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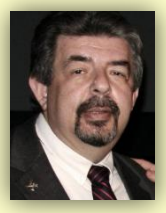


Editorial

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

Editor-in-Chief
CBRNE-Terrorism Newsletter

Dear Colleagues,

Let me start with a joke: we have elections in September in Greece!!! Seriously political life in Greece is nothing but a big joke balancing between ancient tragedy and comedy. Just another proof that politicians do not care about homeland and its citizens. Only about how to prevail on each other and how to hold their placards of "Right", "Left", "Central", "Liberal", "Socialist" to the highest place to see. Bank capital controls are still active, the new financial deal was signed just before the retirement of the last (Left) President mainly to pay debts to European/International "assistance" organizations while major part of the money given went to the stabilization of national banks. What is really sad is the fact that Europeans still believe that part of their money end up into MY pocket. I can honestly assure you that this is not the reality you are told – do your own research and you will see the truth behind the politician-mass media consortium ruling Europe. What will happen after the elections? Nothing! I am sorry to say that things in Greece will change only after a war or a major natural or extraterrestrial catastrophic reboot. The seeds survived will give birth to the new "Greek plant" bearing genes from our history and great achievements of the past. What a terrible destiny for a beautiful country with nice people succeeding worldwide but in their own country…

Among the many problems we currently face is the migration/illegal immigration problem that grows on daily basis – more that you can imagine. Vast numbers of people from 101 countries around

the globe enter Greece hoping to achieve their final destination goal: central and northern Europe. Contries are closing their borders (Hungary; FYROM), choose Christians only to apply for asylum (Slovakia) or work together to face the problem (France and UK). And if Italy can intercept illegal immigration at the borders of Italian/international water this is not the case with Greece due to the minimal proximity of Greek islands to Turkey's inland. Greece's neighbors are not willing to cooperate or get advantage of the problem for money and

politics. It will be naive not to mention the security/health problems accompanying illegal immigration but this is a reality that we have to face. One day will come that a major terrorist incident will happen on our soil and Greece will be tranformed from a passing through hub to a target. Is there a solution available? Yes, but is neither applicable nor desired (you know by whom). So what is left? Only self defense and self preservation. Since everybody is on their own, we have to follow their example. By all means; and I mean ALL means. Perhaps this will force those conspiring in the dark backgrounds to rething their planning and help solve the problem by countering the causes producing current (and future) global instability.

Staynig in our continent the latest shooting in a TVG train in France was not a surprise. And it is only pure lack that these US soldiers (a brave Greek-American among them) were on board and neutralized the offender. What if they were not there? What if the terrorist was killing innocent commuters until he was out of bullets? What would be our excuse of not learning anything from Madrid'd train bombing back in 2004? Elven years passed by since then and probems identified remain problems identified

Islamic State, Syrian civil war, Iraq, Boko Haram, Afghanistan, Yemen and many other places are still burning and fumes are covering our planet spreading a loud message "Do something about it!" but our deaf societies look the other way trying to implement their devious planning. Even the posibility IS to use chemical/radiological weapons made no differene – just some comments, warning and articles with the usual academic "bla-bla". We have what we deserve and we have no right to complain about it. Unless we decide one day to take over the situation and say "ENOUGH!"

The huge explosion in Tianjin, China and masive spread of cyanide compounds (atmosphere, soil, waterbeds) brought few problems on surface: urbanization around chemical plants, lack of control and inspection, illegal operation and much more. Perhaps it is time for change in that issue as well. Same with the reopening of the Sendai nuclear power plant in Japan. Lives of citizens should be above interests and profits.

On the other hand if you leave all the agly news aside and focus on what people are achieving in various fields of sciences you will be amazed! Nanotechnology, robotics, space ladders, water-based nuclear batteries, hydrogen car fueling, computer applications, preservation of the environmet, new novel drugs for Ebola and 3-D printed bones – just to name a few. It is like Planet Earth hosts two different worlds in one package! So sad!

Let us hope that coming winter will cool things up and fresh air will decontaminated human mindests towards the right direction and bring hopeful messages to our injured daily lives!

The Editor-in-Chief

Rio revs up for Olympic opener in one year

Source: http://sports.yahoo.com/news/rio-revs-olympic-opener-one-152217977--oly.html

Aug 02 – Rio de Janeiro hosts South America's first Olympic Games a year from this week and the iconic, contradictory city of sweeping beaches, street crime and joyful music says it's ready to roll.
Thickets of construction cranes rise from dust clouds over western Rio where officials say the Olympic Park and Olympic Village -- part of a nearly $12 billion investment -- are on course to be completed on schedule.
Deep under Rio's sometimes chaotic streets, crews are also racing to finish an extension of the metro system linking the main sporting venues with the rest of the sprawling metropolis.
And after a tumultuous but ultimately successful staging of the 2014 World Cup, Brazilian leaders believe they can take the even more ambitious Olympics in stride.
"We're moving forward with a very high level of satisfaction," Sports Minister George Hilton told AFP.
As the first South American host for the world's biggest sporting event -- Mexico City held the first Latin American Olympics in 1968 -- this is a chance for Brazil to shine.
The country is embroiled in political instability and a giant corruption scandal centered on state oil conglomerate Petrobras. But officials hope that from the moment the Olympic Torch is carried into Rio's Maracana stadium for the opening ceremony August 5, 2016, a different Brazil will be on display.

Aerial view taken on July 28, 2015 of the Athletes Village under construction for the Rio 2016 Olympics

"We aren't just doing a World Cup or Olympic Games for the sport or to show that we are charming or dance the samba well. Everyone knows that already," Rio Mayor Eduardo Paes, seen as a possible presidential hopeful for 2018, said.
"The Olympics is to leave a legacy, to change perceptions of the city. We want to show that Brazil is more than Petrobras and organized theft."

Pollution

However, behind Rio's postcard-like setting and all the optimistic predictions, huge challenges remain.
On the plus side, Rio is doing far better than during World Cup preparations, which were badly delayed at a similar stage.
But this is still a race against time, with the expensive velodrome in particular causing difficulties.

Debris floats near the Rio-Niteroi bridge at the Guanabara Bay in Rio de Janeiro, Brazil, on July 31.

"There is not a single second to lose," International Olympic Committee chief Thomas Bach said.
The most serious failure so far is horrific pollution in the Bay of Guanabara, the site of sailing and windsurfing events.
Leonardo Gryner, deputy CEO of the Rio2016 organizing committee, told AFP that the original target of reducing pollution by 80 percent is on track.

"The bay will be one of the high points of our Games," he said.
However, a host of independent experts disagree, warning that the bay is flooded around the clock with raw sewage and junk.
Large quantities of floating rubbish, not to mention the stench, graphically support those allegations. Even at Marina da Gloria -- the future Olympic sailing harbor -- raw sewage can be seen pouring into the water from two pipes.
"If things keep up like this, it's going to be an enormous humiliation," Brazilian Olympics sailing hero Torben Grael warned earlier this year.
Bach called the clean-up Brazil's top concern.

Huge security operation

Another headache is security in a city where more than three people are murdered daily, part of an estimated **national annual toll of 52,000** -- compared to just over 14,000 in 2013 for the United States, which has a population more than 100 million larger.
Officials say they will deploy some 85,000 security personnel, double the number used at the London 2012 Games.

Aerial view of the Nilton Santos Olympic Stadium under construction for the Rio 2016 Olympic Games, taken on July 28, 2015 (AFP Photo/Vanderlei Almeida)

"It will be the biggest integrated operation in the history of our country," Rio's security secretary, Andrei Passos Rodrigues, told journalists.

Brazil has such a low profile in world conflicts that terrorism receives little attention in the national media or discussions of preparations for the Games.

But the 1972 massacre by Palestinians of Israeli athletes in Munich still looms over Olympic history and potential threats by today's terrorists -- including fears over the use of amateur drones -- have greatly multiplied.
Officials say Brazil's security forces are working with **counterparts from more than 90 countries** to protect against militant plots or cyber attacks.
"Until now, there have been no threats, but we are alert," said Saulo Moura, from the intelligence agency ABIN.

Turbulent times

When Rio de Janeiro beat Madrid, Chicago and Tokyo in 2009 to host the 2016 Games the country was riding high on oil revenue and commodities sales to China. Being chosen to stage both the World Cup and Olympics seemed to signal Brazil's step up into the big time.

Those days look distant, with President Dilma Rousseff in political crisis, looming recession and the Petrobras scandal shaking the country's elite.

Ahead of the World Cup Brazil saw massive, sometimes violent anti-government protests. So far, the build-up to the Olympics has been quieter, but discontent is still high.

Rousseff's government has single-digit popularity ratings and a major demonstration has been called for August 16.

Gryner said the Olympics have greater public support because the budget and construction schedule have been respected. "There has not been excessive spending and the public is conscious of this," he said.

According to Gryner, the Olympics will not leave any "white elephants" in the form of useless sporting infrastructure -- one of the criticisms of the World Cup legacy.

He said that the improved transport system in Rio -- not just a metro extension but an express bus line -- will be among "the benefits that can be enjoyed well before 2016."

Bach, the IOC leader, predicted that Brazilians' famous warmth will make up for any other deficiencies. "I am sure we will all be overwhelmed by the hospitality and the enthusiasm," he said.

EDITOR'S COMMENT: Still not a single word on CBRNE security preparedness – especially in the health/ hospital sector… Again: top secret or top gap?

Oregon teacher sues school officials over PTSD caused by surprise 'active shooter' drill

Source: http://www.rawstory.com/2015/04/oregon-teacher-sues-school-officials-over-ptsd-caused-by-surprise-active-shooter-drill/#.VbtsGjiJ4jk.linkedin

An elementary school teacher in Halfway, Oregon filed a federal lawsuit against local school district officials saying she was traumatized by a surprise drill simulating a school shooting, the Portland *Oregonian* reported.

The suit stated that the "active shooter" drill — held four months after the December 2012 mass shooting at Sandy Hook Elementary School in Connecticut — left 56-year-old Michelle McLean "extremely shaken, confused and mentally, physically and emotionally ill. She could not shake the event but continued to relive it and try to make sense of it, but could not. Ms. McLean could not sleep, and remained anxious and vigilant. When she drifted off to sleep, she experienced nightmares and sweating."

According to the lawsuit, McLean and other staffers at Pine Eagle School District No. 61 were kept in the dark about the drill. But district officials did notify local law enforcement and emergency dispatchers, ensuring that they would not respond to any calls for help from the school.

Pine Eagle principal and school board member John Minarich and the district's security officer, Shawn Thatcher, are accused of storming into several classrooms while carrying firearms loaded with blanks during the drill. The lawsuit stated that Thatcher entered McLean's classroom clad in "a black hoodie

and goggles," pointed his weapon at her head and pulled the trigger.
The man identified as Thatcher then told her, "you're dead," before exiting the classroom. According to the complaint, she wondered if she had really been shot.
"McLean could not figure out what was going on," the suit stated. "She felt very confused. Her heart was racing. She walked out of the classroom and saw a pistol lying on the ground."
Minarich is also identified in the lawsuit as one of the owners of Alpine Alarm, which installed the school's security system. His company is also listed as a defendant in the suit, along with two school administrators and seven members of the Pine Eagle school board.
The suit stated that a psychologist diagnosed McLean with post-traumatic stress disorder (PTSD) after she tried to return to work on the Monday following the drill.
"On the advice of her treating psychologist, Ms. McLean tried to return to the school building as part of a desensitization therapy," the complaint said. "However, when she returned she was short of breath, anxious, emotionally distressed, and had to leave. She has not returned to the school building since."
McLean is seeking compensation covering not only her medical and psychological treatment, the suit stated, but "involuntary separation from employment" that left her unable to collect on retirement contributions.

EDITOR'S COMMENT: Sometimes I just wonder if it worth's what we are doing to secure our communities…

UAVs Over Airports – The New Nightmare

Source: http://i-hls.com/2015/08/uavs-over-airports-the-new-nightmare/

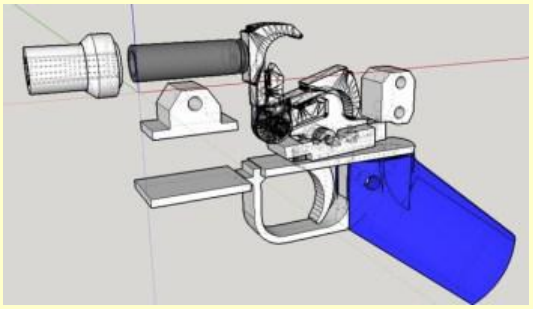
This is the new nightmare of security organizations that are in charge of security in big airports: Experts say that the proliferation of small UAVs can result in using them for terror attacks on aircraft taking off and landing in busy airports.
Last week three drones were spotted flying too close to airplanes landing at New York City's John F Kennedy Airport. Although it's currently illegal to fly a drone within five miles of an airport or higher than 400 feet, one of the pilots landing at JFK on Friday said he saw a drone fly as high as 1,400 feet off the ground.
The drone spotting has prompted worries from federal aviation officials, that the unmanned aircrafts would be used to pose a threat to commercial planes.
According to the Mail Online, in response to the sightings, the Department of Homeland Security issued a bulletin, warning that drones could be used by terrorists: 'The rising trend in UAV incidents within the National Airspace System will continue, as UAV gain wider appeal with recreational users and commercial applications.'
'While many of these encounters are not malicious in nature, they underscore potential security vulnerabilities (…) that could be used by adversaries to leverage UAS as part of an attack,' the statement reads.

New York Senator Chuck Schumer called for tougher defenses against drones. “The FAA has to act and toughen up the rules before a tragedy occurs because if a drone were sucked into a jet engine of a plane filled with passengers' untold tragedy could result and we do not, do not, do not want that to happen,” Schumer said.

3D Printing: Poison-Dart Gun

Source: http://i-hls.com/2015/08/now-for-3d-printing-poison-dart-gun/

Several weeks ago it was made public that the United States, headed by President Obama, is working on a new legislation according to which companies will be forbidden to distribute blueprints which can be used for 3D printing weapons. The American Ministry of Defense claims that this restriction is meant to prevent any possible leak of valuable technical knowledge to any hostile elements, but that was not enough for the American weapon industry, who began to cry out and claim this was nothing but a lame excuse.



The counter-reaction was not late in arriving: Peter Alaric, one of the 3D drawings artists available online has created a blueprint for printing an air gun which shoots poison darts. This printed gun, which can be used as a weapon by any standard, can pass metal detectors. Alaric explains that he created the blueprint because according to the American law, an air-gun is not considered a weapon. Along with publishing the outlines for printing the device, the creator has also added a manual and instructions for the kind of printer to be used, for the way to treat the poison on the arrow heads as well as how to put together the pieces into a useable, working gun.

This obvious act of defiance notable in the artist’s words as well as his pointing out that an air-gun is not considered a weapon in the U.S. expresses more than anything this heated debate between law enforcement agencies, who oppose to weapon distribution in the country, and the businessmen and citizens who support it. It seems that this debate will stay in the American discourse for a while, as each side tries to cope with the difficulties raised by the other side. A wise man once said that need is the father of invention, so it’s safe to assume that more interesting developments are expected in the future.

Add Missiles To the List of Weapons You Can (Sorta) 3-D Print

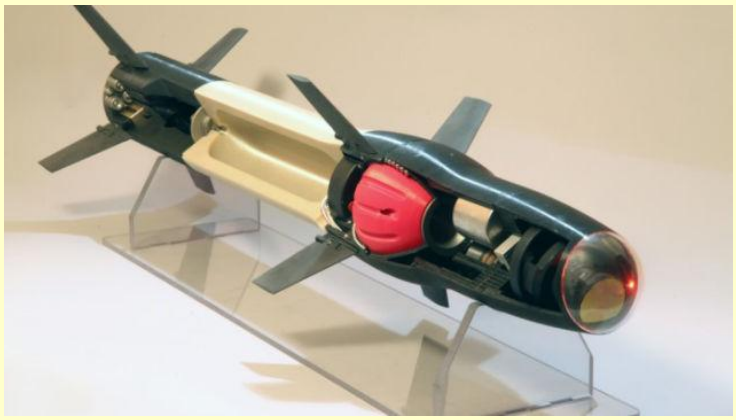
Source: http://gizmodo.com/add-missiles-to-the-list-of-weapons-you-can-3-d-print-1718962696

3-D printing has already spawned dart guns, pistols, and rifles, but up until now, the 3-D printed arsenal has been lacking the firepower of a guided missile.

That’s something that Raytheon, noted producer of things that go bang, wants to change. The company has been working on 3-D printing the component parts of its guided

missiles. According to Raytheon engineer Jeremy Danforth, they've already succeeded in printing 80 percent of the parts.

Given all the stuff that goes into missile— complicated electronics, precise housings, and rocket boosters — that's an impressive achievement. For the time being, Raytheon is mostly interested in the cost savings that additive manufacturing can promise, but for the military, there's a lot of logistical upsides as well: put a stack of raw materials and a 3-D printer on an aircraft carrier, and you could have a virtually unlimited supply of munitions for the aircraft.



That particular logistical dream isn't quite ready yet — there's still some components that can't be 3-D printed, and even if you could theoretically print an entire missile, it's still a complicated process with fine tolerances better suited to a dedicated factory. Thankfully, that also probably means that your local upholder of the Second Amendment probably isn't going to be printing Sidewinders any time soon.

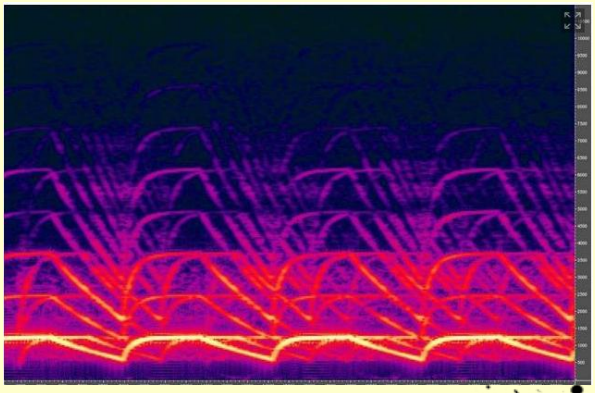
Sound waves disable drones by disrupting the drone's gyroscope

Source: http://www.homelandsecuritynewswire.com/dr20150811-sound-waves-disable-drones-by-disrupting-the-drone-s-gyroscope

Aug 11 – Hobbyists' drones are becoming a growing national nuisance – violating people's privacy, breaching security-sensitive airspace, disrupting attempts by firefighters to bring wildfires on the West Coast under control, and more (for a longer list of drone problems, see Craig Whitlock, "Rogue drones a growing nuisance across the U.S.," *Washington Post*, 10 August 2015).

South Korean scientists report that sound waves could offer an effective protection from drones.

The *New York Daily News* reports that **in twenty trials, the scientists incapacitated 50 percent of the targeted drones by using concentrated sound waves.**



Most drones rely on gyroscopes to maintain level flight and orientation. High-frequency sound waves disrupt these gyroscopes, thus disabling e the drones and causing them to crash to the ground.

"These systems can malfunction because of physical quantities that sensors fail to measure or measure sensitively," the South Korean report said. "Most commercial devices with sensors are not equipped with any ability to detect or protect against such attacks."

The *News* notes that for the experiment, scientists attached wireless speakers to remote-controlled drones, about four inches from their gyroscopes. These speakers could be used from up to 120 feet away. The

experiment, which aimed to prove the concept, used close-range sound waves to minimize the number of intervening variables, and the scientists say that there is still a need to test the approach at longer distances.

"Our real-world experiments showed that an acoustic attack can completely incapacitate a target drone equipped with a gyroscope," according to the report. "But we need to find out possible attack distance or sound level of a sound source required to destabilize a target drone in the air."

How medical imaging can help solve TSA's security challenges

By Eric Zanin

Source: http://thehill.com/blogs/congress-blog/technology/250621-how-medical-imaging-can-help-solve-tsas-security-challenges

Forty years ago, computed tomography (CT) revolutionized our healthcare system through advanced 3D imaging techniques designed to diagnose disease and save lives. CT quickly became the gold standard for medical imaging with benefits ranging from the detection of early stage cancers to helping physicians diagnose and ultimately reconstruct complex fractures and torn joint ligaments. Americans have come to depend on CT technology to detect disease and improve their health.

Following September 11th, the U.S. Department of Homeland Security (DHS) and the Transportation Security Administration (TSA) leveraged this same high-resolution medical imaging technology to deploy CT imaging at our nation's airports to detect explosives and other threats in checked luggage. With more than 15 years of CT imaging experience and over 1500 CT systems nationwide screening our checked luggage, many are asking why this advanced, life-saving technology is not deployed at airport security checkpoints to screen carry-on bags as well.

In a recent test, TSA screeners failed to detect prohibited items 96 percent of the time at security checkpoints. Following these failures, Homeland Security Secretary Johnson released a 10-point plan to improve security standards across the board at TSA. Part of this plan involves "re-testing" and "re-evaluating" checkpoint security equipment and reassessing the current security standards for equipment.

Secretary Johnson's approach is the right one. TSA screeners will continue to struggle detecting prohibited items at the checkpoint with outdated equipment. Now is the time to give them the right tools for the job. Proven CT technology that aids the screener in detecting dangerous items and explosives through advanced detection software reduces the potential for human error. This is the next evolution at the checkpoint.

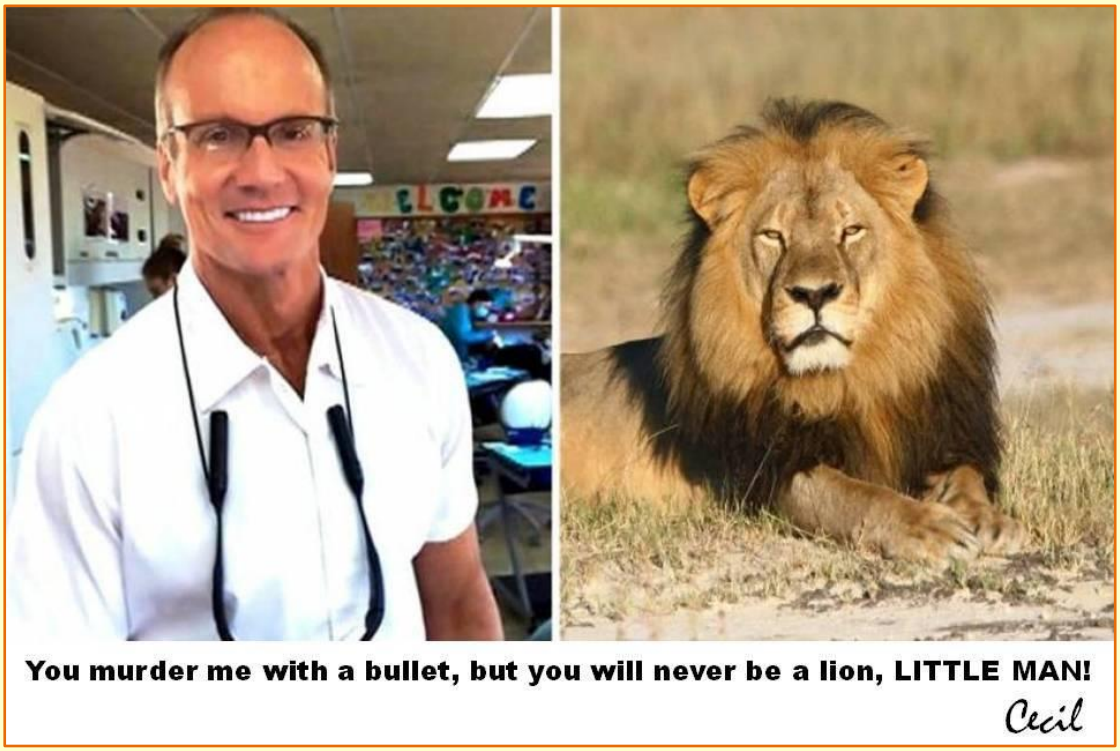
We must find the right balance between security, cost, and efficiency. CT 3D high-resolution imaging technology at checkpoints excels in all three areas, offering a wide range of benefits, including increased safety through better detection capabilities, higher passenger throughput, and an improved passenger experience.

By simply bringing proven CT technology to the checkpoint, TSA has the ability to dramatically change your experience the next time you go through the security line. CT technology simplifies the screening process by allowing both liquids and laptops to remain in your carry-on baggage. That's a game changer.

Cost considerations are a major factor and cannot be overlooked. Models based on airport data suggest that switching to CT checkpoint technology at just the 10 largest airports in the country could save American taxpayers $1 billion over ten years by reducing TSA operational costs. The evidence proving the cost-effectiveness already exists. Trials at Amsterdam's Schiphol Airport and London's Luton Airport resulted in fewer bag searches, better resource utilization, improved operational efficiency, shorter lines, and lower false-alarm rates.

Yesterday's x-ray technology is no longer sufficient to meet the demands of checkpoint operations, increases in passenger volume and an ever-changing threat environment. Just as the medical field shifted away from simple x-ray technology to CT scans, it's time for TSA to bring the gold standard for aviation security – CT 3D imaging – from checked baggage to the checkpoint.

__Eric Zanin__ is senior vice president and general manager of Security Systems Business for Analogic a medical imaging company that also designs state-of-the-art airport security imaging systems.



Four threats Olympics security chiefs need to stop

Source: http://www.businessinsider.com/afp-four-threats-olympics-security-chiefs-need-to-stop-2015-8

Aug 01 – Muggings, crowd violence, a terrorist attack -- there are a lot of potential problems to keep Olympics security chiefs in Rio de Janeiro awake at night a year before the 2016 Summer Games.

