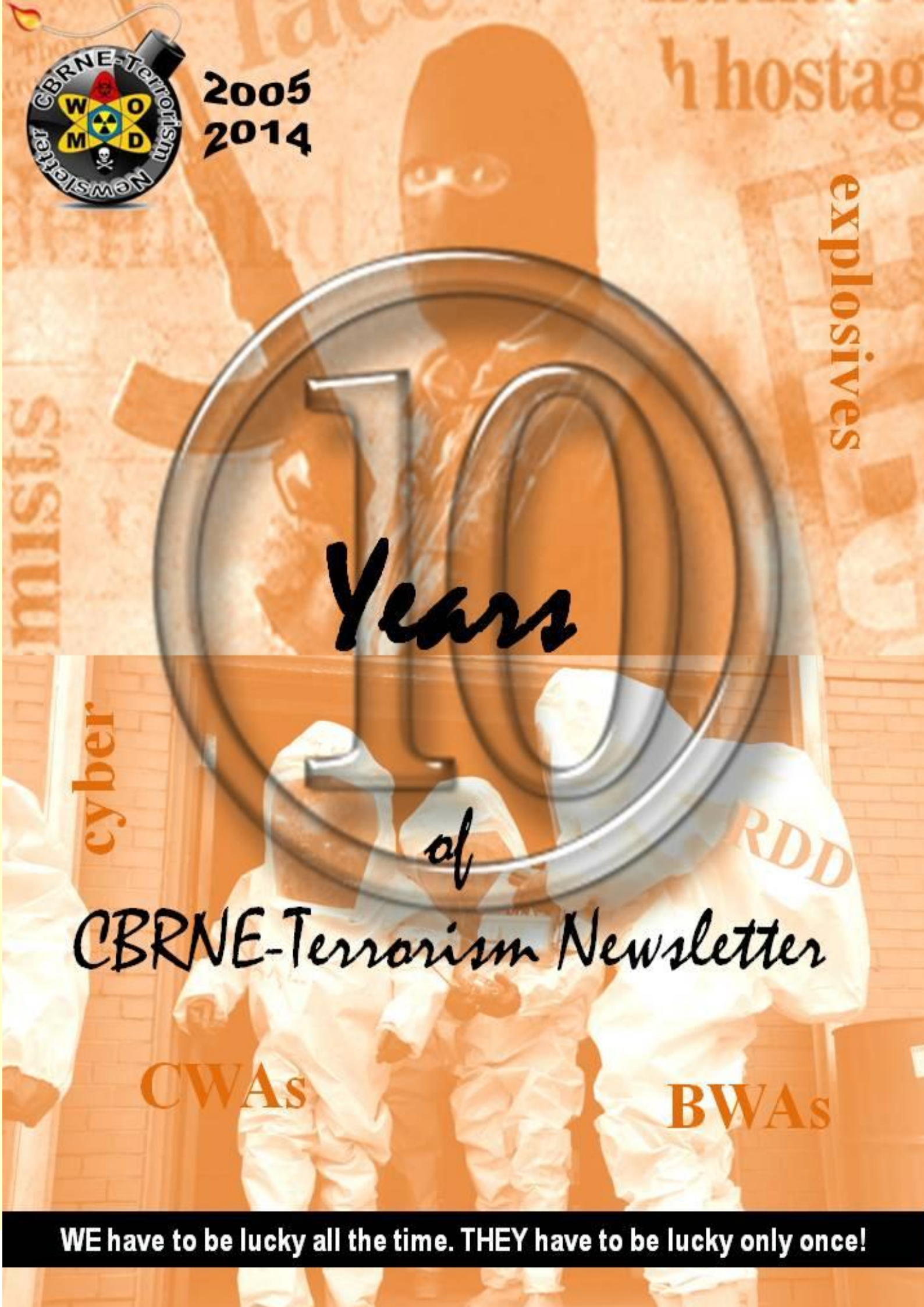
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# CBRNE-Terrorism Newsletter – 2015©

March 2015

**Website:** www.cbrne-terrorism-newsletter.com









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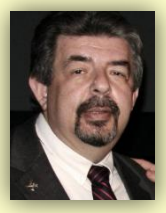
## CBRNE-Terrorism Newsletter is:

1. Read by First Responders in more than 80 countries around the globe (below right: top-20 countries);

2. Distributed to more than 700 institutions, organizations, state agencies, think tanks, defense companies, institutions and universities.



## Editorial

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

*Editor-in-Chief*
CBRNE-Terrorism Newsletter

*Dear Colleagues,*

I was always wondering why we are so sensitive when a terrorist attack happens in Europe, Australia or Canada and so desensitized with hecatombs of innocent eople killed in Africa, Yemen, Iraq or Syria. Many times I want to include a terrorist incident that took place in one of the countries above and when I read that deaths are below 100, I think that "it was not a big one…" But if I put in paper all the incidents around the globe then Part C would become huge and loose interest. Perhaps this is one of the many reasons that terrorism is gradually rising and we do not realize it because we are used to it. There is a sick expectation to read about a new form of attrocity conducted by IS aliens – their bloody imagination has no limits other than the galaxy they are coming from. Latest exapmle the 12 year-old child executing an Israeli hostage

The new alliance between Islamic State and Boko Haram is a fact and we should worry about it. But is worry enough to counter this threat? Surely not! There is debate about jihadis infiltration to massive illegal immigration waves storming counties by the Meditterranean Sea. But who really cares about that especially those not directly affected by them. It is fun to read how central and northern EU countries are pointing the figure on Greece, Italy and Spain regarding the way they behave to illegal immigrants. They think that money can buy them a peaceful sleep! But when asked to share the problem then instinctively they threaen with border closure and alike. Perhaps the Euro Army proposed by the Finns will solve the problem. Or is it for their own problems in relation to neighboring Russia and fake threats they envision to support their proposal.

What was prominent in March was the systemic destruction of ancient historic monuments and landmarks in Iraq – by IS of course. What the "civilized" world did about it? Nothing as usual – other than some "frustrated" rhetorics and words of indignation and convinction.

The Syrian refugees drama is endless and nobody really cares about it as well. Those who created the mess now looks like they support those who where initially condemned (i.e. John Brennan and Assad regime – now in favor of the regime not Assad!). It is always hard to understand high politics but there are rumors that high politics represent a collection of stupid ideas deriving from people with altered psychopathology. This is not my field and I am aware of my limitations in medicine.

On the other side of the ocean where everything is under control, a letter with a cyanide like compound was mailed to the White House. Big deal but mass media like it a lot. Same as with ricin letters before and anthrax letter before that.

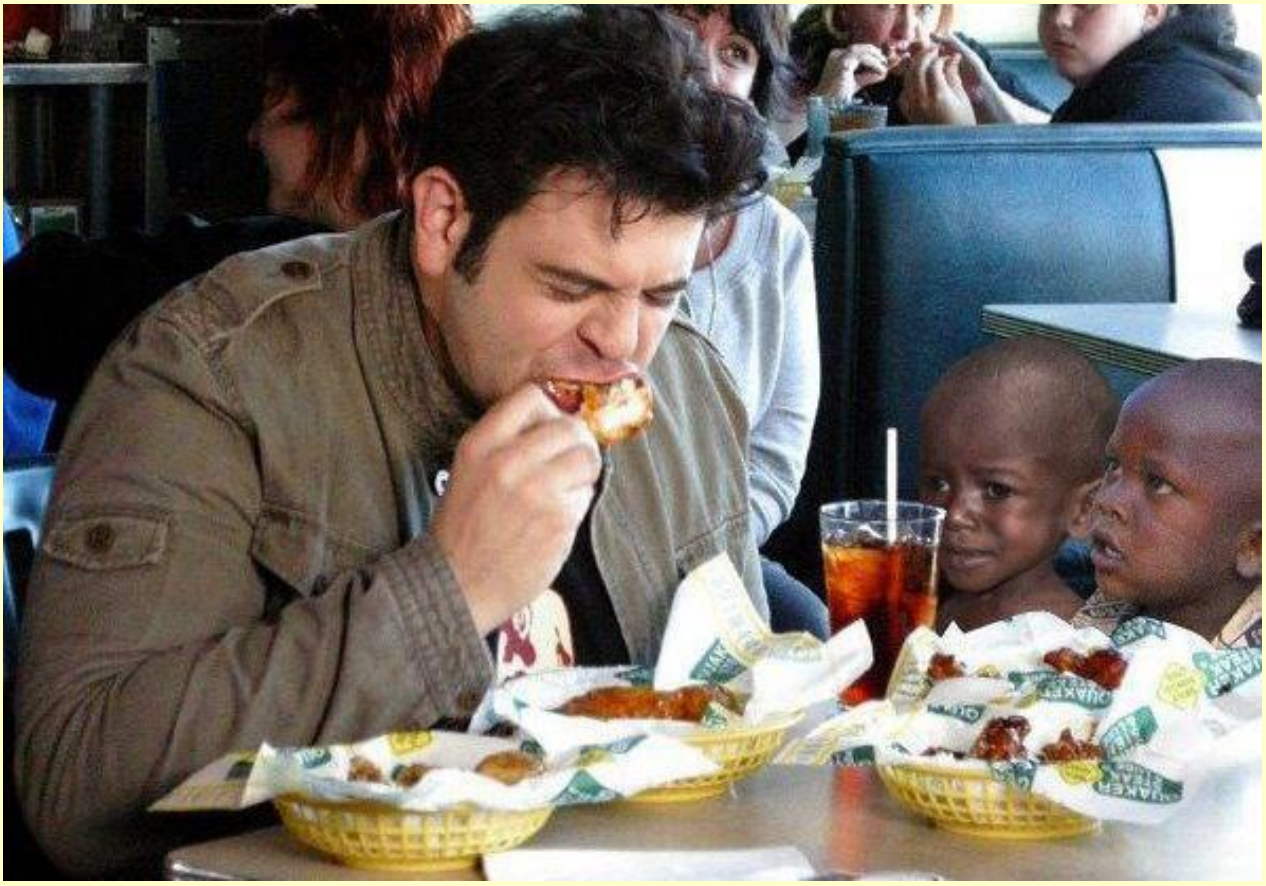
Ebola continues to march but we do not really worry because it is in West Africa and Africa is far away. No recent news on the expected life saving vaccines and the related research that were first page news around the globe. I am sure if you ask many countries off Africa about their level of preparedness you will get this answer "this is history! Ebola will stop mid 2015" But there are still peole dying over there – the psychological barrier of 10,000 deaths is a reality and new cases are recording again. And the big question "is Ebola airborne" still did not get a definite clear answer.

In Greece we continue to learn how to play pocker with EU counterparts with pistols on the table (a scenery resmling wide wild west movies). What we gain so far is that we have replaced "euro" with a new currency called "pride". The good think with "pride" is that you do not need to buy food or clothes or use real money because you feel fed, warm and happy. I am sure that when the rest of Europe (and the world) will realize this, then money will not be necessary and will extinct! I do have my own solutions on our current probems but they are beyond the scope of the Newsletter and not so democratic to put them into paper.

Let us all hope that April will be as bad as March because if it gets worse we might have a problem.

Take care First Responders! Do you job as best as you can and hope for the best while preparing for the worst. Because it will be you that you will be asked to take the snake out of its hole! Not the politicians, not the bankers not the evil minds enjoying chaos and disruption.

*The Editor-in-Chief*



**The root of the problem...**

# U.S. drone companies: FAA's proposed rules "onerous"

Source: http://www.homelandsecuritynewswire.com/dr20150223-u-s-drone-companies-faa-s-proposed-rules-onerous

Feb 23 – **A week after the Federal Aviation Authority (FAA) released its proposed rules for the commercial operation of small Unmanned Aerial Vehicles (UAVs), or drones, several American companies are considering moving their existing or future drone operations to Europe,** where, these companies contend, regulations governing drone use are less onerous. In France, Germany, the United Kingdom, and a few other European countries, drones are being used for delivery services, precision agriculture, and inspection of infrastructure such as power and pipelines. In the United States, the proposed FAA rules would make it impossible to successfully perform those operations.


**One proposed rule requires commercial drones to remain in the line of sight of pilots on the ground.** Michael Drobac, executive director of the Small UAV Coalition, which has twenty-four members, including Amazon, Google, and GoPro, said the line-of-sight limitation made no sense. "If the vehicle is 500 ft in the air, can a person on the ground objectively see it? To receive a view from the aircraft through an iPad or other device would improve visibility." Drobac warns that "every member (of his group) is contemplating moving abroad for testing and development – they are all thinking about it. The set-up in the U.S. is not hospitable to testing."


Amazon has plans to launch a delivery-by-drone service — Amazon Prime Air — in the United States, but the company recently told the *Guardian* that when the FAA's proposed regulations take effect, in about two years' time, "even then those rules wouldn't allow Prime Air to operate in the United States."

Airware, another coalition member, produces integrated software and hardware packages which control a drone's flight systems and allow the streaming and analysis of data collected by its sensors. Jesse Kallman, the company's director of business development, said the FAA's proposals were "expected but disappointing" as they were far more restrictive than rules set by European regulators. Airware adds that technology already exists that can ensure safety in small commercial settings. "In France they have begun flying beyond line-of-sight, they only require a small camera on the nose of the aircraft so that the operator can detect aerial conflicts," Kallman said, adding that geo-fencing technology can contain a drone within a specified three-dimension area, and autonomous systems can equip a drone to

"think" for itself should it lose a GPS signal or contact with its operator.
"The technology exists: it's extremely safe and it's already being used in other countries," he said. "We're now seeing Europe — particularly the U.K., France and Germany — pulling ahead, as UAV manufacturers are being allowed to make use of this technology."

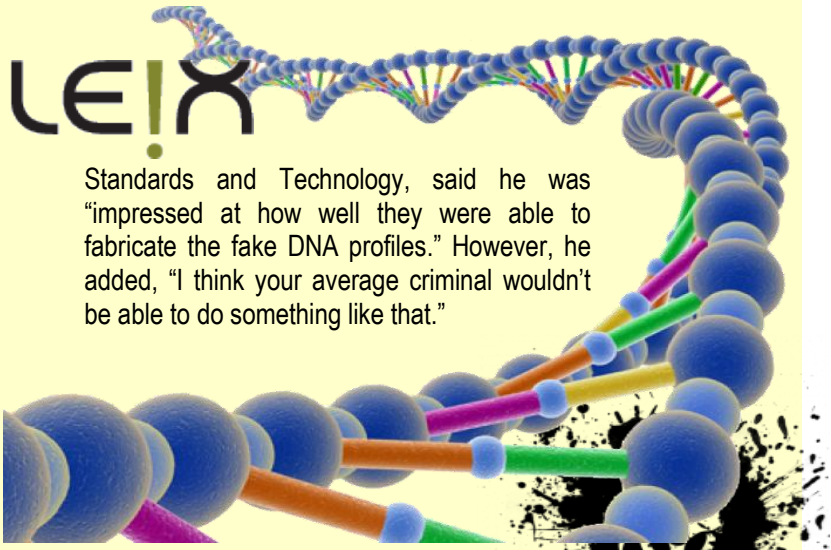
**The FAA also wants to prohibit commercial drone flights at night.** "The restriction on night flight will be extremely limiting," said Brendan Schulman, a lawyer who has been monitoring the domestic drone industry. He adds that the ban was puzzling as "it's very easy to operate a [drone] safely at night when it's lit up. Hobbyists are doing it all the time."

▶ **Read more on UAV rules at:**
http://www.faa.gov/news/press_releases/news_story.cfm?newsId=18295

## Scientists show DNA evidence can be faked!

Source: http://www.freemalaysiatoday.com/category/nation/2015/02/22/scientists-show-dna-evidence-can-be-faked/

**DNA evidence is key to the conviction or exoneration of suspects of various types of crime, from theft to rape and murder.**
**However, the disturbing possibility that DNA evidence can be faked has been overlooked by judges.**
Adopting an authentication assay for casework samples as part of the forensic procedure is necessary for maintaining the high credibility of DNA evidence in the judiciary system.
**Scientists in Israel have demonstrated that it is possible to fabricate DNA evidence, undermining the credibility of what has been considered the gold standard of proof in criminal cases. The scientists fabricated blood and saliva samples containing DNA from a person other than the donor of the blood and saliva. They also showed that if they had access to a DNA profile in a database, they could construct a sample of DNA to match that profile without obtaining any tissue from that person.**
"You can just engineer a crime scene," said Dan Frumkin, lead author of the paper, which has been published online by the journal Forensic Science International: Genetics. "Any biology undergraduate could perform this."
**Dr. Frumkin is a founder of Nucleix, a company based in Tel Aviv that has developed a test to distinguish real DNA samples from fake ones that it hopes to sell to forensics laboratories.**
The planting of fabricated DNA evidence at a crime scene is only one implication of the findings. A potential invasion of personal privacy is another.
Using some of the same techniques, it may be possible to scavenge anyone's DNA from a discarded drinking cup or cigarette butt and turn it into a saliva sample that could be submitted to a genetic testing company that measures ancestry or the risk of getting various diseases. Celebrities might have to fear "genetic paparazzi," said Gail H. Javitt of the Genetics and Public Policy Center at Johns Hopkins University.
Tania Simoncelli, science adviser to the American Civil Liberties Union, said the findings were worrisome.
"DNA is a lot easier to plant at a crime scene than fingerprints," she said. "We're creating a criminal justice system that is increasingly relying on this technology."
John M. Butler, leader of the human identity testing project at the National Institute of Standards and Technology, said he was "impressed at how well they were able to fabricate the fake DNA profiles." However, he added, "I think your average criminal wouldn't be able to do something like that."



The scientists fabricated DNA samples two ways. One required a real, if tiny, DNA sample, perhaps from a strand of hair or drinking cup. They amplified the tiny sample into a large quantity of DNA using a standard technique called whole genome amplification.
Of course, a drinking cup or piece of hair might itself be left at a crime scene to frame someone, but blood or saliva may be more believable.

**A fabricated sample lacks certain molecules that are attached to the DNA**
The authors of the paper took blood from a woman and centrifuged it to remove the white cells, which contain DNA. To the remaining red cells they added DNA that had been amplified from a man's hair.
Since red cells do not contain DNA, all of the genetic material in the blood sample was from the man. The authors sent it to a leading American forensics laboratory, which analyzed it as if it were a normal sample of a man's blood.
The other technique relied on DNA profiles, stored in law enforcement databases as a series of numbers and letters corresponding to variations at 13 spots in a person's genome.
**From a pooled sample of many people's DNA, the scientists cloned tiny DNA snippets representing the common variants at each spot, creating a library of such snippets. To prepare a DNA sample matching any profile, they just mixed the proper snippets together. They said that a library of 425 different DNA snippets would be enough to cover every conceivable profile.**
Nucleix's test to tell if a sample has been fabricated relies on the fact that amplified DNA — which would be used in either deception — is not methylated, meaning it lacks certain molecules that are attached to the DNA at specific points, usually to inactivate genes.

## National Health Security Strategy

Source: http://www.phe.gov/Preparedness/planning/authority/nhss/Pages/default.aspx


Before disaster strikes, people and their communities need to be prepared for the threats to health that come with disasters and emergencies. They need to be ready to protect themselves and remain resilient in the face of these threats.
We all can work together to achieve National Health Security. Individuals, families, communities and community-based organizations, the private sector, academia, and all levels of government, all have important roles to play in addressing the diverse challenges we face in catastrophic incidents.

**The National Health Security Strategy and Implementation Plan**
The goal of the National Health Security Strategy (NHSS) is to strengthen and sustain communities' abilities to prevent, protect against, mitigate the effects of, respond to, and recover from disasters and emergencies. The NHSS Implementation Plan lists activities will help us achieve this goal.

**The National Health Security Review**
The National Health Security Review (NHSR) is an evaluation of progress made—and persistent challenges—in national health security over the past four years. The NHSR findings informed development of the priorities identified in the NHSS 2015-2018.

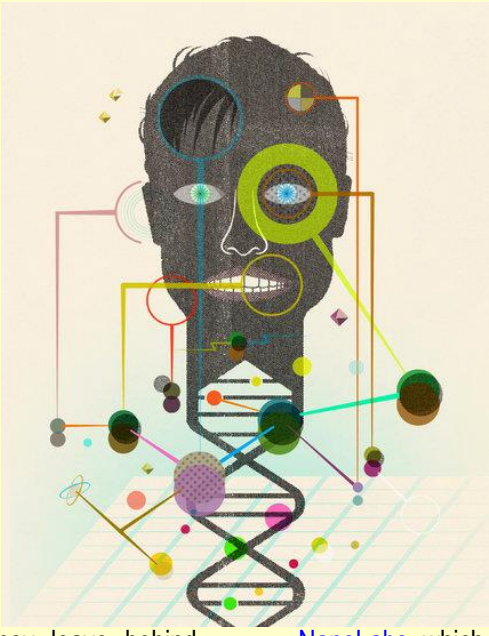
▶ **Read the full paper at:**
http://www.phe.gov/Preparedness/planning/authority/nhss/Documents/nhss-ip.pdf

# Building a Face, and a Case, on DNA

Source: http://www.nytimes.com/2015/02/24/science/building-face-and-a-case-on-dna.html

There were no known eyewitnesses to the murder of a young woman and her 3-year-old daughter four years ago. No security cameras caught a figure coming or going.

Nonetheless, the police in Columbia, S.C., last month released a sketch of a possible suspect. Rather than an artist's rendering based on witness descriptions, the face was generated by a computer relying solely on DNA found at the scene of the crime.



It may be the first time a suspect's face has been put before the public in this way, but it will not be the last. Investigators are increasingly able to determine the physical characteristics of crime suspects from the DNA they leave behind, providing what could become a powerful new tool for law enforcement.

Already genetic sleuths can determine a suspect's eye and hair color fairly accurately. It is also possible, or might soon be, to predict skin color, freckling, baldness, hair curliness, tooth shape and age.

Computers may eventually be able to match faces generated from DNA to those in a database of mug shots. Even if it does not immediately find the culprit, the genetic witness, so to speak, can be useful, researchers say.

"That at least narrows down the suspects," said Susan Walsh, an assistant professor of biology at Indiana University-Purdue University Indianapolis who recently won a $1.1 million grant from the Department of Justice to develop such tools.

But forensic DNA phenotyping, as it is called, is also raising concerns. Some scientists question the accuracy of the technology, especially its ability to recreate facial images. Others say use of these techniques could exacerbate racial profiling among law enforcement agencies and infringe on privacy.

"This is another of these areas where the technology is ahead of the popular debate and discussion," said Erin Murphy, a professor of law at New York University.

DNA, of course, has been used for more than two decades to hunt for suspects or to convict or exonerate people. But until now, that meant matching a suspect's DNA to that found at the crime scene, or trying to find a match in a government database.

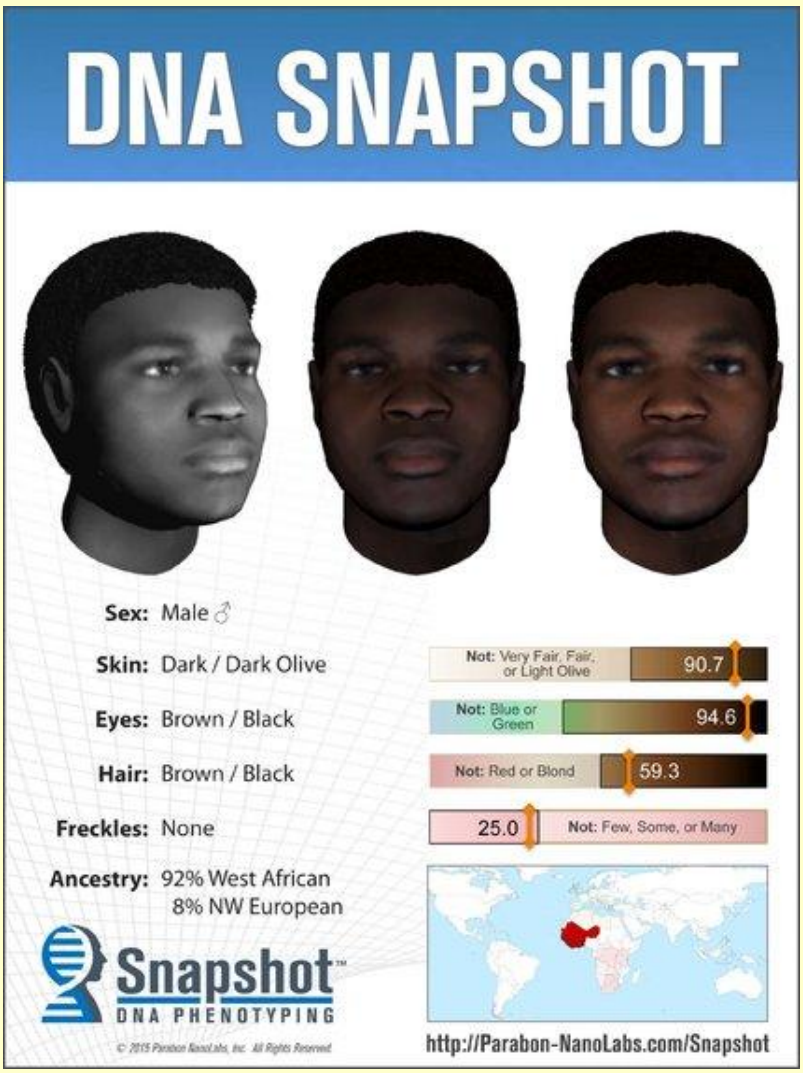
DNA phenotyping is different: an attempt to determine physical traits from genetic material left at the scene when no match is found in the conventional way. Though the science is still evolving, small companies like Parabon NanoLabs, which made the image in the South Carolina case, and Identitas have begun offering DNA phenotyping services to law enforcement agencies.

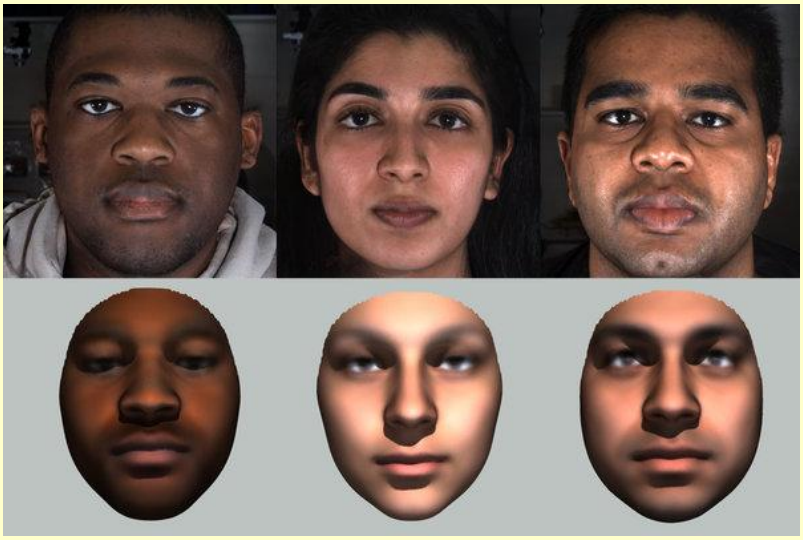
Illumina, the largest manufacturer of DNA sequencers, has just introduced a forensics product that can be used to predict some traits as well as to perform conventional DNA profiling.

The Toronto Police Service has submitted DNA from 29 cases dating from the early 1980s through 2014 to Identitas. In 10 instances, the quality of the sample was too poor for any analysis to be done.

In a number of other cases, "it's enabled us to actually change the direction we were focused on originally," said Detective Sergeant Stacy Gallant, a cold-case homicide investigator. But there have been no arrests or convictions as a result, he said.

Gender has long been ascertained from crime scene DNA. About 15 years ago, some police departments began trying to determine the geographic ancestry of suspects, as well, by using tests like the ones consumers



order to learn about their genetic heritage.
In 2003, such information helped redirect the search for a serial killer in Louisiana. Police had been looking for a white man based on a witness account and on psychological profiles.

But DNA found at the site of one of the murders indicated the person's ancestry was 85 percent sub-Saharan African. Eventually, a black man was convicted of the crimes.
Now researchers are closing in on specific physical traits, like eye and hair color. A system called HIrisPlex, which was developed at Erasmus University MC Medical Center in the Netherlands, is about 94 percent accurate in determining if a person has blue or brown eyes, but less so with intermediate colors like green, said Dr. Walsh, who helped develop the technology.

The police in Columbia, S.C., released this sketch of a possible suspect based on DNA left at the crime scene. Parabon NanoLabs, which made the image, has begun offering DNA phenotyping services to law enforcement agencies.

HIrisPlex, which analyzes 24 genetic variants, is about 75 percent accurate for hair color, which can change as a person ages, she said.
Scientists look for genetic variants associated with physical traits the same way they look for genes that might cause disease: by studying the genomes of people with or without the trait or the disease, and looking for correlations. But this can be a complex task.
Many genetic variants may be associated with a trait, but each may make just a small contribution. Studies of twins, for instance, suggest that height is 80 percent determined by genetics, said Manfred Kayser, a professor of forensic molecular biology at Erasmus.

Individuals' faces compared with Dr. Shriver's computer-generated DNA predictions. Credit The New York Times; Images and renderings by Mark D. Shriver/Penn State University

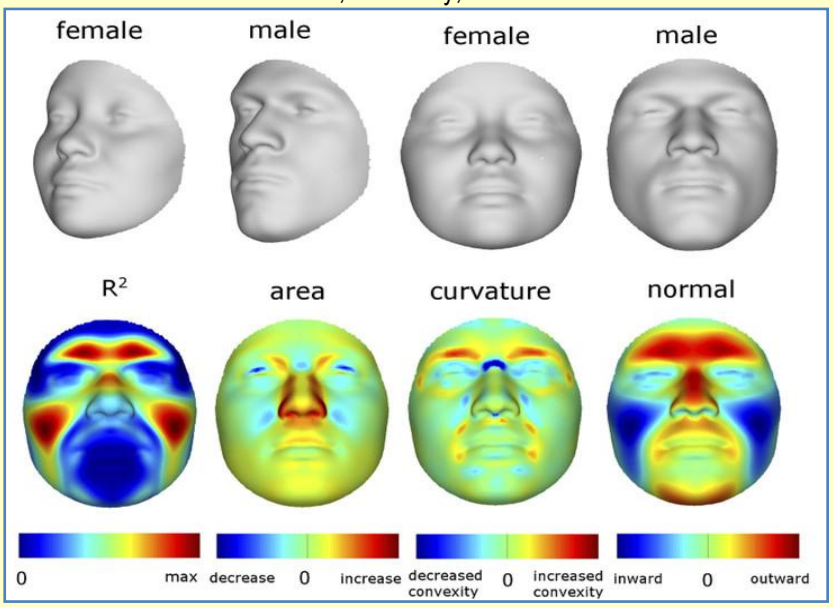
But while one study found about 700 genetic variants linked to height, they explained only about 15 percent of variation from person to person, he added.
On the other hand, eye and hair color have proved relatively easy

to ascertain from DNA samples, Dr. Kayser said, because a single gene has a large influence on these traits.

Predicting a suspect's age is not out of the question, either — by analyzing markers that shut off certain genes as people grow older, he said.

But many of these techniques were developed by studying Europeans and might not work as well elsewhere in the world, said Kenneth Kidd, a professor of genetics at Yale.

He and other experts are skeptical that faces, which are very complex, can be determined from DNA. While inheritance clearly plays a big role – identical twins look alike, obviously, and people resemble their close relatives — some experts say not enough is known yet about the relationship between genes and facial features.




"A bit of science fiction at this point," said Benedikt Hallgrimsson, the head of cell biology and anatomy at the University of Calgary, who studies the development of faces.

The critics noted that Parabon, which is based in Reston, Va., and has received grants from the Defense Department, had not published information in peer-reviewed journals validating its methods, even though such a publication would increase sales.

Parabon announced last week that a well-known outside expert would conduct a validation study that could be published. Ellen McRae Greytak, Parabon's director of bioinformatics, said the company's technique was based partly on the work of Mark D. Shriver, a professor of anthropology and genetics at Penn State University, who published his methods last year.

Dr. Shriver and his main collaborator, Peter Claes of KU Leuven in Belgium, have developed a complex mathematical method to represent faces, based on measuring the three-dimensional coordinates of more than 7,000 points on the face.

They developed a way to create a sort of generic face based on the person's sex and ancestry mix, as determined from their DNA. They then adjust that face based on 24 genetic variants in 20 genes shown to be involved in facial variation.

The researchers said in their papers that their ancestry and gender analysis explained only about 23 percent of the variation in faces and that the genetic variants did not really add much detail. But the technique is in early development and they have since added many more genetic variants to try to improve the accuracy. Some of the images generated look similar to the actual face of the DNA donor, others less so.

But law-enforcement agencies sometimes have few good options in homicide cases. In the Columbia, S.C., case, the police were at a standstill in their investigation of the January 2011 murder of 25-year-old Candra Alston and her 3-year-old daughter, Malaysia Boykin, in their apartment.

There were no signs of forced entry, suggesting Ms. Alston knew her killer. More than 100 acquaintances voluntarily provided DNA samples, but none matched that found at the crime scene.

So four years later, on Jan. 9, the police released an image developed by Parabon of a "person of interest."

"We thought it was worth a shot," said Mark Vinson, a police investigator, who said the department paid Parabon $4,200 and had not independently vetted the technology.

The release of the image generated a couple of leads, he said, but neither panned out.

Law enforcement authorities say that information about physical traits derived from DNA is not permitted in court because the science is not well established. Still, the prospect of widespread DNA phenotyping has unnerved some experts.

Duana Fullwiley, an associate professor of anthropology at Stanford, said that she worried that use of such images could contribute to racial profiling. She noted that Dr. Shriver developed his system by analyzing the DNA and faces of people with mixed West African and European ancestry.

"This leads to a technology that is better able to make faces that are African-American," she said. The image produced in the South Carolina case, Dr. Fullwiley added, "was of a generic young black man."

Dr. Shriver said he initially studied people of mixed European and African ancestry, many of them from Brazil, because that made the analysis easier. His more recent research has involved people of many different ethnicities, he said.

Some legal experts, too, say that DNA phenotyping takes civil liberties into uncharted waters.

Conventional DNA profiling, used for matching, does not rely on DNA linked to characteristics of the person, other than sex. Until now, that had helped blunt concerns that forensic use of DNA would violate the Fourth Amendment protection against unreasonable searches, said Ms. Murphy, the law professor.

But the use of DNA to determine physical traits "completely dissolves that firm boundary," she said.

It also opens up a new set of questions: What traits are off limits? Should the authorities be able to test whether a suspect has a medical condition or is prone to violence should such testing be possible?

Belgium and Germany do not allow forensic DNA phenotyping. The Netherlands restricts it to predicting traits that are publicly visible, like hair and eye color.

In the United States, some states prohibit testing to determine if a person has a medical condition or propensity for a disease, Ms. Murphy said. But those laws mainly pertain to samples taken from a known person, such as those in a DNA database.

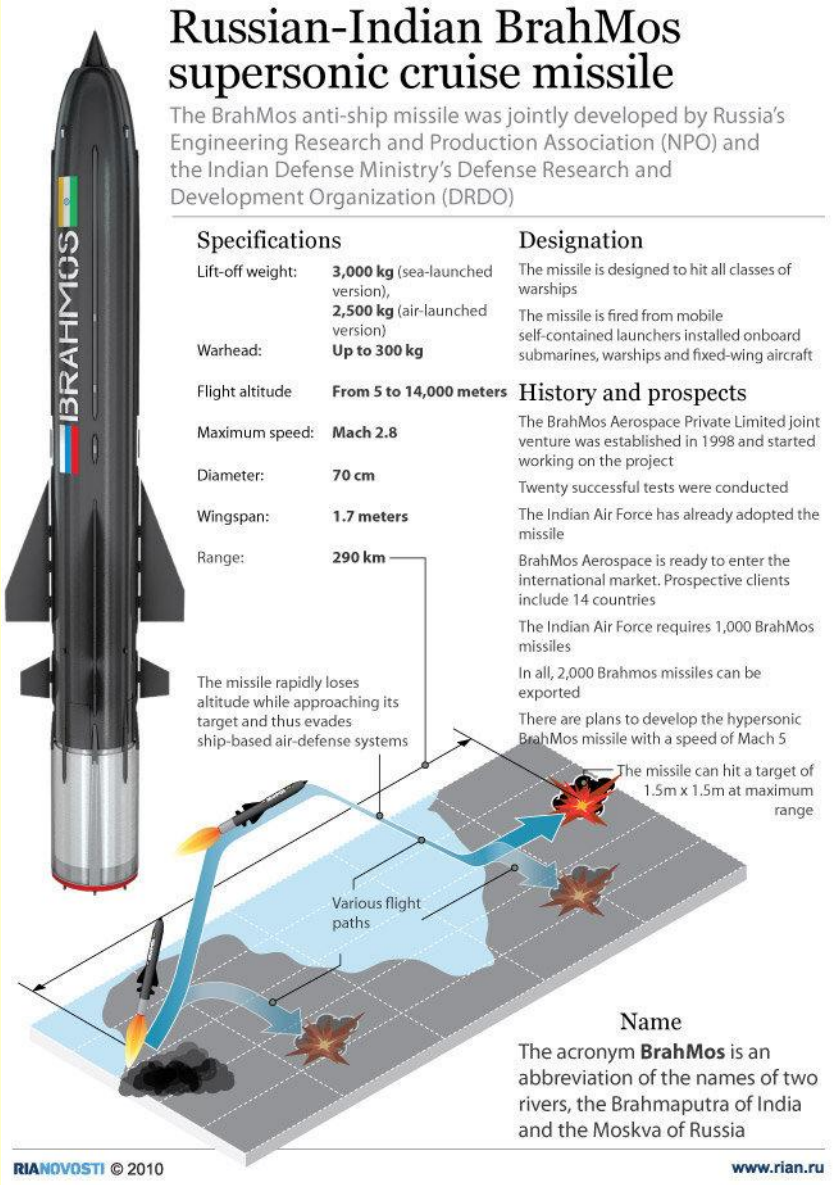
Crime-scene DNA, however, is legally considered abandoned material. "There's pretty much no law on what you can do to a crime scene sample," Ms. Murphy said.



## Russia Develops New Fuel for Hypersonic Cruise Missile

Source: http://www.themoscowtimes.com/article/516053.html


**Russia has created a powerful recipe for fuel that will allow missiles to fly faster than five times the speed of sound, a development that if utilized effectively would make Russia a major player in a growing hypersonic arms race,** a deputy defense minister said.




"The recipe has been created and the energy accumulated in this fuel will enable our vehicles to exceed Mach 5," General Dmitry Bulgakov, deputy defense minister, was quoted by the TASS news agency as saying on Tuesday.

**Mach 5, or 6,126 kilometers per hour,** is considered to be the barrier between supersonic speeds and hypersonic speeds.

Militaries around the world are racing to harness the power of hypersonic flight, which by slashing missile flight times will complicate countries' ability to detect and respond to attacks and potentially upset the global military balance of power.

The United States, China, Russia and India are all working to develop hypersonic missile systems, but the engineering challenges are daunting. Hypersonic missiles need to be strong to withstand the stress of flight beyond Mach 5.

While the United States and China have focused their efforts on so-called boost-glide hypersonic missiles, which launch on a rocket and then glide to their target, Russia and India have chosen to focus their efforts on the co-development of a hypersonic cruise missile.

Cruise missiles **differ** from ballistic missiles in that they fly under their own power to their target and can fly low to evade early warning radar systems.

**Russia and India have already developed a cruise missile together, known as BrahMos (photo). Considered the fastest supersonic cruise missile in the world, BrahMos travels at speeds up to Mach 3, or about 3,675 kilometers per hour.**



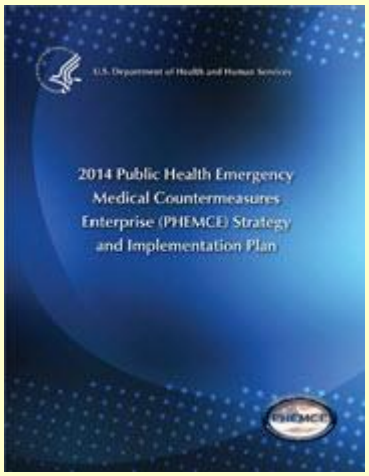
**EDITOR'S COMMENT:** This is a very innovative solution that will surely change the equilibrium of forces not only between traditional big powers **but also** that between countries with serious frictions in our neighborhood. In that case, you do not have to maintain missile elements in the front line – they can be hidden behind mainland's high mountains and effectively destroy everything from a safe distance!

## 2014 PHEMCE Strategy and Implementation Plan

Source:http://www.phe.gov/Preparedness/mcm/phemce/Pages/strategy.aspx

**The United States continues to face a range of serious threats to its national health security from the deliberate use or accidental release of chemical, biological, radiological, and nuclear (CBRN) agents, as well as from naturally occurring and emerging infectious diseases (EID), including pandemic influenza.**

HHS estimated the funding requirements for NIH, ASPR, FDA, and CDC to pursue medical countermeasure development and purchase in fiscal years 2014-2018, and provided this information to Congress. Agency-specific spending is estimated to be: NIH/NIAID - $9.2 billion; ASPR/BARDA - $5.0 billion; CDC/SNS - $3.1 billion; and FDA - $13.7 million. The out-year funding estimates (FY 2017 & 2018) included in the report were developed without regard to the competing priorities that are considered in the annual development of the President's Budget and must be considered as budget submissions to Congress are developed in these out-years. So these estimates are subject to change in the future.




The 2014 PHEMCE Strategy and Implementation Plan reflects the HHS commitment, in collaboration with its interagency PHEMCE partners, to provide the nation with a nimble, flexible capacity to rapidly produce and effectively use medical countermeasures in the face of any attack or threat whether known or unknown, novel or reemerging, natural or intentional.

The 2014 PHEMCE SIP reaffirmed the goals and objectives that were established in the 2012 PHEMCE SIP. It also describes the activities and programs that HHS, in collaboration with its interagency partners, is continuing to take to increase MCM preparedness for national health security threats.

**Additional information included in the 2014 PHEMCE SIP are:**

1. An evaluation of progress against 2012 PHEMCE SIP priorities
2. Progress in addressing the needs of at-risk populations
3. A description of HHS and DoD coordination
4. A summary of advanced research and development and procurement awards
5. Information regarding the use of funds and authorities originally authorized and provided by Project BioShield
6. A summary of PHEMCE interactions with non-federal stakeholders

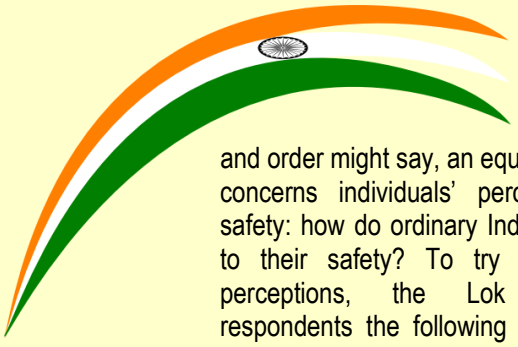
To ensure that our priorities reflect current scientific progress and fiscal capabilities, this plan is annually assessed and updated to ensure optimal allocation of resources to address high-priority threats. As required by the Pandemic and All-Hazards Preparedness Reauthorization Act (PAHPRA) (Public Law 113-5), a PHEMCE Strategy and Implementation Plan (SIP) is released annually.



## Unsafe After Sunset

**By Milan Vaishnav and Neelanjan Sircar**

Source: http://carnegieendowment.org/2015/02/27/unsafe-after-sunset/i30b



Independent of what government statistics on law and order might say, an equally important issue concerns individuals' perceptions of public safety: how do ordinary Indians regard threats to their safety? To try and gauge these perceptions, the Lok Survey asked respondents the following question: "What is the latest time in the day that you feel safe returning home alone?" Respondents were given hourly choices beginning with 5 p.m. and ending with "midnight or after."

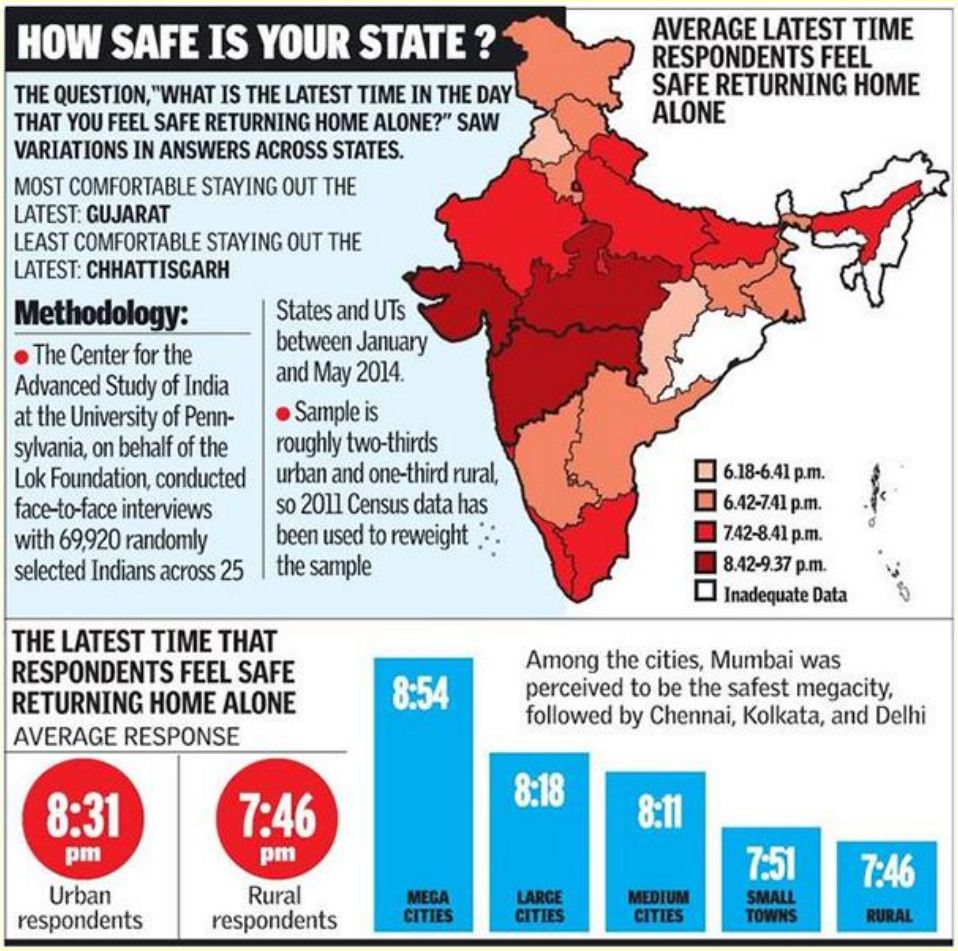
Across India, 36 per cent of survey respondents stated that they did not feel safe returning home alone past 7 p.m. The most popular response was 8 p.m., an answer given by 22 per cent of respondents. Relatively few people offered responses at the extremes: just 3 per cent said 5 p.m. while 4.5 per cent stated midnight or after.

**Variation across States**

Of course, there is significant variation in responses across States. Residents of Gujarat, on average, felt comfortable staying out the latest; the average response was 9:37p.m., which backs up claims made by Prime Minister Narendra Modi that public safety is of less concern in his State. On the opposite end of the spectrum is Chhattisgarh,

whose struggles with Naxal violence have been well-documented, and Punjab, perhaps due to greater social conservatism. The average response times in both States was around 6:30 p.m. But even State-wise aggregate measures mask considerable variation because there are large differences between urban and rural settings.

There is a pronounced difference between urban and rural dwellers. The average response for urban respondents was 8:31 p.m., whereas the average response for rural respondents was just 7:46 p.m. But this simple dichotomy masks significant differences within urban India. In order to understand how safety varies by the size of the city, we divided our sample of cities into four categories: megacities (at least 50 lakh inhabitants), large cities (between 10 and 50 lakh inhabitants), medium-sized cities (between 2 and 10 lakh inhabitants), and small towns (less than 2 lakh inhabitants).




Respondents living in megacities report an average response of 8:54 p.m., which dropped to 8:18 p.m. and 8:11 p.m. for respondents in large and medium-sized cities, respectively. In small towns, the average response was just 7:51 p.m., more than an hour less than those living in megacities and similar to rural India. This implies that perceptions of public safety are not driven by urbanisation per se; rather, they are likely driven by the infrastructure and amenities associated with the largest cities in India.

In order to understand the variation in response of the largest cities, we looked at the four biggest urban agglomerations: Chennai, Delhi, Kolkata, and Mumbai. Mumbai (9:27 p.m.) was perceived to be the safest megacity, followed by Chennai (9:16 p.m.), Kolkata (8:46 p.m.), and Delhi (8:16 p.m.). These data support the view of Delhi as an unusually unsafe megacity, with perceptions of safety on par with smaller cities in India.

The perception of public safety is a multifaceted issue. People may feel unsafe due to a larger context of conflict, as in places experiencing Naxal violence; little can be done to restore the perception of safety without reducing the underlying conflict in these places. Our data also show that urbanisation is not a panacea for concerns about public safety. Rather, cities must invest in the "right kind" of urbanisation, with the sort of infrastructure seen in the largest cities. These cities have better amenities (such as street lights) and often have buses or even a metro that runs reliably until late at night. This demonstrates the positive secondary effects on the larger social environment when building infrastructure. For these reasons, despite recent negative press, the

largest cities continue to be perceived as the safest places to live in India.

