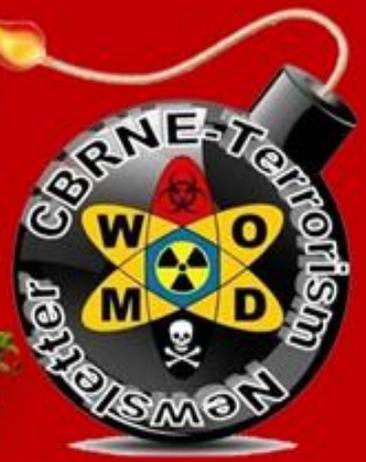


December 2015

CBRNE NEWSLETTER TERRORISM

E-Journal for CBRNE & CT First Responders



**PART
A**

www.cbrne-terrorism-newsletter.com

CBRNE-Terrorism Newsletter – 2015©

December 2015

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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 (Army)***Editor-in-Chief*
CBRNE-Terrorism Newsletter*Dear Colleagues,*

At least 525 people have died in six attacks in six countries across the world as Islamic State (IS) carried out chilling attacks led by suicide bombers and crazed gunmen. Of the six attacks, three were directed from ISIS strongholds in Syria and Iraq. Two were classed as so-called announcement attacks, in which local ISIS cells revealed their existence.

IS was named as the prime suspect when 102 people taking part in a peace demonstration were killed when a bomb exploded outside the main train station in **Ankara, Turkey** on October 10. At least 245 people were injured during a march protesting against the conflict between the state and Kurdish militants in south-east Turkey in the country's deadliest terror attack. Three days of national mourning followed.

The bloodshed continued on October 31 when a Metrojet plane bound for Russia blew up over **Egypt**, killing all 224 passengers and crew. Foreign secretary Phillip Hammond said it was highly likely the jet was brought down by a lone ISIS supporter shortly after taking off from Sharm el-Sheikh. In the chaos that followed the UK suspended all flights to the tourist resort and evacuated more than 1,000 Britons on special repatriation flights.

IS continued its sickening attacks when two suicide bombers blew themselves up in a crowded marketplace in **Beirut, Lebanon** on November 10. Some 43 people were killed in the blast when two crazed jihadists detonated their explosive vests. In a cruel twist the bombers set off one explosion before sending in another bomber to deliberately kill those who had rushed to aid the wounded. It is believed the attack took place as revenge for Lebanese support for Syrian dictator Bashar al-Assad.

Three days later the western world was left in shock when ISIS slaughtered 130 people, including Briton Nick Alexander, in a series of attacks in **Paris** on November 13. Hundreds were left seriously injured when the team of crazed gunmen and suicide bombers attacked restaurants, bars, the Stade de Paris and the Bataclan concert hall in a matter of hours. Days later a police siege followed as counter-terrorism officers raided the lair of mastermind Abdelhamid Abaaoud. He was killed, alongside his cousin, when a third terrorist detonated a suicide vest during the raid. Authorities continue to hunt for other suspects involved in the massacre.

In the wake of the Paris attacks as European countries considered bombing ISIS in Syria the death cult bombed a bus in **Tunisia**. The attack on the bus, which was carrying members of the presidential guard, killed at least 12 people. An IS cell in Tunisia claimed responsibility for the atrocity.

Days' later 14 people were killed in a shooting in **San Bernardino in California** by a couple, alleged to be supporters of IS. American officials continue to investigate the attack and its links to the terrorist organization after attacker Tashfeen Malik posted a message of support to IS leader Abu Bakr al-Baghdadi on Facebook.



As the West steps up its fight against ISIS, taxi driver Muhaydin Mire stands accused of attempted murder following a stabbing at **Leytonstone tube station in London**. He was arrested after a knife-wielding man threatening passengers and shouting “this is for Syria” was caught on camera. Prosecutors claim the attack was an act of terrorism.

Another issue now: In December 8, 2015 a passenger opens door and triggers slider on board Volaris flight 714 from Mexico to Cancun (still on the ground) which triggered slider to leave the plane. The alleged Muslim passenger wanted to make a statement on the Open Door Policy on Immigration, but the passengers failed to get the gist of it. In December 6, 2015 a man (a Jordanian with an American passport) aboard a Lufthansa flight from Frankfurt to Belgrade has been arrested Sunday after threatening to open a plane door during the flight, Serbian authorities said. Passengers quoted by Belgrade media said he banged on a cockpit door threatening to bring down the plane while it was flying over Austria if he was not allowed inside. Lufthansa said the cabin crew and passengers (players of a Serbian handball team) on Flight 1406 managed to restrain him for the rest of the journey, adding that the plane doors can't be opened during a flight anyway. The plane landed safely in Belgrade and the passenger was handed over to local authorities. Should such a lunatic actually manage to open the door of a large passenger aircraft at high altitude, the cabin would lose pressure – extremely rapidly – and chaos would ensue. Even instances of slow decompression, of which there are an estimated 40 to 50 a year, can be fatal. In 2005 a Boeing 737 operated by Helios Airways crashed, killing all 121 passengers and crew (the deadliest air disaster in Greek history), after a gradual loss of cabin pressure. The lack of oxygen at 30,000 feet left the crew incapacitated, and the plane – on auto-pilot – slowly ran out of fuel, before plunging to the ground. It is noticeable that terrorists are using simple weapons more often than before (knives; hatchets, cars etc.). Perhaps this “open door” modus operandi should be given the proper attention to avoid the usual surprises!

A report released by European Parliament warns Islamic State could hit Europe with weapons of mass destruction in a terror attack. The report warns IS has smuggled chemical, biological, radiological, or nuclear material known as CBRN, into Europe. The report says the terrorist group has recruited experts in chemistry, physics and computer science, and has the knowledge to carry out weapons of mass destruction warfare. Europol warns Europe is dealing with a well-organized, determined terrorist threat that is active on its streets. The problem is: Is Europe prepared to deal with such a possibility? Is the European medical/health community ready to receive and manage contaminated mass casualties? By now you all know my answer (I am fighting this gap since 2005) but the thing is what you believe and what are you going to do about this!

Greece continue its lonely struggle with incompetency of governors and 2016 will not bring victory to the people... Media financial-focused terrorism reached a zenith and Greeks are gambling what the tomorrow tax will be! By now the word “progress” has been deleted from our vocabulary; same with “hope”, “joy” and “smile”. He who said that citizens deserve their governors was so right! Even those (like me) who believed in the prevalence of ancient genes, now make second thoughts! The “patient” is currently in Glasgow Coma Scale of close to “3” and only a miracle can make the difference! On top of these we continue experiencing the immense movement of populations from Middle East and rest of the world along with the ridiculous accusations of certain European nations that we cannot protect our borders and that of EU! But when these clever guys are asked for concrete proposals then the usual BS are coming out from their big mouths. It would be very easy to sink the boats or bombard them! It would be easy to let them drawn just a few meters from our vast coastline. Would they like that? Or the moment after they would start condemning us for inhumanity and brutality? It is so easy to raise a fence on land; can they instruct us how to do it in the sea? As always politics blended with stupidity makes an explosive hazardous mixture!



All this is happening, while the populations of the planet are distracted by being conditioned to believe in emotionally charged BS, brain farts and intellectual masturbation that the Armageddon is coming, and the whole world moving towards destruction and falling apart. However, in a parallel world of truth underneath all this stupidity, distractions and fear mongering, there is a wonderful and hopeful world where the scientists and researchers are doing amazing things to improve the human condition on the planet:

- 1) Hybrid solid-state chips and biological cells integrated at molecular level: <http://www.kurzweilai.net/hybrid-solid-state-chips-and-biological-cells-integrated-at-molecular-level>
- 2) Building a new heart: <https://www.youtube.com/watch?v=Ga8x1-XdXiQ>
- 3) Modular Prosthetic Limb: <https://www.youtube.com/watch?v=9NOncx2jU0Q>
- 4) Heart Surgery and real time 3D imaging - Interactive Live Holography: https://www.youtube.com/watch?v=Alj2xE_d_z78
- 5) Tesla Energy: <https://www.youtube.com/watch?v=yKORsrIN-2k>
- 6) Magneto Rheological: <https://www.youtube.com/watch?v=SBXQ-6ul8GY>
- 7) The science behind cloning: <https://www.youtube.com/watch?v=DmHYUvmiXQI>
- 8) How to green the world's deserts: <https://www.youtube.com/watch?v=vpTHi7O66pl>
- 9) Middle East Particle Accelerator: <http://www.haaretz.com/israel-iran-jordan-and-turkey-join-forces-for-multimillion-dollar-science-project-1.418731>

Despite the planetic mess we are dealing with, the Editorial Team of the CBRNE-Terrorism Newsletter would like heartily to thank you all for your support and contribution to our efforts and wish you all and your families to have a New Year full of health, peace, joy, happiness and successes at all levels. Take care First Responders, the world is literally count on you to keep our way of life and peace of our minds!

The Editor-in-Chief

**January 1st is the first
blank page
of a 365
page book.**

**Happy
Newyear**

Write a good one!



Turkey shoots down Russian war plane over Turkey

Source: <http://www.homelandsecuritynewswire.com/dr20151124-turkey-shoots-down-russian-war-plane-over-turkey>



Nov 24 – In a significant escalation of tension along the Syrian-Turkish border, Turkish military aircraft earlier Tuesday shot down a Russian jet after the jet violated Turkey's airspace. The Turkish



announcement said that despite repeated warnings from Turkish F-16 interceptors to turn away, the Russia jet continued to fly over Turkish territory.

The BBC reports that Russian officials confirmed that a Russian Su-24 warplane, one of thirty-two fixed-wing aircraft and sixteen helicopters Russia had sent to Syria two months ago to help save the regime of President Bashar al-Assad, had been shot down, but said it never left Syria airspace and this never violated Turkish airspace.



The Russian Defense Ministry offered its own version of events, saying the plane was flying at an altitude of 6,000 meters and was probably brought down “due to shelling from the ground.” The Russian Defense Ministry added it wanted to “stress that the plane was over the Syrian territory throughout the flight.”

The BBC notes that a video showed a warplane on fire in mid-air before crashing to the ground, and two crew members parachuting, apparently safely. Turkish news agencies, however, said that the fate of the two pilots is not clear, and that Russian rescue helicopters could be seen searching for the pilot over the Turkmen Bayirbucak region.

CNN reports that at least one of the pilots was killed.

In October, Turkey downed a Russian drone flying a surveillance missions across the Syria-Turkish border. The drone crossed onto Turkish airspace, and was shot down.

Earlier in October, a Russian jet entered Turkish airspace, but was chased away by Turkish jets. Russia apologized for what it described as a “a navigational error.”

EDITOR'S COMMENT: In Nov 24, 2015 President Barack Obama said that “Turkey has the right to defend itself and its airspace” following Turkey's shooting down of a Russian plane that it claimed



WikiLeaks
@wikileaks



Following

Classified US cable: Turkey violating Greek airspace 40 times a day

wikileaks.org/plusd/cables/0...

Greek argument that high Turkish sortie rates in the Aegean made it increasingly difficult for the Greek government to defend its cooperation with Turkey in other areas, including the EU. Molyviatis emphasized that Turkey did not need to send 40 aircraft a day across the disputed airspace to make its political point; they could, he insisted, send one flight a week and accomplish the same purpose. If the Turks pursued a less inflammatory policy in the Aegean, he suggested, there would be much more sympathy for Turkey in Greece.

RETWEETS
1,229

LIKES
479



US President will say next time that Greek Air Force will shoot down one or more Turkish warplanes entering Greek airspace.

had flown over its territory. Greek Minister of defense stated yesterday (Nov 25th) that since January 2015 we had 68 violations of Greek airspace along with 21 over-flights (very low altitude flights over Aegean islands – Jan 30 to Oct 8); The same day Sergei Lavrof noted: “... Turkish warplanes trespass Greek airspace over Aegean 1.500 times per year and Greece tries to balance the threat. And these dog-fights do not last 17 seconds... It would be interesting to see what

Turkey's Story on Downing Russian Jet Doesn't Add Up

By Stephen Bryen

Source: <https://technologysecurity.wordpress.com/2015/11/24/downing-of-russian-plane-a-planned-provocation/>

Nov 24 – The Turkish story on the Russian jet shoot down does not hold up. In fact, the evidence points to a deliberate provocation by Turkey with the intention of drawing NATO into a general war against Syria and Russia. That's why the Turks immediately asked for an emergency NATO meeting even though there is no NATO operation either in Iraq or Syria, and no NATO member was attacked. NATO is a collective defense system. If a NATO member is

attacked, then the other members of NATO can exercise collective defense (although there is nothing in the NATO system requiring the members to come to the defense of one under attack).

In fact, the Turks have been working hard for some time to “Nato-ize” the conflict in Syria. That is why they have insisted that the privileges they



have given to the United States at the Incirlik air base, where the US has stationed F-16's and A-10's, is permitted as a NATO operation (notwithstanding the fact there is no NATO operation).

The Turkish story is that Turkish F-16 jets "intercepted" the Russian aircraft and shot it down with an air to air missile.

Strangely, the downing of the jet was filmed by Turkish TV, suggesting as some have already noted, that they were position to record the event.

The piece of Turkey where the Russian plane allegedly passed is only a tiny strip some few miles wide. The Turks were tracking the

Prime Minister. Sorry guys, this is impossible. The scenario makes no sense.

The Sukhoi 24M was hit from behind as the Turkish TV film clearly shows. ~~The two pilots were~~ One of the two pilots was murdered by Turkish-supported Islamists shooting them as they parachuted. Among other things this suggests that the Turks probably fired on the Russian plane while the Turkish F-16's were in Syrian air space –otherwise they could never have made the shot. **Typically two missiles are fired at a target; the imagery suggests only one struck the Su-24.**

When a warning is not observed (if there was



Russian plane for some time and shot it down from behind. The Russian plane apparently took no evasive action and was destroyed. From the photos it was clearly hit from behind, suggesting the Turkish planes may well have been in Syrian air space when they fired their air to air (AIM 9L) missile.

The Sukhoi is an old airplane which lacks speed and modern radar. It does however, have GPS in the "M" version which is what is flying in Syria. So the Russian pilots knew where they were.

If in fact it is true that the Russian plane was warned, isn't it plausible to think they were unconcerned because they were inside Syria's air space?

Moreover, the time the Russian plane could have passed through Turkish airspace, given its speed and the tiny piece of Turkish territory we are speaking of, could only have been **less than 20 seconds**. In this time the Turks claim they gave ten warnings (!) and that they got approval for hitting the Russian airplane from the Deputy

one) the norm is that a warning shot is used to get the pilot's attention. This holds for both Naval and Air operations. **In an air encounter, the chase plane flies beside the intruder and warns him, including even hand motions showing him to flee. If he does not, a warning shot is next.**

The decision to use an air to air missile is an intent to kill, not an intent to warn. In and of itself it is a provocation because of how it was done.

This leads me to think this was a provocation consistent with the Turkish desperation to draw NATO into the conflict, get rid of Assad, and push the Russians out.

In leading up to this, the Turks affected a positive attitude toward Russia and Putin specifically, and Putin thought he had a potential partnership with Turkey, going so far as to extol the relationship in a public meeting in Russia. **That is why Putin says he was stabbed in the back. In fact even worse: he was set up.**



SDSR 2015: An overview of the key points

Source: <http://www.defenceiq.com/air-land-and-sea-defence-services/articles/sdsr-2015-reviewing-the-review/>



The debate about what will be in the UK's 2015 Strategic Defence and Security (SDSR) review is over. It started before the ink was dry on the 2010 review, which saw sweeping cuts including the dismantling of Britain's carrier strike capability with the sale of the Harrier, slashing the number of Challenger 2 main battle tanks by nearly half, and the short-sighted decision to abandon the Nimrod MRA4 without a replacement, leaving this island nation without a maritime patrol capability. But yesterday, Prime Minister David Cameron announced the details of a **£178 billion defence equipment plan** – marking a £12 billion boost – to support the armed forces in their strategic goals over the next decade.

The headline news? The maritime surveillance capability gap will be plugged by the acquisition of nine new Boeing P-8 maritime patrol aircrafts; two new rapidly deployable 'Strike Brigades' will be formed by 2025 supported by six variants of the new Ajax armored vehicle family; the Typhoon's life will be extended by 10 years to 2040 and the number of squadrons will increase by two to a total of seven; Eight Type 26 Global Combat Ships and "at least" another five 'lite' multi-purpose variants will replace the ageing Type 23 Frigates; the cost of four new submarines responsible for the UK's continuous at sea nuclear deterrent has increased from £25 billion to £31 billion; and the acceleration of the F-35 Joint Strike Fighter program with budget set aside for 138 jets, with 24 of those in service by 2023 rather than the eight originally planned.

In the wake of the terror attacks in Paris on 13 November, the UK government had already announced last week that it would be investing a further £2 billion into its intelligence services, increasing personnel numbers by around 15% and acquiring new communications equipment, weapons and vehicles.

To help finance these new acquisitions, the axe has had to fall elsewhere. Hard. The restructuring of defense capability instigated in the 2015 review will see a 30% reduction in the number of civilians employed by the MOD to 41,000 and a downsizing of the built estate by 30%. Outside of the MoD, austerity savings have been found in police and welfare budgets to make way for the £12 billion defense equipment boost. For once Defense has not



been a casualty of the Treasury axe. The review sets out the development of the new Joint Force 2025, replacing the Future Force 2020 strategy, which is said to be “a more capable force to meet the challenges of today and ready for those of tomorrow”. Other commitments laid out in SDSR include the acquisition of another two Offshore Patrol Vessels, more than 20 new Protector armed remotely piloted aircraft, which will more than double the number of the Reaper aircraft they are replacing, and doubling the investment in the Britain’s Special Forces’ equipment. It was also announced that the defense budget will increase by 0.5% above inflation for the rest of this Parliament.

It is clear that this review is significantly more focused on the ‘strategic’ element that it is named after than its 2010 predecessor, which was widely acknowledged as a shambolic cost-cutting exercise.

The Former Chief of the General Staff Lord Dannatt writing in The Telegraph said the review was “an honest attempt to rectify” the errors of five years ago.

“At its [the SDSR strategy] heart is an understanding that we cannot choose between conventional defenses against state-based threats and the need to counter threats that do not recognize national borders,” the review states. “Today we face both and we must respond to both. So over the course of this

Parliament our priorities are to deter state-based threats, tackle terrorism, remain a world leader in cyber security and ensure we have the capability to respond rapidly to crises as they emerge.”

The review sets out four particular challenges that are likely to drive UK security priorities for the coming decade. They include the “increasing threat posed by terrorism, extremism and instability”; the “resurgence of state-based threats”; the impact of cyber threats; and the “erosion of the rules-based international order, making it harder to build consensus and tackle global threats.”

The rise of ISIL is of course at the front and center of the political discourse for this new investment in the UK’s security infrastructure and defense equipment. But other threats – Putin’s Russia, China’s aggressive sea power expansion across Asia, instability in the Middle East, serious and organized crime, and the increasing prevalence and impact of major cyber-attacks – all provide context for the SDSR announcements in a world that is becoming more dangerous, not less. The question is, does this strategic review go far enough?

While the SDSR rumor mill can now be shutdown, the debate about the UK’s position in the world and whether it will have the military capability to support it, both now and in the future, has only just begun.

Did Russia used ATBIP bomb against Islamic State?

Aviation Thermobaric Bomb of Increased Power (ATBIP) Russian: **Авиационная вакуумная бомба повышенной мощности (АВБПМ)**, nicknamed **"Father of All Bombs"** (FOAB) Russian: "Отец всех бомб" ("Овб"), is a Russian-designed, bomber-delivered thermobaric weapon. In describing the destructive power of "FOAB", deputy chief of the Russian general staff Alexander Rukshin was quoted as saying, "all that is alive merely evaporates."



The bomb is reportedly four times as powerful as the US military’s GBU-43/B Massive Ordnance Air Blast bomb (whose official military acronym

"MOAB" is often colloquially called the "Mother of All Bombs"). This Russian device would therefore be the most powerful conventional (non-nuclear) weapon in the world. The veracity of Russia’s claims concerning the weapon’s size and power have been questioned by US defense analysts.

"MOAB" is often colloquially called the "Mother of All Bombs"). This Russian device would therefore be the most powerful conventional (non-nuclear) weapon in the world. The veracity of Russia’s claims concerning the weapon’s size and power have been questioned by US defense analysts.