With more than 10,000 athletes and hundreds of thousands of fans to protect, Rio says it's taking no chances, deploying 85,000 security forces -- double the approximately 40,000 used at the 2012 London games.

Brazil is a violent country, with an estimated 52,000 murders a year, and Rio sees more than three of those murders every day.

However, Brazil has successfully hosted a string of mega-events in the last few years including the 2012 UN Rio+20 environmental summit attended by 191 countries, a visit by Pope Francis, the Confederations Cup and the 2014 World Cup.

"No other country has hosted so many events in such a short time. And this gave us great experience that we can apply to the Games," Rio's public safety chief, Andrei Passos Rodrigues, told a news conference.

These are the main four areas that security services are looking at:

Street crime

Although Rio crime stats have dipped, they remain extremely high, with an average of 3.4 murders daily in the first half of this year. Violence in Rio often grabs the local headlines, adding to a general atmosphere of fear.

Whole areas of the financial center are considered dangerous to walk at night, while most residents would currently refuse to go to the marina hosting the Olympic sailing contests except by taxi, because of the adjacent park's reputation for muggings.

Earlier this month even the metro, long a haven from street violence, saw a rare murder.

Still, by flooding the streets with some 47,500 security personnel, officials say they can guarantee a trouble free city during the two weeks of the Games.

Terrorism

Brazil has such a low profile in world conflicts that the subject receives little attention in the national media or discussions of preparations for the Games.

Still, the Olympics is inevitably seen as a major potential target for militant groups.

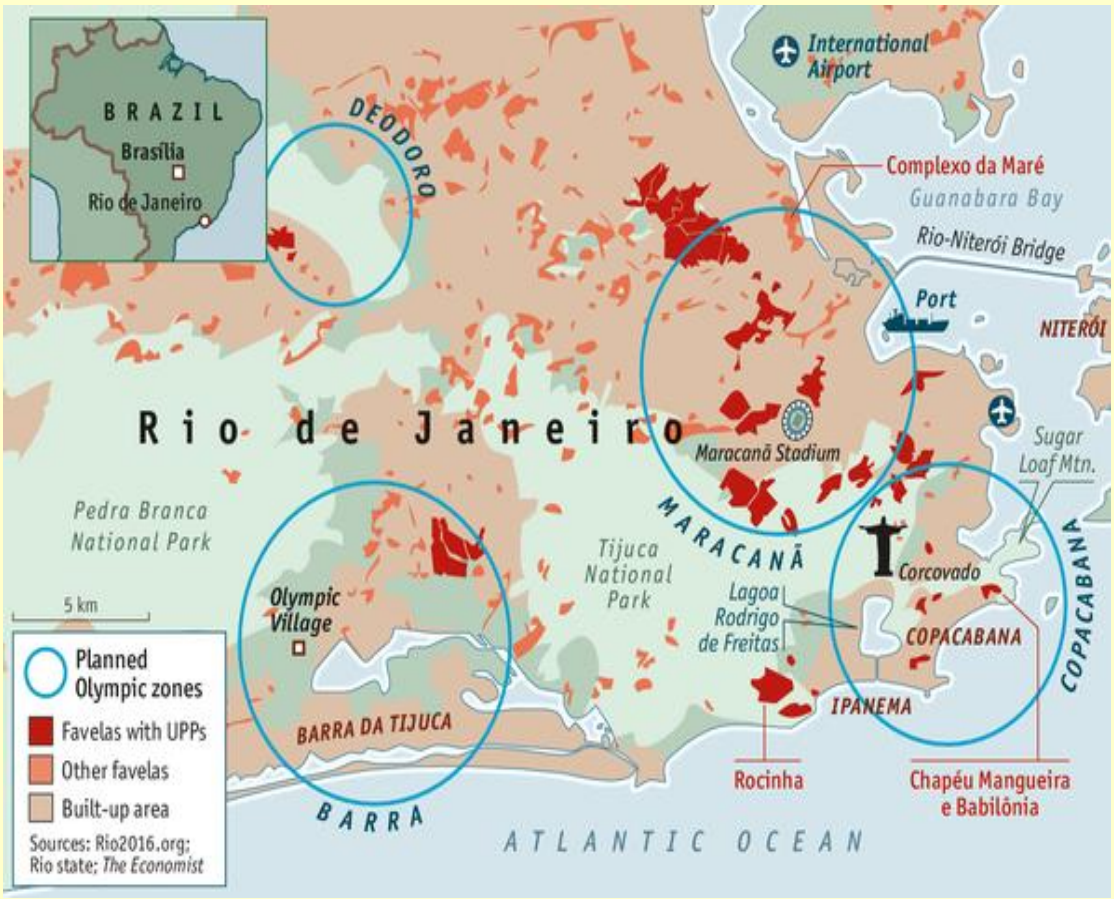
The 1972 massacre by Palestinians of Israeli athletes in Munich still looms over Olympic history, but today's potential threats -- including the feared use of amateur drones -- have greatly multiplied.

The country must "never lower its guard," Rodrigues said.

Brazilian officials say they are working with counterparts from more than 90 countries to protect against militant attacks, and with Interpol to develop a strategy against cyberattacks.

Authorities have also been on fact-finding trips to big events in other countries, including the Tour de France and the Boston marathon, which was targeted by a bomb at the finish line in 2013.

"We have the same level of maturity in confronting terrorism as any other nation that proposes



putting on events like this," Rodrigues said.
The armed forces say they are ready to close airspace over Rio at any time and drones will be prohibited during the Games or over the Olympic Village.

Stadiums

Access to stadiums, X-ray machines and metal detectors will be controlled by unarmed soldiers and prison system employees.

Brazilian Army's Chemical, Biological, Radiological and Nuclear (CBRN) 1st Defence Battalion personnel drill a decontaminating operation during their internal presentation ahead of the Rio 2016 Olympic and Paralympic Games at the Military Training Expertise School (EsIE).

One thing they'll be on the lookout for is crowd violence, which has often been a problem at Brazilian domestic football (soccer) games.
In addition, several stadiums including the Maracana and the Deodoro are close to large slums, or favelas, further complicating the job for police.
Rodrigues said a sign of success for his forces would be that nothing happens -- and "they are not remembered."

Demonstrations?

The run-up to the World Cup saw large street protests against the government's preparations for the tournament and against the world football governing body FIFA. So far, there is no sign of a repeat, with social media sites often used to coordinate protests going largely quiet.
Analysts say Brazilians were angry at the costs of the World Cup preparations but that although discontent remains high, the Olympics have not raised the same controversy.
"Today people's problem isn't with the Olympics -- it's with the government," said Lamartine Pereira da Costa, an expert on the Olympics at the State University of Rio de Janeiro.

EDITOR'S COMMENT: Another generic article – one of the very few available, regarding Olympics Security despite the 60 countries participating? Rely on the military for CBRNE threats – would not be enough… And ChemTape is missing in this drill… (white arrow)

Syrian rebel leader seeks Europe _ fleeing gov't and jihadis

Source: http://news.yahoo.com/syrian-rebel-leader-seeks-europe-fleeing-govt-jihadis-163636165.html

Aug 17 – KOS, Greece (AP) — In the jostling chaos of a crammed refugee center, one man tries to introduce order — forming migrants into lines and collecting names for overwhelmed Greek police clerks.

Laith Al Saleh, a plasterer from Aleppo, stands out from the crowd waiting in the sweltering August heat, and it's not just his battle-scarred face that sets him apart. He is accustomed to being in command — he led a 700-strong rebel unit in Syria's civil war — and he is now keen to help others dealing with exile.

Al Saleh, 30, had a home, a wife and a normal life, before the start of the fighting that has claimed more than 250,000 lives and displaced up to a third of Syria's population. Now, he's one of the tens of thousands of Syrian men, women and children who risk drowning to be smuggled into Greece by sea on frail, crammed dinghies, paying up to thousands of dollars for the service.

At least 135,000 people — mostly Syrians — have crossed over from Turkey this year, more than the total for all of 2014 and 2013 together.

None want to claim asylum in financially broken Greece, which can hardly provide for its own destitute. Their target destinations are wealthier parts of the European Union such as Germany, The Netherlands and Sweden, all only reachable after a further series of illegal border crossings, involving more danger, expense, humiliation and hardship.

"The situation in Syria is very bad, war is eating everything," Al Saleh told The Associated Press in an interview on Kos. "(The) government destroy everything, buildings, people, they kill children, women — there are no safe areas in Syria."

The eastern Greek island is the first milestone on an odyssey that he hopes will end in The Netherlands, where a successful asylum application would allow his family to join him legally — without having to follow the same arduous path.

An intense, wiry man with short-cut hair, Al Saleh speaks slowly as he searches for the right words in English.

"Everyone wants to leave Syria," he said. "My (home) is the most dangerous city in the world. About 70 percent of the city is destroyed ... In Syria, Al Qaeda want me, Daesh (the Islamic State extremist group), the government — I fought them all. I don't care. Some people are afraid. I'm not."

As a seasoned fighter, Al Saleh moves fast. He clandestinely crossed Syria's porous border with Turkey, walking for several hours, proceeded by bus to the coastal city of Bodrum, opposite Kos, and got on the first boat he could find.

Migrants and refugees are pushed as riot police try to maintain an orderly line during a registration procedure at the national stadium of the Greek island of Kos on August 12, 2015

He reached Kos at the crack of dawn on Aug. 5, after a four-hour journey. The rubber boat held dozens of people swaddled in life-vests — a new money-crop in Bodrum — and clutching inflated inner tubes to keep afloat in case of sinking. Smugglers charged him $1,000 for the berth.

Despite a brief alarm when the engine failed, the migrants made it ashore safely and walked the 4 to 5 kilometers (2 to 3 miles) to the main town of Kos, a tourist playground where visitors commonly party to dawn, and spend the days on the very beaches where the refugee boats make landfall.

There, they suffered hardship and delay, as authorities on the island found themselves unprepared for the influx. Many locals vented anger at the crowds of refugees sleeping rough in parks and public spaces at the height of the key tourist season.

"The people here hate us," Al Saleh said of his ten days waiting for temporary travel documents on the eastern Aegean Sea island. "I don't know why. We come here on our way, not to stay here ... We slept on the ground in the parks, in the stadium, nobody helped us to get a place to sleep, water or food. On the first day I went to a supermarket to buy food but they threw me out."

Kos held a more sinister encounter for him — a man he recognized as a Syrian enemy.

"Two days ago, I saw a sniper for the government forces," he said. "I didn't talk to him, but I am still very angry."

On Aug. 15, clean and rested after a couple of days in a small hotel with another 25 paying Syrian guests, Al Saleh took a last photo with his friends before boarding an Athens-bound

ferry. The very next day, he was travelling through Macedonia, on a packed train that he could only board through a window.

Syrian migrants, planning to cross by boat to the nearby Greek island of Kos, try on life jackets offered for sale outside a tourist shop in the coastal town of Bodrum, Turkey, on August 13, 2015.

"I was so tired and upset at what I found (in Macedonia) that I wanted to cry," he said, speaking to The AP by phone.

Al Saleh said he has a cousin in The Netherlands, a former senior officer in the Syrian army who defected to the rebels before being badly injured.

"When I get to Holland I will get my papers and bring my family," he said. "Everything I do for them, for my wife and 3-year-old son. I hope they will be able to join me, after two or three months."

Syria's conflict began in March 2011, with mostly peaceful protests against the authoritarian regime, but later escalated into a full-scale civil war after a massive government crackdown.

Al Saleh joined the Free Syrian Army, the moderate, Western-backed forces opposing President Bashar Assad — but also fighting the Islamic State group and the Al-Qaeda affiliated Nusra Front.

"It's hard to take up weapons and fight, but we want freedom," he said. "When I started fighting my son was 28 days old. Sometimes, he couldn't remember me because I was away fighting. He didn't call me papa, he called me by my name," Laith — Arabic for lion.

Al Saleh's home was destroyed in the fighting and he was injured twice, seeing action in Aleppo and the Kurdish border town of Kobani, and rising to command a unit of 700 men.

"In the first month of revolution, I was injured in the head," he said. "I stayed in my house about one month. After that, I came back to fight, and after a year I was wounded again, a government airplane shot a rocket at me."

The missile missed him by two meters (about 6 feet.) But it blew up his car, killed four people and buried Al Saleh in rubble. He was dug out by civil protection volunteers. After playing the video on his mobile phone, he has a startling thought — musing about a possible return to the fight in Syria.

"Everything in Syria is beautiful. It is destroyed but it is beautiful for me. Our streets our buildings, my friends ... everything is beautiful in Syria," he said. "Maybe I will come back after my family is in Holland. I can't leave my country, I have a name in my country. I can't lose it. My friends are still fighting there."

EDITOR'S COMMENT: This is the sad truth – Europe borders are open inviting anybody to cross them! Jihadists included! It seems that is not a matter of inability to control inflow; rather it is a proof of lack of will doing so. Both views have immense consequences for the future of Europe. And if "I don't; want to solve a problem" is a conscious decision, the "I cannot solve the problem" is a genetic feature and nobody can fix it. But every problem has its own solution or solutions ranging from controlling the reasoning behind the problem (stop the chaotic situation in Syria and Iraq) all the way to inhuman measures that nobody wants to apply but it will come a day that this would be the only solution. According to FRONTEX during the first seven months of 2015, 340,000 illegal immigrants/refugees entered EU (123,500 in 2014) of which in July 2015 more than 50,000 entered Greek islands (Lesvos, Chios, Samos and Kos); 20,000 arrived in Italy while Hungary recorded more than 34,000 new arrivals. It would be interesting to see what The Netherlands will do now that they know the background of this specific individual requesting asylum into their country… (notice the last sentence of his interview: "I have a name in my country; I can't lose it") – good name, bad name he did not clarify…

Phony Claims about Syria Retaining Chemical Weapons

By Stephen Lendman

Source: http://www.globalresearch.ca/phony-claims-about-syria-retaining-chemical-weapons/5464320

Since Obama began waging proxy war on Syria in March 2011, numerous false charges about Assad using chemical weapons followed – discredited by verifiable facts on the ground.

Clear evidence of imported takfiri terrorists using banned toxic agents was systematically covered up – even after Saudi Arabia was caught red-handed supplying sarin gas and other chemical toxins to anti-Assad elements.

Barrels containing banned chemicals were found marked "Made in KSA (Kingdom of Saudi Arabia)." Protective masks were found. So were drugs used when inhaling chemicals.

On June 17, 2015, the Organization for the Prohibition of Chemical Weapons (OPCW) headlined "Disposal of effluents from neutralised Syrian chemical weapons completed," saying:

OPCW "welcomes the completion of disposal of effluents resulting from neutralisation operations aboard the US vessel Cape Ray."

"These operations governed the destruction at sea of almost 600 metric tonnes of sulphur mustard and methylphosphonyl difluoride (DF) from Syria's chemical weapons programme. DF is a key precursor chemical for manufacturing nerve agent."

On 12 June 2015, a OPCW team verified the disposal of approximately 335.5 metric tonnes of sulphur mustard effluents at the German Government facility, Gesellschaft zur Entsorgung von Chemischen Kampfstoffen und Rüstungsaltlasten MBH (GEKA MBH). This was a significant in-kind contribution by the Federal Republic of Germany.

"On 11 June 2015, Ekokem Riihimäki Waste Disposal Facility in Finland announced the disposal of 5,463 metric tonnes of DF effluents received from the Cape Ray."

"This process was part of a commercial contract, which included destruction of other chemicals from Syria's chemical weapons programme. An OPCW inspection team will shortly deploy to Finland to verify completion of this process."

OPCW Director-General Ahmet Uzumcu called the above efforts "yet another milestone on the path to eliminating chemical weapons stocks from Syria – one that was achieved in a safe and efficient way, thanks to the valuable support provided by the German Government and Finnish industry."

"Of the 1,328 metric tonnes of chemical weapon agent declared by the Syrian Arab Republic, only 16 metric tonnes of hydrogen fluoride remain to be destroyed at the facility of Veolia ES Technical Solutions, L.L.C. at Port Arthur in Texas in the United States. The destruction of the 12 former chemical weapons facilities is also underway."

A feature Friday Wall Street Journal article headlined "Mission to Purge Syria of Chemical Weapons Comes Up Short."

The dubious source: US intelligence agencies complicit with the administration, State Department, other Washington agencies, Congress and go-along media scoundrels in vilifying Bashar al-Assad irresponsibly – spreading Big Lies about his activities, ignoring his responsible campaign to rid Syria of imported Islamic State and other terrorist groups operating as US proxies to oust him and his government, replacing it with a pro-Western puppet regime.

The Wall Street Journal outrageously called Assad's full cooperation with OPCW inspectors "a ruse part of a chain of misrepresentations by President Bashar al-Assad's regime to hide the extent of its chemical-weapons work."

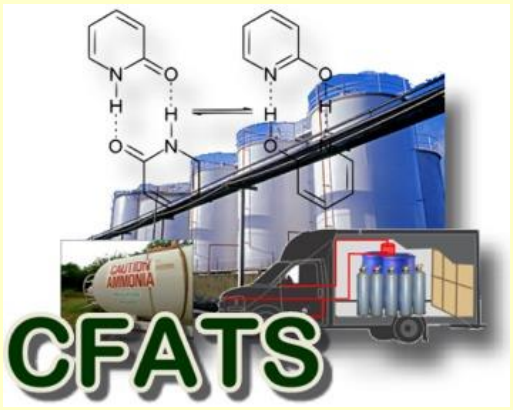
"…US intelligence agencies have concluded that the regime didn't give up all of the chemical weapons it was supposed to."
Despite evidence otherwise, they claimed Assad "controlled where inspectors went, what they saw and, in turn, what they accomplished…according to the inspectors and officials."
The above OPCW comments contradict these assertions. The only restrictions involved securing the safety of inspectors operating in a war zone. Their statements say nothing about restricted or impeded activities in any way. They suggest precisely the opposite – Assad's full cooperation.
The Journal repeated the exposed Big Lie about Syria using sarin gas in Ghouta "kill(ing) some 1,400 people." A British report suggested one-fourth this number.
Former UK ambassador to Uzbekistan, Craig John Murray, called John Kerry's accusations about the Ghouta incident "sheer lies." Independent evidence confirmed it.
The Journal cited US intelligence claiming (with no verifiable evidence) Assad "hid caches of even deadlier nerve agents, and that he may be prepared to use them if government strongholds are threatened by Islamist fighters."
US intelligence claims it "tracked the regime's increasing use of chlorine-filled bombs" earlier this year – despite no evidence proving it. Takfiri terrorists are known to have access to chlorine gas. They've shown willingness to use it. Incidents are wrongfully blamed on Assad.
The new US intelligence report is the latest propaganda effort to vilify Assad – perhaps prelude to greater efforts to oust him.

Stephen Lendman *lives in Chicago. His new book as editor and contributor is titled "Flashpoint in Ukraine: US Drive for Hegemony Risks WW III."*

Chemical Facility Program Failures Continue to Put Nation's Critical Infrastructure at Risk

By Amanda Vicinanzo (Senior Editor)
Source: http://www.hstoday.us/briefings/daily-news-analysis/single-article/chemical-facility-program-failures-continue-to-put-nations-critical-infrastructure-at-risk/f7a5f471f24302a62c65fdbf1ad01a3a.html

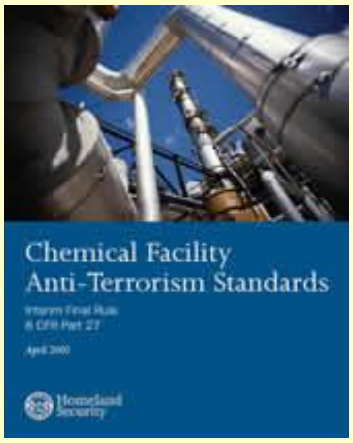
July 24 – A terrorist attack on the nation's high-risk chemical facilities could prove catastrophic. Toxic chemicals could be released from the facility or stolen to produce chemical weapons which could be used to inflict mass causalities in the United States.



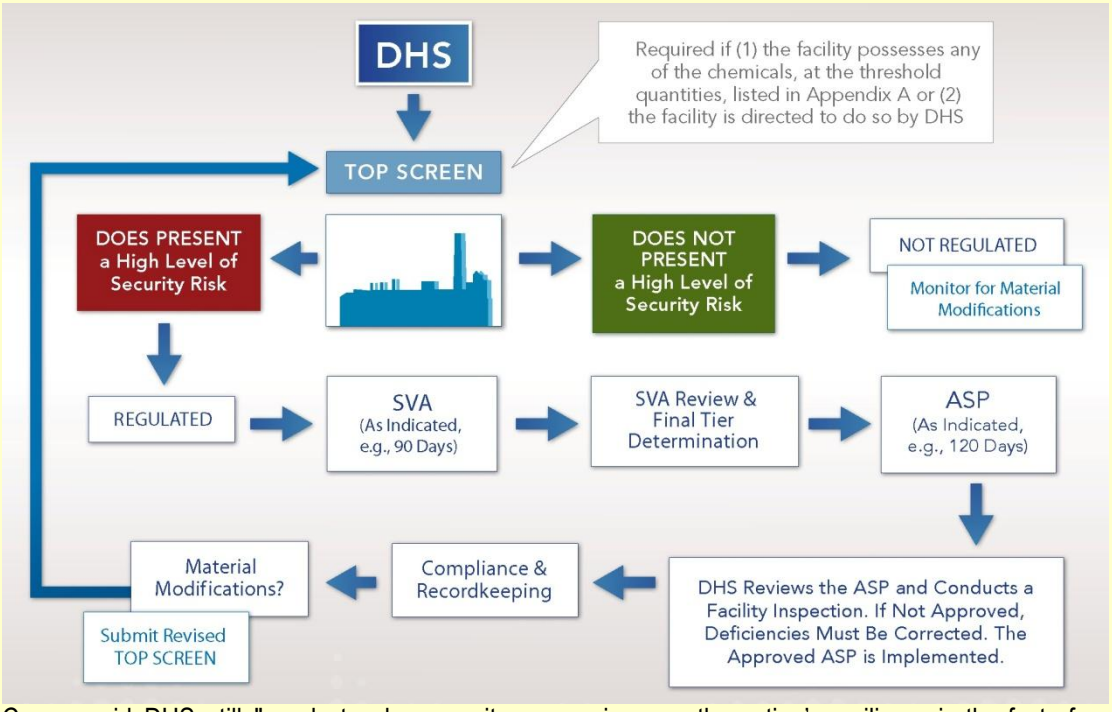
Although the US established the Chemical Facility Anti-Terrorism Standards (CFATS) over a decade ago, CFATS has struggled with a laundry list of significant challenges—including backlogs, mismanagement, and missed goals—hindering the program's mission to protect the nation against chemical terrorism.
And CFATS is still struggling, according to a recent Government Accountability Office (GAO) audit report. After conducting a recent assessment of the current status of CFATS, GAO auditors determined errors in facility-reported data may be preventing the program from lessening the nation's risk of a terrorist attack on chemical facilities.
"Individuals intent on using or gaining access to hazardous chemicals to carry out a terrorist attack continue to pose a threat to the security of chemical facilities and surrounding populations," GAO said. "DHS, through the CFATS program overseen by the Office of Infrastructure Protection's Infrastructure Security Compliance Division (ISCD, has made progress in identifying chemical facilities that pose the greatest risks and in

expediting the time it takes to approve security plans."

"However," GAO continued, "DHS has not taken steps to mitigate errors in some facility- reported data and does not have reasonable assurance that it has identified all of the nation's highest-risk chemical facilities."



Sen. Tom Carper (D-Del.), ranking member of the Senate Committee on Homeland Security and Governmental Affairs said GAO's audit "shows DHS has made real progress and has significantly accelerated its pace for reviewing security plans and chemical facilities since the law went into effect. However, GAO also noted numerous challenges remain."



Carper said DHS still "needs to shore up its processes for addressing noncompliant facilities, and verify key information in order to accurately assess risk. DHS should take GAO's recommendations to heart. My staff and I plan to engage the department early and often in order continue to make the program better. If Congress, the administration and industry work together, as we've done before, we can continue to make progress and shape a program that keeps these vital facilities and the jobs they provide secure, protects our communities and the environment, and allows our businesses to thrive."

The CFATS program was established pursuant to the Department of Homeland Security (DHS) Appropriations Act in 2007. Then, in December 2014, the Protecting and Securing Chemical Facilities from Terrorist Attacks Act reauthorized the CFATS program for an additional 4 years while also imposing a number of requirements to improve the program.

Prior to the legislation's approval, *Homeland Security Today* reported a congressional report produced by former Senate Committee on Homeland Security and Governmental Affairs ranking member Sen. Tom Coburn (R-Okla.) determined DHS's $600 million effort to improve the nation's resiliency in the fact of an attack on chemical facilities was a "near total failure."

In 2013, a GAO audit report disclosed it had found "critical flaws still existed in DHS's approach to calculating risk, meaning DHS could be focusing and regulating the wrong facilities; a seven to nine year backlog of chemical facilities' security plans in the CFATS program; and poor

engagement and transparency with regulated companies."

In addition, a 2013 DHS Inspector General audit identified "thirteen major deficiencies in the CFATS program, including a continuing backlog, lack of appropriate employee training, wasted funds and a culture of management-retaliation and suppression of opposing opinions against employees."

"Today – eight years later – there is little, if any, evidence to show that the more than half a billion dollars DHS has spent created an effective chemical security regulatory program or measurably reduced the risk of an attack on our chemical industrial infrastructure," Coburn said at the time.