**New class structures**

The rapid rates of economic change India has experienced for at least the past quarter-century have undoubtedly shaken up rigid social structures and raised doubts about traditional social norms. A central element of this change is the emergence of new class structures, namely a growing middle class. As the first article in our series demonstrated ("Being middle class in India," Dec.9, 2014), this class affiliation might be real or imagined, but either way, it has a profound impact on social behaviour. But this impact is not unambiguously positive. On the one hand, those who self-identify as belonging to the "middle class" appear more optimistic about the prospects of both themselves and the country. On the other hand, economic progress can also create new anxieties, which can reside both within the household as well as outside.

As previous pieces in the series have shown, economic change does not appear to be enough to remove entrenched preferences for boys or substantially weaken traditional forms of social control over women. Outside of the household, development and increasing urbanisation may be creating new forms of social and economic competition that help reproduce social biases, such as caste or religious discrimination. Indeed, it is precisely among socially mobile populations in our sample that social bias looms the largest. Of course, environmental factors too play their part: persistent gaps in the provision of basic law and order cannot be disassociated from the anxieties and aspirations of ordinary Indians.

Collectively, the central takeaway from the most recent Lok Survey is an obvious, though oft forgotten, one: that modernisation is not a linear process. In the long run, if history is any guide, democracy, economic development, urbanisation, increasing education, and social progressivism do tend to proceed hand in hand. But, this virtuous circle is neither foreordained nor without its share of bumps in the road.

***Milan Vaishnav*** *is an associate in the South Asia Program at the Carnegie Endowment for International Peace. His primary research focus is the political economy of India, and he examines issues such as corruption and governance, state capacity, distributive politics, and electoral behavior. One of his ongoing major projects examines the causes and consequences of political corruption in India with an emphasis on representation and quality of political leadership, connections between the state and private capital, and the management and exploitation of natural resources. He also works on development policy as well as issues of governance in developing countries and their relation to democratic accountability. He is the co-editor of the book* Short of the Goal: U.S. Policy and Poorly Performing States *(Center for Global Development, 2006). His work has also been published in the* Latin American Research Review. *Previously, he worked at the Center for Global Development, where he served as a postdoctoral research fellow, the Center for Strategic and International Studies, and the Council on Foreign Relations. He has taught at Columbia, Georgetown, and George Washington Universities.*



## AK PARTİ EGE'DEKİ ADALARI YUNANİSTAN'A VERDİ

Source: http://www.haber3.com/ak-parti-egedeki-adalari-yunanistana-verdi-3225084h.htm

Ümit Özdağ, 2004'ten bu yana Yunanistan'ın Türkiye'ye ait bazı ada ve adacıkları işgal ettiğini, hükümetin ise konunun üzerini örttüğünü iddia etti.

"21st Century Turkish Institute" that is considered the official "think tank" of the Turkish government sice it is financed from the Ministry of Foreign Affairs released an article of the close friend of President Erdogan, **Prof of Political Sciences Ümit Özdağ** stating that Turkey "must immediately claim of lost 16 islands in Aegean Sea currently under Greek occupation since 2004". The islands in the map below are named after their Turkish names such as Kouyn, Hurşıt, Fornoz, Eşek, Nergizçik, Bulamaç, Kalolimnos, Keçi, Sakarcılar Koçbaba,

Ardacık. In reality these are the Greek islands Oinousses, Fimena, Fournoi, Agathonissi, Arki, Farmakonissi, Kalolimnos, Platia, Kyra Panagia, Gyali, Syrna and those in the Eastern Mediterranean, south of the Island of Crete: Gavdos, Dhia, Dionissiades, Gaidhuronissi, Koufonissi.

**EGE DENİZİ'NDE EGEMENLİĞİ DEVREDİLMEMİŞ ADALAR**

Eritre-Yemen kararının getirdiği yorumdan ve Osmanlı Arşivleri'ndeki bilgilerden yararlanılarak belirlenen adalardan bazıları şöyle:

1- Kardak, Hurşid (Furni), Fornoz (Fimena), Eşek Adası (Gaidaros), Keçi (Pserimos), Nergiscik (Mandiraki), Bulamaç (Farmakonisi)

2- Koçbaba (Koçpapas-Levita), Sirina Ardıçcık (Zenari-Kinaros), Kendiroz (Liadi)

3- Kandilli (Kandheliousa), Yali ve Sakarcalar

4- Kızkardaşlar (Adelfia), Sirina, Üç Adalar (Plakhida)

5- Safran Adaları (Sofrana), İstakida (Astakidhapula), İki Kardaşlar, Kamilun (Kamilonisi)

6- Koyun Adası

7- Andiipsara

8- Kalari Kayalıkları

**ULUSLARARASI HUKUKA GÖRE DEVRİ YAPILMIŞ ADALAR**

24 Nisan 1830'da Eğriboz Adası, Kuzey Sporat Adaları, Kiklad Adaları, 29 Mart 1864'te Çuha ve Küçük Çuha Adaları Yunanistan'a devredildi.

30 Mayıs 1913 Londra Andlaşma sı'nın devrettiği Girit Adası'ndan baş ka Lozan Barış Andlaşması'na kada Ege'de herhangi bir ada, egemenlik devrine konu olmadı. Lozan'da Gökç ada, Bozcaada ve Tavşan Adaları'nd Türkiye hakimiyeti teyid edildi, aksin hüküm olmadığı takdirde Asya sahil nin üç mili içerisindeki adalar Türk h kimiyetine bırakıldı.

13 Şubat 1914'te Altı Büyük Devlet Kararı gereği Limni, Semadirek, Midilli, Sakız, Sisam ve Ahikerya adaları ismen sayılarak, Taşoz, Bozbaba ve İpsara Adaları is ismen sayılmadan Yunanistan'a devredildi.

## "AK PARTI EGE'DEKI ADALARI YUNANISTAN'A VERDI"

**Ümit Özdağ, 2004'ten bu yana Yunanistan'ın Türkiye'ye ait bazı ada ve adacıkları işgal ettiğini, hükümetin ise konunun üzerini örttüğünü iddia etti.**

26.02.2015 15:38

Milliyetçi kesime yakınlığı ile bilinen siyasal bilimler profesörü yazar Ümit Özdağ, Süleyman Şah türbesine yönelik tahliye operasyonunu değerlendirdi.

Başkanı olduğu 21. Yüzyıl Türkiye Enstitüsü'nün internet sitesinde yazan Özdağ, hükümetin Ege Denizi'ndeki bazı adaları Yunanistan'a bıraktığını iddia etti.

Özdağ şunları yazdı:

**YUNANİSTAN TÜRK ADALARINI İŞGAL ETTİ**

Peki, Suriye'de vatan topraklarını bırakıp yerine yenisini aldık Ege'de bıraktığımız adaların ve kayalığın yerine ne aldık? Konuyu bilmeyen okuyucu kendi kendisine bu da nereden çıktı diyebilir. Yunanistan, 2004 ve sonrasında Ege'de Kanuni ve IV. Mehmet döneminde fethedilen, Atatürk'ün Lozan'da vermediği ve 1936 yılında Şükrü Kaya'nın T.C. envanterine kaydettiği, İngiliz ve Amerikan haritalarında Türk Adası olarak gösterilen 16 ada ve bir kayalığı AKP Döneminde Ekim-Kasım 2004'den başlayarak işgal ve fethetmiştir.

**GENELKURMAY AÇIKLAMIŞTI AMA..**

31 Aralık 2008'de Yunan helikopterinin Bulamaç Adası'nda Türk hava sahasını ihlali üzerine Genelkurmay

**EDITOR'S COMMENT:** Another hidden face of a country willing to join EU. And another chance for a future "Molon Lave" in case certain circles still believe in turning dreams into reality!

# Naked man 'escaping Buckingham Palace bedroom window during the Changing of the Guard'

Source: http://www.dailymail.co.uk/news/article-2972782/One-not-amused-Internet-hoaxer-posts-video-naked-man-escaping-Buckingham-Palace-bedroom-window-Changing-Guard.html#ixzz3T6sclyHT

A video clip claiming to show a naked man climbing down the facade of Buckingham Palace on a bed sheet has gone viral on the internet.



The video show a couple of tourists standing on Constitution Hill, outside Green Park as the Changing of the Guard is taking place.


As the video zooms towards Buckingham Palace, it appears as if a naked man has clambered out of a window onto a bed sheet and attempts to lower himself to the ground.

Despite a naked man just yards away the soldiers seem completely unaware of what is happening over their shoulder.

The man is seen slowly lowering himself down the rope made from bed sheets over the course of several seconds.

However, after about ten feet, the man loses his grip and plummets to the ground some 20 feet below him.

Yet, despite the incident, nobody in the crowd or any of the soldiers appear to react.

However, the 45 second video is believed to be an elaborate hoax.

When contacted, Buckingham palace declined to comment on the video.

The Metropolitan Police said they have not received any reports of a naked man dangling from a Buckingham Palace window.
The London Ambulance Service said they have not received any calls to treat a naked man suffering from injuries sustained from a fall from a rope made of bed sheets.

**EDITOR'S COMMENT:** It is understandable the choice of words in all UK media: "hoaxer", "elaborated hoax", "claiming to show" and alike. One could say that Buckingham Palace is an "open house". Another could add the royalties are humans as well! A third might comment that it not a young man but a bird! All the above might be correct if it was just a snapshot taken and processed to make a joke. But the reality is: (1) It is a video and only special people of special services can add a video on a video; (2) No ordinary man can easily do kind of fast-roping unless he is trained to do that; a trained man can also fall from ~3m unharmed; (3) The Guard should have an emergency plan to counter similar events and most important of all they have to look around for possible threats; or at least have their communication headsets with them. (4) Police and Ambulance service might have no direct access to BP that might have its own medical services to deal with minor emergencies. It is amazing how such an incident out of nowhere can lead to nasty conclusions on national security issues both from Brits and international tourists… And he was not a terrorist; just a unucky lover!

# Stratfor: Decade Forecast 2015-2025

Source: https://www.stratfor.com/video/preview-decade-forecast-2015-2025

## Video Transcript (Feb 20)

**David Judson:** Hi I'm David Judson, editor-in-chief at Stratfor. Today with me is George Friedman our founder and chairman and what we want to talk about is something we don't do very often. This is our decade forecast, which we do every five years. From now to 2025 there's some head turners in here George. The centrifugal forces in Russia kind of reverse in the sense of what we saw five years ago, leading ultimately to a nuclear weaponry standoff, not necessarily a standoff of nuclear weapons but a crisis over their management. If not the end the decline of the nation-state in the Middle East — the death of Sykes-Picot if you will — while in contrast the return of the nation-state in Europe. What we've been calling the PC-16, the diffusion of China's low-end manufacturing industrial base to a host of other countries. And ultimately what I think is the big head turner in this is Germany and Poland. You forecast here the beginning of an extended decline of Germany and the emergence of Poland. Can you talk about that a bit?

**George Friedman:** Well, Germany is now exporting 50 percent of its GDP. In 1990 it was less than 24 percent. So as Germany has grown, its exports have surged. That's unsustainable. It's unsustainable because the ability of export-to-export depends on the economic health of its customers. And Europe is unhealthy. But even if

**Russia**

It is unlikely that the Russian Federation will survive in its current form. Russia's failure to transform its energy revenue into a self-sustaining economy makes it vulnerable to price fluctuations. It has no defense against these market forces. Given the organization of the federation, with revenue flowing to Moscow before being distributed directly or via regional governments, the flow of resources will also vary dramatically. This will lead to a repeat of the Soviet Union's experience in the 1980s and Russia's in the 1990s, in which Moscow's ability to support the national infrastructure declined. In this case, it will cause regions to fend for themselves by forming informal and formal autonomous entities. The economic ties binding the Russian periphery to Moscow will fray.

Historically, the Russians solved such problems via the secret police — the KGB and its successor, the Federal Security Services. But just as in the 1980s, the secret police will not be able to contain the centrifugal forces pulling regions away from Moscow this decade. In this case, the FSB's power is weakened by its leadership's involvement in the national economy. As the economy falters, so does the FSB's strength. Without the FSB inspiring genuine terror, the fragmentation of the Russian Federation will not be preventable.

To Russia's west, Poland, Hungary and Romania will seek to recover regions lost to the Russians at various points. They will work to bring Belarus and Ukraine into this fold. In the south, the Russians' ability to continue controlling the North Caucasus will evaporate, and Central Asia will destabilize. In the northwest, the Karelian region will seek to rejoin Finland. In the Far East, the Maritime regions more closely linked to China, Japan and the United States than to Moscow will move independently. Other areas outside of Moscow will not necessarily seek autonomy but will have it thrust upon them. This is the point: There will not be an uprising against Moscow, but Moscow's withering ability to support and control the Russian Federation will leave a vacuum. What will exist in this vacuum will be the individual fragments of the Russian Federation.

This will create the greatest crisis of the next decade. Russia is the site of a massive nuclear strike force distributed throughout the hinterlands. The decline of Moscow's power will open the question of who controls those missiles and how their non-use can be guaranteed. This will be a major test for the United States. Washington is the only power able to address the issue, but it will not be able to seize control of the vast numbers of sites militarily and guarantee that no missile is fired in the process. The United States will either have to invent a military solution that is difficult to conceive of now, accept the threat of rogue launches, or try to create a stable and economically viable government in the regions involved to neutralize the missiles over time. It is difficult to imagine how this problem will play out. However, given our forecast on the fragmentation of Russia, it follows that this issue will have to be addressed, likely in the next decade.

The issue in the first half of the decade will be how far the alliance stretching between the Baltic and Black seas will extend. Logically, it should reach Azerbaijan and the Caspian Sea. Whether or not it does depends on what we have forecast for the Middle East and Turkey.

Europe were healthy, the ability for the fourth largest power to get, fourth economic power to export 50 percent of its GDP is just unsustainable. That, coupled with the fact that the German population is going to start contracting in size, that's not the critical thing, really means that Germany is at the high point of its power. It's not going to be able to sustain this. On the other hand you have next-door Poland, which has had a fairly remarkable economic history, particularly since 2008 it's done fairly well. It's maintained its population and on the North European Plain, with Russia in severe decline and Germany facing serious problems, Poland sits there in the middle as not only a country that is in good shape but as developing unique relationship with the United States.

> To Russia's west, Poland, Hungary and Romania will seek to recover regions lost to the Russians at various points. They will work to bring Belarus and Ukraine into this fold. In the south, the Russians' ability to continue controlling the North Caucasus will evaporate, and Central Asia will destabilize. In the northwest, the Karelian region will seek to rejoin Finland. In the Far East, the Maritime regions more closely linked to China, Japan and the United States than to Moscow will move independently. Other areas outside of Moscow will not necessarily seek autonomy but will have it thrust upon them. This is the point: There will not be an uprising against Moscow, but Moscow's withering ability to support and control the Russian Federation will leave a vacuum. What will exist in this vacuum will be the individual fragments of the Russian Federation.

**David:** Let's move on quickly to this, what we've called the cumbersome term we've given of PC-16, but it's this diffusion of the industrial base if you will of China that you see that accelerating over the next decade.

**George:** Global capitalism almost always has a low wage high growth economy. In the 1880s and 1890s it was the United States. After the war it was Japan, China replaced Japan. Now China is no longer a high growth economy. It's declined in its growth. It's reached a new normal. So the question is where is this going to go. We've identified 16 countries where this growth is already beginning to take place. It's interesting. It kind of centers around the Indian Ocean Basin, but includes countries you wouldn't expect like Eastern Africa — Ethiopia, Uganda, Kenya, and Tanzania. These are countries that are experiencing some rather startling changes, but also Southeast Asia and some countries in Latin America.



**David:** This notion of the death of Sykes-Picot, of the nation-state being replaced by factionalism. And we see that on a daily basis but you forecast you see this as kind of a new normal maybe.

**George:** We've seen the disintegration of the Syrian state, the Syrian nation. The state sort of exists over a part of it. Iraq has now disintegrated. The governor of Baghdad has limited power. The factions are in charge. We're seeing it in Libya as well. We don't know whether it's going to spread to the rest of the Arabian Peninsula, to Egypt, to Algeria. It may limit itself, but we've certainly seen that the states constructed by the European imperialists after WWI have not just ceased to function but sort of ceased to exist. And what replaced instead are small factions that can't be destroyed and can't destroy everyone else.

**David:** I'll just close out with, because we don't talk about the United States a lot at Stratfor. But this forecast does. And it concludes with the coming crisis of the middle class.

**George:** Well, it's not a crisis of inequality, as people like to put it. It is a crisis simply of income. Middle class median income of households is now $50,000 a year. After taxes outside of major metropolitan areas, that comes out to about $40,000 a year. On $40,000 a year you can buy a very simple house perhaps a condominium. You can have a car. You can have a minimal lifestyle. The lower middle class can no longer have that at all. So we've reached a point in American society where the things that Americans expect to get if they work are being priced out. The middle class, the median income isn't quite out of that yet. But the way things are moving it will be. So we're moving into what I consider the 50-year crises that America has the last

one being in the 1970s and culminating in the election of Ronald Reagan. And in the 2020s we're going to be seeing an intensifying crisis in whether the middle class can live the American dream.

**David:** A lot of challenges looking toward 2025. We will be publishing this forecast, our quinquennial if we can call it that, on Monday, Feb. 23. Please join us on Monday and we'll share the details. Thanks so much for making time George.
**George:** Thank you.

**EDITOR'S COMMENT:** It seems that there is a lot of pain, chaos and blood anticipated for the entire world but the United States! And we all know that US homeland's status is not a highway covered with roses!

## America's Spy Agencies Need an Upgrade

**By Jane Harman**

Source: http://www.wilsoncenter.org/article/disrupting-the-intelligence-community?mkt_tok=3RkMMJWWfF9wsRonuq%2FPcO%2FhmjTEU5z16u0sXaC3hlkz2EFye%2BLIHETpodcMTcZhM7rYDBceEJhqyQJxPr3HLdkN18NoRhfmCw%3D%3D


Feb 20 – Some 40 years have passed since the Church Committee's sweeping investigation of U.S. intelligence practices, fresh on the heels of the Watergate scandal. And ten years have gone by since the last major reorganization of the country's spy agencies, enacted in the wake of 9/11. Both efforts led to a host of reforms—among them, the creation of the Senate and House Intelligence Committees, the passage of the Foreign Intelligence Surveillance Act (FISA), and the adoption of the Intelligence Reform and Terrorism Prevention Act, which I helped shepherd through Congress.

New challenges have prompted talk of change once again. The U.S. government's recently acknowledged drone program, the contractor Edward Snowden's leaks about the National Security Agency's surveillance activities, and the Senate Intelligence Committee's recent report on CIA detention and interrogation practices have fanned public anxieties about government overreach. Surprise developments, meanwhile, have blindsided U.S. officials. The disintegration of Syria, the Boston Marathon bombing, the precipitous rise of the Islamic State of Iraq and al-Sham (ISIS), the systematic hacking of U.S. computer networks—in one way or another, all caught Washington flat-footed. Last November, The Washington Post reported that CIA Director John Brennan was weighing a wholesale reorganization of the agency, one that would combine operational and analytic divisions into "hybrid units" dedicated to specific regions and threats. The paper's sources described the plans as "among the most ambitious in CIA history."

Yet rearranging the deck chairs will not be enough to prepare the intelligence community for the challenges that lie ahead. Instead, Washington must venture beyond the conventional wisdom and reckon with an alternative vision of the future. Imagine this: Ten years from now, the CIA's primary mission will be covert action, an arena in which the agency can make a uniquely valuable contribution to national security. The NSA, for its part, will move away from collecting personal data, since private-sector firms have the resources to do the same task. And traditional espionage—the use of spies to gather human intelligence—will become less valuable than open-source intelligence, especially information gleaned from social media. In each case, change will come rapidly. So rather than adapting slowly and haltingly, it may well be time to accept reality and steer into the skid.

### License to Drone

Since President George W. Bush declared a "war on terror" in 2001, the CIA has gotten extremely good at killing terrorists.

The agency's talent for targeted killings has made more than a few people uneasy, however, both inside and outside Langley. As

Elliot Ackerman, a former CIA paramilitary officer, wrote in The New Yorker last November, "The discomfort of my colleagues, where it existed, didn't stem from [targeted killing] itself. . . . The discomfort existed because it felt like we were doing something, on a large scale, that we'd sworn not to. Most of us felt as though we were violating Executive Order 12333."

That order, issued by President Ronald Reagan in 1981 in response to the Church Committee's extensively documented findings on illegal domestic surveillance and plots to kill foreign leaders, banned the U.S. government from planning or carrying out assassinations. But government lawyers do not interpret "assassination" as a synonym for "targeted killing" when it relates to terrorists, a distinction predating Washington's conflict with al Qaeda. Similar concerns about targeted killings arose after the 1983 bombing of the U.S. embassy in Lebanon. In that case, as the journalist Walter Pincus later reported for The Washington Post, CIA discussions produced "an informal agreement with the congressional oversight committees that if a covert action targeted a terrorist in his apartment plotting to blow up a building, he had to be detained. But if the terrorist were found and known to be on his way to blow up a building . . . he could be killed if that were the only way to stop him." And as the executive order notes, the intelligence community is charged with conducting "special activities" to protect national security, a category under which the drone program falls.

Even so, senior officials remain uncomfortable with the CIA's growing paramilitary role, which Brennan himself described during his February 2013 confirmation hearing as an "aberration" from the agency's traditional focus on espionage. In fact, soon after Brennan took the CIA's helm, the White House looked poised to shift all drone warfare to the Pentagon, which has its own drone program. Yet the move never happened, in part because the generals balked and Congress couldn't bypass its own committees' stovepiping. The most important factor, however, was the CIA's success. As Michael Hirsh, writing for the National Journal, noted in February 2014, experts believe that the CIA "may simply be much better than the military at killing people in a targeted, precise way—and, above all, at ensuring the bad guys they're getting are really bad guys."

No public data are available to compare the CIA's and the Pentagon's drone programs, but the agency's has earned high marks from senior policymakers. Months before a Pentagon drone strike reportedly hit a convoy that included innocent Yemeni wedding guests in December 2013, Democratic Senator Dianne Feinstein of California, then chair of the Senate Intelligence Committee, praised the CIA's "patience and discretion" and raised concerns that "the military program has not done that nearly as well."

Critics of keeping a drone program under the CIA's roof contend that the agency's primary mission should be espionage rather than covert action. There's no reason, the argument goes, that the Defense Department could not develop its expertise in carrying out secret drone strikes and other deniable operations over time. Shifting all drone warfare from the CIA to the Pentagon would also be perfectly legal; the president could put pen to paper and authorize it tomorrow.

The problem, however, is that a central mission of the CIA—developing human intelligence—is getting much tougher to carry out. To some extent, that is due to the makeup of the agency's own work force. Although the CIA now selects from a wider pool than it once did (when its ranks were, as it was said, mostly pale, male, and Yale), the government's clearance system still freezes out qualified applicants—even those with critical language skills and cultural acumen—for having a grandmother in Baghdad or an uncle in Tunis. Penetrating tribal and nonstate groups in the Middle East is difficult enough as it is; doing so with few who understand Arab customs or speak a variety of Arabic dialects only adds to the danger.

Another factor making human intelligence gathering a harder game to play is the broader American political culture. Developing informants (let alone embedding assets) within terrorist groups is a dicey proposition. And regardless of their personal courage or willingness to serve, intelligence officers must now operate in a political climate that discourages risk taking, because the American public reacts so strongly to U.S.



casualties—something the fallout from the 2012 attack on the U.S. compound in Benghazi, Libya, which killed two Foreign Service officers and two security personnel, made clear. Of course, such political constraints and risk aversion affect the U.S. military, too. This is partly why many U.S.

policymakers are cool to the idea of putting boots on the ground in the fight against ISIS. The irony is that an effective air war relies on precise targeting, which requires good intelligence collected on the ground, which itself exposes U.S. personnel to the sorts of risks an air war is supposed to avoid.

Public controversy has also imperiled another source of human intelligence: interrogations. The Senate Intelligence Committee's multiyear investigation into Bush-era interrogation and detention programs has added fuel to the fire, challenging not only the legality of so-called enhanced interrogation techniques but also their effectiveness. (In 2003, as a member of Congress, I questioned the program's policy guidance and urged the CIA not to destroy videotapes of interrogations in a letter to the agency's then general counsel, Scott Muller.) For now, President Barack Obama's efforts to close the U.S. detention facility in Guantánamo Bay, Cuba, and move the terrorist suspects to domestic prisons have been hamstrung by congressional opposition to holding their trials in the United States. That said, the facility's prison population has shrunk from over 600 in 2003 to just 127 as of this writing. All eyes are on the next defense secretary to finish the job before Obama's term ends.

If these trends continue, they will make it difficult for the CIA to do much of the human intelligence collection it did in the past. So what should the intelligence community do? It could outsource some human collection to friendly foreign intelligence services that are less risk averse and better culturally equipped, such as those in Israel, Jordan, and the United Kingdom. The CIA could also focus its own collection on directly supporting covert operations. And it could continue to improve its security clearance process, making it easier, for example, to give temporary or limited clearances to individuals with sorely needed expertise.

But in today's environment, the CIA's main value added is reflected in its finances. According to a leaked copy of the intelligence community's "black," or classified, budget for 2013, reported in The Washington Post, funding for covert action programs ($2.6 billion) has outstripped funding for human intelligence ($2.3 billion). Follow the money, and one arrives at a basic fact: the CIA's edge is paramilitary.

**Data Minefield**

The CIA is not the only intelligence agency facing challenges. In the wake of the Snowden leaks, the media have depicted the NSA as an all-powerful agency with a limitless appetite for personal data and few barriers to getting it. In an ongoing debate, civil liberties advocates have faced off against national security hawks, with both sides sharing a single flawed assumption: that the NSA's competitive advantage is in the mass collection of data.

In fact, the NSA's digital dragnet has never been as sweeping as its most vocal critics like to insinuate, and Congress amended FISA in 2008 to ensure that the agency's data collection was carefully circumscribed and reviewed by the Foreign Intelligence Surveillance Court. What's more, new proposals to limit the NSA's programs further are gathering steam, and U.S. technology firms are taking increasingly dramatic

steps to protect their customers' data.

Indeed, the NSA's future will be shaped, more than anything else, by its relationship with Silicon Valley—one in which the agency is fast becoming the junior partner. One can doubt the sincerity of the technology community's outrage over the NSA's surveillance practices—doubt, for example, that the Facebook co-founder Mark Zuckerberg, whose company reportedly stores petabytes' worth of data about its billion-plus active monthly users, was shocked at the thought of mass data collection. But Silicon Valley's reaction has bite, and the outcome has been an encryption drag race that has top government officials panicking. Rather than fight surveillance policies in court, where the government has an overwhelming edge, companies such as Apple, Facebook, and Google have responded in cyberspace. To satisfy a global customer base with strict privacy expectations, they've developed technical capabilities to put customer data under lock and key.

Apple now dedicates a section of its website to "government information requests," which isn't a page about how cheerily they comply. "Our commitment to customer privacy doesn't stop because of a government information request," it reads. Apple iPhones running the latest operating system, iOS 8, have their data encrypted and hidden behind a passcode that makes it, in Apple's words, "not technically feasible for [Apple] to respond to government warrants for the extraction of this data." Google has followed suit, adding a similar function to Android phones. Other agencies are feeling the ripple effects. Last October, James Comey, the director of the FBI, said that the bureau was "struggling to . . . maintain [its] ability to actually collect the communications [it is] authorized to collect."

For years now, there has been a growing gap between the technical capacity of the public sector and that of the private sector. Like the CIA, the NSA has a recruitment problem. The agency lies on the wrong side of a generational divide on privacy; it also has no hope of matching the stratospheric salaries that firms such as Facebook offer even their interns. The security clearance system has made matters worse, putting candidates through the wringer over marijuana use and illegal music downloads. Some NSA hiring practices have improved, but no one expects that the agency will be able to outcompete technology firms for top talent anytime soon.

Over the long run, then, Washington won't win a digital competition with Silicon Valley. And now that the government needs the private sector more than the private sector needs it, the most important task is to rebuild trust between the two. True, the NSA could look for ways to get around technology companies' defenses, but any botched attempts would carry a high political cost. Instead, the agency needs to keep serving warrants through the front door, abide by established legal procedures, and work to persuade the public of its respect for privacy. As companies such as Facebook and Google become more deeply integrated into global communications infrastructure—both are reportedly looking into providing Internet services to the developing world—they could become partners with the government in open-source data collection. That joint effort, if FISA-compliant and properly explained to the public, would be a gold mine for low-cost intelligence collection. But the intelligence community needs to make a savvier, more respectful pitch to the private sector, one that recognizes the digital balance of power. The goal should be to turn privacy and security into a positive-sum game: to guarantee more of both.

What role does that leave for the NSA? Its top priorities should be code-making, code-breaking, and cyberwarfare. Washington will still need the capacity to penetrate secure state networks and prevent its enemies, state and nonstate, from doing the same. Although the NSA has demonstrated abilities in this sphere, it needs to focus on keeping pace with talented Chinese, North Korean, Russian, and nonstate hackers.

**In Plain Sight**

The rising power of Internet companies has paralleled another force upending the world of intelligence: the exponential growth of open-source information. During the Cold War, nothing could match the value of a well-placed mole or a thoroughly bugged bedroom. Today, the so-called dip party, where spies would eavesdrop over cocktails, has gone the way of the dodo. That's

in large part because much of the information policymakers seek is no longer secret. Although complicated tradecraft remains useful in some contexts—advanced cyberattacks rely on intimate knowledge of human beings, their habits, and their software use—the CIA doesn't need an agent in the Russian Ministry of Agriculture in order to follow developments in Ukraine. Social media, in fact, has provided some of the best reports from the ground, allowing bystanders to upload photographs and videos as events unfold in real time. Intelligence agencies need to take advantage of the technological revolution that allowed a Tunisian fruit vendor to spark the Arab Spring, that ISIS exploits by posting barbaric videos designed to attract thousands of followers, and that the State Department has begun to embrace on Twitter.

Now that every smartphone user is a potential collector of intelligence, the key is to skillfully sort the data. Although no structural obstacle prevents the U.S. intelligence community from doing this work well, there remains a strong bias, bordering on elitism, against using freely available information. Too often, the preference is to tap terrorists' phones and send spy satellites in search of hidden training camps, not to read the tweets of a 19-year-old jihadist. But in an era of online radicalization, indoctrination often happens in plain sight.

As the intelligence community moves away from traditional espionage and toward open-source analysis, one of the most important, enduring questions in the spy business will take center stage: how to protect analysis from being biased by policy preferences. Intelligence reform in 2004 was prompted in large part by just how badly the intelligence process went wrong in the lead-up to the U.S. invasion of Iraq in 2003 and before the 9/11 attacks in 2001. Policymakers rightly wanted—and still want—to ensure that the nation never faces anything like those failures again.

The reforms that Congress enacted in 2004 were the right ones for their moment. But now the terrain has shifted. When one expands the intelligence base to include the vast reams of raw information widely available to anyone through open sources, there are infinite ways for individual pieces of data to bias policymakers before analysts can present the bigger picture. Of course, there have always been ways for bias to creep into the briefing process: through analysis that has been crafted with an eye toward specific policy prescriptions, for example, or through insistent briefings on a single topic that the president hasn't solicited. Open-source information will make the problem worse, but no reorganization or policy change will make it go away. People bring prejudices to everything they do; in the end, intelligence is only as good as the people who analyze it.

That basic fact won't change anytime soon, but much else will. To borrow from William Gibson, the novelist who gave cyberspace its name: "The future is already here—it's just not very evenly distributed." The trends shaping the intelligence community are detectable: in budgets, in organizational charts, and in war zones. Policymakers have been slow to notice, as their attention jumps from one crisis to the next. But if Washington wants to get ahead of the curve and anticipate future flare-ups, that needs to change. As in the past, people are not the problem; the country's analysts and officers continue to serve with courage and distinction. The challenge lies instead with a system that is less adaptable than the enemies it confronts, hobbled as it is by conventional thinking.



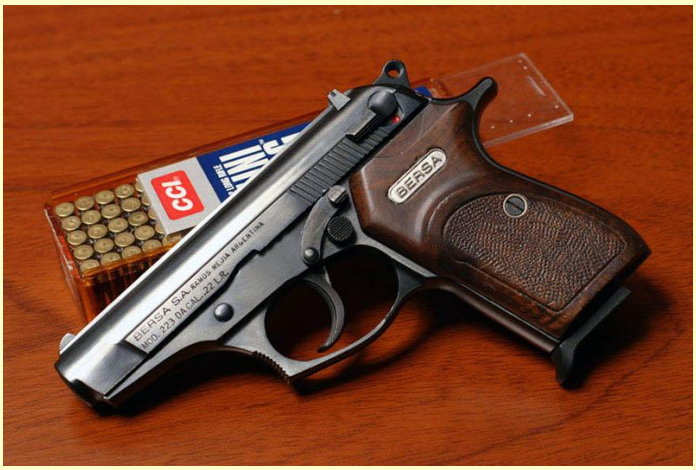
***Jane Harman*** *resigned from Congress February 28, 2011 to join the Woodrow Wilson Center as its first female Director, President and CEO. Representing the aerospace center of California during nine terms in Congress, she served on all the major security committees: six years on Armed Services, eight years on Intelligence, and eight on Homeland Security. During her long public career, Harman has been recognized as a national expert at the nexus of security and public policy issues, and has received numerous awards for distinguished service. She is a member of the Defense Policy Board, the State Department Foreign Policy Board, and the Homeland Security Advisory Committee. She also serves on the Executive Committee of the Trilateral Commission and the Advisory Board of the Munich Security Conference. Harman*

*is a Trustee of the Aspen Institute and the University of Southern California. She is also a member of the Presidential Debates Commission. A product of Los Angeles public schools, Harman is a magna cum laude graduate of Smith College, where she was elected to Phi Beta Kappa, and Harvard Law School. Prior to serving in Congress, she was Staff Director of the Senate Judiciary Subcommittee on Constitutional Rights, Deputy Cabinet Secretary to President Jimmy Carter, Special Counsel to the Department of Defense, and in private law practice.*

## A fake Iranian "defector" assassinated Argentine prosecutor Alberto Nisman

Source: http://www.debka.com/article/24414/A-fake-Iranian-%E2%80%9Cdefector%E2%80%9D-assassinated-Argentine-prosecutor-Alberto-Nisman

Feb 19 – A special investigation conducted by debkafile's intelligence, Iranian and counter-terror sources has discovered that the Argentine-Jewish prosecutor Natalio Alberto Nisman, 51, was murdered on Jan. 18 by an Iranian agent, who had won his trust by posing as a defector under the assumed name of Abbas Haqiqat-Ju. His killer struck hours before Nisman showed the Argentine parliament evidence that President Cristina Kirchner and Foreign Minister Hector Timerman had covered up Iran's complicity in the country's worst ever terrorist attack, the 1994 bombing of the Buenos Aires Jewish community center in which 85 people died, two years after 29 people were killed by a blast at the Israeli Embassy.




The murder weapon, Alberto Nisman's borrowed Bersa .22

Nisman's evidence had it been presented would have ultimately proved Iran's culpability in the two terrorist attacks.

According to our investigation, two Iranian Intelligence Ministers, the incumbent Mahmoud Alavi and his predecessor Hojjat-ol-Eslam Heydar Moslehi, had for nine years wracked their brains for a way to silence the Jewish prosecutor, ever since he began probing the two attacks. They worked hand in glove with senior Argentinean government and intelligence agencies.

(In Iran, intelligence ministers take their orders directly from supreme leader Ayatollah Ali Khamenei although they attend cabinet meetings.)

**Tehran's clandestine hand deep in the Americas**

Nisman had made the powers-that-be in Tehran jittery, because a) he was ambitious, honest and a courageous searcher after the truth; b) he was Jewish and had active connections with Israel; and c) in pursuit of his inquiry, he spread his net wide to include contacts with the Israeli Mossad and the American CIA.

Furthermore, in 2006, after three years on the job, the prosecutor had put together an intelligence file on the unbelievable scope of Iranian intelligence penetration, using Lebanese Hizballah agents, deep into the government and intelligence establishments of many Latin American countries - not only Argentina, but also Brazil, Uruguay, Chile, Surinam, Trinidad-Tobago and Guyana.

No sooner was this file put before the government in Buenos Aires when it was locked away to prevent its publication.

Undeterred, Nisman went to New York in 2007 and put the contents of his file orally before senior CIA

officials and UN Secretariat bureaucrats. His briefing also uncovered scores of Iranian diplomats and agents operating in the United States under cover out the Pakistani embassy in Washington.

It is hardly surprising that in no time, the information leaked from the UN Secretariat to Tehran, adding to the urgency of getting rid of this thorn in the side of the Islamic Revolution's clandestine operations against the West.

**Bribery wouldn't work on Nisman**

Iran's security organs are no strangers to political assassination at home and among its exile communities, in such places as France, Austria and Germany.

But at first, they tried to win the Argentinean round by bribery, which had always worked before in Buenos Aires. For $10 million, Carlos Saul Menem (Argentine president from 1989 to 1999) and his minions agreed to close the investigation of the two terrorist bombings in its tracks.

Tehran handled President Kirchner differently. She was promised economic and trade benefits for Argentina, along with financial perks for government and intelligence heads.

debkafile's Buenos Aires sources report that, at first, Kirchner feared that Nisman's sudden demise would bring her under suspicion at the cost of her presidency. But Tehran assured her through their private channels of communication that the deed would be accomplished cleanly without leaving the slightest trace. Some of the heads of Argentine intelligence eagerly adopted the assassination plan and offered their assistance.

The first step was taken in 2010 when an Iranian contacted prosecutor Nisman to request a secret meeting. He presented himself as a former high Iranian intelligence official who had defected, fled to Denmark and was willing to fly to Buenos Aires with a valuable cache of confidential documents relating to the Jewish Center bombing.

**Fake defector spent 4 years to build trust**

He claimed that those documents exposed in detail the complicity in the crime of Mohsen Rabbani, then senior intelligence official at the Iranian embassy in the Argentine capital.

According to debkafile's inquiry, Rabbani was the senior plotter of the operation.

The agreed rendezvous took place in Buenos Aires. The phony "defector," who introduced himself as "Abbas Haqiqat-Ju," handed Nisman genuine documents containing evidence of Iran's involvement in the bombings. This consolidated his role as an enemy of the regime who was ready to betray its secrets.

In a relationship lasting four years, the phony defector convinced the prosecutor of his good faith. The Argentinean called on the help of colleagues in friendly agencies to check some of the confidential material he was given and

found them to be the real article. Ergo, their donor was a genuine Iranian dissident. By December 2014, Nissen was ready to submit a finished 300-page report documenting his findings on Kirchner's role in covering up the investigation of Iran's terrorist crimes two decades after the event.

Tehran decided that the bird was ready for plucking and it was time for Haqiqat-Ju to cash in on his long investment in trust-building.

In a secret call to Nisman, the fake defector reported that a fellow high-ranking Iranian intelligence officer had managed to flee Tehran with a suitcase full of very important papers that shed valuable light on the criminal collaboration between Argentinean security agencies and Iranian operatives in the bombing attack on the Jewish center.

**Three knocks on the door to murder**

He explained that the second defector required a sterile location for their meeting. Haqiqat-Ju warned the prosecutor that he must keep mum about the

rendezvous. Argentine intelligence was riddled with Iranian agents and the slightest hint of the meeting would give the game away to Tehran. Above all, if he wanted to see the new documents, he must get rid of the 10 bodyguards assigned him and be alone when the guest arrived at his home on the 13th floor of the Le Parc tower in the Buenos Aires district of Puerto Madero.

That guest would signal his arrival with three knocks on the door. Nisman must not let the Iranian wait but admit him at once.

Before setting the scene for the assassination, Haqiqat-Ju had secretly rented an apartment next door.

It was he who knocked on the door three times on Jan. 18. The prosecutor opened the door to his murderer. As his confidant, he knew exactly where the small gun Nisman had borrowed from a friend was to be found and used it to shoot him dead.

The Iranian assassin then escaped through the central heating system connecting the two flats and assumed a disguise. His Argentinean confederates had earlier disarmed the security cameras in the building and so he was able to walk out, reach the airport and fly out on a false passport to Montevideo, thence to Dubai and finally to Tehran.

His murderer was long gone when the prosecutor was found lifeless in a pool of blood in his bathroom, killed by a single bullet to the head from a small .22-caliber gun. On Feb. 18, hundreds of thousands of people marched in his honor in Buenos Aires and called for justice.

## The New Sick Man of Europe: the European Union

Source: http://www.pewglobal.org/2013/05/13/the-new-sick-man-of-europe-the-european-union/

The European Union is the new sick man of Europe. The effort over the past half century to create a more united Europe is now the principal casualty of the euro crisis. The European project now stands in disrepute across much of Europe.

**Decline in Support for the European Project**

| | Economic integration strengthened economy | | | Favorable of EU | | |
|---|---|---|---|---|---|---|
| | 2012 % | 2013 % | Change | 2012 % | 2013 % | Change |
| Germany | 59 | 54 | -5 | 68 | 60 | -8 |
| Britain | 30 | 26 | -4 | 45 | 43 | -2 |
| France | 36 | 22 | -14 | 60 | 41 | -19 |
| Italy | 22 | 11 | -11 | 59 | 58 | -1 |
| Spain | 46 | 37 | -9 | 60 | 46 | -14 |
| Greece | 18 | 11 | -7 | 37 | 33 | -4 |
| Poland | 48 | 41 | -7 | 69 | 68 | -1 |
| Czech Rep. | 31 | 29 | -2 | 34 | 38 | +4 |
| **MEDIAN** | **34** | **28** | **-6** | **60** | **45** | **-15** |

PEW RESEARCH CENTER Q9f & Q31.

Support for European economic integration – the 1957 raison d'etre for creating the European Economic Community, the European Union's predecessor – is down over last year in five of the eight European Union countries surveyed by the Pew Research Center in 2013. Positive views of the European Union are at or near their low point in most EU nations, even among the young, the hope for the EU's future. The favorability of the EU has fallen from a median of 60% in 2012 to 45% in 2013. And only in Germany does at least half the public back giving more power to Brussels to deal with the current economic crisis.

The sick man label – attributed originally to Russian Czar Nicholas I in his description of the Ottoman Empire in the mid-19th century – has more recently been applied at different times over the past decade and a half to Germany, Italy, Portugal, Greece and France. But this fascination with the crisis country of the moment has masked a broader phenomenon: the erosion of Europeans' faith in the animating principles that have driven so much of what they have accomplished internally.

The prolonged economic crisis has created centrifugal forces that are pulling European public

opinion apart, separating the French from the Germans and the Germans from everyone else. The southern nations of Spain, Italy and Greece are becoming ever more estranged as evidenced by their frustration with Brussels, Berlin and the perceived unfairness of the economic system.

These negative sentiments are driven, in part, by the public's generally glum mood about economic conditions and could well turn around if the European economy picks up. But Europe's economic fortunes have worsened in the past year, and prospects for a rapid turnaround remain elusive. The International Monetary Fund expects the European Union economy to not grow at all in 2013 and to still be performing below its pre-crisis average in 2018. Nevertheless, despite the vocal political debate about austerity, a clear majority in five of eight countries surveyed still think the best way to solve their country's economic problems is to cut government spending, not spend more money.

These are among the key findings of a new study by the Pew Research Center conducted in eight European Union nations among 7,646 respondents from March 2 to March 27, 2013.

**EDITOR'S COMMENT:** Read this 2013 very intereting poll and you will understand the future roadmap of Europe. Here is one of most interesting tables presented and that was before the peak of austerity crisis in Greece and change of government.

**Stereotyping in Europe**

**Who Is Trustworthy, Arrogant and Compassionate**

*EU nation most likely to be named...*

| Views in: | Most Trustworthy | Least Trustworthy | Most Arrogant | Least Arrogant | Most Compassionate | Least Compassionate |
|---|---|---|---|---|---|---|
| Britain | Germany | France | France | Britain | Britain | Germany |
| France | Germany | Greece | France | France | France | Britain |
| Germany | Germany | Greece/Italy | France | Germany | Germany | Britain |
| Italy | Germany | Italy | Germany | Spain | Italy | Germany |
| Spain | Germany | Italy | Germany | Spain | Spain | Germany |
| Greece | Greece | Germany | Germany | Greece | Greece | Germany |
| Poland | Germany | Germany | Germany | Poland | Poland | Germany |
| Czech Rep. | Germany | Greece | Germany | Slovakia | Czech Rep. | Germany |

PEW RESEARCH CENTER Q44a-Q46b.



## Converted Prop Guns Are Assassins' Weapon of Choice

Source: http://i-hls.com/2015/03/converted-prop-guns-are-assassins-weapon-of-choice/?utm_source=Israel+Homeland+Security+%28iHLS%29&utm_campaign=27457174f9-ENGLISH_DYNAMIC&utm_medium=email&utm_term=0_8ee2e16ed1-27457174f9-87373033&mc_cid=27457174f9&mc_eid=521c0e089a

**Prop guns are converted to deadly weapons.** Blank-firing guns make for fun movie props and nice showpieces. But with the right tweaks, they can be just as deadly as the real thing.

According to a new report by *Small Arms Survey*, a non-governmental research project based in Switzerland, **the conversion of blank-firing, replica and other less-than-lethal handguns, is a growing problem for countries**

**looking to crack down on gun-related crime. Converted guns might not work very well, but they are cheap, disposable and largely untraceable, all attractive features to would-be crooks and assassins**.

**In Russia, assassins have used converted pistols to murder dissident journalist Anna Politkovskaya and Yuri Budanov,** a controversial former Russian army officer who served in Chechnya.

Converted blank guns, mostly in the form of pistols which are showing up in weapons seizures and at crime scenes by the thousands, signaling a large demand. In Germany, the report notes, roughly two-thirds of all firearms seized by authorities in 2012 were converted weapons.

**The skills required to convert a gun from firing blanks to firing bullets aren't hard to come by.** "It's actually quite easy," Ben King, author of the *Small Arms Survey report*, told *War Is Boring*. "For some [blank-firing guns] there'll be an obstruction in the barrel that can be screwed out or drilled out," he adds. "That takes pretty basic tools."


**In the United States, where guns are plentiful and laws regulating ownership are more lax, converted weapons don't show up often at crime scenes.**

The situation is different in Europe, where gun laws are stricter. Scottish police have noticed that converted "showstopper" guns are increasingly being used by organized criminal groups.

Even in some conflict-wracked Middle Eastern countries like Syria and Yemen – where weapons are plentiful – converted pistols are still popular because they're relatively cheap. "There is a demand for concealable weapons and this is a more affordable option in certain places," King said.

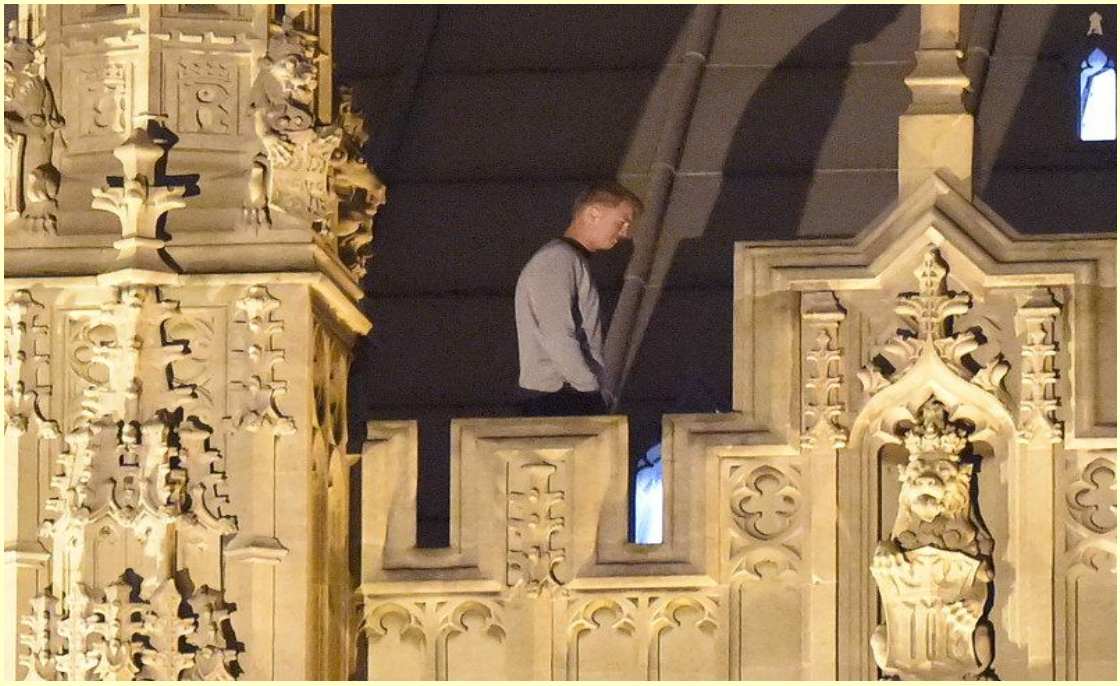
For instance, Small Arms Survey reports that converted pistols have saturated **Libya** since the collapse of the Muammar Gaddafi regime. **The pistols sell for around $125 – a fraction of the $1,600 to $4,100 price that real handguns fetch on the black market.**

Would-be converters can find blank guns manufactured in any number of countries. But Turkish models, including the Atak Zoraki and Ekol-Voltran, are among the most popular choices. "Turkey has several different manufacturers and they're being made at pretty high quality," King said. "They're using metals and they're basing the designs very closely to the actual firearms."