"FOAB" was successfully field-tested in the late evening of September 11, 2007. The new weapon is to replace several smaller types of nuclear bombs in its arsenal

'Allahu Akbar' is No. 1 song on UK charts

Source: <http://www.ynetnews.com/articles/0,7340,L-4731975,00.html>

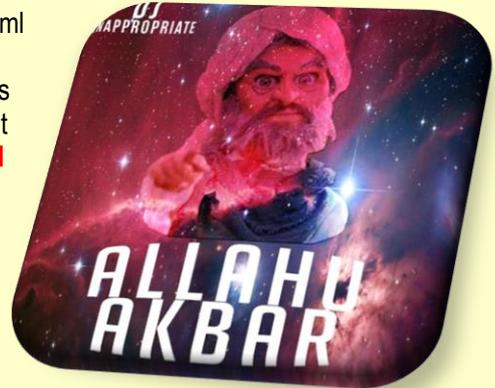
Nov 28 – The atmosphere in Europe can easily be described as tense at the moment, with authorities battling terror on a scale that was previously unheard of. **Thus it is surprising that a song titled "Allahu Akbar" has held the number one spot on the UK Spotify chart, and 5th place on the international charts.**

The hit was created by an anonymous artist named "DJ Inappropriate." The song is a upbeat dance track, leading some to believe that it is not meant to incite, but rather serves as a protest against "modest" Islamist terrorists. With that said, no one truly knows the purpose of the song.

The dance hit has been making the rounds on social media for the last seven months, before making it into the top charts a few days ahead of the Paris attacks. The song has continually gained traction since, and according to viral measurements, the song is most heavily played in Oslo, Stockholm, and London.

Spotify charts, which are part of the global company's online streaming service, are typically a good measure of the international popularity of a song.

"Allahu Akbar," originally a harmless call by Muslim worshippers praising god, has become more and more identifiable with Islamic terror in recent years. The terrorists who conducted the attacks in Paris two weeks ago also sounded the call during their murderous acts.



EDITOR'S COMMENT: "Surprising"??? In the UK???

Community torn apart as arrival of migrants prompts running battles in streets

Source: <http://www.express.co.uk/news/world/622126/Europe-migrant-crisis-refugees-Sweden-tensions>



Outraged protestors threatened children and hurled stones at sheltered housing in apparent retaliation for vandalism and burglaries carried out by newly arrived refugees.

The growing chaos engulfing the once tranquil village of Tärsjö has got so bad that the children of migrants now need a police escort just to get to school.

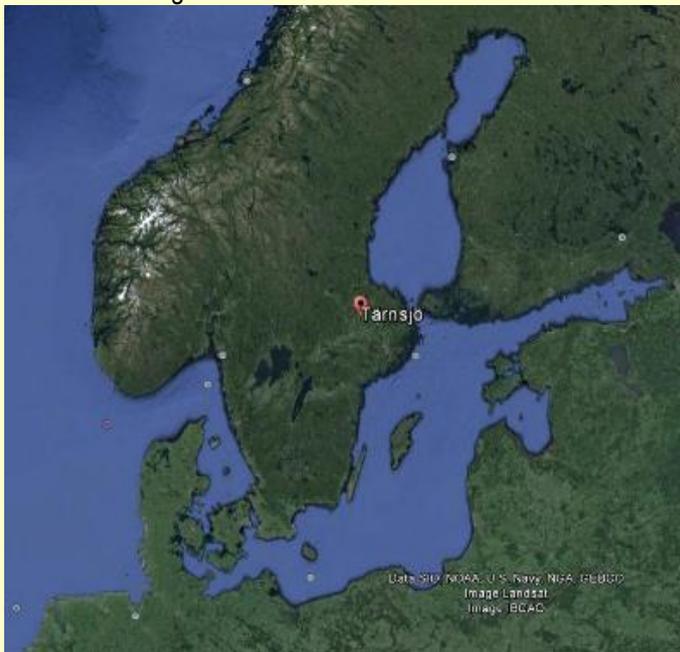
It is a snapshot of



potential tensions between locals and large numbers of new arrivals boil over, coming as thousands of Syrian refugees begin to arrive in Britain.

Villagers have expressed outrage that migrants get instant access to state benefits and housing whilst many families struggle to get by paying exorbitant rates of tax.

Meanwhile aid workers helping the refugees say they have been terrified by racist attacks which have left them too scared to leave their homes. Councillor Michael Ohman said the problems have arisen because the 1,200 locals in Tärnsjö, 90 miles north of the capital Stockholm, never wanted the refugees to move in.



He said: "Racial tension has divided the village into two groups - those who support the immigrants and those who want them gone.

"There has been fighting between immigrants and the people living here.

"The village integration works badly because people don't want immigrants in the village. This is no longer a happy community, it's divided and is not a pleasant place to live."

Sweden is at the heart of Europe's migrant crisis, with 10,000 asylum seekers arriving in the sparsely populated Scandinavian country every week.

It has already reintroduced border controls to stem the flow, whilst the anti-immigrant Sweden Democrats have made significant gains in recent opinion polls.

In Tärnsjö outraged locals say the problems began when 20 refugee families arrive and were linked to a crime wave in the village, including throwing stones at residents' cars.

Hate mobs organised on social media convened and struck back, attacking a block of flats which has been turned into a makeshift migrant centre. Some villagers now fear a more serious racially motivated incident could occur, such as an attack on migrant children at the local school.

Last month 21-year-old Anton Lundin Pettersson walked into a school in the Swedish city of Gothenburg wearing a helmet and a Star Wars mask and used a sword to kill two migrant students.

Villager Tobias Willhall said: "The immigrants have caused all kinds of trouble for us. I have friends whose storage spaces have been burgled by immigrants and bicycles have been stolen.

"There is a really bad tension in the village because of the refugees."

Meanwhile one migrant now living in the village moaned that life there was "boring" and decried the Swedish authorities for taking too long to register his asylum application.

Negazi, who travelled to Europe from Eritrea on a smugglers' boat across the Mediterranean, added that he wants to bring his wife and two children to the continent once the application has been approved.

The 25-year-old told freelance journalist Ulf Andersson: "I want to claim asylum in Sweden so that I can bring my children and my wife over to have a better life.

"Apart from it being boring and there being nothing to do, the only thing I complain about is how long it takes to claim asylum in Sweden.

"I get 200 kroner a week from the government, so I have no complaints. But it's an isolated place, so there is nothing to do here, it's a bit boring."

Other migrants said they were terrified about potentially being attacked by furious locals.

Tamam, who lives in the temporary refugee accommodation which has come under attack with his wife



and two children, said: "We have no problems with the vast majority of the people who are living here. We like living here. But there are some people who really seem to hate us.

"We don't feel afraid when we're at home and all we want is peace and quiet."

Not only in Dubai

Source: http://www.kicker.de/news/auto/neuheiten/startseite/640123/artikel_eine-corvette-fuer-die-polizei.html



Essen Polizie: Corvette C7 Stingray ("Tune it Safe" auf der Essen Motor Show 2015)

NATO call for calm over downed Russian jet..



Watch the video at: <https://www.youtube.com/watch?v=uEO17lflcU> and enjoy his response when commending on violation of Greek air space by armed Turkish warplanes! And that was before the Dec 01, 2015 very low over-flight of Turkish Air Force over four (4) Greek Island in a time stamp of 30 minutes (not 30 seconds!!!).



UAE celebrated its 44th National Day

Source: <http://www.thenational.ae/uae/heritage/al-fursan-aerobatics-team-puts-up-a-show-in-abu-dhabi--in-pictures>



Why do American cops kill so many compared to European cops?

By Paul Hirschfield

Source: <http://www.homelandsecuritynewswire.com/dr20151130-why-do-american-cops-kill-so-many-compared-to-european-cops>



CBRNE-TERRORISM NEWSLETTER – December 2015

Nov 30 – Chicago police officer Jason Van Dyke was charged with first degree murder 24 November in the death of Laquan McDonald. A [video released by police](#) shows Van Dyke shooting the teenager sixteen times.

Van Dyke is an extreme example of a pattern of unnecessary deadly force used by U.S. police. American police kill a few people each day, making them far more deadly than police in Europe.

Historic rates of fatal police shootings in Europe suggest that American police in 2014 were eighteen times more lethal than Danish police and 100 times more lethal than Finnish police, plus they killed significantly more frequently than police in France, Sweden, and other European countries.

As a scholar of sociology and criminal justice, I recently set out to understand why rates of police lethality in the United States are so much higher than rates in Europe.

**More guns and aggression**

Such massive disparities defy a simple explanation, but America's gun culture is clearly an important factor. [Unlike European nations](#), most states make it easy for adults to purchase handguns for self-defense and to keep them handy at nearly all times.

Acquiring guns illegally in the United States is not much harder. About 57 percent of this year's deadly force victims to date were allegedly armed with actual, toy or replica guns. American police are primed to expect guns. The specter of gun violence may make them prone to misidentifying or magnifying threats like cellphones and screwdrivers. It may make American policing more dangerous and combat-oriented. It also fosters police cultures that emphasize bravery and aggression.

Americans armed with less-lethal weapons like knives — and even those known to be unarmed — are also more likely to be killed by police.

Less-lethal weapon holders make up only about [20 percent of deadly force victims](#) in the United States. Yet the rates of these deaths alone exceed total known deadly force rates in any European county.

Knife violence is a big problem in England, yet British police have fatally shot only one person wielding a knife since 2008 — a hostage-taker. By comparison, my calculations based on data compiled by [fatalencounters.org](#) and the Washington Post show that U.S. police have fatally shot more than 575 people allegedly wielding blades and other such weapons just in the years since 2013.



Racism helps explain why African Americans and Native Americans are particularly vulnerable to police violence. Racism, along with a prevailing American ideology of individualism and limited government, helps explain why white citizens and legislators give so much support to controversial police shooters and aggressive police tactics and so little to criminals and poor people.

Not racism alone

But racism alone can't explain why non-Latino white Americans are 26 times more likely to die by police gunfire than Germans. And racism alone doesn't explain why states like Montana, West Virginia and Wyoming — where both perpetrators and victims of deadly force are almost always white — exhibit relatively high rates of police lethality.

An explanation may be found in a key distinguishing characteristic of American policing — its localism.

Each of America's 15,500 municipal and county departments is responsible for screening applicants, imposing discipline and training officers when a new weapon like Tasers are adopted. Some under-resourced departments may perform some of these critical tasks poorly. To make matters worse, cash-strapped local governments like Ferguson, Missouri's may see tickets, fines, impounding fees and asset forfeitures as revenue sources and push for more involuntary police encounters.

Dangers in small places

More than a quarter of deadly force victims were killed in towns with fewer than 25,000 people despite the fact that only 17 percent of the U.S. population lives in such towns.

By contrast, as a rule, towns and cities in Europe do not finance their own police forces. The municipal police that do exist are generally unarmed and lack arrest authority.

As a result, the only armed police forces that citizens routinely encounter in Europe are provincial (the counterpart to state police in the United States), regional (Swiss cantons) or national.

What's more, centralized policing makes it possible to train and judge all armed officers according to the same use-of-force guidelines. It

also facilitates the rapid translation of insights about deadly force prevention into enforceable national mandates.

In the United States, the only truly national deadly force behavioral mandates are set by the Supreme Court, which in 1989 deemed it constitutionally permissible for police to use deadly force when they "reasonably" perceive imminent and grave harm. State laws regulating deadly force — in the thirty-eight states where they exist — are almost always as permissive as Supreme Court precedent allows, or more so.

A different standard

By contrast, national standards in most European countries conform to the European Convention on Human Rights, which impels its forty-seven signatories to permit only deadly force that is "absolutely necessary" to achieve a lawful purpose. Killings excused under America's "reasonable belief" standards often violate Europe's "absolute necessity" standards. For example, the unfounded fear of Darren Wilson — the former Ferguson cop who fatally shot Michael Brown — that Brown was armed would not have likely absolved him in Europe. Nor would officers' fears of the screwdriver that a mentally ill Dallas man Jason Harrison refused to drop.

In Europe, killing is considered unnecessary if alternatives exist. For example, national guidelines in Spain would have prescribed that Wilson incrementally pursue verbal warnings, warning shots, and shots at non-vital parts of the body before resorting to deadly force. Six shots would likely be deemed disproportionate to the threat that Brown, unarmed and wounded, allegedly posed.

In the United States, only eight states require verbal warnings (when possible), while warning and leg shots are typically prohibited. In stark contrast, Finland and Norway require that police obtain permission from a superior officer, whenever possible, before shooting anyone.

Not only do centralized standards in Europe make it easier to restrict police behavior, but centralized training centers efficiently teach police officers how to avoid using deadly weapons.



The Netherlands, Norway, and Finland, for example, require police to attend a national academy — a college for cops — for three years. In Norway, over 5,000 applicants recently competed for the 700 annual spots.

Three years affords police ample time to learn to better understand, communicate with and calm distraught individuals. By contrast, **in 2006, U.S. police academies provided an average of nineteen weeks of classroom instruction.**

Under such constraints, the average recruit in the United States spends almost twenty times as many hours of training in using force than in conflict de-escalation. Most states require fewer than eight hours of crisis intervention training.

Desperate and potentially dangerous people in Europe are, therefore, more likely than

their American counterparts to encounter well-educated and restrained police officers.

However, explanations of elevated police lethality in the United States should focus on more than police policy and behavior. The charged encounters that give rise to American deadly force also result from weak gun controls, social and economic deprivation and injustice, inadequate mental health care, and an intense desire to avoid harsh imprisonment.

Future research should examine not only whether American police behave differently but also whether more generous, supportive, and therapeutic policies in Europe ensure that fewer people become desperate enough to summon, provoke, or resist their less dangerous police.

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Turkey's, Russia's official versions of jet shoot down scientifically impossible: Physicists

Source: <http://www.homelandsecuritynewswire.com/dr20151130-turkey-s-russia-s-official-versions-of-jet-shoot-down-scientifically-impossible-physicists>



Nov 30 – Dr. Tom van Doorslaere and Dr. Giovanni Lapenta, two astrophysicists at Katholieke Universiteit Leuven, have written that the laws of physics [cast doubts](#) over the



official accounts of both Turkey and Russia regarding how the Turkish air force shot down a Russian military plane last Tuesday.

In a blog post on the KU Leuven Web site, the two scientists write that the plane could not have gone down the way either country said it had.

The astrophysicists point to several improbabilities in the official versions of events.



Turkey's version

Turkey insists that the Russian plane was flying over Turkish territory for seventeen seconds, and that it had traveled over two kilometers of Turkish territory, thus violating Turkish airspace.

The *Independent* reports that Turkey says that during that period of seventeen seconds, Turkish pilots and ground control had warned the Russian pilot ten times to change course. The decision to shoot down the plane was made only after it had become apparent that the pilot was not heeding the warnings.

The physicists, however, conclude that the evidence shows that the plane was travelling at a speed of 980 km/h (609 m/h), and that at that speed the plane could not have been flying over two kilometers of Turkish territory for more than seven seconds.

In order for the plane to have been over Turkish territory for seventeen seconds, it would have had to fly at an exceedingly slow speed (for a fighter jet) of 420 km/h – but the two scientists note that the videos of the shooting, provided by the Turkish military, proves that the Russian jet was flying at a more normal speed (for a fighter jet) of 980 km/h.

The video shows that the Russian jet takes about thirty seconds to hit the ground. “Because the vertical movement is only dependent on gravity ($g=9.81\text{m/s}^2$, $z=gt^2/2$), we can calculate that the plane was moving at a height of at least 4,500 meters,” the astrophysicists write. “That number is consistent with the Turkish statement of the jets being at an altitude of 19,000 feet (5,800 meters).”

The map provided by Turkish officials also shows the plane crashed eight kilometers from the place over Turkish territory where it was hit by an air-to-air missile. A simple division suggests an initial speed of 980 km/h, a normal speed for a fighter jet traveling at that altitude.

Since it is unlikely that the plane was flying at 420 km/h, and then, after it was set on fire, its engines destroyed, and the two pilots ejected, more than doubled its speed to 980 km/h, the scientists say we must assume that it was flying at about 980 km/h at the time it was hit.

So if the plane was flying at 980 km/h, it could not have been over Turkish territory for more than seven seconds, and it would have been impossible for the Turkish pilots and ground control to issue the ten warning they said they did.

Some Turkish officials, aware of the fact that issuing ten warning in seven seconds – or even seventeen seconds – is incredible, told reporters that eight or nine of the warning were



actually issued over a period of five minutes, while the plane was still over Syrian territory, and that only the last one or two warning were issued while the plane was already over Turkish territory.

A plane flying at a speed of 980 km/h would cover eighty kilometers in five minutes – meaning that Turkish ground control began warning the Russian plane about not crossing into Turkey while the plane was still eighty kilometers from the Turkish border.

The two scientists find this explanation unconvincing: “How could the Turkish air force predict that the Russian jets were about to enter Turkish airspace? Military jets are very agile, and in theory the Russian jets could have turned at the last moment to avoid Turkish airspace. The warnings issued to the Russian pilots were mere speculation at the moment they were made.”

Russia’s version

Russia admits that its plane flew along the Turkish border, from east to west, but that it had made a 90 degree turn to the left (south) in order to avoid a 2-kilometer wide piece of Turkish territory jutting into Syria (the plane was shot over that small piece of land). Russia insists that the plane made a 90 degree turn south in order to avoid Turkish airspace.

The scientists reject the Russian explanation. They say that at that speed, the only way a 90 degree turn could be achieved was if the momentum of the incoming rocket was so much larger than the momentum of the jet – but since an air-to-air rocket is an order of magnitude lighter than a jet plane, the rocket’s momentum would be negligible. “A change of course of 90 degrees can only be achieved with an object that’s many times heavier or faster than the jet,” they write.

They conclude that Russia’s version, which claims that the jet was trying to avoid Turkey’s airspace, cannot be true, because at the speed the jet was flying there was no way for it, at the last minute, to avoid the 2-kilometer wide Turkish territory extending into Syria.

The scientists conclude: “According to our calculations, it is clear that both the story of Turkey and Russia should be taken with a grain of salt. Estimates limit the violation of Turkish airspace to a maximum of 10 seconds. Russia’s claims not correspond to the laws of mechanics.”

Are wearable police cameras a good idea?

By Greg Barns

Source: <http://www.abc.net.au/news/2015-01-05/barns-should-police-be-wearing-video-cameras/5997296>

Jan 04 – Last week Northern Territory Police announced many front line officers will use body-worn video and audio cameras as they go

trials of body cameras. The Northern Territory is the first jurisdiction to roll out body cameras so broadly.



about their daily business. All Australian jurisdictions, with the exception of New South Wales which will shortly commence a trial of body cameras, and Tasmania, have run limited

Police wearing body cameras is a good idea at first glance, particularly when one considers the amount of court time that goes into hearing evidence from defendants, witnesses and police in cases where there are allegations of impropriety by police.

But like many good ideas, the use of cameras by police needs to be analyzed carefully. If it is to work as a safeguard for both police and citizens, there need to be clear rules about how cameras are used and what happens to the footage obtained

from cameras.

Because the idea of police wearing body cameras is relatively new there is little data that enables a



determination as to whether they reduce police violence and complaints about police misconduct.

The first empirical study on the use of body cameras use by police was [released last month](#) by researchers at Cambridge University's Institute of Criminology. They analyzed the Rialto Police Department in California.

The results from the Rialto study show that in 2012 "use-of-force by officers wearing cameras fell by 59 per cent and reports against officers dropped by 87 per cent against" 2011.

According to a December 23 note from Cambridge University:

The researchers say the knowledge that events are being recorded creates "self-awareness" in all participants during police interactions. This is the critical component that turns body-worn video into a 'preventative treatment': causing individuals to modify their behavior in response to an awareness of 'third-party' surveillance by cameras acting as a proxy for legal courts - as well as courts of public opinion - should unacceptable behavior take place.

These results are promising, although allowance needs to be made for the fact that Rialto has a population of only just over 100,000 and is 75 per cent Hispanic. In other words, its ethnic make-up is very different to the Northern Territory with its large Indigenous population which has a very high interaction rate with police.

The Northern Territory experiment will see footage from cameras being provided to defendants and prosecutors if charges result from an interaction. But what about cases where there are no charges laid and police are alleged to have acted without proper regard to the rights of citizens?

This is an issue that has emerged in Duluth, Minnesota. According to The Guardian on Friday, a local newspaper was refused its request to access police footage of an incident in which a man who had barricaded himself inside his garage was shot twice by police.

Police in Duluth say the man is entitled to privacy. But a privacy advocate in Minnesota, Rich Neumeister, told The Guardian:

One of the reasons for the body cam is to have the availability to see if law

enforcement is doing their job. When I look at it in balancing the public interest weighs out, because this is where [residents] are shot by officers. There's no ifs, ands or buts. It's fact.

One can imagine lawyers acting for an individual in the Northern Territory making a similar request and Northern Territory Police arguing similarly, particularly if there allegations of police violence. Furthermore, the Northern Territory guidelines, published by the ABC on December 29, state that you cannot access footage relating to a person other than yourself. This will prevent media doing what they are seeking to do in Duluth.

The privacy issue is also relevant in two other respects. Firstly, police do use media to spin their side of a story. We know this from the fact that media attends raids when they are high-profile, such as in the case of anti-terrorism arrests or the search of former federal MP Craig Thomson's house in 2012.