Coburn added, "Since its creation, the CFATS program has been beset by chronic mismanagement, missed goals, backlogs and regulatory excess. This program exists to increase our nation's security against attacks on chemical facilities, but it hasn't adequately met that goal. Combined with the current leadership at CFATS, I am confident this bill will provide the necessary fixes to put the program on track to reducing our nation's vulnerability to chemical terrorism."

GAO's most recent audit indicated the CFATS program continues to struggle to overcome some of these challenges. Specifically, ISCD categorized approximately 2,900 facilities as high-risk based on unverified and self-reported data in evaluating facilities for a toxic release threat, which is essentially the threat posed to surrounding populations if the toxin was released.

One of the aspects considered in determining the toxic release threat is the distance of concern— an area in which exposure to a toxic chemical cloud could cause serious injury or fatalities from short-term exposure. ISCD requires facilities to calculate this distance using a web-based tool, but ISCD does not verify facility-reported data for facilities it does not categorize as high-risk for a toxic release threat.

However, GAO estimated more than 2,700 facilities (44 percent) of an estimated 6,400 facilities with a toxic release threat misreported the distance. Consequently, the audit recommended DHS verify the distance of concern reported by facilities is accurate.

In addition, GAO also discovered ISCD has made substantial progress in approving site security plans and conducting compliance inspections. However, ISCD does not consistently ensure compliance and effectively measure program results. Compliance with site security plans is essential, since these outline the planned measures that facilities agree to implement to address security vulnerabilities.

To ensure consistency in addressing non-compliance with the CFATS program, DHS must make sure it has documented processes and procedures for managing non-compliant facilities.

Currently, ISCD addresses compliance issues on a case-by-case basis. GAO revealed almost half (34 of 69) of the facilities ISCD inspected as of February 2015 had not implemented one or more planned measures by deadlines specified in their approved site security plans and therefore were not fully compliant with their plans.

The audit report stated, "Given that ISCD will need to inspect about 2,900 facilities in the future, having documented processes and procedures could provide ISCD more reasonable assurance that facilities implement planned measures and address security gaps."

As an important part of the nation's counterterrorism efforts, strengthening the CFATS program will continue to be a critical way to keep dangerous chemicals out of the hands of those who wish to do us harm. DHS concurred with GAO's recommendations and has outlined steps to address them.

DHS concurred with GAO's recommendations and has taken steps to address them. According to Bob Davis, National Protection and Programs Directorate, DHS believes that documenting processes to track non-compliant facilities is worthwhile and, as had previously been done with all other major aspects of CFATS implementation, the Department is in the process of developing and documenting such procedures for this final stage of the CFATS process.

In addition, as recommended by GAO, the Department will develop a performance measure that includes only planned measures that have been implemented and verified. Davis explained that, "It is important to note there is no single measure

that can fully capture the impact of CFATS. This is due to the complexity of the CFATS program and the many ways in which it reduces risks."
Finally, DHS has begun developing a revised Top-Screen application and supporting tiering methodology that eliminates the need for facilities to calculate and self-report Distances of Concern. While this is in development, DHS will establish a process through which it will verify Distances of Concern submitted in new Top-Screens for accuracy before finalizing a preliminary tiering result for any facility with threshold quantities of a release-toxic chemical of interest.
"DHS' CFATS program focuses specifically on security at high-risk chemical facilities and continues to make strides in securing facilities in communities across the country," said Davis. "Since the program's inception, more than 3,000 facilities have eliminated, reduced or modified their holdings of chemicals of interest. DHS concurs with the GAO's recommendations and has already taken steps to implement them."

CBRNe Book Series

Source: http://www.aracneeditrice.it/aracneweb/index.php/collana.html?col=CBRNE

Peace cannot be kept by force; it can only be achieved by understanding
Albert EINSTEIN

The CBRNe Book Series was born as an initiative of the Directive Board and of the Scientific Committee of "International Master Courses in Protection Against CBRNe events" (www.mastercbrn.com) at the University of Rome Tor Vergata.
The evolution and increase in Security and Safety threats at an international level place remarkable focus on the improvement of the emergency systems to deal with crisis, including those connected to ordinary and non-conventional events (Chemical, Biological, Radiological, Nuclear, and explosives). In every industrial Country there are multiple entities with specialized teams in very specific fields, but the complexity of the events requires professionals that not only have specific know-how, but also expertise in the entire relevant areas.
Given the global interest in these issues, the Department of Industrial Engineering and the Faculty of Medicine and Surgery of the Tor Vergata University organize the international Master Courses in "Protection against CBRNe events": I Level Master Course in "Protection against CBRNe events" (120 ECTS) and II Level Master Course in "Protection against CBRNe events" (60 ECTS). These courses aim at providing attendees with comprehensive competences in the field of CBRNe Safety and Security, through teaching and training specifically focused on real needs.
Both Master Courses are designed according to the spirit of the Bologna Process for Higher Education, the Italian law and educational system.

The Master Courses are organized also in cooperation with the following Italian Public Entities:

- Presidenza del Consiglio dei Ministri (Prime Minister's Office);
- Ministero della Difesa (Ministry of Defence);
- Ministero dell'Interno (Ministry of The Interior);
- Istituto Superiore di Sanità (National Health Institute);
- Istituto Nazionale di Geofisica e Vulcanologia (National Institute for Geophysics and Vulcanology);
- ENEA (Italian National Agency for New Technology, Energy and Sustainable Economic Development);

- University Consortia CRATI, MARIS and SCIRE;
- Comitato Parlamentare per l'Innovazione Tecnologica (Parliamentary Committee for Technological Innovation).

And together with the following International Entities:

- OPCW (Organization for the Prohibition of Chemical Weapons);
- NATO Joint Centre Of Excellence (Czech Republic);
- NATO SCHOOL of Oberammergau (Germany);
- HotZone Solutions Group (The Netherlands);
- VVU–026 Sternberk (Czech Republic);
- Seibersdorf Laboratories GmbH (Austria);
- Chernobyl Centre (Ukraine).

All the above–mentioned organizations have signed official cooperation agreements with the University of Rome Tor Vergata in the aim of Master course activities.The Master have also cooperation with OSCE, IAEA, ECDC, KEMEA in the aim of the didactical activities and we are working to formalize this collaboration with a formal cooperation agreement.
Both Master Courses have been officially granted the "NATO selected" status and have been included in the NATO Education and Training Opportunities Catalogue (ETOC) and also they are supported by OPCW.
The purpose of the CBRNe book series is to give a new perspective of the safety and security risks from both a civil and military point of view, touching all the aspects of the risks from the technological to the medical ones, talking about agents and effects, protection, decontamination, training, emergency management, didactic, investigation, communication and policy.
The authors will be experts of the sector coming from civil, military, academic/research and private realities.A special thanks for the realization of this series goes to Prof. Carlo Bellecci for his initial encouragement, continuous support and help.

The first two books are already published:

1. PRACTICAL MANUAL FOR THE UPDATING OF CBRN PLANNING AND SHORT NOTES FOR THE PREPAREDNESS TO CRISIS MANAGEMENT
by Luciano Cadoni, Ferruccio Di Paolo, Giovanni Ferrari

2. ARMI A ENERGIA DIRETTA
by Fausto Intilla

More evidence emerges of ISIS's use of chemical weapons

Source: http://www.homelandsecuritynewswire.com/dr20150727-more-evidence-emerges-of-isis-s-use-of-chemical-weapons

July 27 – A joint investigation by two independent organizations – Conflict Armament Research (CAR) and Sahan Research — has found that ISIS has begun to use weapons filled with chemicals against Kurdish forces and civilians in both Iraq and Syria. On three occasions last month, ISIS used projectile-delivered chemical agents in Hasakah province and against Kurdish positions near the Mosul Dam.
When CAR investigators reached the "scene of crime" near the Mosul Dam, they experienced severe headaches and nausea when encountering the pungent odor of a chlorine chemical agent, and saw a dark

yellow liquid leaking from a projectile, according to James Bevan, the executive director of CAR.

CNN reports that the investigation was launched to ascertain that the **device contained chlorine**. The results showed that fragments of munitions contained chemical residue which still emitted a powerful odor which affected eyes and throat. The same thing happened with the residue of another rocket from Tel Brak.

Malik Ellahi, spokesman for the Organization for the Prohibition of Chemical Weapons (OPCW), noted that **any use of toxic chemicals as weapons is prohibited by the Chemical Weapons convention**. CAR's James Bevan believes that the occasions of chemical weapon use the researchers identified may likely be a test run. He also added that ISIS forces are known to experiment with improvised munitions and chemicals which are at hand.

ISIS is notorious for its skill in creating and adapting weapons. Last month, photos depicting its improvised explosive device (IED) workshop in Fallujah were published. The latest assessments of experts suggest that it was a facility for creating different types of weapons.

There is a big distance between Mosul Dam and Tel Brak, but the similarity of the attacks in the two areas led analysts to think that different ISIS commands were sharing weapons and knowledge.

Moreover, there are precedents for ISIS using chlorine in a number of attacks earlier this year. Bombs filled with chlorine were used in a series of attacks near the town of Balad, in Eski Mosul, and Tikrit (see "Syrian Kurdish militia says ISIS used poison gas in attacks on militia fighters," HSNW, 20 July 2015).

Also, during the fight against U.S. forces in 2006-07, Iraqi insurgents used crude chlorine-based weapons — usually bombs. Islamist insurgents also mixed chemicals with explosive in a suicide truck they exploded in Ramadi in 2007, killing twenty and injuring many more who required hospitalization for chemicals-related injuries.

There were many reports of the use of chemical weapons by the Assad regime (see "'Strong possibility' Assad may use chemical weapons on a large scale to protect regime: U.S. intelligence," HSNW, 6 July 2015; and "Assad regime continues to employ chemical weapons," HSNW, 22 April 2015). At the same time Bevan is concerned with ISIS's access to chemical agents, and the group's experiments with and use of these agents in chemical weapons.

Pentagon's Top CBRNE Leader Keeps 'Persistent Stare' on World's Growing WMD Threats

Source: http://www.hstoday.us/focused-topics/public-health-and-safety/single-article-page/pentagons-top-cbrne-leader-keeps-persistent-stare-on-worlds-growing-wmd-threats.html

While on a recent trip to the Middle East during a visit to Israel, House Speaker John Boehner described the national security environment and overall threat landscape in very stark terms. Boehner said, in part, "the world is on fire," adding, "And I don't think enough Americans or enough people in the administration understand how serious the problems that we're facing in the world are."

The spread of the Islamic State (ISIS) throughout Iraq, Libya and elsewhere in Africa, and the ongoing Syrian civil war and the chaos in Yemen, has increasingly evidenced that

tactical chemical agents are being employed on the battlefield. As ISIS recruitment efforts continue to inspire Islamist jihadists to take up arms domestically, in Europe and throughout the Middle East, the threat to the homeland is rapidly expanding.

Both ISIS and Al Qaeda's leaders and their determined affiliates around the world have made it exceedingly clear they seek weapons of mass destruction – especially chemical, biological, radiological and nuclear – to use in attacks on the West – in particular, the United States.

In this exclusive interview with *Homeland Security Today*, Brig. Gen. JB Burton, the commanding general of the United States Army 20th Chemical, Biological, Radiological, Nuclear and Explosives Command (CBRNE), discusses his command's approach to developing a "persistent stare" towards the burgeoning CBRNE threats around the world.

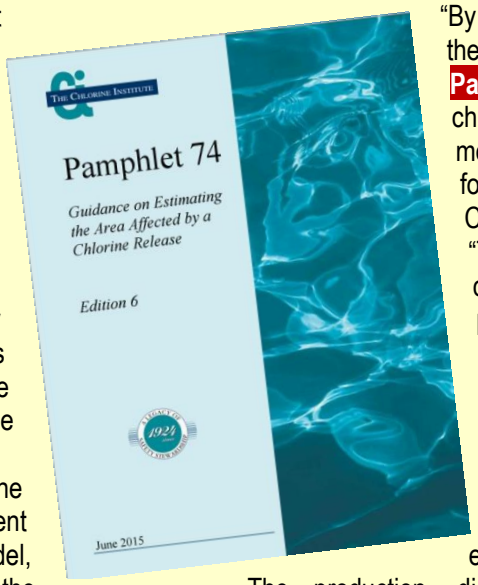
In the interview, Burton highlighted the fact that CBRNE threats and hazards in a changing and increasingly complex security environment can be impacted by local events that often have global consequences. He cited lessons learned from previous CBRNE efforts in Iraq over the last decade, the operating norm of surgical and distributed offense platforms in regards to CBRNE deterrence, and the transformative nature of disruptive technology development. Lastly, Burton outlined a roadmap to overhaul his command's organizational structure from a functional outfit to one that's more capable of being multi-functional.

▶ Read the complete report in the April/May issue of *Homeland Security Today*.

New guidance on estimating area affected by a chlorine release issued

Source: http://www.homelandsecuritynewswire.com/dr20150730-new-guidance-on-estimating-area-affected-by-a-chlorine-release-issued

July 30 – Arlington, Virginia-based Chlorine Institute (CI) said that as part of its efforts to encourage safety best practices and share the latest technical information, it has issued a new version of Pamphlet 74 - Guidance On Estimating the Area Affected By A Chlorine Release. The new version, Edition 6, dated June 2015, reflects CI's collaboration with the U.S. Department of Homeland Security's Chemical Security Analysis Center and incorporates information obtained from the DHS "Jack Rabbit I" chlorine release field tests.



The new guidance employs the Hazard Prediction and Assessment Capability (HPAC) model, developed and widely used by the U.S. government, with the data and findings from the field trials to provide more accurate modeling results. CI says that this multi-scenario, science-based information will assist chlorine producers and users, local emergency planning committees, fire departments, and municipalities in estimating the area affected by a chlorine release for both emergency planning and hazard assessment.

"By using Jack Rabbit data, the sixth edition of Pamphlet 74 updates the chlorine dispersion modeling used to prepare for an actual incident," said CI president Frank Reiner. "The members of CI are committed to the safe production, transport and use of chlorine, and we were very pleased to partner with DHS Science and Technology to present the test data in this easily-used format."

The production, distribution, and use of chlorine have strong safety records. However, in the rare event of a chlorine emergency, public and private sector emergency planners need accurate data about how chlorine will disperse in varied weather

and terrain conditions. The **Jack Rabbit I** experimental releases performed at the U.S. Army Dugway Proving Ground in 2010 provide the most current information about the chemistry and physics associated with chlorine releases and allow planners to more effectively form emergency management and action plans keyed to local conditions and the unique properties of chlorine.

Jack Rabbit II testing is scheduled to begin in August. CI says that in this test members, of the Institute will be working side-by-side with DHS to obtain additional data and further refine chlorine dispersion models. Once the new data are analyzed, a seventh edition of Pamphlet 74 may be required, Reiner said.

He added that all organizations that use or handle chlorine, along with emergency planners, should utilize the new edition of Pamphlet 74, available as a free download from the CI bookstore.

Background

The Jack Rabbit test program was conducted at Dugway Proving Ground (DPG), Utah in April/May 2010. The program was sponsored by DHS Transportation Security Administration (TSA) with program oversight provided by the Chemical Security Analysis Center (CSAC) and test execution provided by the Meteorology Division of DPG. During the field campaign, ten trials were conducted — two pilot trials and eight record trials with releases of either anhydrous ammonia or chlorine.

— Read more in Pamphlet 74: Guidance on Estimating the Area Affected by a Chlorine Release, ed. 6 (Chlorine Institute, June 2015)

Chemical plants provided incorrect information about toxic release risks: GAO

Source: http://www.homelandsecuritynewswire.com/dr20150730-chemical-plants-provided-incorrect-information-about-toxic-release-risks-gao

July 30 – A new report from the Government Accountability Office (GAO) recommends that federal agencies should more carefully verify information provided by chemical facilities and improve compliance with safety standards.

ChemInfo reports the GAO analyzed the Chemical Facility Anti-Terrorism Standards (CFATS) program, enacted by Congress in 2007 as concerns were growing that a voluntary, industry-developed safety measures to protect against potential terrorist threats to U.S. chemical plants were just not good enough. Under the act, DHS's Infrastructure Security Compliance Division (ISCD) collected data on some **37,000 facilities handling dangerous chemicals, and identified 2,900 which were especially risky**. Those plants, typically located near residential areas, posed more risk of mass casualty events in case of a terrorist- or accident-induced chemical release.

The report criticizes DHS officials for relying on self-reported data — without checking and verifying the information chemical operators provided. **The GAO reports estimates that of the 6,400 facilities with some degree of toxic release threat, 2,700, or 44 percent, incorrectly reported nearby areas which**

could be vulnerable to short-term chemical exposure.

"By verifying that the data ISCD used in its risk assessment are accurate, ISCD could better ensure it has identified the nation's high-risk chemical facilities," the report says.

The report also noted that ISCD does not have procedures in place for facilities not in compliance with agency-approved security plans. GAO inspectors reviewed sixty-nine facilities as of February 2015, but thirty-four had not yet meet one or more deadlines for implementing security measures.

"Given that ISCD will need to inspect about 2,900 facilities in the future, having documented processes and procedures could provide ISCD more reasonable assurance that facilities implement planned measures and address security gaps," the report said.

DHS agreed with the recommendations and outlined steps to address them.

— Read more in Critical Infrastructure Protection: DHS Action Needed to Verify Some Chemical Facility Information and Manage Compliance Process, GAO-15-614 (July 2015).

Communities near chemical plants should develop preparedness, response plans: Experts

Source: http://www.homelandsecuritynewswire.com/dr20150730-communities-near-chemical-plants-should-develop-preparedness-response-plans-experts

Researchers found that despite the 2007 passage of the Chemical Facility Anti-Terrorism Standards (CFATS), only a few chemical facilities have completed the necessary security measures implementation. The authors recommend that communities should not wait for CFATS to be implemented before developing their own preparedness and response plans in anticipation of possible chemical disasters in the future, whether caused by terrorism or accident.

The slow implementation of the Chemical Facility Anti-Terrorism Standards (CFATS) in as part of homeland security and antiterrorism measures is leaving chemical plants vulnerable and putting at risk the safety of American citizens, according to research published in the *International Journal of Critical Infrastructures*.

Maria Rooijakkers and Abdul-Akeem Sadiq of the School of Public and Environmental Affairs at Indiana University-Purdue University in Indianapolis, explain that post-9/11 efforts to safeguard the chemical sector gave the Department of Homeland Security (DHS) the authority to regulate the safety and security of U.S. chemical facilities. In April 2007, DHS added an interim final rule, the Chemical Facility Anti-Terrorism Standards (CFATS), but the latest information suggests that very few chemical facilities have completed the necessary implementations.

Inderscience Publishers notes that the authors suggest that **the chemical industry and DHS must now work more closely together before it is too late to ensure the safety and security of the U.S. population.** They also add that communities should not wait for CFATS to be implemented before developing their own preparedness and response plans in anticipation of possible chemical disasters in the future, whether caused by terrorism or accident.

The chemical sector is a vital part of the U.S. economy, the authors say. Based on 2009 data, it represents almost 2 percent of U.S. gross domestic product (GDP) and is the nation's greatest exporter. The industry also contributes materials to a vast array of other industries from automotive and aeronautics to agriculture and healthcare. The chemical industry employs almost one million people directly and sustains an additional 5.5 million jobs in other sectors. Moreover, it is officially considered to be part of the U.S. critical infrastructure, as stated in the National Infrastructure Protection Plan (NIPP) of 2009, for being essential to sustenance of the economy and government itself.

The prominence and importance of the chemical industry as well as the proximity of its facilities to densely populated areas make it a particularly vulnerable target for

terrorist attack, hence the DHS interest and rules. Indeed, four of the fifteen National Planning Scenarios are related to chemical attacks, the authors point out. However, of the 3,468 chemical facilities given their final tier designations under CFATS in 2007, a mere forty of these had had their plans approved by 2013, and the pace of adoption and implement is yet to pick up.

— Read more in Maria Rooijakkers and Abdul-Akeem Sadiq, "Critical infrastructure, terrorism, and the Chemical Facility Anti-Terrorism Standards: the need for collaboration," International Journal of Critical Infrastructures 11, no.2 (2015): 167-82.

CBRN Transport Packaging

Source: http://saab.com/region/saab-australia/land/cbrn-transport--handling/

The CBRN Transport Packaging is a unique container designed for safe transportations of CBRN samples and other hazardous materials.

The CBRN Transport Packaging is certified for all types of transportations by road, railway, boat and airplane, according to the transport regulations of ADR, RID, IMDG-code and ICAO-TI/IATA and UN regulations.
It is easy to handle even in full protection clothing. The package consists of a case and a transportation container.

Features

The transport packaging solution provides safe transportation of hazardous CBRN samples and toxic industrial chemicals. Easy to handle even in full protection clothing and approved for air, land, sea and rail transports. The package consists a case and a transportation container. The plywood case has aluminium-reinforced edges, is furnished with shock absorbing material and has a documentation compartment for signs, seals, transportation documents, test documents, manual and spare parts list. The transportation container is made of stainless steel with two shock-absorbing inserts

housing 1 litre or 250 ml assaying vessel.
The Saab CBRN Transport Packaging is approved for transportation by SP Technical Research Institute of Sweden to ADR, RID, IMDG, ICAO, IATA and UN regulations.

UN now calls for identifying perpetrators of chemical attacks in Syria

Source: http://www.homelandsecuritynewswire.com/dr20150810-reversal-un-now-calls-for-identifying-perpetrators-of-chemical-attacks-in-syria

Aug 10 – **The UN Security Council on Friday has unanimously adopted a resolution calling for identifying those using chlorine and other chemical weapons in attacks in Syria.** The United States and Russia are divided over the best way to end to war in Syria, but both countries were behind the 2013 initiative to dismantle and remove chemical weapons from Syria, and behind Friday's resolution.
The Friday resolution fills a gap in attributing blame for chemical weapons attacks, allowing for the perpetrators of such attacks to be brought to justice.
The *New York Times* reports that the impetus for removing chemical weapons from Syria was provided by an August 2013 sarin gas attack by Syrian government forces on civilians in a Sunni neighborhood in Damascus. The attack killed more than 1,400 civilians and injured many more. Under threat of a U.S. military strike, the Assad regime agreed to dismantle Syria's chemical weapons production infrastructure, and remove tons of chemical precursors from the country.
Since the removal of sarin and other chemicals from Syria, there have been many reports of continuing use of chemicals as weapons in Syria, especially chlorine-filled barrel bombs which Assad forces drop on civilians in Sunni neighborhoods (see Colum Lynch and John Hudson, "Inside the U.N.'s New Effort to Stop Assad's Gruesome Barrel Bombs," *Foreign Policy*, 7 August 2015)
"Pointing a finger matters," U.S. ambassador, Samantha Power, told the council after the vote. She commended Security Council members for taking "another step aimed at stopping the use of chemical weapons in Syria."
The Organization for the Prohibition of Chemical Weapons (OPCW) has been authorized by the UN to investigate reports of chemical attacks in Syria. In 2013, however, when the Security Council passed the resolution authorizing the removal of chemical weapons from Syria, Russia – which, with Iran, is Assad's main supporter – conditioned its support for the resolution on adding to it a clause which would explicitly prohibit OPCW or the UN from determining who is responsible for chemical attacks in Syria, if such attacks continue.
Friday's resolution calls on the UN secretary general, Ban Ki-moon to coordinate with OPCW the development of an investigative mechanism which would allow chemical weapons inspectors to determine the source of the attacks and identify the perpetrators.
Observers note that Russia's reversal on the issue is one more indication of Russia distancing itself from Assad, whose forces have been in retreat across Syria since January, in the face of growing pressure by anti-regime rebels and ISIS.
The resolution stipulates that the investigative body set up by Ban Ki-moon and OPCW would identify those who are "perpetrators, organizers, sponsors or otherwise involved in the use of chemicals as weapons, including chlorine or any other toxic chemical" in Syria, in cases in which OPCW fact-finding inspectors mission determine that an incident involved, or likely involved, chemical use.
Friday Security Council's resolution came after U.S. secretary of state John Kerry and Russia's foreign minister Sergey Lavrov, on Wednesday, reached an agreement on the wording of the resolution.
The growing use of chlorine-filled barrel bombs by the Assad regime against Sunni civilians has led several Western powers to press for a change in the 2103 Security Council resolution, so

responsibility for chemical attacks could be attributed to those who perpetrated them. In April, the United States sponsored an informal Security Council meeting in which victims of Assad's chlorine barrel bomb attacks offered council members graphic, first-hand accounts of those attacks.

The Assad regime is responsible for most of the chemical attacks in Syria, but there have also been reports that ISIS forces there used projectile-delivered poison gas against Kurdish forces in both Iraq and Syria on several occasions in June (see "More evidence emerges of ISIS's use of chemical weapons," HSNW, 27 July 2015).