King notes that, at least in Europe, a varying patchwork of laws governing the possession and conversion of replica, blank-firing and other types of less-than-lethal firearms is a contributor to their availability. As a result, Europe's close integration and lack of borders makes buying and selling converted and convertible firearms easier. Also, as ever, where there's demand, supply finds a way. For now at least, these replicas are plentiful and close enough to the real thing for buyers to find what they want.

# What Was This Man Doing On The Roof Of The British Parliament?

Source: http://www.npr.org/blogs/thetwo-way/2015/03/08/391701284/what-was-this-man-doing-on-the-roof-of-the-british-parliament



A 23-year-old man whom police have not identified was arrested early Sunday in London after spending the night wandering around on the roof of the British parliament building.



The man was on the top of the Palace of Westminster, where both houses of Britain's parliament meet, for about eight hours, reports said. He was carrying no signs or banners and appeared to have no political agenda.

The U.K.'s Sunday Express reports:

"Video footage of the man ... seen as he walks around the roof in a grey top and dark trousers, appeared online yesterday.

"Police negotiators, fire brigade and London ambulance services rushed to the scene at 9:15 pm last night."

An eyewitness told *The Daily Telegraph*: "He's just walking up and down, looking a bit vacant."

He was reportedly not taken into custody until 5 a.m. London time. It was not clear why it took authorities so long to remove him from the government building.

The *Telegraph* says the man is being held on "suspicion of criminal damage and trespassing" and adds that "the roof has been the scene of campaign stunts by groups in the past."

Scotland Yard, it reports, has said it is "too early to say why this lone man broke onto the roof of the houses of parliament."

**EDITOR'S COMMENT:** The question is NOT **"**What Was This Man Doing On The Roof Of The British Parliament?" **BUT** "how did he get there!" Perhaps he is the same man that climbed down naked the Buckingham Palace quarters some days before! Or Spiderman!

# Heartbreaking Times for Syrian Kurdish Refugees

**By Jonathan Spyer**

Source: http://www.meforum.org/5086/syria-kurdish-refugees


A refugee camp in Suruc near the Turkey-Syria border, photographed by the author

Kobani refugees faced a bitter winter on the Turkish-Syrian border, yet there was one bright spot: The fight to rid the Kurdish Syrian town of Islamic State jihadists was officially declared over on January 27.

The Kurdish YPG militia, with the vital assistance of the US Air Force's 9th Expeditionary Bomb Squadron and additional coalition air power, drove the last of the jihadists out and planted the Kurdish flag once more over Kobani. They have kept up the momentum; more than 160 additional villages in what once formed the Kobani enclave have been liberated. The Kurds are now pressing up against Tel Abyad to the east of the city, and Jarabulus to its west.

Yet for the civilian residents of Kobani, the story is far from over. Around 200,000 displaced people remain on the Turkish side of the border; they form the overwhelming majority of the families who fled Kobani last autumn, before US air support began, when it looked like the city was doomed. Concentrated in and around the border town of Suruc are 67,200 of the refugees, where a number of makeshift refugee camps have been established.

Refugees have also taken up residence in any available space, swelling the population of the town. Many of the structures are exposed to the elements, and lack even the most basic facilities. It is an acute humanitarian crisis – one largely ignored now that the fighting fronts have moved elsewhere.

Last week, this reporter visited Suruc and the border area, seeking to gain a clearer picture of the reality facing both refugees and returnees.

For the 4,000 or so who have returned to Kobani and environs, the main problem beyond the sheer physical destruction visited on the city is booby traps. Islamic State forces, before leaving, wired explosives to much of what remained intact in the city – including furniture, doorways and toys.

"We need experts to come in and remove the unexploded bombs," Mustafa Alali, a Kurdish activist who was among the first to return to Kobani, tells me, "and then we need a humanitarian corridor for helping the people as they begin to return, with food, water and electricity."

Most of those who have returned were formerly residents not of

Kobani town itself, but of villages surrounding it. The villages were rapidly abandoned by the jihadists once Islamic State ceded the goal of conquering the urban area. As a result, houses in the rural points of settlement were less badly damaged in the fighting than those in the city.

In Kobani town, little remains. Yet impatience to return is growing among the refugees. " Just yesterday, a seven-year-old girl here in my office was asking her father why they haven't gone home yet to Kobani," says Mustafa Dogal, head of Kurdish relief efforts in Suruc, speaking in his cluttered office there. "And of course, he doesn't know how to tell her that their home simply doesn't exist any more."

"People are running out of patience to return to their homes," Dogal continues. "There is an urgent need to rebuild houses, schools and hospitals, and for clean water and electricity; Kobani now has none of these. We are living in heartbreaking times."

But Alali and Dogal's hope for a "humanitarian corridor" from Turkey into Kobani runs up against the political reality of Turkish-Kurdish conflict.

The Turkish government appeared content to allow Kobani to fall to Islamic State; Turkish forces assembled to the north of the enclave during the battle made no move to intervene. This is because the Kurdish cantons in Syria are controlled by the Syrian franchise of the Kurdistan Workers' Party (PKK) – which has been engaged in an insurgency against the Turkish government for over 30 years.

The conflict has left a legacy of extreme distrust between the Turkish authorities and Kurds on both sides of the border, and this is having a direct impact on the plight of the refugees. In January, AFAD (the Disaster and Emergency Management Organization of the Turkish republic) opened a new camp, offering accommodation for 35,000 refugees; thus far, only around 4,000 people have taken up residence there.

"People are worried about going to the government camp," says Ferzad Daniel, an Iranian Kurdish relief worker in Suruc. "You need to remember that many of the refugees are Kurdish activists on one level or another; they're worried about retaliation from the government after the 'foreigners' leave."

The absence of facilities for education in Kurdish under AFAD auspices is another reason given for avoiding the government camp. Lack of food is the main problem facing the refugees who prefer to remain outside of Turkish jurisdiction, says Ferzad. "Food not controlled by the government isn't reaching the camps; so the refugees live on a meager diet of just rice and beans. There are urgent health issues, too – flu is everywhere; 40 percent of the children have diarrhea; and there are skin diseases too, brought on by lack of nutrition."

Despite the shortages, the camps maintained by the Kurdish relief organizations offer basic but adequate facilities – tents, washing areas, schooling in Kurdish for the children.

Disused houses in Suruc have also been occupied by some refugee families, seeking shelter from the elements. Conditions here are primitive in the extreme. In one structure I visited, four families – 40 people in total – were living together in one large room, with just a blanket placed over the open doorway.

One of the families, the Shaikhos of Sheran village, are still mourning the loss of their eldest son, 19-year-old Mahmoud, who was killed when he stepped on a land mine while crossing the border to escape the advance of the jihadists last October.

Mahmoud's younger brother, Fadel, 13, was with him when he was killed; Fadel survived the explosion, but lost both legs. Now he lives with his family in the large, empty shell of a house in Suruc, a thoughtful-looking boy who tries but does not quite succeed in smiling.

The plight of the Kobani refugees is just one element of the vast problem of people displaced by the Syrian war. No end to the war appears in sight, and spring looks set to bring little respite to the refugees on the Turkish-Syrian border.

Heartbreaking times, indeed.

***Jonathan Spyer*** *is a senior research fellow at the Global Research in International Affairs (GLORIA) Center, and a fellow at the Middle East Forum. He is the author of* The Transforming Fire: The Rise of the Israel-Islamist Conflict *(Continuum, 2011).*

## Abu Dhabi Police add Rolls-Royce Phantom to fleet

Source: http://www.thenational.ae/uae/abu-dhabi-police-add-rolls-royce-phantom-to-fleet#1


March 10 – Abu Dhabi Police have added a 2015 Rolls-Royce Phantom to their fleet. The car, which is being used to promote Gulf Traffic Week, was on display at Yas Mall on Monday.



**EDITOR'S COMMENT:** I always wondered why they do that? Promotion for recruitment? Money show-off? Too many supercars around? Stimulation of boring traffic police officers?

## 2nd Largest Nationality Living In Each European Country

Source: http://brilliantmaps.com/2nd-largest-nationality/

The map below shows the flag of the 2nd largest nationality, by country of birth, living in each European country. Thus, it may include citizens and those who have moved temporarily for work. Nevertheless, there are many surprises, such as:

- Ireland is no longer the largest source of foreign born residents to the UK. Since 2011, they've dropped to 4th, behind India, Poland and Pakistan.
- Neither the Cezch Republic nor Slovakia are each other's second largest nationality, despite both being successor states to Czechoslovakia.
- Despite both being comprised primarily of ethnic Albanians, neither Kosovo nor Albania are each other's second largest national group.
- Poles make up the 2nd largest group in Ireland, Iceland, Norway and Lithuania.
- Turks make up the 2nd largest group in not only Germany, but also the Netherlands, Denmark, Austria and Bulgaria.
- Although you can barely see it on the map Portugal born residents are the 2nd largest group in Luxembourg, while Brazilians make up the 2nd largest group in Portugal.
- The impact of the former USSR can still be fairly clearly seen, given that Russians make up the 2nd largest group in Estonia, Latvia, Belarus and Ukraine. However, in Russia itself Ukrainians are the 2nd largest group.

- Similarly Serbs make the 2nd largest group in 4 of the 7 successor states to Yugoslavia (Slovenia, Croatia, Bosnia and Herzegovina and Montenegro) yet Hungarians are the 2nd largest group in Serbia.
- Finally, the 2nd largest group in Spain, Italy and Hungary are Romanians not Chadians.

Controversially, the map author decided to include Kurdistan as a separate nation. And states that: "I did have a dilemma with Turkey because although Kurdistan isn't a country, Kurds (who don't consider themselves to be Turkish) are by far the 2nd most popular, and it would be misleading to suggest otherwise."

Finally, because I know somebody is going to mention it, the United kingdom is treated as single country in the map above in keeping with the Countries in the International Organization for Standardization. None of the the 4 constituent countries of the UK is a Sovereign state and thus is not be listed separately.

# Controversial Lessons Show Schools How to Thwart an Armed Intruder

Source: http://www.emergencymgmt.com/training/Controversial-Lessons-Show-How-Thwart-Armed-Intruder.html

Independence police hold an active shooter training session for staff of Pioneer Ridge Middle School on Tuesday. Feb. 17, 2015, in Independence, Mo. In their first scenario the staff was told to just take cover. This allowed the shooter, played by Sgt. Chris Summers, to "kill" many victims. *(Keith Myers/Kansas City Star/TNS)*



**The training's goal is to present human targets with options beyond the traditional response of locking doors, switching off lights and hoping the shooter doesn't spot them.**

The woman's voice on the intercom was anguished.

"There's a shooter in the building. Lockdown! Lockdown!"

Inside the library at Independence's Pioneer Ridge Middle School, about 65 teachers and staff members — who knew this was all pretend but were warned it may be unnerving — assumed their positions under desks and crouched between rows of children's books.

Someone switched off the lights as instructed. Maybe the shooter won't see them hiding. The rest of the school stood empty.

It was part of training increasingly occurring in the nation's schools, hospitals and other workplaces to drive home lessons, some of them controversial, on how not to become an armed intruder's sitting duck.

"Lockdown! Lockdown! He's getting close to the library."

Independence Police Sgt. Chris Summers entered with a steely expression and brisk gait. He carried an Airsoft pistol filled with plastic pellets. The lights came on and he weaved around the shelves, firing.

An officer following him sounded an air horn representing each shot.

"You're shot," Summers said, tapping the gun barrel against the thighs of three teachers huddled behind a table. No point pulling the trigger on them, close as they were.

Eliminating that huddle took three seconds.

The killer played by Summers had dozens of others to finish off, quickly as he could, to show the

teachers what's likely if they do nothing but try to hide.

Not all "active shooter" drills simulate someone firing and people supposedly dying. But lessons are more apt to stick, say many police officials and security consultants, when the real thing can be replicated without anyone getting hurt.

The ultimate point is to present human targets with options beyond the traditional response of locking doors, switching off lights and hoping the shooter doesn't spot them.

How about dashing to exits, tossing objects, even overcoming the gunman?

"Things are moving in that direction," said Paul Fennewald, director of the Center for Education Safety, a partnership of law enforcement agencies and the Missouri School Boards Association.

The thought of encountering an armed intruder and, as a last resort, fighting back "isn't in the mindset of the education culture," Fennewald said.

"But you look at where we are as a society now, you've got to get your mind around it. … You need options. You can't just lay down in a fetal position and die."

Some critics shudder at the basic tenets behind a fast-growing protocol called Run, Hide, Fight, especially as it applies to schools.

They contend that in some situations the lessons could result in more deaths than might occur in a basic lockdown.

That criticism is apart from the questions surrounding how some workplaces get the lessons across to their employees. In other areas of the country that have initiated high-tension drills, injuries have resulted and employees have complained that the role-playing is too much.

The Independence drill employed the principles of one of the more common training programs, known as ALICE.

Summers shot 90 percent of those library occupants. All fake deaths and injuries happened in less time than the five to six minutes it would take for police to arrive in a real emergency.

After the demonstration, the teachers and office workers rose to their feet in nervous laughter, though some soon were dabbing at tears with tissue. That was while they listened to a 911 call from a terrified Columbine High School librarian during the 1999 assault that left more than a dozen dead.

In the next exercise, Pioneer Ridge educators learned to run down empty hallways to nearby exits. Next, they used desks and chairs to barricade their classrooms.

They were told that in a real-life event it's OK to crawl out windows.

Next, they threw plastic balls and learned to physically swarm a shooter, separating gun from intruder and pinning that person to the floor. Nobody should be

holding the gun when police arrive, they were told, because officers will be targeting the shooter.
The group applauded at the end of two hours of instruction and exercises.
One employee shouted, "Empowered!"
Eventually, such lessons will be made age-appropriate and passed on to pupils, school officials said.

Here and across the nation, the strategies for survival are pitched under different names: Escape, evade, engage. Get out, hide out, take out. Flee, fade, fight.
But the idea is the same: Provide options, and the safest one may not be crouching in the dark.

A new Missouri law requires all school workers to "participate in a simulated active shooter and intruder response drill … led by law enforcement professionals." Kansas lawmakers are discussing similar legislation. But educators ask: What's the best drill?
In many districts, lock-down exercises already are routine. But these drills often are no more complex than classrooms locking up, window shades coming down and kids inside quietly staying out of view.
Schools commonly unite staff and police in "tabletop drills."
That could mean poring over building maps, perfecting an alert system and acting out scenarios that include locking down or evacuating, depending on an intruder's location.
"I don't think a full-blown drill of dramatic proportions is all that necessary," said John Douglass, the Shawnee Mission district's director of safety.
Others think it is.

For several years, public schools in Columbia have drilled teachers using mock shooters marching through a building with pellet-filled air pistols or starter guns that make a smoke-emitting blast.
"It was nerve-wracking and kind of scary at first," said Susie Adams, head of the Columbia teachers association. "But it forced me to think about the threat in ways I really hadn't before. …
"After you hear the weapon over and over and you're familiar with the smell of (gun) smoke, it's not so startling and your brain can react. You become more active than passive."
Columbia officials are hoping to drill volunteer high school students in the same manner this year. Adams said: "I think it's a great idea."
Around the Kansas City area, police partner with school districts and other workplaces to develop lock-down plans and controlled evacuation drills, usually lacking flair. But you can have drama if you want, as

the Kansas City Ballet learned earlier this year.
Police asked the ballet if it would be interested in instructions and a drill to gird for armed intruder episodes, said ballet officials.
Jeffrey J. Bentley, executive director of the Kansas City Ballet, thought it worthy if the training would help employees feel better prepared.
And it did, he said.
After a PowerPoint lesson, police staged a nightmare.
On a day when only workers were in the building, an officer posing as an enraged intruder, out to get his girlfriend, stepped into the Todd Bolender Center for Dance and Creativity. He yelled, "Where is she?"
He shouted vulgarities, fired loud blanks at two employees in the atrium and stepped toward the office corridors.
One worker, electronic media coordinator Jessica Kelly, said she screamed on impulse even though she knew the drill was coming.
"I was amazed at how real it seemed," Bentley said. "It gave you a sense of how discombobulated you can get.
"You learn you have options. … I got up from my desk and stood flat against that wall," away from the shooter's view through Bentley's locked glass door. The shooter jiggled the door handle. "I know you're in there," he howled.
Bentley stayed in place and passed the test, a validation that lockdowns still work when a shooter is nearby.
Other ballet employees took off through available exits, validating the escape option.
Marketing manager Andrea Wilson was among the escapees.
She said the drill made her more conditioned to react if a true shooter entered the building.
It made her sad, too.
"I cried three times that night," Wilson said.
"What bothered me most was thinking that this is the world my young son is growing up in."

The Lincoln County R-III district northwest of St. Louis has taken true-to-life even further.
Dozens of high school drama students since 2013 have acted out shooter drills, including one shown in a You-Tube video with teens in bloody makeup, strewn across a cafeteria floor in lifeless poses.
The adult shooter grabs a girl and demands her to pound on a locked classroom door so he can get inside. The door stays closed, as teachers are advised.
In December, a national report on drills simulating school shootings called the rising practice "uncharted territory" and urged districts to proceed cautiously, especially when youngsters are involved.
"We really don't know the effect of these drills. We need to know that," said Stephen Brock, president of the National Association of School Psychologists, which co-sponsored the report with the National Association of School Resource Officers.
Brock cited the rarity of kids being killed by shooters at schools — "the odds are similar to being struck by lightning three times" — and said some districts may be reacting to intense media attention to the threat.
So far, though, official grievances have been few:
In Colorado, a nursing home worker filed suit after she stepped unaware into an active-shooter drill.
Police conducting it allegedly ordered her into an empty room as a "hostage." Realizing the worker was startled, an officer tried to explain that it was just a drill.
In Farmington, Mo., four teachers complained to the county prosecutor that shooter drills made them uncomfortable. No legal action was taken and the teachers reportedly resolved their issues with the district.
In Iowa, more than 25 school workers have filed for workers' compensation for injuries that they claimed occurred in drills that taught how to wrestle down shooters as a last resort, said Jerry Loghry of EMC Insurance Companies in Des Moines.
"We have injuries related to running, to tackling, being tackled, running into door jambs, jumping off furniture," said Loghry, whose company insures most Iowa schools and 1,500 districts nationwide.
Todd Fuller, spokesman for the Missouri State Teachers Association, has heard that some teachers feel uneasy about their jobs after a shooter drill.

"You have teachers whose sole purpose is helping people," he said, yet they're being trained to confront a violent, unlikely threat the way police would.

"The way they (law enforcement) train people is vastly different from the way teachers do training," said Fuller. "It's two divergent populations colliding."

For such reasons, the Olathe School District decided against aggressive active-shooter simulations in favor of "cognitive training drills" that prepare teachers through tabletop instruction, said assistant superintendent Erin Dugan.

Olathe schools, like those in Independence, initiated ALICE at the start of this school year. Every teacher and staffer has been trained to alert, run, fight or, given the situation, go into a traditional lockdown. Dugan said the effort has "overwhelming community support."

District officials explained the protocol to parents in nine meetings over the fall. Students in all grade levels received video and classroom instruction.

ALICE stands for Alert, Lockdown, Inform, Counter or Evacuate. The program is based on concepts developed by police in Houston, Texas, after the Columbine slayings. It's now administered by a private company, the Ohio-based ALICE Training Institute.

"The last count I got, there are 1,700 police departments and 1,600 school districts on board," said the institute's founder, Greg Crane, a former Texas police officer.

ALICE instructors travel the country to host two-day seminars that train school officials, law enforcement, security consultants and private companies. The trainees become ALICE-certified and relay what they've learned to the places they work.

The lesson plan is compatible with the "run, hide, fight" concept endorsed by the U.S. departments of justice, education and homeland security.

According to a 2013 FBI report on active-shooter incidents, about 1 in 8 ended when unarmed citizens successfully restrained the shooter. "These actions likely saved the lives of students and others present," the report concluded.

Options beyond the basic lockdown and keeping still gained traction after the 2007 massacre on the university campus of Virginia Tech, where an armed student methodically broke into classroom after classroom, killing 31 people mostly trying to hide.

The killer had less success in rooms where students jumped out the window. That's the E in ALICE — evacuate.

The C in ALICE — counter — raises concerns among some security experts: Should civilians be taking on a crazed intruder with a weapon?

Without knowing an armed person's intentions, should he be swarmed and tackled, risking lives?

"Trying to teach all that in a two-hour, four-hour or even 16-hour program doesn't do it," said Michael Dorn, a former police officer who now directs Safe Havens International, a school safety organization.

Dorn said he received 80 hours of close-quarters combat training to join a police tactical squad, adding: "I found 80 hours to be inadequate to learn the skills needed when applied under stress."

But it doesn't take training to know how to throw a backpack, book or laptop at someone bent on murder, ALICE advocates say.

Heaving papers. Running in zigzags. Anything but freezing in fear might throw a shooter off script, said Alisa Pacer, emergency preparedness manager at Johnson County Community College, where ALICE training has been mandatory for all workers since 2012.

Instead of locking down all classrooms when an armed intruder comes on campus, JCCC's protocol is to track the whereabouts of the intruder, through video cameras and text alerts, and keep classroom instructors updated. They'll do what they deem necessary.

Barricade the door. Direct students to a safe exit. Swarm the killer if death is the only other possible outcome.

"I believe it's all about options," Pacer said. "Doing nothing gets people killed."

That was the takeaway for Pioneer Ridge staffers who drilled in Independence.

Courtney Wall, a health care worker at the school, said the most disturbing exercise was the first one, when Summers showed how quickly a shooter could attack a library full of people trying to hide.

"The hardest part," she said, "was being a sitting duck."

## Iran claims to have tested 'very special weapon'

Source: http://www.janes.com/article/49784/iran-claims-to-have-tested-very-special-weapon?utm_campaign=[PMP]_PC5308_J360%2013.3.15_KV_Deployment&utm_medium=email&utm_source=Eloqua&elqaid=12196&elqat=1&elqTrackId=12d3be4a76b74ca89f804f8a3b32cec6




A still from Iranian television footage of the sub-surface missile launch purportedly carried out during the 'Great Prophet 9' exercise. The strange double plume produced by the missile suggests it did not discard its capsule correctly or that its motor vented from the side of its airframe. Source: IRINN

The naval wing of Iran's Islamic Revolution Guard Corps (IRGC) has implied that it is working on a **missile that can be launched from a submerged submarine**.

Iranian television showed footage of a missile being launched from below the surface during the 'Great Prophet 9' exercise that was held on 25-27 February. "I believe that this weapon is a strategic weapon. It has special characteristics," IRGC naval commander Rear Admiral Ali Fadavi said in a subsequent television interview.
When asked for more details, including confirmation that the missile was launched from a submarine, he said, "I would like to keep this information for the future. It is a very special weapon and the Americans cannot even surmise how strong and effective this weapon is."

## Dubai Police add movie star sports car to luxury fleet

Source: http://www.thenational.ae/uae/transport/dubai-police-add-movie-star-sports-car-to-luxury-fleet

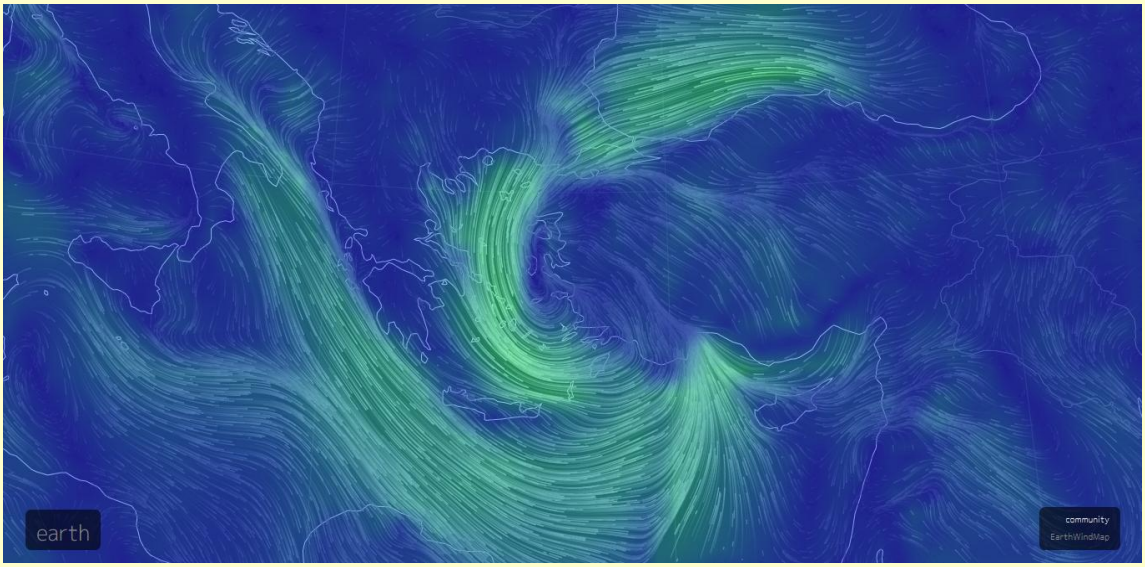

The BMW i8 featured in the film Mission: Impossible – Ghost Protocol, is the latest vehicle to join Dubai Police's fleet of luxury cars.
Sequences from the Hollywood film, released in 2011, were shot in the emirate, including scenes of actor Tom Cruise climbing the Burj Khalifa.


The BMW i8 in an environmentally-friendly sports car that can go from 0 to 100 kilometres per hour in 4.4 seconds, and has a top speed of more than 250kph. The plug-in hybrid is the first model of its kind, with the consumption and emission values of a compact car. It weighs 1,490 kilograms and produces 362 horsepower.
Dubai Police released a video on Wednesday to show the latest addition to the fleet. Maj Gen Khamis Al Muzeina, Dubai's police chief, is seen test driving the vehicle and parking in front of Dubai Police headquarters, where he is joined by Maj Gen Abdelrahman Al Rafi, director of the Department of Community Services, and Brig Anas Al Matroushi, director of the General Department of Transport and Rescue.

**The fleet of luxury cars promotes the image of the authorities and encourages the public to interact with police. It patrols heritage sites and tourist areas.**

## Real time wind map

Source: http://earth.nullschool.net/#current/wind/surface/level/orthographic=-332.78,37.97,3000




**EDITOR'S COMMENT:** Quite useful resource especially for CRN incidents both at national and international levels.

## Devastating homemade weapons of Syria



Source: http://www.rediff.com/news/report/pix-devastating-homemade-weapons-of-syria/20150312.htm

March 12 – The civil war in Syria has seen a fierce battle between President Bashar al-Assad's regime and the rebels. The rebels who lack the resources of Assad's government forces, have had to improvise and build their own bombs, missiles and mortar shells.

The fighters have been fighting in the besieged city of Aleppo using these homemade weapons. One weapon of choice is nicknamed the 'hell cannon'. The resistance fighters take great pride in the arm that usually fires out propane gas cylinders

Al-Shamiyah Front fighters inspect a new locally-made cannon named "Borkan" (Volcano) as it was being launched towards forces loyal to Syria's president Bashar Al-Assad located in Aleppo artillery school. The "Borkan" is made out of four tubes attached to a loader, which can fire four shells at a time, and have a range of three kilometres (1.86 miles).

Men fill gas canisters with explosive for usage with a cannon named "Borkan" (Volcano) inside a weapon factory in Aleppo countryside.


A Free Syrian Army fighter displays homemade bombs made from ornamental balls in the old city of Aleppo.

A homemade military vehicle called Sham 1 is seen in Khan al-Assal area

Fighters from the Free Syrian Army's Tahrir al Sham brigade use a shotgun to fire an improvised grenade at Syrian Army soldiers in the Arabeen neigbourhood of Damascus.



▶ **More photos at source's URL.**

## Lambda-Sat – the first Greek CubeSat

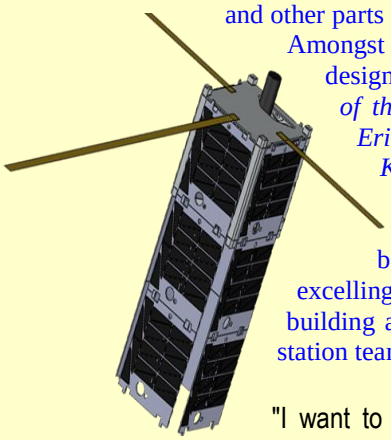
Source: http://forums.qrz.com/showthread.php?471906-The-ARRL-Letter-March-12-2015

Lambda-Sat – the first Greek CubeSat – was released from the International Space Station on March 4, following its launch last summer, and its developers have invited radio amateurs around the world to listen for the Lambda-Sat signal and file reports.

"You can help us to track and get the data from the Lambda-Sat while [it is] flying above areas not covered by our ground stations," the Lambda-Sat team said. The 1U CubeSat transmits AX.25-protocol UI packets at 1200 bps AFSK on 437.465 MHz. The 1 W transmitter identifies as KK6DFZ.

Lambda-Sat was constructed entirely by young volunteers from Greece, who traveled to Silicon Valley to participate in this project. Members of the Lambda-Sat team contributed to the construction of the satellite system through their knowledge in robotics, electronics, software development, and telecommunications.

Greek Minds at Work. Lambda Team is an international group of Greek scientists/students, based in Silicon Valley (San Jose), CA, USA. Λ-sat is the first ever Hellenic satellite designed and built by Greek scientists. Principal Investigator: Dr. Periklis Papadopoulos Lambda team members from San Jose, CA, New York, NY (USA) as well as Athens – Greece, London – England, Paris – France and other parts of the world have been collaborating towards this enormous task with immense success. Amongst them a group of six university students from Greece was selected to participate in the design and manufacturing process of the satellite in Silicon Valley, California. PHOTO: *Part of the Lambda Team with (right to left) Dr. Periklis Papadopoulos, Kostas Alexandrou, Eriana Panopoulou, Vaggelis Christodoulou, Maria Dimitrakopoulou, Charalabos Koulouris and Simos Kanis.* Λ-sat was successfully tested at NASA Ames Research Center in Mountain View CA, while passing all the strict International Space Station standards. We are here to prove that "Greek Minds at Work" is more than just a belief. It is a demonstration of a united Greek front. A demonstration of the globally excelling scientific Greek mind. And there is not a better way to do so other than building and sending to space a Greek Satellite. University of Aegean and ground station team Members: Dr. Nikitas Nikitakos, Georgios Mantzouris



"I want to motivate the youth in Greece to continue to dream," said the project's

initiator, Periklis Papadopoulos, an aerospace engineering professor at San Jose State University. "My goal is to demonstrate the capabilities of young people in Greece."
Lambda-Sat carries an experiment that measures the radiation effects on graphene in a low-Earth orbit environment. It also carries an Automatic Identification System (AIS) receiver for tracking all marine vessels within its footprint around the globe, employing an Iridium Short Burst Data (SBD) modem and making use of the Iridium constellation.

## In Nationwide Protests, Angry Brazilians Call for Ouster of President

Source:http://www.nytimes.com/2015/03/16/world/anger-bubbles-up-against-brazilian-president.html


Hundreds of thousands of protesters took to the streets in cities across Brazil on Sunday to express their ire at President Dilma Rousseff, raising pressure on her as she grapples with an onslaught of challenges including an economy mired in stagnation, a sweeping bribery scandal and a revolt by some of the most powerful figures in her governing coalition.
The protests, organized to coincide with commemorations of the re-establishment of democracy 30 years ago after a long military dictatorship, reflect rising disenchantment with Ms. Rousseff after former executives at Petrobras, the national oil company, revealed an elaborate scheme in which they said they channeled huge bribes from contractors to Ms. Rousseff's 2010 election campaign, in addition to enriching themselves and legislators supporting her.
The payoff racket coincided roughly with the period that Ms. Rousseff led the company's board of directors. While no testimony has surfaced claiming that she personally profited from the scheme, calls for her impeachment have been growing louder. Political analysts and even some of Ms. Rousseff's chief political opponents view impeachment as a distant possibility. Yet with her approval ratings falling sharply, Ms. Rousseff has seen her maneuvering room grow more limited to deal with a range of urgent problems.
Concerns are growing over a sluggish economy expected to contract this year as the boom of the previous decade recedes into memory. Brazil's once-strong currency, the real, has plunged 23 percent against the dollar this year as investors cut their exposure to the economy. Inflation has climbed to its highest level in nearly a decade as job losses mount, partly as a result of the Petrobras scandal rippling through the Brazilian oil

industry, which has also been shaken by the worldwide plunge in petroleum prices.

"If there was thievery all around her and they were looting Petrobras, then, yes, the president is responsible," said Joana Simões Lopes, 40, a fashion designer who was among the protesters in Rio de Janeiro's seaside Copacabana district. "She should resign simply out of shame."


Pointing to rising polarization, some prominent supporters of Ms. Rousseff have begun calling supporters of her ouster "golpistas," or putschists, claiming the movement reflects dissatisfaction among privileged Brazilians rather than broad-based discontent.

But in contrast to leaders elsewhere in the region who have responded to rising dissent by spewing insults at their critics or cracking down with security forces, Ms. Rousseff has taken a relatively nonconfrontational approach. While she has acknowledged the corruption at Petrobras, she contends there is no basis for impeachment.

"In this country, we all have the right to protest," Ms. Rousseff, 67, said in a video posted over the weekend on her Facebook page in which she alluded to her past as a guerrilla who opposed the dictatorship, which, she noted, harshly restricted civil liberties, including street demonstrations.

Still, the protests are focusing scrutiny on the steady erosion of support for Ms. Rousseff, an economist by training who lacks the talent for political deal-making of her mentor and predecessor as president, Luiz Inácio Lula da Silva. Raising fears about gridlock in Brazil's Congress, Ms. Rousseff is facing a dispute with the Brazilian Democratic Movement Party, the large centrist party, known as the PMDB, that anchors her coalition.

Leaders of the PMDB, who control both houses of Congress, are fuming after the Supreme Court authorized investigations into claims that they received money from the Petrobras bribery scheme. Blaming Ms. Rousseff for their predicament — the prosecutor general in her government is pursuing the inquiry — they are threatening to block legislation aimed at bolstering unpopular austerity measures.

## 2014 FIFA World Cup demonstrations

Beyond the halls of power in the capital, Brasília, a public opinion survey by Datafolha, a Brazilian polling company, showed Ms. Rousseff's approval ratings declining to 23 percent from 42 percent at the end of 2014. The poll, conducted in early February with interviews of 4,000 people, had a margin of sampling error of plus or minus 2 percentage points.

Brazil's diverse economy remains on a stronger footing than neighbors like Argentina and Venezuela. A sense of crisis, however, is spreading through the political establishment, which resents Ms. Rousseff's top-down management style and questions her reluctance to acknowledge that policies expanding the government's role in the economy might have accentuated some of the problems Brazil faces.

Some political analysts are drawing uneasy comparisons with the turbulent period in the early 1990s, when a corruption scandal moved Fernando Collor de Mello to resign as president in an attempt to thwart his impeachment trial. (He was impeached anyway, shortly after he left office.) Nearly every other civilian president since the 1980s has faced calls for impeachment, but rarely has the momentum built as fast as it has for Ms. Rousseff.

"The protests are an attempt to untie one of the biggest knots of

the crisis: the inability of the least-prepared president of the democratic era to deal with the most difficult process Brazil is facing in the last

30 years," said Fernando Gabeira, a respected writer and founder of Brazil's Green Party.

Still, Ms. Rousseff and the governing Workers Party still command important bastions of support. Many Brazilians who have climbed out of poverty in recent years, partly because of the government's social welfare programs, remain loyal to Ms. Rousseff, who narrowly won re-election last October.

"There is no evidence for removing Dilma from the presidency, so let her finish her term," said Kelly Molina Porto, 33, a street vendor who attended smaller protests on Friday here in support of the president. "She was democratically elected."

At the same time, others are saying they have had enough after witnessing the evolution of the leftist Workers Party from an insurgent organization that criticized the rampant corruption in Brazil's political system into an establishment fixture, fending off accusations that it benefited from what may be the largest bribery scandal in the country's history.

"The economy is entirely for them, and they don't care if this finishes with Brazil," said Laerte Alves Machado, 61, a civil engineer among the protesters in São Paulo, referring to the Workers Party. "They just want to stay in power."

**EDITOR'S COMMENT:** Are these demonstations genuine driven by current socioeconomic perception or there is a dark background present related to Brazil's relations with other countries in the American continents? And is this the right environment for the upcoming mega event of 2016? Could this be another chapter in the global chess dictating future geopolitical transformations and monopoly ruling ambitions? If strong nations such as Brazil is not capable to provide a decent life to its citizens then what is the faith or the rest of the nations planet-wide? There is something rotten here and it is not hydrogen sulphite!



## Searching for light in war-torn Syria

Source: http://www.bbc.com/news/world-middle-east-31882417

A dark shadow falls across Syria as a punishing war enters its fifth year.

**It's not just that satellite imagery has revealed the night sky is 83% darker because so much infrastructure has been destroyed, and millions forced to flee their homes .**

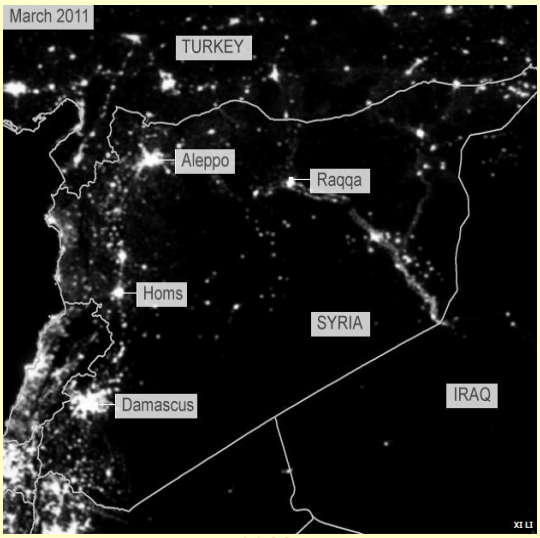
It's not just that UN Security Council resolutions - urging armed forces to protect civilians and allow greater access for humanitarian aid - have largely been ignored.

It's not just that Syrian leaders on all sides of a bitter and brutal divide still don't genuinely subscribe to the mantra that "there is no military solution."

None of their outside allies, providing military or moral or financial support, are pushing them to accept it either.

It's also that hope is draining from so many Syrians, no matter what side they're on, that this nightmare will be over any time soon. No-one expected it would last so very long and cost so very much.

You see it in the eyes of millions of Syrian children and exhausted parents, displaced from their homes, or forced into exile, who now realise their dream of going home, going to school, was just that - a dream.
You see it in the anguish of young educated Syrians who, four years ago, were stirred by the tantalising prospect of peaceful political change. They gambled almost everything, including their future, on this shimmering prize, and now anguish that they lost almost everything in return.



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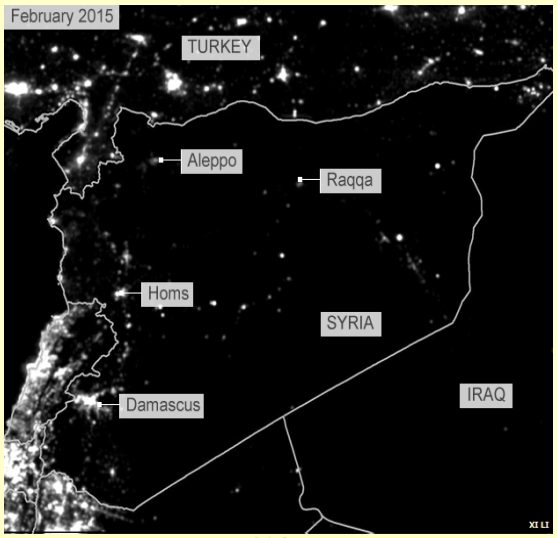


2015

**'Slim prospect'**
"We have all the international institutions we need to resolve this crisis," Lord Michael Williams, a former Mideast envoy, recently told me with palpable regret.
He points to the experience of international efforts in the Bosnia war of the 1990s.
All available instruments of international intervention, including military force, and international justice in the form of the International Criminal Tribunal for the Former Yugoslavia, were deployed in the name of humanitarian principles.
This week Lord Williams writes that when it comes to Syria "it is daunting to write that there is a slim prospect of international intervention, and if truth be told, even less of international justice".
Even humanitarian obligations under the 1951 International Refugee Convention are not being honoured.
"Western countries, with the honourable exception of Sweden, have taken fewer refugees from the Syrian war than almost any other conflict in the past 100 years," Lord Williams adds.
Germany also stands ahead of other Western nations with its pledge to take in 20,000 Syrians. Britain has agreed to accept 500, and has so far accepted less than 100.

**'Not interested anymore'**
Hence, there is the urgent question with its barely concealed anger: "What will it take?" That's the unprecedented banner headline of a statement signed by more than 20 heads of international agencies - including even UN Secretary General Ban Ki-moon.
The UN's humanitarian envoy, Valerie Amos, who repeatedly implored a divided UN Security Council to do more, spoke in a recent interview of "a stain on the international community".
"It may take at least another five years," concedes another senior UN official involved in frustrating efforts to try to bring an end to this devastating downward spiral.
The worst East-West crisis since the end of the Cold War is now making it ever more difficult to achieve the kind of co-operation that allowed the US and Russia to at least reach a deal in 2013 on eliminating Syria's chemical weapons.
Washington's priorities now are the fight against the so-called Islamic State (IS) in Iraq and Syria, as well as critical

negotiations with Iran over a nuclear deal.
"They're just not interested anymore," remarks a Washington-based Syrian activist, who has been shuttling between US government offices and rebel-held areas of Syria since the first years of this conflict.
"Syria doesn't have a Merkel and Hollande making this crisis a priority," comments Justin Forsyth, Chief Executive of Save the Children, in a reference to the dogged, if only partially successful, European efforts to resolve the crisis with Russia over Ukraine.

**Growing pressure**

The optimists say "if and when there is a nuclear deal" the West will then focus on working with Iran, arguably the Syrian government's most important ally, to put pressure on President Assad.
But for Tehran and Moscow, the ominous reach of IS forces, as well as the growing sway of the al-Qaeda-linked al-Nusra Front, only reinforces their view that to move against President Assad now is to move towards an even more chaotic future.
Many suspect Western governments also harbour this anxiety, even if they still insist President Assad is "part of the problem, not the solution".
"We will be prepared to look at other options when the time is right," one senior Iranian official told me late last year. "But now is not the time."
Western political and military leaders still talk about supporting the "moderate Syrian opposition" - even though forces armed by the West and some Gulf allies are steadily losing ground on the battlefield.
"We're coming under pressure to talk to al-Nusra," a Western intelligence official tells me with a grimace about a group under UN Security Council sanctions and on the US list of terrorist groups.
Russia and Egypt recently embarked on some still unconvincing efforts to relaunch a political process.
The UN's focus has been narrowed to a possible "freeze" in hostilities in one district in one divided city, Aleppo, and a temporary suspension of government bombardment across the city.
"It's a pilot project," the UN's third envoy in four years Staffan de Mistura told me recently. "We want people to see the benefits... and we have to start somewhere".

**Rare bright spark**

Under political fire from all sides, the veteran UN troubleshooter holds up his own reminder of the darkness that is now Syria - a tome of a book, with a pitch black cover, entitled #100,000Names. Pages and pages that list the dead cover less than half the number of Syrians who have lost their lives so far.
It's this sad catalogue of abuse that leads many Syrians to say they can never accept a role for President Assad and other leading members of his regime, in any future order.
But those who back him see in this book a story of an opposition backed by powerful Arab and Western states with their own agendas for Syria.
There was a rare bright spark this month when the UN's agency for Palestinian refugees was able to get agreement from all sides to resume distribution of food and medical supplies to besieged Yarmouk, just south of Damascus, after a hiatus of more than three months.
But like most of the world's work on Syria, it simply didn't cover the needs of so many people desperate for food, water, medical care, and most of all freedom.
And it's all too fragile, all too hostage to the vagaries of this war.
And like much of Syria, it's just one small bright light in a big dark hole.



## Secret Service agents disrupted bomb investigation at White House

Source: http://www.washingtonpost.com/politics/secret-service-agents-disrupted-bomb-investigation-at-white-house/2015/03/12/0eb74590-c8c4-11e4-aa1a-86135599fb0f_story.html

Two Secret Service agents suspected of being under the influence while striking a White House security barricade drove through an active bomb investigation and directly beside

the suspicious package, according to current and former government officials familiar with the incident.
These and other new details about the March 4 incident emerged Thursday from interviews and from police records obtained by The Washington Post.
The revelations spurred fresh questions Thursday from lawmakers about whether the newly appointed director of the Secret Service, Joseph P. Clancy, is capable of turning around the troubled agency.
Among lawmakers' questions was whether Clancy, a 27-year Secret Service veteran appointed to his job last month after a string of embarrassing agency missteps, has been aggressive enough in his handling of last week's incident.
Clancy placed the two senior agents involved in the incident in new "non-supervisory, non-operational" jobs pending an investigation — a less stringent approach than the service has taken in the past, when staffers suspected of misconduct were put on administrative leave or pressed to resign or accept demotion. Also, Clancy did not take action against a senior supervisor on duty that night who, according to officials briefed on the incident, ordered Secret Service officers to let the agents go home without giving them sobriety tests.


Through a spokesman, Clancy declined to comment on the case, saying he had referred the matter to be investigated by the Department of Homeland Security inspector general.
Clancy has told lawmakers he learned of the allegations Monday, according to people familiar with the discussions. That is five days after the incident, which involved two of his most senior agents, including a top member of President Obama's protective detail.
Lawmakers did not learn of the episode, however, until it was reported by The Post on Wednesday.
On Thursday night, Rep. Jason Chaffetz (R-Utah), the chairman of the House Oversight and Government Reform Committee, and the panel's ranking Democrat, Rep. Elijah E. Cummings (Md.), sent Clancy a letter asking for a detailed briefing on the incident, which they called "extremely serious" and said raised concerns about the path to reforming the agency.
"This incident also raises important questions about what additional steps should be taken to reform the agency and whether the problems at the USSS run deeper than the recently replaced top-tier of management," they wrote.
The lawmakers also cited the "zero tolerance" policy the service said it followed when it immediately moved to recall agents suspected of drinking during the job on presidential trips to the Florida Keys and Amsterdam in 2014, saying that standard "should apply to USSS managers and leadership just as it does to rank-and-file personnel." The statement of zero tolerance was made in April 2014 by the agency's then-spokesman, George Ogilvie — one of the agents now under investigation in connection with the incident last week.
Chaffetz said Thursday he was concerned that the events of March 4 suggest some in the Secret Service feel they are above the law. "The director needs to send a message. He needs to signal there is going to be new accountability in the agency," he said. "We're still learning all the facts, but I'm still not very impressed by how this is going."
White House spokesman Eric Schultz said Thursday that the president retains full confidence in Clancy. Schultz said Obama learned about the incident "earlier this week" before The Post's report and was "disappointed" by the news.
The March 4 incident unfolded on a hectic night for Secret Service officers guarding the White House.

About 10:25 that night, a woman hopped out of a blue Toyota near the southeast entrance of the White House on 15th Street NW and, holding a package wrapped in a green shirt, approached an agent.
"I'm holding a [expletive] bomb!" she yelled, according to a government official with knowledge of the incident.
The woman then put the object on the ground and retreated to her car, the official said. The agent ran to the car and opened the front passenger-side door and ordered the woman to get out. But she then put the car in reverse and accelerated, striking the agent with the open door. The agent reached inside the car and forced it into park, said the government official, but the woman was able to shift it back into drive and drive forward, again hitting the agent and forcing him to jump out of the way.
The woman then sped off.
Police quickly secured the area with tape and called an inspection team to check the package for potential explosive materials or other dangers.
But shortly before 11 p.m., the two high-ranking Secret Service agents, returning from a work party at a Chinatown bar about eight blocks from the White House, drove their government car through the crime scene. According to people familiar with the incident, they drove through police tape and then hit a temporary barricade, using the car to push aside some barrels. An agency official said Thursday that the car was not damaged.
The episode was caught on surveillance video. Investigators who reviewed the video of the incident initially said they could not be sure whether the pair drove very close to or over the suspicious item wrapped in the shirt, one law enforcement official said. But after reviewing more video later Thursday afternoon, the official said, they concluded that the agents' government car drove directly next to the package.
Secret Service officers on duty that night considered the agents' behavior to be erratic and suspected they were drunk, according to current and former officials familiar with the incident.
The officers wanted to arrest the agents — but a more senior supervisor at the complex told them to let the agents go, the officials said.
At 11:45 p.m. Wednesday, the police explosives team determined the suspicious item was not a threat and gave the complex the all-clear. The item was a book.
Secret Service officers found the woman they suspected in the incident two days later to question her about the threats on the White House, an agency official said. A police record said that she is from Pennsylvania and has had contact with the Secret Service in the past and that the agency had her photo on file.
On Thursday, a government official said a warrant for the woman's arrest had been issued through a D.C. court, charging her with assault with a dangerous weapon, the car. The warrant remains sealed, and it was unclear Thursday whether the woman was in custody.
The Secret Service agents under investigation are Marc Connolly, the second-in-command on Obama's detail, and Ogilvie, a senior supervisor in the Washington field office. Both men have declined to comment.