How will we stop police leaking body camera footage in cases where individuals or groups make allegations of police brutality?

Secondly, while the Northern Territory Police say that data will be stored on a secure server and destroyed after 110 days if not being used in court, is it right that police should have control of storage of such data? To ensure that data does not leak or is not misused in other ways surely an independent data storage entity ought be established. The Ombudsman of the Northern Territory would be a good place for such an entity.

Finally, there is the matter of when a recording is made. According to the Northern Territory Police:

Officers will press record when they execute their police powers or make customer contact or custody or when there is a likelihood of custody incident.

The phrase "make customer contact" is curious. If it means every time a police officer with a body camera in the Northern Territory talks to, observes or otherwise interacts with any member of the public, then this is a good thing. If it only means when an officer is investigating or issuing an order, then the possibility of abuse taking place "off camera" is alive.

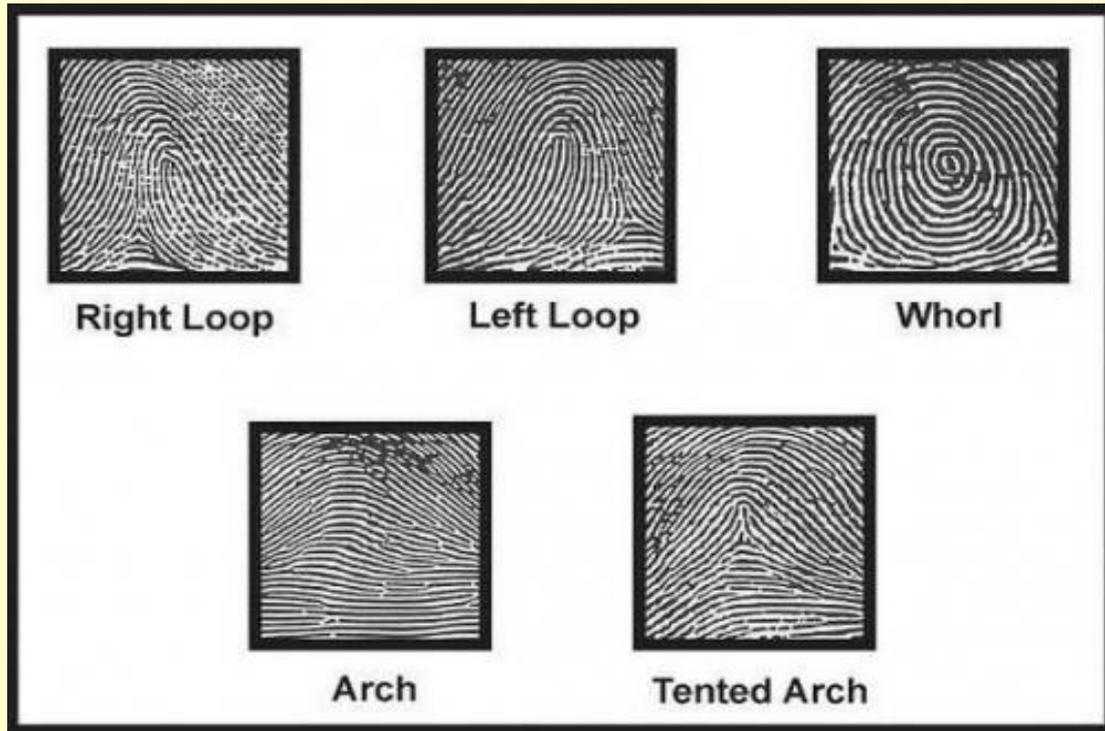


Body held cameras are potentially an important tool in improving police conduct and the Northern Territory trial is welcome in that respect. But we need to ensure that footage is

not misused and police do not look for excuses not to hand it over when the going gets tough. *Greg Barns is a barrister and a spokesman for the Australian Lawyers Alliance.*

New technique can tell whether a fingerprint belongs to a male or female

Source: <http://www.homelandsecuritynewswire.com/dr20151127-new-technique-can-tell-whether-a-fingerprint-belongs-to-a-male-or-female>



Fingerprint patterns used in fingerprint identification // Source: uah.edu

Nov 27 – Culprits beware, a University at Albany research group, led by assistant chemistry professor Jan Halánek, is taking crime scene fingerprint identification to a new level.

Halánek and his team of researchers at UAlbany have discovered a straightforward concept for identifying whether a culprit is male or female. It is based on the content in fingerprints — specifically amino acids.

According to known literature, amino acid levels in the sweat of females are about twice as high as in males. There is also a slightly different distribution, due mostly to hormonal differences. The same is true for amino acids left behind in fingerprints. Halánek's research team has devised a simple method to back up these claims.

UAlbany reports that as a starting point, Halánek's team extracts amino acids from a fingerprint by transferring it onto a piece of plastic wrap. A hydrochloric acid solution is then placed onto the fingerprint, followed by heating. This process allows for the water-soluble amino acids to migrate into the acidic solution. From there, the team can easily view amino acid levels, distinguishing sex.

Halánek and his colleagues' first test this method on "mimicked fingerprint samples," which they found to have a 99 percent accuracy of correct sex classification. From there, they set up a real crime scene scenario. Three female volunteers placed their fingerprints on five different surfaces, including a doorknob and a computer screen. Regardless of



same size, the average female has to have 2.1 children (total fertility rate). For some time now, all European countries, including Britain, have been well below that rate. The exception is Muslim Albania. For native Europeans, it seems, the consumer culture has replaced having children as life's main goal.

These startling demographic facts have been available for some time (see 'Muslim Population "Rising 10 Times Faster than Rest of Society"', *The Times*, 30 January 2009. Also the work of the Oxford demographer David Coleman). But on this historic transformation of the country there is silence from the political establishment. Not everyone agrees with these demographic figures. Population projection, some say, is not an exact science. Perhaps the Muslim birth rate will drop to European levels.

But this seems to be wishful thinking. For years it was believed that Muslims would enter what is known as "demographic transition", with European Muslim birth rates falling to native European levels. But that demographic transition has not happened. In Britain, for example, the Pakistani and Bangladeshi communities continue to have significantly higher birth rates than the national average, even after more than 50 years in the country.

Over the short term (a few generations) demographic forecasting is as scientific as any social science can be. Britain and the rest of Europe are in native population decline and European Muslim birth rates are up. If that trend continues, then the projection of a majority Muslim population in Britain is sound. Even the highly respected economist and historian Niall Ferguson accepts the figures.

Many British people find it hard to believe their country could become majority Muslim. After all, it was never what they wanted so why, in a democracy, should it be happening? But we've had such disbelief before. Back in the 60s and 70s, many people scoffed at the notion that London could ever be majority non-white. But today it is.

The fact is that the deathbed demography of native Britons has come up against increasing Muslim birth rates and the result is a classic Malthusian geometric increase in the Muslim population. As Malthus emphasized, populations increase geometrically, not arithmetically. Given two populations, one

declining one increasing, within a few generations the geometric increase of one over the other can be substantial.

Why has the Muslim birth rate not fallen to native levels? Just as there may be consumerist-cultural reasons for the low birth rates of native Britons, there may be strong cultural reasons for higher Muslim birth rates. As the journalist Christopher Caldwell puts it: "Muslim culture is full of messages laying out the practical advantages of procreation. As the hadith saying has it: 'Marry, for I will outnumber peoples by you.'"

Yassir Arafat understood the political power of high birth rates. The Palestinian population increased sevenfold in one generation from 450,000 in 1967 to 3.3 million in 2002. The wombs of Palestinian women, Arafat said, were the "secret weapon" in his cause. The Israeli government is very much aware of Palestinian demographics.

Population projections over the long term can be wrong. But for Britain, over the short term, whatever way you do the numbers, they all point in one direction: Britain will be a majority Muslim state by the year 2050.

The political and social consequences of all this will be significant. Britain's traditional foreign policy, particularly regarding the US and Israel, would very likely change. In fact the US and Israel are already anticipating the consequences of a majority Muslim Western Europe.

Britain's social landscape would also be changed. The *Adhan*, the Muslim call to prayer, would very likely be heard throughout most of Britain. The traditional iconic sights and sounds of the country would also change from church bell-towers to minarets.

Very likely all of this would happen gradually but there can be little doubt that it will happen, and it would be perfectly democratic.

Given that such a historic change is taking place, the silence of the political class is curious, to say the least. Britain, until the 1950s, could trace its ethnic and cultural ancestry back thousands of years. In 1903, in Cheddar Gorge Somerset, the remains of a pre-historic man were found. Known as Cheddar Man, DNA tests on this almost 9000 years old skeleton



showed that he has living descendants' today, still in Somerset.

In fact, genetic studies show that the populations of the British Isles (and Western Europe) have been stable for millennia, giving the lie to the oft quoted liberal comment that "Britain has always been a country of immigrants." That's false. Until the mass immigration of the 1950s, Britain was ethnically homogeneous. (See Bryan Sykes's [Blood of the Isles](#).)

The long stretch of Britain's exclusively European identity is now coming to an end, yet the political class refuse publicly to discuss such a culturally transforming event. Why the silence from the politicians? Are they not proud of their achievement?

The answer is that the demographic projections of a majority Muslim Britain show the British political class to have been catastrophically wrong on multiculturalism and immigration, and they are genuinely afraid to admit it. The British political establishment cannot give the full truth about immigration.

The former Conservative MP George Walden, considering the fears of his fellow MPs in discussing particularly Muslim immigration, wrote:

"I'd be so alarmed by the situation I'd do everything possible to suggest it was under control. It's up to politicians to play mood music in a crisis, and up to the people to understand

that there's little else governments can do. The last thing they can say is that we face a threat to which we can see no end because it's based on a clash of cultures. On the IRA we told the truth; on the Islamic problem, we lie." (Walden, *Time to Emigrate?* p.120)

Back in the 60s and 70s, the British political establishment united in condemning Enoch Powell, not just as a racist but as being factually incorrect in his demographic predictions. Since then, the subject of immigration has split British politics between the truth-denying, but morally superior, political mainstream and the truth-telling legacy of the bogeyman Enoch Powell.

For good or bad, the history of the last 40 years has vindicated Powell on many issues and shown the political establishment to have been wrong. Some major figures on the liberal-left now acknowledge this fact.

David Goodhart, the founder of *Prospect* magazine, in his new book *The British Dream*, argues convincingly that he and others on the liberal-left got it wrong on immigration.

But they also got it wrong on democracy. The projection of a Muslim majority by the year 2050, coupled with the fact that the vast majority of the British people have consistently opposed large-scale immigration, post-war British politics must represent the greatest ever failure in democracy. If ever the "Iron Law of Oligarchy" were proved right, then it is post-war British politics that has done it.

Vincent Cooper is a freelance writer with a particular interest in philosophy, mathematics, and economics.

Sweden to become a Third World Country by 2030, according to UN

Source: <http://speisa.com/modules/articles/index.php/item.454/sweden-to-become-a-third-world-country-by-2030-according-to-un.html>

According to UN projections, Sweden will be a much poorer country by 2030, much worse than what anyone in the Swedish government indicates.

The UN report HDI (Human Development Index) predicts a significant decrease in Swedish prosperity, unlike their Nordic neighbors, who will retain their top positions and even strengthen them globally in the long run.

In 2010 Sweden had the 15th place in the HDI rankings but according to UN forecasts, Sweden will be #25 in 2015, and in 2030 on the 45th place.

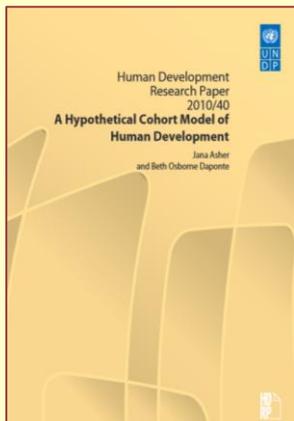
Sweden is one of few countries with such a sharp deterioration from what it had in 2010.





Finland demonstrates one of the world's best school systems, while the Swedish school have lost competitiveness.

Fewer ends up on welfare dependency in their Nordic neighboring countries while Sweden continues to have a greater amount of family households forced to live on welfare, which are a couple factors causing the dropped global competitiveness. Negative developments, or rather liquidations can be exemplified by Orrefors Kosta Boda, which in 1992 had 940 employees in Sweden and was a profitable industry. Today less than 100 remain in the company after further cost reductions and adaptations in order to meet global competition.



Most of today's less developed countries such as Cuba, Mexico, the Baltic countries and Bulgaria according to the 2030 UN report will be passing Sweden in prosperity.

Even Greece, which today is more or less bankrupt, but will be on 13th place by 2030.

Sweden's leftist establishment and media believe a cornerstone of their perfect society is multiculturalism: large scale immigration from some of the poorest, most backward nations on earth. Swedes who disagree with that plan risk being labeled racist, fascist, even Nazi.

"We had a perfectly good country," Ingrid Carlqvist, a journalist said. "A rich country, a nice country, and in a few years' time, that country will be gone."

The logic should be really simple to understand, yet many have difficulties grasping it: If you import the Third World, it's what you'll get.

► Here is the UN report: [2010–2030 UN projections of Very High HDIs](#)

Turkey's Human Wave Assault on the West

By Gregg Roman and Gary C. Gambill

Source: <http://www.meforum.org/5683/turkey-human-wave-assault-on-europe>

For months, Western policymakers have agonized over what to do with the masses of Sunni Muslim migrants flooding Europe by the boatload, particularly Syrians. Largely missing from this discussion is the question of why this flood is happening.

For starters, it doesn't have much to do directly with the civil war in Syria or the rise of ISIS. The

vast majority of the 886,662 migrants who illegally entered Europe this year embarked from Turkey, a little over half of them Syrians who took shelter in the country over the past four years. "EU officials have said ... Ankara was very effective in previous years in preventing the outflow of refugees



from the country," according to the *Wall Street Journal*.

What caused the spike in migration is that Ankara stopped containing it. Over the past year or so, the Turkish government has allowed human traffickers to vastly expand their operations, bringing prices down tenfold (from

Erdogan also used the crisis to generate foreign political support ahead of snap elections on November 1, essentially a re-do of the June 2015 elections that saw the ruling AKP lose its parliamentary majority for the first time. Though Western diplomatic protocol frowns on state visits during election time, German Chancellor



\$10,000-\$12,000 per person last year to around \$1,250 today, according to one report). This spawned what the *New York Times* calls a "multimillion-dollar shadow economy" profiting from the traffic, ranging from the smugglers to manufacturers of cheap rafts, life vests, and other equipment.

By the spring of this year it had become easier and cheaper than ever before to illegally enter Europe through Turkey, and more people have taken advantage of the opportunity Ankara has created.

So why did Turkish President Recep Tayyip Erdogan open the spigot? Put simply, to extract financial, political, and strategic concessions from European governments in exchange for closing it.

Ankara certainly hasn't been shy about asking for money over the course of its negotiations with EU officials in recent weeks. On November 29 the EU agreed to provide Turkey with an "initial" \$3.19 billion and take steps to expedite its bid to join the EU in exchange for Turkish promises to better patrol its coastlines.

Angela Merkel visited Istanbul for high-profile meetings with Erdogan and Prime Minister Ahmet Davutoglu just two weeks before the vote. The European Commission postponed the release of a report detailing the erosion of the rule of law, freedom of expression and judicial independence in Turkey until after the election in order, according to Reuters, "to avoid antagonizing" its president.

Most worrisome, perhaps, is Turkey's pursuit of strategic payoffs for its human wave assault on Europe. In a letter sent to European leaders at the September 23 EU migration summit, Davutoglu proposed the creation of a "safe zone" and U.S.-enforced no-fly zone stretching from the Turkish border 80 km into northern Syria, where his government has backed a variety of Sunni Islamist insurgents against both pro-regime Syrian forces and local Kurds.

Although the start of Russian military intervention in Syria on September 30 put an end to this fantasy for the time being (which perhaps explains why the Turks were so trigger-



happy in shooting down an SU-24 that only slightly violated their airspace on November 24), you can bet Erdogan will use the migrant crisis to pressure the West into supporting his ambitions in Syria.

If all of this sounds familiar, it's because the late Libyan leader Moammar Qaddafi used to play the same game, turning the pipeline of illegal trans-African migration into Europe on and off as a way of extracting concessions. **The most vexing question, then as now, is not what to do with the migrants, but what to do with a government that so callously manipulates masses of downtrodden human beings as a diplomatic pressure tactic.**

On this there's room for debate. But the first step in doing anything about it is to call Erdogan out for what he is – dangerous and manipulative – no partner for Western leaders. Still, after

meeting with the Erdogan in Paris on Tuesday, President Obama praised Turkey for being "extraordinarily generous when it comes to its support of refugees."

The next step, instead of bribing Turkey with ransom payments to end the hemorrhaging of Syrian and other Middle East refugees into the West, should turn the tables on Ankara. The potential loss of Western support to Turkey as it deals with both Russia and ISIS should be the sword of Damocles, convincing Erdogan to contain the refugee crisis.

Western material support to Turkey should be cut off entirely unless Ankara puts an end to the refugee crisis it is manufacturing and begins to play a constructive role in bringing stability to the region. How appropriate that an ancient Greek tragedy disrupt the current calamitous Turkish-born reality.

Gregg Roman is director of the Middle East Forum. Gary C. Gambill is a research fellow at the Middle East Forum

Norway is PAYING asylum seekers to return home

Source: <http://www.dailymail.co.uk/news/article-3351169/Norway-PAYING-asylum-seekers-return-home-Thousands-kroner-free-flights-offered-Scandinavian-country-struggles-cope-migrant-crisis.html>

Dec 09 – **Asylum seekers in Norway are being offered thousands of pounds and free flights to leave the country. A couple and their two children can apply for more than 80,000 kroner (£6,200) and have their flights paid for if they agree to return home. So far this year, more than 900 people have taken up Norway's offer.**

Katinka Hartmann, head of the immigration department's return unit, said many migrants did not expect the asylum process to take so long. She told Norwegian news outlet NRK: 'They thought they would have the opportunity to work or take an education, and maybe even to get their family to Norway.'

'Many cannot wait. They have family at home who expect them to be able to help.'

She said that now Norway is able to forcibly return people to Somalia, more Somalis will opt for assisted return.

A spokesman for the International Organization for Migration (IOM), which processes the return program, told NRK that the number of asylum seekers taking up the offer was spiraling.

The IOM says the Voluntary Assisted Return Program is 'organized, safe and dignified'.

Last month, emergency laws tightening asylum rules came into force as the government tried to stem a sharp rise in the number of people arriving.

The 5.2 million Nordic country of Norway, which is a member of the passport-free Schengen area but not of the European Union, expects to receive up to 35,000 asylum applications this year.

That figure has been revised upwards several times since August as Europe grapples with its biggest migrant crisis since the Second World War. The new rules, which will be in force for two years, make it easier



to refuse to process an asylum application if the asylum seeker has already resided in a third country deemed safe.

Other measures allow foreign nationals to be arrested and detained in cases where it is most likely that their asylum applications will not be processed, or to impose a duty to report to authorities and stay in a specific place.

Separately, a majority of parliamentarians agreed on a deeper, more long-term reform of Norway's asylum policy that includes fast-track

deportation of asylum seekers with a criminal record.

The number of asylum seekers arriving in Norway remains relatively modest compared with other European countries. Neighboring Sweden expects to receive 190,000 asylum applications this year.

But the numbers are rising rapidly, particularly on Norway's Arctic border with Russia, where more than 4,000 people have entered the country this year, up from just 10 last year.

Finland says asylum seekers should work for free and learn about women's rights

Source: <http://www.telegraph.co.uk/news/worldnews/europe/finland/12040552/Finland-says-asylum-seekers-should-work-for-free-and-learn-about-womens-rights.html>

Dec 08 – **Finland's government will require asylum seekers to work for free and to acknowledge a "national curriculum" on Finnish culture and society**, it said on Tuesday, launching measures to tighten its immigration policy.

It will also regularly reassess conditions in the asylum seekers' home countries twice a year, and if necessary, cancel residence permits accordingly.

After its latest reassessment on Afghanistan, it said it would no longer grant subsidiary protection, claimed by people who say they face death or torture, to asylum seekers from south and east Afghanistan.

"The new set of measures will tighten our practices and erase possible attractiveness factors," Juha Sipilä, the prime minister, told reporters.

About 32,000 asylum seekers have come to the Nordic country this year, compared to just 3,600 last year, as refugees and migrants pour into Europe fleeing war and poverty.

The government said it will speed up the return of migrants who do not qualify for asylum. It estimated around two thirds will be rejected.

With the economy expected to shrink for a fourth successive year, anti-immigrant sentiment has increased after police last month reported it was investigating a few cases where asylum seekers are suspected of rape. Violent hate crime against the asylum seekers has also picked up.