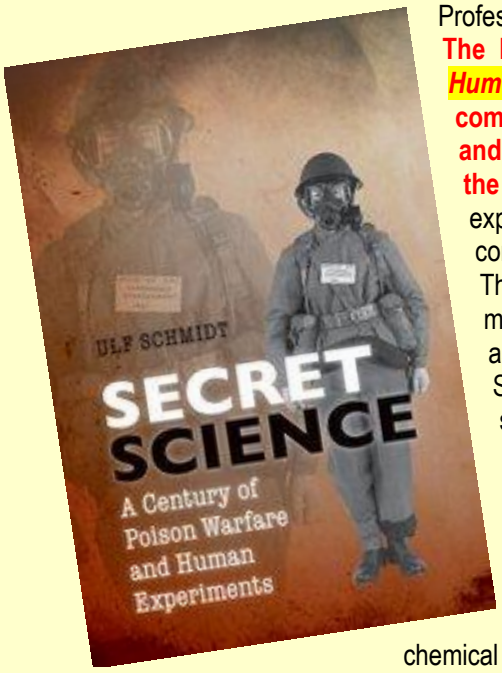
Syria admitted to being in possession of the world's largest stockpile of chemical weapons — 1,300 metric tons – and those chemicals have been removed from Syria and destroyed. Western intelligence services have recently concluded that Assad, in violation of the 2013 agreement, has not turned over all of his sarin gas weapons, and that he intends to use them if his regime is pushed to the brink (see "'Strong possibility' Assad may use chemical weapons on a large scale to protect regime: U.S. intelligence," HSNW, 6 July 2015). OPWC's experts, too, have unofficially determined that the Assad regime still has considerable quantities of chemical weapons which the regime never declared.

Chlorine is not considered a chemical warfare agent, and it was not among the chemicals Syria was obliged to declare under the 2013 agreement. Still, the use of chlorine as a weapon is illegal.

U.K. conducted chemical weapons experiments on "unconsenting participants"

Source: http://www.homelandsecuritynewswire.com/dr20150810-u-k-conducted-chemical-weapons-experiments-on-unconsenting-participants

Aug 10 – **In 1963 the U.K. Ministry of Defense's Porton Down military science center carried out the first of a series of tests to release zinc cadmium sulphide in the atmosphere over Norwich.** It was one of many examples of secret experiments conducted in the name of military research during the 1950s and 1960s, now chronicled for the first time in a new book by University of Kent historian Professor UlfSchmidt.



The book, entitled *Secret Science: A Century of Poison Warfare and Human Experiments* (Oxford University Press), provides a comprehensive overview of state military scientific research on chemical and biological weapons by Britain, the United States, and Canada since the First World War. It shows that the history of human and animal experimentation should not be seen as a national issue but rather in the context of an international network of expert scientists.

The University of Kent reports that the book also highlights how breaches of medical ethics have been more wide spread and systematic than previously assumed —and were carried out over a prolonged period of time. This led Schmidt to challenge the claim that ethics violations on both civilians and soldiers were "isolated" incidents.

Schmidt further considers how the medical ethics of experimentation have evolved —and suggests that further changes could yet see a more ethical approach that would not compromise the state's ability to test new weapons.

Using little-publicized examples, such as the Norwich zinc cadmium sulphide experiment, Schmidt details the ways in which chemical and biological experiments touched on the lives of ordinary people as well as military personnel.

Although he acknowledges that Britain's atmospheric trials may not have posed an immediate health hazard to the public, Schmidt points out that the government was well

aware, as the Chief Scientist warned in 1963, that "public … knowledge of them by unauthorized persons could be politically embarrassing."

Schmidt highlights the historical context of such experiments. He writes: "As an island nation, Britain was widely believed to be particularly vulnerable to large-scale chemical and biological attacks. During the Cold War, research and development activities reached far beyond the identification and testing of ever more toxic chemical compounds in the secure confines of Porton's experimental landscape. With an estimated total of over750 field trials carried out by Porton between 1946 and 1976, Britain was turned into a large-scale open-air laboratory; her people into an army of unconsenting participants."

In the same period as the Norwich tests, many other people — mainly service personnel— volunteered to take part in experiments. *Secret Science* poses the wider question as to why human beings participate in such experiments. In many cases, Schmidt suggests, the scientist "takes on the role of the seemingly selfless father figure, assuring his subjects that their joint enterprise will ultimately, in some distant future, be of benefit to the greater good; resources and human sacrifice are an apparently inevitable necessity."

Schmidt identifies that in many cases secrecy impacted on medical ethics in relation to issues of informed consent and full disclosure, but he concludes by arguing that secrecy and medical ethics do not have to be mutually exclusive.

Schmidt is Professor of Modern History, director of the Center for the History of Medicine, Ethics and Medical Humanities at the University of Kent, and principal investigator of the Porton Down Project on the history of chemical warfare research during the Cold War.

Tianjin: Latest Chinese chemical plant explosion risks massive environmental impacts

Source: http://energydesk.greenpeace.org/2015/08/13/tianjin-latest-chinese-chemical-plant-explosion-risks-massive-health-impacts/

The series of explosions in the port city of Tianjin – which killed at least 50 and injured ~700 – could leave the region facing huge environmental impacts, according to an analysis of information from the local environmental monitoring station.

The explosion is the latest – and by far the most dramatic – in a series of seven chemical plant blasts so far this year including explosions in the provinces of Jiangsu, Fujian and Shandong according to media reports. There are also reports this evening of a further – smaller – explosion at a boiler factory in northern China.

The Tianjin Tanggu Environmental Monitoring Station data suggests hazardous chemicals stored by the company may include sodium cyanide (NaCN), toluene diisocyanate (TDI) and calcium carbide (CaC2), all of which are extremely hazardous to health. The initial data may be unreliable however and comes as authorities struggle to establish exactly which chemicals were involved.

Sodium cyanide is highly toxic whilst toluene diisocyanate and calcium carbide react violently with water – a further potential hazard with rain forecast for the region over the next 24 hours. The rain also raises the risk of chemicals being washed into local water supplies and eco-systems – with unknown impacts. The full extent to which the chemicals may have been burned off in the explosion is also unknown.

The warehouse that exploded in Tianjin on Aug. 12 was near several apartment buildings, which all

suffered broken windows, upturned furniture and other damage. A nearby subway station had a partial roof collapse.

▶ **Excellent audio/video footages can be seen at the following link:**
http://www.dailymail.co.uk/news/article-3195477/Fifty-people-injured-enormous-blast-explosives-shipment-hits-Chinese-city.html

Report: ISIS Used Chemical Weapons Against the Kurds

Source: http://townhall.com/tipsheet/aaronbandler/2015/08/14/report-isis-used-chemical-weapons-against-the-kurds-n2039009

Aug 14 – **ISIS reportedly used chemical weapons against Kurdish forces in Iraq on Wednesday, according to The Wall Street Journal. The attack occurred in northern Iraq, where 60 Peshmerga fighters suffered injuries that appeared to be the result of chemical weapons.**

From the WS Journal:

The officials said Islamic State could have obtained the mustard agent in Syria, whose government admitted to having large quantities in 2013 when it agreed to give up its chemical-weapons arsenal. The use of mustard agent would mark an upgrade in Islamic State's battlefield capabilities, and a worrisome one given U.S. intelligence fears about hidden caches of chemical weapons in Syria, where Islamic State controls wide swaths of territory. It raises new questions about the evolving threat posed by Islamic State and the ability of U.S. allies on the ground to combat it. Frontline Kurdish, Iraqi and moderate Syrian forces say they aren't getting enough U.S. support now to counter Islamic State's conventional capabilities. Officials say these forces may need specialized equipment and training to help protect them against unconventional weapons if they become a fixture on the battlefield.

Mustard gas was among the chemical weapons banned by the United Nations in 1993. Here are some details as to how it affects its victims:

First used during World War I, the gas is effective at incapacitating its victims en masse. Sulfur mustard is generally colorless in its gaseous state, though it may have a faint yellow or green tint. It's most easily recognized by its trademark "mustardy" odor, though some compare its smell to that of garlic, horseradish or sulfur.

The gas is a vesicant, or blister-agent, causing redness and itching of the skin that results in yellow, pus-filled blisters. Because mustard gas strips away the mucous membranes of the eyes, nose and respiratory tract, victims may also experience irritation of the eyes, temporary blindness, runny nose, cough, shortness of breath and sinus pain. The digestive tract is also affected, resulting in abdominal pain, diarrhea, fever and vomiting.

Mustard gas can cause victims to be permanently blind, disfigured, or develop respiratory diseases or cancer.

A senior military U.S. official tried to downplay it by telling the Journal that mustard gas had to be used in high volumes in order for it to be deadly, and that it didn't seem like ISIS had a lot of it.

The problem with downplaying it is that ISIS could one day stockpile enough mustard gas for it to be lethal, and it could still use it to gain advantage

over our allies in battle.
It is unknown how ISIS was able to obtain the mustard gas, but it is believed that they either got it from the stockpiles of either Syrian president Bashar al-Assad or former Iraqi dictator Saddam Hussein. Wouldn't that mean Saddam... had weapons of mass destruction?
The Libyan military also gave a warning last year that ISIS had obtained chemical weapons. Deposed dictator Moammar Gadafi had 20,000 cubic tons of mustard gas, and it is believed that ISIS got hold of it and was testing it nearby Tripoli.
The Kurds have also accused ISIS of using chlorine gas back in March, which is Assad's favorite chemical weapon.
It sure would be nice if Obama had a complete strategy to combat ISIS.

Washington says use of mustard gas by Islamic State 'plausible'

Source: http://www.jewocity.com/blog/washington-says-use-of-mustard-gas-by-islamic-state-plausible/27030

Aug 16 – Hamish de Bretton-Gordon, a former commanding officer of the British army's chemical-weapons unit, said the use of mustard agent by Islamic State could give a boost to the group's "psychological warfare campaign".
She added that as a result of earlier chemical weapons use by the *Syrian* government, the US and its partners now have advanced forensic systems to analyse chemical attacks.
Speaking Tuesday at the Ronald Reagan Library in California, he said: "In Iraq's Kurdish region we have loyal friends, and fearless and skilled fighters".
Obama has *said* that the use of chemical weapons would cross a red line that could force U.S. action.
According to the Wall Street Journal, German officials *said* approximately 60 Iraqi Kurd fighters reportedly "suffered injuries to their throats consistent with a chemical attack while fighting [ISIL]".
Senior U.S. and German officials initially claimed that the chemical agent utilized by ISIS forces was mustard gas.
While the majority of Syrian chemical weapons have been destroyed, questions have abounded as to if the Assad government fully declared all their stockpiles, either intentionally or by their own failure to maintain accurate records.
U.S. intelligence agencies already believed that ISIS had mustard gas in small quantities, but do not have any evidence to suggest that the group has access to sarin or VX.
Police in the northern province of Kirkuk said Islamic State launched mortars and attacked positions of Kurdish *peshmerga* fighters in four districts southwest of Kirkuk city.
"ISIS is a group that has demonstrated time and again its willingness to stop at nothing", an anonymous official told CBS News. Officials say these forces may need specialized equipment and training to help protect them against unconventional weapons if *they* become a fixture on the battlefield.
Mustard gas is a deadly agent that was used extensively in World War I and causes blisters on the skin and lungs.
If ISIS has access to chemical weapons, this could be a devastating turning point in ongoing military actions against this group. "We continue to take these and all allegations of chemical weapons use very seriously", he said. But backed down in the face of congressional opposition and Russian President Putin's offer to broker a deal for Syria to allegedly turn over all of its chemical weapons.
In a related report by the *Inquisitr*, while ISIS' chemical weapons may be unsafe, with DAESH having access to old stockpiles of Saddam Hussein's weapons of mass destruction, another possibility is creating a functioning nuclear weapon.

EDITOR'S COMMENT: Although this is one of these review "boring" articles (same as the one before this), if you put the "marked" dots together there is something fishy here or better the beginning of something needing a good excuse to do something. The thing is to do something before they do something to us – especially to our side of the ocean…

Sodium cyanide stored at explosion site pollutes city's water

Source: http://www.homelandsecuritynewswire.com/dr20150817-sodium-cyanide-stored-at-explosion-site-pollutes-city-s-water

Aug 17 – The Chinese government says that 114 people, most of them firefighters, have been killed and ninety-five still missing after first responders were sent to the Tianjin chemical plant to fight large fires which broke out after a powerful explosion at the plant last Wednesday.

News agencies report that the quantity of sodium cyanide stored at the site were seventy times the permitted quantity.

The BBC reports that hundreds of rescue workers wearing gas masks and protective suits were working frantically to clear the area before the weather changes, for fear that gusts of wind could spread the toxins to nearby urban areas and that rain might cause a dangerous reaction with chemicals stored at the sprawling site.

Chinese officials say they found 700 tons of sodium cyanide at two locations at the site. Some reports in the Chinese media said that Rui Hai International Logistics, the company which owned the warehouse where the first explosion occurred, may have been illegally transporting chemicals.

The Chinese premier, Li Keqiang, visited the site on Sunday, and was greeted by angry protesters from neighboring housing complex.

Some of the large apartment buildings evacuated after the blast are located less than 800 meters from the plant's large storage facilities, in violation of Chinese law which stipulates that warehouses storing large quantities of chemicals are not permitted to be that close to a residential area. "From a legal perspective it's unreasonable that dangerous chemicals would be so close," one resident told AP.

The *Guardian* reports that Chinese public health officials said on Monday that the health risks of last week's explosion are spreading, reporting that alarming levels of sodium cyanide have been found at wastewater monitoring stations in and around the city of Tianjin.

At a press conference on Monday morning, Bao Jingling, the chief engineer from Tianjin's environmental protection bureau, said excessive levels of the toxic chemical had been detected in surface wastewater at the blast site. The highest levels detected were twenty-seven times acceptable limits.

Exposure to sodium cyanide — a white crystalline or granular powder with a variety of industrial uses — can be "rapidly fatal," according to the U.S. Centers for Disease Control and Prevention (CDC).

Worries grow about rain-induced toxic chemical clouds from destroyed Chinese facility

Source: http://www.homelandsecuritynewswire.com/dr20150818-worries-grow-about-raininduced-toxic-chemical-clouds-from-destroyed-chinese-facility

Aug 18 – China's state-run news agency has reported that the warehouse where last Wednesday's powerful explosions in the Chinese city of Tianjin originated, received a license to handle hazardous chemicals only two months before the disaster.

Xinhua reported today (Tuesday) that between October 2014,when large quantities of hazardous chemical were moved into the warehouse, and June 2015, Tianjin Dongjiang Port Rui Hai International Logistics, the company which owns the warehouse, did not have the required legal permits to handle such dangerous materials.

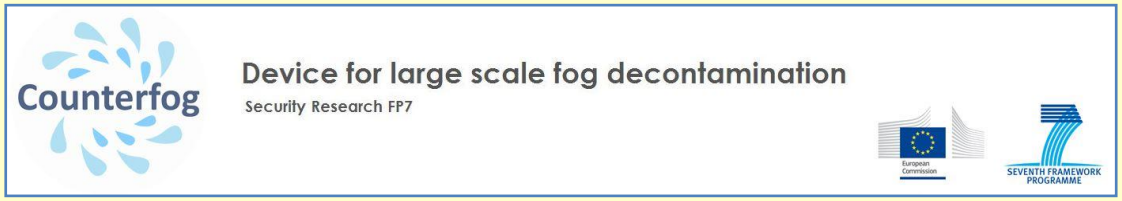
Chinese media reported that the president and vice-chairman of the company were among the ten Rui Hai employees who were detained by state authorities as early as last Thursday.

The reports said that Rui Hai company president Yu Xuewei and vice-chairman Dong Shexuan were placed "under control" on the afternoon after the blasts. Local newspaper *Caijing* reports that four of the Rui Hai employees are in hospital and six

others are at Tianjin No. 1 Detention Center.
Earlier today, former deputy mayor of Tianjin and current director of the State Administration of Work Safety – China's equivalent of the U.S. Occupational Safety and Health Administration (OSHA) — was also placed under investigation.
A statement posted on the government's anti-corruption Web site said that Yang Dongliang, who was vice-mayor of Tianjin between 2009 and 2012, is suspected of "serious violations of discipline and law."
The BBC reports that the city of Tianjin, whose water supplies have already been found to be contaminated by the toxic sodium cyanide released in the explosion, now faces other risks, as heavy rain began to fall on the city – and the site of the explosion – Monday night. Chemical engineers said there is a danger that the rain might set off more chemical reactions, creating clouds of toxic gas which would waft over residential areas – some of them less than a mile from the destroyed chemical facility – and hobble rescue and recovery work.
Chinese TV showed residents of neighborhoods close to the chemical plant, wearing gas masks and protective gear and accompanied by armed policemen, returning to their homes to pick up belongings before being evacuated to evacuation centers set up by the government.
Engineers are especially worried about the rain reacting with the more than 700 tons of sodium cyanide still stored at two locations on the site.
Earlier today, health and safety officials announced that more toxic and volatile chemicals were discovered by first responders sent to investigate the partially destroyed facility.
Niu Yuegang, deputy director at Tianjin's fire department, said that more than forty different types of chemicals have now been discovered at the blast site, including 700 tons of sodium cyanide, 800 tons of ammonium nitrate, and 500 tons of potassium nitrate.
The BBC notes that footage from drone flying over the site and broadcast on state TV channel CCTV showed a huge crater where the explosion occurred. The crater has been filled with water since Friday.
Yesterday, Tianjin's vice-mayor He Shushan confirmed that sodium cyanide had been found as far as one kilometer from the site of the explosion.

COUNTERFOG

Source: http://www.counterfog.eu/



COUNTERFOG will be a new, rapid response system for collapsing all kinds of dispersed agents (smoke, fog, spores, etc.) by using a fog made of a solution that could eventually contain any kind of neutralizing component. It will be a permanent installation in large public buildings like railway stations but also a portable COUNTERFOG for use outdoors, used to counteract a CBRN attack in its earliest stages, greatly reducing the number of potential fatalities. In fact, COUNTERFOG will use the same "weapon" as a CBRN attack: a dispersed state with a large surface/volume ratio. It will penetrate all the intricate holes CBRN agents are able to infiltrate. As it needs a minimum quantity of decontaminant, it is intrinsically an environmental-friendly and electric-compatible system. It would have three benefits: Firstly, to neutralize and collapse the CBRN cloud, secondly, to rapidly decontaminate all the affected people in that area, and finally, to rapidly decontaminate any equipment and the facility itself.
Because of the large-scale fogging capacity of up to three components, choice of pressures and capability to simultaneously emulsify liquids and disperse solid particles and an enormous surface/volume ratio, it will be possible to counteract a CBRN cloud in large, open areas. Nozzle, sensor and solid mesoporous particles will be technological keys.
A Fog Dynamic Laboratory will be designed, built and used in the project to test the ability such a system has to condense different kinds of smokes, clouds or fogs and its ability to

simultaneously neutralize different kinds of CBRN agents and combined incidents (fire & CBRN). Full scale tests will be also performed. Eventually, the real applicability, side effects and compatibility with conventional fire protection facilities will also investigated, a detailed marketing plan prepared and a diffusion campaign implemented. Furthermore, a spin-off company will be set up in order to exploit the results most effectively.

Bizarre conspiracy theories have been circulating since the Tianjin disaster

Source: http://www.dailymail.co.uk/news/article-3202417/Did-U-S-bomb-China-using-weapon-launched-space-explosions-covering-plot-kill-president-bizarre-Tianjin-disaster-conspiracy-theories-revealed.html

Did the U.S. fire a weapon from space at Tianjin, disguising the attack that killed more than 100 people as accidental explosions? Or was it an attempt to assassinate Chinese President Xi Jinping?

These are just two of the bizarre conspiracy theories circulating online in the wake of the twin blasts which set off a giant fireball and devastated a vast area of the port.

Other theorists claim one of China's supercomputers - which is used by the country's military and in space exploration, and is located only a mile away - was the target.

U.S. space weapon

Natural News, a website which describes itself

as America's truth bureau and claims to have more than seven million readers, claims China and America are at war and the explosions were carried out by a Pentagon space weapon.

It claims the attack was an act of 'kinetic retaliation' by the Pentagon in response to the devaluation of the Yuan.

The site tells readers that the U.S. used a secret space-based kinetic weapon called the **"Rod of God"** that can be dropped from 'high orbit to strike almost any land-based target'.

Assassination attempt

Rumours have been circulating on Chinese language websites that the real target was President Xi Jinping, who was due to travel through the area with top officials after a secret meeting.

An insider told NTDTV.com: 'The original plan was to wait until the Chinese communist meeting in Beidaihe to finish so when the high ranking officials returned, there will be an explosion on the railway between Tianjin and Heibei.'

The officials are said to have changed their plans at the last minute, and the killers instead decided to bomb the warehouse to get rid of any evidence.

An unnamed analyst told the website that if this was an assassination plot, the President would be the prime target.

Supercomputer

Chinese **supercomputer Tianhe-1A** was shut down as a result of the explosions, the official Xinhua news agency said, citing officials

at the National Supercomputing Centre in Binhai.
The machine itself was intact after the explosion and running normally, Xinhua said, but the building housing it was damaged and it was switched off due to security concerns.
Some believe this important piece of equipment may have been the real target.
Some people have likened it to 9/11 and others claim Russia is responsible for the disaster.
China has warned of the danger of conspiracy theories developing as a result of its own secretive local authorities following the disaster.

Cyanide Levels In Tianjin Water At 356 Times The Safe Limit After Blast

Source: http://www.buzzfeed.com/franciswhittaker/cyanide-levels-in-tianjin-water-at-356-times-the-safe-limit#.wr5PbBy5W

A pool of unknown liquid is seen near the site of the Tianjin blast, Aug. 15. China Stringer Network / Reuters
The port city's environmental protection bureau said the deadly chemical was detected at 25 water monitoring positions within the restricted zone near the blast site on Wednesday.
"An excessive level of cyanide was detected in eight locations with the highest reaching 356 times" the allowed limit, the bureau said.
Of the 16 monitoring points located outside the alert area, cyanide was detected at six, below the normal limit.
Authorities had previously put estimates on the amount of cyanide at the site at thousands of tons, and earlier tests had shown the level at 28 times the permitted limit. Authorities have given no explanation as to why the levels have suddenly spiked, AFP reported.

Progeny™ ResQ™ Chemical Detection System

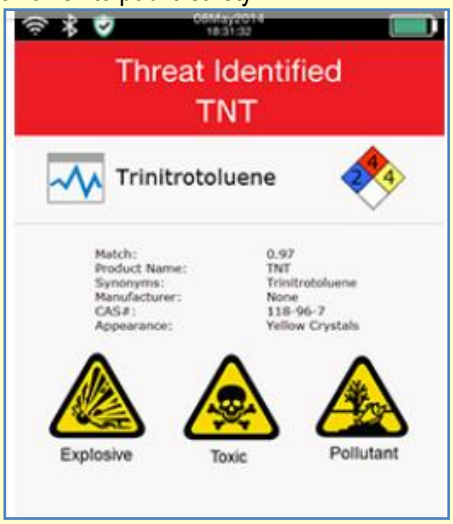
Source: http://www.rigakuraman.com/products/progeny-resq-chemical-detection-system/

Progeny™ ResQ™ Chemical Detection System provides emergency responders, law enforcement agencies and the military with the industry's most comprehensive chemical detection in a fast and simple handheld form.
Faced with increasingly sophisticated chemical threats and global drug trafficking, Progeny ResQ enables users to detect, identify and respond to these threats with confidence at the touch of a button:

- Detect **explosive threats** quickly and accurately while

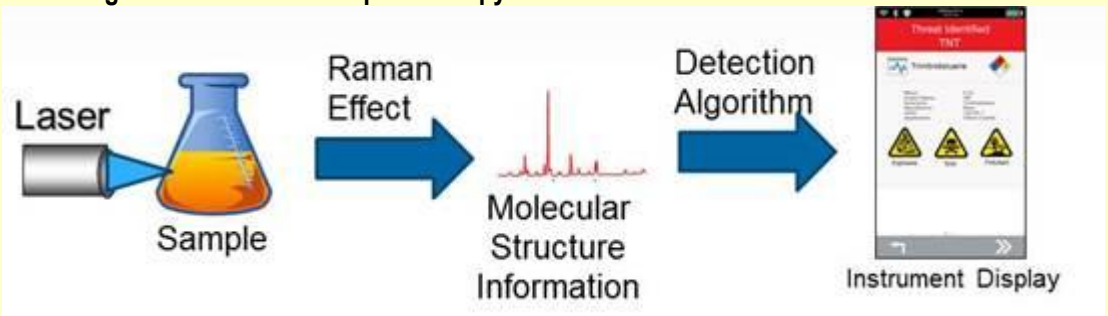
wearing M3-type protective suits in harsh environments

- Identify a wide range of **narcotics and illegal drugs** removing any uncertainty over results
- Respond to suspicious **hazardous materials** that pose a toxic risk to public safety



Progeny ResQ provides immediate and comprehensive unknown substance detection. Users can now analyze colored materials or substances found in packaging or containers. Results are provided within seconds at the touch of a button and the simple Threat/No Threat readings mean that there is no uncertainty. Display tags also indicate the severity of the risk posed by the substance as well as the NFPA rating.
Suitable for use in rugged environments, Progeny ResQ is a MIL STD 810G tested tool and has a standard library of over 12,000 common materials. As part of our reachback support program Progeny ResQ is backed by our global network of sales and service support partners to ensure we are there when assistance is needed.

The new generation of Raman spectroscopy



Recent advances in instrumentation have led to the successful miniaturization of Raman spectroscopy and the development of portable and handheld Raman for fast sample analysis at the point of need. Raman spectroscopy is an efficient and cost-effective technique for raw material identification, product authentication and is now recognized by the U.S. Pharmacopoeia and the European Pharmacopeia for raw material identification. In Raman spectroscopy a laser is focused at the sample and the light scattered by the sample is measured to detect changes in chemical structure and physical characteristics of a sample; the recent introduction of miniaturized 1064nm excitation lasers has enabled users to analyze a more comprehensive range of materials than ever before, successfully overcoming issues of fluorescence interference that affect traditional excitation wavelengths such as 532 and 785 nm.