**EDITOR'S COMMENT:** While Joseph P. Clancy will try his best to normalize the functionality of Secret Service, it might be a good idea Mr President to **carry a piece himself**! Just in case the impossible becomes possible! Too many incidents in such a short time!

## The 4037 Cities In The World With Over 100,000 People

Source: http://brilliantmaps.com/4037-100000-person-cities/

**The map below shows the 4,037 cities in the world that have over 100,000 people living in them**. It was created by reddit user Fingolas, who explains how the map was created:

*A little background: I started with a list from the United Nations, later realising, that it's not complete (China is missing, for example) and it not in every case contains the most current data. So I looked what Wikipedia had and in many cases it really helped (surprisingly often the German version was better than the English one). The one big exception was Central and West Africa, where an organisation called E-Geopolis did their own count and found many official statistics overblown. So I used data from their count called Africapolis.*

**For an alternative view, here are the same cities without the world map behind:**



**The top 5 countries with the most 100K+ cities are:**

1. **India** – 328
2. **Brazil** – 300
3. **USA** – 295
4. **Japan** – 263
5. **China** – 209

**In total these cities house around 2.1 billion people or around 28% of the world's population.**

Now if you look at the list above, a few things should jump out at you. For example, how does China, with nearly 1.36 billion people, have 100 fewer 100K+ cities than Brazil, a

country with just over 200 million people? Reddit user elefantpp provides a plausible answer:
**China defines "cities" differently than most of the western world.** In China, the primary subdivision is the province, and some cities are direct-controlled municipalities such as Chongqing which, being on the same level as provinces, take up about the same amount of space!
The Municipality of Chongqing which in countries like Brazil or the US would be multiple cities and some large suburbs in a metro area and then some, are considered a single city. Most cities in China have massive limits from the size of an American county all the way up to a province, including both urban and rural areas.
This is one of the reasons why (other than its large population) that there are a whopping 160 "cities" in China with over a million inhabitants but only 9 in the US. This is also evident if you look at the map. If you zoom in on China, there are far-spaced large bubbles but over Brazil and America, there are large bubbles surrounded by a host of small bubbles.
In China, these would all be consolidated.
Finally, while the map above is impressive many users on reddit were quick to find faults. Some of which include:

- Lack of Taiwanese cities
- No cities from Bosnia and Herzegovina
- Confusion between metro area and city proper population figures
- Several missing cities that have over 100K people

Nevertheless, despite these errors, we think the map above is pretty cool given the difficulty of finding comparable data.



# ISIS Seizes Chemical Weapons in Libya, Poses 'Serious Danger,' Claims Expert

Source: http://www.inquisitr.com/1864174/isis-seizes-chemical-weapons-in-libya-poses-serious-danger-claims-expert/#7gcZeEqlmq6cpzhl.99

**According to the latest reports this weekend, ISIS, also known as Islamic State, may be sitting on a deadly cache of chemical weapons it allegedly seized during its takeover of large parts of Libya.**

These weapons of mass destruction, according to war expert and **former British Army officer Hamish de Bretton-Gordon**, pose a real threat to Europe if they are unleashed by ISIS via Italy, for example, which is relatively close to Libya.

**According to the expert, the terror group has unconfirmed quantities of sarin and mustard gas after defeating government forces in southern and central Libya. Even if these weapons are old and in a degraded state, they would, apparently, still be effective.**

De Bretton-Gordon based his assumption on President Assad's use of one ton of sarin in Ghouta, Syria, in August 2013, which killed as many as 1,000 people.

As he said to reporters, "We saw what a single ton of not very good quality sarin did in Ghouta. While we don't know how much IS has acquired, and though the Libyan sarin dates back to the Gaddafi era, it would still have a toxicity and pose a danger. Libya is virtually Europe and so the fear factor from a European perspective is huge. I should think the security forces will be watching this situation very closely."

Some online commenters have noted that the ISIS threat of chemical weapons may not be as bad as some claim.

A user called "Worldweary," for example, commented, "Sarin and the like don't seem to be the big deal you get in the films or on TV. Remember the Tokyo subway, where relatively few died in a confined space. Anyway, these guys are so dumb they'd probably off themselves first."

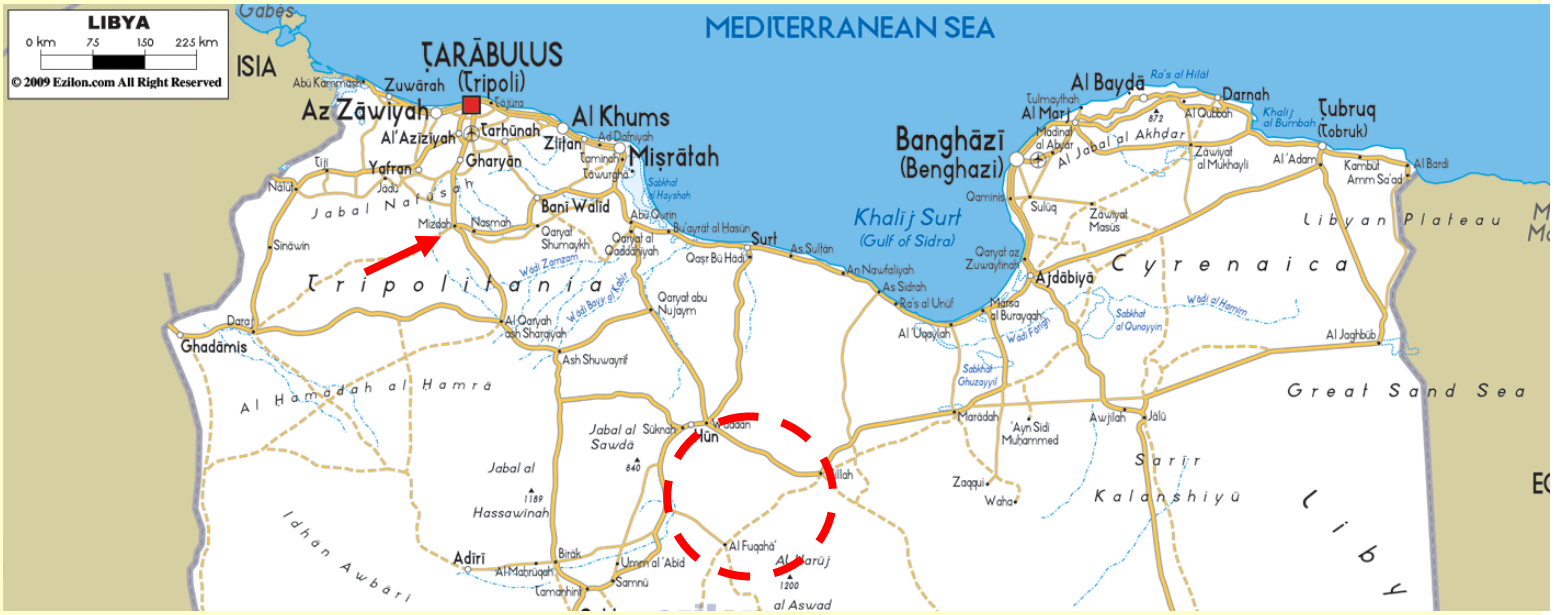
While at the same time, another user, going by the name of "Joeninety," asked," Can we believe this article? Judging by DM's other headlines, it makes me wonder. Does ISIS have nuclear capabilities? Do they eat food or are they robots from Mars? I may stop reading the news as it is clearly rubbish based on no facts whatsoever."

According to those comments, the news of ISIS being in possession of chemical weapons is no big deal, while other people are certainly concerned about what the Islamist terror group could do with such weapons.

# Libyan Army official tells Arab paper that militias captured chemical weapons

Source: http://www.jpost.com/Middle-East/Libyan-Army-official-tells-Arab-paper-that-militias-captured-chemical-weapons-391810

Militias in Libya have captured chemical weapons from storage areas in southern and central parts of the country, the Arab media reported on Saturday.
"Unfortunately [chemical weapons] exist in locations known to the militias, who have seized large amounts of them to use in their war against the [Libyan] army," a Libyan military official told the London-based daily Asharq al-Awsat.
The former regime of Muammar Gaddafi had held the chemical weapons and the official warned that Islamic State could obtain the chemicals, which include mustard gas and the nerve agent Sarin.
"Before his death, Gaddafi left approximately one thousand cubic tons worth of material used for manufacturing chemical weapons and about 20,000 cubic tons of mustard gas," added the military official.
**In addition, Asharq al-Awsat obtained a video of what seemed to be fighters testing the chemical weapons in a mountainous area near the town of Mizda, 100 miles south of Tripoli.** The video




shows the firing of a projectile which produced fire and dense white smoke.
**Locals told the Arab newspaper that an armed group that was guarding a chemical factory in Jufra District, 370 miles (600 kilometers) southeast of Tripoli, transferred some of the mustard gas to the Mediterranean city of Misrata.**

# New system helps US step up defense vs. biological warfare

Source: http://www.stripes.com/new-system-helps-us-step-up-defense-vs-biological-warfare-1.331101?_scoop_post=886f2540-bbce-11e4-beaf-001018304b75&_scoop_topic=4004019#.VOy_TCKvVmV.linkedin

Feb 22 – A unique chamber designed to improve the nation's readiness against biological warfare has debuted at a U.S. Army facility in Utah.

The Dugway Proving Ground, which is about 85 miles southwest of Salt Lake City, now is home to an intricate system that tests how well detection systems of deadly biological agents such as anthrax, ricin and plague do their job.

A ribbon-cutting ceremony was held Thursday for the system, which represents a $39 million investment for the Department of Defense. It's expected to begin operation in the next several weeks.

Detection systems previously have had to be tested component by component to determine how efficiently they functioned.

Typical detection systems used by the military are about the size of a refrigerator, but the new chamber is big enough to accommodate two at the same time so they can be compared side by side and their ability to perform independently can be tested.

"It is a huge deal," Dugway's commander, Col. Ronald Fizer, told the Deseret News. "We have not had the ability to evaluate these systems in a live environment before. This allows us to have a high degree of confidence in our systems."

Carmen Spencer of the federal Joint Program Executive Office for Chemical and Biological Defense said it's paramount that biological agent detection systems operate at the highest efficiency given the evolving nature of global threats.


Brig. Gen. Jeffrey Gabbert, commander of Army Mission & Installation Contracting Comman, gets gloves-on experience with a biological agent detector inside the glovebox of a Whole System Live Agent Test (WSLAT), an intricate system that tests how well detection systems of deadly biological agents such as anthrax, ricin and plague do their job. U.S. Army

"The world is a far different place than it was 20 years ago," he said. "There's an ever-increasing awareness of the potential of a biological threat against nation states by non-nation states."

Fizer said al-Qaida has made no secret of its desire to get its hands on biological agents, and biological labs are top targets for multiple terrorist cells.

"Before we didn't have a chamber that could test these systems. This gives us that readiness," he told the Deseret News.

Douglas Andersen, chief of the life sciences division at Dugway's West Desert System, agreed. "We can do those tests and safely challenge or expose a real system to agent in the air and see if it will respond."

# McPherson monochromator can help early detection of chemical, biological, or explosive weapons

Source: http://www.prnewswire.com/news-releases/mcpherson-monochromator-can-help-early-detection-of-chemical-biological-or-explosive-weapons-300039405.html

Feb 24 – Standoff Raman spectroscopy is an optical sensing technique. Among other things, it can be used to detect and identify chemical, biological and explosive activity. There is an ongoing national and international scientific effort to improve these types of detectors. The goal is to form sensing networks to provide early warning for a variety of chemical, biological, radiological, nuclear or explosive (CBRNe) weapons of mass destruction (WMD). One potential improvement of these Raman spectroscopy systems is to excite samples with shorter wavelengths of light. UV excitation at 213 or 244 nanometers may increases sensitivity, suppresses fluorescence and provide resonance coupling. These each improve signal-to-noise in the measurement for faster detection of trace.

**McPherson's compact double-monochromator Model 275D is ideal for deployment in these sensors**. It works as a tunable filter, adjustable Raleigh edge-rejection and bandpass. It can work to wavelengths as short as 190 nanometers with no special preparation. The double-monochromator has a stable housing and wavelength tuning for easier signal optimization. Diffraction gratings with aberration correction and good efficiency from 190 nanometers ultraviolet to the infrared are available.

**Spectrometer Applications**

- Raman Filtering, UV Edge Rejection
- Photoluminescence
- Radiometry (LED, light source characterization)
- Tunable High Purity Light Source
- Detector Characterization

**More on the compact double monochromator**

All McPherson monochromators are available with a special wavelength controller, an extensive software package and are easy to use and integrate. The dedicated 789A-4 stepper motor controller is commanded directly in ASCII. The user can specify speed, direction, and step size increment with software commands. Homing insures calibrated performance, a feature critical in many applications. Libraries and program examples support LabVIEW™ and text-based programming.

**Need more bandwidth from a tunable filter for UV-Raman**

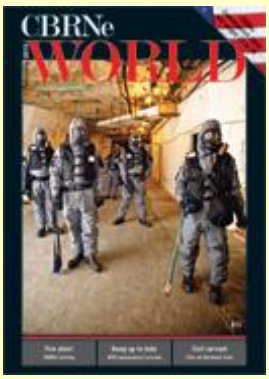
Catering to ultraviolet resonance Raman applications, the bandwidth aperture of the model 275DS is available in XXL sizes.

With the larger central aperture, users collect a wider range of spectra while laser scatter is blocked. Combined with fiber optic coupling and tertiary spectrograph, highest performance is attained with UV tunable rejection and wavelength positioning.

Tetsu Okumura, director of the Japanese Society for Clinical Toxicology, shares his views on terrorism and Japan's approach to CBRN matters

CBRNeWORLD

## Playing it safe, in a good way




**CBRNE World:** What is the current terrorist threat level in Japan – low, medium, high? Do you see the most likely threat being conventional weapons, or is there something that makes would-be Japanese terrorists more likely to use CBRN devices?

Feb 2015 issue

**Tetsu Okumura:** Japanese people think the current terrorist threat level is high because Islamic State (ISI)L recently declared Japan to be a target. We are also hosting the 2020 Olympic Games, so we are becoming more aware of terrorism. Conventional weapons such as bombs are the most probable scenario, but terrorists could easily use hazardous chemicals such as toxic industrial chemicals (TICs) along with bombs.

First of all, we try to exclude the possibility of CBRNE being used in the case of bombings whenever we conduct bombing scenario exercises in Japan. After the Tokyo subway sarin gas attack, sufficient diverse and precise detectors were distributed to first responders to ensure we are prepared for international political and sports events such as the G8 summit and the World Cup.



▶ **Read the rest of this article at (free subscription might be required):**
http://www.cbrneworld.com/_uploads/download_magazines/Playing_it_safe.pdf

Torill Tandberg of the Norwegian Directorate for Civil Protection explains their work on a new national CBRNE strategy

CBRNeWORLD

## Norway's progress towards a new national CBRNE plan

The Norwegian government is developing a national CBRNE strategy to improve its ability to prevent, prepare for and recover from CBRNE incidents. The aim is to ensure that appropriate protection measures are in place for the benefit of the civilian population and to reduce society's vulnerability in the face of CBRNE threats.

CBRNE has become an important political issue in Norway. In 2013 a white paper on preparedness against terrorism was sent to the Norwegian parliament highlighting the likely impact of 'low probability threats' from CBRN agents. As result a cross-sector project group chaired by the Norwegian Directorate for Civil Protection (DSB) and supported by Norwegian Defence Research Establishment (FFI), which provides the secretariat, were mandated to look into the matter.

▶ **Read the rest of this article at (free subscription might be required):** http://www.cbrneworld.com/_uploads/download_magazines/Tandberg.pdf

## The Non-Conventional Threat CBRNe event series comes to America


Source: http://www.start.umd.edu/news/non-conventional-threat-cbrne-event-series-comes-america?utm_source=START%20Announce&utm_campaign=30bf0fb45a-START_Newsletter_Feb2015&utm_medium=email&utm_term=0_a60ca8c769-30bf0fb45a-14081393

Feb 27 – START will welcome the leading international The Non-Conventional Threat CBRNe event series to the University of Maryland campus April 29-May 1 for its debut in the United States. The conference aims to provide a forum for the armed forces, government agencies, first responders and the industry to discuss crucial challenges of CBRNe (Chemical, Biological, Radiological, Nuclear and Explosives) preparedness.
Drawing from its well-established experience and expertise in Europe, the Middle East and Asia, the NCT USA edition will have two parallel streams: the conference stream and an innovation stream where accepted papers will be presented.
Topics of discussion will include an American perspective on the requirements of international CBRN defense, CBRN operations in a military environment, threat mitigation and decontamination, international threat reduction, critical infrastructure and urban security – challenges for CBRN detection, nuclear and radiation monitoring and surveillance, mass diagnosis and forensics, as well as CBRN preparedness and protection.

**Speakers include:**

- HE Minister Aung Kyaw Nyat, Myanmar,
- Brig Gen Burton, 20th CBRNe Support Command,
- Dr Gerald Epstein, Deputy Assistant Secretary for CBRN Policy, DHS.
- Ambassador Bonnie Jenkins, US State Department,
- Dr Christine Bent, Director Megaports Initiative,
- Dr Peter Emanuel, ECBC BioSciences Division Chief & JPEO-CBD JUPITR ATD Lead,
- Sen Mike Balboni, frm. State Senator New York and
- Dr Erica Canzler, Director CBRN Consequence Management Advisory.

▶ **For more information and to register, visit:** http://www.cbrneusa.com/.

## CBRN – Integrated Response Italy


Source: http://cbrn.netseven.it/

The project is a starter measure as it aims at building and testing an integrated CBRN response capability of first responders and law enforcement agencies in Italy, with a view to transfer the approach to other member States in a transnational project, envisaged for 2013 with Estonia, France, Netherlands and Finland.

At the same time it is also a complementary measure a s it aims to integrate the lessons learned from the EU CREMEX 2011CBRN exercise, organized by Estonia, with Italian practice.

The following two major challenges can be identified at Member State level in terms of first responders delivering assistance to a CBRN-security incident scenario, where law enforcement and security services have the lead:

(1) The different working requirements of law enforcement and security structures in terms of procedures, tasks, tools, responsibilities and liabilities. First responders and law enforcement officers respond to different authorities and have different interests (saving lives versus criminal investigations). In practice this can lead to conflicts at the incident scene thus hampering effective responses;

(2) The on-site interagency coordination between governmental services in charge of safety (fire services) and security (law enforcement and security services), in terms of EU incoming assistance through the European Mechanism for Civil Protection during a CBRN incident, is not well defined. The current EU Host Nation Support Guidelines (Commission Staff Working Document of 1 June 2012) do not address the CBRN scenario and its specific requirements.

These problems have been confirmed by the project partners during recent national CBRN-incidents and were confirmed to exist also in other Member States in a similar manner (more specifically the European exercise EU CREMEX 2011 identified a number of issues in this respect for Estonia, NL and UK). This national project therefore aims to address the issue of integrated response, by building on previous experiences of other Member States (Estonia, NL) and testing them in a pilot area – Italy. By doing so it will further validate the previous work done by others and take it one step ahead, by developing and implementing specific guidelines and curricula, which can be used by other MS at a later stage. The issue is relevant as the capability of Member States to deal with CBRN-incidents is limited (it is a low probability/high impact event) and assistance from other Member States can make a difference.


**Objectives**

The project aims to implement the EU CBRN Action Plan (actions H 29, H31, H37, H40, H42 e H57) in Italy and more specifically the coordinated and integrated actions of first responders and law enforcement agencies in a CBRN security incident. It will:

1. Identify differences between national operational response frameworks of law enforcement and fire fighters to CBRN security incidents and critical issues existing in the coordination of first responders and law enforcement actions;
2. Define common approaches to deal with the critical issues by building on the experience of other EU countries such as Estonia and the Netherlands;
3. Develop common guidelines for response to national CBRN incidents and incoming assistance;
4. Translate the guidelines into the outline of a common training curriculum for both first responders and law enforcement training institutes.

**Work Plan**

**Work Package 1**: Project Management – Partnership contacts and agreements, Reporting, Project Evaluation, Financial Auditing

**Work Package 2**: Preparatory and Mapping Activities: Analysis of frameworks and technologies at national level, development of 2 scenarios / events for the two table top exercises and ensuing evaluation, identification of and contact with participants to the table top exercises

**Work Package 3**: Two Table-Top Exercises – respectively in Italy and Estonia
**Work Package 4**: Gap Analysis – Workshop to review the results of the two exercises and identify gaps
**Work Package 5**: Guidelines – definition and validation of common operational guidelines
**Work Package 6**: Training curricula definition and validation
**Work Package 7**: Dissemination (website, articles etc.)

**Mapping Report**
The "Mapping Report" identifies and analyses the Italian and – in a comparative perspective – other 10 EU Member States' Institutional and legal framework governing the response to CBRN emergencies or crises affecting their territory. To a minor extent, it also maps the technical-operational procedures and practices adopted by national law enforcement authorities, incident commanders and other first responders in dealing with these emergencies or crises.
▶ Available at: http://cbrn.netseven.it/?post_type=document&p=522

**Gap Analysis Report**
▶ Available at: http://cbrn.netseven.it/?post_type=document&p=583

**Proposal for the Integration of the EU Host Nation Support Guidelines (HNSG)**
▶ Available at: http://cbrn.netseven.it/?post_type=document&p=600

# Color-changing film detects chemical weapons

Source: http://i-hls.com/2015/03/color-changing-film-detects-chemical-weapons/?utm_source=Israel+Homeland+Security+%28iHLS%29&utm_campaign=9e7112f7bb-Newsletter_English_4_3_2015& utm_medium=email&utm_term=0_8ee2e16ed1-9e7112f7bb-87373033&mc_cid=9e7112f7bb&mc_eid=521c0e089a



A new way of detecting chemical weapons: thin-film materials change color in response to chemical warfare agents.
In today's world, in which the threat of terrorism looms, there is an urgent need for fast, reliable tools to detect the release of deadly chemical warfare agents (CWAs)
According to a report in the scientific journal *ACS Macro Letters*, scientists are reporting new progress toward thin-film materials that could rapidly change colors in the presence of CWAs — an advance that could help save lives and hold aggressors accountable.
An *ACS* release reports that in their paper, Timothy M. Swager and Jonathan G. Weis point out that there are many techniques available to detect CWAs. One of the most effective ways for a sensor to show quickly whether chemicals weapons are in the environment is through a distinct color change.
**Several tests can do this when they're exposed to CWAs, but of these, most are based on liquids, which are not as practical as thin films.**

Thin films are critical for real-time detection because they are easier to use and can work continuously. Swager and Weis wanted to address this gap.

**According to *Homeland Security News wire*, with that goal in mind, the researchers produced a new thin-film material and tested it using a substance that mimics a chemical nerve agent. It rapidly changed color in response to the agent. The researchers conclude that a family of such materials could be developed to sense various chemical threats.**

Funding for the research was provided by the Defense Threat Reduction Agency, an agency within the United States Department of Defense and is the official Combat Support Agency for countering weapons of mass destruction (chemical, biological, radiological, nuclear, and high explosives).

DTRA's main functions are threat reduction, threat control, combat support, and technology development. The agency is headquartered in Fort Belvoir, Virginia. DTRA employs 2,000 civilian and military personnel at more than 14 locations around the world, including Russia, Kazakhstan, Azerbaijan, Uzbekistan, Georgia, and Ukraine.

## CBNW January 2015

Source: http://www.chembio.biz/digital-issues/cbnw-digital-june2014/


Following the deadliest outbreak of Ebola fever on record, January CBNW includes a special section on Ebola by leading first responders and medical specialists focusing on its social and economic impact as well as the ongoing challenges of medical care, treatments, testing, response and prevention. Editor Andy Oppenheimer analyses the rising threat posed by ISIL and other terrorist groups, and examines response to further use of chemical weapons in Syria and Iraq. Deputy Editor David Oliver reviews CBRN training in the Czech Republic and Ilja Bonsen asks if the EU is prepared for a CBRN attack. Holly Carter looks at new ways of managing decontamination, and CBNW US correspondent Frank Rando talks to Vice President and General Manager of CBRNE Defense at Battelle, Matt Shaw.

**Read the current issue at source's URL.**

## UTAH: Public safety agencies ready for terrorism attack

Source: http://www.heraldextra.com/news/local/central/orem/countywide-public-safety-agencies-ready-for-terrorism-attack/article_a1222d89-4471-5a4c-93c7-0b37c779a63c.html

March 08 - Countywide disaster exercise at Utah Valley University's west campus parking lot.

**EDITOR'S COMMENT:** Judging from the photo there are a few things to be done yet!

# North Korea's 5 Nightmare Weapons the World Should Fear

Source: http://nationalinterest.org/feature/north-koreas-5-nightmare-weapons-the-world-should-fear-12380

North Korea, for lack of a better term, is one hell of a hot mess. And its one that if South Korea and its ally the United States ever had to go to war with would create all sorts of problems.

From a leader who has more in common with the fictional Dr. Evil [4] than any other normal head of state to rants about going to war against the United States [5] and South Korea [6] on an almost weekly basis to much more serious and deadly temper tantrums (like attacking a South Korean naval vessel and opening up its artillery to shell islands), one never knows what Pyongyang is capable of—just look how it treats it own people [7].

And that is what makes it one of the most dangerous regimes on the planet today.

But in a straight up war with Seoul and Washington, many military minds are of the opinion that Pyongyang would lose—and lose badly. Sure, North Korea could come out swinging, launching a massive strike across the DMZ, firing off a blistering artillery barrage at Seoul that would induce panic on par if not worse than 9/11 and maybe even have the guts to use those nukes the Kim regime has been threatening the world with for years. But in the end, most agree Kim Jung-un would be signing his own death certificate.

History tells us though that not all heads of state are rational actors. Our history books are riddled with the tails of dictators and rogue regimes who think they can overcome the impossible. What if Kim Jung-un one day felt he was backed into a corner—that his regime was in mortal danger—and decided to strike South Korea decisively and essentially?

While his military is not of a superpower pedigree, he could set the conditions to do an insane amount of damage quickly and create mass panic the likes we have not seen in decades—maybe just enough to give the North Korean military a slim chance at some measure of early success. And such early success could cost millions of people their lives.

**This article will look at five specific weapons or capabilities that North Korea could use in a surprise attack as part of an invasion of the South.** These five weapons could be used in various combinations— in one massive strike or used on their own— as the opening salvo of an invasion.

Such weapons would be used with the goal of creating fear and mass panic in South Korea—so much so that it would create adverse conditions making an effective multi-domain kinetic counterattack difficult to execute. This would help a North Korean invasion take as much early territory as possible and make the always important "fog of war" that much thicker. ROK and American forces would be fighting one of the toughest challenges ever devised—a nightmare scenario for certain.

**Dirty Bombs**

Instead of trying to strap a nuclear weapon on a missile that might not hit its target, North Korea could decide **to send multiple teams of commandos on a trip through secret tunnels under the DMZ and fan out across South Korea— all armed with nuclear materials**. Their mission: to detonate deadly atomic packages in the five most populated cities of South Korea.

Their goal would not be to strike a military target, but to simply create havoc throughout the country. Pyongyang could even deliver such a blow though short or

medium range missiles armed with nuclear material— no special teams or tunnels needed and no super accuracy would be necessary if all you were trying to do was hit a big target like a massive metropolis like Seoul.

**Chemical Weapons**:
We all know from the conflict in Syria the hell chemical weapons can rain down on a population. Unfortunately, North Korea seems to have invested considerable time and resources into developing its own stockpile of these weapons of mass destruction. According to the Nuclear Threat Initiative (NTI), **Pyongyang possesses the 3rd largest chemical weapons stockpile on the planet** [8]. NTIs analysis also notes that:
**North Korea may possess between 2,500 tons and 5,000 tons of CW agents**. The South Korean government assesses that North Korea is able to produce most types of chemical weapons indigenously, although it must import some precursors to produce nerve agents [9], which it has done in the past. At maximum capacity, North Korea is estimated to be **capable of producing up to 12,000 tons of CW**. Nerve agents such as sarin [10] and VX [11] are thought be to be the focus of North Korean production.
So how could Pyongyang strike South Korea with maximum impact using such deadly weapons? Well, for starters, a massive folly fired from artillery shells or missiles is always the most thought of approach. However, with a little ingenuity, North Korea could also spread small amounts of chemical weapons in some of the largest cities in the ROK using teams as I laid out above. With a little planning and ingenuity, Pyongyang could use such a plot to create panic and slow the response times of ROK and U.S. forces— a fog of war thickened by deadly chemical agents hanging in the air.

**A Nuclear Strike on America?**
Yes, we all know North Korea has been testing long range missiles for years. But could North Korea actually plant a nuclear missile on U.S. soil?
Although it cannot at at this point, the possibility cannot be ruled out in the future. General Vincent Brooks, the Commander of U.S. Army forces in the Pacific, sure doesn't. Indeed, at a recent event here in Washington, Brooks warned that Pyongyang's capabilities are becoming a physical threat to U.S. territory [12].
**Here is a possible scenario:** Pyongyang could have the ability to launch a long-range, nuclear armed or nuclear material tipped weapon at Hawaii or Alaska. They don't have to be picky about the target if the goal is just to incite fear and panic while launching some combination of the attacks I lay out in this article as part of an invasion.
If one is simply aiming at Anchorage or one of the more densely populated Hawaiian Islands there is the possibility— all be it, an unlikely one at this point— they could get through U.S. missile defenses. Stretch this scenario out 5-10 years, and North Korea could very well have a large and diversified enough missile arsenal to oversaturate U.S. missile defense systems and land a fatal nuclear blow.

**An Artillery Strike**
This scenario has been around for awhile. Pyongyang launches a massive artillery barrage on Seoul. The chaos that would result would be massive. Imagine millions of people flooding out of one of Asia's largest cities. If one wanted to induce sheer panic and hence help your invasion strategy, this would be an effective way to do it.
While many point out that U.S. and ROK forces could quickly take out such artillery pieces once they fire their deadly barrage, enough damage would already be done to cause a massive exodus as Seoul residents attempt to make their exit. The mass of people stampeding any and all exits out of the capitol would act as its own weapon— panic and fear always are.

**Cyberstrikes**
In my humble opinion, **this is the great unknown when it comes to North Korea's military capabilities.** Yes, we know Pyongyang has struck out using its army of hackers several times in recent years, but just how good are they?
Could they, for example, take down South Korea's electricity grid? Could they inject crippling Malware into critical command and control nodes needed to effectively

launch a counterattack against Pyongyang?
Does North Korea have cyber agents in other countries ready to strike or armies of computers infected with dormant malware and viruses ready to attack using denial of service methods against targets of importance? Could Kim strike U.S. military facilities with Malware or hard to cure computer viruses?
While there is lots of different expert opinions on this, I think it is safe to say we don't have as good of an idea as we should— and that fact itself should have you concerned.

**Parting Thoughts**
North Korea is the pandora's box no one wants to open. Yet, we must consider the possibility that Kim Jung-un or some other future North Korean dictator just might do that for us if he feels his regime is either about to crumble or some how misinterprets allied intentions and decides to strike first.
Whether part of a massive strike using all of the above five weapons or part of some stand alone attack— all the opening salvo of an invasion— North Korea has potent capabilities to inflict great harm against Seoul and Washington. While no one wishes for such a conflict to occur, one must always prepare for the possibility. The five above weapons and how they could be used were dreamed up in just a few hours; North Korea has had decades to stew on such scenarios. Now put that in your pipe and smoke it.

▶ **Notes are available at source's URL.**

***Harry J. Kazianis*** *serves as Editor of* RealClearDefense*, a member of the* RealClearPolitics *family of websites. Mr. Kazianis is also a non-resident Senior Fellow for Defense Policy at the* Center for the National Interest *and a non-resident Senior Fellow at the China Policy Institute (non-resident). He is the former Executive Editor of* The National Interest [16] *and former Editor of* The Diplomat.

## Ready for anything: Marines train for CBRN response

Source: http://www.marines.mil/News/NewsDisplay/tabid/3258/Article/579004/ready-for-anything-marines -train-for-cbrn-response.aspx



Marines with 2nd Marine Logistics Group practice using the M26 Joint Service Transportable Decontamination System during a CBRN decontamination course aboard Camp Lejeune, N.C., March 4, 2015. Students of the week-long course learned about detection of and protection against CBRN agents and the processes of decontaminating troops, equipment and vehicles.

**EDITOR'S COMMENT:** In 2010, Editor Gwyn Winfield of CBRNe World participated as observer at the Exercise Milo (29 June 2010, East London - planned by HPA) to look at London's preparation for the Paralympic decontamination towards London 2012. He commented at journal: *"As a generalization, the British have a "muddle through" attitude that is almost revered in some parts – abjuring the painful, precise processes you would see in a German or Czech exercise for a "we'll sort it out when it happens" approach. Too much of the exercise, in my opinion, was taken for granted and too much was lax – perhaps informed by a sober threat assessment. Yet if you cannot do it in exercises and get it right, there is little chance it can be done "on the day". "B-" London. Good effort, but must try harder!"* It seems that in many instances this is the case worldwide when conducting CBRN drills. Why using laborious PPE when you can do it with your bear hands under Level-C that is not water resistant? – as shown in the photo above. And this is a Marine unit not just an infantry group that might excuse a lax attitude!

# CBRNE-Terrorsm Newsletter Editorial Team's activities

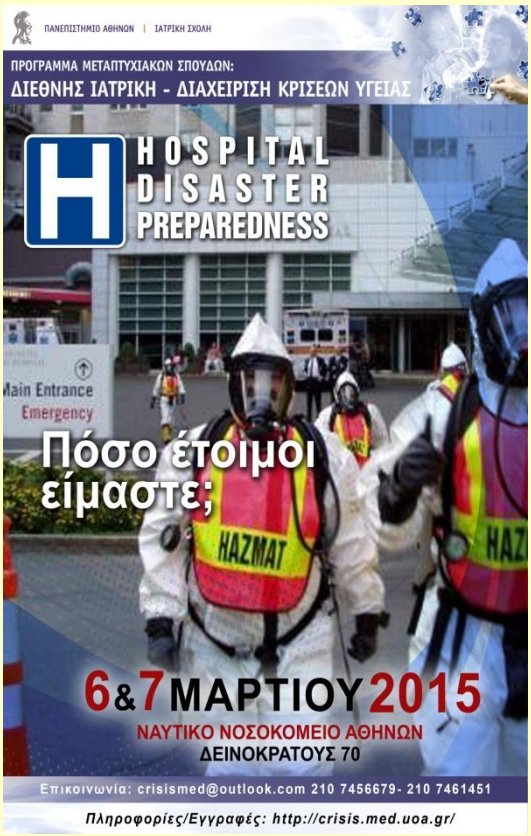
## 1. CBRNe Summit

On February 25 – 27, 2015, the **CBRNe Summit** was held at the Roma Cavalieri Hotel in Rome, Italy.


The event was supported by the Observatory on Security and CBRNe Defence (OSDIFE), University of Rome "Tor Vergata" **and the** University of the Republic of San Marino, the NATO JCBRN Defence Centre of Excellence and the NATO EOD Centre of Excellence.

The speakers were niche specialists from many European countries as well as from the Americas. The audience was composed of Italian and international military and civilian CBRNE experts. The event offered the opportunity to experts to meet and network, and exchange viewpoints on CBRNE topics and cutting-end new information.

Our CBRNE Newsletter's Co-editor **Dr Steve Photiou** was one of the Conference's invited speakers. His topic was "Emergency Preparedness and Stockpiling in case of CBRNE attack".




## 2. Hospitals' preparedness

On March 6-7, 2015, a 2-day Conference on **"Hospital Disaster Preparedness (HDP): how ready are we?"** was held at the Athens Naval Hospital.

The Conference was organized by the "Post-graduate Master in International Medicine – Heath Crisis Management" of the National and Kapodistrian Athens University School of Medicine, together with the Athens Naval Hospital.

The Conference was well attended by Hellenic Navy personnel and by the students of the aforementioned Master Course.

Our CBRNE Newsletter's Co-editor **Dr Steve Photiou** (who is Visiting Professor in this Master Course) was an invited core speaker, as an expert in HDP.

# Islamic State 'using chlorine gas' in Iraq roadside bombs

Source: http://www.bbc.com/news/world-middle-east-31847427

March 12 – **Iraqi officials have shown the BBC footage, which they say proves Islamic State militants are using chlorine gas in roadside bomb attacks.**

The videos show bomb disposal teams carrying out controlled explosions, which send plumes of orange smoke into the air.

**The bombs contain small concentrations of a chemical agent and in open ground are unlikely to be lethal.**

**Experts say they are designed to create fear rather than harm.**

There have been multiple reports that IS has been deploying chlorine gas since late last year, but Iraqi officials say their footage confirms its use.

Haider Taher, from the Iraq Bomb Disposal Team, said troops have defused dozens of devices containing chlorine as part of the offensive against the militants.

"They have resorted to this new method," he told the BBC. "They're putting chlorine inside these homemade roadside bombs, which is toxic for those that inhale it."

**Psychological weapon**

His team inadvertently exploded one of the weapons outside the embattled city of Tikrit in the north of Iraq six weeks ago.

"Our throats were blocked, we couldn't breath. My ears felt enormous pressure... we were lucky a military ambulance was there to treat us," Mr Taher said.

Chlorine gas is classified as a "choking agent", burning the lungs when inhaled in large quantities. But it is nowhere near as dangerous as nerve gases.

It is instead designed to create fear and panic, according to chemical weapons expert Hamish de Bretton Gordon.

"It is a psychological thing, to not only get civilians in Tikrit worried, but also the Iraqi soldiers who are doing the bomb disposal here," he said.

Roadside bombs are cheap and easy to make in Iraq and are widely used by militants.

Although bomb disposal teams say they have encountered the small-scale use of chlorine, there is no evidence to suggest IS has accumulated a significant chemical weapons cache.



# When will Islamic State use its chemical weapons?

Source: https://www.opendemocracy.net/opensecurity/bob-rigg/when-will-islamic-state-use-its-chemical-weapons

**The west turned a blind eye to the possible use of chemical weapons by militant Islamists allied against the Assad regime in Syria. Now that Islamic State almost certainly possesses them, the chickens are coming home to roost.**

For decades the Achilles heel of the Chemical Weapons Convention was the failure of key Middle Eastern states to ratify it. Egypt, Iraq, Israel, Libya and Syria have all been known to possess chemical weapons (CW) at times, with **Egypt and Israel now sharing a regional monopoly on these weapons of mass destruction**.

Syria's powerful CW capability, backed up by tailor-made Russian

missiles, was a threat to Israel's population centres and would have been a major strategic factor in a war with Israel.
Like other disarmament and arms-control treaties negotiated 40 or so years ago, the convention critically assumed that only governments would be capable of developing, producing and using CW. That assumption is now outdated: new technologies and production methods facilitate the production of CW in backyard laboratories, and violent, non-state organisations have become increasingly powerful, organised and well-funded.
Given that Iraq, Libya and Syria have recently acceded to the convention, only **Angola, Egypt, Israel, Myanmar, North Korea and South Sudan now need to join for state membership to be universal.** But if non-state entities, such as al-Qaeda and the Islamic State (IS), are capable of developing and producing CW, is the convention obsolescent?

**Flatly denied**

It was not until 2013 that al-Qaeda in Iraq and the al-Nusra Front in Syria and Turkey were suspected of having produced and used CW. At that stage of the war in Syria, the west and Turkey were providing these anti-regime militants with political and military support. So although there were allegations, mainly from the government of Bashar Assad, that the militants had used CW against his armed forces, the US and the west flatly denied them.
The first major claim of CW use in Syria was made on 19 March 2013, in relation to Khan al-Assal, west of Aleppo, where a rocket killed more than 20 people, including a small number of Syrian soldiers. Just one day after the attack, the government of Syria formally requested the UN secretary-general, Ban ki-Moon, to launch an impartial investigation.
He thus ensured that the inquiry would not anger any of the five permanent members of the Security Council.
Syria was convinced that the CW had been delivered by an al-Nusra rocket. Its government, then on the back foot facing the western-backed militants, would not have taken this step lightly. In the later words of Ake Sellström, the leader of Ban's CW inquiry, "the Syrian government requested the investigation, so there was a background that makes you believe that maybe, just maybe, the government was right".
Although the finger of suspicion pointed at the al-Nusra Front, nothing was proved beyond doubt. The US vigorously protested that its militant Islamic allies were blameless.
Two months later, reports emerged of the arrest by Turkish authorities of five al-Nusra militants in possession of 2.2 kg of sarin, just on the border with Syria. When Russia's foreign minister, Sergei Lavrov, sardonically inquired why Turkey had seemingly buried the matter, its foreign minister declared that anti-freeze had been mistaken for sarin. As Turkey's sympathy for militant groups seeking to bring down Assad remains an open secret, it was probably providing its anti-Assad ally with political cover.
Then, in June 2013, Iraqi soldiers arrested a small number of al-Qaeda members producing mustard gas and sarin in two backyard Baghdad laboratories. Although this news was internationally disseminated, it was not pursued by anyone—least of all by the west, which has, however, seized on every opportunity to accuse Syria's government of using CW. Al-Qaeda in Iraq now forms part of IS.
Ban surprisingly ruled out the possibility of a clear factual finding from his own UN investigation when he announced that it would only explore whether CW had been used, not by whom. He thus ensured that the inquiry would not anger any of the five permanent members of the Security Council.

**Tremors of anxiety**

**In June 2014 IS captured Iraq's largely destroyed Al-Muthanna chemical-weapons complex.** The White House intervened successfully to defuse tremors of anxiety surfacing in the west by declaring that the CW buried there were not a security risk. Yet in June 2006, Michael Maples, then director of US intelligence, had testified to the House Armed Services Committee that, although the Al-Muthanna CW were badly corroded, "the agent used in the weapons would be very valuable to terrorists and insurgents". Although safe extraction would be tricky, Maples appeared to think it could be done.
**On 23 February this year, it emerged that armed men had**

**broken into a CW storage facility in the Jufra district of Libya, removing large amounts of CW, including mustard gas and sarin.** The nocturnal break-in was apparently impeccably planned and executed, with the CW removed in cone-shaped tanks. Yet an eerie international media silence ensued.

Regional media speculated that IS, now established in Libya, was probably responsible. The careful planning and execution of the break-in would support that. As CW are at their best in a confined environment, they could even surface in shopping malls, which al-Shabaab in Somalia, currently cementing strong links with IS, recently identified as suitable targets.

The hypocritical inertia of the west, in the face of the possible use of CW in the Middle East by its own allied militant groups, and the conspiracy of silence on the part of similarly allied regional governments have helped to bring about this situation.

**The question is now not whether IS or another militant Islamic group will use CW but when, and where?** This week, Iraqi officials accused IS of using chlorine gas in roadside bombs.

**Unleashing CW in a country in its sights, on a larger scale with many casualties, would be just the kind of public-relations coup IS actively seeks.**

## Handheld Analyzer Combines Dual Chemical ID Technologies for First Responders

Source: http://www.hstoday.us/single-article/handheld-analyzer-combines-dual-chemical-id-technologies-for-first-responders/d0bb7fcf46b35724d7623e61d2808e24.html


Military and first responders tasked with identifying unknown chemical substances now have access to a handheld instrument that uses two chemical identification technologies to detect a broad range of hazardous substances and explosives.

Thermo Fisher Scientific, an American biotechnology product development company, recently introduced the **Gemini Analyzer**, **the first and only handheld analyzer to integrate both Raman and Fourier Transform Infrared (FTIR) spectroscopy in a single instrument.**

"Combining FTIR and Raman spectroscopy into one instrument provides a powerful tool for chemical and explosives identification," Maura Fitzpatrick, senior director of Portable Analytical Instruments at Thermo Fisher Scientific, told *Homeland Security Today*. "The complementary and confirmatory capability of the Gemini analyzer provides operators with faster, more confident results – without having to carry two separate instruments."

Fitzpatrick explained that the two complementary technologies give operators a huge advantage in the field. A substance responds to each technology based on its unique molecular structure. Consequently, a substance that the Raman technology cannot identify may be

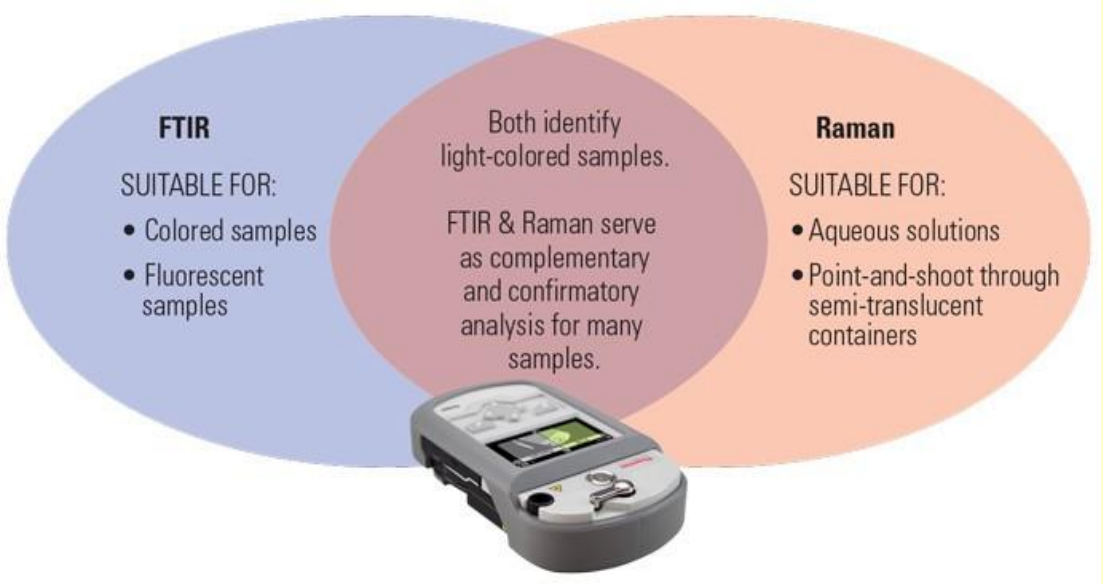
identifiable by switching to FTIR analysis.

**Raman spectroscopy is best used for analyzing substances in sealed containers, aqueous solutions and white and light colored powders. FTIR spectroscopy, on the other hand, is highly effective in identifying colored substances and fluorescent samples.**

Operators of the Gemini Analyzer can access 24/7 reachback support from Ph.D. spectroscopists for spectral analysis and operational inquiries.

Gemini software allows operators to set up profiles, which allows users to customize scan parameters before entering the hazard zone. Fitzpatrick explained that, "By setting scan parameters such as laser power or anvil pressure, operators can be more efficient downrange and minimize their time on target."

Gemini also includes several built in safety features, such as FTIR scan delay enabled by a motorized anvil. This new feature allows operators to increase the distance between themselves and the substance of interest




Whether a roadside bomb, chemical spill or other potential hazard, our equipment helps protect those who put themselves in harm's way," Fitzpatrick said. "The benefits of complementary Raman and FTIR solutions are already well understood by explosives ordnance disposal teams, bomb squads, chemical battalions and hazmat teams worldwide."

According to Fitzpatrick, the Gemini analyzer comes with a large substance library – more than 16,000 individual substances, including the most concerning chemicals faced in the field – toxic industrial chemicals, chemical warfare agents, explosives, precursors and more.

**The Gemini Analyzer builds on two previous Thermo Fisher Scientific technologies: the FirstDefender analyzer, based on Raman spectroscopy, and the TruDefender analyzers, based on FTIR spectroscopy.**

before the scan initiates, according to Fitzpatrick.

Designed for harsh environments, the analyzer can be used in extreme climates. Thermo Fisher Scientific indicates that the analyzer has been certified to the latest military standards for ruggedness—drop, shock, vibration, temperature, immersion and much more.

**Weighing only 4.2 pounds (1.9kg),** Gemini analyzers can be easily transported into hazardous zone, making it ideal for chemical battalions, explosive ordnance disposal technicians, and other first responders burdened with heavy equipment.

"Military and first responders often carry extensive equipment – frequently more than 100 lbs (45kg) of gear – into the field," Fitzpatrick said. "When missions can last days, every pound counts. The dual identification technologies in the Gemini analyzer helps ease the load without sacrificing capability."