The government said it will start assigning work to working-age asylum seekers on the grounds that meaningful action would help relieve their frustration.

"It is not necessarily paid work, it could be something outdoors, some maintenance work at the reception centre ...

The longer that people are idle, the more frustrated they become," said employment minister Jari Lindström.

The government will also compose an information package on Finnish culture and society, highlighting the rights of women and children.

"All asylum seekers will acknowledge it as received. No one can be able to say that they didn't know,"

Mr Lindström said.

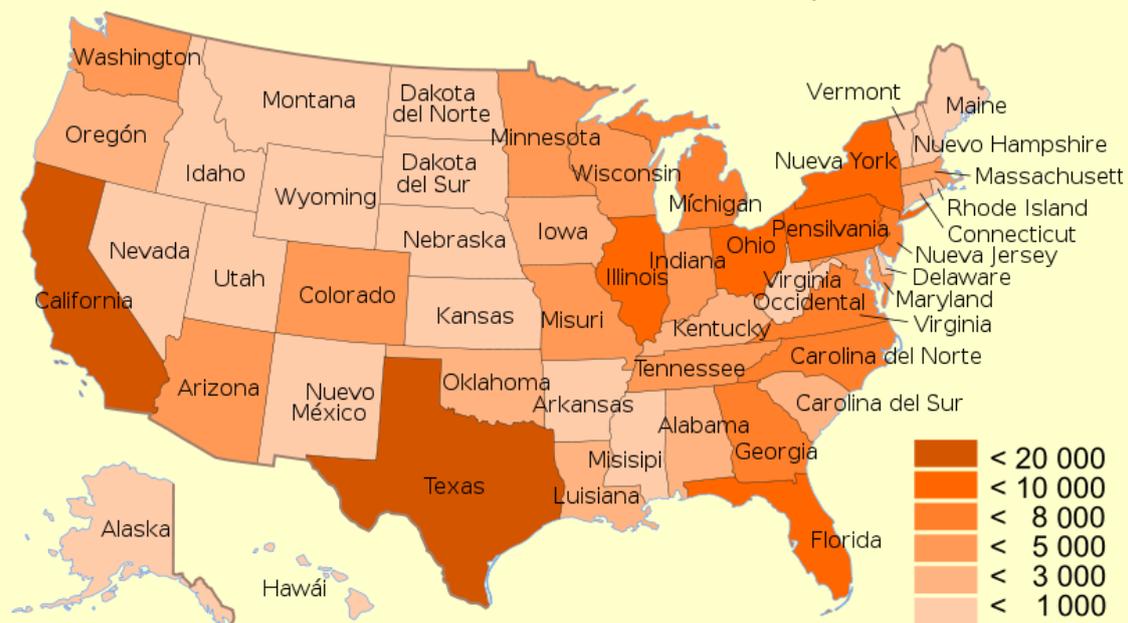


EDITOR'S COMMENT: If I remember well Norway's solution has been attempted some years ago by France with very poor results. Although the amount of money given is "huge" given the circumstances in many African countries (e.g. Somalia), it is the environment there that make such proposals to fail. As for Finland's proposal: this is a more logic approach (again, I recall similar announcements from UK) and might work if strictly implemented. Might also be a good solution for Greece as well! Incorporation of newcomers is the main problem. These people need to reboot their lives but also to keep their religion and way of life. Any allowance given should be paid back with work and social contribution. We all know that in Germany, France, UK and Scandinavia there are thousands of families taking advantage of public welfare without doing nothing! Doing nothing is not a work! And they have to understand that being in Norway they should be Norwegians as close as possible. This is what for example Greeks do when immigrating to another EU country or the US. And this is why they prosper and have a happy life without causing any problems in hosting country. Besides, if they do not like life in Europe they can always stay in their countries – they came to us; they were not invited to be eternal paid guests.

The truth about Muslims in America

By Holly Yan (CNN)

Source: <http://edition.cnn.com/2015/12/08/us/muslims-in-america-shattering-misperception/>



2010 estimate

Dec 09 - Donald Trump sparked a firestorm of criticism from liberals, conservatives and those in between when he [called for a ban on Muslims entering the United States](#).

But while such a ban is unlikely to be implemented in a country with freedom of religion, the cheers that followed his announcement at a South Carolina rally are telling.

"I think that we should definitely disallow any Muslims from coming in. Any of them," supporter Charlie Marzka, 75, told CNN. "The reason is simple: We can't identify what their attitude is."

Indeed, the truth about Muslims in America is perhaps surprising -- but not in the way Trump and his supporters might think.

A look at polls and studies conducted in the last few years shows that Muslims have been crucial in helping law enforcement find terror suspects in the United States. Many [have served in the military protecting the country against terrorists](#). And in many ways, they're a lot like other everyday Americans.



Here's the reality of Muslims in America -- and how it smashes stereotypes:

They are a minuscule portion of the U.S. population

It's difficult to come by hard numbers because the U.S. Census doesn't collect religious data. But the fear of Muslims taking over and imposing Sharia law is unfounded. By some estimates, Muslims make up [less than 1% of the U.S. adult population](#). By 2050, their numbers will grow -- to 2.1%. Of all the Muslims in America, 63% are exactly the kind Trump wants banned -- immigrants.

They're better educated than most Americans

U.S. Muslims have the [second-highest level of education among major religious groups](#) in the country; [Jews have the highest](#). And [a greater proportion of them have college degrees](#) than the general U.S. population.

They have more gender equality

While in many parts of the Muslim world, women are confined to second-class status, that's not the case among American Muslims. [Virtually all of them, 90%, agree](#) that women should be able to work outside the home. [American Muslim women hold more college or postgraduate degrees](#) than Muslim men. And they [are more likely to work in professional fields](#) than women from most other U.S. religious groups.

They've been here since the birth of the nation ...

Scholars estimate about [a quarter to a third of the Africans brought to the United States as slaves were Muslims](#). Most were then forced to convert to Christianity.

... and they're not just clustered in big cities

American Muslims live in cities big and small all across the United States. The first mosque built in America was in, of all places, [Ross, North Dakota](#), back in 1929.

They're as religious as Christians ...

The general perception of Muslims has one thing right: Most Muslims are very religious. About half say they attend the weekly Friday prayers. But that makes them [similar to Christians](#): About 70% of Christians say religion is important in their lives, and about 45% go to a weekly service.

... but they're not as dogmatic as they are portrayed

Much has been made about fundamentalist Muslims and their strict interpretation of the Quran. But most American Muslims are different. [A Pew religious landscape survey found](#) that 57% of American Muslims say there is more than one way to interpret Islam's teachings. A similar number say many different religions can lead to eternal life.

There have been Muslims involved in terrorism ...

From September 11, 2001, until the end of 2014, 109 Muslim-Americans plotted against targets in the United States. And terrorism by Muslim-Americans killed 50 in the same time period. Contrast that with the deaths from other mass shootings just last year: 136 -- [more than twice as many as all the deaths](#) from 13 years of Muslim-American terrorism.

... but they've also spoken out against it

After every terrorist attack at home and abroad, the refrain rises, "Where is the Muslim condemnation?" American Muslims have spoken out -- and done much more. A Duke University study found more terrorism suspects and perpetrators [were brought to the attention of law enforcement by members of the Muslim-American community](#) than were



discovered through U.S. government investigations. And a Pew survey found that roughly half of U.S. Muslims say their religious leaders aren't speaking out enough against Islamic extremism.

Refugee system “vulnerable to exploitation from extremist groups”: U.S. intelligence

Source: <http://www.homelandsecuritynewswire.com/dr20151208-refugee-system-vulnerable-to-exploitation-from-extremist-groups-u-s-intelligence>

Dec 08 – On Monday, in his inaugural State of Homeland Security Address, House Homeland Security Committee chairman Michael McCaul (R-Texas) highlighted **new concerns regarding refugees with ties to terrorist groups in Syria who might try to enter the United States**. Earlier this year, McCaul wrote to intelligence officials regarding possible terrorist exploitation of Syrian refugee flows, and on Monday he released unclassified excerpts from a response letter provided by the Office of the Director of National Intelligence earlier this year. The letter noted that:

- The National Counterterrorism Center (NCTC) has identified “...individuals with ties to terrorist groups in Syria attempting to gain entry to the U.S. through the U.S. refugee program.”
- In the same response letter, NCTC also offered that: “The refugee system, like all immigration programs, is vulnerable to exploitation from extremist groups seeking to send operatives to the West. U.S. and Canadian authorities in 2011 arrested several refugees linked to what is now ISIL. Early in 2011, Canadian authorities arrested dual Iraqi-Canadian citizen Faruq ‘Isa who is accused of vetting individuals on the internet for suicide operations in Iraq. The FBI, in May of the same year, arrested Kentucky-based Iraqi refugees Wa’ad Ramadan Alwan and Mohanad Shareef Hammadi for attempting to send weapons and explosives from Kentucky to Iraq and conspiring to commit terrorism while in Iraq. Alwan pled guilty to the charges against him in December 2011, and Hammadi pled guilty in August 2012.”

Responding to the ODNI letter, McCaul said that “ISIS has said in their own words that they want to exploit the refugee program to enter the West. They have already proven their ability to do so with the attacks in Paris, which were reportedly

perpetrated by terrorists who infiltrated Europe through refugee flows. I have deep concerns with what I have heard from the intelligence community regarding the vulnerability of the U.S.-bound Syrian refugee pipeline, and these revelations reaffirm my belief that we need tighter security to keep terrorists from slipping into the United States. I call on the Senate to take up our refugee security bill and the President to sign it.”

“That was very courageous for them to come forward with this, to tell me about this personally, given the political debate on the Hill,” McCaul told *The Hill* on Monday.

In his Monday’s State of Homeland Security Address, McCaul offered a gloomy assessment of American national security, comparing the stakes as similar to those in the Second World



War fight against fascism.

He said that the ISIS threat is greater than at any time since 9/11, and that ISIS is “now more dangerous than al Qaeda ever was under Osama bin Laden.”

“I believe the state of our homeland is increasingly not secure,” McCaul said.

“I believe 2015 will be seen as a watershed year in this long war — the year when our enemies gained an upper hand and when the spread of terror once again awoke the West.”



The House this week will consider legislation to tighten the security of the Visa Waiver program. “This is just the beginning,” McCaul said. “Over the coming weeks, we will introduce a slate of new bills based on the findings of the [bipartisan congressional] task force to keep terrorists from crossing our borders.”

McCaul told *The Hill* that among the issues to be considered will be further hardening the country’s borders, sharing intelligence with foreign countries, and examining challenges posed by the proliferation of encryption technologies.

Fibers from natural fats make bulletproof vests stronger and greener

Source: <http://www.homelandsecuritynewswire.com/dr20151210-fibers-from-natural-fats-make-bulletproof-vests-stronger-and-greener>

Dec 10 – Bulletproof vests and other super-strong materials could soon become even tougher and more environmentally friendly at the same time with the help of extra firm, or “al dente,” fibers. Researchers



report in ACS’ journal *Macromolecules* an innovative way to spin high-performance polyethylene fibers from natural fats, such as oils from olives and peanuts.

[That’s not spaghetti — polyethylene fibers made with olive oil could help make super-durable materials even stronger.](#)

ACS reports that these materials, which are powerful enough to stop speeding bullets, can also be used for many other tasks that require strength. They recently played a key role in lifting a sunken ferry from a delicate



ecosystem off the coast of Italy. The fibers also can serve as sails to catch wind, ropes for climbing and tying, and thin, sturdy surgical sutures that ensure wound healing. But making fibers for these applications with today’s commercial processes has drawbacks. For example, one of the methods requires large amounts of solvents that are flammable and toxic. The research group led by Theo Tervoort and Paul Smith from ETH Zurich wanted to find a more environmentally friendly route to produce these ultra-strong fibers.

The researchers replaced the hazardous solvents with natural, safer alternatives, including extra virgin olive oil, peanut oil, and stearic acid, which is a substance found in animal and vegetable fats. Their new approach was up to 250 percent more efficient than current methods. And resulting fibers were up to two times stronger than a current commercial version. With a nod to the culinary connection, the researchers dubbed their novel product al dente fibers.

— [Read more in Raphael Schaller et al., “High-Performance Polyethylene Fibers “Al Dente”: Improved Gel-Spinning of Ultra-High Molecular Weight Polyethylene Using Vegetable Oils,” *Macromolecules*, Article ASAP \(30 November 2015\).](#)



Americans are twice as willing to distance Christian extremists from their religion as Muslims

By Philip Bump

Source: <https://www.washingtonpost.com/news/the-fix/wp/2015/12/10/to-many-christian-terrorists-arent-true-christians-but-muslim-terrorists-are-true-muslims/>

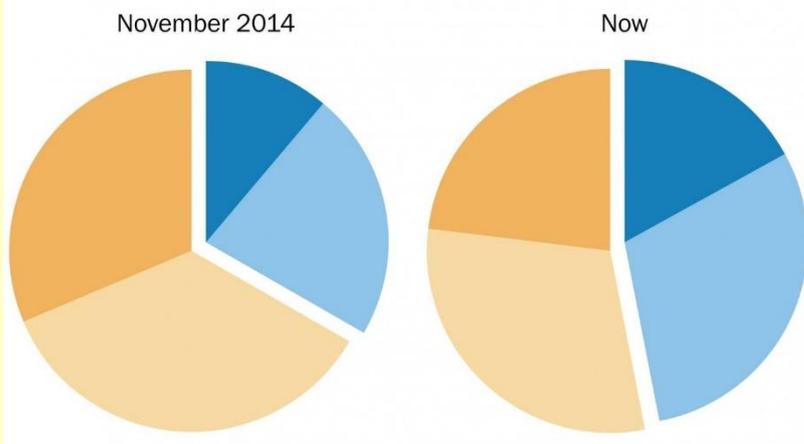
Dec 10 – The Islamic State's effort to terrorize the United States appears to be working.

A new survey from the Public Religion Research Institute [released](#) Thursday shows a sharp increase in the number of Americans who are actively worried about terrorism. In November 2014, a third of

Fear of terror attacks has increased since last year

Data from Public Religion Research Institute, December 2015..

■ VERY WORRIED ■ SOMEWHAT WORRIED ■ NOT TOO WORRIED ■ NOT AT ALL WORRIED



Americans said they were "very" or "somewhat" worried about themselves or a family member being a victim of a terrorist attack. This year, after attacks in Paris and San Bernardino, Calif., nearly half of Americans say they share that concern.

Terrorism is also the issue Americans consider critical — far more than illegal immigration and slightly more than mass shootings. Note that attitudes about illegal immigration haven't really changed much over the past year. About the same number of people support a path to citizenship as have since February, and about the same number of people support deporting

those here illegally.

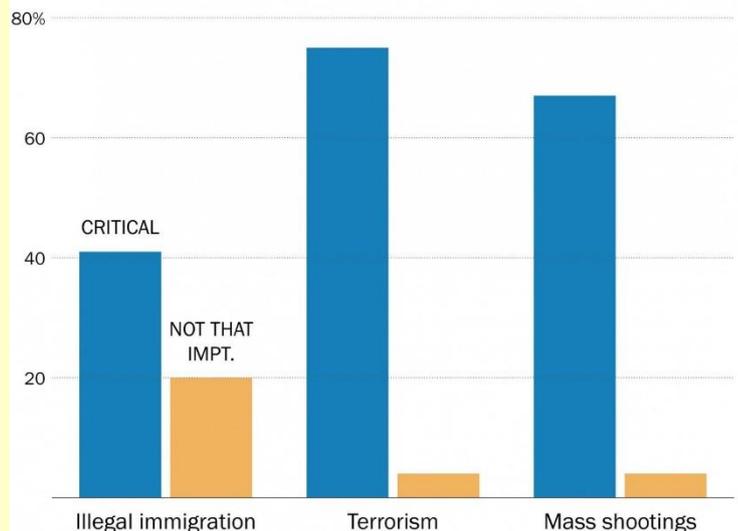
On the other two topics — terrorism and mass shootings — there's a predictable partisan split. Republicans are more worried about the former, and Democrats the latter.

(I asked the folks at PRRI if they'd considered asking about the extent to which Americans were afraid of being the victims of a mass shooting. "We toyed around with that idea, but ultimately decided against including it," PRRI's Dan Cox said via email. "We thought that because the ideas are not mutually exclusive — a terrorist attack could certainly take the form of a mass shooting. The usefulness of the question would be limited.")

Perhaps the most striking questions, though, were a pair in which the pollsters asked whether people were willing to distance terrorists from the religions in whose name they claimed to be acting. (The questions were: "When people claim to be Muslim/Christian and commit acts of violence in the name of Islam/Christianity, do you believe they really are Muslim/Christian, or not?")

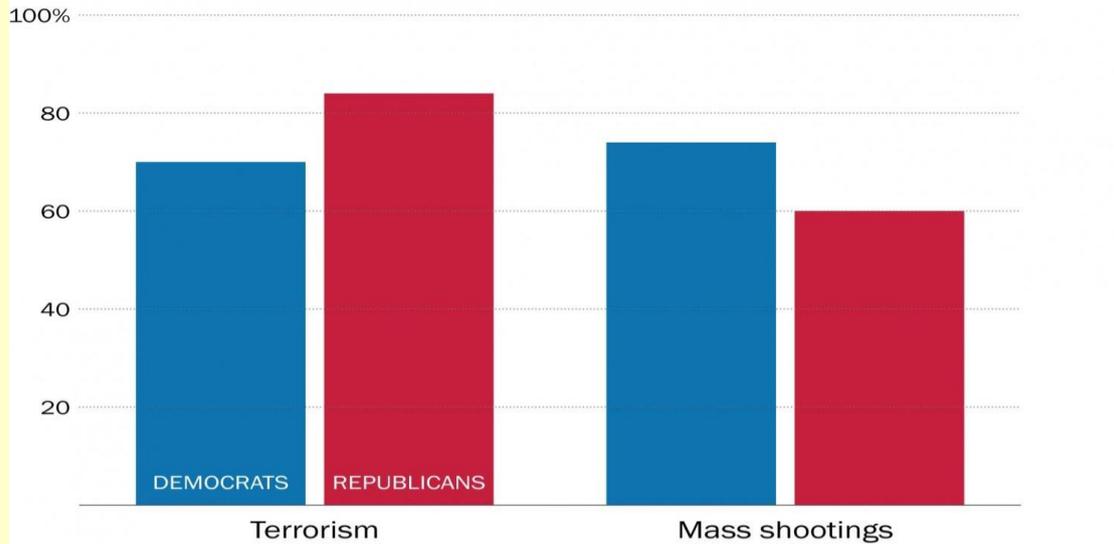
Are these critical issues facing the country?

Data from Public Religion Research Institute, December 2015.



The partisan split on terror and shootings

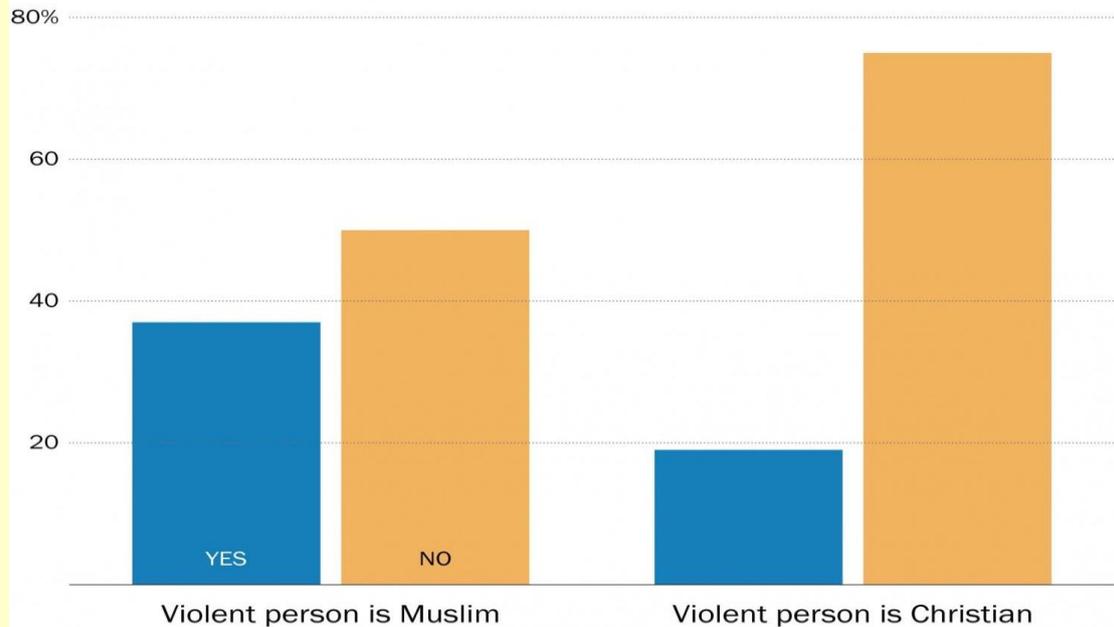
Percent calling the issue “critical.” Data from Public Religion Research Institute, December 2015.