The new generation of handheld Raman instruments from Rigaku Raman is designed to be customizable for seamless integration into any workflow, easy to use, increase inspection rates and comply with increasingly stringent industry regulations.
Raman spectroscopy is an established vibrational technique that works by first exciting a sample with a laser. A small portion of this light undergoes "inelastic scatter" (also referred to as the Raman scatter or the Raman effect). The return signal is received and read by a detector, resulting in what is referred to as a Raman spectrum. The Raman spectrum contains a series of peaks that relate to features in the sample's molecular structure. Each compound's Raman spectrum is unique, and serves as a "chemical fingerprint" that can be used to identify an unknown compound, or a mixture of compounds. Onboard algorithms are used to match the sample's spectral constituents to an extensive Raman spectral database to provide a positive identification of the sample. A cartoon schematic of this process is shown in below.

AristaTek Releases Brief on Explosion, Fireball and Toxic Plume Threats from Acrylonitrile

Source: http://www.hstoday.us/single-article/aristatek-releases-brief-on-explosion-fireball-and-toxic-plume-threats-from-acrylonitrile/cff8d6fee5919e835228fc557dfe2634.html

On July 2, 2015, a train derailment and fire shortly after midnight near Maryville, Tennessee caused more than 5,000 people to have to be evacuated because one of the derailed railcars carried flammable acrylonitrile – also known as vinyl cyanide, a confirmed animal carcinogen and probable human carcinogen – had caught fire and was releasing toxic black smoke including hydrogen cyanide. A mandatory evacuation was ordered for everyone within a 1.5 mile radius of the fire, which was finally extinguished almost 24 hours later.

The train had 57 railcars, of which 27 carried hazardous materials. Ten first responders and some residents were treated for irritation due to smoke inhalation, headaches, dizziness and nausea, Twenty-five people had to be hospitalized. The cause of the derailment is unclear, but the rail car carrying the acrylonitrile had a broken axel which apparently punctured the tank.
On May 4, 2013, a train transporting acrylonitrile, butadiene and triethylaluminum derailed at Wetteren, Belgium, resulting in several rail cars carrying acrylonitrile exploding with fire. More than 2,000 people were evacuated. Responders concentrated on cooling intact railcars with water. The acrylonitrile fire produced a toxic cloud containing hydrogen cyanide. One nearby resident died and two other residents experienced life threatening injuries due to inhalation. about 200 people sought treatment at surrounding hospitals.

Aristatek, Inc, a leading provider of hazardous materials planning and response solutions, has prepared a written brief detailing the consequences of vapor cloud explosions, fireballs and toxic plumes for various quantities of acrylonitrile which the company will make available at no cost to hazmat teams, fire departments/fire marshals, sheriffs, and other first responders and emergency response officials and public safety/health professionals. The document is available to those that visit the Aristatek's website at www.aristatek.com.

Aristatek's *Acrylonitrile Brief* was prepared to help with planning and response to accidents involving acrylonitrile, a flammable liquid used in the manufacture of resins and plastics.

"Acrylonitrile is probably not a substance on the minds of many emergency planners and responders," stated Bruce King, CEO of AristaTek, "However, after the recent accident in Tennessee involving the substance, questions started coming in from our customers about this substance and they wanted more information."

According to Aristatek, "Acrylonitrile presents several hazards when it is spilled in the environment and the brief summarizes these hazards in useful tables. The first hazards happen when spilled acrylonitrile vaporizes, contacts an ignition source, explodes and also rapidly burns in a fireball. The resulting hazards are an explosion whose blast is measured in overpressure, and the fireball which has a burn hazard for those standing too close. The other hazard is an inhalation hazard associated with an evaporating pool of spilled acrylonitrile. The tables [in the technical brief] offer safe-standoff distances for various quantities of spilled acrylonitrile for all three hazards."

"We prepared the tables of hazards using our flagship PEAC-WMD software," King said, saying, "We are proud to continue to provide free resources to the emergency planners and responders tasked with protecting our communities."

Exposure symptoms are similar to cyanide poisoning. Inhalation or ingestion may cause dizziness, headache, nausea, vomiting, weakness tremor and shortness of breath. Ingestion causes abdominal pain, irritation of eyes, throat and respiratory tract. Prolonged skin contact can result in blisters and systemic toxicity due to absorption through skin. The affected area may resemble a second degree thermal burn. There's also the possibility of liver and kidney damage. Air concentrations irritating to adults may be fatal to children.

Fighting bioterrorism – Europe works on master plan

Source: http://horizon-magazine.eu/article/bioterrorism-europe-works-master-plan_en.html

July 23 – **Specialist laboratories capable of detecting biological weapons are coming together to try to work on a master plan so that Europe is ready in the case of a bioterrorist attack.**

Bioterrorism is the intentional release of harmful biological agents such as bacteria, viruses, or toxins. To protect citizens and national infrastructure, the race is on to improve Europe's preparedness.

'We are at a critical moment,' said Dr Brigitte Dorner, coordinator of the EQuATox research project, which is working to network Europe's toxin laboratories together. 'In light of the attempted release of biological toxins in the past we have to make sure that we are well prepared.'

Technology to test for harmful agents is already being used, but laboratories currently use different testing methods, making any comparison of accuracy and sensitivity nearly impossible.

EQuATox, funded by the EU, has been tasked with developing research and best practices by establishing a network of laboratories among EU and associated countries. The project has so far linked 35 expert laboratories from 20 countries.

'With the information obtained in large international proficiency tests, we now have for the first time a clear picture of where we stand in terms of biotoxin detection; this serves as starting point for further development and improvement,' said Dr Dorner.

Response

If a bioterrorism attack was to occur, two information exchange systems are already in place within Europe. The **Early Warning and Response System** and the **Rapid Alert System** help connect the European Commission and national public health authorities in order to implement quick measures to control an outbreak.

While these systems support management actions, such as containment and distribution of medicine, dedicated laboratory networks are necessary because they prevent potential biothreats by linking experts specialised in detection and identification.

In terms of biological toxins, **EQuATox** has identified several expert laboratories which are well prepared for a potential incident and, in the case of an outbreak, would be able to support other countries.

'This is a clear benefit of the project because incidents of biological toxins being intentionally released have occurred, like the ricin letters sent to Barack Obama in 2013,' said Dr Dorner.

Ricin is a poison produced by the *Ricinus communis* plant to protect itself from insect pests. It is one of the most powerful plant toxins known today. Due to its toxicity, the poison has a history of military, criminal and terroristic use.

Common ground

There are several tests to detect ricin, including analysing samples of suspicious materials and tests on human body fluids. But now, EQuATox's approach to detecting ricin, along with other biological toxins, is helping establish a European common ground in bioterrorism prevention.

Along with bioterrorism, the potential for terrorist attacks against agriculture, also known as agroterrorism, is increasingly recognised as a threat to international security.

'Those affected will not be just the farmers and input providers, but also shippers, merchants, food retailers and the restaurant trade. It could also affect the tourism and transport sector,' said Dr Paola Colla of the University of Turin, Italy, who is project manager at **PLANTFOODSEC**, a research project identifying agroterroism threats.

The PLANTFOODSEC project found that current EU capabilities to detect and respond to agroterrorism, or biocriminal acts, are very modest and divided among too many unrelated organisations.

In response, the project is establishing a virtual plant and food biosecurity centre to enhance international preparedness against agroterrorism. It focuses on biological threats that have the capacity to affect and damage agriculture, infect plants, and ultimately affect food and feed at any stage in the supply chain.
'We have 600 pathogens which we analysed in terms of their economic effect on specific crops and potential threat level,' said Dr Colla.

Ricin seeds produce a deadly poison which has been used in military and terror attacks. Image credit: EQuATox

PLANTFOODSEC also has 13 partners located in eight different countries including the United States, Turkey, and Israel. The project has a unit working on hazard analysis, doing trials on certain pests and pathogens to determine how to tackle outbreaks. There is also a unit that visits farms to provide direct advice to farmers and to collect soil and plant samples as new diseases can arrive every year.
'Agroterrorism is seen as a genuine threat by intelligence services because it's an effective means for a terrorists to generate fear,' said Dr Colla. 'If something happens in Europe, then we need to be prepared in order to avoid something like the *E. coli* outbreak in Germany.'
The 2011 German *E. coli* outbreak highlighted the urgent need for rapid and reliable analytical methods. At the beginning, the source of the pathogen was thought to have come from Spanish cucumbers, but it was in fact from fenugreek seeds imported from Egypt and used in salads in the EU.
The extended process resulted in entire cucumber crops being destroyed and demand plummeting across Europe, which in turn caused farmers to suffer. The total economic losses were estimated between EUR 0.5 billion and EUR 3.2 billion.
Incidents such as these provide timely scientific inputs to enable a response to potential agroterrorism threats. This research can then be used to develop preventive crisis management to different intentional or unintentional outbreaks.
'We publish a lot of research on plant pests, epidemiology and diagnostics,' said Dr Colla. 'These results can be used not just in terms of bioterrorism, but also for unintentional threats because we now have protocols to eradicate particular pathogens.'

EQuATox

Source: http://www.equatox.eu/

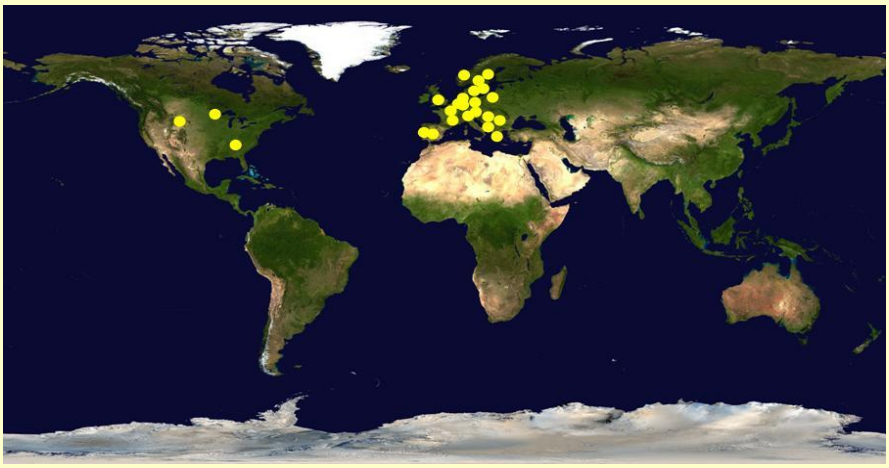
EQuATox represents a network of nine expert laboratories organizing four large EU-wide proficiency tests for the detection of biological toxins which will be conducted in 32 laboratories from 20 countries worldwide.

EQuATox project

The features of biological toxins like ricin, botulinum toxins, staphylococcal enterotoxins and saxitoxin place them at the interface of classical biological and chemical agents. They could be used for terrorist attacks on the basis of their availability, ease of preparation, high toxicity and/or lack of medical countermeasures. Some of the toxins are considered among the most relevant agents in the field of bioterrorism, for which the current preparedness within

European countries should be further improved to limit casualties in the case of an intentional release.

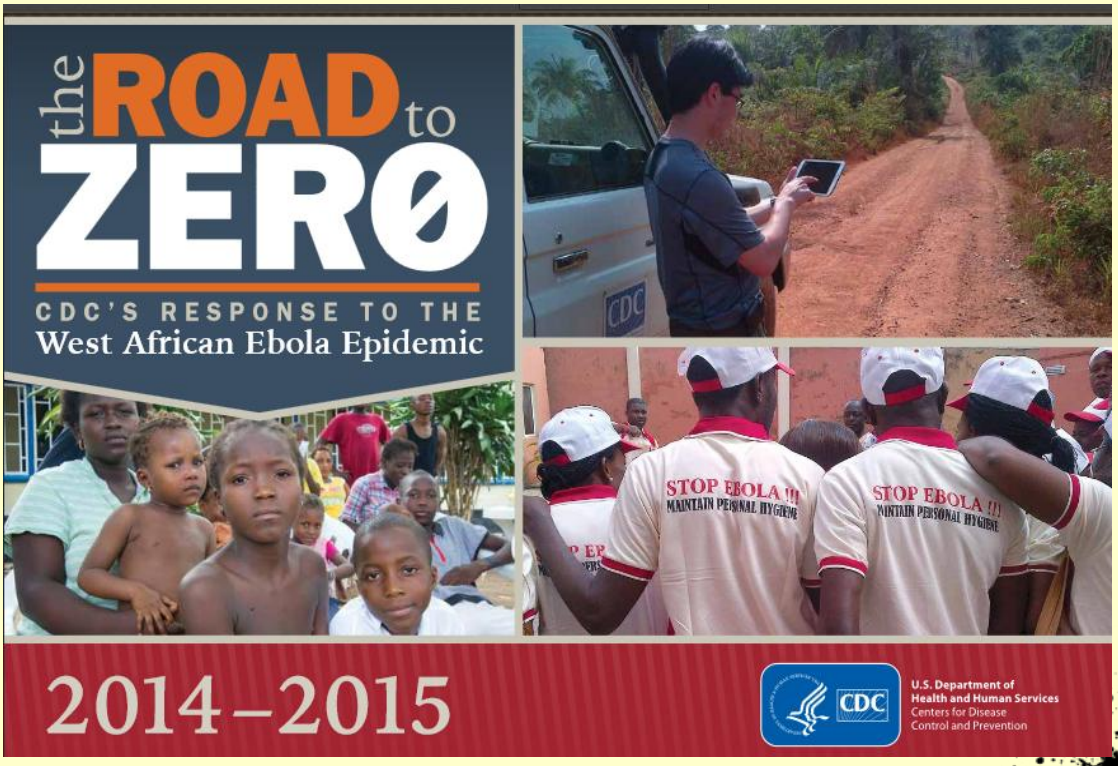
While different technologies for toxin detection and analysis have been established, hardly any universally agreed "gold standards" are available. Generally, proficiency tests and certified reference materials for the mentioned toxins are lacking. In this context, recent results of the first international proficiency test on the detection of one of the toxins provided highly relevant insights and a basis for further development.

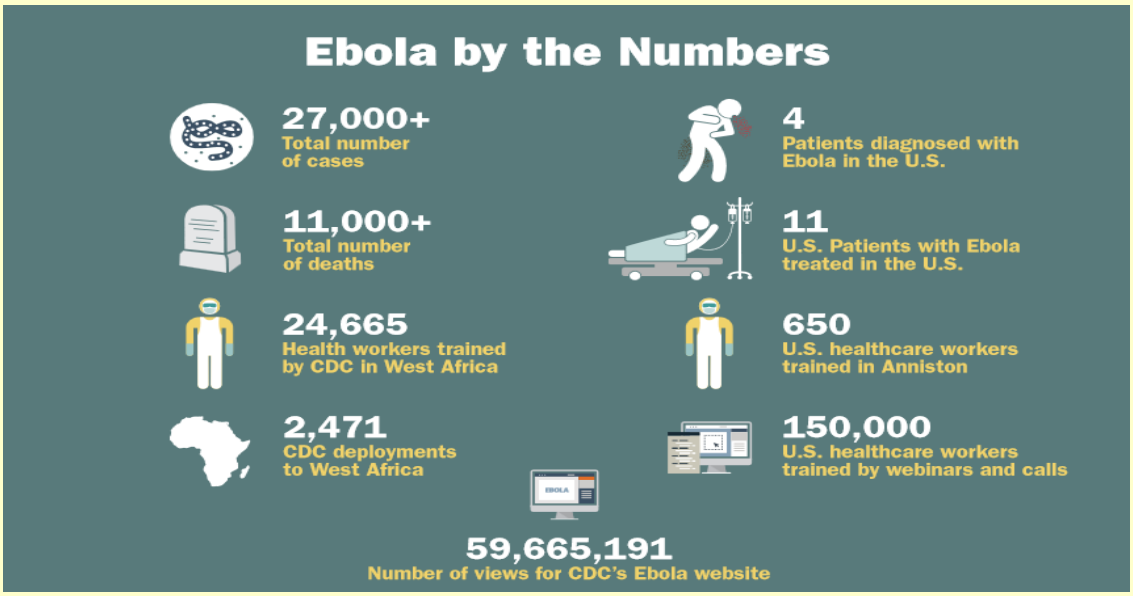


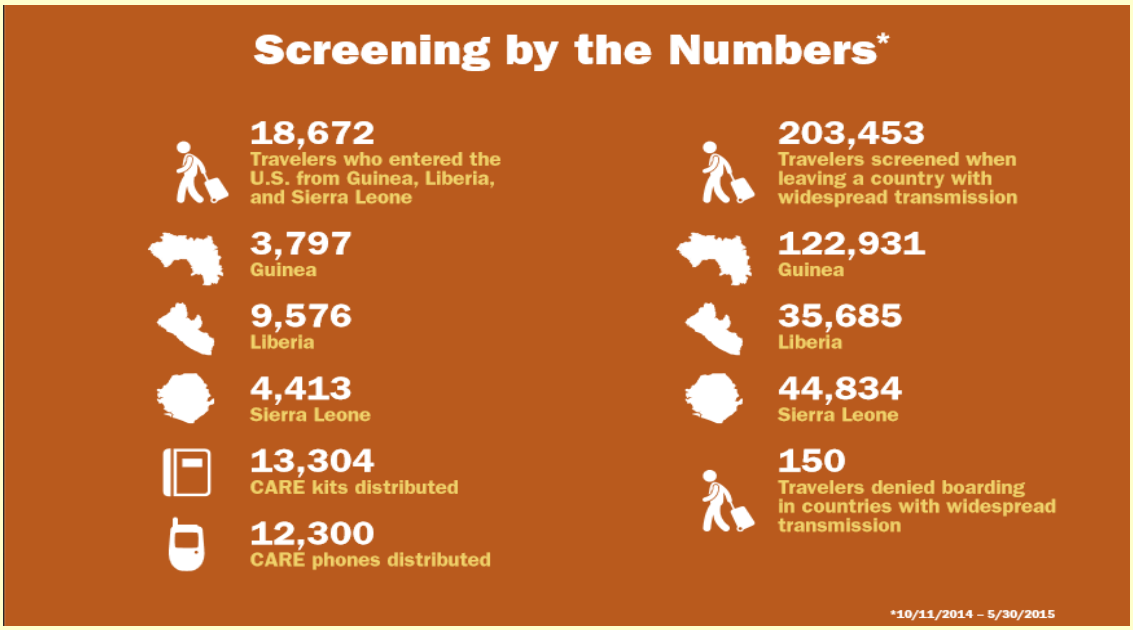
EQuATox will address these issues by creating a network of expert laboratories among EU-27 and associated countries, focusing on the detection of biological toxins and integrating experts from the security, verification, health and food sector.
Four large EU-wide proficiency tests on the mentioned toxins will be organized with 32 laboratories from 20 countries worldwide so far being interested in participating and joining the network. The task will include generation and characterization of toxin reference materials which in the future can be further developed into ISO-compliant certified reference materials.
Based on the status quo of toxin detection described in EQuATox, good practices and critical gaps in detection technology will be identified as foundation to harmonize and standardize detection capabilities. Furthermore, recommendations will be given on how to close these gaps and to minimize potential health and security risks for European citizens.

PHOTOBOOK: The road to Zero

Source: http://www.cdc.gov/about/pdf/ebola/ebola-photobook-070915.pdf







Tularemia strikes North Dakota: 3 human cases, Dakota Zoo primates

Source: http://outbreaknewstoday.com/tularemia-strikes-north-dakota-3-human-cases-dakota-zoo-primates-31540/

July 25 – North Dakota health and agriculture officials are reporting several cases of the bacterial, zoonotic disease, tularemia, in both humans and animals in at least four counties.

To date, three human cases have been reported–confirmed cases in LaMoure and Burleigh County and a suspect, but likely case in Stark County. The health status of the three individuals is not known.

In addition, two North Dakota zoos have reported tularemia in animals. A squirrel from the Roosevelt Zoo in Minot tested positive, while two primates from the Dakota Zoo in Bismarck contracted the disease.

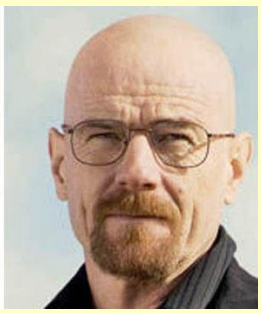
Zoo officials are taking precautions to protect their animals, staff and visitors from the disease. Visiting a zoo does not pose an increased risk to the general public. However, people are advised to follow guidelines against touching animals that are posted by the zoos, and to avoid direct contact with wild animals, such as rabbits and rodents, which are known carriers of tularemia.

Reported tularemia cases – United States, 2004-2013
Source: http://www.cdc.gov/tularemia/statistics/state.html

Bad inspired computer geek bought enough deadly poison to kill 1,400 people

Source: http://www.express.co.uk/news/uk/594708/ricin-computer-geek-breaking-bad-poison

July 29 – An Old Bailey jury deliberated for around five and a half hours to convict software programmer Mohammed Ali, 31, of attempting to possess a chemical weapon between January 10 and February 12.



Under the username Weirdos 0000, Ali struck a deal with a supplier on the internet black market to buy 500mg of powder for 500 US dollars - enough to kill 1,400 people.

Ali was unaware that his source Psychochem was in fact an FBI agent who tipped off police in England and substituted the consignment of ricin for harmless powder.

After the father of two took delivery of a toy car with five vials hidden in the battery compartment, police swooped to arrest him at his home in Prescot Road, Liverpool.

Ricin toy car

Under ultraviolet light, Ali's face lit up showing that he had handled the package which had been specially treated with a marker substance.

Computer analysis showed that Ali first began trawling the internet for information on poisons such as abrin, ricin and cyanide in October last year.

The court heard Ali approached the undercover agent in January with a private message: "Hi, would you be able to make me some ricin and send it to the UK?"

In a series of encrypted chats they discussed the price of a lethal dose, discounts for bulk orders and repeat purchases, and ricin's "shelf life", jurors were told.

At one point Ali asked: "How do I test this ricin?" and received the instruction: "You must test it on a rodent."

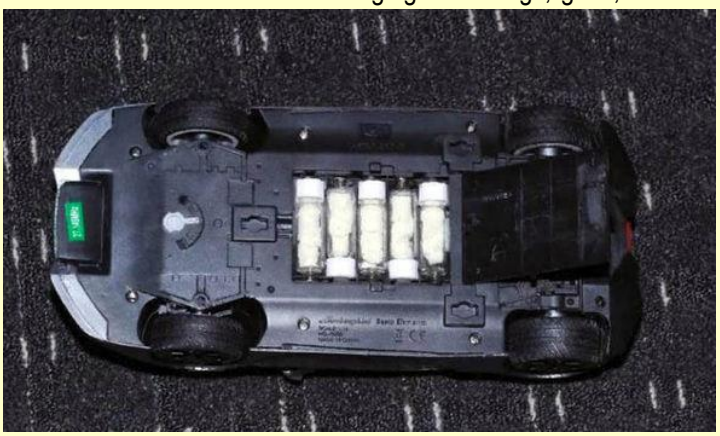
Records showed that on February 4 - days before the delivery - he made a payment of 2.1849 Bitcoins, the online currency.

Around this time, Ali had made a to-do list on his computer which included the entries "paid ricin guy" and "get pet to murder", the court heard.

He had also made a series of internet searches for chinchillas, animal rescue centres, rabbits and "pocket-sized pets".

In his defence, Ali told jurors that he was just "curious" and wanted to test the boundaries of the Dark Web unaware that ricin was illegal.

He told the jury: "I was interested in the Dark Net and ricin. I just wanted to know what the fuss was about.
"I wanted to know can you actually get anything from these sites. So I go on one of these websites - Evolution.
"I found lots of different items ranging from drugs, guns, other illegal items, and because I had been watching Breaking Bad TV show I just had ricin in my mind."



He said that he abandoned his idea to test out the poison on a small animal and had resolved to flush it down the loo instead.
His defence team suggested this excused his behaviour in law because Ali wanted ricin for a "peaceful purpose" and a psychologist told jurors he exhibited signs of Asperger's syndrome.
But prosecutor Sally Howes QC said Ali was a "chancer" who lied to police about having ricin when he was arrested in the hope that he would "get away with it".
And everything about his conduct pointed to a man who carefully and meticulously researched and carried out a plan to buy ricin.

Ms Howes told the jury that ricin was the "perfect poison" because it killed without leaving a trace in the body. Ali had ordered enough to kill up to 1,400 people, although his potential targets were not known.
Before hatching his ricin plan, Ali had been involved in various illegal money-making scams which included stealing 250,000 from PalPal through a loophole in the system and "mining" for Bitcoins.
Mr Justice Saunders said: "There is no evidence that he was planning any sort of terrorist attack. There is also no evidence that he had in mind any specific victims for ricin. I do not accept he was going to dispose of it. I'm satisfied it would have remained in his possession in some way and that is the basis on which I propose to sentence."
Ali slumped in the dock with his head in his hands after hearing the verdict.
The judge ordered a psychiatric report as he adjourned sentencing to September 18.
The maximum sentence for the offence is life imprisonment.

Cops trawl hotel records in hunt for supergrass assassin

Source: http://www.telegraph.co.uk/news/uknews/crime/11762935/Cops-trawl-hotel-records-in-hunt-for-supergrass-assassin.html

The prestigious Bristol hotel in Paris, where Alexander Perepilichnyy is believed to have stayed. Police think he may have been poisoned during his stay in the French capital

July 25 – Police are combing the guest records of one of the world's most famous and expensive hotels in search of the alleged assassin who poisoned a Russian financier.