# A New Synthetic Compound Can Neutralize Chemical Weapons in Minutes

Source: http://gizmodo.com/a-new-synthetic-compound-can-neutralize-chemical-weapon-1691873970

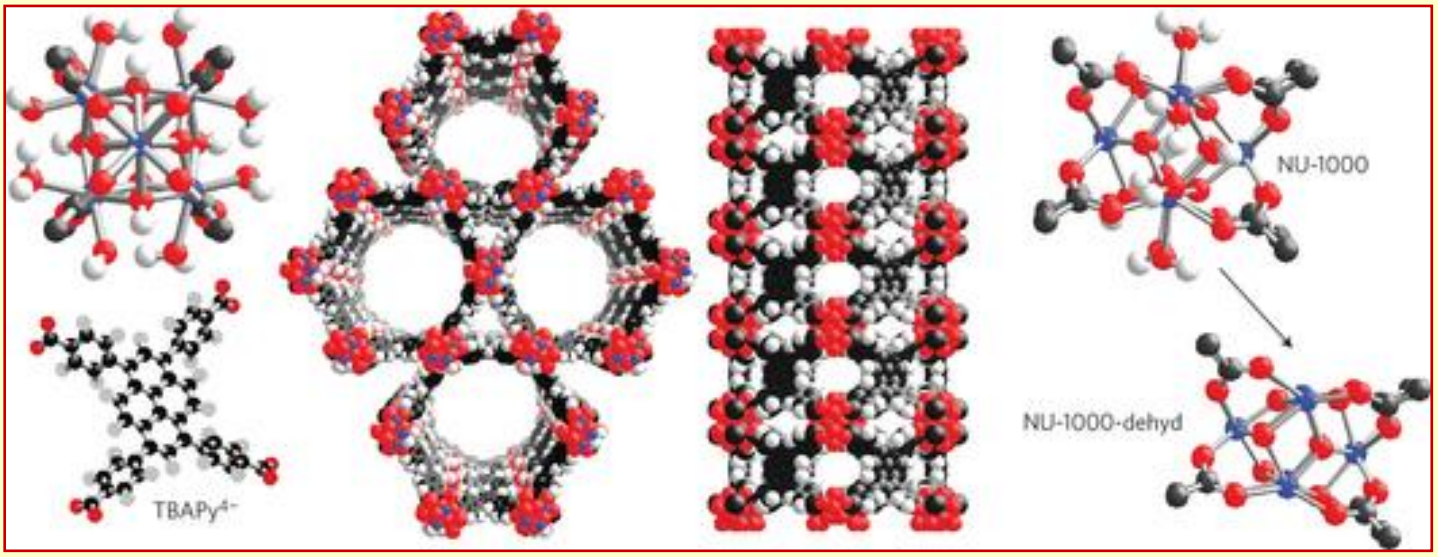
Chemical weapons are a dangerous and all-to-real threat. Now, a team of scientists has developed a new compound that can deactivate chemical weapons—including nerve agents like sarin—in just minutes.

A team from Northwestern University in Evanston, Illinois, have found inspiration for the new compound in enzymes called phosphotriesterases. **Usually produced by bacteria, these proteins deactivate some pesticides—and nerves gases—in milliseconds. Problem is, those enzymes can break down easily, losing their ability to halt the actions of the dangerous compounds.**

**So the researchers attempted to reproduce the same effects using a synthetic catalyst.** Science describes nicely how they went about the process: They started with **metal-organic frameworks** (MOFs), a recently developed class of porous compounds composed of metals arranged in a crystalline network linked by carbon-based molecules. MOFs are highly adaptable materials... and because MOFs are porous, they have large surface areas that can rapidly create chemical bonds, making them good candidates for catalysts.

In the natural enzyme, phosphotriesterase, two zinc atoms act as so-called Lewis acids, which accept electrons to bind with the nerve agent. Once the agent has bonded, hydrolysis occurs—a water molecule attacks the agent, slicing and dicing essential chemical bonds, thereby deactivating it. The scientists designed a MOF with a similar structure, but they replaced the zinc with zirconium, which likewise behaves as a Lewis acid and makes for an ultrastable MOF.

Colour code: Zr (blue); O (red); C (black); H (white).




In tests published in Nature Materials, the team used their catalyst to deactivate a pesticide similar to nerve agents but safer to use in the lab. **Experiments showed that the new compounds—known as NU-1000 (photo) — deactivated half of the pesticide in 15 minutes. Further testing by U.S army facilities has shown that it neutralizes half of the nerve agent GD—more toxic than the well-known sarin—in just three minutes. The researchers claim that that's 80 times faster than any previous compound has managed.**

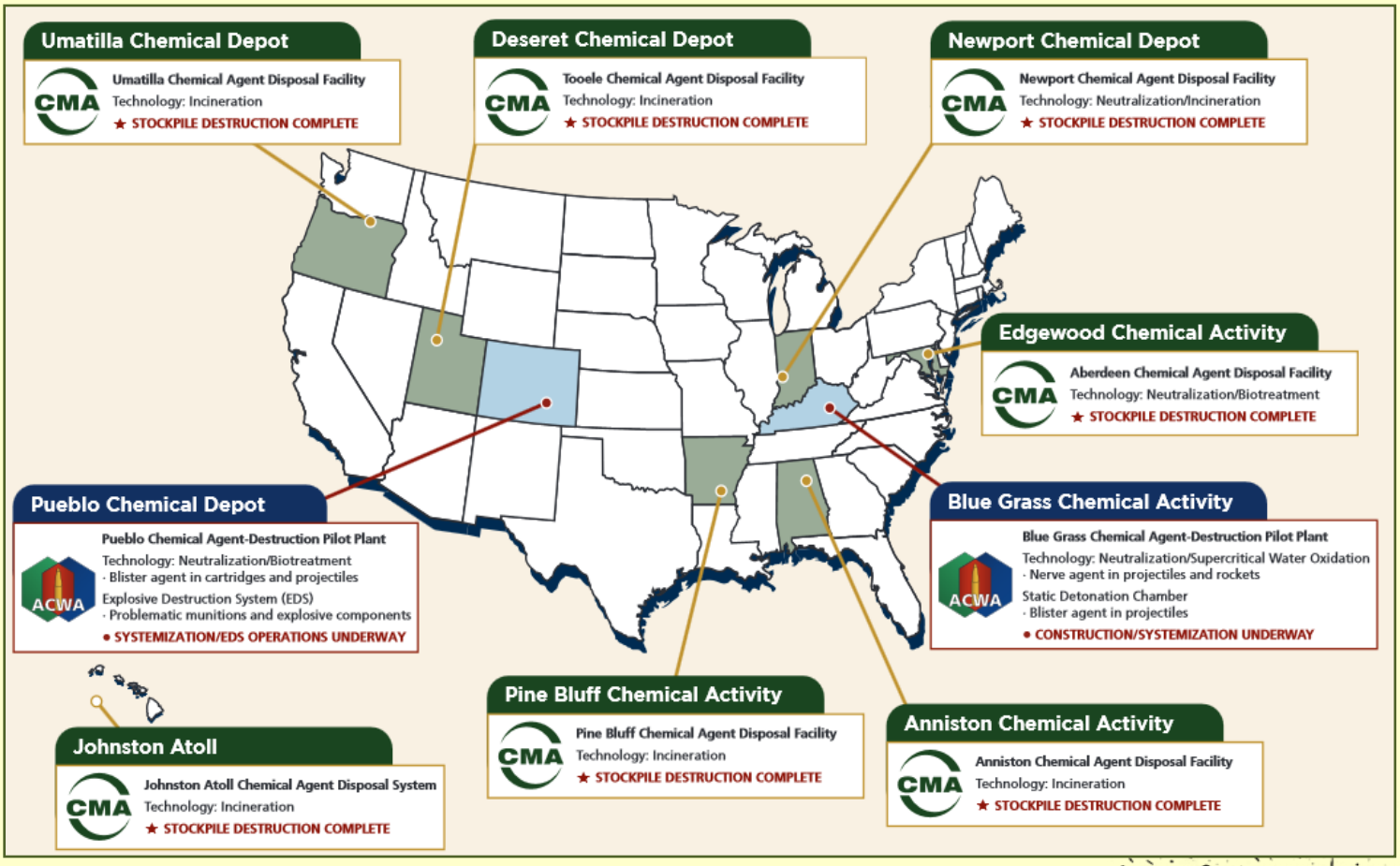
It's still not perfect, though. Indeed, the natural version—though fragile—works up to 100,000 times faster, so the team certainly has some way to go before it's as good as nature itself. But for now, it's a significant milestone in the quest to keep the world safe from chemical warfare.

# Destruction of 780,000 chemical munitions stockpiled in Colorado begins

Source: http://www.homelandsecuritynewswire.com/dr20150319-destruction-of-780-000-chemical-munitions-stockpiled-in-colorado-begins

March 19 – This week Sandia National Laboratories' Explosive Destruction System (EDS) began safely destroying stockpile chemical munitions for the U.S. Army. **The project to destroy 560 chemical munitions at the U.S. Army Pueblo Chemical Depot in Colorado with EDS is a prelude to a much larger operation to destroy the stockpile of 780,000 munitions containing 2,600 tons of mustard agent, stored at the Pueblo depot since the 1950s.**

A Sandia Lab release reports that the bulk of those munitions will be safely destroyed in the Pueblo Chemical Agent-Destruction Pilot Plant , which will begin operation later this year. The munitions to be destroyed in EDS are considered unsuited for processing by the plant's automated equipment because



they have leaked or have been sampled in the past.

"EDS was originally designed for nonstockpile chemical munitions at recovery sites, many of which are deformed and corroded," explained mechanical engineer Brent Haroldsen, Sandia project lead. "Stockpile munitions are generally in better shape, but there are always a few that are leaking or damaged. That's where EDS will come in to keep the plant moving efficiently."

The Program Executive Office, Assembled Chemical Weapons Alternatives (PEO ACWA) is overseeing the pilot plant as well as the Blue Grass Chemical Agent-Destruction Pilot Plant near Richmond, Kentucky. Once the pilot plant begins operation, the Sandia EDS systems will remain at the site to process any additional reject munitions unsuitable for processing in the Pueblo pilot plant.

**Latest EDS model destroys munitions twice as fast**

The two EDS units that will augment the pilot plant operation work much faster than the original EDS, which took two days to process a single munition. Sandia designed that system for the Army in the late 1990s to destroy munitions that were discovered unexpectedly.

Safely to destroy a few damaged munitions at a time, possibly in populated areas, the original design emphasized transportability, flexibility, redundancy, surety of destruction and simplicity of manual operation — not rapid processing.

The Army first used EDS in 2001 at Rocky Mountain Arsenal in Colorado and then at other locations where abandoned munitions were recovered. Sandia then created a larger version, capable of destroying multiple munitions simultaneously and handling munitions with a higher explosive charge. In 2010, Sandia engineers created the Phase 2 Pilot (P2P), which decreased the processing time from two days to one through changes to the heating and cooling system and door clamp design.

Over the years, the basic operation of EDS has remained the same. At its core is a leak-tight vessel in which munitions are placed. An explosive shaped charge opens the metal shell, exposing the chemical agent and burster, a small explosive that disperses the agent.

The burster explodes or deflagrates safely inside the vessel. A reagent is then pumped into the chamber to neutralize the chemical agent. The chamber is heated and turned to mix the chemicals and speed the reaction.

**Stockpile munitions easier to process**

The new EDS, called the Phase Two Retrofit (P2R), incorporates many of the P2P improvements along with a separate boiler/chiller container and larger pipes and pumps to transfer fluids more quickly. Working with stockpile munitions also simplifies the explosion process.

"Nonstockpile munitions are discovered in strange conditions, tangled in tree roots or covered with barnacles. Badly corroded munitions are often stabilized with plaster of Paris and then wrapped in plastic before processing. Consequently, the EDS was designed to be adaptable and flexible," explained Haroldsen.

Stockpile munitions, even problematic ones, are quite uniform, however. "So we need less flexibility in the design and we can use the shaped-charge explosives more effectively to cut the munitions," said Haroldsen.

At the pilot plant, EDS will process six munitions a day, starting with 560 reject munitions already set aside. ACWA expects EDS to destroy about 1,300 munitions over the five-year operation, including reject munitions.

**Improvements under way to vapor monitoring**

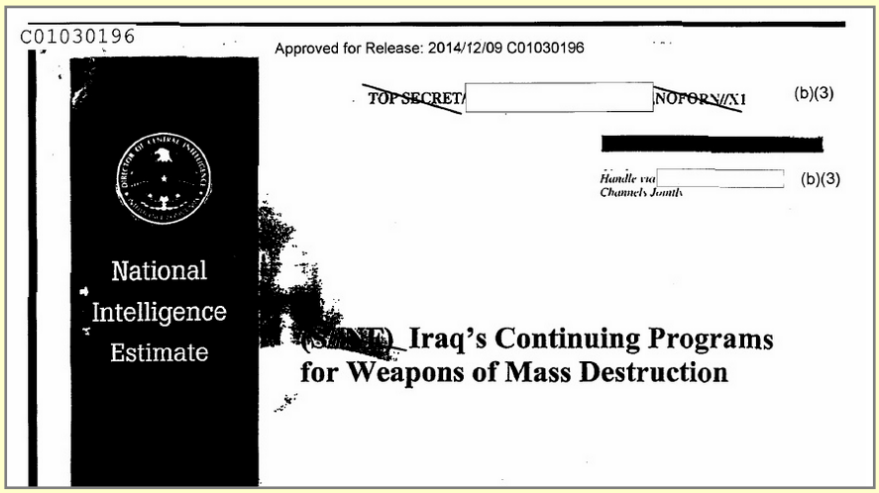
In collaboration with Defiant Technologies, the EDS team also is working on an in-situ vapor monitoring system, which is an offshoot of Sandia's MicroChemLab gas phase system. To ensure the EDS vessel is safe to open following operation, a vapor sample must be collected and analyzed. An in-

situ monitoring system would draw a sample from inside the vessel, eliminating the collection step and saving about forty-five minutes.
The vapor monitoring system also can monitor for multiple agents simultaneously, so it could be used to monitor the environmental enclosure around EDS or at a munition recovery site. That monitoring is currently being done with specialized gas chromatographs, which are reliable but can only check for one agent at a time.
"The ability to monitor for multiple agents with a single system would further simplify operations," said Haroldsen.
The release notes that the two EDS units will spend several years at PCAPP. Meanwhile, the Army continues to use the EDS system to destroy recovered chemical munitions. In February, an EDS unit was sent to Schofield Barracks, a U.S. Army installation on Oahu, Hawaii, and another is set to go to the Tooele Army Depot in eastern Utah later this year.

## Here's the full version of the CIA's 2002 intelligence assessment on WMD in Iraq

Source: http://www.businessinsider.com/heres-the-full-version-of-the-cias-2002-intelligence-assessment-on-wmd-in-iraq-2015-3

March 19 – In October of 2002, 9 months before the US-led invasion of Iraq, the CIA produced a document summarizing relevant intelligence on Saddam Hussein's chemical and biological weapons programs. The document became the basis for the Bush Administration's public statements about the extent of Saddam's WMD program and was also distributed to members of Congress.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National Intelligence Estimate

Iraq's Continuing Programs for Weapons of Mass Destruction

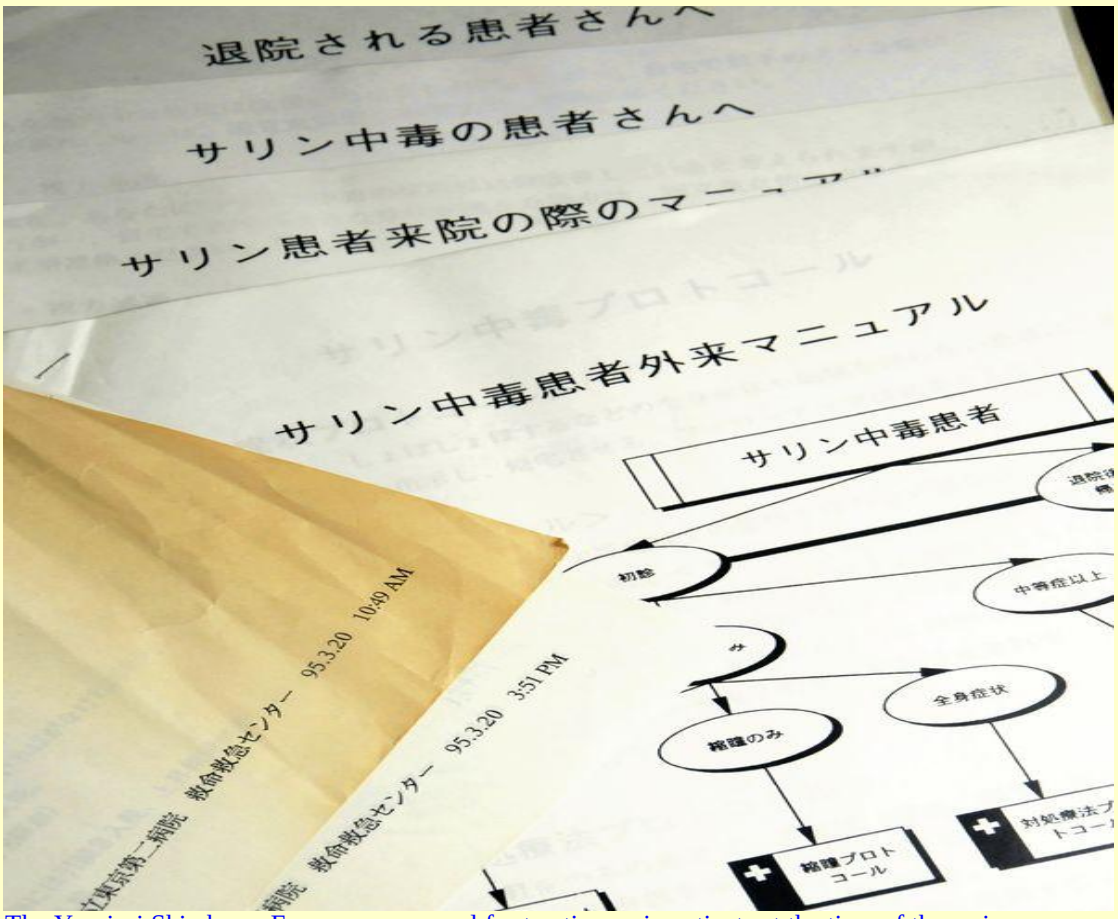
The intelligence estimate was used to support the Bush administration's case that Saddam Hussein's weapons of mass destruction (WMD) program represented an imminent threat, which became perhaps the leading justification for the US-led war.
An expurgated version of the document was released as the result of a Freedom of Information Act request in 2004. But it wasn't until last year that a transparency activist named John Greenwald was able to obtain the intelligence estimate in its entirety. Greenwald provided the document to Jason Leopold of Vice News, which published it with analysis on March 19th.
The document determines that Saddam Hussein had an active chemical weapons program — although crucially, the CIA couldn't prove that his regime had actually resumed producing chemical and biological agents and cast doubt on the actual extent of Saddam's program.
The intelligence estimate also heavily qualified its evidence of any link between Saddam's regime and al Qaeda, noting that the sources were not entirely reliable.
The full document allows for a comparison of the CIA's actual findings with both the Bush administration's pre-war claims, and later post-war assessments of Saddam's actual WMD capabilities.
In December, the RAND Corporation issued a report that stated the CIA assessment

"contained several qualifiers that were dropped ... As the draft NIE went up the intelligence chain of command, the conclusions were treated increasingly definitively."

Consequently, the findings shed much-needed light on one of the most important events in recent US and Middle Eastern history.

## Manuals illustrate doctors' desperate battle with sarin

Source: http://the-japan-news.com/news/article/0002021220




The Yomiuri Shimbun - Emergency manual for treating sarin patients at the time of the sarin nerve gas attack in 1995.

March 20 – The Yomiuri ShimbunTokyo doctors battled with an unknown adversary on March 20, 1995, fighting to save the lives of the many people brought to their facilities.

Friday marked the 20th anniversary of the sarin nerve gas attack on the Tokyo subway system by the Aum Supreme Truth cult. The toll from the attack was unprecedented, with 13 people killed and more than 6,000 injured.

Hurriedly prepared manuals for providing treatment, newly obtained by The Yomiuri Shimbun, illustrate the turmoil and problems faced on the front lines of medical care that day.

**Conflicting reports**

"The [sarin nerve gas] attack forced Japan's emergency medical services to fundamentally review their approach," said Takaaki Kikuno, chief of the emergency and critical care unit at the National Hospital Organization Tokyo Medical Center in Meguro Ward, Tokyo. The center was called the Second Tokyo National Hospital at the time of the incident.

A little after 8 a.m. on March 20, 1995, the hospital received a call from the Tokyo Fire Department saying there had been an explosion at Tsukiji subway

station. Kikuno was in charge of the emergency and critical care unit that day and brought a TV set into the unit to monitor the situation through live broadcasts. However, there were many conflicting reports.
At about 9:30 a.m., the hospital was told that there were suspicions of cyanogen poisoning due to hydrocyanic acid gas, but it had no manuals for chemical terrorism. To enable other physicians to deal with the situation, Kikuno researched how to confirm typical symptoms and drew up a manual for patients suffering from cyanogen poisoning.
However, as he finished printing the manual at 10:49 a.m., Kikuno was told the causative agent was sarin.

**Preventing more harm**
Patients were brought into the hospital one after another. Kikuno consulted reference works and drew up a manual for patients exposed to sarin. To prevent secondary damage from sarin adhering to clothes and other items, Kikuno specified in the manual the need to remove patients' clothes and give them a shower.
Doctors used it to treat patients with pupillary contractions and respiratory problems.
The hospital also implemented for the first time a triage system, giving preferential treatment to those who needed it most. Kikuno provided criteria in a written document so doctors could make judgments quicker. For example, patients with more than two medium-level symptoms needed to be hospitalized.
The hospital also happened to have PAM, a medicine effective for sarin poisoning, and Kikuno provided the drug to nearby facilities. A total of 34 patients recovered from sarin poisoning at Kikuno's hospital.

**Preparing for future**
**About 280 medical facilities treated victims of the sarin attack.** Afterward, the Japan Disaster Medical Assistance Team was formed, and training for medical service workers to handle nuclear, biological and chemical terrorism began in 2006. Funds have been allocated in this fiscal year's supplementary budget for the government to distribute medicines effective for victims of chemical terrorism.
However, Kikuno said: "If another chemical terrorism attack occurs, the perpetrators will go around [predictable] preparations. It's vital to be prepared to deal promptly with any chemical substance, not just focusing on sarin."
"I have to convey our experiences to young medical practitioners," Kikuno said with determination.



# Armed Forces of Brazil are preparing to fight biological, chemical and nuclear attacks during the Olympic Games Rio 2016

Source: http://www.radioprogressoam.com.br/2015/02/forcas-armadas-do-brasil-se-preparam-para-combater-ataques-biologicos-quimicos-e-nucleares-durante-os-jogos-olimpicos-rio-2016.html

March 16 – As the best athletes in the country, the armed forces of Brazil are busy with the preparation for the 2016 Olympic Games, to be held in Rio de Janeiro 5-21 of August.
In addition to training for athletics competitions, the Armed Forces are preparing to deal with any attack or biological, chemical, radiological or nuclear accident that might occur during the event.
The different institutions of the Armed Forces -

Army, Air Force and Navy - are working together in Chemical Defense System, Biological, Radiological and Nuclear (DQBRN) for the Olympic Games.
Authorities of the armed forces are involved in the detailed planning that will help the military to carry out reconnaissance, gather information, identify threats, prevent attacks and reduce any damage attacks, according to Maj Luiz Carlos Guimarães Lott, chief of the DQBRN Command Army Land Operations (COTER), headquartered in Brasilia.
The Brazilian Armed Forces activated the set DQBRN system to ensure safety during the World Military Games 2011 and then to the World Cup 2014.

However, the Army DBQRN section, which has a training center in the neighborhood of Realengo, in Rio, consists of two military units: **a battalion with 409 soldiers, located in Rio; and a company with 100 soldiers, located in Goiania.** The center is used to train members of the Brazilian Armed Forces, and military officers from other countries.

**Brazilian armed forces preparing for an unprecedented challenge**
The task of protecting against attacks involving unconventional biological, chemical, radiological or nuclear weapons during the Olympic Games will be a bigger challenge than any ever faced by the military.
"People think that the Olympic Games are like another World Cup, but are not. The Olympics are several World Cups, "says Major Guimarães. "Brazil is not traditionally an important target [for terrorist attacks], but we can not eliminate any risk."

Recent terrorist attacks such as the one conducted by two armed men to the French satirical magazine Charlie Hebdo on January 7, raised the alert level of the Brazilian Armed Forces, even missing more than a year for the Rio Olympics.
"The environment is to reduce violence," says Major Guimarães. "We had a terrorist attack during the Olympic Games in Munich in 1972". The military refers to the terrorist attack of the Palestinian group Black September, which killed 11 Israeli athletes and a German policeman. German police killed five of the eight terrorists of Black September and captured the three survivors.
Preparations of DBQRN of Brazil began after a four-day conference organized in early December in Brasilia, where members of the Brazilian Armed Forces met with officials of the UK Armed Forces. The British military authorities shared their experiences in providing security for the 2012 Olympics in London.

**The importance of technology**
Technology is a crucial part of efforts to prevent an attack with dirty bomb, other non-conventional attacks and damaging accidents involving the release of hazardous substances into the environment. As part of the prevention effort, the **Brazilian Army will use three mobile laboratories** that have the board samples of dangerous substances and their antidotes. The Army already has one of these laboratories, which was used during the World Cup in 2014.
The other two laboratories are being acquired from a private company in the United States, at a total cost of $ 1.8 million. These laboratories will be transported to Brazil and sent to Rio.

**Air Force prepares for the Rio Olympics**
While the Army supervises the use of mobile laboratories, the Air Force is preparing to transport victims of unconventional attacks or accidents in event sites. The Air Force is creating specialized teams, under the direction of the Institute of Aerospace Medicine (IMAE), located in Rio de Janeiro,

on the campus of the University of the Air Force (UNIFA).
"With the arrival of these great events, the Ministry of Defense identified the need for the Brazilian Air Force (FAB) is also prepared," said First Lieutenant Paulo Pires Jr., medical and health of Operational Subdivision chief assistant IMAE.
**Six doctors from DBQRN two nurses and 11 nursing assistants are assigned to the IMAE. By the end of 2015, the institution will be reinforced by an additional 30 health professionals.**
The military authorities conducted two training courses for doctors, nurses and nursing assistants since 2013 and plan to promote two more by the end of 2015.
Every five days' hard training session, with classes held eight hours a day. About 30 health professionals will attend each training session, during which they will use special protective clothing, as will exercises on how to detect chemical and biological agents and decontaminate people exposed to harmful substances.
"The exercises involve the entire chain of action, since the contact at the scene until the end of the mission, which is the transportation of the victim after decontamination," says First Lieutenant Pires Jr. "We train extensively to reduce risk."

**Surveillance will be focused on Rio**
While the military is preparing to respond to any place, Rio de Janeiro will be the main focus of surveillance DQBRN. The International Olympic Committee (IOC) divided the sites for sports competitions in four groups: Barra, Deodoro, Copacabana and Maracana.
Using devices that detect chemical, biological and nuclear substances, the Army will monitor three areas, while the Navy will be responsible for Copacabana. For those in football stadiums outside these areas, the DBQRN section of the Army monitor São Paulo, Belo Horizonte and Brasilia in the distance, and the Navy will do the same with Salvador.
"In the case of an accident or an attack, time is of the essence to minimize collateral damage," said Maj Guimarães.
The first step would be to isolate the area. Then the specialized teams of DBQRN division would make the recognition in the contaminated area, which would help the military medical authorities to decide what they must do to minimize the damage.



**EDITOR'S COMMENT:** Finally an article on CBRNE preparedness for Rio2016!!! But the article is incomplete since it refers only to Armed Forces' preparedness since there is not a single line on civil preparedness! So the military will take care of all CBRNE related incidents during the Games? Big mistake if true! What about Brasilian hospitals CBRNE preparedness? Do doctors and nurses familiar with procedures, PPE, decon and all related issues accompanying the arrival of mass contaminated casualties at hospitals' facilities? I openly doubt this! And why only Rio? A terrorist will avoid attacking a mega-city proteted by the military and might choose another softer venue. Or just a city not involved in the Games! The message will be equally strong and disruption equally of the same importance! Time is running fast and if these issues are not seriously addressed then the efforts deloyed by the military would be useless!

## CDC's CHEMPACK Program—The Stockpile that may protect you from a chemical attack

Source: http://blogs.cdc.gov/publichealthmatters/2015/02/cdcs-chempack-program-the-stockpile-that-may-protect-you-from-a-chemical-attack/

It's a terrifying but plausible scenario. You're in an enclosed crowded place—perhaps a subway or a mall—and a terrorist organization releases lethal quantities of a nerve agent such as sarin into the air. The gas sends your nervous system into overdrive. You begin having convulsions. EMTs rush to the scene while you go into respiratory failure. If they have nerve agent antidotes with them, you may have a greater chance of living. If they don't, you may be more likely to die. Will you survive?

Thanks to CDC's Strategic National Stockpile CHEMPACK program, the answer is more likely to be yes.

First responders prepare for CHEMPACK training.

CHEMPACKs are deployable containers of nerve agent antidotes that work on a variety of nerve agents and can be used even if the actual agent is unknown. Traditional stockpiling and delivery would take too long because these antidotes need to be administered quickly. CDC's CHEMPACK team solves this problem by maintaining **1,960 CHEMPACKs strategically placed in more than 1,340 locations** in all states, territories, island jurisdictions, and the District of Columbia. Most are located in hospitals or fire stations selected by local authorities to support a rapid hazmat response. More than 90% of the U.S. population is within one hour of a CHEMPACK location, and if hospitals or first responders need them, they can be accessed quickly. **The delivery time ranges from within a few minutes to less than 2 hours.**

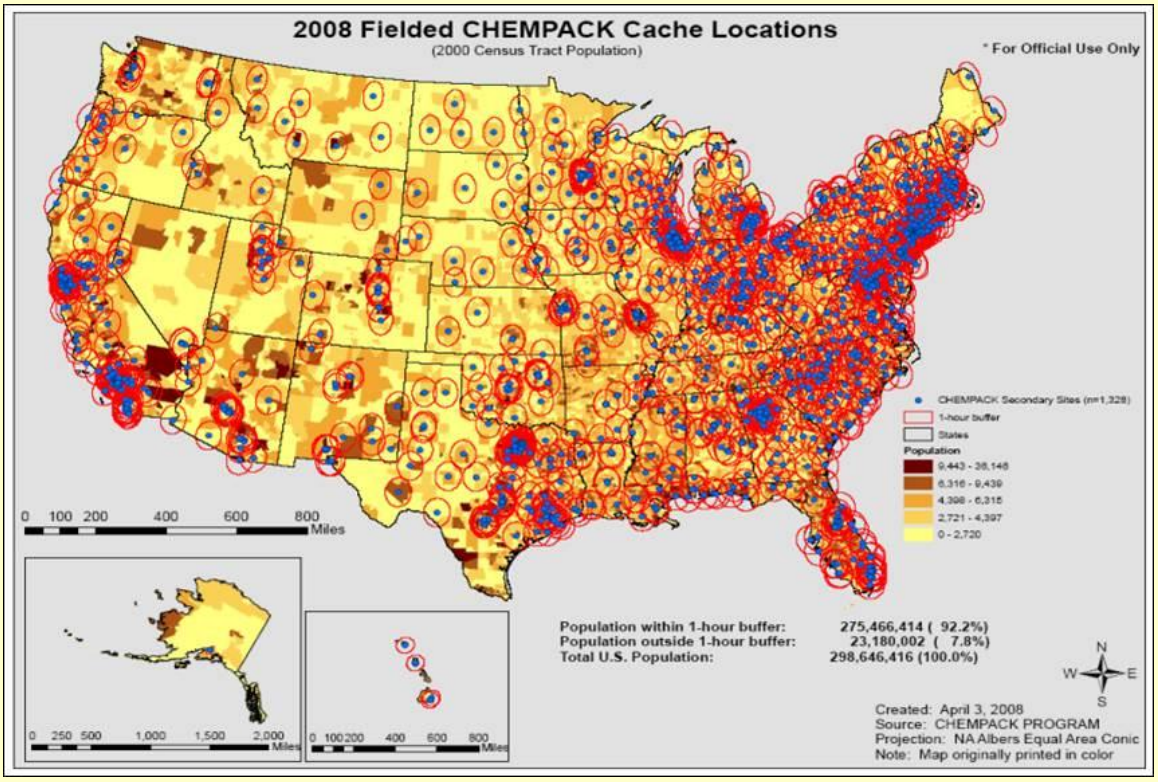
CHEMPACK container

The medications in CHEMPACKs work by treating the symptoms of nerve agent exposure. According to Michael Adams, CHEMPACK fielding and logistics management specialist, "the CHEMPACK formulary consists of three types of drugs: one that treats the excess secretions caused by nerve agents, such as excess saliva, tears, urine, vomiting, and diarrhea; a second one that treats symptoms such as high blood pressure, rapid heart rate, weakness, muscle tremors and paralysis; and a third that treats and can prevent seizures."

Maintaining CHEMPACKs throughout the nation is challenging, but it is an essential part of the nation's defenses against terrorism. The CHEMPACK team must coordinate with limited manufacturers to keep the antidote supply chain functioning. CHEMPACK antidotes are regularly tested for potency and are replaced when needed. They must be maintained in ideal locations for quick use by hospitals and first responders. But, having them available is only the first step. Personnel who may use them need to know where they are and must be trained. CDC supports state and local partners as they identify CHEMPACK placement locations and conduct trainings for their responders.

Terrorist nerve agent attacks are not hypothetical. The Aum Shinrikyo group in Japan used sarin gas to attack subway passengers twice: an attack in 1994 killed eight people and a second attack in 1995 killed 12. Experts agree that these attacks were amateurish and a better timed and executed attack could have killed many more people.

CDC's CHEMPACK team is part of the rarely seen network that protects the people of the United States from unusual threats. You might not have heard much about them, but if you are ever attacked by nerve agents, they may be the reason you survive.




CHEMPACK locations across the U.S.

# Improving CBRN Forensics Can Stop War Crimes

**By Dan Kaszeta**

Source: http://ciceromagazine.com/opinion/improving-cbrn-forensic-capabilities-can-stop-war-crimes/



**Investigating criminal acts involving chemical, biological, radiological, and nuclear (CBRN) materials presents a number of unique challenges.** A crime scene involving a CBRN attack could manifest itself in many forms: An actual incident with injuries and deaths; a clandestine production laboratory; or a vehicle or container used for moving or smuggling material. These are only some of the possibilities.

National or international ability to successfully investigate and prosecute criminal acts using CBRN substances, whether they used in terrorist acts, conventional criminal activity, or war crimes leaves much to be desired. In many places around the world, the lack of consistent, competent, and legally defensible processes, procedures, personnel, and equipment means that war criminals and terrorists may escape justice due to lack of credible evidence. As recent incidents of reported CBRN attacks by the Assad regime and ISIS in Syria show us, there is a need for better capabilities and procedures in the collection and preservation of evidence in such cases.

## Holding Up in Court

**Across the world, legal proceedings in national and international courts rely on evidence.** In the case of CBRN incidents, physical evidence is extremely important and it can be assumed that skilled and aggressive defense counsel in trials and hearings will challenge any evidence presented. The chain of events that leads from turning up at the scene of the incident all the way to a conviction in a courtroom is fraught with pitfalls. **Competent defense counsel will question the evidence and everything to do with the evidence.** Where was the sample collected? What was the procedure to determine where to collect samples? What container was used to collect it? Was it sterile? Can this be

proven? What techniques were used?
A competent forensic technician knows how to answer these questions from a hostile attorney. But the hazmat technicians and military CBRN specialists who might be the ones collecting the evidence, as is the case in many places, may be competent in their jobs, but untrained for the court-room environment. Challenging the evidence being presented is the nature of adversarial legal systems around the world.

**It is indeed tragic that terrorists or war criminals may walk free simply because CBRN evidence was collected improperly or not collected at all.**

**In addition to legal proceedings, regardless of what happens in the courtroom, evidence will be challenged in public forums.** One only needs to look at the recriminations, conspiracy theories, and related drama surrounding the August 2013 Sarin attacks in Ghouta, Syria to see the kind of morass that can develop. Doubt, specious allegations, contradicting theories, and chaos will drip and leach into any real or perceived gap in the evidence or the process by which the evidence was collected and processed.
The problem is that the chain of events to take evidence from the point of use in an incident or investigation all the way through to the courtroom is deficient in most parts of the world. In my decades of experience in CBRN matters, I have seen no end of substandard practices in this area, and many places in the world simply have zero capability to collect and process evidence from a CBRN crime scene. I have seen in recent years in a NATO and EU member state a training exercise in which the remnants of a terrorist chemical device and the incriminating material it contained literally flushed down the sewer, without any attempt to examine it for evidence. No one (other than myself) raised objections to these actions.

**Training First Responders**

In today's asymmetric battlefields where state and non-state actors mix, the issue of collecting and preserving evidence at the scene of a CBRN incident or war crime is problematic for many reasons. The problem is caused by a number of conflicts in priorities and deficiencies in capabilities. The sphere of people with the ability to safely operate in a CBRN environment (or similar hazardous situations) does not intersect very much (or at all) with the sphere of people who are trained to think and operate forensically. In many countries, CBRN/Hazardous material incident responders are drawn largely from or entirely from the military and fire services, and the forensic technicians work with, under, or as part of the police services. The handful of people who have some sort of awareness in both fields are scarce.
They do exist, however. Some come from a background in the enforcement of environmental and pollution regulations and laws. Experts in clandestine drug laboratory response are a useful repository of expertise as well, but are rarely tasked with CBRN terrorism as a mission. **Many countries simply cannot answer the question, "Who is going to collect the evidence?"** In many places, the answer is, in effect, "Nobody knows." Therefore evidence will go uncollected and efforts at prosecution may be unsupported by physical evidence.
The problem extends from the crime scene back to the laboratory and the morgue. Laboratories most used to dealing with traditional forensic crime scene evidence may be ill-prepared to deal with dangerous CBRN materials. Likewise, the traditional CBRN laboratories may not have the ability to process and exploit conventional crime scene evidence, like a dead body, a mobile phone, or a scrap of paper contaminated with CBRN material. **Post-mortem examination is also an important capability gap.** The issue of what to do with a dead body that may be contaminated is important on several levels, and has not been seriously addressed in many places. A post-mortem exam may be revelatory and dead bodies could yield crucial evidence, particularly in situations where the causative agent is unclear and the material may degrade or disappear before an standard forensic response can capture it.
**The issue of time and speed causes several other conflicts.** The transitory nature of the evidence can be a complicating factor. **Gasses dissipate, vapors disperse, liquids evaporate, short-lived isotopes decay, and microbes die.** There is a fundamental conflict between the need to react quickly to seize evidence before it



degrades or disappears and the need to approach a crime scene in a thorough and methodical way. Speed is important. However, competent crime scene procedures are slow and methodical. Evidence needs to be collected in an appropriate way that are both procedurally and administratively safeguarded against tampering, cross-contamination, or accidental degradation. Trained and experienced technicians can do the best they can to strike a balance between speed and thoroughness, but this is a fundamental conflict that confronts every CBRN crime scene.

Time interacts with safety to pose another conflict. **The health and safety of forensic technicians is a serious concern.** Forensic technicians are generally unaccustomed to the type and extent of protective clothing and equipment required to lurk about for a period of time in a CBRN crime scene. The exposure of civilian and military medical response personnel to the Ebola virus illustrates how difficult avoiding exposure is, even among trained, cautious personnel. Wearing and operating in protective clothing slows all people down, is a burden on human physical and mental endurance, and acts to shorten the period of time that people can spend in a contaminated environment. The act of operating in protective posture complicates the time problem and makes it even more likely that evidence will degrade before somebody can do something useful with it. Crime scenes can have other hazards besides the obvious CBRN exposure. Incidents in an ongoing theater of operations can present conventional security problems in open warfare. **It is hard to operate forensically while people are shooting at you.**

**Another conflict is the friction between the imperative to help people and the imperative to collect evidence before it disappears**. One FBI unconventional weapons coordinator told me some years ago that it was unfortunately easier to his task when all the victims were dead before he arrived, as it would be far easier for him to manage the incident scene. This comment sounds harsh and callused, and it indeed it is. But this example clearly exposes the conflict between compassion (the natural human desire to care for the injured) and the scientific (the rational desire to have the best evidence possible.) **Rescue efforts may compromise a crime scene** and large scale search and rescue efforts could permanently damage the integrity of a crime scene from a forensic standpoint unless serious measures are undertaken from the beginning.

**Decontamination of living and dead victims can destroy or degrade critical evidence, literally flushing it down the drain**. Evacuation of victims to definitive care may remove evidence from the crime scene. But rescue, medical care, decontamination, and evacuation all need to happen regardless of the imperative to collect evidence. Live must be saved where possible. **The challenge is to integrate the forensic response into the rest of the effort.** There is no reason why investigators cannot be present at the start of victim decontamination to capture samples of contaminated clothing (shoes of victims can be particularly useful), collect smart phones with useful data on them, take swabs of liquid or powder from the skin of victims, and to collect witness statements while the event is still fresh. Indeed, the presence of law enforcement, other than collecting evidence, would be helpful in maintaining order in a chaotic situation.

These various conflicts are inherent to the issue of responding to, investigating, and documenting the occurrence of CBRN/Hazmat incidents. They cannot be wholly eliminated. However, they can be mitigated through various means, such as equipment, training, and operating practices. **Once the major dilemma – who is going to actually do the work – is resolved, the basic fundamentals of crime scene evidence collection can be applied to CBRN crime scenes.**

It is indeed tragic that terrorists or war criminals may walk free simply because CBRN evidence was collected improperly or not collected at all. National and international organizations should take steps to address this problem or continue to face CBRN attacks perpetrated by state and non-state actors who can simply shrug their shoulders and sow seeds of doubt regarding their guilt.

*Daniel Kaszeta has over twenty years of diverse experience in the defense and security sectors with experience in the field of chemical, biological, radiological, and nuclear (CBRN) issues. He was a member of the U.S. Secret Service as a Senior Physical Security Specialist in the Technical Security Division and in the Chemical/Biological Countermeasures Branch. He is an independent consultant at Strongpoint Security and author of, "CBRN and Hazmat Incidents at Major Public Events: Planning and Response".*

**EDITOR'S COMMENT: This is a very to the point article that all First Responders must study (not just read it)!** It is a fact that CBRN FRs only seldomly trained in forensics. This reminds me of another fact almost always seen in related drills: Drills stop at the entrance of the hospital or the moment casualties/ victims are inside the ambulances presuming that hospital staff can take over from there. But can they? Test it in your next drill and you will be surprised! Same with forensics at the CBRNE field but also with the training coroners and their staff are confronted with when dealing with an organophosphate poisoning (suicide). Do they know how to handle contaminated corps or provide safe directives for burial purposes? Most probably not! So it is time to answer all the questions posed by the very experienced author one by one and establish protocols and guidelines that would be both simple (given the PPE restrictions) but also effective and able to stand in courts around the globe.

## M908: Meeting the Unmet Needs of Today's Response Mission

Source: www.908devices.com

Due to the increased threat level of today's environment, first responders must be ready for anything and require a lot of different tools to get the actionable answers they need. The most critical component of the mission is identifying threats in the field as quickly and confidently as possible. Often the answers are not obvious and responders require the right mix of technology and understanding to come to a conclusion. Together, the right tools can enable responders to quickly and safely monitor the air for harmful airborne hazards and continue on to conduct analysis on seen and unseen targets to discern threats and protect lives. This type of immediate situational understanding is key to reaction time and threat neutralization.

At 908 Devices, we have expanded response capabilities with our flagship product, M908 – the first and only handheld mass spectrometer for downrange threat detection and identification. M908 was specifically purpose built for the safety and security community, filling technology gaps and meeting the unmet needs of today's response mission. Compared to conventional mass spectrometers, M908 is 70 times lighter (only 4.4lbs), consumes about 100 times less power, and is ruggedized for use in harsh environments. It is currently being used by state, local, federal and foreign government agencies as well as

civilian and military organizations worldwide for CBRNE threat detection and HazMat response.

**The world's first *and only* handheld mass spectrometer**

M908 is the first and only handheld tool to provide responders with downrange mass spectrometry capabilities. While other companies have attempted to take mass spectrometry out of the lab, these luggable instruments remain large, complex, and fragile resulting in limited field deployment. Our high-pressure mass spectrometry™ (HPMS) technology enables M908 to operate in the hotzone at unprecedented levels of selectivity and sensitivity down to the parts-per-million level and sometimes lower. This allows M908 to detect low-level quantities of critical threats amongst myriad interferents that plague other less selective technologies with incredibly low false alarm rates.


**Easy to Use**

Unlike conventional mass spectrometry devices, M908 is simple-to-use and requires little to no training. The software interface was designed with clarity and simplicity in mind. The task-oriented functions perform highly automated acquisition and analysis, and a large high-resolution backlit color display provides great visibility even in personal protective equipment (PPE). M908 provides unmistakable visual and audible alerts within seconds to the presence of priority threats - making it an ideal tool for the first responder mission.

**Identifies Priority Threats**

M908 uses a targeted threat list to enable rapid analysis of priority chemical agents, toxic industrial chemicals, precursors and more. Multiphase capability allows for detection and identification of chemicals from surface residues to ambient and headspace gasses to bring unique and focused capabilities to the survey mission. The ability to identify priority threats, or rule them out at the scene, makes M908 a critical tool for downrange operation.

**Filling the Gap**

While presently fielded tools are critical to the first responder toolkit, each has limitations. M908 was specifically purpose-built to fill technology gaps and meet the unmet needs of today's response mission. Handheld mass spectrometry complements the capabilities of other fielded tools such as IMS, Raman and FTIR devices by adding focused chemical analysis capabilities to the survey mission.

# Clinical Guidance for Smallpox Vaccine Use in a Postevent Vaccination Program

**By Brett W. Petersen, MD[1], Inger K. Damon, MD, PhD[1], Carol A. Pertowski, MD[2], Dana Meaney-Delman, MD[3], Julie T. Guarnizo[4], Richard H. Beigi, MD[5], Kathryn M. Edwards, MD[6], Margaret C. Fisher, MD[7], Sharon E. Frey, MD[8], Ruth Lynfield, MD[9] and Rodney E. Willoughby, MD[10]**

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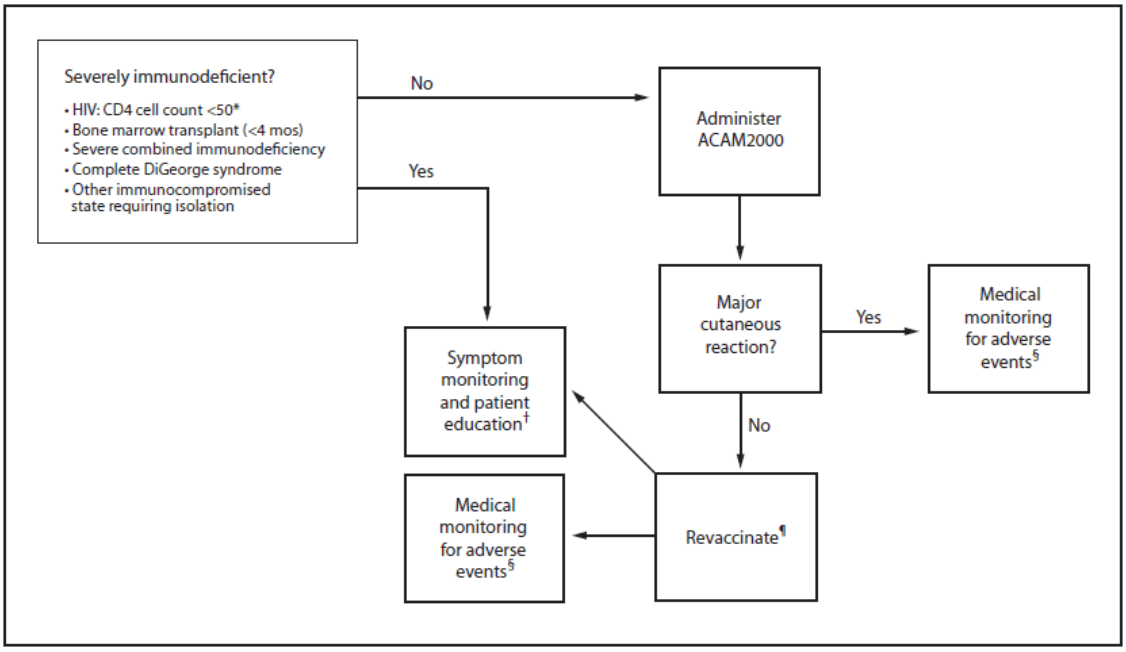
[8]*Center for Vaccine Development, Saint Louis University School of Medicine, Saint Louis, Missouri*
[9]*Minnesota Department of Health, St. Paul, Minnesota*
[10]*Children's Hospital of Wisconsin, Medical College of Wisconsin, Milwaukee, Wisconsin*

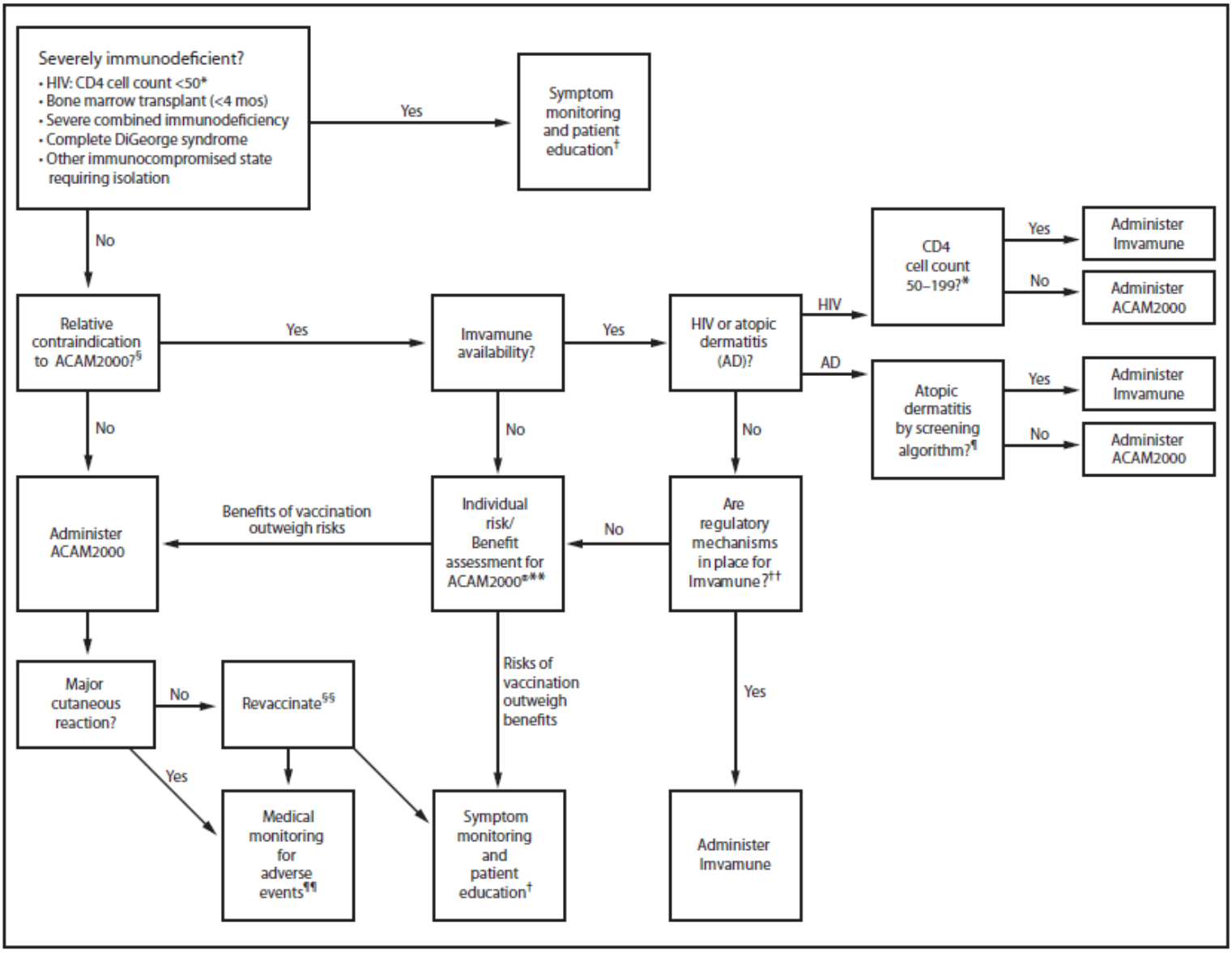
Source:http://www.cdc.gov/mmwr/preview/mmwrhtml/rr6402a1.htm?s_cid=rr6402a1_w

**This report outlines recommendations for the clinical use of the three smallpox vaccines stored in the U.S. Strategic National Stockpile for persons who are exposed to smallpox virus or at high risk for smallpox infection during a postevent vaccination program following an intentional or accidental release of the virus.** No absolute contraindications exist for smallpox vaccination in a postevent setting. However, several relative contraindications exist among persons with certain medical conditions. CDC recommendations for smallpox vaccine use were developed in consideration of the risk for smallpox infection, risk for an adverse event following vaccination, and benefit from vaccination.