Americans were nearly twice as willing to assume that those saying they were committing violent acts in the name of Christianity weren't real Christians than they were to make the same distinction for Muslims.

When people commit violence in the name of a religion, do you believe they really are members of that religion?

Data from Public Religion Research Institute, December 2015.



(Many terrorist acts, of course, are a subset of this category.) Part of that is probably a result of familiarity; more Americans understand the basics of Christianity than Islam and may be likely to assume that Islam provides more allowance for violent acts (47 percent of respondents considered the values of Islam "at odds with American values"). Regardless, this also shows that the Islamic State is being successful. Its goal of driving a wedge between the West and the Muslim world relies on precisely these sorts of distinctions.

Philip Bump writes about politics for The Fix. He is based in New York City.



Assad's future; Israel's missile defense; U.S. overseas bases

Source: <http://www.homelandsecuritynewswire.com/dr20151211-assad-s-future-israel-s-missile-defense-u-s-overseas-bases>

Gen. Gadi Eisenkot, the IDF chief of staff, the other day said the key to ending the war in Syria is in the hands of the United States and Russia – but that even if the two powers cooperated, it would take a couple of years or more to stabilize Syria and the end the violence there.

Eisenkot, who was promoted to the position of chief of staff earlier this year, is highly regarded as a “thinking general,” capable of both leading soldiers in battle and also engaging in the scholarly fashioning of long-term strategy. He was – and is – opposed to an Israeli military strike on Iran’s nuclear facilities, and is known to be keenly aware of the limits of military power.

He is also known to support the view that **Israel's interests, at least in the short term, would be served if Assad remained in power.** Assad's influence on events in Syria has been steadily diminishing, and the shots are now being called by Iran and Hezbollah, the Assad regime's two steadfast supporters.

Eisenkot believes that as hostile to Israel as Iran and Hezbollah are, they are at least rational in their approach to the use of power, and understand the give-and-take of regional power relations. This cannot be said of ISIS. Since the moderate opposition to Assad is currently too fragmented, then until there is a unified and cohesive non-Islamist force to challenge both Assad and ISIS, Israel would be better off with the status quo.

The status quo, however, cannot be maintained because the Alawite community is too small to continue and provide soldiers to Syria's army, and both Iran and Hezbollah appear to have concluded that the cost of maintaining Assad in power is just too high.

Eisenkot said that the likelihood of the Assad-Hezbollah-Iran axis winning the war in Syria is “zero” (his words).

Even in order to keep himself in power only in western Syria – Assad now controls only about 15-20 percent of Syria's territory — Assad would need a large number of ground forces, forces which the Alawite community cannot provide, and which Russia, Hezbollah, and Iran are unwilling to supply.

At the end of September, Iran sent about 2,000 Revolutionary Guard soldiers to Syria as part of a coordinated joint Iranian-Russian operation to evict moderate rebel groups from Idlib Province in northern Syria – with Russia providing air cover to the ground forces. Iran suffered heavy casualties, including the loss of several senior officers.

Israeli intelligence sources say that there is a growing sensitivity on the part of Iran and Hezbollah to the cost of their continued support of the Assad regime. Hezbollah, a militia of some 30,000 fighters, has lost about 1,300 dead and more than 5,000 wounded, most of them from the better-trained ranks of the militia. Russia has decided not to send ground troops to Syria.

Russia's airpower is aimed almost exclusively at the anti-regime rebels, but there is just so much airpower can do. Hezbollah has limited its participation in the war to defending positions in the Qalamun mountain range on the Lebanon-Syria border. And Iran has decided to limit its involvement in Syria to logistical and intelligence support to the shrinking Syria army.

Missile defense: Israel announced successful test of its Arrow-3 defensive missile

Israel is surrounded by adversaries with large missile fleets. Iran has tested ballistic missiles than can carry large warheads to Israel—including nuclear warheads. **Hezbollah, the Shi'a Lebanese militia, now has in its arsenal more than 100,000 rockets and missiles of different ranges, accuracy, and carrying capacity.**

In response to the growing missile threats, Israel, with U.S. financial assistance, had developed a layered missile defense which aims to tackle short-, medium-, and long-range missiles.

The Arrow 3 is the fourth component of Israel's layered missile and rocket defense system:

- Iron Dome system intercepts short-range rockets with a range of up to four kilometers
- David's Sling's system is designed to intercept long-range



rockets, with a range of up to seventy kilometers

- Arrow 2 is designed to intercept mid-range missiles, those with range of up to 300 kilometers



On Thursday, Israel has successfully tested the latest version of the Arrow 3 missile.

The Arrow system is a joint project between Israel Aerospace Industries (IAI) and Boeing. *Ha'aretz* notes that **each Arrow 3 missile costs about \$2.2 million.**

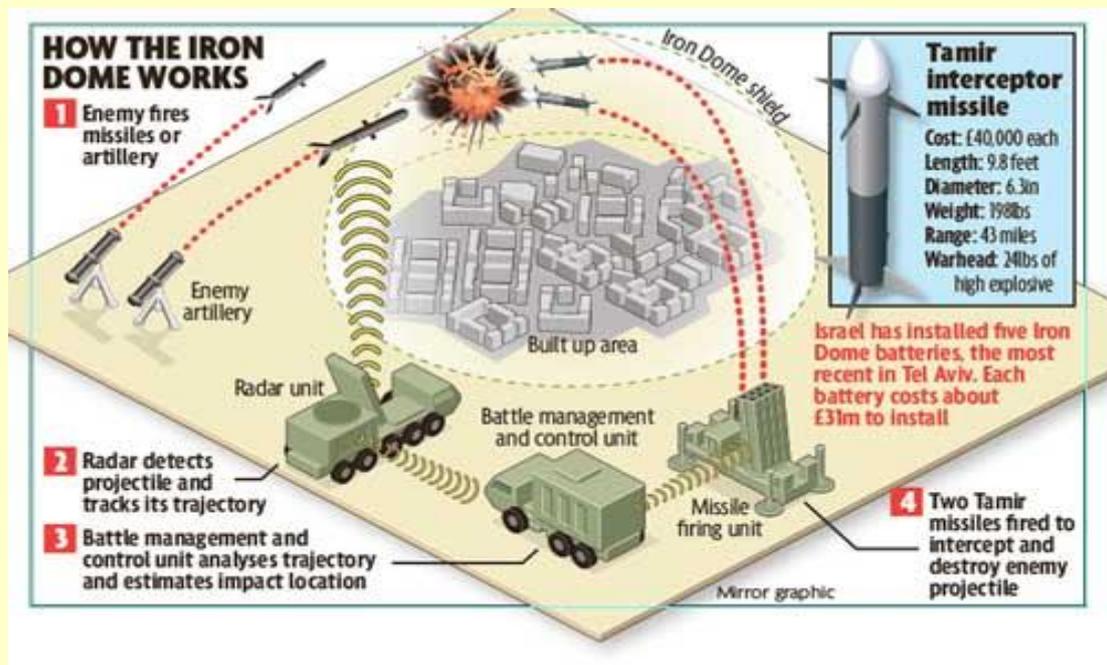
In Thursday's test, the Arrow-3 hit and destroyed target in space, which were simulated nuclear or chemical warheads.

Not all the technical details about how the missile destroys its targets, but what is known is that once the missile reaches a certain altitude, it releases several small satellites, each aiming itself toward a different warhead.

The Iron Dome, Israel's protective system against short-range missile, proved effective during the summer 2014 war between Israel and Hamas. Next year Israel will unveil its **David's Sling system.**

Overseas bases: Pentagon wants counter-insurgency bases in volatile regions

U.S. military and national security officials have been considering a Pentagon's proposal for forward deployment of American forces so they



- **Arrow 3 is designed to intercept long-range ballistic missile, with a range of up to 2,500 kilometers**

Israeli defense ministry officials said the Arrow 3 was designed to intercept missiles outside the atmosphere.

better positioned to tackle terrorist groups. The troops will be based in several military bases in Africa, Southwest Asia, and the Middle East.





David's Sling Missile system

The *New York Times* reports that senior military officials envision a network of bases which would serve as hubs for Special Operations troops and intelligence operatives from which to launch counterterrorism missions.

The Pentagon's proposed new architecture would include four "hubs," including expanding

existing bases in Djibouti and Afghanistan, and smaller "spokes," that is, more basic installations, in countries like Niger and Cameroon, both of which are now at war with Boko Haram and other Islamist militias.

The number of troops in each hub would range from about 500 to 5,000 personnel. The creation of both the hubs and the spokes would also require the approval of the host nation.

Russian frigate fires warning shots at Turkish fishing boat

Source: <http://atimes.com/2015/12/russian-frigate-uses-firearms-to-prevent-collision-with-turkish-vessel-in-aegean-sea/>

Dec 13 – A Russian destroyer had to open warning fire as a Turkish fishing vessel sailed on a collision course towards it and did not respond to calls from the warship, the Russian Defense Ministry reported.



Smetlivy destroyer

The incident happened in the northern part of the Aegean Sea some 12 nautical miles from the Greek island of Lemnos, the ministry said.

The crew of the Kashin-class guided missile destroyer Smetlivy spotted the Turkish fishing trawler some 1,000 meters from the Russian warship early

on Sunday, the ministry said. The ship was sailing towards the destroyer and ignored calls for radio contact and other attempts to communicate.





When the Turkish vessel approached to about 600 meters, the Smetlivy opened small arms fire at a spot in front of the trawler, taking care to avoid any risk of hitting the Turkish ship itself, the report said.

**Smetlivy's
Armament:**

- 1 × twin 76 mm (3 in) AK-726 guns,
- SAM: 2 × twin launchers (NATO reporting name: SA-N-1 Volna),
- Navalised version of the Isayev S-125 (SA-3 Goa) system,
- 32 × missiles,
- 1 × 5 533 mm (21 in) torpedo tubes,
- 2 × twelve barrel RBU-6000 ASW rocket launchers,
- 2 × 4 anti-ship SS-N-25 Uran missiles.

The ministry said the Turkish fishing ship changed course after that and kept about 540 meters from the Smetlivy, but did not contact the Russian warship.

“Russian Deputy Defense Minister Anatoly Antonov has summoned the military attaché of the Turkish embassy in Russia in connection with the incident in the Aegean Sea,” the statement said.

EDITOR'S COMMENT: Russian crew had specific orders to intercept floating or aerial means loaded with explosives attempting a suicide attack by jihadist operatives. Same was the case a few days ago when a Russian sailor with a 9K38 Igla was photographed on board of landing ship Caesar Kunikov throughout the ship's passage through the Bosphorus straits. At that time intelligence warned for the possibility of a suicide aerial attack by a loaded small propeller aircraft piloted by terrorists. If you follow Greek news on the Internet for some time you will realize that incidents like this are very common in our seas but apart from “cool” pilots we also have “cool” sailors and the incidents end just with tension and another scar in our national pride... But history dictates that bullying sometimes end up badly! And we have the means to stop this nonsense. **By the way** the vessel was not a fishing trawler but most probably the Gechitsiler Balik Chilik (fishing) vessel was a communications' interception/bugging (spy) ship most often used by Turkish MIT!

Is the West Indebted to Islam?

By Mark Durie

Source: <http://www.meforum.org/blog/2015/12/does-the-west-owe-islam>

Dec 10 – Back in 2011, on 28 February, Malcolm Turnbull, now Australia's Prime Minister, had [this to say about Islam on Q&A](#):

Islam is an ancient religion, of great scholarship. I mean — for heaven's sake — much of our learning and culture came to us from the Muslims, just like, you know, our whole system of numbers and much of the learning of the ancient Greeks only

survived because of the Arab scholars and the Islamic scholars.

So, you know, the idea that Islam is antithetical to learning or culture or scholarship is absurd. Now, you know, it's a great tradition. It is important for us that we promote and encourage Islam and Islamic traditions which



are moderate, which support freedom, which support democracy and which support Australian values — not in the sense of "Aussie values" — but in the sense of democracy, rule of law, tolerance, freedom. That's what we're talking about and they are universal values.

Turnbull made this statement in order to dismiss a suggestion he considered absurd, namely that Islamic schools in Australia promote extremism. He intended the argument he put forward to be evidence for the inherent moderation of Islam.

The idea that Western people should feel indebted to Islam for keeping Greek and Hindu learning alive is common enough. But does it make any sense at all?

Consider the case of the Hindu number system. Muslim conquests of the Indian subcontinent commenced in the 7th century and, by the early 9th century, Muslim scholars had learned about the Hindu numbering system and adopted it. Use of the system then spread rapidly across the Arab world, and by the early 10th century it had reached Spain.

The Hindus were quite capable of preserving their intellectual achievements without the dubious benefits of Islamic conquest. Indeed Hindu societies have preserved the use of the number system they invented right down to the present day.

The fact that this excellent system passed into Europe via Arab colonies stretching around the Mediterranean cannot justify a claim that the Hindu system of numbers 'only survived' because of Muslims or Islam. Nor does it imply that the Arabs who passed on this numbering system to the West were – to use Turnbull's words — 'moderate' or supportive of freedom and democracy. It is not possible to work out whether a society is moderate from the numbering system it uses. Even the Islamic State uses the same numbering system as Malcolm Turnbull.

Concerning Greek learning I had this to say in my book, [The Third Choice: Islam, Dhimmitude and Freedom](#):

A repeated theme in ... school texts is that the West should be grateful to Islamic civilization for preserving Greek philosophy. The narrative offered to justify this gratitude is that during the Dark Ages the Islamic world underwent a golden age

of cultural and scientific development, preserving Greek learning, which then kick-started the Western Renaissance.

Greek civilization did not need 'rescue-by-conquest': indeed it continued in Constantinople all through the European dark ages.

It is true that when the Europeans translated Arabic texts into Latin, this did stimulate the development of Western philosophy and science. Many terms passed over from Arabic into European languages as a result, including *sherbet*, *zero* and *zenith*. **However the fact that elements of Greek philosophy and science were transmitted to Europe via Arabic was not something for which Western children should be schooled to feel grateful. If Arab conquest had never happened, we can assume that Greek culture and philosophy would have continued to develop in Alexandria, Damascus and Constantinople to the present day.**

In reality, as A.C. Crombie pointed out in [Augustine to Galileo](#), the conquest of the heart of the Greek-speaking world by Islam, and resulting Arab control of the Mediterranean, stunted scientific progress in Europe:

[I]t was the eruption of the Mohammedan invaders into the Eastern Empire in the 7th century that gave the most serious blow to learning in Western Christendom. The conquest of much of the Eastern Empire by the Arabs meant that the main reservoir of Greek learning was cut off from Western scholars for centuries.

Islam's disruption of Mediterranean civilization ushered in the so-called European 'Dark Ages', as historian Henri Pirenne concluded in his classic study, [Mohammed and Charlemagne](#):

The cause of the break with the tradition of antiquity was the rapid and unexpected advance of Islam. The result of this advance was the final separation of East from West, and the end of the Mediterranean unity. ... The Western Mediterranean, having become a Musulman lake, was no longer the thoroughfare of commerce and of thought which it had always been. The West was blockaded and forced to live upon its own resources.

It is disappointing that today history books are teaching a dhimmified version of history, according to



which children are schooled in feeling grateful to Islam for rescuing Western and Christian culture from Islam itself. This is exactly the dhimmi condition, and the essential meaning of the jizya payment ritual: to render gratitude to Islam for being rescued by conquest.

Malcolm Turnbull's comment on Q&A illustrates the hole the West is falling into. It risks being buried alive by the weight of bad ideas about its own identity and history.

In the face of escalating Islamic terrorism, it is reasonable to inquire into the contribution schooling may or may not make to the ideological formation of jihadis. However, the way to make that inquiry is by examining what people are saying and doing today, not by making grandiose appeals to a mythical history.

To learn from history is wisdom. To abuse it is folly indeed.

Mark Durie, the pastor of an Anglican Church and founder of the Institute for Spiritual Awareness, is a Shillman-Ginsburg Fellow at the Middle East Forum.

New biometric measures to identify, track refugees

Source: <http://www.homelandsecuritynewswire.com/dr20151214-new-biometric-measures-to-identify-track-refugees>

Dec 14 – Refugees applying to come to the United States go through several different security measures aiming to make sure that they who they say they are, and that they are involved with terror organizations or criminal gangs. The security screening includes detailed interviews, three levels of background checks, three fingerprint screenings, contagious disease screening, and cultural orientation.

PBS reports that the United States has plans in the works for additional biometric measures in order to find out where and when refugees

refugees presenting themselves as members of a family are really related.

These new biometric measures are coming in at a time when the ongoing refugee crisis in Europe and last month's deadly attack on Paris have prompted a debate over whether the United States should accept refugees from Syria.

More than two dozen GOP governors have said that they would try to block the resettlement of Syrian refugees in their states, and the House passed legislation which would require DHS secretary, the director of National Intelligence, and the director of the FBI each personally to sign off on the security clearances for every refugee from Syria or Iraq being accepted for entry into the United States.

The demand on the biometric scanners would be daunting. More than four million refugees have fled Iraq and Syria because of the fighting there. Many of the refugees flee their homes without papers, or lose documentation during their arduous journey, and thus can be difficult to identify and track.



check into camps and offices. The use of these additional biometric measures also aims to deter fraud and more accurately confirm the identity of applicants for aid, services, or relocation.

DH will soon introduce iris scans, and the department is developing a quick turnaround DNA test which, in under ninety minutes, will be able to determine whether a

UN agencies have been using fingerprinting techniques as the preferred method of identification, but this is time consuming and requires technical knowhow to interpret. In October 2013 the United Nations refugee agency adopted the use of iris scanners.

The agency has since scanned the



eyeballs of more than 1.6 million refugees in nations across the Middle East and Europe, with the exception of Turkey, which still insists on fingerprints.

The scanning has yielded a comprehensive biometric database of a large number of the refugees fleeing from Iraq and Syria. The refugees can be tracked as they check into the different camps in different countries.

“The great benefit is the ability to confirm identity without relying on pieces of plastic or paper,” Larry Yungk, a senior resettlement officer with the U.N., told PBS. “The scans are quick, painless, and require less technology and skill than you need for fingerprints.”

The United States does not use biometric scanners yet, but even before the Paris

attacks there were already plans to upgrade from the fingerprinting. The United States is in contact with the UN over sharing the biometric refugee database with its State Department as well as Department of Homeland Security.

Another form of biometric testing the United States has been developing is the rapid DNA testing. The test would confirm the family relationship of refugees presenting themselves as members of the same family, but it is controversial. Refugee rights advocates say that the DNA test would not take into account the realities of refugee life, which includes the fact that some families take charge of children who have been separated from their parents or whose parents have lost their lives.

Why Erdoğan Decided to shoot down a Russian Plane

Aydinlik Newspaper

Source: <http://www.meforum.org/5710/interview-daniel-pipes>

Dec 12 – **The editors of *Aydinlik*, a Turkish newspaper, asked Middle East Forum President Daniel Pipes a number of questions about the shoot-down of the Russian plane on Nov. 24. He sent in his replies on Nov. 27 but did not hear back. We provide these replies here, as he wrote them, in English.**



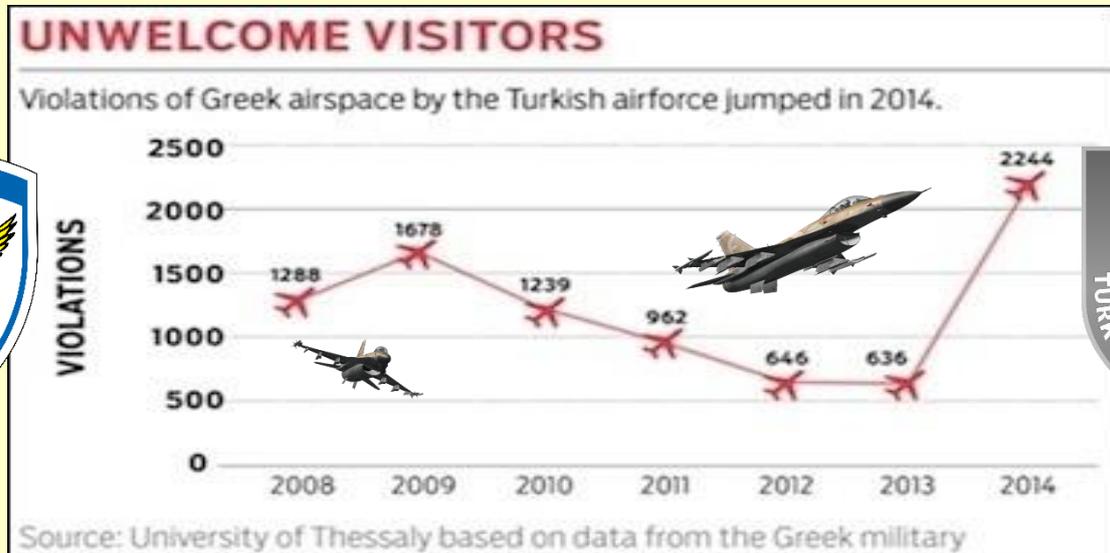
As relations between the Turkish and American governments have worsened in recent years, Turkey's President Recep Tayyip Erdoğan has sought improved relations with Russia and (to a lesser extent) China. With the shoot-down of the Russian SU-24 warplane, Erdoğan has seemingly thrown away this option. Why?