Alexander Perepilichnyy, a businessman who had turned supergrass, died at his home in Surrey on the day he returned from a secretive trip to Paris.

British detectives had ruled out foul play but – to their embarrassment – French investigators have taken up the case. They believe Mr Perepilichnyy, 44, may have been poisoned in Paris up to 48 hours before his death.

Alexander Perepilichnyy, inset, died shortly after returning to his Surrey mansion (INS)

A post mortem examination found traces of Gelsemium elegans, a slow-acting poisonous plant said to be favoured by Russian and Chinese assassins, in his stomach.

Police have now established Mr Perepilichnyy checked into the prestigious Bristol Hotel in Paris for three nights before his death.

Sources have told The Telegraph that police are now examining the Bristol's records to see who else was staying there when Mr Perepilichnyy was in Paris. He died on

November 10, 2012, at his rented home on the high security St George's Hill estate in Weybridge, Surrey.
It is understood French officials have also made a request to British police to secure his mobile phone records for the period up to and during his stay in the French capital.
Mr Perepilichnyy, a father of two, came to the UK in 2010, apparently in fear of his life, and brought with him a series of damning documents that exposed a massive fraud perpetrated in Moscow.
On the day of his death, he had complained to his wife he was feeling ill after arriving at his home and had gone for a jog to shake off the effects. He then collapsed and died.
Despite serious concerns about his death, Surrey police ruled out murder in June 2013, despite not being able to determine the cause of death.
The examination showing traces of Gelsemium was only found by a specialist plant expert at Kew Gardens, carrying out tests on behalf of Mr Perepeilichnyy's life insurance company. An inquest in May was postponed and is due to resume in September.
Concerns over Mr Perepeilichnyy's death were first raised by Bill Browder, an Anglo-American financier. Hermitage Capital, which Mr Browder founded and which now operates from London, had its Moscow branch raided by police in 2007 and it is alleged $230 million worth (£148 million) of assets was stolen from the fund. Sergei Magnitsky, a lawyer working for Mr Browder who exposed corruption at senior levels, was subsequently arrested in Moscow and beaten to death in a prison cell in November 2009.
Eight months later, Mr Perepilichnyy approached Mr Browder's lawyers with documents that claimed tax officials in Moscow had gone on a multi-million-pound spending spree on kickbacks earned from the Hermitage fraud.
Mr Browder told The Telegraph: "It beggars belief that the British police continue to refuse to reopen the investigation, given the evidence he may have been poisoned and given that French police have now opened their own murder investigation. What are they waiting for?"
It is understood Mr Perepeilichnyy booked two hotel rooms in Paris; one at the Bristol and another at an as yet unknown three-star hotel. One possibility is he stayed at the cheaper hotel and paid for a representative of the Russian gang to stay at the Bristol in an attempt to broker a peace deal that would keep the gang from going after him.
Surrey police declined to comment.

Gelsemium is a plant. Some people call it "woodbine", which can be confusing because American ivy and honeysuckle are also known as "woodbine." If you want gelsemium, look for its scientific name, which is "Gelsemium sempervirens", "Gelsemium nitidum", or "Bignonia sempervirens".

Despite serious safety concerns, the root and underground stem (rhizome) of gelsemium are used to make medicine. Gelsemium is used as a painkiller for migraine headaches and for face pain caused by certain facial nerves (trigeminal neuralgia). It is also used for asthma and other breathing problems.
Gelsemium is UNSAFE. All parts of the plant are very poisonous. Even small amounts can cause serious toxicity, including death. Symptoms of poisoning include headache, vision problems, difficulty swallowing, dizziness, muscle problems, seizures, breathing problems, slowing of the heart, and others.
Gelsemium comes in 3 flowering varieties -- 2 native to North America and 1 to China. All 3 can be deadly. The most toxic variety of gelsemium, "Gelsemium elegans", only grows in Asia, and is also known as "heartbreak grass".
Initial symptoms from an overdose would typically include dizziness, nausea, blurred vision, and convulsions. At larger doses, it causes paralysis of the spinal cord, leading to almost complete loss of muscular power and eventually asphyxia.
Previous cases of poisoning with "heartbreak grass" have revealed telltale traces of gelsemium alkaloids in the blood and urine of the victim. The appearance of these

chemicals in the latest toxicology report give weight to the theory that Alexander Perepilichnyy may have been the victim of foul play.
The toxic agent of gelsemium are 2 alkaloids (gelseminine and gelsemine) that exert analgesic and anti-inflammatory effects. At a lethal dose, the alkaloids produce violent clonic convulsions that lead to respiratory failure. Since the convulsions could be prevented by pentobarbital or diazepam and potentiated by reserpine, it is postulated that the alkaloids act centrally against GABA [gamma-aminobutyric acid] action.
The alkaloid is a spinal convulsant, acting much the same way as strychnine. The drug is a powerful spinal depressant; its most marked action being on the anterior cornus of grey matter in the spinal cord.
The drug kills by its action on the respiratory centre of the medulla oblongata. Shortly after the administration of even a moderate dose, the respiration is slowed and is ultimately arrested, this being the cause of death.
Poisonous doses of gelsemium produce a sensation of languor, relaxation, and muscular weakness, which may be followed by paralysis if the dose is sufficiently large. The face becomes anxious, the temperature subnormal, the skin cold and clammy, and the pulse rapid and feeble. Dropping of the upper eyelid and lower jaw, internal squint, double vision, and dilatation of the pupil are prominent symptoms. The respiration becomes slow and feeble, shallow and irregular, and death occurs from centric respiratory failure, the heart stopping almost simultaneously. Consciousness is usually preserved until late in the poisoning, but may be lost soon after the ingestion of a fatal dose. The effects usually begin in half an hour, but sometimes almost immediately. **Death has occurred at periods varying from 1 to 7.5 hours.**
The feelings described in the paragraph above may be why the victim felt like he was ill, but why he would go for a run, when feeling ill, seems illogical. In fact it may have hastened his death.
The treatment of gelsemium poisoning consists in the prompt evacuation of the stomach by an emetic, if the patient's condition permits; secondly, and equally important, artificial respiration, aided by the early administration, subcutaneously, of ammonia, strychnine, atropine, or digitalis.
An allied species, "G. elegans" (Benth.) of Upper Burma, is used in China as a criminal poison and its effects are very rapid.

Source: http://www.promedmail.org

WHO: Trials show new Ebola vaccine is 'highly effective'

Source: http://edition.cnn.com/2015/07/31/health/guinea-ebola-vaccine/index.html

July 31 – A newly developed vaccine against the deadly Ebola virus is "highly effective" and could help prevent its spread in the current and future outbreaks, the World Health Organization said Friday.
Trials of the single-dose VSV-EBOV vaccine began in March in Guinea -- one of three West African nations at the center of the recent outbreak -- and have shown such promise that this week it was decided to extend immediate vaccination to "all people at risk" after close contact with an infected person, a WHO statement said.
"This is an extremely promising development," said Dr. Margaret Chan, the body's director-general.
"The credit goes to the Guinean government, the people living in the communities and our partners in this project. An effective vaccine will be another very important tool for both current and future Ebola outbreaks."
More research is needed, but the results so far on this trial show 100% efficacy.
It will take weeks at the least, and possibly a couple of months, for more supply to be made, according to Chan.
Researchers have been using a "ring" strategy -- based on that used in smallpox eradication in the 1970s -- to test the vaccine's effectiveness.
"The premise is that by vaccinating all people who have come into contact with an infected person you create a protective 'ring' and stop the virus from spreading further," said John-Arne Rottingen of the Norwegian Institute of Public Health, which has been involved in implementing the trial.

Relatives, co-workers, health workers get jab

To date, more than 4,000 close contacts of almost 100 Ebola patients, including family members, neighbors and co-workers, have

voluntarily participated in the trial, the WHO statement said.

Until this week, half were vaccinated three weeks after the identification of an infected patient and others straight away, to allow for comparison of the results. The randomization was stopped on Sunday "to allow for all people at risk to receive the vaccine immediately, and to minimize the time necessary to gather more conclusive evidence needed for eventual licensure of the product," the WHO said.

The trial will now include 13- to 17-year-olds, and possibly children from age 6, on the basis of new evidence of the vaccine's safety, it added.

The vaccine has also been given to 1,200 front-line health workers, laboratory staff, cleaning staff and burial teams, Doctors Without Borders said.

The VSV-EBOV vaccine was developed by the Public Health Agency of Canada and licensed to Merck and NewLink.

The Guinea trial is being implemented by the Guinean authorities, the WHO, Doctors Without Borders and the Norwegian Institute of Public Health, with support from international and national organizations.

Medical journal The Lancet published the phase three trial's interim results Friday.

Dr. Bertrand Draguez, who's been leading Doctors Without Borders efforts to find new tools to combat Ebola, said more data was needed -- for example, on how soon protection kicks in after vaccination and how long it lasts -- but that the results suggest a "unique breakthrough" in fighting the disease.

"Even if the sample size is quite small and more research and analysis is needed, the enormity of the public health emergency should lead us to continue using this vaccine right now to protect those who might get exposed to the disease: contacts of infected patients and front-line workers," he said.

VSV-EBOV is an experimental vaccine against Ebola.

Because the virus is concentrated in "hot spots" across the region, it makes more sense to focus on vaccinating those close to infected patients and front-line workers than to embark on a mass vaccination campaign, he said.

Jesse L. Goodman, professor of medicine at Georgetown University Medical Center in Washington, said the results published in The Lancet provided "exciting preliminary evidence" that the vaccine is likely to be effective but also cautioned that further analysis was needed.

"Nonetheless, the degree of protection reported seems convincing," he said.

The concerted effort to find a vaccine reflects the severity of the crisis presented by Ebola, spread through contact with body fluids from an infected person or contaminated objects from infected persons. Other vaccines are also being tested.

WHO: Lowest weekly total in more than a year

There have been more than 11,000 reported deaths in the three worst-affected countries -- Guinea, Sierra Leone and Liberia -- since the epidemic took hold last year.

The number of new Ebola cases is now far below that of the outbreak's peak, but it has remained stubbornly difficult to eradicate.

On Sunday, the WHO reported seven Ebola cases were confirmed in the preceding week -- four in Guinea and three in Sierra Leone.

"This is the lowest weekly total for over a year, and comes after 8 consecutive weeks during which case incidence had plateaued at between 20 and 30 cases per week," the WHO said.

Two people in Liberia, including a 17-year-old in Nidonwin, have died of Ebola since the end of June, weeks after the WHO declared

the nation free of the disease. At the time, though, officials warned outbreaks in Guinea and Sierra Leone ran the risk of bringing the virus back to Liberia, where more than 4,000 people died after contracting it.

All 33 contacts in Liberia who have been followed up since the latest infections there are two days from completing the 21-day period to be declared free of the disease.

10 Essential Facts About Anthrax

By Jennifer J. Brown, PhD

Source: http://www.everydayhealth.com/news/essential-facts-about-anthrax/

Live anthrax, a serious human and animal pathogen, made headlines as it traveled widely to U.S. and foreign research labs — mistakenly shipped out by the U.S. Department of Defense (DoD) in the spring of 2015. Now, a new government review of the anthrax debacle reveals the release of live anthrax samples actually spanned the past 10 years.

Monitoring is set up for as many as 86 labs, institutions, and companies that received the potentially deadly bacteria in 21 U.S. states and Washington D.C., as well as in Japan, the United Kingdom, Korea, Australia, Canada, Italy, and Germany. Because of contact with the live bacteria, 21 people are taking medications to prevent anthrax disease, the report notes. The DoD also set up a 24-hour hotline for questions about the anthrax release, at **1-800-831-4408**.

What went wrong? The DoD's laboratory methods are ineffective at killing anthrax before shipping it out, concluded the 30-day review, summarized in public comments written by Frank Kendall, the U.S. Under Secretary of Defense at the Pentagon on July 22, 2015. The failures all originated from one site, Dugway Proving Ground near Salt Lake City, Utah — but their impact reached around the globe.

"These labs use irradiation exposing the material to a source of gamma rays. This is one of the standard methods and has been used effectively in the past for sterilization," says Stephen S. Morse, PhD, professor of epidemiology at Columbia University Medical Center and author of Emerging Viruses from Oxford University Press.

This wasn't the first time that government lab safety procedure failures exposed workers to live anthrax and prompted a hefty public report. On June 5, 2014, at the Bioterrorism Rapid Response and Advanced Technology laboratory in Atlanta, plates thought to hold anthrax that was inactive — or dead — after a kill-treatment with toxic chemicals turned out to contain live bacteria colonies instead. The error exposed dozens of Centers for Disease Control and Prevention (CDC) workers to anthrax, further evidence that the two main methods researchers use for inactivating anthrax — irradiation and chemical treatment — are error-prone. This is most likely because anthrax can survive in the form of spores that can be very difficult to kill.

All of this work on anthrax was spurred by the bioterrorism scare of 2001, when 22 Americans got anthrax from intentionally contaminated mail sent to media and government offices, later traced to anthrax from U.S. bioweapons research facilities. Five died from their infections.
In a controversial investigation, the FBI accused biodefense researcher Steven Hatfill, MD, who was later exonerated with a $5.8 million settlement. A second researcher, army microbiologist Bruce Ivins, PhD , died from apparent suicide after finding out the FBI would charge him next. The case was then closed, leaving many questions unanswered, according to ProPublica's anthrax investigation.
But realistically, what are the risks that you will actually come into contact with anthrax here, as a civilian not working in a bioterrorism laboratory? And if you do, what comes next?

Anthrax Facts

Here are 10 essential facts about anthrax and your health that may help put the news in perspective.

1. Anthrax is extremely rare in the United States, outside of bioterrorism. Only one or two Americans get an anthrax infection each year, according to CDC records. "Sporadic [anthrax] outbreaks do occur in wild and domestic grazing animals such as cattle or deer. In the United States, yearly vaccination of livestock is recommended in areas where animals have had anthrax in the past," says William A. Bower, MD, medical officer with the Bacterial Special Pathogens Branch of the CDC and adjunct instructor of medicine at Emory University School of Medicine in Atlanta. Most recently, a case of anthrax in a beef cow in Grand Forks County, North Dakota, in June 2015 prompted renewed concern over keeping livestock up-to-date with protective vaccines.

2. Anthrax is not contagious from person to person. People usually get anthrax from infected animals or meat. "People can also get sick if they handle animal parts, such as hides, or products made from those animal parts, such as animal hide drums," explains Dr. Bower, who emphasizes that you cannot catch anthrax from another person. It's good to know that documented anthrax cases from hides and drums are rare, and the risk of infection from these sources is very low, according to the CDC.
"Visitors to countries where anthrax is common can get sick with anthrax if they have contact with infected animal carcasses, or eat meat from animals that were sick when slaughtered," says Bower. These areas include agricultural regions of Central and South America, sub-Saharan Africa, Central and Southwest Asia, Southern and Eastern Europe, and the Caribbean.

3. Bacteria called *Bacillus anthracis* cause anthrax. This rod-shaped bacteria lives in the soil, sometimes infecting wild animals like antelope and deer, and livestock including cattle, sheep, and goats. In the resting or dormant phase, anthrax bacteria persist as tiny spores that are amazingly resilient and hard to kill. Anthrax spores are extremely resistant to heat, radiation, and even drought, possibly because they have a crystalline core that holds their tightly-packed DNA, reveals research published in the June 2015 Journal of Structural Biology.

4. Anthrax can get inside your body and cause disease in four different ways. You can get anthrax through your skin if you touch something contaminated with the bacteria, through your breath if you inhale the bacterial spores (which are colorless and odorless), via your mouth if you eat contaminated meat, or through your bloodstream if you inject anthrax-contaminated drugs. "All types of anthrax can eventually spread throughout the body," says Bower.
Injection anthrax is the latest form of contagion: from 2009 to 2010, the United Kingdom and Germany saw 119 cases of anthrax from contaminated heroin. Of those infected, 19 people died.

5. Anthrax symptoms depend on how you were infected. An anthrax skin infection is the most common form — and the least dangerous, says Bower. "More than 95 percent of all naturally occurring anthrax infections worldwide are cutaneous [in the skin]," he says. This type of infection takes from one to seven days after exposure to show symptoms. Here's a summary of the symptoms of the four types of anthrax from the CDC's case reports:
Cutaneous anthrax symptoms: Small clusters of blisters or bumps that can be itchy and

develop into skin ulcers that may be painless, larger, and have a black center.

Inhalation anthrax symptoms: Fever and chills, extreme fatigue and body aches, chest pain, shortness of breath and cough, nausea and headache. This type of anthrax resembles a flu-like illness and is the most deadly type, says Bower, adding, "Infection usually develops within a week after exposure, but it can take up to 2 months."

Gastrointestinal anthrax symptoms: Fever and chills, swollen neck glands, sore throat, hoarseness, bloody vomiting and diarrhea, flushed face, red eyes, and fainting.

Anthrax symptoms from injection drugs: Groups of blisters or bumps similar to cutaneous anthrax, but these may spread throughout the body and can cause deep abscesses at the injection site, in addition to fever and chills.

6. Tests can quickly show if you've been infected with anthrax. "A few days after infection when there are signs of disease, it's easy to grow anthrax as a bacteriological culture from any affected tissue," says Dr. Morse. A skin lesion swab in the case of cutaneous anthrax, for example, takes a few days to grow as a bacterial culture. And for inhalation anthrax, your doctor can see the bacteria in blood samples looking through a microscope. A chest X-ray will also show abnormalities, he adds.

Doctors can also detect anthrax by a specific polymerase chain reaction (PCR) test that identifies the bacterial DNA. Morse notes that this can be done in less than a day. "Earlier, it may be possible to detect by PCR or culture from swabs of areas thought to be exposed. However, it's harder to detect early, especially right after possible exposure," he says. "So if you think there's been an exposure to live anthrax, or there is a known exposure, antibiotics are given right away to prevent possible disease."

7. Anthrax is treatable. While antibiotics can cure an anthrax infection, treatment needs to begin as soon as possible in order for it to work, according to the Mayo Clinic. And in the late stages of anthrax infection, medical antitoxin treatments can counter the toxins that anthrax produces in the body.

8. Anthrax is preventable. An FDA-approved anthrax vaccine is available, but it's only intended for adults who are at high risk for infection. The vaccine may take several weeks to be effective, so if you've been exposed to anthrax, early treatment with antibiotics like Cipro (ciprofloxacin), doxycycline (available as many brands), or Levaquin (levofloxacin) can prevent an infection called post-exposure prophylaxis from taking hold. "People with certain jobs, including researchers and lab workers, may be at increased risk of coming in contact with anthrax spores because of what they do," says Bower. In the current DoD anthrax accident, he says, "Laboratory workers who might have been exposed were assessed for risk of exposure, and if they were potentially exposed, they were placed on post-exposure prophylaxis."

9. Research anthrax is very different from naturally occurring anthrax. "Natural anthrax, on hides, is usually at a lower concentration and tends to be clumped," says Morse. "It's therefore less likely to be inhaled readily and doesn't usually waft into the air, and exposures usually involve lower doses," he explains. Processed anthrax spore preparations could more easily get into the air: they're also odorless and colorless, so they're hard to detect.

"Anthrax is considered a 'Select Agent,' so labs handling live anthrax for research require a special registration and must continually meet, at all times, specific safety, security, and emergency preparedness requirements with regular inspections and ongoing training," says Morse. In addition, he notes that all personnel must be registered and pass a background check before working with any Select Agent. And during transport, any live anthrax is always very securely wrapped. "There are specific, and very strict, shipping requirements requiring multiple layers of packaging. The personnel who pack the shipments also require special training to ensure that they are doing it correctly," says Morse.

However, in the wake of the anthrax safety breach, FedEx will not accept any Select Agent packages moving forward, reported USA Today.

10. You are probably not at risk for anthrax infection. "The general public is at no risk from exposure to anthrax as a result of this incident with DoD," says

Bower. "People who work with the bacteria, who travel to areas where it is more common, or who make or play animal-hide drums are at increased risk — and there are specific things they can do to minimize their risk."

__Jennifer J. Brown, PhD__, is a senior editor at Everyday Health focusing on health journalism. After completing a PhD in genetics at the State University of New York, Stony Brook, she brings her scientific research experience to coverage of health news. Her publications include medical education and outcomes studies, as well as breaking medical, health and wellness news for the health consumer.

First ever successful field testing of Ebola vaccine reported

Source: http://www.medicalnewstoday.com/articles/297608.php?tw

Aug 01 – Field testing of a new vaccine against Ebola conducted in Guinea, West Africa - called **rVSV-ZEBOV - has revealed that it is effective in protecting individuals and containing the spread of the deadly virus.**

The World Health Organization (WHO) trial, whose results are published in both *The Lancet* and *The BMJ*, was designed by researchers from the University of Bern in Switzerland.

A technique known as "ring vaccination" was the inspiration for the trial. This method involves tracking down and vaccinating anyone who may have been exposed to someone carrying a virus, in order to contain its spread. Ring vaccination was behind the eradication of smallpox in the 1970s.

For the trial, researchers first identified people who, within the previous 21 days, had been in close contact with someone that had recently contracted the Ebola virus. These people were considered to be directly at risk and included relatives, household members and clinical staff. Next, they identified people who might have been indirectly at risk of contracting the virus. These included the neighbors and work colleagues of people identified in the first step of the trial. Together, all of these people were considered to be part of a "ring," and if they were considered eligible to receive the rVSV-ZEBOV vaccine, they were asked to participate in the trial.

A total of 90 rings were identified for examination by the researchers, consisting of 5,415 contacts who were eligible for vaccination. Of these, a total of 3,512 individuals were recruited and received the vaccination.

Participating rings were then randomly assigned into one of two equally sized groups. One group received the Ebola vaccine immediately, while the other group was vaccinated after 21 days - the incubation period of the virus.

Although this approach meant that some participants would likely contract Ebola, study author Dr. Matthias Egger states that it was the only way they could test whether the vaccine really worked.

Could this be the end of the Ebola epidemic in West Africa?

The researchers found that none of the people who were vaccinated immediately contracted Ebola, compared with 16 cases of Ebola reported in the group whose vaccination was delayed. Each of these 16 cases developed within 6 days of the vaccination being administered. After this time, no further cases were reported.

Dr. Sven Trelle, from the Clinical Trials Unit at Bern University Hospital, states that these findings indicate the vaccine offers full protection from Ebola after around 1 week.

Looking at the rings overall - which contained several individuals who had not received the vaccination - the researchers observed that a 76% level of protection had been afforded, suggesting that implementing the vaccine had a broadly disruptive effect on virus transmission.

"It is not just the efficacy of the Ebola vaccine that has now been shown but also the effectiveness of the ring vaccination strategy," explains Dr. Egger. "This could finally be the beginning of the end of the Ebola epidemic in West Africa and also be useful when combating this disease in the future."

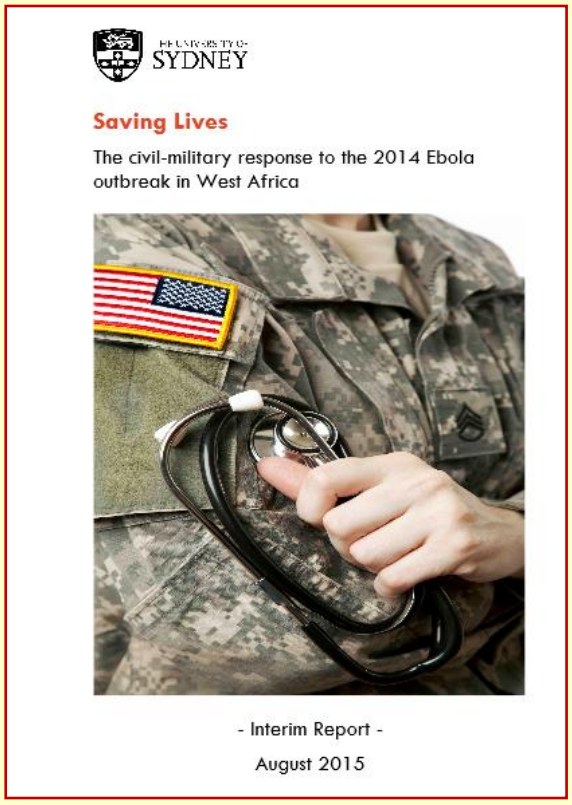
Following the success of the initial trial, a data and safety monitoring

board advised that the trial be expanded to gain further evidence on the vaccine's effectiveness. The board suggested stopping the randomization, however, and simply vaccinating new clusters of eligible participants. "The continued enrollment, immediate vaccination, and follow-up of clusters will generate additional data about the effectiveness of ring vaccination to protect communities through herd immunity, and will hopefully help to stop Ebola virus disease transmission in Guinea," the authors conclude.
While Guinea has been one of the countries most affected by the Ebola epidemic, a recent report published in *The Lancet Infectious Diseases* suggests that rising numbers of malaria deaths have greatly exceeded the total number caused by Ebola, possibly due to the manner in which Ebola disrupted the country's health care facilities.

