contrast to the growing threat of biological weapons of mass destruction; there is “reason for concern that future bioterrorism attacks may be more effective than incidents in the past, and disease control facilities in other countries may not be as robust as those in our own.”^{2,3} While biological weapons research



is a subset of all biological research, the downward trend in the greater field is not promising; the field must be considered holistically as epidemiology, immunology, and related subfields that can inform biological attack response even if they are not all classified as biological weapons defense research. Because the United States' biological WMD preparedness is inadequate, the United States government should substantially increase its investment in biological weapons response, including private- and public-sector biomedical research, treatment coordination infrastructure, and intelligence-driven threat mitigation.⁴

Need for Research

The United States government should invest at least \$155.8 billion next year in public research and private research grants, corresponding to our 2007 figure adjusted for inflation. This was the demonstrated need in 2007, and the need is at least as large now as it was ten years ago given our present state of understanding and preparedness.⁵

Although general epidemiological research is certainly useful in preparing for a targeted outbreak, bioterrorism research must also include more focused analysis. Biological weapons of mass destruction can be qualitatively different from naturally-occurring outbreaks of disease, both in terms of how concentrated they are and in their mode of transfer. This difference can be to the extent that a weaponized pathogen is untreatable by conventional means such as vaccination, as even a naturally occurring analog would respond to treatment.⁶ Aerosolizing normally grounded biohazards can render existing epidemiology models of those materials dangerously misleading, as spreading could take place at a far faster pace than expected. These factors all demonstrate the need for dedicated biological weapons research.

In addition to infecting humans, bio-WMD can also attack a population indirectly, for instance via agriculture.⁷ Given increasing monoculture and despeciation (i.e. biodiversity loss) in U.S. agriculture, American food supply and agricultural byproducts (e.g. ethanol) are less resilient to targeted bioterrorism.

A recent (2013) network analysis of the American interdisciplinary approach to bioterrorism research and prevention sought to determine whether the research being produced was covering the bases necessary to produce positive public health outcomes in the event of an attack. It finds value in the decentralized nature of the American approach, but also calls for more interdisciplinary research collaboration

and greater “development of discovery techniques that are specialized to bioterrorism and security research sources.”⁸ Further investment should be channeled to these areas in addition to general epidemiology research.

Treatment Coordination Infrastructure

In 2004, the Project Bioshield Act appropriated \$5 billion for preparation against likely bioweapons such as anthrax and botulism. This investment included stockpiling millions of vaccines.⁹ While this is a good start, momentum for this sort of investment has died down in the absence of political pressure 15 years after 9/11.

Early detection of infection is critical to saving individual lives and identifying and limiting the spread of a biological weapon of mass destruction. This will invariably happen at the local level, so it is critical that doctors on the ground across the country are knowledgeable of the symptoms of deployable biohazards and that they have the ability to quickly report incidents up the chain of command.¹⁰ It is likewise critical that the government continue to invest in bio-WMD epidemiological modeling (distinct from traditional modeling, as stated above) and in infrastructure to track ground-level reports of symptoms with the capability of distinguishing an attack from a natural outbreak (which should be treated differently).

In 2011, the Department of Health and Human Services discontinued a program that outlined a comprehensive model of epidemic response with an emphasis on bioterrorism. The model, known as the Weill/Cornell Bioterrorism and Epidemic Response Model (BERM), was used by hospitals and epidemiologists.¹¹ It has since been supplanted by CDC guidelines for epidemic response, but extensive research fails to yield a robust replacement that affords the same flexibility as BERM with regard to bioterror-specific cases.¹² The



government should invest in consolidating and refining the approach and publicizing it to the necessary channels as mentioned above.

Threat Mitigation

Finally, there is little publicly known intelligence on foreign state and non-state actor bioterrorism capabilities beyond the Congressional Research Service figure that¹² several countries plus the United States have or have had biological weapons research programs (if not weapons themselves).¹³ This intelligence is extremely limited, in part because of the concealable nature of bio-WMD development. While procurement of some dangerous biological agents can be difficult outside of visible controlled facilities, others require less effort. However, the public may lack the fear and urgency needed to motivate policymakers to

invest in biological weapons threat mitigation. In 2003, Colin Powell famously held a model vial of “anthrax” to the United Nations Security Council to make the case of invasion. While the Hussein regime was in fact weaponizing biological weapons including anthrax, simultaneous failures of U.S. intelligence cast a shadow on all of the WMD intelligence.¹⁴

One of the major deterrents to weaponizing biologics is the difficulty in controlling their spread; unlike conventional weapons and other WMD, biological weapons quite literally have “lives of their own” and, once deployed, could ostensibly infect the assailant’s population. However, one could conceive of a scenario in which the assailing population has been vaccinated so that the attack only affects the intended target.¹⁵

Conclusion

Biological weapons are a clear and present danger to the United States, and the country’s understanding of and preparation for an attack are grossly inadequate. Substantial increases in biological defense research, crisis management, and threat prevention are crucial to increase the security of American citizens.

►► Works cited can be seen at source’s URL.

Sam Klein studies political science and writing at Washington University in St. Louis, where he also serves as executive director of the Washington University Political Review. A native of Bethesda, MD, Sam is interested in domestic legislative politics and foreign affairs. In addition to the Political Review, he is involved in Model UN and student government. He intends to graduate in 2018.