Erdoğan's aggressiveness has won him near total-power within Turkey, so he naturally assumes that the same methods will work on the international stage. But they do not. Although he had made some major achievements in foreign policy until about 2011, his record since then has been dismal, featuring worsened relations not only with nearly every state near Turkey but also with the great powers and even with the Turkish administration in northern Cyprus. Shooting down the Russian plane fits within this context of steady belligerence.



Do you think Turkey benefits from the shoot-down that compensates for losing Russia?

No, there are no benefits. I see only disadvantages. This incident marks a major reversal from the Turkish government's point of view.

Was it really necessary for Turkish forces to shoot down this warplane?

It was completely unnecessary. The Russian infringement was very minor, apparently lasting just 17 seconds, hardly a mortal offense between two states at peace. Also, air-space infringements take place routinely; for example, a Greek defense economist, Christos Kollias, has counted [6 infringements a day in 2014](#) by Turkish military aircraft – and the Greeks did not shoot a single time at them.

Perhaps relevant is that Syrian forces shot down a Turkish plane in June 2012, saying it infringed on Syria's airspace and Turkish forces shot down a Syrian plane in March 2014. The most recent shooting may have been motivated in part by a further desire to avenge the 2012 incident.

Are the economic sanctions that Russia intends to apply on Turkey realistic?

Very realistic. Russia's President Vladimir Putin showed in the Ukraine crisis that he is willing to accept economic pain to achieve his larger purposes. Noting that Russia and Turkey are among each other's largest trading partners, Putin can certainly make life more difficult for Ankara, especially at a time when the Turkish economy has slowed down.

Will this incident hurt Russian relations with the West?

I doubt it because Russia is widely seen as the victim in this incident. Indeed, Turkey's NATO allies are concerned that, for the [first time since 1952](#), a NATO member has shot down a Russian plane – and without due cause. They see this as irresponsible and dangerous; among other problems, it impedes cooperation with Russia in the skies of Syria. Erdoğan has made Turkey a problem for NATO.

How would you evaluate Turkish-American relations after this incident?

The shoot-down adds yet another tension between the governments, on top of others such as Ankara's policies toward press freedom, the civil war in Syria, and mass illegal emigration to Europe.

What do you see as the long-term consequences of this incident?

The Russian and Turkish leaders' similar personalities suggests that neither of them will compromise or retreat, implying that this confrontation will have lasting repercussions. For the Turkish government, it is another major step toward economic troubles and its purportedly happy isolation.



The economic impact of refugees in Sweden

Source: <http://www.homelandsecuritynewswire.com/dr20151217-the-economic-impact-of-refugees-in-sweden>

Dec 17 – **The world currently has more refugees and internally displaced persons than it has had since the Second World War.**

Since late summer 2015 massive numbers of refugees from countries like Syria, Iraq, and Afghanistan have streamed into Europe — with policymakers often in disagreement over how to react. The readiness of many wealthy countries to provide asylum to these refugees is waning. Security is a recent concern, but a major underlying reason is the perceived financial burden which would result from larger intake of refugees.

But what, in reality, is the economic impact of these new arrivals? A new study, published in *Population and Development Review*, a journal of the Population Council, examines the case of **Sweden, the country with the largest number of refugees per capita** (the Population Council Journals notes that if all fifteen pre-2004 EU member states had accepted refugees at the same rates of immigration per capita as Sweden did from 2005 to 2014, the total number of refugees in these countries would have been 5.9 million, not the current 740,000). The study finds that the net fiscal redistribution from the non-refugee population to refugees in 2007

corresponded to **1.0 percent of Swedish GDP** in that year. Four-fifths of the redistribution is due to lower public per capita revenues from refugees compared with the total population, and one-fifth to higher per capita public costs.

This research offers the first estimate of the fiscal redistribution specifically to refugee immigrants in any Western country.

“The fiscal redistribution to the refugee population in Sweden is fairly sizeable,” said Dr. Joakim Ruist, the paper’s author. “At the same time it is not a cost that is difficult for the country to bear. Hence it is clear that other Western European countries, whose per-capita refugee intakes until this point have only been around one-tenth of the Swedish intake, could substantially increase their intakes without in any way endangering their welfare systems.”

The lower public revenues from refugees are a direct result of their lower employment rate; this was 20 percentage points lower among adult refugees than among all other adults.

Thus a clear takeaway from this research is that **policies should focus on integrating refugees into the labor market as quickly as possible.**

— Read more in Joakim Ruist, “*The Fiscal Cost of Refugee Immigration: The Example of Sweden*,” *Population and Development Review* 41, no. 4 (December 2015): 567–81.

EDITOR’S COMMENT: Integrating refugees into the labor market as quickly as possible! What if there is no “labor market”? What if the unemployment rate in a country exceeds 25%? What if the money spend for supporting/maintaining wars/conflicts were given to solve problems instead of asking nations to absorb refugees?

Reducing deadly police force in Rio de Janeiro, and elsewhere

Source: <http://www.homelandsecuritynewswire.com/dr20151218-reducing-deadly-police-force-in-rio-de-janeiro-and-elsewhere>

Dec 18 – In striving to understand and to curb the use of lethal force by police in Rio de Janeiro’s poorest neighborhoods, Stanford University researchers seek to help inform the widespread debate about police conduct and behavior.

Beatriz Magaloni, an associate professor of political science at Stanford, is leading an international research effort to understand why Brazil’s Rio de Janeiro has one of the world’s highest police-on-civilian fatality rates. Her [research](#) shows that between 2005 and 2013



there were 4,707 police killings and 17,392 homicides for a total of 22,099 violent deaths in Rio. “In many developing countries, the police institution is exceedingly dysfunctional,” said Magaloni, a senior fellow at Stanford’s Freeman Spogli Institute for International Studies.



“Either cops are corrupt and work in partnership with organized crime, are poorly staffed and trained, or they abuse their power, including using torture and excessive lethal force,” she said.

Magaloni points out that violence is an obstacle to progress, peace, and prosperity in developing nations like Brazil. But police-involved deaths are not limited to developing nations. She cited recent minority deaths at the hands of police in U.S. cities, including Chicago; Ferguson, Missouri; and New York City, as an indication that police everywhere sometimes act too aggressively. And so, strategies that can be used anywhere — like body-worn cameras on police — are part of her study.

Understanding police behavior

Stanford U reports that in 2013, Magaloni created the Stanford International Crime and Violence Lab, which designs research-based strategies to control violence, a central challenge for poverty alleviation in areas like Rio de Janeiro. Support for the research came from Stanford’s Global Development and Poverty Research initiative.

The Rio research has emerged from that effort. For their project, Magaloni and her team have partnered with the Minister of Security and the Military Police of Rio de Janeiro, and nongovernmental organizations working in the city’s slums. So far, this involved more than 100 interviews and focus groups with police officers and citizens. The researchers also conducted a survey of 5,000 officers, or 20 percent, of the Rio de Janeiro police force.

“The goal is to advance knowledge about police behavior and violent crime, as well as provide feedback to policymakers in Rio de Janeiro to design better strategies to control police violence and homicides,” Magaloni said.

Most victims of police violence have been young black men living in the slums, the researchers found. Also, police killing rates were five times higher in the poorest parts of Rio than in the wealthiest areas.

Community bonds critical

The researchers found that one promising reform already enacted by the government is “proximity” policing. This involves assigning newly graduated police officers trained to *not* reflexively engage in shootouts to the poorest areas of Rio. Also called “Pacifying Police Units,” this initiative significantly reduced police killings of civilians in the areas studied.

“Police killings in the *favelas* [slums] would have been 60 percent higher without the Pacifying Police Units, which means that the reduction in police killing can largely be attributed to the proximity policing strategy,” Magaloni said.

Another problem is police deaths while on duty, which have doubled since 2011. She attributed the



increase to poor relationships between police and their communities.

“Police officers often treat citizens with disrespect, and racial stigmatization is common. Hence, *favela* residents do not trust police officers and seldom offer cooperation, including giving information to the police about suspects and violent criminals in the community,” Magaloni said.

But the consequence is that a police force that feels vulnerable is more likely to use lethal force, she added.

Magaloni’s team is also studying how many bullets individual police officers used in their daily shifts during the 2005-2014 period. Other variables under review include officers’ age, gender, training and the effect of promotions.

One big issue is how police units encourage “violent subcultures,” she said. This point was recently made clear when five adolescents were killed by Rio police officers in a unit infamous for its violent history and reputation.

“Using a variety of statistical methods, including network analysis, our research will be able to better understand how violent subcultures are engendered and how easily these can spread across units,” Magaloni said.

Violence breeds violence

Prior research shows that violent societies tend to produce violent police forces — whether in Rio or elsewhere, Magaloni said.

“One of the most revealing aspects of the survey research is that police officers in Rio de Janeiro have been exposed to high levels of violence during childhood,” she said.

According to Magaloni’s research, during their childhood 18 percent of Rio police officers saw a homicide, 32 percent had a person close to them killed by a criminal, 25 percent were constantly surrounded by gunshots and 20 percent were afraid of being killed when they were children.

Such experiences have long-lasting psychological effects on people who become police officers, she said.

In Rio, Magaloni said, police often use the “resistance to arrest” defense in cases of civilian killings, which has exacerbated the violence problem. In fact, during the late 1990s, the government introduced a “bravery bonus” that financially rewarded police officers if they

engaged in shootouts with so-called “criminals.” Parts of Rio are known as havens for drug traffickers and criminal gangs.

The bonus program has been terminated, but its effects linger. Magaloni’s research revealed that police officers who received such bonuses in the past continue to use more lethal force on the job today.

Cultural and social attitudes play other roles. Forty-two percent of Rio police officers in one of Magaloni’s surveys agree with the statement that a “good criminal is a dead criminal.”

“Police killings have unfortunately been vindicated by the larger society, which has trivialized violence, especially when this affects black people in the *favelas*,” said Magaloni, who is also the director of the Program on Poverty and Governance for the Center on Democracy, Development, and the Rule of Law at Stanford.

Checking police aggression

Magaloni’s team suggests that body-worn cameras, which have been adopted by some U.S. police departments, could help reduce the police-on-civilian killings in Rio de Janeiro. She acknowledges that impediments exist, such as whether police officers will keep the cameras on when interacting with citizens.

As a result, her study will investigate whether it is more effective when police keep their cameras on during their entire shifts or when they only turn them on when interacting with citizens. The study will also explore the most effective protocols for processing images, which Magaloni said is often problematic for police.

“Which videos should be audited and what strategies should commanders and supervisors follow to deliver feedback to police officers?” she noted.

This study involves cameras randomly assigned among police units in Rocinha, Rio’s largest slum neighborhood. Launched in late November, it will last between nine and twelve months, she said.

“We seek to evaluate not only if cameras can reduce lethal violent confrontations, but also other forms of violent interactions, including disrespect and aggressions by the police and the community against police officers,” said Magaloni.

Finally, in 2016 she plans to begin another project with the Rio police



on developing a “scorecard” that identifies the most violent police officers at all levels of their careers and randomly selects a group of these for a cognitive-behavioral intervention to practice impulse control, emotional self-

regulation and developing a sense of personal integrity.

“Our research suggests that cultural and psychological factors shape police violence,” Magaloni said.

— *Read more in Beatriz Magaloni, Vanessa Melo, and Edgar Franco, [Killing in the Slums: An Impact Evaluation of Police Reform in Rio de Janeiro](#), CDDRL Working Papers (December 2015)*

Why Hero Military Dogs Can Only Receive Honorary Purple Hearts

Source: <http://www.care2.com/causes/why-hero-military-dogs-can-only-receive-honorary-purple-hearts.html>



Dec 17 – People around the world have been touched by the viral photos of Rocky, a wounded military dog, sharing a hospital bed with his handler, Specialist Andrew Brown. Both were injured by an IED explosion in Afghanistan earlier this month.

What’s especially moving about one of the photos, which was posted on the 89th Military Police Brigade’s [Facebook page](#), is the Purple Heart on Rocky’s collar.

Did the military dog who suffered a broken leg and shrapnel wounds really receive this honor? The answer is no. It was only awarded to Brown.

“The Army typically does not process awards for our working dogs the same way we do for our other soldiers,” Sgt. 1st Class Michael Garrett, public affairs officer for the 89th Military Police Brigade, told the Killeen Daily Herald. “The Purple Heart in the photo was placed on Rocky as a sign of respect and solidarity between him and Brown during their recovery.”

Ever since World War II, the U.S. military has only awarded the Purple Heart to two-legged heroes. Rocky and a handful of other military dogs have only received honorary or commemorative Purple Hearts.

“The use of military decorations is limited to human personnel who distinguish themselves in service to the nation,” Defense Department spokeswoman Eileen Lainez said in 2010, according to the American Kennel Club (AKC).

For the past 10 years, Ron Aiello, founder of the United States War Dog Association, has been urging the Department of Defense to establish an official medal for those military dogs who also distinguish themselves in service to the U.S.



“They say they can’t do that,” he told the AKC. “We utilize these dogs and they are recognized as a large asset to our military. But we can’t honor them.”



The last military dog to officially be honored with a Purple Heart was Chips, the most decorated dog of World War II.

“For ‘singlehandedly’ wiping out a machine-gun nest in Italy, a dog named Chips was awarded the D.S.C., the Silver Star and the Purple Heart,” TIME reported in February 1944.

All the press Chips was getting caught the attention of the commander of the Order of the Purple Heart, according to Military.com. The commander complained to President Roosevelt and the War Department that giving the Purple Heart to a dog demeaned all the men who had received one.

Chips was allowed to keep his medals, but the Army’s adjutant general, Major General James A. Ulio, ruled that no other dogs would receive the Purple Heart, TIME reported.

The most decorated dog in U.S. military history was Purple Heart recipient “Sergeant” Stubby, who saved hundreds of lives during World War I by sniffing out mustard gas and barking to alert the troops when he heard artillery fire.

What’s especially unfair is that not only would this four-legged hero not receive a Purple Heart today, but he would not be allowed to live on any U.S. Army base. Why? Because Stubby would be considered a Pit Bull mix, one of several dog breeds banned from military bases today because they’re considered dangerous.

There is some good news for military dogs. Last month, President Obama signed the National Defense Authorization Act, which guarantees that when these dogs retire, they will be returned by the military to the United States instead of being left behind, as they have



been in the past. (For a sad example, the 4,000 or so military dogs who served in Vietnam were never returned to U.S. soil.)

The military dogs' handlers will have first dibs on adopting their partners. As for Rocky, he is still recovering while Brown has returned home. "He is expected to make a full recovery, and depending on how fast he recovers, could be home soon," the 89th Military Police Brigade reported on its Facebook page Dec. 15. "Both Rocky and SPC Brown are doing very well and are grateful for the outpouring of support. We can't wait to have them home. Proven in Battle!"

Webster Athens in RIEAS Panel for Book on Security, Intelligence in Greece

Source: <http://news.webster.edu/academics/2015/athens-rieas-security-book.html>

Dec 18 – Faculty from Webster Univ Athens participated in a book presentation organized by the Research Institute for European and



American Studies (RIEAS) and featuring a panel of representatives from Webster, Greek news media and the diplomatic and intelligence services.

They discussed concepts from the book, "National Security and Contemporary Intelligence Services in Greece," authored by Joseph Fitsanakis of Coastal Carolina University, who has built the Security and Intelligence Studies program at King University and has conducted extensive research on communications interception, intelligence reform, and transnational criminal networks.

John Nomikos, head of the History Politics and International Relations department at Webster Athens, noted that in the current information age, people are constantly bombarded by facts, opinions, speculations, and rumors from every direction. Television carries into homes each night unsettling images of misery and death from around the world. Computers draw people

into an interactive sphere where e-mail gives, and expects in return, ever more rapid exchanges of information. The cellular telephone assures that a flow of information will follow everywhere: into a car, the mall, and the meeting place.

He acknowledged that as Fitsanakis suggests, no doubt that since the intelligence community works its way into the 21st century, complex information technology and methodologies need to be mastered and integrated into the intelligence process. He confirmed that cyberattacks against military and political networks have multiplied in frequency and technical complexity.

The head of the Admissions Office at Webster Athens, Antonia Dimou, provided an overall approach to the book, stressing that the relationship between democracy and the



character of secret intelligence presents a composite two-sided puzzle. On one side, the very concept of democracy demands



that an intelligence agency serves democratic interests by providing one country's security and preparedness against potential threats both internal and external, she said. The core notion is that a stronger country can turn itself into a heaven where democracy can continue to be practiced. On the other side, intelligence investigative methods in many countries occur outside the context of democratic control and oversight mechanisms, thus surfacing an inherent conflict.

She highlighted the case of Greece noting that the geopolitical upheavals in the East Mediterranean and the wider Middle East especially after 9/11, and the evolving severe economic crisis that Athens undergoes necessitate more than ever before an efficient national intelligence agency to counter multiple threats ranging from criminal networks to terrorism. She voiced that it is no secret that one

of the prime challenges to Greece's national security is the one posed by the continuous flow of refugees and/or migrants as a number of foreign fighters who have joined ISIS pretend to be migrants/refugees with the aim to penetrate the European Union and initiate terrorist attacks on European soil.

The book was also presented by Ambassador Ioannis Corantis, former director of the Greek Intelligence Service, and Costas Papadopoulos, editor of Potamos Publishing Company. The event was moderated by Costas Papachlimintzos, managing editor of ESTIA newspaper.

The book presentation was attended by Webster Athens vice-chancellor for Academic Affairs Susie Michaelidis, academic advisor and Special Programs coordinator Ellie Despotaki and intern Nadia Black.





Brazil's CBRNE preparedness towards 2016 Olympic Games

By Editor-in-Chief, CBRNE-Terrorism Newsletter



For the last two years there were almost no articles on the Internet regarding security preparedness towards 2016 Olympic Games in Brazil. Only after the November 2015 multiple terrorist attacks in Paris, France there are some articles **overstating** that 2016 Olympiad would be the most secure ever! Some examples:

Activists Planning Protests at Rio Olympics Are Worried They Could Be Charged With Terrorism

Source: <https://news.vice.com/article/activists-planning-protests-at-rio-olympics-are-worried-they-could-be-charged-with-terrorism>

Nov 03 – Activists in Brazil say a proposed law defining terrorism will criminalize protest movements, including those looking to use media attention on the 2016 Olympics in Rio de Janeiro to highlight social injustices and push for reforms.

More than 80 social and political movements have signed an open letter repudiating what they label a "retrograde step" in citizens' rights to protest.

Critics have focused their opposition to the bill on the vagueness of its definitions of what constitutes a terrorist attack that could carry with it jail terms of up to 30 years.

One particularly controversial clause also defines "vandalizing... or destroying... public transport or any public or private property" as acts of terrorism.

Now, with less than a year until hundreds of thousands of people descend on Rio for the 2016 Olympics, Brazilian social movements insist they should be allowed to use the world spotlight to draw attention to their causes without the fear of a terrorism charge hanging over their heads.

Brazil guarantees Rio safety

Source: <http://www.herald.co.zw/brazil-guarantees-rio-safety/>

Nov 17 – A top Brazilian security officer promise on Sunday to "guarantee absolute peace" at the Rio Olympics, despite safety fears after a massacre claimed by Islamist militants in Paris. "Brazil has become a leading example for (security at) major events," Andrei Rodrigues, secretary for large events in Brazil's Ministry of Justice, said in an interview with CBN radio. Rodrigues said that Brazil – with experience from hosting 2014 football World Cup, a Papal visit in 2013 and other mega events – has proved fully prepared for the huge challenge of hosting the Olympics in Rio next summer.

Brazilian police work alongside counterparts around the world to study their methods and Rio will feature an international coordination center for different police forces and another specifically for police agencies combating terrorism, Rodrigues said.

Brazil is not prepared to avoid attack in the Rio 16, say specialists

Source: <http://olimpiadas.uol.com.br/noticias/2015/11/19/brasil-nao-esta-preparado-para-evitar-ataque-na-rio-16-dizem-especialistas.htm>

Nov 19 – Brazil still has not the necessary knowledge and the preparation to prevent the Olympic Games of 2016 in the Rio of January from being a target of attacks like which they took place in Paris, and it will depend on the help of foreign countries to guarantee the protection of the event, they valued specialists at security.