Saving Lives: The Civil-Military Response to the 2014 Ebola Outbreak in West Africa

Source: http://sydney.edu.au/arts/ciss/news/?id=3822

Aug 03 – **The Marie Bashir Institute and Centre for International Security Studies in Australia have released the interim report of Saving Lives: The Civil-Military Response to the 2014 Ebola Outbreak in West Africa.**



The report analyses the role that various humanitarian agencies, the United Nations, and foreign and domestic military forces performed throughout the 2014 outbreak in Liberia and Sierra Leone.
This study was a joint initiative involving researchers from the University of Sydney, Queen Mary University of London, and the London School of Hygiene & Tropical Medicine, and funded by the University of Sydney. The final report is due to be released in September 2015.
Drawing on over 60 interviews with key stakeholders, including government officials, health professionals, diplomats, military officers, and representatives from non-government organizations and United Nations agencies, the report examines how the affected governments and the international community responded to the crisis in the initial stages of the outbreak.
It also explores some of the challenges that arose in relation to coordination, including the creation of the UN's first ever public health mission – the United Nations Mission for Ebola Emergency Response (UNMEER).
The report concludes by outlining a series of key recommendations for consideration by governments, humanitarian organizations, and UN agencies on how to improve future civil-military co-operation in health-related humanitarian crises.
This study was a joint initiative involving researchers from the University of Sydney, Queen Mary University of London, and the London School of Hygiene & Tropical Medicine, and funded by the University of Sydney. The final report is due to be released in September 2015.

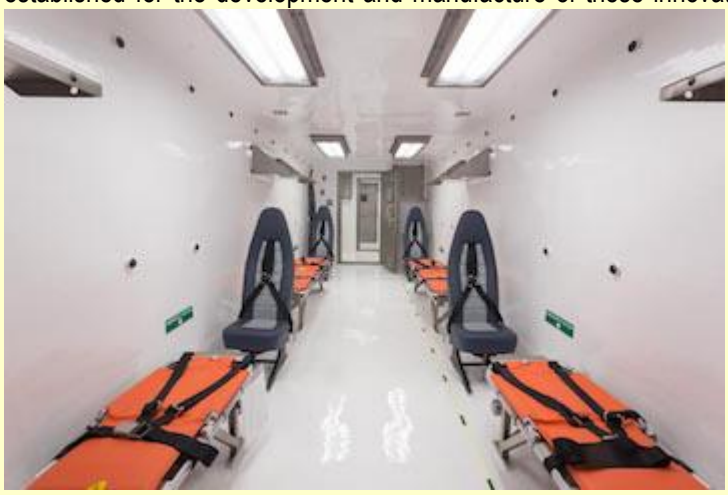
▶ **Read the full study at:** http://sydney.edu.au/mbi/PDFs/saving-lives.pdf

World's Leading, Next-Generation Medevac Biocontainment Units Revealed Today

Source: http://www.mriglobal.org/Blog/Post/148/World%E2%80%99s-Leading,-Next-Generation-Medevac-Biocontainment-Units-Revealed-Today

Aug 11 – Today, the U.S. Department of State, the Paul G. Allen Ebola Program and MRIGlobal unveiled first of-their-kind biocontainment units at Dobbins Air Reserve Base in Marietta, Georgia. This unique public-private partnership brought together diverse resources and advanced thinking to develop the next generation of biocontainment, greatly improving U.S. medevac capability and better preparing us for global health threats in the future.

Effectively addressing global public health challenges such as Ebola requires the commitment of medical professionals. A major recruitment challenge has been limited access to medical evacuation should health workers become ill and need access to medical treatment. To help solve this challenge, a $5 million private-public partnership grant between Paul G. Allen and the State Department was established for the development and manufacture of these innovative systems, which are owned and operated by the U.S. State Department and housed at Dobbins Air Reserve Base.



Designed by MRIGlobal, the units are state-of-the-art, flight-ready Containerized Biocontainment Systems (CBCS) that roll on and off planes. The units can contain highly contagious pathogens and are extremely durable and safe, which will allow for the secure transport of healthcare workers abroad.

The completion of these biocontainment units highlights the numerous outcomes that can be achieved through collaborative, strategic, and agile public-private partnerships.

Supporting Quotes:

"The world's primary medical evacuation system for bringing patients infected with Ebola out of West Africa to the United States or Europe for medical treatment not only saved the lives of many of those evacuated, it also provided reassurance to countless other Ebola responders that they could be evacuated in case of need, and thus increased the flow of essential personnel to the region. We are proud to have participated in such a unique partnership. These units will be crucial in specialized air transport and medical precautions required for Ebola and other virus infections." **–U.S. Department of State, Under Secretary for Management, Patrick Kennedy**

"Today, some of the most dangerous adversaries we face are contagious diseases. These new medevac units are an extraordinary example of partnership and innovation in action. We applied lessons learned from Ebola today to better prepare for the future and save lives." **–Barbara Bennett, Vulcan Inc., President and Chief Operating Officer**

"The creation of the CBCS units highlights our expertise and aligns well with our mission. We are honored to be a part of this collaboration toward global health." **–Thomas M. Sack, Ph.D., MRIGlobal President and Chief Executive Officer**

"Dobbins Air Reserve Base and the 94th Airlift Wing stand ready to assist our partners in strategically positioning the bio-containment units at Dobbins. We are proud to assume the vital role of providing logistical and security support for this important capability." **–Col Brent Merritt, 94th Airlift Wing Commander**

Existing class of drugs may halt Ebola, Marburg viruses

Source: http://www.medicalnewstoday.com/articles/297934.php?tw

Aug 11 – There is an urgent need to develop vaccines and antiviral drugs against Ebola virus and its cousin the Marburg virus - two of the deadliest and most contagious viruses in the world. Now, researchers have discovered that the way the Ebola and Marburg viruses try to enter host cells to replicate themselves can be blocked using a class of drugs that is already in common use.

The team - from the University of Illinois at Chicago (UIC) - publish their findings in the *Journal of Virology*.

Ebola and Marburg are the only two known members of a filovirus family called *Filoviridae*, which can cause severe hemorrhagic fever in humans and nonhuman primates.

According to the World Health Organization (WHO), the current outbreak of Ebola in West Africa is the largest and most complex since the virus was first discovered in 1976. Since the outbreak was first reported in March 2014, there have been 27,898 confirmed cases and 11,296 deaths.

Marburg was first identified in Marburg and Frankfurt in Germany and Belgrade in the former Yugoslavia. The victims were lab workers handling African green monkeys imported from Uganda. Fatality rates have varied greatly, from 25% to more than 80%.
The most recent outbreak of Marburg was in Uganda in 2014, where one man was confirmed to have the disease and died. The Ugandan government declared the country to be free of the virus in November 2014.

Study identifies 20 drugs that can block Ebola and Marburg

While the search for a vaccine is yielding results - for instance, *Medical News Today* recently learned of the first ever successful field test of an Ebola vaccine - there is still an urgent need for antiviral therapies to treat people who become infected and to learn more filoviruses.
Principal investigator Lijun Rong, a professor in microbiology and immunology, notes that: "We know very little about the basic biology of these diseases."
In their study, he and his colleagues discovered that the way Ebola and Marburg gain entry into host cells - where they take over cell machinery to make copies of themselves - is via a cell surface receptor that acts like a gateway.
The cell surface receptor is a type of protein called a GPCR (G protein-coupled receptor). GPCRs sit on the surface of cells and are involved in a broad range of biological processes. A large number of clinically used drugs act through these gateway proteins.
Prof. Rong explains there are probably more than a thousand different GPCRs in humans that are involved in many diseases, so a large number of drugs has already been developed to target them. He adds:
"In the history of therapeutics, about half of our drugs were developed to target GPCRs. For example, a number of antihistamines used as allergy medications are GPCR receptor antagonists."
The team screened around 1,000 compounds and found that 20 GPCR antagonists - molecules that block the receptor - were able to stop Ebola and Marburg viruses from entering host cells.
The researchers say their findings "strongly suggest that GPCRs play a critical role in filoviral entry" and that GPCR antagonists can be developed as an effective therapy against Ebola and Marburg viruses.
Prof. Rong says there are a lot of drugs that work through this mechanism and concludes:
"This gives us a huge repertoire that can be tested against Ebola/Marburg."
Meanwhile, *MNT* learned recently how another team has discovered another two protein pathways critical to Ebola can be blocked, and that there are also drugs currently in use that target these pathways, which are called PI3 kinase and CAMK2.

First responders could be inoculated with almost-expired anthrax vaccines

Source: http://www.rt.com/usa/312222-first-responders-anthrax-vaccine/

Aug 11 – **First responders may be supplied with anthrax vaccines to protect them against potential future biological attacks if the Senate passes the First Responder Anthrax Preparedness Act.** The bill would also reduce waste of public health resources.
The bipartisan legislation – introduced by Senators Kelly Ayotte (R-New Hampshire), Cory Booker (D-New Jersey) and Chris Coons (D-Delaware) on Tuesday – would make anthrax vaccines available to first responders on a voluntary basis, provided those vaccines were either surplus or close to expiration. The preventative medicine would be provided from the Strategic National Stockpile.
"Unfortunately, an estimated 4 million doses expire unused each year and are thrown away, when they could instead be used to better protect our first responders and help prepare them to respond to possible anthrax attacks," the senators said in a statement.
HR 1300, the House of Representatives version of the bill, would also direct the Department of Homeland Security

(DHS) to create a two-year pilot program to distribute the vaccines to first responders. It would include selecting providers to participate

in the test, training people to administer the vaccines, and conducting an economic analysis of the program.

"We're pleased that DHS has begun working with the Centers for Disease Control on a pilot program to do just that, and we are hopeful that the Homeland Security and Governmental Affairs Committee will take up and pass our legislation so that we can better support the first responders we rely upon in emergency situations," the three senators said.

The bill passed the House of Representatives 424-0 at the end of July. Representative Peter King (R-New York) introduced the legislation in March.

"My regret is that it took so long to get Congress to act," King posted on Facebook when the bill passed. *"Let me thank, however, the International Association of Fire Chiefs who endorsed my bill stating that 'this legislation would provide a crucial tool to protect firefighters and EMS when responding to acts of terrorism and other emergencies involving anthrax.'"*

According to a June analysis by the Congressional Budget Office, implementing the First Responder Anthrax Preparedness Act would cost approximately $4 million from 2016 to 2020.

The Obama administration – with help from at least four federal departments, including DHS – created an initiative in 2012 to offer select state and local officials the option of receiving a federally funded course of anthrax vaccination doses for first responders, Global Security Newswire (GSN) reported at the time.

"If a major city is hit with anthrax and it's a dry powdered form or we think there's a significant possibility of secondary aerosol invasion, we know we can send in the US military to help out because they're pretty well protected with vaccines," Randall Larsen, chief executive officer of the WMD Center in Washington, told GSN. *"Wouldn't it be nice if we knew that the majority of the public health people in that city and law enforcement personnel were also protected?"*

That pilot program is expected to last 18 months, which is approximately how long the *"priming series"* of the standard anthrax vaccine regimen takes, with five shots over an 18-month period. Once the priming series is complete, recipients are inoculated with boosters on a yearly basis to sustain immunity.

A 2013, a presidential commission recommended that anthrax vaccination trials be carried out on children, noting that in the event of a mass bioterrorist attack a large proportion of the victims would be children.

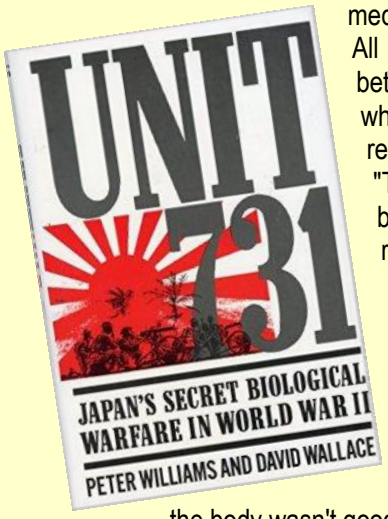
EDITOR'S COMMENT: There is no doubt that the Bill is indeed a clever approach to an existing problem! But which country has the capability to launch a powder attack against US? Should stockpile be that big (and expensive)? Big nations; big problems to solve!

Japan's biological weapons leave bitter legacy: Russian experts

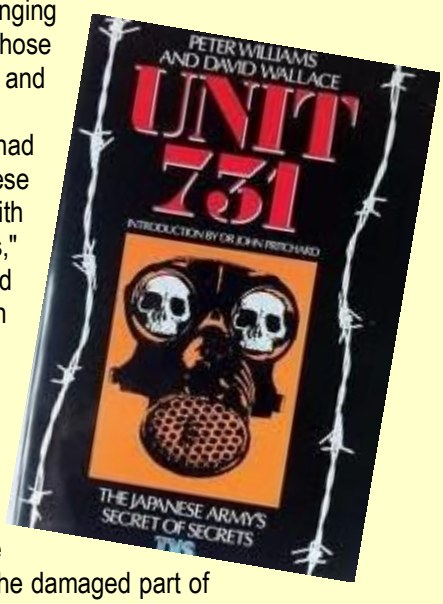
Source: http://www.wantchinatimes.com/

Aug 13 – Biological weapons should never be applied anywhere and the civilized world will not tolerate such crimes against humanity, two Russian experts on the history of World War II have said.

In 1949, 12 former members of the Japanese Kwantung Army were tried for war crimes in the Russian Far East city of Khabarovsk for manufacturing and using biological weapons and carrying out inhumane medical experiments during WWII.



All accused were found guilty and sentenced to terms ranging between two and twenty-five years in a labor camp. In 1956, those who were still serving their sentences were released and repatriated to Japan.



"The Chinese partisans, Communists and even civilians had been brought to a secret facility near Harbin where Japanese researchers infected these victims — termed "logs" — with anthrax, plague, paratyphoid, cholera and other infections," said Alexander Lavrentsov, a military historian and retired lieutenant colonel, speaking of the notorious Unit 731 in China's northeast.

"Then they dissected the bodies and examined the process of the organs' infection. If somebody survived after such torture, they infected the person again until the body wasn't good enough for experiments. No one survived," he said.

Japanese doctors also exposed live subjects to the bitter cold of Harbin to study the effects of extreme temperatures on humans. Once the limbs were "frozen solid," doctors would test their frostbite treatment, and then "amputate the damaged part of the arm." Around 500 to 600 people annually were brutally killed, Lavrentsov said.

The influence of germ warfare can still be felt among the Chinese inhabitants of the region and on the land, and the same applies to the Russian Far East, experts said.

"Containers of toxic substances are hidden in the ground of China, rusted, and the poison inside has washed from Chinese territory into the Songhua River, and then into the Amur. Now all these poisons come to Khabarovsk through the water," said Alexandr Filonov, another expert in military history.

The main task now, Filonov said, is to force Japan to destroy the remnants of these toxic substances in China. Negotiations were conducted before, but the problem has still yet to be solved.

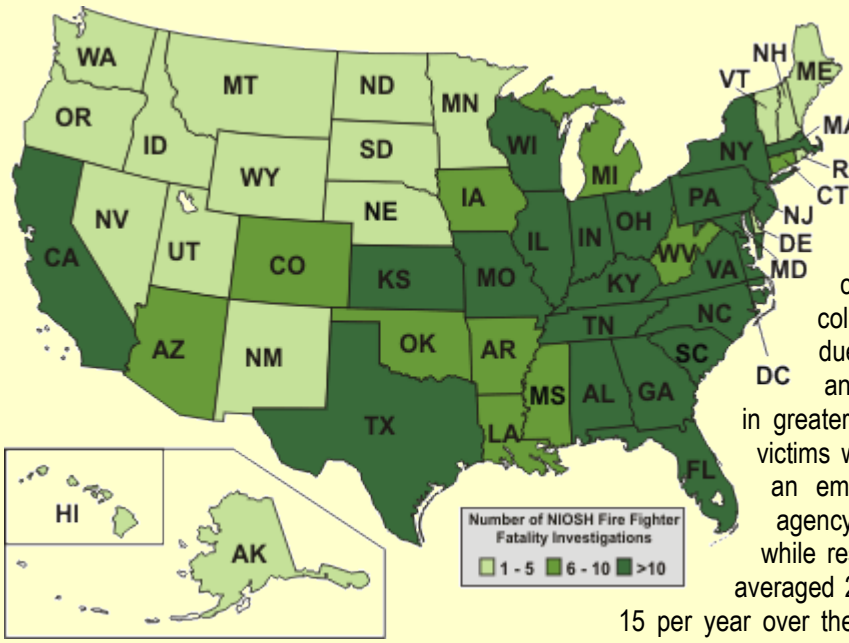
Source: http://www.nfpa.org/newsandpublications/nfpa-journal/2015/july-august-2015/features/firefighter-fatalities?order_src=C248

IN 2014, 64 FIREFIGHTERS in the United States died while on duty. This total represents a significant decrease from the 97 deaths that occurred in 2013, when three incidents claimed a total of 32 lives. By contrast, in 2014, the largest multiple-death incidents were two double-fatality fires, both in apartment buildings. The annual average number of firefighter deaths over the past decade is 83.

Of the 64 firefighters who died while on duty in 2014, 34 were volunteer firefighters, 23 were career firefighters, three were employees of state land management agencies, two

were state contractors, one was a civilian employee of a military fire department, and one was a member of an industrial fire department.

The largest share of deaths, 22, occurred while firefighters were operating at fires. This is the second-lowest total number of fire ground deaths since this study began in 1977, and the third time in the last five years that the total has been below 25, accounting for about one-third of the on-duty deaths in 2014. There has been an average of 31 fire ground deaths over the past 10 years (2005 through 2014). The total in 2014 is sharply lower than in 2013 because of the two major loss-of-life incidents that occurred at fires that year: the Yarnell Hill Fire in Arizona that killed 19 wildland firefighters, and the fire and explosion at the West Fertilizer Company facility in West, Texas, that killed nine firefighters.



Eleven firefighters died in 2014 while responding to or returning from emergency calls. It is important to note that deaths in this category are not necessarily the result of vehicle crashes. While six deaths occurred in collisions or rollovers, the other five were due to sudden cardiac events. (All crashes and sudden cardiac deaths are discussed in greater detail later in this report.) Ten of the victims were volunteer firefighters and one was an employee of a state land management agency. The number of deaths that occurred while responding to or returning from calls has averaged 21 per year over the past 10 years and 15 per year over the past five years. The 11 deaths while responding to or returning from alarms in 2014 make up the second-lowest total since this study was first conducted in 1977.

Nine firefighters died at non-fire emergencies: five at medical emergencies, one while checking an automatic alarm activation, one at the scene of a partial building collapse, one during a missing person search, and one at a motor vehicle crash. Five of the nine suffered sudden cardiac deaths, two were struck by vehicles, one was struck by a collapsing cell phone tower, and one was trapped in a floor collapse.

Eight deaths occurred during training activities. Sudden cardiac death claimed seven firefighters: two during work capacity tests, one during air management training, one during the fire department's annual physical ability test, one while returning from an off-site physical and agility test, one at the fire station for driver training, and one during wildland fire training. One firefighter died of influenza while he was attending training out of state.

The remaining 14 firefighters died while involved in a variety of non-emergency-related on-duty activities. Eleven of the deaths were due to sudden cardiac death. Eight of the 11 were engaged in normal administrative or station duties, one was involved in vehicle maintenance activities, one had been cutting down trees on department property, and one was clearing a blocked culvert to assist a member of the community. One was killed when his aircraft crashed while on patrol checking for wildland fires. One died when his vehicle crashed as he was returning from an unrelated service repair. One was electrocuted while assisting at an Ice Bucket Challenge event.

FIRE GROUND DEATHS

Except for 2001, when 340 firefighters died at the World Trade Center, and 2013, when an exceptionally high number of firefighters were killed at the Yarnell Hill and West Fertilizer fires, deaths on the fire ground have been declining fairly steadily since 1999. The 22 deaths in 2014 match the second-lowest total in a single year since NFPA began this study in 1977, and is the third time in the past five years that the total has been

below 25. Seventeen of the deaths occurred at 15 structure fires. In addition, there were four deaths at four wildland fires and one at a vehicle fire.

The 17 deaths at structure fires included five deaths in three apartment building fires, nine in fires involving one- and two-family dwellings, and one death each in fires at a restaurant, an industrial facility, and a storage property. One of the dwellings was vacant at the time of the fire.

Both double-fatality fires that occurred in 2014 involved apartment buildings. In one of those fires, the two victims were caught in a rapid fire event and suffered fatal burns while operating a hoseline on the upper story of a two-story structure. In the other fire, the two victims were trapped in the basement and died of burns and smoke inhalation. One additional fire in an apartment building also killed a firefighter, who was trapped by rapid fire progress while searching for occupants in the high-rise building.

The remaining nine single-fatality residential fires involved one- or two-family dwellings. Four of the nine firefighters suffered sudden cardiac death at the fire scene: one during interior operations, one while pulling a supply line to a hydrant, one while waiting in his tanker to dump water at the scene, and one while picking up equipment at the scene after the fire. Three firefighters were lost inside during fire operations and died of smoke inhalation or asphyxiation. Two firefighters fell through floors into basements; one died of smoke inhalation, and the other of traumatic injuries.

In the remaining structure fire deaths, a firefighter suffered a fatal cardiac event while ventilating the roof of a restaurant, another suffered a fatal cardiac event at a fire in an industrial property, and the third firefighter was killed when the roof collapsed during a fire in a storage facility.

None of the structures in which firefighters died was reported to have had an automatic fire suppression system.

Among the non-structure fire deaths, four firefighters died at separate wildland fire incidents—sudden cardiac death claimed two lives, one firefighter was killed in an aircraft crash, and one firefighter fell and was fatally injured at a fire camp during a wildland fire. One firefighter was struck by a passing vehicle on a highway at the scene of a motor vehicle fire.

CAUSE AND NATURE OF FATAL INJURY OR ILLNESS

Overexertion, stress, and medical issues accounted for the largest share of deaths. Of the 37 deaths in this category, 35 were classified as sudden cardiac deaths (usually heart attacks), one was due to a stroke, and one to influenza.

The second-leading cause of fatal injury was vehicle crashes, which claimed nine lives. Another three firefighters were struck and killed by vehicles.

Five firefighters were caught or trapped by rapid fire progress (including flashover) in three incidents. All of these incidents were structure fires, including the two double-fatality incidents mentioned above.

Structural collapses resulted in two deaths. One firefighter was investigating a reported structural collapse at an apartment building when the walkway on the second story of the building collapsed beneath him. The other firefighter was killed when the roof collapsed at a structure fire.

In separate incidents, three firefighters became lost inside structures and died of smoke inhalation or asphyxiation.

Three firefighters died in fatal falls. In separate incidents, two firefighters fell through the floor and into the basement while on the fire ground (one during overhaul at a dwelling fire and the other while checking on an adjacent building after a fire). Both died of smoke inhalation. The third firefighter fell at a fire camp during a wildland fire and died of traumatic injuries.

As mentioned earlier, one firefighter was struck and killed by a collapsing cell phone tower.

SUDDEN CARDIAC DEATHS

In 2014, the 36 sudden cardiac deaths with onset while the victim was on-duty is the highest since 2008, and ends the general downward trend in on-duty sudden cardiac deaths that was observed over the past 10 years. Cardiac-related events accounted for 56 percent of the deaths in 2014.

The number of deaths in this category, however, has fallen significantly since the early years of this study. From 1977 through

1986, an average of 60 firefighters a year suffered sudden cardiac deaths while on duty (44.7 percent of the on-duty deaths during that period). These are cases where the onset of symptoms occurred while the victim was on-duty and death occurred immediately or shortly thereafter. The average number of deaths fell to 44 a year in the 1990s and to 34 in the past decade. In spite of this reduction, sudden cardiac death still accounted for 44 percent of the on-duty deaths in the last five years. Overall, sudden cardiac death is the number-one cause of on-duty firefighter fatalities in the U.S., and with two exceptions (1984 and 2013) has accounted for the single largest share of deaths in any given year.

Sudden cardiac death accounts for a higher proportion of the deaths among older firefighters, as might be expected. Two thirds of the firefighters over age 40 who died in 2014, and almost all of those over age 60, died of heart attacks or other cardiac events. It is interesting to note that two of the three deaths of firefighters in their late 20s were due to sudden cardiac events.

VEHICLE-RELATED DEATHS

In 2014, 12 firefighters died in vehicle-related incidents, including nine firefighters who died in single-fatality vehicle crashes. Three other firefighters were struck and killed by vehicles.

Two of the vehicle crashes involved aircraft. One of these occurred during a routine fire patrol over a wildland area when the aircraft struck trees on a ridge line under a low cloud ceiling with reduced visibility. The other aircraft crash occurred during wildland fire operations when the aircraft, making its second fire retardant drop, possibly struck a tree with its wing. Visibility was good at the time, but there was smoke in the area. Both crashes are being investigated by the National Transportation Safety Board, but the final reports have not yet been released.

Five of the seven firefighters who died in road crashes were killed while responding to incidents, and one was killed while returning from an incident. Three were responding to structure fires, one to a grass fire, one to a motor vehicle crash, and another was returning from a structure fire.

In the final crash, a fire chief was returning a pumper that had just been serviced when the drive train failed and the pumper collided with a pickup truck on a highway. The chief and the five occupants of the pickup died in the fiery crash. The chief was wearing a seatbelt. Repairs that had recently been completed on the pumper were not related to the drive train failure.

Of the seven firefighters who died in road vehicle crashes, three were not using seatbelts (two were ejected or partially ejected and one was not), two were using seatbelts and were not ejected, and no details on seatbelt use were reported for two victims (one of whom was not ejected). Factors reported in the crashes included weather conditions and careless operation.

Three firefighters were struck and killed by vehicles. Two were operating on highways when they were struck: one at a motor vehicle crash and the other at a motor vehicle fire. The third was searching along railroad tracks for a missing person when he was struck by a train.