Algorithm for evaluation and management of smallpox vaccination of persons with a known exposure to smallpox virus

Smallpox vaccines are made from live vaccinia viruses that protect against smallpox disease. They do not contain variola virus, the causative agent of smallpox. **The three smallpox vaccines stockpiled are ACAM2000, Aventis Pasteur Smallpox Vaccine (APSV), and Imvamune.** Surveillance and containment activities including vaccination with replication-competent smallpox vaccine (i.e., vaccine viruses capable of replicating in mammalian cells such as ACAM2000 and APSV) will be the primary response strategy for achieving epidemic control.




Algorithm for evaluation and management of smallpox vaccination of persons at high risk for smallpox infection without known exposure to smallpox virus

**Persons exposed to smallpox virus** are at high risk for developing and transmitting smallpox and should be vaccinated with a replication-competent smallpox vaccine unless severely immunodeficient. Because of a high likelihood of a poor immune response and an increased risk for adverse events, smallpox vaccination should be avoided in persons with severe immunodeficiency who are not expected to benefit from vaccine, including bone marrow transplant recipients within 4 months of transplantation, persons infected with HIV with CD4 cell counts <50 cells/mm$^3$, and persons with severe combined immunodeficiency, complete DiGeorge syndrome, and other severely immunocompromised states requiring isolation. If antivirals are not

immediately available, it is reasonable to consider the use of Imvamune in the setting of a smallpox virus exposure in persons with severe immunodeficiency.
**Persons without a known smallpox virus exposure** might still be at high risk for developing smallpox infection depending on the magnitude of the outbreak and the effectiveness of the public health response. Such persons will be defined by public health authorities and should be screened for relative contraindications to smallpox vaccination. Relative contraindications include atopic dermatitis (eczema), HIV infection (CD4 cell counts of 50–199 cells/mm$^3$), other immunocompromised states, and vaccine or vaccine-component allergies. Persons with relative contraindications should be vaccinated with Imvamune when available and authorized for use by the Food and Drug Administration. **These recommendations will be updated as new data on smallpox vaccines become available and further clinical guidance for other medical countermeasures including antivirals is developed.**

▶ **Read this important paper at souce's URL.**

Ebola: how to prevent a lethal legacy for food security
**By Saul Guerrero**
Source: http://www.theguardian.com/global-development-professionals-network/2015/feb/23/ebola-how-to-prevent-a-lethal-legacy-for-food-security

Market traders in Sierra Leone, Guinea and Liberia (pictured) need assurances that their food will be purchased Photograph: Abbas Dulleh/AP

The Ebola outbreak did what outbreaks do: affected movement. People were afraid of the virus and governments made concerted efforts to contain Ebola's spread. In doing so, food-producing parts of the countries found themselves isolated from urban cash economies. Traders willing to maintain trading routes, or with sufficient stock, often hiked prices to capitalise on the increase in demand as people panic-bought. Stocks decreased, prices rose and the purchasing power of people decreased as income-generating activities were affected by the outbreak.
The resilience of communities and national and international aid efforts helped to mitigate the effects of these shocks, but only temporarily.

There is growing evidence that the number of food-insecure people in these countries is rapidly increasing. In October 2014, a report released by Action Against Hunger and the University of Naples Federico II estimated that Ebola could make up to 700,000 additional people undernourished across Guinea, Liberia and Sierra Leone. **Recent estimates by the World Food Programme suggest that the number of people who could become food-insecure by March 2015 could be as high as 3 million, 1.4 million because of the effect of Ebola.** If WFP's estimates prove correct, Ebola will have doubled the number of food-insecure people in these three countries.
As new Ebola cases start to decrease – along with much of the media attention – the wider and longer-term implications for the people in Sierra Leone, Liberia and Guinea are becoming increasingly clear. And the picture that is emerging is troubling. **The World Bank estimates that the final economic toll from the epidemic will be over $30 billion by the end of 2015, an amount three times larger than the combined GDP of these three countries in 2013.** The inability of Ebola-affected countries to single-handedly absorb the economic costs has led to high-level requests to the International

Monetary Fund to cancel their debt. While the world debates the viability of that, the challenges for the average citizen are more stark: how to put food on the table.

Agriculture accounts for more than half of the GDP of Sierra Leone and Liberia, and at least a quarter of Guinea's. In spite of some success in improving food security over the last decade, the challenges before the outbreak were significant. **For example, in Sierra Leone in 2011 45% (2.5 million people) were classified as food-insecure during the lean season.** Prior to the outbreak food security may have been gradually improving, but it remained tenuous. If the international community is serious in its commitment to address this, the time for action is now.

We need to acknowledge the means by which people have managed to get by throughout this outbreak, and to complement them with measures that improve supply and demand. The first task must be to ensure that food is available in remote areas and those that were quarantined. Action is needed to help families and farmers to grow and harvest food. Reinvigorating trading and commerce must also be prioritised by guaranteeing traders a demand for their products.

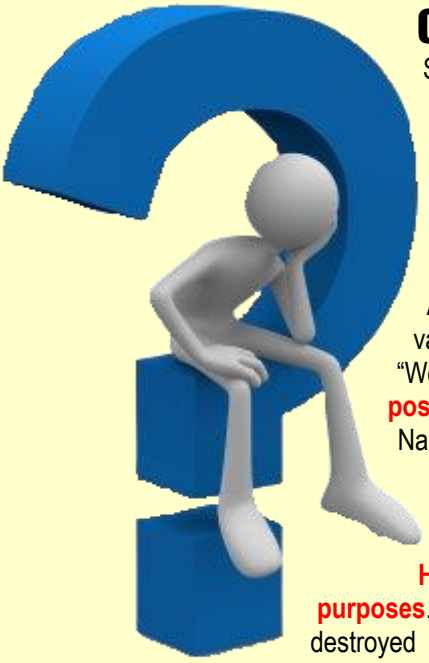
While many households will have retained purchasing power, vulnerable families should be given cash or vouchers that can be used to purchase food. These can be provided as emergency support or as part of income-generating schemes that can get local economies moving again. An example would be a road-building project that employs local people.

We need to recognise that getting people back on track will not necessarily happen on its own, and that investment is urgently needed. The international community can learn from the mistakes and delays of the outbreak response by taking action before these tell-tale signs of need lead to a nutrition crisis.

***Saul Guerrero** is director of operations at Action Against Hunger UK.*

# Tetanus Vaccines Found Spiked with Sterilization Chemical to Carry out Race-Based Genocide against Africans





Source: http://worldtruth.tv/tetanus-vaccines-found-spiked-with-sterilization-chemical-to-carry-out-race-based-genocide-against-africans/

**Tetanus vaccines given to millions of young women in Kenya have been confirmed by laboratories to contain a sterilization chemical that causes miscarriages, reports the *Kenya Catholic Doctors Association*, a pro-vaccine organization.**

A whopping 2.3 million young girls and women are in the process of being given the vaccine, pushed by UNICEF and the World Health Organization.

"We sent six samples from around Kenya to laboratories in South Africa. **They tested positive for the HCG antigen**," Dr. Muhame Ngare of the Mercy Medical Centre in Nairobi told LifeSiteNews. "They were all laced with HCG."

**Chemical causes a woman's body to destroy its own fetus with vaccine-induced antibodies**

**HCG is a chemical developed by the World Health Organization for sterilization purposes**. When injected into the body of a young woman, it causes a pregnancy to be destroyed by the body's own antibody response to the HCG, resulting in a spontaneous abortion. Its effectiveness lasts for years, causing abortions in women up to three years after the injections.

Dr. Ngare explained "…this WHO campaign is not about eradicating neonatal tetanus but a well-coordinated forceful population control mass sterilization exercise using a proven fertility regulating vaccine."

The Kenyan government, of course, insists the vaccine is perfectly safe. Dr. Tabu of Kenya's Health Ministry even told the media that because some young women are still

having babies, the vaccine therefore must not contain any sterilization agent. However, this claim belies the fact that HCG doesn't work 100% of the time. It only sterilizes the majority of those injected with it, not all of them.

More importantly, the Kenyan Catholic Church is a pro-vaccine organization. "What reason do the Catholic doctors have for lying?" asked Dr. Ngare as reported in the LifeSiteNews article linked above. "The Catholic Church has been here in Kenya providing health care and vaccinating for 100 years for longer than Kenya has existed as a country."

In other words, the very group exposing the sterilization agenda of the tetanus vaccines is in fact a pro-vaccination group. Yet even they have now come to realize the horrifying truth: **vaccines are the perfect vector for governments to deviously insert covert chemical or viral agents** which are never revealed to the public.

**The smoking gun: a five-shot course over two years**

What really raised red flags about this so-called tetanus vaccine was the highly unusual inoculation schedule. This vaccine demanded five shots over two years — a schedule that isn't used for tetanus.

"The only time tetanus vaccine has been given in five doses is when it is used as a carrier in fertility regulating vaccines laced with the pregnancy hormone, Human Chorionic Gonadotropin (HCG) developed by WHO in 1992." explained Dr. Ngare.

Furthermore, the vaccine was only being given to women of child-bearing years, not men or women beyond the age of fertility.

As Dr. Ngare explains, the same vaccine sterilization campaign was used in 1993 in Mexico and both Nicaragua and the Philippines in 1994. WHO attempted to bring it to Kenya in the 1990's, Ngare says, but the effort was stopped by the Catholic Church.

According to Brian Clowes of Human Life International, the United Nations is not refuting the laboratory testing and confirmation of HCG in the vaccines. Instead, it claims some vaccines were "contaminated" in the manufacturing process — an absurd claim that no reasonable person would believe because HCG should never even be anywhere near a vaccine manufacturing operation unless someone put it there deliberately.

LifeSiteNews reports that it:

*has obtained a UN report on an August 1992 meeting at its world headquarters in Geneva of 10 scientists from "Australia, Europe, India and the U.S.A" and 10 "women's health advocates" from around the world, to discuss the use of "fertility regulating vaccines." It describes the "anti-Human Chorionic Gonadotropin vaccine" as the most advanced.*

**United Nations, WHO and UNICEF all engaged in vaccination genocide**

You will not see this news reported by any mainstream media outlet in the United States. All truth about vaccines is censored, even if the truth is that the United Nations is deliberately engaged in a campaign of vaccine genocide against people of Africa.

What is happening in Kenya is a crime against humanity, and it is a crime committed with deliberate racial discrimination. Normally, the liberal media in the United States would be all over a story involving racial discrimination and genocide — or even a single police shooting of a black teenager — but because this genocide is being committed with vaccines, the entire mainstream media excuses it. Apparently, medical crimes against black people are perfectly acceptable to the liberal media as long as vaccines are used as the weapon.

As this story clearly demonstrates, "vaccine violence" is very real in our world. Vaccines are the perfect weapon for population control for several reasons:

1) Nobody really knows what's in them.
2) They can be easily spiked with hidden chemicals.
3) They can be administered under the cover of "public health."
4) All governments and establishment media will deliberately collaborate with the genocide in order to protect vaccines from being recognized as medical weapons against women.

Thus, vaccines can be routinely used to inject populations with birth control chemicals or even stealth cancer viruses. In fact, this is exactly what happened to as many as 98 million

Americans during the mass polio vaccinations of the 1960's and 70's. **The CDC even documented the "accidental" injection of millions of Americans with the cancer-causing SV40 simian virus, but the agency scrubbed all that history from its website in 2013.**
In Kenya today, government authorities also claim the sterilization chemical was an "accidental" contamination. That's the excuse that can always be used as a cover story in weaponized vaccination schemes, where governments deliberately taint vaccines with known chemicals that end life, promote cancer or cause spontaneous abortions.

**Vaccines as weapons = Medical crimes against humanity**
The deliberate adding of HCG to vaccines without full disclosure to the population is a heinous violation of human rights and human dignity. Here are just a few of the crimes now being committed against humanity under the guise of vaccinations:
**CRIME #1) No informed consent.** None of these women in Kenya were told the truth that they were being injected with a sterilization chemical designed to cause infertility.
**CRIME #2) Race-based genocide.** The targeting of Kenyan women with this vaccine is a deliberate selection based on their race. By any reasonable standard, this would be called a racially-motivated hate crime resulting in genocide.
**CRIME #3) The deliberate killing of a human being.** The spontaneous abortions caused by these HCG-spiked vaccines results in the ending of a human life inside the mother's body. These killings take place without the consent or permission of the mother, nor any opportunity for defense of the life of the unborn child.
**CRIME #4) Violation of Geneva Convention limitations on medical experimentation.** All these Kenyan women injected with this vaccine are being used as human guinea pigs in a covert, criminal medical experiment. None of these women voluntarily signed up for this medical experiment, nor were they even informed. This is a medical crime against human beings.
**CRIME #5) Crimes against women.** Only women were selected for this targeted sterilization vaccine effort, proving that this is not only a race-based crime but also a gender-based crime against women.
If you add all this up, you've got **weaponized vaccines** being **intentionally spiked** with a known sterilization chemical developed by the WHO, then deployed in a racially-motivated genocidal manner that targets women to be used in an illegal medical experiment administered via vaccine inoculations.



**When administered via vaccines, genocide and murder are apparently not news**
Yet, despite all this, the mainstream media is perfectly okay with this activity. The World Health Organizations endorses it. The United Nations organizes it. Governments help fund it. Vaccine-pushing scientists excuse it. Media outlets cover it up and censor the story.
When pharmacies in your neighborhood push flu shots and other vaccines, they don't tell you they are part of a branch of medicine steeped in genocide, racially-motivated hate crimes and a medical war on women. They don't tell you that flu shots still contain toxic mercury at concentrations 100 times the mercury found in ocean fish. They don't tell you anything about what's in those vaccines for the same reason that women in Kenya are never told what's in them, either.

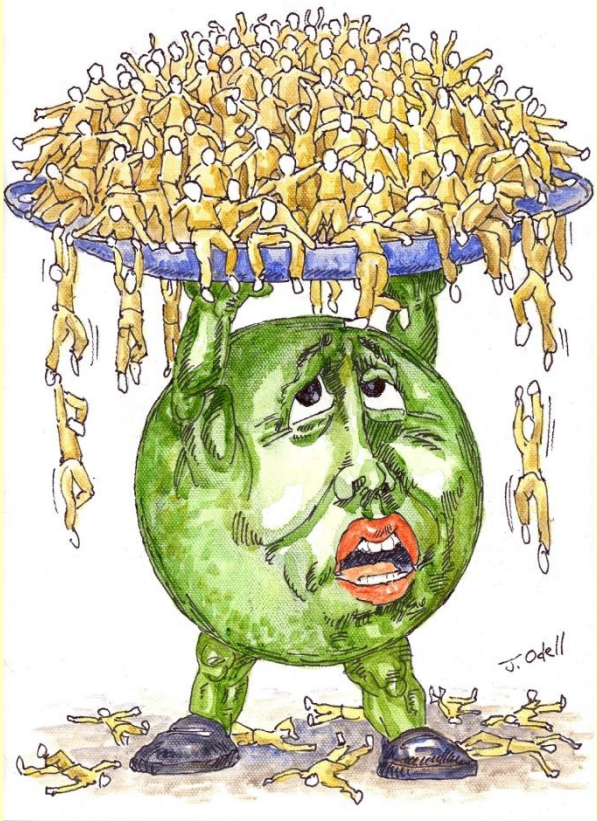
**Vaccines are the perfect weapons against women and children**
The truth is that **vaccines are easily deployed as weapons against humanity** under the false cover story that they are saving humanity. What better way to pursue deliberate chemically-induced population control than to convince people they are being injected "for their own good?"
This is precisely why Bill Gates famously said:
*The world today has 6.8 billion people… that's headed up to about 9 billion. Now if we do a really great job on new vaccines, health care, reproductive health services, we could lower that by perhaps 10 or 15 percent.*
Why would Bill Gates be talking about vaccines REDUCING human population if vaccines didn't secretly contain sterilization agents? Remember, Gates is the same person who has funded all sorts of sterilization technologies including one that blasts men's scrotums with high-intensity sound waves to make them infertile.

**Top tools for human depopulation**

Gates is part of a covert medical cabal that believes aggressive human depopulation is urgently necessary to save the planet. This group, which includes many scientists and virologists, believe that the most effective tools for human depopulation are:

1) Vaccines which are covertly spiked with sterilization chemicals.

2) Genetically engineered viruses with a high mortality rate, possibly engineered to target specific races and genetic profiles.




For example, Dr. Charles Arntzen, head of The Biodesign Institute for Infectious Diseases and Vaccinology recently joked about using an engineered virus to cull the human population, saying "That's the answer! Go out and use genetic engineering to create a better virus. (laughter) Twenty-five percent of the population is supposed to go in Contagion."

As I wrote on October 22, 2014, many virologists believe humans are nothing more than a "parasite" to be consumed by viruses which are the planet's "immune response" to human overpopulation. Here's a passage from the book "The Hot Zone" by Richard Preston, summarizing the way these scientists think:

*…the earth is mounting an immune response against the human species. It is beginning to react to the human parasite, the flooding infection of people, the dead spots of concrete all over the planet, the cancerous rot-outs in Europe, Japan and the United States, thick with replicating primates [i.e. humans], the colonies enlarging and spreading and threatening to shock the biosphere with mass extinctions.*

Perhaps the biosphere does not "like" the idea of five billion humans. Or it could also be said that the extreme amplification of the human race, which has occurred only in the past hundred years or so, has suddenly produced a very large quantity of meat, which is sitting everywhere in the biosphere and may not be able to defend itself against a life form that might want to consume it…

The earth's immune system, so to speak, has recognized the presence of the human species and is starting to kick in. The earth is attempting to rid itself of an infection by the human parasite.

What's extraordinary in all this — both with vaccines and viruses engineered as weapons — is how the most influential people in the scientific community have come to view humanity as an enemy to be destroyed via tools of medicine and science. Frighteningly, modern medical science has the tools to carry out its genocidal assaults on humankind through "accidental" releases of deadly viruses or "accidental" contamination of vaccines with sterilization chemicals.

The evidence of deliberate sterilization chemicals in United Nations vaccines raises the obvious question: Was the recent Ebola outbreak in West Africa also intentional? And what else might scientists, vaccine pushers, world health authorities and governments have in mind for human depopulation in the years ahead?

Is there already something in the food supply that causes sterilization? The answer is a definite YES, and just like the pandemic viruses, it too is genetically engineered.

**The five vectors for destroying humanity**

These are the vectors for the science-based genocidal assault on humanity:

1) Vaccines
2) Viruses
3) Food
4) Water
5) Chemtrails (i.e. atmospheric deployment of chemicals)

All five of these vectors present "opportunities" for genocidal scientists to achieve their goal of human sterilization and depopulation. That is precisely why anyone who wishes to survive the great human culling now under way must take extraordinary steps to isolate themselves from institutionally-produced food, water and medicine. The only safe food, water and medicine is that which was produced independently and far outside the control of Big Food, Big Ag and Big Pharma.

Don't drink the city water without filtering it first, and read my laboratory testing results for all popular water filters at www.WaterFilterLabs.com

Don't eat factory-produced food. Don't allow yourself to be injected with weaponized vaccines. Don't take Big Pharma's deadly medicines. Be smart by being skeptical about the claimed "safety" of all those things created by institutions and authorities that quite literally want to kill off a significant percentage of the existing world population.

If you're smart and resourceful, you might just survive this great human culling. On the other hand, those who anxiously line up to be injected with the seasonal flu shots are all admitting they are too stupid and gullible to last long in a world where "science" has declared a covert war on human life.

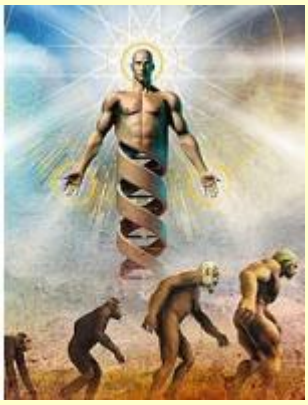
**EDITOR'S COMMENT:** Why I included this article? Although it looks like one of the usual conspiracy theories, I always like to be openminded and look for the fire under the smoke. I will not argue it is BS if you prove that it is not possible to happen – at least technically. Remember an old similar topic on "ethnic bombs" targeting Arabs? Do you claim that we do know everything evil minds are scheduling for us without us having a clue? Read also below…

## Scientists warn the effects of synthetic biology in warfare



Source: http://www.news.com.au/technology/innovation/scientists-warn-the-effects-of-synthetic-biology-in-warfare/story-fnpjxnlk-1227240654669

It sounds more like something from a Matthew Reilly book than real life. **But programmable bioweapons are coming and scientists are warning that they could be just as, if not more deadly than nuclear weapons.**



The weapons use something known as synthetic biology, which is a bit like genetic engineering on steroids. Basically, **it involves reprogramming genes to do specific things.** Already scientists are working to use synthetic biology to create plants that can sniff out drugs at airports.

But a panel of academic experts at the New America Future of War conference overnight have warned that weapons made using synthetic biology could be as big of a problem as nuclear weapons were in the past.

"The biologically-based conflicts of the future would be wild by comparison: I'll wipe out your food supply, I'll wipe out your water, I'll wipe out your ability to reproduce, I'll wipe out your ability for your gene line to advance." said Michael Crow, president of Arizona State University.

"We have to figure out some way to rethink this stuff before we can no longer think about it," he said.

The United States' equivalent of Australia's defence technology research agency DSTO, DARPA has been researching the possibility to use synthetic biology for warfare for years, and even started a **dedicated division in 2014 called the Biological Technologies Office**.

Their research has been nothing less than terrifying.

**In 2011, DARPA began investing money into a project called BioDesign.** Its goal was to create a "synthetic organism" that can live forever, or if need be,

killed off with the flick of a molecular switch. These organisms can then be used to do whatever their creators want them to, or as DARPA put it, “produce the intended biological effect.”

## Biosecurity and Bioterrorism Is Now Health Security

Source: http://www.prnewswire.com/news-releases/biosecurity-and-bioterrorism-is-now-health-security-300042278.html

Feb. 26 – The journal *Biosecurity and Bioterrorism* has changed its name to ***Health Security***. The bimonthly peer-reviewed journal is published in print and online by Mary Ann Liebert, Inc., Publishers, of New Rochelle, NY.


Launched at the beginning of 2003, *Biosecurity and Bioterrorism* has become one of the premiere journals in science and policy in the areas of biosecurity, emergency preparedness, and community resilience. The Journal is now read in more than 90 countries worldwide by thought leaders, policymakers, medical and public health practitioners, legislators, and media people.

Over the years, the field itself has broadened to include the continued risk of pandemics and emerging infectious diseases, natural disasters, outbreaks of foodborne illness, health emergencies caused by acts of terrorism, and the potential for biological, chemical, and nuclear accidents.

The new title, ***Health Security,*** better reflects the expanded horizons and challenges of readers and authors from the range of professions and expertise relevant to the science and practice of preparedness and response.

Examples of the range of serious threats to the public's health in just the past year, as well as the potential for new health interventions and controversies, make clear the importance of our preparedness and response efforts and why we need to continue to invest in and strengthen them:

- The world's largest outbreak to date of Ebola virus in West Africa has implications for health infrastructure and infection control worldwide.
- MERS-CoV continues to spread in the Middle East.
- The Chikungunya outbreak in the Western Hemisphere continues to grow.
- This year the US joined 30 countries and international organizations, including WHO, OIE, and FAO, in introducing the Global Health Security Agenda, which seeks to promote global health through prevention, detection, and rapid, effective response.
- The White House released its strategy for combating antibiotic-resistant bacteria.
- The discovery of smallpox virus in a storage room at the NIH, the accidental exposure of CDC employees to anthrax, and the accidental shipment by CDC of a highly pathogenic H5N1 strain all highlight the ongoing importance of biosecurity and biosafety in the laboratory.
- The US government's announcement of a moratorium on funding of gain-of-function research has sparked an important debate among scientists.

"It is more important than ever to continue to examine scientific and technological innovations that strengthen our ability to prepare for and respond to these types of emergencies," notes Editor-in-Chief Tom Inglesby, MD. "The work

published in this journal will give us a better understanding of what strategies could save the most lives, where resources might have the most impact, and what national policies and international collaborations can produce the most important benefits."

***Health Security*** is the only peer-reviewed journal dedicated to this set of issues. The new name signals a commitment to protecting people's health after epidemics or disasters and to ensuring that communities are resilient to major health challenges.

**As we begin our 13th volume year, we are pleased to welcome a distinguished group of new Editorial Board members:**

- **Sheri Fink,** MD, *The New York Times*
- **David Heymann,** MD, Head and Senior Fellow, Chatham House Centre on Global Health Security, London
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***Health Security,*** published bimonthly in print and online by Mary Ann Liebert, Inc., is a peer-reviewed journal that explores the issues posed by disease outbreaks and epidemics; natural disasters; biological, chemical, and nuclear accidents or deliberate threats; foodborne outbreaks; and other health emergencies. It offers important insight into how to develop the systems needed to meet these challenges.

The UPMC Center for Health Security is an independent nonprofit organization that works to protect people's health from the consequences of epidemics and disasters and to ensure that communities are resilient to major challenges.



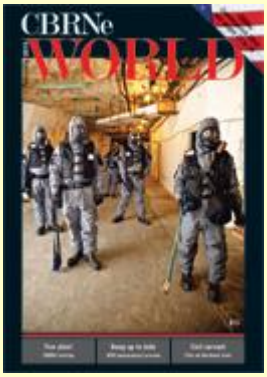
▶ **The Journal is online at:** http://www.liebertpub.com/hs.

Andrew Johnston on whether the devil you don't know is actually better

CBRNWORLD

# A healthy fear of the known

As the have-a-go epidemiologist Bill Gates declared recently, we must be better prepared to deal with the devastating effects of Ebola. The world famous philanthropist was no doubt referring to the effect of such epidemics in less developed regions, often the origin of these diseases, with poor infrastructure, health care systems and contingency plans; much as we have seen in West Africa over the past 10 months. What William might not know is just how ill-prepared many nations are within their own borders. The real and theoretical threat of Ebola has somewhat dominated the world of CBRN and the media at large in recent months, even to the point where the Herculean task of completing the destruction of Syria's chemical weapons at sea went almost unnoticed. In contrast, incomplete figures on Ebola casualties, geographical areas affected, and contagion statistics have been reported time and again.




The UK has now dealt with two confirmed cases of Ebola on its own shores, and is prepared for many more given that almost 800 volunteer medical staff have worked for six months in the most at-risk areas of west Africa. Contrary to popular belief contracting Ebola is not a death sentence and both UK patients who did so have now fully recovered. In fact of the 24 cases confirmed by developed nations, 79% have survived. The two UK patients, although a small sample, have given UK generalist and specialist medical staff the opportunity to review and revise local and national response plans, so the UK is better off, with improved resilience.

February 2015 issue

Nick Spence, a member of the South West Ambulance Service Trust Hazardous Area Response team (SWAST HART) suggested that lessons learnt from Ebola were applicable to other agents. "The recent Ebola outbreak has enabled UK medical responder teams to benefit from the experiences of the past eight months. We are now undoubtedly in a better place to deal with a far broader range of threats, not just Ebola or even viral haemorrhagic fevers (VHF), but all kinds of future biological threats. Generalist frontline staff now has a better understanding of personal protective equipment (PPE) and protective requirements, of dedicated response plans and procedures. Given the tragic events in West Africa it can sound cold, but we are now in a better position to respond to patients than we ever have been."

▶ **Read the rest of this article at** (free subscription may be required):
http://www.cbrneworld.com/_uploads/download_magazines/A_healthy_fear_of_the_known.pdf

## Asian herb holds promise as treatment for Ebola virus disease

Source: http://www.homelandsecuritynewswire.com/dr20150227-asian-herb-holds-promise-as-treatment-for-ebola-virus-disease

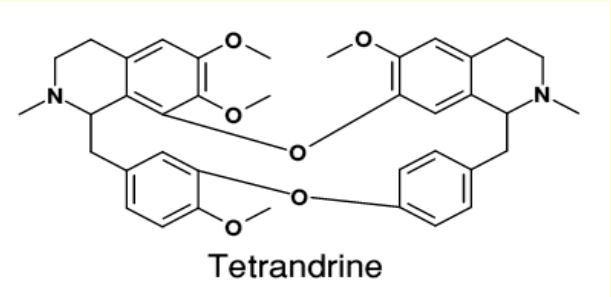


Feb 27 – New research that focuses on the mechanism by which Ebola virus infects a cell and the discovery of a promising drug therapy candidate is published today, 27 February 2015, in the journal *Science*. Dr. Robert Davey, scientist and Ewing Halsell Scholar in the Department of Immunology and Virology at Texas Biomedical Research Institute announced that **a small molecule called Tetrandrine derived from an Asian herb has shown to be a potent small molecule inhibiting infection of human white blood cells in vitro or petri dish experiments and prevented Ebola virus disease in mice.**

The latest outbreak of Ebola virus disease has caused the death of more than 8,600 people worldwide and created an international crisis that has shown few signs of stopping, continuing to infect thousands in West Africa. Ebola virus causes hemorrhagic fever in humans and currently has no approved therapy or vaccine.

A Texas Biomed release reports that scientists at Texas Biomed have been working in the Institute's Biosafety Level 4 containment laboratory for more than ten years to find a vaccine, therapies, and detection methods for the virus.

Davey and his team have been working for more than five years on identifying and finding therapy targets for Ebola virus disease.




Davey's research has focused on stopping the virus before it has a chance to enter or interact with cellular factors, as that is a critical first step to combatting infection.

Ebola virus begins its entry into a cell by first binding to several types of cell surface proteins. Then the virus is taken into the cell and follows an endosomal

route, or membrane-bound route that transports the virus to various cell compartments.

From previous studies, Davey said that during this endosomal process, he knew that **calcium signaling in cells, which allow cells to transmit electrical charges to one another, controls many of the processes in the cell and was important for Ebola virus infection.**

"We were not able, however, to pinpoint the mechanisms involved in this process," Davey explained. "With this research, we discovered that **two pore channels (TPCs) are the key calcium sensor involved in Ebola virus infection. These TPCs essentially need to be turned on in order for the virus to function properly."**

Two pore channels are unusual calcium channels found in endosomes that control the way endosomes move through cells and the environment of the cells. Davey compared TPCs to traffic cops and air conditioners, helping direct the endosomes and any virus it might be carrying through the cell and making the endosomes and its passengers more comfortable along the way.

Stephania tetrandra

**Davey and his team were able to show the critical role of two pore channels in Ebola virus infection, which has not previously been shown in any other virus**. In addition to identifying this critical mechanism to infection, Davey's team also showed that drugs targeting this interaction show some efficacy as potential treatments against Ebola virus disease.

In the study, Davey's team determined that existing drugs currently used to treat high blood pressure have an ability to turn this key calcium sensor on and off. Working with a group in Munich, Germany and Southwest Research Institute, the team tested several small molecules to see which was most effective at turning the sensors off thus prohibiting Ebola virus from moving any further through the cell.

**The team found Tetrandrine protected mice from disease without obvious side effects and was the best candidate for further animal testing, because**

**it was the most potent compound tested, gave little evidence of cytotoxicity and required a smaller dose to be effective and tolerated.**

"When we tested in mice, the drugs stopped virus replication and saved most of them from disease," Davey said.

**Essentially, this drug shows an ability to stop the virus before it has a chance interact with cellular factors, thus stopping the virus from continuing its infection process.**

"We are very excited about the progress made in this study and the momentum it provides as scientists across the world vigorously search for effective vaccines and treatments against Ebola virus," Davey said. "We are cautiously optimistic. **The next step in the process is to test both safety and effectiveness of the interaction of the drug with Ebola virus in non-human primates**."

*— Read more in Yasuteru Sakurai et al, "Two-pore channels control Ebola virus host cell entry and are drug targets for disease treatment,"* Science *347, no. 6225 (27 February 2015): 995-98*

# Ex-Ebola Czar Ron Klain: 5 management lessons from the Ebola outbreak

**By Ron Klain**

Source: http://fortune.com/2015/02/25/ex-ebola-czar-ron-klain-5-management-lessons-from-the-ebola-outbreak/

**Even in a digital age, nothing can replace the importance of face-to-face interactions when deadlines are tight.**

In mid-October 2014, when I was asked to serve as the first U.S. Ebola Response Coordinator, America was gripped by Ebola fear. We had quickly gone from zero cases of the disease ever diagnosed on U.S. soil to four in a matter of days. Overseas, the epidemic raged in West Africa, with hundreds of new cases being reported each week in Liberia. Fast-forward to four months later, and we have not had a single new case of Ebola diagnosed on American soil in more than 100 days, and the new caseload in Liberia is less than five per week. How did we do it?

While most of the credit is due to those on the front lines of the battle — the people of West Africa, health care workers, and the responders on the ground — management and coordination in Washington helped make a difference. Here are five key management lessons that helped my team get the epidemic under control. These lessons are applicable to any number of business and social challenges.

## 1. Data matters – but only the right data really matters

The headline-grabbing numbers – 24,000 cases of Ebola, across West Africa —naturally dominated media coverage, but they were not the data that was ultimately relevant to planning our response. These totals reflected cumulative cases that included thousands of patients who had developed the disease months ago, but were long ago either cured or dead. While emotionally and historically important, the total was not valuable for shaping decisions about where to put medical teams, send burial teams, or build treatment units *going forward*.

For example, Lofa County, Liberia, one of the places with the highest cumulative case count, and was widely described as the epicenter of the epidemic, but it had largely eradicated the disease as the international response was ramping up. So as we shaped the forward-looking Ebola response, we had to focus on the RIGHT data: Where were the *currently* infected people? Where were the *most recent* cases? Where was the disease going *next*? There are countless

business problems like this: the data most discussed may be the data that are least relevant for decision-making.

## 2. Turn the telescope around

When I started the job, the horrible experience of Thomas Eric Duncan, the first person diagnosed with Ebola in the U.S. who walked into an unsuspecting and unprepared emergency room in Dallas, had planners scrambling for a scheme to get every health care provider in the U.S. trained to identify and treat Ebola patients. But it became clear that while we had 500,000 health care facilities in America, we only had about 1,200 potential Ebola patients at any one time: the people who had come from West Africa within the previous 21-day incubation period.

So instead of spending vast sums of taxpayer funds in a lengthy process to prepare every single health care provider in the U.S. for an Ebola case, Tom Frieden, the director of the U.S. Centers for Disease Control and Prevention (CDC), developed a savvy plan to monitor and direct those 1,200 people to a relatively small number of facilities that we then prepared to receive and test potential Ebola patients.

This system targeted each person arriving in the U.S., assigned them a unique identifier number, tracked them daily, coordinated with local Emergency Medical Services units to take them to appropriate facilities if they called for help, and matched returnees with specific facilities to care for them if needed. By turning the telescope around to focus on the patients, not the providers, we significantly scaled down our problem. The challenge facing many consumer-oriented firms has a similar dimension: instead of trying to prepare many places to transact with few targets, it is often easier to steer those targets to your best locations (in the physical world or on the web) for dealing with them.

## 4. Nothing replaces face-to-face time

I love doing business by email, and our government loves doing its work by sending memorandums. But in a complex, multi-discipline, multi-unit response, nothing replaces face to-face interactions between people, around a table (in person or via video), where concerns can be plainly stated, problems confronted directly, and organizational counterparts looked in the eye.

Hence, every Friday afternoon, I assembled key officials from every agency working on the Ebola response – from the military leaders of U.S. Department of Defense to the development officials of U.S. Agency for International Development to the medical experts from the National Institutes of Health and U.S. Health and Human Services – around a table in the White House Situation Room, and we hashed out problems face-to-face. And we made working-level teams do the same: bridging gaps in culture between the law enforcement-oriented Customs and Border Patrol agents and the medically-oriented teams from the CDC, who needed to work together on our inbound arrivals screening plan.

It is easy to blame "those guys" for what is going wrong in a complex operation when they are just an email address on a distribution list, or a box on a chart; much harder to do so when you are seeing them face-to-face, week after week. The time this took was well worth it.

## 3. Recognize and respect fear

In those most fearful days of October, many experts wanted us to convey a message that public fears were overwrought or misguided; to tell Americans that they were far more likely to die from a car crash or a heart attack than Ebola. But Dr. Tony Fauci of the National Institutes of Health, perhaps our nation's most respected medical expert, wisely counseled our team to acknowledg the public's fears, and not dismiss them. Dr. Fauci reminded us of similar fears in the early days of AIDS. "People fear new threats," he told us. "If you deny them, you only drive them underground where they fester and get worse." So we talked openly and honestly about risks and protections; about measures we were taking and the safeguards they provided. We employed science-based decision making with transparent communication. We honestly told people that there could be more cases of Ebola in America, while also reassuring them with information about how we had improved preparations to identify and isolate those cases.

In every organization, business, or endeavor, fear of the new and fear of the unknown is present. Rather than dismissing or disparaging it, it should be acknowledged and addressed.

### 5. Don't over solve problems

At one point in my tenure I met with a respected group of scientists who warned that, with flu season then approaching, America's emergency rooms would be overwhelmed by flu patients whose symptoms were similar to Ebola, and would have to be given costly and time-consuming tests for that disease. They argued that the US government needed an expensive, crash program to develop an instant test to differentiate between Ebola and flu. I disagreed.

While the world did need an inexpensive point of care test for Ebola for Africa (and one is finally being piloted on a large scale in West Africa), I told them that we had no imminent crisis of emergency room gridlock in the US, because we had a simple, cheap "test" to whittle down thousands of flu patients to a handful of Ebola suspects.

We would ask them, "Have you been in West Africa in the past 21 days?" Those who had not – and over 99% of the flu patients hadn't – did NOT have Ebola. In our technocentric world today, we often look for overly complex, innovative, or "game changing" solutions to problems – instead of focusing on how a simpler, less elaborate solution can sometimes do the job.

Of course, these are just five of countless lessons we learned in the response – others included the need to constantly reassess and reshape plans; to respect the wisdom and insights of those nearest to the problem, and to focus closely on cultural differences and perspectives – and more. Not all problems are life-and-death, or headline-grabbing, or social-media dominating, as Ebola was. But to the teams dealing with them, business problems are just as important. By using data the right way, turning the telescope around, gathering people face-to-face, acknowledging fears, and rightsizing problems, you can improve your team's performance and get better results.

*__Ron Klain__ is general counsel of Revolution LLC, a Washington, DC-based investment firm. On leave from Revolution, he recently served as the first White House Ebola Response Coordinator.*



## Quick test for Ebola

Source: http://www.medicalnewstoday.com/releases/289923.php?tw

Feb 25 – When diagnosing a case of Ebola, time is of the essence. However, existing diagnostic tests take at least a day or two to yield results, preventing health care workers from quickly determining whether a patient needs immediate treatment and isolation.

**A new test from MIT researchers could change that: The device, a simple paper strip similar to a pregnancy test, can rapidly diagnose Ebola, as well as other viral hemorrhagic fevers such as yellow fever and dengue fever.**

"As we saw with the recent Ebola outbreak, sometimes people present with symptoms and it's not clear what they have," says Kimberly Hamad-Schifferli, a visiting scientist in MIT's Department of Mechanical Engineering and a member of the technical staff at MIT's Lincoln Laboratory. "We wanted to come up with a rapid diagnostic that could differentiate between different diseases."

Hamad-Schifferli and Lee Gehrke, the Hermann L.F. von Helmholtz Professor in MIT's Institute for Medical Engineering and Science (IMES), are the senior authors of a paper describing the new device in the journal *Lab on a Chip*. The paper's lead author is IMES postdoc Chun-Wan Yen, and other authors are graduate student Helena de Puig, IMES postdoc Justina Tam, IMES instructor Jose Gomez-Marquez, and visiting scientist Irene Bosch.

**Color-coded test**

Currently, the only way to diagnose Ebola is to send patient blood samples to a lab that can perform advanced techniques

such as polymerase chain reaction (PCR), which can detect genetic material from the Ebola virus. This is very accurate but time-consuming, and some areas of Africa where Ebola and other fevers are endemic have limited access to this kind of technology.

**The new device relies on lateral flow technology,** which is used in pregnancy tests and has recently been exploited for diagnosing strep throat and other bacterial infections. Until now, however, no one has applied a


multiplexing approach, using multicolored nanoparticles, to simultaneously screen for multiple pathogens.

"For many hemorrhagic fever viruses, like West Nile and dengue and Ebola, and a lot of other ones in developing countries, like Argentine hemorrhagic fever and the Hantavirus diseases, there are just no rapid diagnostics at all," says Gehrke, who began working with Hamad-Schifferli four years ago to develop the new device.

Unlike most existing paper diagnostics, which test for only one disease, **the new MIT strips are color-coded so they can be used to distinguish among several diseases. To achieve that, the researchers used triangular nanoparticles, made of silver, that can take on different colors depending on their size.**

**The researchers created red, orange, and green nanoparticles and linked them to antibodies that recognize Ebola, dengue fever, and yellow fever.** As a patient's blood serum flows along the strip, any viral proteins that match the antibodies painted on the stripes will get caught, and those nanoparticles will become visible. This can be seen by the naked eye; for those who are colorblind, a cellphone camera could be used to distinguish the colors.

"When we run a patient sample through the strip, if you see an orange band you know they have yellow fever, if it shows up as a red band you know they have Ebola, and if it shows up green then we know that they have dengue," Hamad-Schifferli says.

This **process takes about 10 minutes,** allowing health care workers to rapidly perform triage and determine if patients should be isolated, helping to prevent the disease from spreading further.

**Faster triage**

The researchers envision their new device as a complement to existing diagnostic technologies, such as PCR.

"If you're in a situation in the field with no power and no special technologies, if you want to know if a patient has Ebola, this test can tell you very quickly that you might not want to put that patient in a waiting room with other people who might not be infected," says Gehrke, who is also a professor of microbiology and immunology at Harvard Medical School. "That initial triage can be very important from a public health standpoint, and there could be a follow-up test later with PCR or something to confirm."

The researchers hope to obtain Food and Drug Administration approval to begin using the device in areas where the Ebola outbreak is still ongoing. In order to do that, they are now testing the device in the lab with engineered viral proteins, as well as serum samples from infected animals.

This type of device could also be customized to detect other viral hemorrhagic fevers or other infectious diseases, by linking the silver nanoparticles to different antibodies.

"Thankfully the Ebola outbreak is dying off, which is a good thing," Gehrke says. "But what we're thinking about is what's coming next. There will undoubtedly be other viral outbreaks. It might be Sudan virus, it might be another hemorrhagic fever. What we're trying to do is develop the

antibodies needed to be ready for the next outbreak that's going to happen."

## Mauritania joins the Biological Weapons Convention

Source:http://www.defenceweb.co.za/index.php?option=com_content&task=view&id=38238&catid=49&Itemid=115

March 04 – **Earlier this year, on 28 January, the Islamic Republic of Mauritania acceded to the Biological Weapons Convention** (the BWC – formally named the Convention on the Prohibition of the Development, Production and Stockpiling of Bacteriological [Biological] and Toxin Weapons and on their Destruction).

The news was announced on 4 February by the United Kingdom, one of the three depositories of the BWC along with the United States and Russia. By acceding to the convention, Mauritania formally commits never to develop, produce, acquire, transfer, retain, stockpile or use biological weapons. While the state was not suspected of pursuing a clandestine biological weapons programme, its recent accession remains a meaningful development as it brings additional trust in the peaceful nature of its activities, and strengthens the global move towards non-proliferation.

Mauritania joining the BWC is also an important step towards the convention being globally implemented, as it now has **172 states parties**. **Prior to Mauritania, the most recent state to accede had been Myanmar, on 1 December last year, and there are encouraging signs that Andorra and Angola may soon follow suit.**

These developments can be attributed to the efforts of the Chair of the BWC, the depository governments and states parties in advocating for the convention to be universalised. The Implementation Support Unit (ISU), based in Geneva, spearheads these efforts. The ISU faces significant structural constraints, however, with its body of staff limited to only three employees. This number is very low if one compares it, for instance, to the almost 500 individuals serving the Technical Secretariat of the Organisation for the Prohibition of Chemical Weapons (OPCW).

Paradoxically, the understaffing of the ISU may have contributed to its success, as it was forced from the outset to find efficient working methods and develop strong partnerships to source human and financial resources. The European Union has provided close to EUR 5 million in support of the BWC through three decisions adopted so far by its Council, and it has also channelled additional resources through its initiative aimed at establishing chemical, biological, radiological and nuclear centres of excellence.

Similarly, the United States has contributed through the Department of State's Biosecurity Engagement Program and other channels, while other key partners such as Australia, Canada, Norway and individual European countries have also offered support in their national capacity. The African Union, World Health Organisation, the Food and Agriculture Organisation and the 1540 Committee Experts Group, among many others, have also worked with the ISU in a mutually reinforcing way to produce tangible results in terms of implementation and capacity building.

The BWC is recognised as a central component of the global security architecture, embodying the renouncement of states parties in ever resorting to biological weapons. This makes it an important step towards a world free of weapons of mass destruction. The relevance of the BWC was made even more pertinent following United Nations Security Council resolution 1540. Adopted in April 2004, the resolution addresses the threat of proliferation of all kinds of weapons of mass destruction,

which includes biological weapons.
These two international instruments strengthen each other: the main goal of the BWC is to prevent proliferation activities conducted by states, while resolution 1540 aims at preventing proliferation activities by non-state actors, such as criminal groups and terrorists.
Unfortunately, African states have far from reached their full potential in implementing the BWC. **Eight African states are still not parties to the BWC, (Angola, Chad, Comoros, Djibouti, Eritrea, Guinea, Namibia, South Sudan), while six African states are signatories only (the Central African Republic, Côte d'Ivoire, Egypt, Liberia, Somalia and Tanzania).** The decision to join an international convention is a prerogative of national sovereignty, and no state should be forced to do so against its will. However, that such a high number of states are not parties to the BWC sends a troubling message about Africa's commitment to prevent the proliferation of biological weapons.
**It should also be noted that only a limited number of African states parties participate in the confidence-building mechanism developed in the framework of the BWC. The framework relies on states parties to provide information annually to instil trust in the peaceful nature of their activities conducted. Over the past 20 years, only 16 African states parties have participated at least once in the mechanism. The more recent figures are not encouraging: in 2014, only four African states parties submitted a declaration.**
A lot of work awaits Daniel Feakes, who was appointed as the new head of the ISU in November 2014, to strengthen support for the BWC on the African continent and facilitate capacity building. In light of the important challenges that remain, the ISU should consider launching an African programme, as has been successfully achieved by other international organisations such as the OPCW. This would be useful to address implementation challenges in Africa in a systematic manner, and to develop sustained co-operation with relevant partners.