The easiness of arms are got in the Rio, where several slums are dominated by strongly armed drug traffickers, the lack of a net of intelligence in the country able to intercept plans



of attacks of militants and the evacuation of the stadiums for the eventuality of a bomb they are the principal problems faced by the authorities and worry experts.

Fernando Brancoli from Foundation Getúlio Vargas (FGV) quoted: "Brazil has no conditions to track in the international field or to know if money is arrived here to finance attacks. It will have to dispose of help from whom it can do. It is hopeless."

Diplomats in Brasilia were surprised in Monday when, three days after the attacks in Paris, President Dilma Rousseff minimized the possibility of an attack in Brazil in an interview during the G20, in Turkey, by saying that the country is "very far away from the places where such incidents are taking place".

"Brazil is placing its head in the hole like an ostrich" said a European diplomat commenting on questions about security.

The public authorities and the organizers of the Games always agitated the fact that Brazil has not faced any case of violence during mega events, i.e. Top of the World of last year, but the new threat represented by the Islamic State must lead to a revision regarding security.

As for recent works, the Olympic Stadium and the Maracanã have not been progressing well and leaks consider them ideal for attacks; there are not enough security cameras, metal detectors and even anti-aircraft protection in the surroundings.

Brazil to accept global intelligence help for 2016 Games

Source: <http://www.newsfultoncounty.com/world/news/2318124-brazil-to-accept-global-intelligence-help-for-2016-games>

Nov 23 – Brazil signaled Monday that it would accept help from international intelligence agencies in order to safeguard the Olympic and Paralympics Games set for next year in Rio de Janeiro.

"Recent events ... show that we can never be too careful in the steps and preparations that we take," Government Secretary Ricardo Berzoini told reporters at the opening of an anti-terrorism seminar in Brasília.

Rio 2016 Olympics security questioned by Brazil government watchdog

Source: <http://www.cbc.ca/sports/olympics/summer/generic/rio-olympics-border-security-questioned-1.3336928>

Nov 25 – A government watchdog said Wednesday that "flaws" in Brazil's border security are a "big concern" heading toward next year's Olympics in Rio de Janeiro. Augusto Nardes, a government auditor, told a news conference organized by Brazil's Justice Ministry that police and military need better ways to control the country's 17,000 kilometre-long border, which touches 10 countries and runs through remote areas of the Amazon jungle. "We are aware that we have seven months to correct [the problem]," Nardes said, speaking at a news conference with security issues for the Olympics on the rise following the deadly attacks almost two weeks ago in Paris.

However, Public Security Secretary Regina Miki dismissed those concerns. Miki said Brazil's policing was also questioned before the World Cup in 2014, when thousands of police and soldiers were deployed to keep order. "The Olympics in Rio will be held in total security," she said.

However, independent security consultant Paulo Storani disagreed. "Brazil's public security plan for the Olympics is a total improvisation," he told The Associated Press. "There are no deadlines for things to happen. It is hard to know who is responsible for what."

Olympic Security Good Enough despite Terror Threats: Brazil

Source: <http://www.newindianexpress.com/sport/Olympic-Security-Good-Enough-Despite-Terror-Threats-Brazil/2015/11/27/article3149632.ece>



Nov 27 – The Brazilian government has announced it has already adopted the best measures to combat terrorism and there is no need to increase the security arrangements for the 2016 Olympic Games 2016 despite recent terrorist threats.

Despite the terrorist attacks in Paris two weeks ago, "there are no changes in the plans because we have already adopted the best measures to prevent and combat terrorism. However, we are careful, vigilant and more cautious," said the special secretary for the Ministry of Justice's Security for Important Events, Andrei Rodrigues, during a news conference on Thursday, reports Xinhua.

For Olympics, the Brazilian authorities trust the Comprehensive Centre for Police Cooperation as well as the fact they have already organized and held the football World Cup in 2014.

The authorities will allow the country's police to exchange information and collaborate with police from at least 40 countries and regions.

Foreign police will also be involved in operations and protecting their respective delegations during the event. However, foreign police will be under constant supervision of Brazil's Federal Police.

"All help offered by other countries to fight terrorism is welcome", Rodrigues added.

Hamburg 2024 bid hinges on referendum

Source: <http://thepeninsulaqatar.com/sports/swimming/360290/hamburg-2024-bid-hinges-on-referendum>

Nov 29 – Meanwhile, Brazil is preparing to deal with a terrorist attack at the Rio Olympics but has no information of any planned plots, the country's intelligence chief said yesterday.

"We have no information about a terrorist cell preparing in Brazil. Our risk assessment does not indicate this, but we are working permanently as if the threat were imminent, as if this could happen tomorrow," Wilson Trezza, director of the Brazilian Intelligence Agency, said.

With nine months before the first Summer Games in South America, Brazilian security officials say they will be able to stop any threat. Brazil has no history of conflict with Islamist or other violent radical groups. However, with 10,500 athletes from 206 countries and dozens of heads of state and large numbers of tourists, the Olympics are considered a potential target. Brazil says it will deploy 85,000 security personnel, double the number used during the 2012 London Olympics.

These conflicting articles are apocalyptic of current situation within Brazilian government and Olympic Games' authorities. It is normal for a government to try to reassure that all necessary precautions have been taken. It is clever that international assistance has been asked – always a good

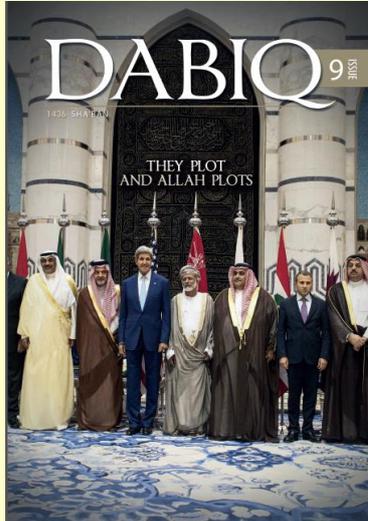
excuse if something bad happens! But it seems that they have not fully realized that the **Paris attack is a game changer.** Athens 2004 Olympic Games was the first Summer Olympiad organized after the 9/11 massacre in the United States and the anthrax scare that followed. And that changed all security plans while a master CBRNe master plan was added for the first time. Until then, this threat was considered just a NBC (NoBody Cares) possibility. But



after September 11, 2001 all that changed and a lot of money and efforts were employed to secure Games even for this extraordinary possibility.



In 1998 Osama bin Laden suggested that “*acquisition of WMD is a religious duty*”; in 2003 a fatwa issued by radical Saudi cleric Nasir bin Hamd al-Fahd indicated that “*it is legitimate to use WMDs to kill millions*” while in 2011 late al-Qaeda ideologue Anwar al-Awlaki gave “*permission to use poisons and other WMDs in densely populated areas*”. During the past two decades al-Qaeda and its affiliates made over reported attempts to acquire, produce or deploy CBRN weapons.



Let me throw a hypothetical operation onto the table. The Islamic State has billions of dollars in the bank, so they call on their wilayah in Pakistan to purchase a nuclear device through weapons dealers with links to corrupt officials in the region. The weapon is then transported overland until it makes it to Libya, where the mujahidīn move it south to Nigeria. Drug shipments from Columbia bound for Europe pass through West Africa, so moving other types of contraband from East to West is just as possible. The nuke and accompanying mujahidīn arrive on the shorelines of South America and are transported through the porous borders of Central America before arriving in Mexico and up to the border with the United States. From there it's just a quick hop through a smuggling tunnel and hey presto, they're mingling with another 12 million “illegal” aliens in America with a nuclear bomb in the trunk of their car.

In June 29, 2014, a new terrorist organization proclaimed itself to be a worldwide caliphate, with Abu Bakr al-Baghdadi being named its Caliph, and renamed itself as *ad-Dawlah al-Islāmiyah* (“Islamic State” – IS). Currently there is an ongoing global debate regarding CBRNE capabilities of IS: [“Hoax or reality?”](#) There are three tenants to IS terror: (1) The “active shooter” Charlie Hebdo type attack or the most recent Paris multiple attacks in November 2015 (which includes suicide bombers, executions, conventional explosives, etc.); (2) Cyber-attack against all things electronic; and (3) Irregular or asymmetric attack, predominantly CBRNe – but also anything we haven't thought about which will enhance IS's psychological campaign of terror.

There are 7 reasons why CBRNe Islamic State is a reality: (1) Religious terrorist organizations tend to regard WMD usage as not only morally justified but expedient for the attainment of their goals; (2) Access to financial resources – IS possess assets of more than US\$2 trillion – mainly from oil/gas trade; (3) Increased number of safe havens in both Syria and Iraq; (4) Accessibility of CBRN arsenal (Syria, Iraq, Libya); (5) University educated foreign jihadists potentially provide with the requisite scientific expertise to develop and use CBRN weapons; (6) The coordinated attack of US – Russia – France – EU against IS might corner terrorists to the point to use CWAs or RDDs against Western targets; and (7) Overall mentality and incredible disrespect of human life already displayed in various ugly ways. The main conclusion is that the threat is real and the new game changer (IS) needs to be addressed seriously in order to avoid (the usual) future surprises!

Brazilian counter-terrorism forces

Brazil has three main pillars of security for these major events: the Special Secretariat for Security at Major Events (SESGE), the Brazilian Intelligence Agency (ABIN) and the Armed Forces. The SESGE is responsible for coordinating dozens of federal, state and municipal agencies including the Federal, Federal Highway, Military and Civil Police forces, the Municipal Guard, transit agencies, forensic investigators, the Civil Defense Force and the Fire Department. Two integrated national command and control centers – one in Brasília and one in Rio de Janeiro – also are operational, alongside mobile centers installed in high-tech trucks. The SESGE acquired an aerial imaging device – a thermal camera used in a helicopter, like those used in Boston during the hunt for the bombers – for each of the centers. Under the coordination of the Ministry of Defense, the three branches of Brazil's Armed Forces – the Army, Navy and Air Force – are responsible for protecting the country's borders, strategic infrastructure and maritime area, controlling airspace and



engaging in counter-terrorism activities, which include offensive measures against identified threats. During the Confederations Cup (June 15-30, 2013), between 2,000 and 2,500 soldiers were deployed in each of the six host cities while a unit of 1,200 soldiers was prepared to deploy in the event of an emergency. The Army's Special Operations Brigade, which is headquartered in Goiânia, is leading the country's counter-terrorism operations. Army's Special Battalion, in Rio, will be responsible for chemical, biological, radiological and nuclear defense. The Navy also will assist in this area, given its experience with a cesium-137 accident in Goiânia in the state of Goiás in 1987, when the majority of patients were transferred to the Marcílio Dias Naval Hospital in Rio. ABIN, which is working in partnership with the SESGE and the Armed Forces, has agreements with Interpol and the intelligence services of more than 80 countries. During the Confederations Cup, three types of intelligence centers were created by ABIN, with operations running from May 15 until July 3: the National Intelligence Center, in Brasília; five Regional Intelligence Centers in the remaining Confederations Cup host five cities; and the Center for Intelligence and Foreign Services, which will bring together representatives from the intelligence services of the other participating countries.

Brazilian intelligence web

The Brazilian Intelligence System (SISBIN), among several functions, seeks the operational capability to neutralize terrorist threats in Brazil. Intelligence work has an ample scope and an urgent need for qualified professionals to develop different activities, including collection, which is considered the simplest form of activity, and as the name indicates, is the act of collecting ostensibly exposed data from open sources (internet, media, explicit reports, etc.). The "search" implies looking for denied data and is performed confidentially. This operation has great relevance due to the large scope of activities that can be performed by many terrorist groups nowadays. Their creativity is endless and the ability to identify and anticipate the nature of an attack makes the difference. For instance, we can name the hijacking of a civilian airplane for various purposes (September 11), bomb explosions (Madrid subway), the use of chemical or biological agents (Tokyo subway), suicide bombings (numerous cases in the Middle East), the use of firearms (the murder of Anwar El Sadat, in Egypt), and others as examples of these.

Recent experience teaches us that the operations which characterize the fourth generation war (including transnational terrorism) must prioritize human intelligence over intelligence signals and imagery. It is imperative that the activity is performed with great force and proactive characteristics. These precautionary activities are universally included in the package of anti-terrorism procedures, which cover preventative countermeasures. It is the responsibility of the chief minister of the Institutional Security Cabinet of the Brazilian presidency, supported by the SISBIN, to promptly assist the president in the actions to be implemented during crisis situations. It is essential that decisions are made after taking into consideration the five fields of power: political, economic, psychosocial, military, scientific and technological.

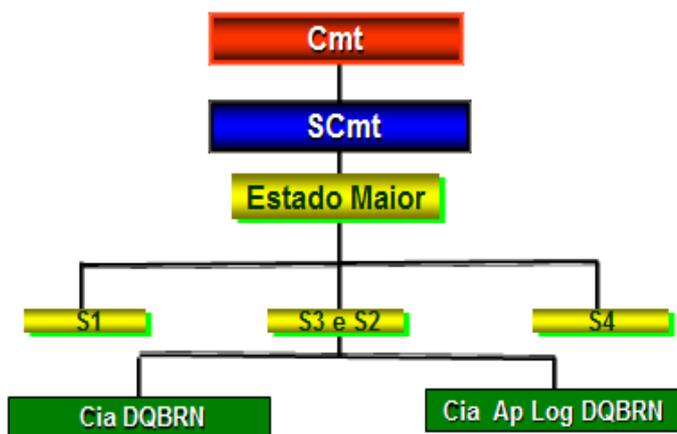
The counter-terrorism activities are performed by highly qualified professionals in damage control, and by trained and prepared Special Operation Forces; in this activity, improvising is a very dangerous risk. The control of actions such as dissemination of toxic gases or biological agents is extremely difficult and complex, in addition to implying high cost and a wide spectrum of activities, such as detoxification, decontamination, hospitals, trained professionals, mass vaccination of population, just to name a few of the activities. To perform all this, the Chemical, Biological, and Nuclear Defense Peloton of the Special Operations Brigade needs to receive support from professionals who are specialized in the identification of threats, as well as more resources and equipment. Besides, institutions such as Fundação Instituto Oswaldo Cruz, a scientific institution for research and development in biomedical sciences located in Rio de Janeiro, Brazil, and considered one of the world's main public health research institutions, along with the Brazilian pharmaceutical industry, must be able to initiate short-term mass production of necessary vaccines and medication. The logistics are extremely complex, and the lack of training in this situation would cost many lives. It is also a very serious mistake to think that the purchase of expensive equipment and black uniforms would turn a man into a counter-terrorism specialist. The selection and qualification process of these professionals has been very strict



in countries where this activity is taken seriously, with an average approval rate of 25% among volunteers. Brazil's experience at the 5th Military World Games 2011 revealed a trend in the establishment of a Special Operations Joint Task Force, which gathers the Army, Navy, Air Force, as well as the Federal, Military, and Civil Police. In 2013 the city government recently opened in Rio a new command and control center, a facility spurred by the upcoming Olympics. The room has 70 operators in shifts that monitor the city's operation with more than 400 cameras installed at strategic points in the city. The room contains the largest screen in Latin America. For Olympics, the Brazilian authorities trust the Comprehensive Centre for Police Cooperation as well as the fact they have already organized and held the football World Cup in 2014.

Brazilian CBRN forces

The 1st Chemical, Biological, and Nuclear Defense Platoon (1o. Pelotão de Defesa Química, Biológica e Nuclear) is a combat support element of the Army Special Operations Brigade. It is structured to operate in small teams along with detachments for operational employment. It is organized with a Chemical, Biological, and Nuclear Support Team and a Chemical Counterterrorism Team.



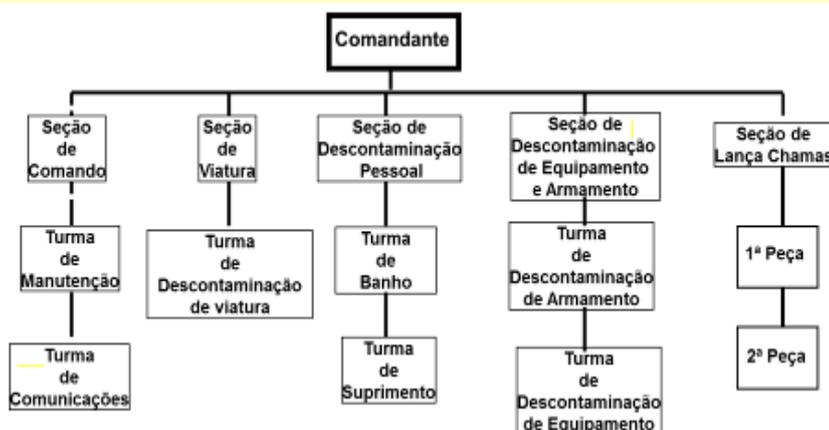
Efetivo total: 258 militares

Organogram of DQBRN Platoon

The platoon's mission is based on the risk analysis resulting from a confrontation within an environment contaminated by chemical, biological, or nuclear agents. From this analysis, the chemical, biological, and nuclear specialist evaluates the troops' and the non-combatant civilians' vulnerability level in the designated operational area. This

vulnerability is reduced due to the guidance given about protection postures, decontamination procedures, and protection equipment to be used against chemical, biological, or nuclear agents.

The Chemical, Biological and Nuclear Support Team's mission is to carry out the supported unit's vulnerability monitoring, to provide protection equipment, and perform the decontamination of these elements.



Decon element DQBRN Platoon

The Chemical Counterterrorism Team's mission is to operate with the Counterterrorism Detachment/1st Special Forces Battalion to provide

an immediate response force aiming to contain possible damage caused by the release of chemical, biological, and nuclear agents over the troops and over the civilian population. In summary, the 1st Chemical, Biological, and Nuclear Defense Platoon constantly monitors the contamination levels with chemical, biological, and nuclear agent detection equipment and carries out decontamination efforts of all the material and personnel involved in a suspected area of contamination.





Decontamination element DQBRN Platoon



Mobile laboratory at Centro Tecnológico do Exército (CTEx)

Brazilian hospitals' CBRNe preparedness

During 2004 Olympic Games there were some public announcements describing the status of Olympic Hospitals on CBRNe preparedness issues along with an outline of the plan to be deployed in case such an event occurred during the Games. During 2008 Beijing Olympic Games we read about a new huge hospital build in Beijing specifically for receiving contaminated mass casualties and some details from Chinese response plans against



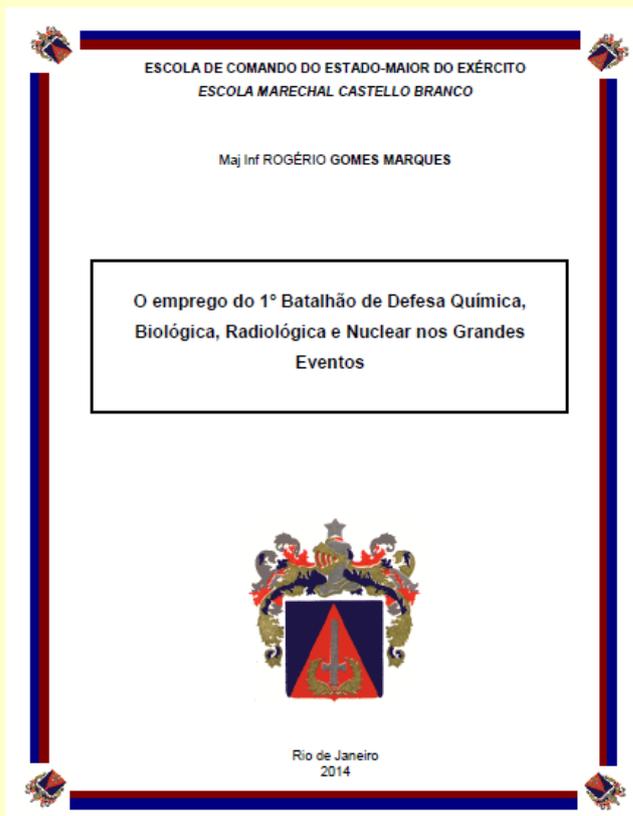
asymmetric threats. During 2012 Olympic Games there where only limited information about hospitals' CBRNe preparedness. That information came mainly from defense industry's websites from where it was (at least partially) obvious the British hospitals were given the money to buy decontamination equipment on their own (thus diminishing necessary interoperability). In that respect a specific hospital bought decon inflatable tents while another (specific) hospital bought decon containers. A second source of information was the UK Ambulance Service that provided a lot of information regarding their preparedness status and their HART teams. Ambulance responders were always present in related CBRN conferences and workshop in which the absence of NHS Trust was prominent making experts to wonder of the Olympic Hospitals' CBRNE Response Plan was either a top security issue or just a top security gap! This is also my personal conclusion since I followed London 2012 CBRNe preparedness from the very beginning – I also tried to be involved but at that time I was just a civilian (retired from Greek military in 2010) and not a British citizen (as MI5 informed me following a relevant application for a CBRNE job opening proclaimed). Just 8 months before Rio's 2016 Summer Olympics not a sound about Brazilian hospitals' CBRNe preparedness! Not a single article! Only very few YouTube video clips showing how the Brazilian military is prepared to counter CBRNe threats during the Games. In 2013 during the VIII World Biosecurity Congress organized by ANBio in Salvador, Brazil we prepared a "white paper" addressing medical/hospital preparedness issues during a special workshop in which all Olympic Games stakeholders participated. That paper was delivered to Brazilian authorities in an effort to motivate authorities to proceed to certain related issues. This did not change the overall situation – not a bit! Keeping touch with many experts in the country the main conclusion is that this issue is covered by silence. Again: is it top secret or a top gap? I am sure that international experts and advisors have pointed out this critical issue and perhaps there are things already done but covered by security regulations. On the other hand publishing some details of hospitals' CBRNe preparedness is a good way to pass a message to those that might have evil thoughts! In contrary if this silence is a consequence of the inherent (and public) belief that "Brazil is immune to terrorism" then there is a big problem. If organizers focus only on terrorism issues omitting the possibility of an asymmetric attack this will be a major mishap with immense consequences.