OTHER FINDINGS

Two firefighters were killed at the scene of an intentionally set fire in an apartment building in 2014. From 2005 through 2014, 40 firefighters (five percent of all on-duty deaths) died in connection with intentionally set fires, either at the fire or while responding to or returning from the fire. The number of these deaths annually has dropped since 1985.

In 2014, one death resulted from a false call. Over the past 10 years, 14 firefighter deaths have resulted from false calls, including malicious false alarms and alarm malfunctions.

Overall, the firefighters who died in 2014 ranged in age from 21 to 84, with a median age of 52. Over the past five years, the lowest death rates were for firefighters under 40, whose death rate was about half to three-fifths of the all-age average. The rate for firefighters 60 and over was three times the average. Firefighters aged 50 and over accounted for half of all firefighter deaths over the five-year period, although they represent a quarter of all career and volunteer firefighters in the U.S.

The 34 deaths of volunteer firefighters while on-duty in 2014 was the second-lowest total for volunteers and well below the annual average of 44 deaths per year. It was the third time in the past five years that the total has been below 40 deaths. Overall,

the number of deaths of volunteer firefighters while on duty has followed a general downward trend since 1999. The 23 deaths of career firefighters marks the fifth consecutive year that the total has been at or below 25. The trend for career firefighters has been relatively flat over the past 10 years, except for a spike in 2007 due to a single nine-fatality incident.

NFPA STANDARDS AND OTHER EFFORTS FOCUSED ON FIREFIGHTER HEALTH AND SAFETY

Given that the largest number of on-duty firefighter fatalities usually are due to sudden cardiac events, it is particularly important that NFPA provides several standards that focus on the health risks to firefighters. For example, NFPA 1582, Comprehensive Occupational Medical Program for Fire Departments, outlines for fire departments the medical requirements that must be met by candidate firefighters and incumbent fire department members. NFPA 1500, Fire Department Occupational Safety and Health Program, calls for fire departments to establish a firefighter health and fitness program that meets NFPA 1583, Health-Related Fitness Programs for Fire Fighters, and requires that firefighters meet the medical requirements of NFPA 1582.

Assistance is available to develop a fitness wellness program from the IAFC/IAFF Fire Service Joint Labor-Management Wellness-Fitness Initiative and the National Volunteer Fire Council's Heart-Healthy Firefighter Program. The heart-healthy program was launched in 2003 to address heart attack prevention for firefighters and EMS personnel through fitness, nutrition, and health awareness.

Emotional health is important as well. Firefighter behavioral health is a topic that has garnered considerably more attention in recent years, particularly due to the efforts of the Firefighter Behavioral Health Alliance. The Alliance recently produced a report on behavioral health and suicide prevention that was published by the National Volunteer Fire Council, with support from USFA. NFPA 1500 requires access to a behavioral health program that provides assessment, counseling and treatment for such issues as stress, anxiety, and depression.

NFPA publishes several standards related to road and vehicle safety issues. These include NFPA 1002, Fire Apparatus Driver/Operator Professional Qualifications, which identifies the minimum job performance requirements for firefighters who drive and operate fire apparatus in both emergency and nonemergency situations, and NFPA 1451, Fire and Emergency Services Vehicle Operations Training Program, which provides for the development of a written vehicle operations training program, including the organizational procedures for training, vehicle maintenance, and identifying equipment deficiencies. NFPA 1451 also covers training for those using privately owned vehicles. NFPA 1911, Inspection, Testing, Maintenance and Retirement of In-Service Automotive Fire Apparatus, details a program to ensure that fire apparatus are serviced and maintained to keep them in safe operating condition.

NFPA 1901, Automotive Fire Apparatus, addresses vehicle stability to prevent rollovers and gives manufacturers options on how to provide it. NFPA 1906, Wildland Fire Apparatus, establishes minimum design, performance, and testing requirements for new vehicles over 10,001 pounds (4,500 kilograms) gross vehicle weight rating that are specifically designed for wildland fire suppression.

NFPA 1091, Traffic Control Incident Management, published this year, identifies the minimum job performance requirements necessary to perform temporary traffic control duties at emergency incidents on or near an active roadway.

The provisions of NFPA 1500 include requirements that operators successfully complete an approved driver-training program, possess a valid driver's license for the class of vehicle, and operate the vehicle in compliance with applicable traffic laws. All vehicle occupants must be seated in approved riding positions and secured with seatbelts before drivers move the apparatus, and drivers must obey all traffic signals and signs and all laws and rules of the road. This includes coming to a complete stop when encountering red traffic lights, stop signs, stopped school buses with flashing warning lights, blind intersections, and other intersection hazards, as well as unguarded railroad grade

crossings. Passengers are required to remain seated and must not release or loosen their seatbelts for any reason while the vehicle is in motion. It also includes a requirement that when members are authorized to respond to incidents or to fire stations in private vehicles, the fire department must establish specific rules, regulations, and procedures relating to the operation of private vehicles in an emergency mode.

Requirements also exist for emergency personnel operating on roadways. The 2009 version of the Federal Highway Administration's Manual of Uniform Traffic Control Devices (MUTCD) requires anyone working on a roadway to wear an ANSI 107-compliant high-visibility vest. An exemption was created for firefighters and others engaged on roadways that allows them to wear NFPA-compliant personal protective clothing (turn-out gear) when directly exposed to flames, heat, and hazardous material. NFPA 1500 requires firefighters working on traffic assignments where they are endangered by motor vehicle traffic to wear clothing with fluorescent and retroreflective material and use fire apparatus in a blocking position to protect firefighters.

The 2009 edition of NFPA 1901 requires that ANSI 207-compliant breakaway high-visibility vests be carried on all new fire apparatus, and MUTCD allows emergency responders to use them in lieu of ANSI 107-compliant apparel. Advice on compliance with the updated Federal rules can be found at Responder Safety website. NFPA 1901 also requires reflective striping for improved visibility on new apparatus and a reflective chevron on the rear of fire apparatus. Advice on improving the visibility of existing apparatus is also available at Responder Safety website. U.S. Fire Administration resources on emergency vehicle and roadway operations safety are available online.

IN SUMMARY

There were 64 on-duty firefighter deaths in 2014. This is the third time in the past four years that the total has been below 65. (In 2013, there were 97 deaths, with 32 occurring in just three incidents.) From 1995 though 2008, the average number of on-duty deaths each year was in the low 100s. Since 2008, however, the average has dropped steadily and now stands at 83 deaths per year.

In spite of the sustained decline in on-duty fatalities over the past several years, sudden cardiac death continues to claim a major share of the on-duty deaths annually—more than half of the deaths in 2014, and the highest number since 2008.

Deaths in road vehicle crashes, often the second-most-frequent cause of on-duty firefighter fatalities, remained low in 2014. With seven fatalities in seven crashes, this is the second-lowest number of crashes and crash deaths over the past 30 years. Importantly, none of the deaths in 2014 involved privately owned vehicles, the first time that has been the case since 1983.

This NFPA study focuses on the fire deaths that are directly associated with specific on-duty activities, and does not track the effects of long-term exposure to toxic products that might occur during an individual's time in the fire service. To put the numbers in perspective, however, the International Association of Fire Fighters alone reported almost 100 firefighter cancer deaths in 2014, compared to the 64 on-duty fatalities reported here. The National Institute for Occupational Safety and Health (NIOSH) undertook a multi-year study to examine the cancer risk of firefighters, using health records of approximately 30,000 current and retired career firefighters from three large city fire departments to look at mortality and cancer incidents. A followup study looked at exposure-response among 20,000 firefighters from the same fire departments. Results of the first phase were published in 2013, and results of the second phase were published this year.

▶ The findings are available online.

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Researchers carefully protect dangerous pathogens – but how secure are all their data?

By Carole Baskin

Source: http://www.homelandsecuritynewswire.com/dr20150817-researchers-carefully-protect-dangerous-pathogens-but-how-secure-are-all-their-data

Aug 17 – Ebola, smallpox, anthrax and many others: the most dangerous microorganisms are strictly regulated in the United States. The federal government oversees use of sixty-five so-called select agents with "the potential to pose a severe threat to public, animal or plant health, or to animal or plant products." Before scientists can work with them to learn more, find cures or create vaccines, they must meet a long list of conditions. The goal is to keep deadly infectious agents safely under lock and key, where they can't threaten the general population or fall into the wrong hands.

But even the most physically secure research lab could be the site of a devastating data security breach. As they stand now, information security guidelines published by science regulators with regard to select agents lack the critical level of detail needed to protect data effectively.

There has never been as much research performed with these pathogens as in the past decade. The sprawl of high containment laboratories has led to a parallel increase in individuals with access to these agents. **As of January 2015, approximately 11,000 individuals were on the list.**

As the amount of research done on these deadly microorganisms continues to grow, the scientific community needs to wise up about information security threats and toughen up its defenses. The stakes are high. The goal is to avoid a data security breach that could, for instance, provide bioterrorists with information they could use to make already dangerous agents even more so.

Physically securing dangerous pathogens

The government has mandated strong security measures for people working with deadly microorganisms since 2001, subsequent to the anthrax events that followed 9/11.

Today, research has to be reviewed internally by a scientist's institution to assess whether safety precautions are adequate. In some cases, it's reviewed externally as well by the National Institutes of Health (NIH) (one of the major federal sources of funding for researchers). The NIH takes particular note if potential results could be used for nefarious purposes or if recombined genetic materials are to be administered to human beings.

Personnel must pass stringent background checks. Facilities must be inspected for proper containment and physical security. Standard operating procedures must be in place to ensure protection of the agents, scientists, community and environment. All of these precautions are meant to ensure that dangerous pathogens don't infect anyone and stay safely in the lab.

Limiting open discussion

There are also policies in place that curtail how freely researchers can intentionally share information about their work on these dangerous microorganisms.

Since the implementation of the federal government's first Dual Use Research Policy in 2012, the notion that some nonclassified research information may need to be withheld has marked a big change from science's typical culture of openness. Researchers are used to running studies and

experiments, then publishing details and results in freely available peer-reviewed journals.
Never before has the U.S. scientific enterprise been as constrained as it currently is. There is even an ongoing moratorium on so-called gain-of-function experiments that involve certain agents potentially capable of causing a pandemic.

Information security at least as vulnerable
Recent safety lapses by government laboratories involving anthrax and H5N1 flu prove that despite all precautions, the system is far from perfect. And the bad news is there might be more to worry about – even if the microbes remain under lock and key and the researchers aren't deliberately sharing sensitive findings.
Vulnerabilities in information security can directly affect the physical security of dangerous pathogens. For instance, someone gaining access to a computerized key card system could use that information to enter a restricted area.
So-called "dual-use" knowledge, which could be used to weaponize some of these agents, is also at risk. In theory, a hacker could gain access to a researcher's data on how a particular microbe could become more pathogenic: for instance, by increasing its resistance to available therapeutic or prophylactic drugs.
My colleagues and I recently published an article in the journal *Health Security* describing these kinds of vulnerabilities. It was the result of a unique collaboration. I am an associate professor of environmental and occupational health who specializes in biosecurity. Nick Lewis came from an information security perspective. And Mark Campbell is a biosafety officer and select agent responsible official at Saint Louis University.
We found that current information security guidelines are inadequate. For instance, government agencies must abide by the Federal Information Security Management Act (FISMA), which is considered the gold standard for a risk-based approach. Unfortunately, current government-mandated information security around dangerous pathogens does not meet even the lowest standard of the act. One example: FISMA specifies how to configure a firewall in great detail; on the other hand, select agent information security guidelines mention firewalls, but don't specify how to configure or manage the firewall securely.

Why isn't research's data security cutting-edge?
Understanding of the threats unique to the academic and research environment is still evolving. There's very poor communication between the scientific community, the security community and the information technology community.
Scientists themselves are largely uneducated in matters of information security. For instance, many remain unaware that they might be targeted to divulge sensitive information through a variety of stealth tactics. Since advances in science often depend on open communication and sharing data, scientists aren't trained to be wary of inquiries about their work.
Many also don't recognize that shared computer systems and laboratory equipment capable of storing or transmitting data – from microscopes with digital photography capability to freezers that send emails when temperatures are too high – are sources of vulnerabilities. After all, everything connected to a computer network is at risk, even if it doesn't look like a computer.

How to lock down the information, too
First (and obviously), the standards required for government agencies by FISMA should be implemented for information related to research with dangerous pathogens. This is a matter of carrying out what the law already calls for.
Secondly, there should be a secure way for research institutions to exchange information about current information security threats, as well as effective strategies to protect scientific data that could be misused. While implementing these measures now is not without monetary and time costs, they would prevent the big security and research expenses that would be incurred after a major security breach and implementation of reactive measures.
Finally, there should be more concrete efforts at effective communication between science, information technology, and

security experts, so they may understand each other's disciplines better. An effective approach could include educational opportunities for individuals who are interested in working at the interface of these very different communities.
My colleagues and I found writing our research paper to be difficult because we were all outside of our comfort zones. Professionals, whether they are life scientists or computer people, do not like to admit that they don't know or understand something. When we had to ask each other for explanations regarding simple concepts in the others' fields, it was humbling.
But we have proved it can be done. The cross-disciplinary conversations must continue. Information security concerns are not going away, so we need to awaken to this reality before a major disaster happens.

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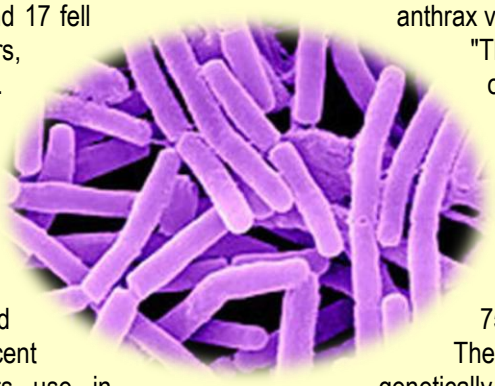
Pfenex to make anthrax vaccine

Source: http://www.sandiegouniontribune.com/news/2015/aug/17/pfenex-barda-anthrax/

Aug 17 – Nearly 14 years since anthrax-laced letters caused a near-panic, there's still no widely available vaccine against the deadly bacterial infection. **Under a federal contract worth up to $143.5 million announced Monday, San Diego-based Pfenex will develop one.**
The only approved vaccine is made from a strain of anthrax bred to be harmless. Preparing the vaccine is difficult, and supplies are limited. Emergency authorization is required to give the vaccine.
Pfenix plans to use its recombinant technology to make a vaccine that doesn't require growing anthrax. Such a vaccine would be safer to make and, presumably, less expensive. Then if anthrax were once against sent by letters, or other means, the population could be quickly immunized.
Five people were killed and 17 fell ill from anthrax in the letters, sent shortly after the Sept. 11 terrorist attacks. They were addressed to media outlets and U.S. Senators Tom Daschle and Patrick Leahy, both Democrats.



While anthrax has receded from the headlines in recent years, the danger of its use in bioterrorism remains, said Robin Robinson, director of the Biomedical Advanced Research and Development Authority, or BARDA, part of the Department of Health and Human Services.
"The Department of Homeland Security has determined that anthrax remains a threat to national security," Robinson said by email. "There have been no successful anthrax attacks since 2001, but the threat still persists. The Pfenex vaccine represents a next-generation anthrax vaccine candidate that may be more stable and easier to mass produce and to administer at less cost than the currently licensed anthrax vaccine."
Under a previous BARDA contract, Pfenex performed proof-of-concept work to determine if the company's recombinant bacterial expression system could be used to make an anthrax vaccine.
"This holds a lot of potential for our company," said Paul Wagner, chief financial officer of Pfenex (pronounced "Phoenix"). "The government has indicated that they're looking to have a stockpile of 75 million doses."
The company will use a genetically modified bacterium to grow proteins that, when given as part of a **vaccine now called Px563L,** will cause the immune system to make antibodies that neutralize

anthrax toxin. The vaccine does not directly kill anthrax.

Old foe

A Pfenex predecessor, Mycogen Corp., also of San Diego, developed the technology. Mycogen pioneered its use to engineer manufacture of proteins difficult to make by traditional biotech gene expression processes.

Mycogen was purchased by a Dow Chemical subsidiary in 1998. In 2009, Dow spun off the Mycogen technology as Pfenex. The company became publicly traded last year in an initial stock offering. Pfenex is now valued at nearly $490 million on the New York Stock Exchange. Shares gained 8.7 percent Monday to close at $21.04.

The technology's roots go back to 1983, when it was developed to produce an insecticide naturally made by the bacterium Bacillus thuringiensis, said Joe Panetta, a former Mycogen executive who is now chief executive of the San Diego-based life science trade group Biocom.

The gene encoding the insecticide was introduced into another bacterium, Pseudomonas fluorescens, that could make the insecticide in far greater quantities than in the Bt. bacterium. The insecticide is harmless to mammals.

Over the years, the technology has been greatly improved, Panetta said.

Pfenex has been hiring since going public, Wagner said. The company, which had 43 people as of June 30, is adding employees because of the contract.

Anthrax is an animal disease that has been associated with human outbreaks as far back as Biblical times, possibly being one of the plagues of Egypt. The bacterium, *Bacillus anthracis*, causes different symptoms depending on how it gets into the body.

- Inhalation anthrax, as spread in the letters, causes fevers and chills; shortness of breath and discomfort in the chest; coughing, extreme fatigue; and other symptoms. It is the most deadly form, according to the U.S. Centers for Disease Control and Prevention.
- Coetaneous anthrax can produce itchy blisters or bumps; a painless ulcer with a black center, appearing after the blisters or bumps; and swelling around the sores.
- Injection anthrax causes much the same symptoms as coetaneous anthrax.
- Gastrointestinal anthrax can cause fevers and chills; neck swelling; hoarseness; nausea; stomach pain; bloody diarrhea and other symptoms.

Symptoms can develop from 1 day to two months after exposure, the CDC says.

Solving problems

Along with the anthrax vaccine. Pfenex is also developing a malaria vaccine called Px533, funded by the National Institute for Allergy & Infectious Diseases.

Pfenex is developing non-vaccine protein-based drugs, including an equivalent to Lucentis, a drug now named PF582 for wet age-related macular degeneration. The drug, a so-called "biosimilar", is expected to enter Phase 3 trials next year.

Biosimilars are equivalents of large protein drugs, similar to generic version of small molecule drugs. However, while small molecules can be precisely made in labs according to a standard procedure, large protein drugs are manufactured in cells. These cells contain biological machinery far more complicated than any piece of lab equipment. So turning these cells into protein factories is much more difficult.

When Pfenex was spun off in 2009, it solved protein drug manufacturing problems on a fee-for-service basis, Wagner said.

"Biotechnology and pharmaceutical companies would bring to Pfenex proteins that failed to express in their systems, and they would ask if they could use our system to get it to express," Wagner said. Pfenex would also measure protein production, to make sure it was within specifications.

"That skill set is exactly what is required for biosimilars," Wagner said.

In 2012, the company changed directions to focus on biosimilars, with the Lucentis biosimilar its lead program. In February, Pfenex allied with Hospira to develop the drug. Pfenex got $51 million up front, and can get a total of $341 million, not including royalties.

The vaccine projects are also based on the gene expression technology, Wagner said. The company has partnered with

federal agencies such as BARDA to finance this work.

Joe Lieberman and Tom Ridge on, the Burden of Emerging Infections Calls for an Emergence of Leadership

By Joseph I. Lieberman and Tom Ridge

Source: http://www.hstoday.us/industry-news/general/single-article/exclusive-joe-lieberman-and-tom-ridge-on-the-burden-of-emerging-infections-calls-for-an-emergence-of-leadership/b88f78b92b39a6601b55dd521bf98e47.html

Aug 19 – It can be challenging to keep track of outbreaks these days. No sooner does one epidemic relinquish its place as the top news story than another has replaced it. A major MERS outbreak in South Korea made headlines where Ebola left off, only to be overshadowed by the worst avian influenza outbreak among poultry the United States has ever seen.

In December 2014, several strains of influenza that are deadly to chickens and turkeys (called highly pathogenic avian influenza (HPAI) – H5N1, H5N2 and H5N8) began to ravage the flyways of the Midwest, extending up into the Northwest and out to California. These particular strains do not affect people. They probably entered the region with migrating wild birds and then passed to commercial poultry and backyard flocks.

Although far less serious strains occur from time to time in the United States, this was the first outbreak of HPAI in 15 years. Cases appear to be abating, but only after more than 48 million birds (primarily commercial chickens, turkeys and ducks) were culled. Although most of the birds were not symptomatic, they were euthanized as part of a massive strategy to control the spread of the disease.

The good news is that the biosurveillance systems in place identified the emerging disease, with the national veterinary diagnostic laboratories at the ready to confirm the virus in samples and federal agencies poised to provide response support. The bad news is the disease has insidiously touched almost every American's life by dramatically increasing the price of eggs and everything that we eat that contains them.

Successful components of our fragile agricultural system can be brought down by weak links, which some evidence suggests in this case may have been at the biosecurity level. The staggering loss of life is compounded by the estimated billions in economic losses. Unfortunately, the only stockpiled vaccine was designed for different influenza strains and would not have been sufficiently effective to justify its use.

Despite all the ingenuity of the 21st century, a devastating disease ravaged birds for six months with no medical countermeasures of any kind to combat it. The only option was euthanasia. This is not a successful system. It does not inspire confidence for a comparable human outbreak.

Why are these threats emerging?

A convergence of factors, including global increases in livestock farming; greater intensity and integration of that farming; and more frequent interfacing among humans, livestock and wildlife, is allowing pathogens like influenza to emerge with greater frequency and virulence. While these winds of cultural and industrial change may not be easily redirected, US policies certainly can be.

Although the United States has arguably the best avian influenza surveillance in the world, that alone is not enough. In 2013, the Government Accountability Office (GAO) reported that the changing landscape of emerging disease required a new approach to disease detection. The more traditional disease-specific approach to detecting outbreaks must make way for a more dynamic approach more likely to identify unknowns, one that will require ingenuity, resources and significant cross-agency coordination to implement.

The Department of Agriculture (USDA) has been moving in this direction. GAO recommended USDA develop a strategy that would support national homeland security efforts to enhance the detection of biological threats that cut across animal health, human health and multiple sectors of critical infrastructure. Despite advances

in its surveillance approach, USDA has not yet produced its strategic vision for how its efforts are coordinated with other national efforts to defend the nation's food systems from terrorist attacks and major disasters.

What policy shifts are needed?

To effectively prepare for emerging infectious disease and bioterror threats, we must take animal populations into more serious consideration and address the animal-human interface. This is difficult to do when funding for animal health research is an order of magnitude less than that for humans.

The National Animal Health Laboratory Network, a consortium of veterinary labs designed to look for homeland security threats at the front lines, is chronically underfunded and must appeal to Congress and the administration annually for its rather minimal annual request of $15 million. Further, the United States lacks a nationally reportable list of domestic and wild animal diseases comparable to that for humans. In 2014, USDA published a concept paper on what such a list would look like, but it has not been implemented.

Biosurveillance is one of the most important tools available for mitigating the consequences of emerging infections. The US has indeed been a leader, and has increased its surveillance of livestock and wildlife in the last decade, but most surveillance systems, including these, are focused on the known pathogens, not the unknown. Like others across the world, animal surveillance efforts in North America are less common than those for human surveillance, and only a portion of the animal data they do collect are integrated with human data analyses. We cannot expect to expeditiously detect the next outbreak of a zoonotic disease if our animal and human health communities work in silos.

On the human side, the Department of Health and Human Services is still operating off of a 10-year old pandemic influenza plan which states that a key capability needed for effective response to a human outbreak is domestic influenza vaccine manufacturing capacity sufficient to produce "pandemic vaccine for the US population within 6 months of the onset of an influenza pandemic."

Six months?

How many people will have died during that time? The unwillingness to think outside the box and fund innovation in medical countermeasures (diagnostic tests, vaccines and therapeutics) is stifling our ability to respond. We fund safe investments, but those may not be the ones that keep people safe.

What all of this requires is centralized leadership. The laudable efforts of hard-working public servants throughout the government lack a harmonizing and forward-looking force at the White House to ensure needed activities occur and that efforts are coordinated. The White House has made impressive strides toward interagency coordination, but, in reality, a total paradigm shift that employs a much greater level of centralized prioritizing, planning and operating with respect to the crossovers of animal and human health is necessary. We will release a report this fall that addresses the elements of what this governance structure should contain.

Meanwhile, an outbreak of a much worse strain of highly pathogenic H5N1 is brewing in West Africa. It has spread across five countries in six months and has led to the destruction of 1.6 million birds. Unlike the US strains, this virus has much greater potential for human spillover. The United Nations Food and Agriculture Organization released a statement saying that without timely intervention, "further spread is inevitable."

We are certain that influenza and other viruses will continue to emerge in birds and other animal and human populations, that they will do so increasingly, and that the locations where they emerge will even be predictable to a certain extent. We can make educated guesses about the what, where and when, but the one thing that requires no guessing is the threat from emerging infectious diseases will continue unabated. Rather than waiting until catastrophe occurs to shore up our defenses, we would much rather endorse a forward-looking approach aggressive enough to meet the threat.

*Former **Senator Joseph I. Lieberman** and former **Homeland Security Secretary Tom Ridge** are chairmen of the Blue Ribbon Study Panel on Biodefense, which is*

recommending changes to US policy and law to strengthen national biodefense while optimizing resource investments.

MERS CoV is back

As of 22 Aug 2015, there have been a total of: 1141 laboratory-confirmed cases of MERS-CoV infection, including 487 deaths, 592 recoveries and 62 currently active cases including 6 on home isolation. Current main target: Saudi Arabia (again).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