## Having and Fighting Ebola — Public Health Lessons from a Clinician Turned Patient

106

**Craig Spencer, M.D., M.P.H.**
Source: http://www.nejm.org/doi/full/10.1056/NEJMp1501355

While treating patients with Ebola in Guinea, I kept a journal to record my perceived level of risk of being infected with the deadly virus. A friend who'd volunteered previously had told me that such a journal comforted him when he looked back and saw no serious breach of protocol or significant exposure. On a spreadsheet delineating three levels of risk — minimal, moderate, and high — I'd been able to check off minimal risk every day after caring for patients. Yet on October 23, 2014, I entered Bellevue Hospital as New York City's first Ebola patient.
Though I didn't know it then — I had no television and was too weak to read the news — during the first few days of my hospitalization, I was being vilified in the media even as my liver was failing and my fiancée was quarantined in our apartment. One day, I ate only a cup of fruit — and held it down for less than an hour. I lost 20 lb, was febrile for 2 weeks, and struggled to the bathroom up to a dozen times a day. But these details of my illness are not unique. For months, we've heard how infected West Africans, running high fevers and too weak to move, were dying at the doorsteps of treatment centers. We've seen pictures of dying children crippled by vomiting and diarrhea and unable to drink.
Yet for clinicians, striving and repeatedly failing to cure Ebola is brutal, too. The Ebola treatment center in Guéckédou, Guinea, was the most challenging place I've ever worked. Ebola is frightening not just because of its high fatality rate, but also because of how little we know about it. We cannot explain exactly what it does to our bodies, nor tell patients who survive it how it may affect them in the future. As a clinician and epidemiologist, I've worked in places just miles from active conflict and managed to grow

used to the sight of soldiers and the sound of gunfire. But this microscopic virus, an invisible enemy, made me uneasy.

While in Guinea, I often woke up sweating in the middle of the night, my heart racing. I might have felt warm, but my thermometer would read 97.7°F — perhaps it was broken? I started diagnosing myself with gastritis, amebiasis, peptic ulcer disease. Though I understood the connection between psychological stress and physical pain, I'd never experienced it like this. As an emergency physician, I try to approach challenging situations rationally and remain calm under pressure. But my work made it hard for me to relax and feel like myself.

Nevertheless, when I was at the treatment center, I was fueled by compassion and the immense challenge of caring for patients with Ebola. I'd never felt so deeply that my decisions could have a measurable impact on other people's lives. Difficult decisions were the norm: for many patients, there were no applicable algorithms or best-practice guidelines. Creating safe discharge plans for pregnant Ebola survivors in their third trimester or advising lactating mothers when it was safe to resume breast-feeding required hours of discussion and planning with colleagues, health promoters, and patients. Every day, I looked forward to putting on the personal protective equipment and entering the treatment center. No matter how exhausted I felt when I woke up, an hour of profuse sweating in the suit and the satisfaction I got from treating ill patients washed away my fear and made me feel new again. Yet I also remember the calm that settled over me the last time I left the center, knowing that I'd no longer be exposed to Ebola. I left Guinea focusing on the socially trying 21 days ahead of me.

Back in New York, the suffering I'd seen, combined with exhaustion, made me feel depressed for the first time in my life. I slept long hours and had a hard time connecting with old friends. I became fearful of the incredibly remote possibility that I could become sick and infect my fiancée, the person I love the most. Touching others and shaking hands — forbidden actions throughout West Africa — still made me uncomfortable. Twice a day, I held my breath in fear when I put a thermometer in my mouth. I did all this worrying well before I ever had a fever or showed any symptoms of Ebola.

The morning of my hospitalization, I woke up knowing something was wrong. I felt different than I had since my return — I was more tired, warm, breathing fast. When I took my temperature and called to report that it was elevated, in some bizarre way I felt almost relieved. Although my worst fear had been realized, having the disease briefly seemed easier than constantly fearing it.

My activities before I was hospitalized were widely reported and highly criticized. People feared riding the subway or going bowling because of me. The whole country soon knew where I like to walk, eat, and unwind. People excoriated me for going out in the city when I was symptomatic, but I hadn't been symptomatic — just sad. I was labeled a fraud, a hipster, and a hero. The truth is I am none of those things. I'm just someone who answered a call for help and was lucky enough to survive.

I understand the fear that gripped the country after I fell ill, because I felt it on a personal level. People fear the unknown, and fear in measured doses can be therapeutic and inform rational responses, but in excess, it fosters poor decision making that can be harmful. After my diagnosis, the media and politicians could have educated the public about Ebola. Instead, they spent hours retracing my steps through New York and debating whether Ebola can be transmitted through a bowling ball. Little attention was devoted to the fact that the science of disease transmission and the experience in previous Ebola outbreaks suggested that it was nearly impossible for me to have transmitted the virus before I had a fever. The media sold hype with flashy headlines — "Ebola: `The ISIS of Biological Agents?'"; "Nurses in safety gear got Ebola, why wouldn't you?"; "Ebola in the air? A nightmare that could happen"[1-3] — and fabricated stories about my personal life and the threat I posed to public health, abdicating their responsibility for informing public opinion and influencing public policy.

Meanwhile, politicians, caught up in the election season, took advantage of the panic to try to appear presidential instead of supporting a sound, science-

based public health response. The governors of New York and New Jersey, followed by others, enacted strict home quarantine rules without sufficiently considering the unintended side effects. The threat of quarantine may cause sick people to defer seeking treatment, and both nationals of affected countries and health care responders returning from those countries may alter their travel plans or misreport their exposure to avoid quarantine. Implementing restrictions that don't accord with the recommendations of the Centers for Disease Control and Prevention[4] also undermines and erodes confidence in our ability to respond cohesively to public health crises. At times of threat to our public health, we need one pragmatic response, not 50 viewpoints that shift with the proximity of the next election. Moreover, if the U.S. public policy response undermined efforts to send more volunteers to West Africa, and thus allowed the outbreak to continue longer than it might have, we would all be culpable.

Instead of being welcomed as respected humanitarians, my U.S. colleagues who have returned home from battling Ebola have been treated as pariahs. I believe we send the wrong message by imposing a 21-day waiting period before they can transition from public health hazard to hero. As a society, we recognize the need for some of our best-trained physicians and public health professionals to participate in a potentially fatal mission because failing to stop the epidemic at its source threatens everyone. We should also have faith that these professionals will follow proven, science-based protocols and protect their loved ones by monitoring themselves. It worked for me, and it has worked for hundreds of my colleagues who have returned from this and past Ebola outbreaks without infecting anyone.

For many politicians, the current Ebola epidemic ended on November 4, 2014, the day of midterm elections (and, coincidentally, the day my fever broke). For the U.S. media, it ended a week later, when I walked out of Bellevue Hospital and the country was officially Ebola-free. But the real Ebola epidemic still rages in West Africa. The number of new cases is stabilizing in some areas and declining in others, but more than 23,000 people have been infected,[5] and many are still dying from this disease.

When we look back on this epidemic, I hope we'll recognize that fear caused our initial hesitance to respond — and caused us to respond poorly when we finally did. I know how real the fear of Ebola is, but we need to overcome it. We all lose when we allow irrational fear, fueled in part by prime-time ratings and political expediency, to supersede pragmatic public health preparedness.



▶ **References are available at source's URL.**

**Source Information**

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# Clinical Management of Potential Bioterrorism-Related Conditions

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N Engl J Med 2015; 372:954-962 March 5, 2015
Source: http://www.nejm.org/doi/full/10.1056/NEJMra1409755

In this article, we review the clinical management of deliberate infection with several pathogens of greatest bioweapons concern. On the basis of historical incidents coupled with information on ease of dissemination, contagiousness, mortality rates, public health impact, ability to engender panic, and the need for special preparedness,[1-3] the Centers for Disease Control and Prevention (CDC) stratifies pathogens and toxins into three risk categories — A, B, and C — with category A meriting the highest level of concern and preparedness.[4,5] In this review, we consider diseases that are caused by category A agents for which there are high-quality clinical data in the unclassified literature. The category A viral hemorrhagic fever viruses are beyond the scope of this review.

## Anthrax

Naturally occurring anthrax has been known since antiquity and is found worldwide. It has also been used as a bioweapon: there were 22 anthrax cases and 5 deaths after the 2001 attacks in which anthrax spores were sent through the U.S. mail.6 Anthrax is caused by infection with the spore-forming, exotoxin-producing, gram-positive bacillus *Bacillus anthracis*. It is a disease of herbivores that ingest spores present in the soil that then germinate in the gut. In humans, three forms of anthrax are recognized: cutaneous (the most common), gastrointestinal, and inhalational (the most deadly).7 After the 2009–2010 European outbreak linked to heroin injection, a fourth type, injectional, was recognized.8 In all forms, the clinical manifestations are primarily caused by the toxins secreted by the vegetative bacterium.7,9

### Cutaneous Anthrax


The most common and least lethal form of anthrax, cutaneous anthrax occurs after spores penetrate breaks in the skin and germinate. After a 1-day to 12-day incubation period, a pruritic papule appears at the site of inoculation, progresses to become a vesicle or pustule, and finally becomes the characteristic painless, coal-black eschar from which the disease derives its name.

Panel A shows a cutaneous anthrax lesion. Panel B is a chest radiograph of a patient with anthrax, showing mediastinal widening and pleural effusions. Panel C shows a smallpox rash. Panel D shows a patient with bubonic plague with axillary lymphadenopathy. Panel E shows paralysis in a patient with botulism. Panel F shows a tularemia skin ulcer. Images courtesy of the CDC Public Health Image Library.

Marked edema of the affected region is present, as well as lymphadenopathy and fever. When untreated, cutaneous anthrax carries a mortality rate of less than 1%, but in rare cases it can disseminate throughout the body and produce high lethality.9

### Gastrointestinal Anthrax

Gastrointestinal anthrax occurs after ingestion of vegetative *B. anthracis* bacteria from the meat of infected animals. The disease is divided into two phases: oropharyngeal and lower gastrointestinal. After an incubation period of 3 days, oral or esophageal ulcers, cervical lymphadenopathy, and dysphagia occur. Fever and constitutional symptoms are also present. Lower gastrointestinal involvement is signaled by the appearance of abdominal pain, nausea, vomiting, bloody diarrhea, and abdominal distention. Ascites and inflammatory changes in the bowel wall may be present and visible on imaging. Mortality can reach 60% if the disease is untreated.7,10

### Injectional Anthrax

Injectional anthrax is characterized by skin lesions similar to those seen in “skin-popping” drug users. These lesions may progress rapidly and require surgical débridement.

Dissemination with systemic symptoms, including meningitis and shock, may occur. Unlike cutaneous anthrax, injectional anthrax is not associated with eschar formation on the skin, and the mortality, even with treatment, is considerably higher, at 34%.11

### Inhalational Anthrax

The most lethal form of anthrax, and the form that would follow an intentional aerosol release of spores, inhalational anthrax results from the inhalation of bacterial spores that later germinate in the lung. The incubation period of inhalational anthrax can be as short as 1 day; has been as long as 6 weeks, in the case of the Sverdlovsk outbreak12; and has also been as long as 9 weeks in experimentally exposed monkeys.13 Disease onset begins with nonspecific influenza-like symptoms, with the exception that rhinorrhea is absent.14 After the disease progresses through this stage, which lasts hours to days, a severe advanced phase occurs and includes high fever, shock, and respiratory distress. Inhalational anthrax does not cause pneumonia but nevertheless can progress to the acute respiratory distress syndrome. Hemorrhagic mediastinitis, as well as toxin-laden pleural and pericardial effusions, can be present.15 Spread of the disease to the meninges, with resultant hemorrhagic meningitis, is a frequent complication of systemic forms of anthrax, occurring in up to 50% of cases16; this complication confers a higher degree of mortality. In the 2001 attacks, all persons with meningitis died, a finding consistent with other cases.17 Traditionally, inhalational anthrax has carried a 90% case fatality rate; however, during the 2001 attacks, the case fatality rate was halved, to 45%.6 The reason for the decrement in mortality is probably multifactorial and includes the benefits of modern critical care, the drainage of toxin-laden pleural effusions, and the use of antimicrobial therapies.

### Considerations for Anthrax in Special Populations

Children and pregnant women are populations that may require special consideration. In a recent systematic review of 20 natural cases — most of which were cutaneous — reported in pregnant women, high rates of maternal and fetal death were noted.18 It is unclear whether this represents a heightened proclivity for severe disease among pregnant women or a reporting bias. A systematic review of 73 pediatric cases, most of which were cutaneous or gastrointestinal, yielded no striking differences in the presentation of anthrax in children, as compared with adults.19



### Diagnosis of Anthrax

Although clinical suspicion is of utmost importance, laboratory confirmation is required for diagnosis, because the clinical findings in anthrax may overlap with those of other infections. *B. anthracis* grows rapidly in culture, and patients with systemic disease can be identified with the use of routine blood cultures. Because other bacillus species are frequent contaminants, there is the potential for delayed diagnosis if results are disregarded. Cultures from skin, ascites, pleural fluid, cerebrospinal fluid, and pericardial fluid may be positive. Biopsy can also be used to identify cases of cutaneous anthrax. A serologic test that has been cleared by the Food and Drug Administration (FDA) is available, but it does not yield positive results until late in the disease course. Reference laboratories, such as a state health laboratory, can perform definitive testing, including polymerase-chain-reaction (PCR)–based assays.9

Chest imaging may reveal a widened mediastinum, pleural effusions, or both, as well as apparent infiltrates due to effusions, atelectasis, and changes consistent with the early phase of the acute respiratory distress syndrome; in addition, many patients may have characteristic hyperdense (hemorrhagic) mediastinal lymphadenopathy on unenhanced computed tomography of the chest. An echocardiogram may reveal a pericardial effusion.9

Laboratory studies may reveal hemoconcentration, abnormal transaminases, anemia, thrombocytopenia, and coagulopathy, depending on disease severity. Lumbar puncture is required to rule out meningitis.9 There are decision support tools available to facilitate the diagnosis of anthrax after a known release of the bacillus.20

### Treatment of Anthrax

Several antimicrobial agents have activity against *B. anthracis*, although concerns regarding engineered drug resistance influence the choice of treatment regimens.2

Because the disease is toxin-mediated, therapies that inhibit protein synthesis or disable toxins are preferred in the published CDC guidelines.21

The form of the disease and context of exposure (natural vs. intentional) determine the specifics of treatment. Treatment regimens can be divided into those for systemic disease and those for limited cutaneous disease.21

Uncomplicated cutaneous anthrax can be treated with an oral fluoroquinolone (ciprofloxacin, levofloxacin, or moxifloxacin) or doxycycline. Penicillin can be used if the isolate is known to be susceptible. The recommended duration of treatment is 7 to 10 days; however, a recent study suggests that shorter courses for naturally occurring cases are effective.22 In the setting of an intentional attack, in which inhalation of spores may also have occurred, the duration should be extended to 60 days to cover the full incubation period of inhalational anthrax. 21

Ideally, systemic forms of anthrax should be treated in an intensive care unit, where interventions such as mechanical ventilation, hemodynamic monitoring, fluid resuscitation, vasopressor support, prophylaxis for deep-vein thrombosis, and prophylaxis for gastrointestinal bleeding can be provided, consistent with the current sepsis protocols.23 Anthrax-specific treatments include combination antimicrobial therapy. If meningitis has not been ruled out, the CDC recommends a regimen including a fluoroquinolone, such as ciprofloxacin; a drug that inhibits protein synthesis, such as linezolid; and a drug that penetrates the central nervous system, such as meropenem. If meningitis has been ruled out with the use of a lumbar puncture, a two-drug regimen that includes a fluoroquinolone plus linezolid or clindamycin is recommended. Glucocorticoid treatment could be initiated for anthrax meningitis in accordance with the protocols for bacterial meningitis. The treatment duration is 2 to 3 weeks.21

Because historical studies of anthrax showed benefit with the use of antiserum, modern antibody therapies directed against anthrax toxins have been developed as adjunctive treatment. Two antibody-based therapies are available: raxibacumab and anthrax immune globulin. Raxibacumab is an FDA-approved monoclonal antibody targeted at the protective antigen component of the toxins and is administered in a single dose. In studies in animals, the use of raxibacumab without the concomitant use of antimicrobials was highly protective against lethal disease.24 However, when raxibacumab was combined with antimicrobials, the protective effect was no longer significant, although a trend in favor of the effectiveness of the therapy was apparent.21 Similar findings were seen with anthrax immune globulin.21,25 The CDC recommends antitoxin treatments in cases of systemic anthrax. 21 However, it is difficult to determine what added benefit they confer for patients who are effectively treated with antimicrobials.



Another recommended adjunctive therapy is drainage of pleural effusions, ascites, and pericardial effusions, all of which are toxin-laden. In a historical review, such treatment of pleural effusions was shown to be partly responsible for the diminished fatality rate in modern cases of anthrax.26 Surgical resection may be required in cases of gastrointestinal and injectional anthrax.21

Anthrax does not spread from person to person. Standard precautions are sufficient for infection control.9

### Prevention of Anthrax

Anthrax vaccine adsorbed (AVA) is the FDA-licensed vaccine used for the prevention of anthrax. AVA was initially administered in a series of six subcutaneous injections followed by annual booster injections. A randomized clinical trial, however, showed noninferior immunogenicity results when five intramuscular injections were used.27 The intramuscular regimen is now the recommended method of vaccination. Evidence suggests that this schedule may be further simplified.28 Other anthrax vaccines are in development.

For postexposure prophylaxis, AVA would probably be recommended for off-label (or Emergency Use Authorization) use in a three-dose schedule21 on the basis of studies in animals.29 Antimicrobial therapy is coupled with vaccination for postexposure prophylaxis; ciprofloxacin and doxycycline are the preferred antimicrobials. The duration of prophylaxis, derived from the longest germination time of inhaled spores, is 60 days.21 After the 2001 anthrax attacks, approximately 10,000 persons received antimicrobial prophylaxis and had no resultant disease, despite compliance rates of less than 50%; this suggests that some modification

of antibiotic recommendations is possible.30 On the basis of studies in animals, raxibacumab can also be used as single-agent postexposure prophylaxis when no other option is available,21,24 although the circumstances in which ordinary postexposure prophylaxis could not be used are limited.

## Smallpox

Smallpox, a viral disease, has the distinction of being the only human infectious disease that has been eradicated. Because of this success, routine vaccination ceased, which allowed immunity to wane and has created a large susceptible population, should the virus be released from a laboratory. A recent study, however, indicates that some residual immunity may remain in persons vaccinated in the past.31

### Cardinal Features of Smallpox

Infection with the smallpox virus, variola, occurs through droplet or aerosol exposure. After an incubation period of 10 to 14 days, a prodrome of fever and constitutional symptoms begins. Rash appears 1 to 4 days after the onset of fever. The rash is characteristically centrifugal, with lesions progressing synchronously from macules to papules to vesicles (umbilicated) to pustules to scabs over a period of a couple of weeks. A person is contagious during the period when the rash is present, and infectiousness ceases after the scabs have sloughed. The fatality rate of smallpox is approximately 25%, and severe complications such as blindness can also occur. 32

### Diagnosis of Smallpox

The initial suspicion of smallpox infection is likely to arise from the presence of a characteristic febrile rash. Definitive diagnosis is based on serologic testing, cell culture, PCR, or electron microscopy performed at reference facilities. Because a single case represents a public health emergency, authorities should be notified immediately on initial suspicion.32

### Treatment and Prevention of Smallpox

There are currently no FDA-licensed treatments for smallpox, although two compounds are in late development stages (tecovirimat and liposomal cidofovir).33 Indications for their use are not yet available, but their availability during an outbreak would probably be through emergency-use authorization. The prevention of smallpox is based on the efficacy of the vaccine and is derived from the strategy of surveillance and containment pursued during the global eradication campaign.



**Table 1. Dermatologic Vaccinia Reactions.**

| Reaction | Feature or Features |
|---|---|
| Progressive vaccinia | Necrosis in the area of vaccination |
| Eczema vaccinatum | Local or generalized spread of vaccine virus in persons with eczema |
| Generalized vaccinia | Skin lesions that are remote from the vaccination site |

The current vaccine, ACAM2000 (Sanofi Pasteur Biologics), is based on the traditional Jenner vaccine (using the related virus, vaccinia) and is administered in a single percutaneous dose. Vaccination after exposure — but before the rash is present — can abort or attenuate the clinical manifestations of the disease. This live vaccine is contraindicated for persons with severe immunosuppression, and newer-generation vaccinations have been developed for these populations. 34

The vaccine is not without risk: it is estimated that pericarditis or myocarditis may develop in 5.7 per 1000 vaccinees.35 In addition, eczema vaccinatum, generalized vaccinia, progressive vaccinia, and vaccinia encephalitis can also occur.36 (Table 1) Patients with eczema vaccinatum, generalized vaccinia, or progressive vaccinia benefit from the administration of vaccinia immune globulin and possibly antiviral therapy.37,38 Accidental inoculation of the vaccine from the administration site to the eye or to other persons can also occur.36

Newer-generation vaccines (LC16 and Imvamune [Bavarian Nordic]) exist and have shown promise in safety and immunologic studies involving populations for whom the traditional vaccine is contraindicated. Neither vaccine is FDA-approved for use, although Imvamune is stockpiled and would be expected to be available through emergency-use authorization.39,40
Smallpox is contagious. Patients with smallpox should be placed under airborne precautions.32

## Pneumonic Plague

Pneumonic plague is caused by infection with the fleaborne bacterium *Yersinia pestis*. This organism, found worldwide and responsible for the "Black Death," can cause several forms of illness: bubonic (the most common), septicemic, and pneumonic plague.41 Because of the focus of this review, only pneumonic plague is discussed.

### Cardinal Features of Pneumonic Plague

In a deliberate attack, primary pneumonic plague — rather than secondary spread from bubonic or septicemic forms — would occur 1 to 3 days after inhalation of the released bacterium or after droplet transmission from another infected person. The initial presentation of pneumonic plague is nonspecific and is difficult to differentiate from an ordinary pneumonia in its early stages. Hemoptysis, a unique feature, might be present, and rapid progression to respiratory failure and death would occur with greater frequency than in ordinary pneumonias.41

### Diagnosis of Pneumonic Plague

Because the clinical features of pneumonic plague are nonspecific, diagnosis is largely based on the results of culture. Sputum, blood, or lymph-node aspirates could yield positive culture results. Chest radiography would reveal a severe pneumonic process. Serologic testing can also be useful but would not play much of a role during acute illness.41 Rapid antigen tests are available in regions in which plague is endemic, but none are FDA-approved.



### Treatment and Prevention of Pneumonic Plague

The treatment of pneumonic plague involves a 10-day course of an aminoglycoside antibiotic agent, such as streptomycin or gentamicin. Doxycycline is considered a second-line treatment.41 However, a randomized, controlled trial of potential treatments for bubonic plague revealed equivalency between gentamicin and oral doxycycline; it is unclear whether these results can be extrapolated to pneumonic plague.42 There has been increased interest in the use of fluoroquinolones as primary treatment in mass-casualty settings.42 A 7-day course of doxycycline or ciprofloxacin would be used as postexposure prophylaxis.41 No vaccine against plague is available. Because pneumonic plague can be transmitted from person to person through respiratory droplets, droplet precautions must be implemented for all patients.41

## Botulism

Botulism is the result of toxin elaboration by the gram-positive, spore-forming bacillus *Clostridium botulinum*. Several forms of botulism occur, including infantile, wound, gastrointestinal, iatrogenic, and inhalational botulism. In a deliberate attack, inhalational botulism would be anticipated, although gastrointestinal botulism is also a possibility. Because of the dearth of naturally occurring cases of inhalational botulism, gastrointestinal botulism is taken as a surrogate for the pathophysiological aspects of inhalational botulism.43

### Cardinal Features of Inhalational Botulism

Approximately 6 hours after the inhalation of botulinum toxin, persons exposed would have a descending paralysis with symptoms of cranial-nerve dysfunction, such as diplopia, dysphagia, pupillary dilation, and ptosis. This would progress to ventilatory failure necessitating mechanical ventilation. Fever and altered mental status are absent.43

### Diagnosis of Botulism

The diagnosis of botulism is largely clinical and is confirmed with the use of mouse bioassays, through culture, or through laboratory detection of the toxin in contaminated materials, blood, or stool. New methods of diagnosis are being developed. Nerve-conduction studies can also be used. Newer methods involve the use of PCR-based detection.43

There are currently eight known toxin types (A through H) that can be elaborated by *C. botulinum*, and knowing which type is present can provide epidemiologic clues regarding the source of exposure.44 For example, toxin type G does not cause disease naturally in humans, and toxin type E is found almost exclusively in seafood.45

### Treatment of Botulism

The treatment of botulism involves the administration of the equine-derived heptavalent (A–G) antitoxin, which has been approved by the FDA and is available exclusively from the CDC.43 In a deliberate attack, the bivalent human-derived antitoxin, BabyBIG (Baxter Healthcare), which is used for infant botulism, should not be administered. A diagnosis of inhalational botulism should prompt attention to any signs of impending respiratory failure, along with consideration of admission to an intensive care unit and initiation of mechanical ventilation. In addition, given the equine origin of the antitoxin, there is the potential for hypersensitivity. There is no vaccine against botulinum toxin, although the antitoxin may induce host immunity to the toxin and therefore may be efficacious when used as a vaccine.46 A program for vaccination of workers at high risk has ended.47 Botulism is not contagious, and standard precautions are sufficient for infection control.43

## Tularemia

Tularemia is caused by infection with *Francisella tularensis*, a gram-negative bacillus that occurs naturally in many parts of the United States. Colloquially known as “rabbit fever,” the infection can be transmitted from contaminated animals or through tick bites.48 The infectious dose is very low. Several forms of tularemia occur; however, a deliberate release would be expected to cause pneumonic tularemia rather than the more common ulceroglandular form .



### Cardinal Features of Pneumonic Tularemia

After an average incubation period of 3 to 5 days, pneumonic tularemia would manifest with signs and symptoms similar to those of community-acquired pneumonia, including fever, cough, and dyspnea. However, septic shock, acute respiratory distress syndrome, and respiratory failure can ensue. Because there is no distinguishing characteristic of pneumonic tularemia, clinical suspicion must be high.48

### Diagnosis of Tularemia

Tularemia can be diagnosed with the use of culture, although enriched culture medium must be used. Immunofluorescence staining, serologic testing, and PCR can also be used for diagnosis. In addition, because of the highly infectious nature of tularemia bacilli, laboratory personnel must be alerted, so that they can work in proper biosafety conditions. Chest imaging results in tularemia are nonspecific and would reveal changes consistent with pneumonia.48

### Treatment and Prevention of Tularemia

The treatment of tularemia consists of a 10-day course of an aminoglycoside antibiotic, such as streptomycin or gentamicin. Ciprofloxacin and doxycycline are alternatives. For postexposure prophylaxis, a 7-day course of doxycycline or ciprofloxacin can be prescribed. There is no vaccine for tularemia. Standard precautions are adequate for infection control.48

### Conclusions

The purpose of this review is to highlight clinically useful issues related to CDC category A pathogens. Because most of these conditions can occur naturally, suspicion for bioterrorism depends on clinicians being alert to unusual patterns, such as unexplained clusters of infection (Table 2).

Table 2. Selected Features of the Conditions Discussed.

| Condition | Contagious | Clinical Form or Forms | Vaccine Available | Treatment |
|---|---|---|---|---|
| Anthrax | No | Three primary forms: cutaneous, inhalational, and gastrointestinal | Yes | Combination antimicrobials, effusion drainage, monoclonal antibody |
| Smallpox | Yes | Centrifugal rash with same-stage lesions | Yes | Supportive treatment |
| Plague | Yes | Pneumonic or bubonic | No | Antimicrobials |
| Botulism | No | Inhalational or gastrointestinal | No | Antitoxin |
| Tularemia | No | Inhalational or ulceroglandular | No | Antimicrobials |

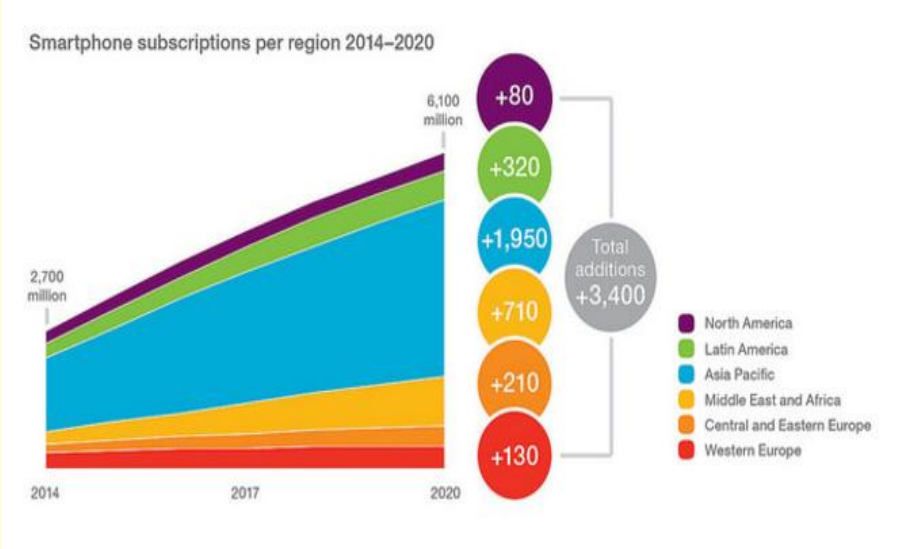
# Tracking diseases in the digital age

**By Marcel Salathé**

Source: https://agenda.weforum.org/2015/03/tracking-diseases-in-the-digital-age/

Being stuck in bed, waiting for the flu to run its course, is pretty unpleasant. And it's also really boring. What else is there to do but search for symptoms online, and read entries about the flu on Wikipedia or WebMD or post messages on Facebook and Twitter about how sick you are?

A lot of people get the flu every year and many of them do exactly that: they search for relevant information, and share their misery with the rest of us. The consequence is remarkable: a description of their symptoms, time-stamped and perhaps even geo-tagged, is online. Which means that the internet has a rather detailed picture of the health of the population, coming from digital sources, through all of our connected devices, including smartphones.




**This is digital epidemiology: the idea that the health of a population can be assessed through digital traces, in real time.**

Projected smartphone subscriptions 2014 to 2020.

It has the potential to be a powerful boon for traditional epidemiology. Researchers have already started to develop methods and strategies for using digital epidemiology to support infectious disease monitoring and surveillance or understand attitudes and concerns about infectious diseases. But much more needs to be done to integrate digital epidemiology with existing practices, and to address ethical concerns about privacy. By 2020, there will be 6.1 billion smartphone users, so it is high time to get serious about digital epidemiology.

**Digital epidemiology goes mainstream: Google flu trends**

Google Flu Trends was one of the first popular examples of digital epidemiology. Launched in 2008 to help predict flu epidemics, it was based on a very simple idea: when people come down with the flu, they will often turn to the internet and search for information about their symptoms.

In 2009, researchers from Google and the US Centers for Disease Control and Prevention (CDC) published a paper with the apt title "Detecting influenza epidemics using search engine query data," outlining a method for using search queries to recognize flu outbreaks.

For many years, Google Flu Trends has served as a prime example of digital epidemiology. It embodies both the opportunities and the challenges the field faces. While it has undoubtedly popularized the idea of using digital data to derive epidemiological insights, Google Flu Trends has also demonstrated that this is no easy task.

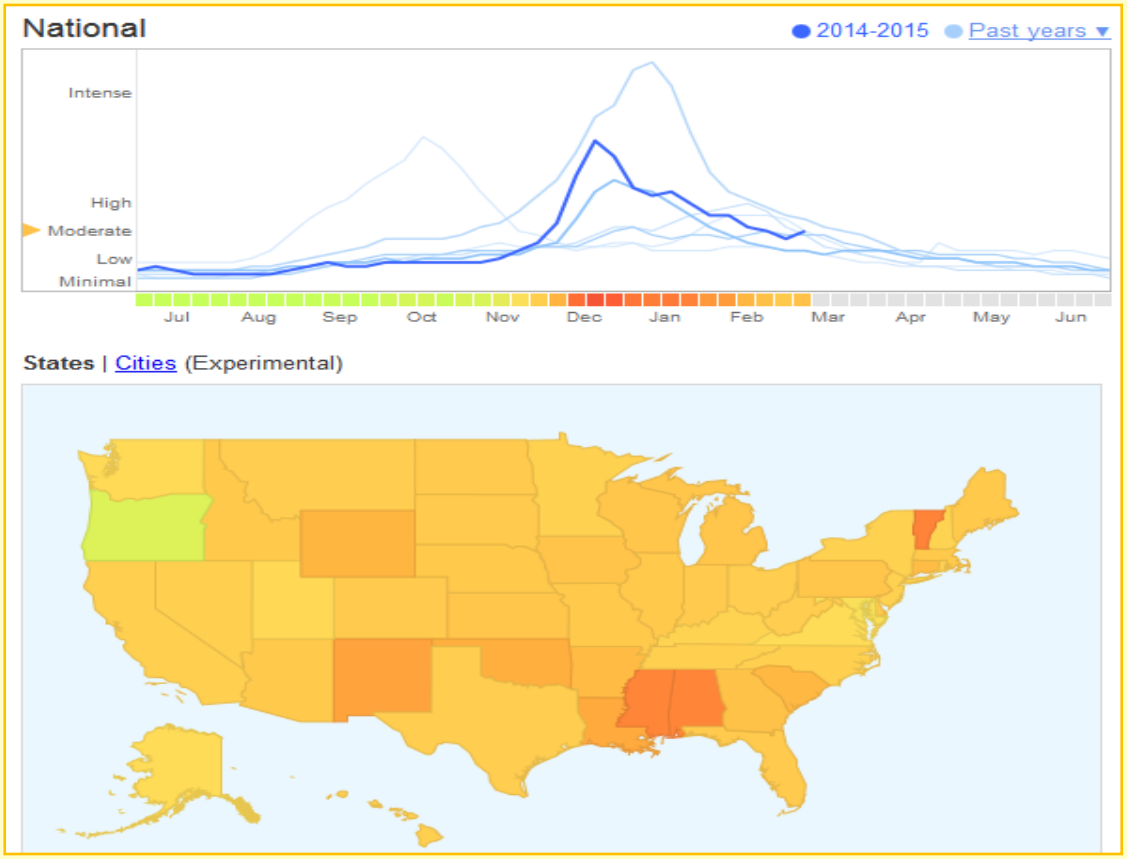
For starters, its estimates were not always very accurate. Indeed, during the 2012-2013 flu season in the northern hemisphere, it overestimated the flu prevalence by up to 100% (relative to CDC numbers). And the estimates cannot be reproduced easily – Google controls access to Google data, of course.

For this reason alone, many researchers have in the past few years turned to alternative data sources. Twitter has been a particularly popular source, because tweets are public by default, and because Twitter data can be accessed by anyone.

**Twitter and Wikipedia are becoming data sources for digital epidemiology**

For instance, a study from 2011 used data from Twitter to measure public interest and concern about the influenza H1N1 virus and to track disease activity. Another study from 2014 showed that incorporating data from Twitter into CDC influenza-like illness models can reduce forecasting errors. Twitter has also been used to assess health sentiments such as those about vaccination, and to monitor drug safety.

And Wikipedia access logs – open accessible data about how often certain Wikipedia pages



were accessed on the web – have recently provided a rich data source for disease monitoring and forecasting. Research suggests that examining Wikipedia access logs could support traditional disease surveillance for influenza.

**The doctor is in your pocket: epidemiology goes mobile**

But it's not just publicly accessible data from Twitter and Wikipedia that have been harnessed for epidemiology. Anonymized mobile phone data have provided unparalleled insights into how the movement of people affects disease dynamics.

For example, cell phone data have been used to measure how human travel patterns spread malaria and to rapidly estimate population movements during disasters and outbreaks, such as the earthquake and subsequent cholera outbreak in Haiti in 2010.

Apps that allow the self-diagnosing of diseases are not too far away. With the help of a small attachment, a smartphone can already be turned into a mobile clinic able to diagnose multiple infectious diseases in minutes.

**Traditional + digital = a better picture**

Public health is traditionally based on data collected from health-care providers, who collect data from sick patients. This produces a very patchy picture. It only includes those populations who have access to health care or who decide to go to the doctor in the first place. And it mostly includes information about reportable diseases, missing out on a huge array of other illnesses. Last but not least, it largely misses out on information about health behaviors, sentiments and opinions.

Digital epidemiology can add more information to that picture and fill in some of the blanks.

Of course, digital epidemiology won't capture the entire population. But, neither do traditional ways of gathering epidemiological data. With the vast majority of the world getting online, populations who slipped under the radar of public health will become more visible, which is crucial in a world where diseases anywhere today are diseases everywhere tomorrow. And it will also enable us to fulfill the mantra of "early detection, early response" by building digital warning systems designed to stop pandemics in their tracks.

**Don't forget privacy and surveillance**

Digital epidemiology faces ethical challenges about surveillance and privacy as well. Ill health is stigmatized – socially and economically – in all societies. And people are more and more concerned about surveillance and information privacy. As digital epidemiology grows, we need to keep these ethical considerations at the forefront.



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# German visitor to UAE contracts MERS

Source: http://www.thenational.ae/uae/german-visitor-to-uae-contracts-mers

March 09 – A German man who travelled to Abu Dhabi last month is in hospital after contracting Mers.

The 65-year-old, who returned to Germany on February 8, was taken to hospital after developing symptoms shortly after arriving home, the World Health Organisation (WHO) said. Mers-CoV was confirmed in two laboratory tests, the most recent on March 5.

WHO said the man was is in a severe but stable condition. "All necessary, recommended, preventive and control measures have been applied since February 23 at the hospital, where he is being treated.

"Contact tracing of all possible contacts is ongoing for this case," WHO said. No additional cases have yet been found.

Last month in Abu Dhabi, a 38-year-old expatriate died after contracting Mers. It was the first reported case in the UAE in more than six months. According to WHO, the man had no chronic or long term medical conditions and no history of exposure to other known risk factors in the 14 days before the onset of symptoms. **The last known cases of Mers in the UAE were reported to WHO on July 14**.

Middle East Respiratory Syndrome is a virus that causes acute respiratory illness with symptoms of fever, cough, shortness of breath and difficulty breathing. **More than 85 per cent of cases were reported in Saudi Arabia.**
**WHO has been notified of 1,041 confirmed cases, of which 383 have proved fatal.**

## Bio-Terrorism in India: Are we capable of handling it?

Read more at: http://www.oneindia.com/india/bio-terrorism-in-india-are-we-capable-of-handling-it-1677618.html

March 09 - The dean of the Mysuru Medical College and Research Institute, Krishnamurthy at a recent event made an interesting and yet startling point when he said that India is not prepared to face the threat of bio-terrorism. He also pointed out that there is an urgent need to train doctors, nurses and para medical staff to face an eventuality resulting out of bio-terrorism. Terrorists tend to use biological agents as they are difficult to detect and agents such as the smallpox virus can spread from person to person, he also noted. Is India capable of bio-terrorism?

**How serious is the threat of bio-terrorism in India?**
There are enough and more reports both nationally and internationally to show that India faces the risk of bio-terrorism. A recent document by Wikileaks had also suggested that India faces a potential risk of bio-terrorism. The kind of agents that can pose a major security risk in bio-terrorism are anthrax, small pox, Viral Hemorrhagic fever, Rabbit fever or Bubonic plague. The use of Hantavirus, SARS, H1N1, HIV/AIDS and also Nipah Virus can be produced easily and could be used as a weapon of mass destruction.

**India on the hit list of bio-terror since 2006**
Terrorist groups have been careful while using bio-terrorism on India. Every major group including the Lashkar-e-Tayiba are capable of unleashing a bio-terror attack on India. However they consider it to be their trump card and hence would wait for an opportune time to use it. It has been stated clearly in Intelligence Bureau reports that the threat of bio-terror is real and not academic. Intelligence reports also state that terror groups could unleash bio-terror in a big way in the years to come and are fully equipped for the same. Nuclear terrorism can be considered to be fiction, but that is not the case of bio-terrorism, the IB report further states.

**Discussing the possibility of using bio-terror**
According to the Intelligence Bureau there has been a lot of chatter that has been picked up where terror groups are seen discussing bio-terror. Groups such as the Al-Qaeda and the Lashkar have been discussing this method of launching attacks. They are getting in touch with scientists from across the world to help them launch such attacks. While there is a lab dedicated to facilitating bio-terror attacks in Khandahar, there has not been concrete evidence of an attack being launched as yet. However the agencies say that while terrorists may use it sparingly India would need to do a lot to stay prepared.

**Was the attack of 1996 bio-terror?**
**In the year 1996 there was a major outbreak of dengue hemorrhagic fever in India.** After several hiccups at first, the situation was brought under control. However till date the investigations have not found how this virus broke into India. The issue was discussed for some time and then forgotten. Successive governments have promised action, but is yet to come up with a disease surveillance network. There have been several proposals that have been made to set up this network which would help track easily the entry of virus into India. However till date no concrete measures have been taken. Moreover there is also an urgent need to train hospital staff across the country to react in the case of such a break out.

**Bio Defence activities in India**

According to a report on Bio Weapons in India prepared by the National Disaster Management Authority there are 400 trained personnel to handle bio-terrorism in India. It is the DRDO which is heading the Research and Development on bio-defence in India. Detection, diagnosis and decontamination are the primary fields that are under focus. Investigation into medical management during a biological attack is also a part of the agenda. During investigations it was found that Anthrax was a serious threat and India is considered an endemic region for animal anthrax. In the year 2012 there were 6 reported deaths due to anthrax. The fight against bio-terror is an ongoing process and steps will have be taken from time to time, the IB says. The IB would provide the intercepts and each case of a virus scare must be treated with utmost seriousness. Moreover in the case of a virus outbreak while the first priority would be to control the problem it is equally important to investigate the source, the IB also points out.

## Seek and destroy: Micromotors rapidly eliminate biothreats on the battlefield

Source: https://www.dvidshub.net/news/156233/seek-and-destroy-micromotors-rapidly-eliminate-biothreats-battlefield#.VP_gkOGTLz5

Scientists at the University of California–San Diego are speeding ahead to provide new protections for the warfighter by detecting and eliminating biothreats on the battlefield.

Principal investigator, Professor Joseph Wang, Dr. Wei Gao and their team, in a research project managed by Dr. Brian Pate of DTRA CB/JSTO, recently developed a micromotor-based approach for rapidly screening, capturing, isolating and destroying anthrax simulant spores with minimal sample preparation.

Micromotors are functionalized with the antibody B. globigii, a species of bacillus found in soil and decomposing organic matter, which recognizes, selectively captures and transports B. globigii spores in complex environmental matrices (e.g. pond scum). Research showed effective and efficient destruction of these anthrax simulant spores as evidenced via the micromotor-induced mixing of a mild oxidizing solution.

A significant benefit to the warfighter on the battlefield, this approach charts a new biodefense capability trajectory for micromotor based multifunctional systems that rapidly destroy biological threats. The full journal article, “Micromotors to capture and destroy anthrax simulant spores,” can be found in the Jan. 8, 2015, edition of Analyst.



## Case Study: Nebraska's Ebola isolation and decontamination approach

Source: http://www.medicalnewstoday.com/releases/290245.php?tw

**The Nebraska Biocontainment Unit (NBU), located at the Nebraska Medical Center, has shared its protocol for Ebola patient discharge, handling a patient's body after death and environmental disinfection in the March issue of the *American Journal of Infection Control*, the official publication of the Association for Professionals in Infection Control and Epidemiology (APIC).**

**Discharge process for a patient treated for EVD**

Patients are discharged after two consecutive blood samples taken 24-hours apart are confirmed undetectable for Ebola virus (EVD). After all surfaces are cleaned and mopped by healthcare workers, the patient dons a clean, disposable gown and takes a 10-minute chlorhexidine-gluconate shower. While showering, the path the patient walked to the shower is mopped with hospital-grade disinfectant. Then the patient dons another clean, disposable gown with shoe covers and is met by a healthcare worker

in full personal protective equipment (PPE), who escorts the patient to the NBU exit corridor. Here the patient undergoes another 10-minute CHG shower before changing into clean street clothes and leaving the facility.

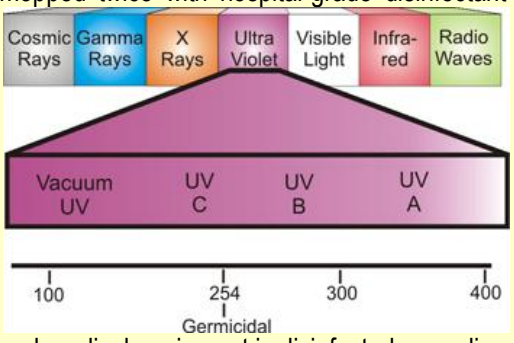
**Body removal for a patient with EVD**

After a patient with EVD dies, the patient is identified by a family member through a video link and then healthcare workers place dressings over the body and wrap it in bed sheets. The body is then moved to a double heat sealed, biosafety level 4 containment bag, and the bag and the bed are then disinfected with bleach. Two healthcare workers in PPE transfer the body into two 18-mil-thick leak-proof, laminated vinyl bags and close, seal, and disinfect the bags. This process is repeated with a second, identical vinyl bag before the body is removed from the hospital to the funeral home, where, after receiving permission from the family, it is cremated.

**Environmental decontamination of isolation unit**

After discharge, the patient room is cleared of

linen and solid waste by personnel in full PPE and the unit is sealed and left undisturbed for 48 hours while 15-19 high-efficiency particulate absorption-filtered air exchanges per hour flow throughout the unit to promote desiccation of EVD. Healthcare workers then decontaminate the unit via manual disinfection **and ultraviolet germicidal irradiation (UVGI).** All floors are mopped twice with hospital-grade disinfectant




and medical equipment is disinfected according to manufacturer recommendations. Four UVGI

generators are used as a final step after all surfaces have been bleach wiped, clustering multiple generators around equipment to reduce shadows. After UVGI, the unit is sealed once again for 48-hours to promote further desiccation. After this, the unit is deemed safe for entry without PPE.

"We acknowledge that our cleaning procedures go well beyond what is required to return the patient care area back to a

safe environment," state the study authors. "However, given the morbidity and mortality of EVD, and the misinformation regarding the spread of the Ebola virus, our additional cleaning measures represent a cost-effective way to ensure safety and address public perception."

## Needle stick-injured Ebola doctor free of virus after vaccination

Source: http://www.medicalnewstoday.com/articles/290333.php?tw

*Having effective postexposure vaccines ready for use, added to physical protection of health workers in contact with Ebola patients, would play a part in containing outbreaks.*

The physician, given the vaccine 43 hours after the needle stick injury, went on to show a clinical syndrome "consistent with vaccination response, and no evidence of Ebola virus infection was detected."


Known as VSVΔG-ZEBOV, the treatment was injected into the doctor-patient's muscle as he was boarded onto a flight back to the US.

During transit 12 hours after the injection, malaise, nausea and fever set in. Care following at the special clinical studies unit of the National Institutes of Health in Bethesda, MD, observed this sequence:

- On arrival, "mild to moderate distress" because of fever, nausea, malaise, muscle pain and chills
- On day 2, reduced fever but continuing severe symptoms accompanied by mild nausea and joint pain (arthralgia)
- Days 3 to 5, symptoms and laboratory abnormalities subsiding
- By day 7, all symptoms completely gone.

Throughout, lab tests also took regular measures of the patient's immune cell, antibody and protein levels - "strong innate and Ebola-specific adaptive immune responses were detected after vaccination," the researchers found.

The 44-year-old American doctor had received his injury when placing a needle into a sharps bin - it "inadvertently punctured two layers of gloves and caused bleeding of the left thumb."

The needle "had just been in direct contact with severely ill Ebola patients" and the exposure was estimated to pose a significant risk of infection for the doctor.

"The patient experienced a transient febrile syndrome after vaccination," says Thomas Geisbert, PhD, in his editorial article about the case. He reiterates the researchers' findings: "Importantly, no evidence of Ebola virus infection was detected, and the vaccine elicited strong innate and Ebola virus-specific adaptive immune responses."

**"Most significantly," Dr. Geisbert adds, the vaccine gave an immune response in the patient at a level that had been shown in tests on primates to confer protection against the virus.**

Laboratory tests on the doctor showed the vaccine expressed the surface glycoprotein of the Ebola virus, which was able to induce a "sufficient level" of a certain type of antibody response to the glycoprotein.

"Although it is not possible to know with absolute certainty" whether the vaccine used to treat this single case of "potential high-risk exposure" had any influence on the patient's survival, Dr. Geisbert says, "this incident serves as an example of how important it is to have safe and effective countermeasures available in sufficient quantities that can be rapidly deployed for emergency use for both medical workers and affected populations."

A number of vaccines and postexposure treatments have made "substantial progress" in animal studies, but advancement of these for human use "is a matter of utmost urgency," Dr. Geisbert adds - none is yet licensed for use in people.

This is just the second time a person has been given VSVΔG-ZEBOV for postexposure treatment; its first use in a human was in 2009 for an Ebola lab worker.

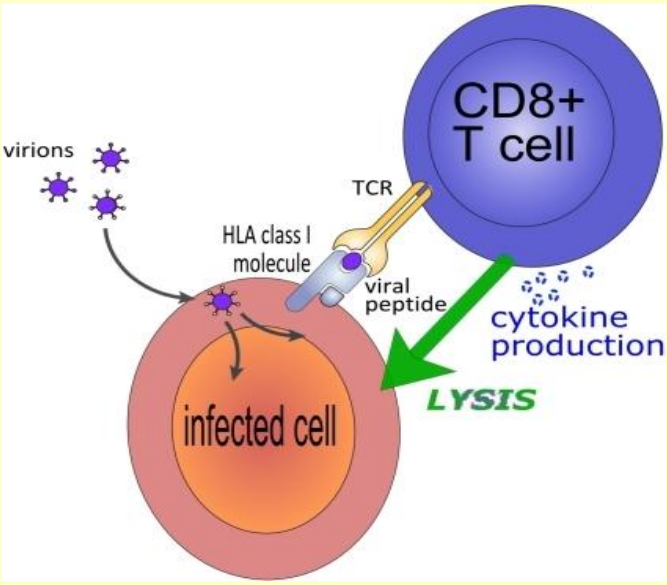
The authors of the present case study - Dr. Mark Mulligan of Emory University in Atlanta, GA, and colleagues - note, however, that four early-phase clinical trials were started in 2014 - although the results are as-yet secret.
The authors also cite a trial that has just begun in Liberia, with enough promise from this confidential information to investigate the vaccine for use in pre-exposure prevention of Ebola - aiming, that is, to protect people who have not been infected with the virus but are at risk.
The authors say there are unknowns in the physician's case that will need to be considered for future experimental treatment.
"In the current patient, a self-limited, moderate to severe clinical syndrome began at 12 hours postvaccination."
"Future decision making about using this experimental vaccine for postexposure vaccination will need to balance the risks of harm from the vaccine or possible Ebola infection (both were unknowns at the time of the patient's exposure) against the possible benefit of vaccination (also unknown at the time of the patient's treatment)."
At the end of January, the World Health Organization said the Ebola fight 'had shifted to ending the epidemic' in the West African countries affected.

## First look at hospitalized Ebola survivors' immune cells could guide vaccine design

Source: http://www.medicalnewstoday.com/releases/290666.php?tw

In the ongoing Ebola outbreak in West Africa, whose death toll is approaching 10,000, little information has been available about how the human immune response unfolds after infection.
Researchers from Emory and the Centers for Disease Control and Prevention have now obtained a first look at the immune responses in four Ebola virus disease survivors who received care at Emory University Hospital in 2014, by closely examining their T cells and B cells during the acute phase of the disease. The findings reveal surprisingly high levels of immune activation, and have implications for the current effort to develop vaccines against Ebola.
**All four patients' immune systems showed strong signs of T and B cell activation, according to a paper to be published in *PNAS*. Some previous research on Ebola virus disease had suggested that immune responses could be impaired.**
"Our findings counter the idea that Ebola virus infection is immunosuppressive, at least in the patients that we were able to study," says lead author Anita McElroy, MD, assistant professor of pediatrics (infectious disease) at Emory University School of Medicine and a guest researcher at CDC's Viral Special Pathogens Branch. "They also demonstrate the value that supportive care may have in enabling the immune system to fight back against Ebola virus infection."
The paper emerged from a collaboration between immunologists at Emory Vaccine Center led by Rafi Ahmed, PhD, Aneesh Mehta, MD and Emory's Serious Communicable Diseases Unit team, and investigators from CDC's Viral Special Pathogens Branch, led by Christina Spiropoulou, PhD. Researchers from La Jolla Institute for Allergy and Immunology contributed to the paper.
"Until now, detailed studies like this in acute Ebola virus disease were logistically challenging," Ahmed says. "Our work only became possible through a close collaboration with the CDC and use of its biosafety level 4 facilities."
Each patient's level of immune activation reflected the relative intensity of their illnesses. Out of the four patients, the first two became very sick, the third was even sicker and required renal replacement therapy and respiratory support, and the fourth had a milder illness in comparison.
While hospitalized, the first three of the patients displayed lymphopenia, or low levels of immune cells in their blood. However, an extraordinarily high proportion of their B and T cells were activated, researchers found.

The immune activation continued even after




the virus became undetectable in the blood and patients had left the hospital, suggesting that Ebola antigens persist in the body for several weeks.

Scientists tracked patients' B cells, important for generating antibodies against the Ebola virus, and cytotoxic CD8+ T cells, which directly kill infected cells.

**The patients' CD8+ T cells targeted several proteins, and a major target was an internal Ebola virus protein called NP.** However, **vaccines now entering clinical trials in Africa contain only the external glycoprotein called GP.** This suggests that NP could be added to existing vaccines to generate stronger T cell responses.

**"CD8+ T cell responses have been associated with vaccine protection against Ebola infection in some animal models,"** McElroy says. "But the relative importance of T cell responses, compared to antibody responses, in driving survival and vaccine efficacy in humans is not known. We anticipate it will be an active area of research in the future."

## One year into the Ebola epidemic: a deadly, tenacious and unforgiving virus

123

Source: http://www.who.int/csr/disease/ebola/one-year-report/introduction/en/

**One year after the first Ebola cases started to surface in Guinea, WHO is publishing this series of 14 papers that take an in-depth look at West Africa's first epidemic of Ebola virus disease.**

This assessment looks at how West Africa's epidemic of Ebola virus disease has evolved over the past year, giving special attention to the situation in Guinea, Liberia, and Sierra Leone. The success stories in Senegal, Nigeria, and likely Mali are also described to show what has worked best to limit onward transmission of Ebola following an imported case and bring the outbreak to a rapid end. The fact that a densely populated city like Lagos was successful in containing Ebola offers encouragement that other developing countries can do the same.

An overview of how the outbreak in the Democratic Republic of Congo evolved and was brought under control underscores the many differences between the outbreaks in West Africa and in equatorial Africa, where all previous outbreaks since the first two in 1976 have occurred.

Key events in the WHO response are outlined to show how initial control efforts were eventually overwhelmed by the wide geographical dispersion of transmission, the unprecedented operational complexity of the outbreaks, and the many factors that undermined the power of traditional containment measures to disrupt transmission chains. These factors are also described.

World Health Organization

In efforts coordinated by WHO, scientists and the pharmaceutical industry have geared up to develop, test, license, and introduce the first Ebola vaccines, therapies, and point-of-care diagnostic tests. As a strong expression of solidarity with the people of West Africa, these groups are attempting to compress work that normally takes two to four years into a matter of months.

Finally, the assessment takes a look at the potential future evolution of the Ebola epidemic. Based on what has been learned during this first year, what critical strategies and interventions will give countries and their partners the best chance of bringing the outbreaks under control?

▶ **Read the report at:**
http://www.who.int/csr/disease/ebola/one-year-report/ebola-report-1-year.pdf?ua=1

# Clinic worker might have been exposed to bioterror bacteria at Tulane research center

Source: http://www.washingtonpost.com/news/morning-mix/wp/2015/03/12/clinic-worker-might-have-been-exposed-to-bioterror-bacteria-at-tulane-research-center-report-says/

An adult female rhesus macaque monkey cuddles with an infant in a pen at the Tulane National Primate Research Center near Covington, La., in this file photo. Five rhesus macaque monkeys at the center were mysteriously infected with a potentially deadly bacteria. (AP Photo/The Times-Picayune, Chuck Cook)

March 12 – For weeks, federal and state officials have scrambled to figure out **how a dangerous bacteria, which is classified as a bioterrorism disease, escaped a laboratory at the Tulane National Primate Research Center.**

Now, the laboratory's troubles have deepened: **tests indicate that a veterinary clinic worker might have been exposed to the bacteria**, a federal official said according to USA Today.

**The burkholderia pseudomallei bacteria causes a disease called Melioidosis,** which can be life-threatening. People and primates can become infected if they come into contact with soil or water where the bacteria lives and grows. It is found predominantly in tropical climates like Southeast Asia and northern Australia where infection rates can be high, according to the Centers for Disease Control and Prevention. But it is not typically in the U.S..

Tulane was conducting vaccine research on the bacteria, according to USA Today. And that requires a biosafety level 3 laboratory facility — the second highest that exists.

**But over the last few months, officials have discovered that the bacteria was released from Tulane's lab and several monkeys who were infected had to be euthanized.**

There is no risk to the general public, the CDC said. But the discovery has raised additional questions about the procedures at several labs that are responsible for highly infectious and in some cases, deadly substances.

All five of the rhesus macaque monkeys that tested positive for the bacteria were treated at Tulane's veterinary clinic, where the health worker was also employed, according to USA Today.

The only commonality among the animals "was their presence in the veterinary hospital during the same period of time," Andrew Lackner, the director of the Tulane center, said in a statement according to ABC News. The veterinary clinic has since been decontaminated.

The monkeys were never part of any research involving the bacteria and were kept in a part of the facility that is not in the same building where the bacteria

was held, USA Today's investigation found:
The CDC and Tulane have said they suspect that the monkeys, which lived in the outdoor breeding colony and away from the lab, were exposed to the bacteria inside the center's veterinary hospital. All of the animals that have tested positive for the bacteria were treated in the hospital sometime between last fall and Feb. 2, when the clinic was decontaminated.
It is not known how the bacteria got into the hospital, which is in a different building about a five-minute walk from where the lab is located.
The clinic worker's test results are still preliminary and will need to be confirmed in subsequent retesting — the results of which will be available by early next week, according to USA Today.
"The amount of antibodies found in the employee was just at the **threshold** for a verified positive result," CDC spokesman Jason McDonald told USA Today in an e-mail. "This level is sometimes found in members of the public, even among those who have no history or knowledge of actual exposure."
It is just the latest troubling mystery involving labs that deal with potentially hazardous materials.
Last year, the CDC acknowledged that it improperly handled samples of agents including anthrax, botulism bacteria, and bird flu on five separate occasions in the last decade at its Atlanta laboratory.
In a separate incident, the Food and Drug Administration said that it discovered missing vials of small pox and other diseases in a storage room.
A more thorough sweep of federal labs found half a dozen cases where dangerous or deadly substances were improperly stored — including ricin and the bacteria that causes the plague.

## 48th CBRNE Brigade to hold departure ceremony for Liberia mission moved to March 9

Source: http://www.forthoodpresscenter.com/go/doc/3439/2474093/



The Fort Hood-based **48th Chemical, Biological, Radiological, Nuclear and Explosives (CBRNE) Brigade** will hold a departure ceremony for its first operational deployment at 11:30 a.m. March 9 in the III Corps Headquarters East Atrium here.

The 48th CBRNE Bde. will be part of a residual Operation United Assistance force **of approximately 100 Soldiers** that will provide core command and control capability; rapid response capability; and to enable a rapid restart of larger operations, if needed. Other response functions have been or will be transitioned to civilian personnel. Troops are coming home, but the United States is not leaving West Africa. The civilian-led response will actually grow in size and number in the weeks ahead to continue the fight against Ebola until there are zero cases.

The brigade is part of the Aberdeen Proving Ground, Maryland-based 20th CBRNE Command, the U.S. Defense Department's only multifunctional formation that combats global CBRNE threats.

# MERS-CoV Cases Surge Amidst Concern of International Spread

Source: http://www.hstoday.us/single-article/mers-cov-cases-surge-amidst-concern-of-international-spread/caf11c80d3785b4413a9e9558701d710.html

**A team of experts from the World Health Organization (WHO), the UN's Food and Agriculture Organization, the World Organization for Animal Health and Institut Pasteur, France concluded a mission to Saudi Arabia on February 23 to assess the current situation of the Middle East respiratory syndrome (MERS-CoV) following a surge of cases in the past few weeks, and to make recommendations for improving the surveillance, prevention and control of the virus.**

Already this month, more than 50 cases have been reported in several locations in the Saudi Arabia, including infections acquired in health facilities (called nosocomial infections) in Riyadh, Qassim Region and Damman City, eastern region.

MERS-CoV is a viral respiratory disease caused by a novel coronavirus that was first identified in Saudi Arabia in 2012. MERS-CoV cases continue to occur, with sporadic cases and clusters of cases in communities and healthcare settings.

**In total since the emergence of the virus in April 2012, 1,026 laboratory–confirmed cases of MERS-CoV, including at least 376 deaths have been reported to WHO. More than 85 percent of these have been reported from Saudi Arabia.** There is no cure or vaccine at present, and WHO has expressed concern about the possibility of international spread. There is no evidence of sustained human-to human transmission although a small number of cases have been exported by travelers.

Members of the joint mission held discussions with high-level representatives from the Saudi Ministry of Health, visited the Command and Control Center that has been leading all activities related to the control of the MERS-CoV, and toured the emergency and isolation facilities of the Prince Mohammed Bin Abdulaziz Hospital. Government officials and the WHO-led mission shared their concern about the rising number of MERS-CoV cases in recent weeks and in particular in healthcare facilities.

"The Kingdom did a lot to control the MERS-CoV. We want to hear WHO experts' feedback on the Kingdom's progress, but also where we can improve," said Ahmed Bin Aqeel Al Khateeb, the Saudi Arabian Health Minister who also stressed the need to enable any hospital, whether government–run or private, to handle a MERS-CoV case. "The government is fully committed to implementing the right control and prevention measures and also to funding any activities needed to control this disease."

Although data collection and surveillance have improved globally in recent months, critical gaps in knowledge remain, and several challenges in the country will require further work.

For example, how and why infections occur in the community is yet to be understood, and this is critical to stopping the outbreak. In addition, cases that occur in healthcare settings require further analysis to fully understand what steps are needed to ensure infection prevention and control measures are adequately implemented.

**The fact that infections are still occurring in some healthcare settings but not in others indicates that current infection control measures are effective but not implemented.**

"When health workers are infected at work, this puts other healthcare workers at risk, but also can be a risk to all other patients who seek care for other health conditions," said Dr. Keiji Fukuda, WHO Assistant-Director General who led the mission to Saudi Arabia. "Understanding where the breach in these measures is occurring and taking the steps needed to fully implement infection prevention and control measures can put an end to these nosocomial infections."

Besides implementing good infection control and prevention measures, efforts to educate professionals and the public are urgently needed. There are also significant gaps in community engagement to fully understand routes of infection and the preventive steps that should be taken.

**Defining groups that are most at risk, such as the elderly and those with underlying medical conditions, and how to target these groups with the right health messages remains a challenge.**

The mission, along with the Saudi Arabian health authorities, **identified main areas that should be urgently addressed:**

- Understanding the animal/human interface, that is, modes of infection and transmission;
- Filling critical knowledge gaps in the science and epidemiology of MERS-CoV by conducting further research studies and by sharing the findings widely and rapidly;
- Improving disease prevention, especially in health facilities that continue to experience avoidable infections; and
- Intensifying social mobilization, community engagement activities and communications. The mission also stressed the need for intersectoral cooperation and coordination, especially between health, agriculture, and other sectors.

Additional information from research studies is also required to better understand the risk factors for infection and transmission. Results from case-control studies from affected countries are urgently needed, in particular, from Saudi Arabia.

## New Project to Improve Preparedness for Zoonotic Diseases

Source: http://www.hstoday.us/single-article/new-project-to-improve-preparedness-for-zoonotic-diseases/920e306328731531d4682c46ccc7b852.html

Experts will be able to better track and detect animal diseases that could eventually be transmitted to humans as a result of a new EUR2.7 million International Atomic Energy Agency (IAEA) project.

**Over 20 experts from 13 countries met in Uganda at the end of February to firm up plans to improve regional capacity for the early detection of such zoonotic diseases, including Ebola.**

"One of the issues during the recent Ebola outbreak in West Africa was lack of preparedness," said Michel Warnau, who oversees the project at the IAEA. "Through this project, we intend to reinforce existing capacities to diagnose zoonotic diseases early in order to better anticipate risks of outbreaks in human populations and implement appropriate preventive and control measures."

The IAEA initiative supports the regional strategies of the World Health Organization (WHO) and the Food and Agriculture Organization (FAO) of the United Nations to strengthen the cooperation between human health and animal health experts and to increase preparedness. Experts from WHO and FAO also attended the Uganda meeting.

**The technical cooperation project will initially run for two years** to train and equip diagnostic teams to better monitor wildlife and livestock for zoonotic diseases that could have major impacts on humans. Priority will be given to viral hemorrhagic diseases such as Ebola, Marburg virus and Crimean-Congo hemorrhagic fever. The Joint FAO/IAEA Division of Nuclear Applications in Food and Agriculture will provide technical support to the project.

Recent Ebola outbreaks have had a major human, social and economic impact in West Africa. Since WHO reported a major outbreak of Ebola in Guinea nearly one year ago, the disease has claimed the lives of nearly 10,000 victims across Liberia, Guinea, Sierra Leone and elsewhere. In order to help limit the spread of diseases such as these, early detection in animals and wildlife is critical, Warnau said.

As human populations grow and spread into previously isolated environments, more and more people come into contact with formerly untouched wildlife and diseases they carry. Experts predict that in the future, outbreaks of current and new zoonotic diseases could be more diverse and even more severe than those the world has faced so far.

**The IAEA project makes use of nuclear-derived technologies to quickly diagnose the spread of viruses. Reverse Transcriptase Polymerase Chain Reaction (RT-PCR) and Enzyme-Linked ImmunoSorbent Assay (ELISA) are recognized as fast and efficient diagnostic techniques, and the IAEA has already supported the transfer and application of these technologies in several**

**countries to help fight various diseases including rinderpest and H7N9 avian influenza**.

IAEA assistance also includes reinforcement of national and regional networks to share epidemiological information faster and more efficiently, and to ensure national preparedness in the long run.

"Right now international assistance is concentrated in the region so there is a lot of manpower, but the latter will not remain there," Warnau said.

The project builds on previous support IAEA

The key feature is an automatically retracting needle that **retracts** back into the plunger only when the complete injection of the medicine has occurred.

**100% REDUCTION IN NEEDLE STICK INJURIES**

provided to the region in the use of RT-PCR and other early-diagnostic tools under safe conditions. The agency has also provided specialized diagnostic equipment to help Sierra Leone in its efforts to combat the ongoing Ebola outbreak. The IAEA Board of Governors will soon review an additional project to ensure the sustainability of the early diagnosis effort and to enhance disease control in the region as a whole.

Funds for the current project have come from the United States, Japan and the African Regional Cooperative Agreement for Research, Development and Training related to nuclear science and technology.

**Meanwhile, WHO is launching a new policy on safe syringes to help tackle the pervasive issue of unsafe injections and prevent disease spread through contamination and needle stick accidents.**

As well as reducing the number of unnecessary vaccinations, WHO recommends use of new "smart syringes" designed to prevent re-use. For example, some models include a weak spot in the plunger that causes it to break if the user attempts to pull back on the plunger after the injection. Others have a metal clip that blocks the plunger so it cannot be moved back, while in others the needle retracts into the syringe barrel at the end of the injection.

Syringes are also being engineered with features to protect health workers from "needle stick" injuries and resulting infections. A sheath or hood slides over the needle after the injection is completed to protect the user from being injured accidentally by the needle and potentially exposed to an infection.

**WHO is urging countries to transition by 2020 to exclusive use of the new "smart syringes,"** except in a few circumstances in which a syringe that blocks after a single use would interfere with the procedure. One example is when a person is on an intravenous pump that uses a syringe.

**Syringes without safety features cost $0.03 to $0.04** when procured by a UN agency for a developing country. The new "smart" syringes cost at least twice that much. WHO is calling on donors to support the transition to these devices, anticipating that prices will decline over time as demand increases.

# Mutating H7N9 bird flu may pose pandemic threat, scientists warn

Source: http://news.yahoo.com/mutating-h7n9-bird-flu-may-pose-pandemic-threat-183117237.html

March 11 – **A wave of H7N9 bird flu in China that has spread into people may have the potential to emerge as a pandemic strain in humans, scientists said on Wednesday.**

The H7N9 virus, one of several strains of bird flu known to be able to infect humans, has persisted, diversified and spread in chickens across China, the researchers said, fuelling a resurgence of infections in people and posing a wider threat.

"The expansion of genetic diversity and geographical spread indicates that, unless effective control measures are in place, H7N9 could be expected to persist and spread beyond the region," they said in a study published in the journal Nature.

**The H7N9 bird flu virus emerged in humans in March 2013 and has since then infected at least 571 people in China, Taipei, Hong Kong, Malaysia and Canada, killing 212 of them, according to February data from the World Health Organization (WHO).**

After an initial flare up of human cases at the start of 2013, the H7N9 appeared to die down -- aided in large part by Chinese authorities deciding to close live poultry markets and issue health warnings about direct contact with chickens.

**But infections in people increased again last year and in early 2015, prompting researchers to try to understand more about how the virus re-emerged, how it might develop, and how it might threaten public health.**

In this study, an international team of scientists led by Yi Guan of Hong Kong University monitored the evolution and spread of H7N9 over 15 cities across five provinces in China.

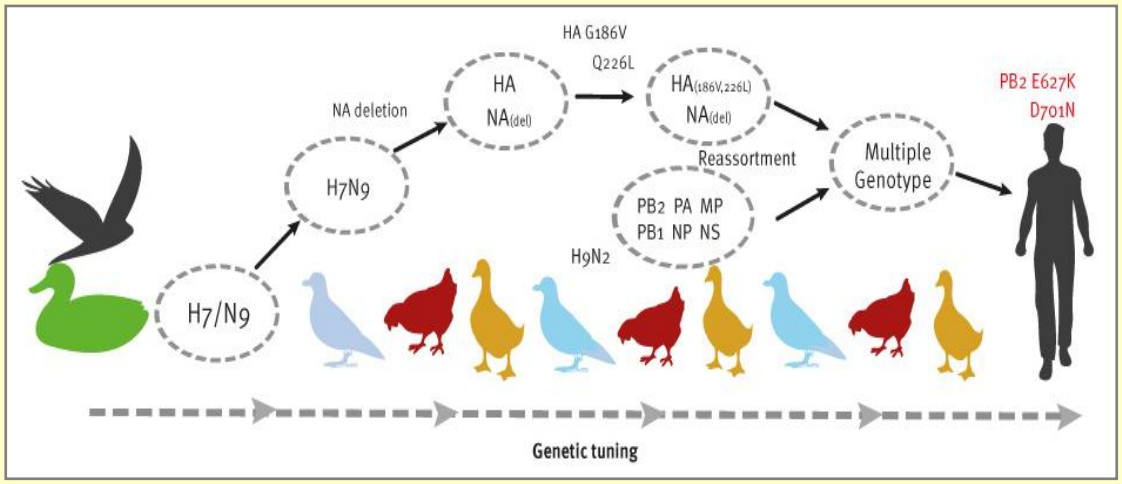
By collecting and sequencing a large number of samples, they found that the H7N9 virus is mutating frequently, acquiring genetic changes that might increase its pandemic potential.

A large number of new genetic variants of the virus have become established in chickens and have spread across the country, probably because of poultry trade movement, they said.

Flu experts not directly involved in the research said its findings were interesting but did not necessarily show the H7N9 was changing in ways that made it more likely to develop into a pandemic flu strain.

"What we don't know from this paper is the significance of all these mutations that are accumulating as the virus persists and spreads," said Wendy Barclay, an expert in flu virology at Britain's Imperial College London. "This is especially relevant for human health -- does any of this change the pandemic potential of the virus?"

In its latest update on the flu strain, the Geneva-based WHO said it "continues to closely monitor the H7N9 situation" and conduct risk assessments.



"So far, the overall risk associated with the H7N9 virus has not changed," it said.
Yi Guan's team, however, said their analysis pointed to a need for heightened vigilance of H7N9 and for curbing direct human contact with live poultry at markets.

**"Permanent closure of live poultry markets, central slaughtering and preventing inter-regional poultry transportation during disease outbreaks are needed to reduce the threat of H7N9 to public health,"** they wrote.

## AniBioThreat

Source: http://www.anibiothreat.com/

**PROJECT**
"Bio-preparedness measures concerning prevention, detection and response to animal bio-threats"

**START DATE OF THE PROJECT**
1 October 2010

**DURATION**
3 years

**COORDINATOR**
National Veterinary Institute SVA, Sweden

**VALUES**
The focus of the project AniBioThreat is to improve the EU's capacity to counter biological animal bio-threats in terms of awareness, prevention and contingency. The project will contribute to create a safer and more secure world. To succeed, we need to carry on a borderless dialogue. AniBioThreat builds bridges across boundaries dividing countries, competencies, and disciplines. In our work, we strive to be **C**ollaborative, **L**earning, **E**fficient, and **A**lert, to be a **R**obust organization. Keep it **CLEAR!**

**Work at the European Commission**
In 2006, the European Commission, through the DG Justice Liberty and Security, initiated work on bio-preparedness and arranged two seminars on European bio-preparedness and a workshop on transport and traceability of bio-materials. In 2007, the Commission initiated the Green paper on Bio-preparedness. During 2008, the Chemical, Biological, Radiological and Nuclear materials (CBRN) Task Force were formed, which was composed of approximately 250 experts from throughout Europe. Each of the three areas created Sub-groups. The Bio-subgroups held expert meetings through April-September 2008 concerning following topics:

- *Threats to humans*
- *Threats to animals*
- *Threats to crops, food and feed*
- *Biological detection and diagnosis*

The final conference of the CBRN Task Force took place in Prague, Czech Republic, from 29-30 January 2009. A final CBRN Task Force report was generated that was composed of 264 recommendations. This report formed the basis for the CBRN Action Plan. The CBRN Action Plan consists of 68 Horizontal (H) Actions, 15 Chemical (C) Actions, 17 Biological (B) Actions and 25 Radiological/Nuclear (RN) Actions. The decision by the EU to carry out the CBRN Action Plan was taken on 30 November 2009. The EU CBRN Action Plan is being implemented during 2010-2014.

**Partners**
The consortium is composed of experienced personnel from eight European countries in the fields of veterinary medicine, security, forensics, animal and public health, food safety and academia. The breadth of expertise traverses Europe as well as levels of position: from superintendents, sergeants and police officers, to fingerprint experts, lawyers and DNA specialists, to veterinarians, medical doctors, bacteriologists, virologists, molecular biologists, agronomists, and modelers, to professors, postdocs and PhD students.

**Final deliverables**
The final deliverables are available here:

- Deliverable 1.1
- Deliverable 1.2
- Deliverable 1.3
- Deliverable 2.1
- Deliverable 2.2

- Deliverable 2.3
- Deliverable 3.1
- Deliverable 3.2
- Deliverable 3.3
- Deliverable 4.1
- Deliverable 4.2
- Deliverable 4.3
- Deliverable 5.1
- Deliverable 5.2
- Deliverable 5.3
- Deliverable 6.1
- Deliverable 6.2
- Deliverable 6.3

# Long-held theory on how bacteria causes bubonic plague overturned

Source: http://www.homelandsecuritynewswire.com/dr20150318-longheld-theory-on-how-bacteria-causes-bubonic-plague-overturned

March 18 – **For decades, scientists have thought the bacteria that cause the bubonic plague hijack host cells at the site of a fleabite and are then taken to the lymph nodes, where the bacteria multiply and trigger severe disease. UNC School of Medicine researchers discovered, however, that this accepted theory is off base. The bacteria do not use host cells; they traffic to lymph nodes on their own and not in great numbers.**

In fact, most of the plague-causing bacteria — called *Yersinia pestis* — get trapped in a bottleneck either in the skin, while en route to the lymph node, or in the node itself. Only a few microbes break free to infect the lymph node and cause disease.

"Anytime you find something where the host is winning, you want to exploit it," said Virginia Miller, Ph.D., professor of microbiology and immunology and senior author of the paper in *PLoS Pathogens*. "If we can understand how the host and the bacteria contribute to this bottleneck, then this could become something we'd target so we could either ramp up what's causing the bottleneck or slow down the infection."

A UNC release reports that the discovery offers much needed information about how virulent insect-borne diseases, such as plague, malaria, and dengue virus cause infection. The findings also present new routes for research on how bacterial strains cause disease despite the immune system's best efforts.

The plague, which killed millions of people during the Middle Ages, is contracted by several people each year in the western United States. Outbreaks have occurred in the recent past in India and Africa, and one is unfolding right now in Madagascar. Standard antibiotics are effective against *Y. pestis* if taken early enough. But infection can go undetected for days, making diagnosis difficult and antibiotics less effective the longer the bacteria take root.

There are three kinds of plague all caused by *Y. pestis*: bubonic, which is contracted through fleabite; pneumonic, which is contracted by breathing in the bacteria; and septicemic, which is a severe infection of blood.

**Miller's team studies the pneumonic and bubonic versions.** Three years ago, Rodrigo Gonzalez, Ph.D. — a UNC graduate student at the time and now a postdoctoral fellow at Harvard — searched the scientific literature for data confirming the accepted notion that *Y. pestis* gets trafficked by human phagocytic cells from the fleabite site to the lymph nodes.

Scientists readily accepted this idea because when *Y. pestis* microbes are added to phagocytic cells in culture, the cells do soak up the bacteria.

Phagocytes essentially eat harmful microbes, and because these cells traffic through the lymphatic system, scientists came to the logical conclusion that phagocytes take the *Y. pestis* to the lymph nodes.

Gonzalez and Miller knew, however, that a fleabite does not penetrate all layers of skin like an injection does. The bites of fleas and mosquitos are intradermal; they occur within the layers of skin. Gonzales and Miller agreed that testing this long-held theory was a worthy project.

Gonzalez spent months developing an accurate way to mimic the flea bite in the lab so that the proper amount of bacteria would get transferred into the skin

of mice. Then Miller's team **created ten special DNA sequences and added them to the chromosome of *Y. pestis* to generate ten different strains**. This did not affect virulence of the bacteria but allowed Miller's team to tag the microbes so that the researchers could identify which bacteria traveled from the "bite site" to the lymph nodes.
"**We found that only one or two of the ten bacteria made it to the lymph node**," Miller said. "But they got there fast – within five or ten minutes after the bacteria were introduced. We know that if a bacterium is traveling in a host cell, it would not move that fast because host cells are slow; they kind of crawl through the lymphatic system instead of flowing through fluid like bacteria can."
The release notes that Miller's team is currently conducting experiments to figure out how most of the bacteria are prevented from infecting the lymph node.
"We may have found a point of vulnerability," Miller said. "Exploiting it could lead to new ways to defeat *Yersinia pestis* and other insect-borne pathogens."

*— Read more in Rodrigo J. Gonzalez et al., "Dissemination of a Highly Virulent Pathogen: Tracking The Early Events That Define Infection," PLoS Pathogens (22 January 2015)*

## Computer model predicted when the Ebola outbreak in Liberia would fade out

Source: http://www.medicalnewstoday.com/releases/290894.php?tw

A novel mathematical approach applied to model the ongoing Ebola outbreak, predicted the current fade out of the epidemic in Liberia almost to the exact date (early March). Using World Health Organization (WHO) data through December 21, 2014, the study that was published online in *PLoS Currents Outbreaks*, **was the first to provide an accurate prediction for the epidemic containment**.
The study represents an important step in the development of accurate computer-aided predictions of evolving epidemics. Predicting real-world epidemics as populations of individuals interact is extremely difficult. However, recent advances in mathematics and computer science have removed this barrier, at least to some extent. Siettos and colleagues applied these advances to real demographic data and constructed a detailed networked model that was used to predict the evolution of the Ebola epidemic in Liberia and Sierra Leone. Key epidemiological variables, such as the effective reproductive number and the structure of the contact transmission network, were monitored from the onset of the epidemic.
The proposed approach is promising for modern epidemiological research since it enhances our understanding of infectious diseases transmission dynamics and forecasting capability. Such state-of-the-art computer models can also aid the optimal design of public health strategies to combat epidemics, possibly through targeted and more effective control interventions. As Liberia released the last Ebola patient last Friday, these results are particularly encouraging and should allow scientists to be better prepared to combat new epidemics to come in the future
.

**Read the full paper at:** Modeling the 2014 Ebola Virus Epidemic - Agent-Based Simulations, Temporal Analysis and Future Predictions for Liberia and Sierra Leone, Constantinos Siettos, Cleo Anastassopoulou, Lucia Russo, Christos Grigoras, Eleftherios Mylonakis, *PLoS Currents Outbreaks*,

*Professor Constantinos Siettos was born in Greece in 1971. He is Associate Professor in Computational Science and Engineering at the School of Applied Mathematics and Physical Sciences of the National Technical University of Athens (NTUA). He received a Diploma in 1994 and a Ph.D. in Nonlinear Dynamics and Control Theory from the Dept. of Chemical Engineering at NTUA in 2000. He also holds a major degree in Industrial Management from the University of Piraeus. From 2001 to 2004 he was a Post-Doctoral Fellow at Princeton University. There, he had a key*

*role in a research effort originated in the group of Prof. Yannis Kevrekidis to "bridge the gap" between micro and macroscales of complex systems with important scientific implications. He has been the PI or co-PI on more than five projects mainly funded by the European Social Fund, the Hellenic General Secretariat for Research and Technology and the NTUA. He has published a total of 50 papers in leading international peer-reviewed scientific journals and 33 papers in peer-reviewed conference proceedings. For his work, he has been invited to give several invited presentations. He has been Lead-Guest Editor of the Journal of Applied Mathematics (2013-2014) and he is a member of the Editorial Board of Applied Mathematical and Computational Sciences, ISRN Journal of Computational Mathematics, ISRN Journal of Applied Mathematics and the Annual Review of Chaos Theory, Bifurcations and Dynamical systems. He is also reviewer in several leading peer-reviewed journals of Applied and Computational Mathematics and Engineering and he has been also invited to organize sessions in peer-reviewed international conferences. In 2012, Prof. Siettos was awarded a Fulbright Research Scholar grant for Academic Excellence to conduct research and lecturing on Complex System Dynamics at Princeton University.*

## Ebola-infected sewage may require longer holding period

Source: http://www.medicalnewstoday.com/releases/290802.php?tw

March 12 – **Storing Ebola-infected sewage for a week at 86° Fahrenheit or higher should allow enough time for more than 99.99 percent of the virus to die, though lower ambient temperatures may require a longer holding period,** according to a new study by researchers at Georgia State University's School of Public Health.

The study co-authored by Lisa M. Casanova, assistant professor of environmental health, and Scott R. Weaver, research assistant professor in Epidemiology and Biostatistics, **used bacteriophage Φ6, a type of virus, as a stand-in to study how long Ebola and similar viruses can survive in latrines and other systems** for collecting and disposing of sewage. Bacteriophage Φ6 has a lipid envelope, meaning it has structural similarities to Ebola and several other types of virus, allowing for a safe study that did not require use of Ebola itself.

"The places hardest hit by Ebola are the places that often have the least infrastructure for safely disposing of sewage and are using things like pit latrines," said Dr. Casanova. "They need the answers to questions like this."

Their study, "Inactivation of an Enveloped Surrogate Virus in Human Sewage," was published recently in *Environmental Science & Technology Letters.*

**To reduce the risk of infection for sanitary workers, the World Health Organization recommends latrine waste contaminated with Ebola is held for a week or longer before any efforts are made to transport it.**

Casanova and Weaver conducted experiments on sewage samples taken from an urban wastewater reclamation facility, spiking the samples with Φ6 as a stand-in for Ebola. **Their analysis found that at 86° Fahrenheit (equal to 30° Celsius) the virus was essentially inactivated after 3-7 days. However, samples tested at 72.6° Fahrenheit (or 22°C) took several days longer to decay.**

The study suggests longer holding times may be needed where temperatures are lower. Longer holding times may also be advisable to eliminate "longer-surviving subpopulations of viruses."

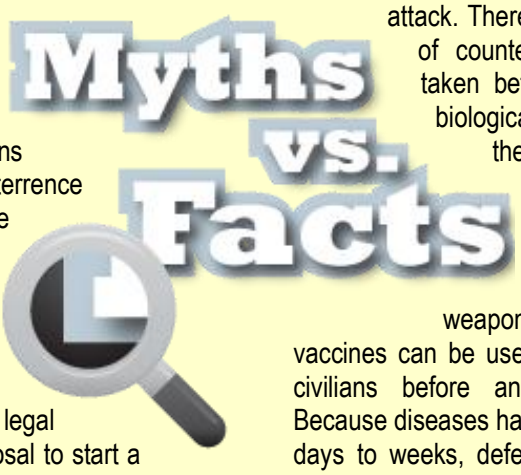


## The myth of biological weapons as the poor man's atomic bomb

**By Gregory D. Koblentz**

Source: http://thebulletin.org/winter-safe-deterrence-debate/myth-biological-weapons-poor-man%E2% 80%99s-atomic-bomb

In his recent column, "Deterrence, without nuclear winter," Seth Baum concludes that non-contagious biological weapons are one of two viable alternatives to replacing nuclear weapons in order to achieve what he calls "winter-safe deterrence." He writes that non-contagious biological weapons "could work well if deterrence required threatening large human populations" without posing the risk of a global catastrophe like nuclear winter or a pandemic. Leaving aside the disturbing normative and legal implications of Baum's proposal to start a global biological arms race, I will focus on the strategic logic underpinning his proposal to replace nuclear weapons with biological weapons. Baum's conclusion is based on an uncritical acceptance of the long-standing myth that biological weapons are "the poor man's atomic bomb." This myth is based on the simplistic notion that because biological weapons could potentially cause mass casualties on par with those caused by nuclear weapons, these weapons should have similar political effects and implications for international security. Although biological and nuclear weapons are both considered weapons of mass destruction, biological weapons differ from nuclear weapons in three important ways that undermine the utility of biological weapons for deterrence: uncertainty of effects, availability of defenses, and the need for secrecy and surprise.




**The first significant difference** involves the level of uncertainty associated with the employment of these weapons. Nuclear weapons deliver instantaneous, overwhelming, and predictable levels of destruction. The effects of biological weapons, on the other hand, are delayed, variable, and difficult to predict due to their sensitivity to environmental conditions and the importance of pathogen-host interactions. In addition, the lack of operational experience with these weapons and the inability to simulate realistically their effects (short of massive human experimentation) impedes the ability of states to substantially reduce this level of uncertainty.

**The second major difference** between nuclear and biological weapons concerns the availability of defenses. There are no effective defenses against the effects of a nuclear attack. There are, however, a number of countermeasures that can be taken before, during, and after a biological attack that can mitigate the consequences of such an attack. Masks and filters can prevent exposure to biological agents. Biological weapons are also unique in that vaccines can be used to protect soldiers and civilians before an actual attack occurs. Because diseases have an incubation period of days to weeks, defenders have a window of opportunity to detect an attack using sensors and biosurveillance systems. Early detection can trigger the distribution of medical countermeasures to treat the victims of an attack and there are already vaccines and /or treatments available for the most lethal diseases such as anthrax, plague, smallpox, and tularemia. As a result, the effects of a biological attack are not absolute and incontestable; they can be mitigated and limited by a well-prepared defender. This possibility is likely to reduce the confidence of states in their ability to reliably inflict unacceptable damage against an adversary in a retaliatory strike. The full panoply of defenses need not be deployed constantly at full readiness because the very availability of these defenses may be sufficient to dissuade a state from calculating that it can inflict unacceptable damage. Although civilian populations will remain more vulnerable to biological weapons than will military forces, damage limitation remains a viable option for larger, more advanced states facing less sophisticated adversaries.

**Third,** biological weapons have limited value as strategic deterrents due to the need for states to shroud their biological weapons programs in strict secrecy. This need for secrecy is driven by normative, legal, and strategic considerations. In the strategic context, the availability of defenses against biological weapons places a premium on the attacker achieving surprise.

This undermines the ability of a state to use biological weapons as a deterrent in two ways. First, the secrecy required to retain the element of surprise in a biological attack reduces a state's ability to issue credible threats to inflict unacceptable damage against an adversary. To make a deterrent threat credible, a state would not only have to admit that it was violating international norms and laws but it would also have to reveal details about its offensive biological warfare capabilities such as the types of agents it has developed and their means of delivery. These revelations could reduce the effectiveness of these weapons by allowing the defender to mobilize appropriate countermeasures. In contrast, the superpowers flaunted their nuclear forces during the Cold War for deterrent purposes. They were able to do this because these demonstrations of their nuclear capabilities did not provide the other side with an improved means of defending against them. Second, secrecy is a flimsy means of protecting strategic forces designed for deterrence. Strategic forces that depend on secrecy for their protection are vulnerable to intelligence breakthroughs by an adversary. If a defender gained inside information about an attacker's capabilities, it would be possible to develop and stockpile new pharmaceuticals, immunize the at-risk population, distribute protective masks and treatments, enhance public health surveillance, and take other precautions that could substantially mitigate the impact of a first-strike or retaliatory attack with biological weapons. Although such information is difficult to acquire, the cases of Soviet biologist Vladimir Pasechnik, former Soviet bioweapons program official Ken Alibek, and Iraqi weapons official Hussein Kamal attest to the risk posed by the defection of high-level government officials knowledgeable about their nation's biological warfare programs.

**A careful analysis of the technical and strategic aspects of biological weapons reveals that while biological weapons have the potential to inflict unacceptable damage against an adversary, they are unable to offer states an "assured" capability for doing so.** This shortfall significantly undermines the suitability of biological weapons to serve as a strategic deterrent. Whatever the merits may be of pursuing "winter-safe deterrence," promoting the discredited concept of biological weapons as a "poor man's atomic bomb" is not an analytically defensible means of achieving that objective.



***Gregory D. Koblentz*** *is an associate professor and deputy director of the Biodefense Graduate Program in the School of Policy, Government, and International Affairs at George Mason University. He is the author* Living Weapons: Biological Warfare and International Security *(Cornell University Press, 2009).*

## German drugmaker Stada to launch rapid test for Ebola

Source: http://www.reuters.com/article/2015/02/09/us-health-ebola-test-stada-idUSKBN0LD0HF20150209

German drugmaker Stada will launch a test next month that can diagnose Ebola virus infections within minutes, it said on Monday, a move it hopes will help to slow the spread of the disease.

**The test, which is being marketed by Stada, was developed and produced by unlisted German diagnostics firm Senova. It yields results based on pre-treated patient blood samples within about 10 minutes.**

Stada said its main use would likely be to diagnose the deceased because their body fluids do not need to be pre-treated before testing. Contact by mourners with their dead relatives is a common way for the disease to be transmitted.

"The viral load in people who have died of Ebola is so high that a mere throat swab suffices to perform the rapid test," Senova owner Hans Hermann Soeffing said.

The number of new cases of Ebola rose in all three of West Africa's worst-hit countries last week, the World Health Organization (WHO) said, ending previously encouraging declines across the region.

In all, 8,981 people have died of Ebola out of 22,495 known cases in nine countries since the

outbreak began in December 2013, according to the WHO.

Using Stada's test on living patients will typically require pre-treating blood samples with battery-powered centrifuges, which are available at most emergency relief centers in the affected regions, a company spokesman said.

**Stada, a supplier of generic drugs, non-prescription treatments and diagnostic kits, said it would distribute the test from next month to aid organizations for 3.20 euros ($3.66) apiece, which covers its costs.**

The test has been shown to work in a trial with several hundred participants in Guinea, according to the company.

**While Stada said the test was the first of its kind, there have been previous efforts to speed Ebola diagnosis. Health charity The Wellcome Trust said in November a new 15-minute Ebola test it helped fund was being tried out in Guinea, targeting six times faster testing than diagnostic kits currently in use.**

# Management of Accidental Exposure to Ebola Virus in the Biosafety Level 4 Laboratory, Hamburg, Germany

**Stephan Günther,[1] Heinz Feldmann,[2] Thomas W. Geisbert,[3] Lisa E. Hensley,[4] Pierre E. Rollin,[5] Stuart T. Nichol,[5] Ute Ströher,[6] Harvey Artsob,[6] Clarence J. Peters,[7] Thomas G. Ksiazek,[8] Stephan Becker,[9] Jan ter Meulen,[10] Stephan Ölschläger,[1] Jonas Schmidt-Chanasit,[1] Hinrich Sudeck,[11] Gerd D. Burchard,[12] and Stefan Schmiedel[12]**

[1]Bernhard Nocht Institute for Tropical Medicine, Hamburg, Germany; [2]Laboratory of Virology, Division of Intramural Research, National Institute of Allergy and Infectious Diseases, National Institutes of Health, Hamilton, Montana; [3]National Emerging Infectious Diseases Laboratories Institute, Boston University School of Medicine, Boston, Massachusetts; [4]U.S. Army Medical Research Institute of Infectious Diseases, Fort Detrick, Maryland; [5]Viral Special Pathogens Branch, Division of High Consequence Pathogens and Pathology, Centers for Disease Control and Prevention, Atlanta, Georgia; [6]Special Pathogens Program, National Microbiology Laboratory, Public Health Agency of Canada, Winnipeg, Manitoba, Canada; [7]Center for Biodefense and Emerging Infectious Diseases, and [8]Galveston National Laboratory, Department of Pathology, University of Texas Medical Branch, Galveston, Texas; [9]Institute of Virology, Philipps University Marburg, Germany; [10]Vaccine Research, Merck Research Laboratories, West Point, Pennsylvania; [11]Bundeswehrkrankenhaus Hamburg; and [12]University Medical Center Hamburg-Eppendorf, Hamburg, Germany

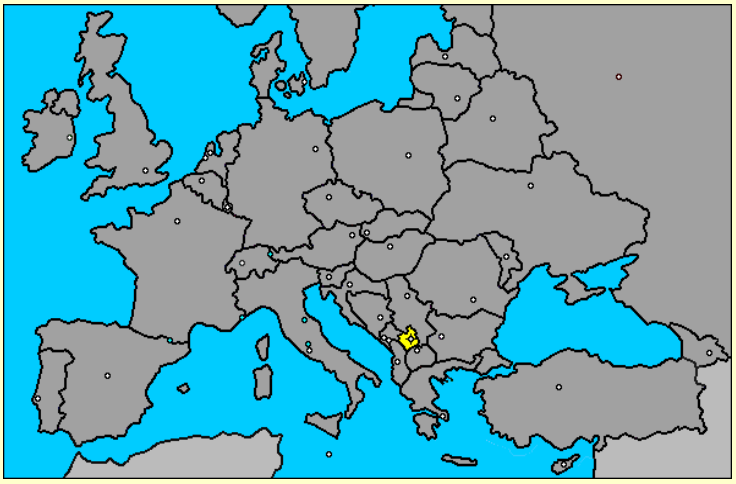
A needlestick injury occurred during an animal experiment in the biosafety level 4 laboratory in Hamburg, Germany, in March 2009. The syringe contained *Zaire ebolavirus* (ZEBOV) mixed with Freund's adjuvant. Neither an approved treatment nor a postexposure prophylaxis (PEP) exists for Ebola hemorrhagic fever. Following a risk–benefit assessment, it was recommended the exposed person take an experimental vaccine that had shown PEP efficacy in ZEBOV-infected nonhuman primates (NHPs) [12]. The vaccine, which had not been used previously in humans, was a live-attenuated recombinant vesicular stomatitis virus (recVSV) expressing the glycoprotein of ZEBOV. A single dose of $5 \times 10^7$ plaque-forming units was injected 48 hours after the accident. The vaccinee developed fever 12 hours later and recVSV viremia was detectable by polymerase chain reaction (PCR) for 2 days. Otherwise, the person remained healthy, and ZEBOV RNA, except for the glycoprotein gene expressed in the vaccine, was never detected in serum and peripheral blood mononuclear cells during the 3-week observation period.

Source: http://m.jid.oxfordjournals.org/content/204/suppl_3/S785.full.pdf

# Kosovo Declares Tularemia Epidemic

Source: http://www.independent.mk/articles/14228/Kosovo+Declares+Tularemia+Epidemic

Feb 11 – The committee for the prevention of infectious diseases at the Kosovo Ministry of Health declared an epidemic of tularemia in the country. All the teams on the ground are activated in order to prevent new cases of the disease.



**Pristina media told that 206 cases of tularaemia were reported from January 1, 2014 to February 10, 2015 were reported. The disease is registered in central and eastern part of Kosovo.**

**So far there was not a single fatal case of this disease. An outbreak of tularemia already occurred in Kosovo in 1999-2000. From 1999 until now, 1,469 cases of tularemia were reported**.

Tularemia is a serious infectious disease caused by the bacterium *Francisella tularensis*. Rabbits, hares, and rodents are especially susceptible and often die in large numbers during outbreaks. Humans can become infected through several routes, including: tick and deer fly bites, skin contact with infected animals, ingestion of contaminated water, laboratory exposure, inhalation of contaminated dusts or aerosols.