[Hospital Sarah Rio](#)

There is still some (very limited) time to organize 2 hospitals in Rio, 2 hospitals in Sao Paulo and one in Brasilia and Salvador. You see, despite the fact that the Tokyo subway sarin attack teaches us that all hospitals and clinics of a megapolis will be involved, I end-up proposing only six hospitals to burden the weight of receiving contaminated victims... It can be done – I did it in just 3 months when on January 2004 I was ordered to create, train and equip our Olympic Hospital CBRN Response Unit that was deployed at the parking lot of Army General Hospital of Athens from July to end of September 2004. It can be done if there is the will and knowledge on related issues (read also how "Article X" of the CWC and OPCW can greatly assist on such an effort). I only hope that in the coming months new information will appear in the media proving that accusations





posted here were wrong. Depending only on the limited capabilities of the Brazilian military is not enough. If we keep on allocating the vast majority of security budget to field first responders and their high technology equipment instead of investing on hospitals and medical people (including medical/nursing university students) while forgetting that all consequences of terrorism worldwide end up at hospitals, it would be too late for regrets! Operations last a few hours; medical consequences of CBRN agents last for decades. In 2003, during the preparatory phase of the Olympic Games I participated in a course organized by OPCW in Tehran, Iran. At the military hospital of Tehran there is a small clinic dedicated to chemical victims of Iraq-Iran was back in the 1980s. The clinic follows more than 20,000 active files of such victims and we had the chance to examine some and interview many others suffering for decades. This unique course marked my personal way of evaluating things and

for almost 15 years I am trying to enhance hospitals' CBRNe preparedness. Unfortunately the deaf community is much bigger than I thought! ■



Paris attacks: All precautions taken to avoid chemical attack, says French minister

Source: <http://www.straitstimes.com/world/europe/paris-attacks-all-precautions-taken-to-avoid-chemical-attack-says-french-minister>



Nov 23 – **French Defense Minister Jean-Yves Le Drian said Sunday that a chemical or biological attack "was among the risks" in the wake of the Paris attacks but that all possible precautions to avoid such a scenario had been taken.**

He said French authorities were not ruling anything out in the wake of the Paris attacks even though it was "very complicated" for anyone to use chemical weapons.

French police are investigating the recent theft of medical protective clothing from a hospital in Paris, the Paris public hospital administrator AP-HP has said.

The motive for the theft is unclear but it comes amid heightened fears in France over the risk of biological or chemical terrorism following the Paris attacks.

The disappearance of a "limited number" of "protective clothing elements" from the Necker hospital was discovered on Nov 18, the Assistance Publique-Hopitaux de Paris (AP-HP) said in a statement on Saturday. A report was filed the day after at the local police station, it added.

A spokeswoman for AP-HP reached by Reuters on Sunday declined to provide further details on what equipment was taken.

After the Nov. 13 attacks, Prime Minister Manuel Valls said France could face the risk of chemical or bacterial warfare in its fight against Islamist militants.

The Necker hospital is used by patients possibly suffering from the Ebola virus and as such has a large stock of protective clothing, the AP-HP statement added. The equipment was stored in a room locked with a code but accessible to a large number of people. It is checked once a week and security has been increased since, the statement said.

Prime Minister Manuel Valls had on Thursday said that an attack using chemical or biological weapons was

possible.

"We must not rule anything out... There is also the risk from chemical or biological weapons," Valls said in the aftermath of the shootings and suicide bombings on Nov13 that killed 130 people.

The government on Saturday issued an authorization for the army's pharmacies to distribute an antidote for chemical weapons to civilian emergency services in France, ahead of a major UN climate summit in Paris that will bring together world leaders beginning November 30.

Le Drian meanwhile said French jets would be able to launch air strikes on ISIS (Islamic State in Iraq and Syria) targets in Syria from the Charles de Gaulle aircraft carrier in the eastern Mediterranean from Monday.

"It will be operational from tomorrow," the minister said.

France has stepped up air strikes against Raqqa, ISIS' de facto capital in Syria, since the day after the Paris attacks that were claimed by the extremist group.

The fight against the extremists is "both a war in the shadows and a war on the battlefield," Le Drian said.

It will involve battling a well-organized, brutal force that controls large parts of Syria and Iraq, and "an international terrorist movement that is seeking to strike the Western world".



EDITOR'S COMMENT: It is a usual habit of politicians to speak only with headlines that practically mean nothing! "... all possible precautions to avoid such a scenario had been taken" he said. It would be nice to define "precautions". Was it about the distribution of atropine/pralidoxime antidotes for nerve agents? At any given time (at least) atropine is available to all hospitals because it is used in daily activities (e.g. in Cardiology). But are hospitals' personnel trained and equipped accordingly to deal with CWAs mass casualties? All hospitals? Or just hospitals like Necker Hospital? And what about populace awareness? People are getting upset and most probably they do not know what to do if accidentally involved in chemical terrorist incident. The most important player in all state emergency plans is kept out of the game because authorities and planners continue to believe they will be panicked or upset. But they are ALREADY panicked; they read the possibility of such an attack; they read (on the Internet) about the horrible effects of nerve agents or mustard gas to human health but they do know how to cope this invisible threat. Certain elements of chemical weapons are legally available in the market and on the Internet there are many cookbooks giving details on how to do it. Educated terrorists might be capable to materialize their background and knowledge to construct improvised chemical bombs or cultivate bacteria or toxins in their backyards to be used for widespread contamination or focal assassinations of high rank officials. So what exactly are the "precautions" taken???



always
that
about
effects

ISIS Determined to Produce Chemical Weapons

Source: <http://www.newsmax.com/Newsfront/ML-Islamic-State-Chemical-Weapons/2015/11/19/id/702932>

The Islamic State group (ISIS) is aggressively pursuing development of chemical weapons, setting up a branch dedicated to research and experiments with the help of scientists from Iraq, Syria and elsewhere in the region, according to Iraqi and U.S. intelligence officials.

Their quest raises an alarming scenario for the West, given the determination to strike major cities that the group showed with its bloody attack last week in Paris. U.S. intelligence officials don't believe ISIS has the capability to develop sophisticated weapons like nerve gas that are most suited for a terrorist attack on a civilian target. So far the group has used mustard gas on the battlefield in Iraq and Syria. Still, French Prime Minister Manuel Valls on Thursday warned that Islamic extremists might at some point use chemical or biological weapons.

An official, like others from the Iraqi and U.S. intelligence agencies who have first-hand knowledge of the ISIS chemical weapons program, spoke on condition of anonymity to discuss the sensitive information.

So far, the only overt sign of the group's chemical weapons program has been the apparent use of mustard gas against Iraqi Kurdish fighters and in Syria. In mortars that

hit Kurdish forces in northern Iraq earlier this year, preliminary tests by the U.S. showed traces of the chemical agent sulfur mustard.

Iraqi authorities clearly fear the use could be expanded. Over the summer, Iraq's military distributed gas masks to troops deployed west and north of Baghdad, one general told the AP. A senior officer in Salahuddin province, north of Baghdad, said 25 percent of the troops deployed there were equipped with masks.

More recently, Iraq's military received from Russia 1,000 protective suits against chemical attacks, said Hakim al-Zamili, the head of the Iraqi parliament's security and defense committee.

IS has set up a branch tasked with pursuing chemical weapons, according to a senior Iraqi military intelligence officer and two officials from another Iraqi intelligence agency. They wouldn't give details of the program, including how many personnel it is believed to have or its budget.

But al-Zamili, citing intelligence reports he has access to, told the AP that the group has managed to attract chemical experts from abroad as well as Iraqi experts, including ones who once worked for Saddam Hussein's now-dissolved Military Industrialization Authority. The foreigners include



experts from Chechnya and Southeast Asia, the Iraqi intelligence officials said.

IS recently moved its research labs, experts and materials from Iraq to "secured locations" inside Syria, al-Zamili added — apparently out of concern of an eventual assault on Mosul, Iraq's second largest city, captured by ISIS in the summer of 2014.

"Daesh is working very seriously to reach production of chemical weapons, particularly nerve gas," al-Zamili said, using an Arabic acronym for ISIS. "That would threaten not just Iraq but the whole world."

Still, U.S. intelligence officials say they don't believe ISIS has the technological capability to produce nerve gas or biological agents, and that the militants were more likely to harm themselves trying to make them. A European official privy to intelligence on the extremist group's programs agreed, saying so far even ISIS production of mustard gas was in small quantities and of low quality.

The United States and its allies accused the military of Syrian President Bashar Assad of using chemical weapons in its nearly 5-year war with rebels, including a 2013 attack in a rebel-held Damascus suburb that killed hundreds. The Syrian government denies using any such weapons, but after that attack it struck a deal to give up its chemical weapons stockpiles. Still, it has been accused of continuing to use chlorine gas, a claim it denies.

Retired Lt. Gen. Richard Zahner, who was the top American military intelligence officer in Iraq in 2005 and 2006 and went on to lead the National Security Agency's electronic spying arm, noted **that al-Qaida tried for two decades to develop chemical weapons and didn't succeed, showing the technical and scientific difficulties.**

However, he said, **U.S. intelligence agencies have consistently underestimated the Islamic State group, which has shown itself to be more capable and innovative than al-Qaida and has greater financial resources.**

"Even a few competent scientists and engineers, given the right motivation and a few material resources, can produce hazardous industrial and weapons-specific chemicals in limited quantities," Zahner said. Developing chemical weapons has been an ambition of the group — and various other jihadi

movements — for years. There are also concerns about militants trying to obtain radioactive materials. An AP investigation published last month uncovered that authorities in the Eastern European nation of Moldova, working with the FBI have interrupted four attempts in the past five years by gangs with suspected Russian connections that sought to sell radioactive material to Middle Eastern extremists.

A senior deputy of the group's leader Abu Bakr al-Baghdadi wrote in a 2013 report to al-Baghdadi of "significant progress" toward producing chemical weapons, according to two senior officials with access to the document, obtained by Iraqi intelligence.

In it, the deputy, **Sameer al-Khalifawy, wrote that chemical weapons would ensure "swift victory" and "terrorize our enemies." But, he added, what was needed was "to secure a safe environment to carry out experiments."**

Al-Khalifawy was killed by rebels in Syria in early 2014. Months later, ISIS overran Mosul and much of northern and western Iraq, linking that territory to the stretches of northern and eastern Syria it controlled and declaring itself a "caliphate."

In May 2013, Iraqi security forces, acting on a tip from the Americans, raided a chemical weapons research lab in Baghdad's Sunni-majority district of al-Doura, the Iraqi intelligence officials said. Security forces arrested two militants running the lab, Kefah Ibrahim al-Jabouri, who held a master's degree in chemistry, and Adel Mahmoud al-Abadi, who has a bachelor's degree in physics and worked at Saddam's Military Industrialization Authority before it was disbanded in 2003.

The Iraqi officials said the two men were working with al-Baghdadi, citing ISIS correspondence they seized from al-Jabouri. Other international officials disputed this, however, saying the men were not connected with the group.

Iraqi officials complained of lack of cooperation from neighboring Syria.

They cited the case of a veteran Iraqi jihadist and weapons expert, Ziad Tareq Ahmed, who fled to Syria after Iraqi security agents raided his Baghdad home in 2010 and arrested members of his cell. The agents



found large amounts of material that could be used for making mustard gas.

Ahmed, who has worked with several Islamic militant groups without formally joining any, was arrested by the Syrians last year. The Syrian government allowed Iraqi officials' to interrogate him in prison but refused to hand

him over. Then last month, they released him, two Iraqi intelligence officials said.

"This is a very grave development," said one of the officials, who heads one of Iraq's top counterterrorism agencies. "His release adds significantly to our concerns".

CBRNe Islamic State – Hoax or Reality?

Presented at "2nd IW CBRNe Workshop held in Rome (Nov 20, 2015)
University of Rome Tor Vergata (CBRNe Master Courses)

You can download the PPT presentation from:

<http://allergy-cbrne-consultant.yolasite.com/multimedia.php>



Small-scale Terrorist Attacks – Using Chemical and Biological Agents: An Assessment Framework and Preliminary Comparisons

Source: <http://fas.org/irp/crs/RL32391.pdf>

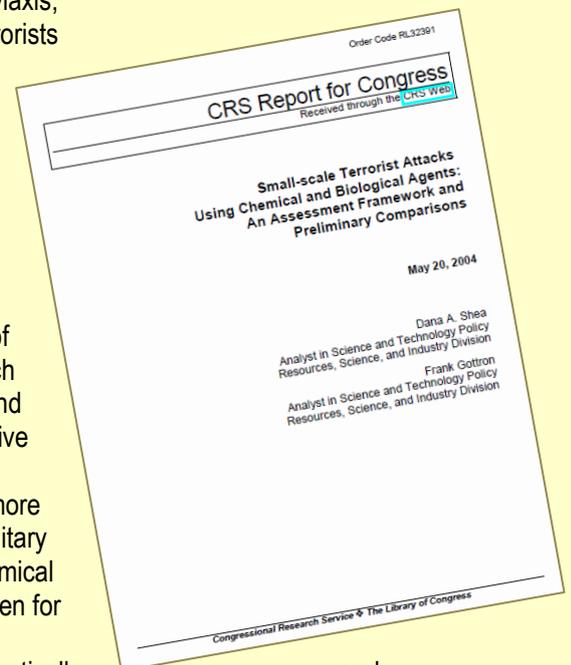
This report, which will be updated as necessary, presents a means of assessing the relative threat from terrorist-use of individual chemical, biological, and toxin agents. It focuses on small-scale, targeted chemical and biological attacks, rather than mass-casualty attacks. The framework considers the elements of access, public health impact, medical treatment, prophylaxis, and dissemination. Other factors that may affect potential use by terrorists include the range of lethality, covert employment of an agent, and the availability of dual-use technologies.

The results of this framework may be useful in addressing the threat these agents pose, for example by indicating priorities for countermeasure funding. Other uses include weighing the potential effectiveness of policy options, assessing threat reduction approaches to specific agents, and serving as a resource for developing other specialized frameworks.

Defense against chemical and biological agents is high on the list of the nation's priorities. No clear consensus exists with respect to which agents pose the greatest threat. Previous analyses of the chemical and biological threat have largely revolved around historical and comparative treatments or been based in a military framework.

Examination of the chemical and biological threat to civilians is more complicated. Agents whose characteristics make them poor military weapons may still be powerful if deployed as weapons of terror. Chemical and biological weapons used in the past have not always been chosen for the highest potential fatalities, but rather for other reasons.

Some chemical and biological agents are closely regulated, both domestically and internationally. Expansion or further refinement of policies controlling these agents may lower the threat posed by terrorist use of them. Domestic policy options to reduce the threat posed by these agents include methods to prevent their use, consequence management after their use, and methods for protecting the public from them. Specific policies to implement these goals include improving the general public health system, increasing



and



prophylaxis research, development of new medical countermeasures treatments, increasing intelligence gathering, and increasing regulation of dual-use technology. International policy options include development of new biosecurity agreements and increasing participation in current nonproliferation organizations.

It is impossible to eliminate the risk of chemical or biological terrorism. Important issues facing policymakers include balancing the need for increased security with the potential economic costs associated with increased regulation and redirected federal resources, determining the relative ratio between general and specific countermeasures against chemical and biological terrorism, and assessing the success of federal efforts at reducing chemical and biological terrorism vulnerability.

Smart sensor detects single molecule in chemical compounds

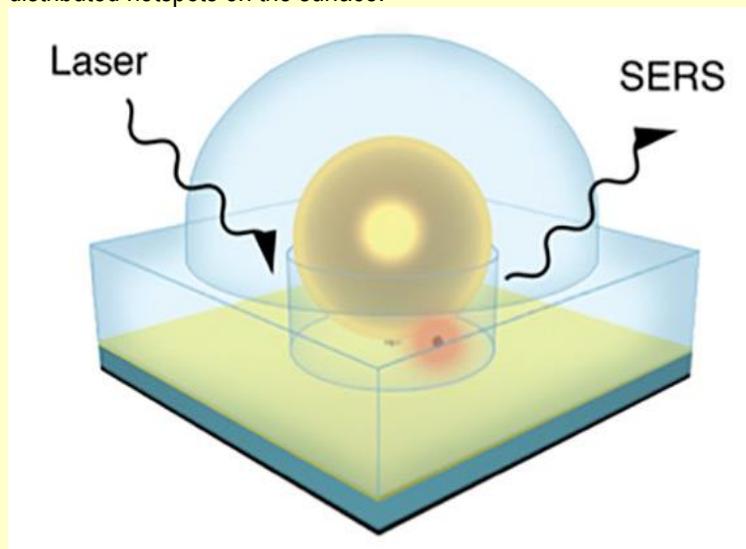
Source:

Nov 24 – **Australian and Italian researchers have developed a smart sensor that can detect single molecules in chemical and biological compounds — a highly valued function in medicine, security, and defense.**

The researchers from the University of New South Wales, Swinburne University of Technology, Monash University, and the University of Parma in Italy used a chemical and biochemical sensing technique called **surface-enhanced Raman spectroscopy (SERS)**, which is used to understand more about the make-up of materials.

Swinburne U reports that the researchers were able greatly to amplify the technique's performance by taking advantage of metal nanostructures, which help generate "hotspots" in close proximity to the metal surfaces.

The sensor was created using gold nanoparticles which self-assemble onto a gold- and silica-coated silicon base. This approach means the nanoparticles find the perfect spacing to achieve lots of uniformly distributed hotspots on the surface.



The hotspots also used a heat responsive polymer which acted as a gate to trap molecules, but importantly also allow them to be released down the track.

"The sensor shows not only a good SERS reproducibility but also the ability to repetitively catch and release molecules for single-molecular sensing," postdoctoral fellow at Swinburne's Center for Micro-Photonics, Dr. Lorenzo Rosa, said.

"This reversible trapping process makes it possible to detect an abundance of

analytes in one measurement, but also to reuse the SERS substrate multiple times."

The technique used in this work has various applications for other measurement and detection systems sensitive to humidity, pH and light.

— *Read more in Yuanhui Zheng et al., "Reversible gating of smart plasmonic molecular traps using thermoresponsive polymers for single-molecule detection," Nature Communications 6, Article number: 8797 (9 November 2015)*



ISIS are trying to buy chemical and biological weapons warns David Cameron's Defence Review

Source: <http://www.mirror.co.uk/news/uk-news/isis-trying-buy-chemical-biological-6886940>



Dangerous: An expert disposing of a chemical weapons shell in Germany in 2013

It said: "Terrorists have tried to use a wide variety of methods of attack, from unsophisticated knife and gun attacks to more complex plans involving firearms and explosives at multiple locations. "Passenger aircraft remain a primary target for some terrorist groups. Some groups, especially ISIL [ISIS] and Al Qa'ida, will also try to acquire chemical, biological and radiological capabilities."

ISIS terrorists are trying to buy chemical and biological weapons to inflict a new wave of terror on the world, David Cameron's defense review warned today.

Terrorists also want to get hold of 'dirty bombs' that spread radioactive waste, the startling

The announcement came as David Cameron revealed he will ask MPs to consider plans to bomb Syria 'over the weekend' - meaning he could force a vote early next week.

He warned: "We shouldn't take too long over it.

Every day that we spend is a day that we're not getting to grips with the ISIL menace."



AFP/Getty Images – Soaring: The cost of renewing Trident will now be as high as £41 billion

Japanese extremists killed 12 people and injured 50 in 1995 when they released sarin gas on the Tokyo subway, and there have always been fears a similar

document said.

Chemical and biological weapons were banned in 1925 after mustard and chlorine gas caused soldiers agonising suffering in the First World War.

But they have been used in Syria's brutal civil war, where there are fears President Assad's regime could have been behind attacks using the deadly nerve agent sarin.

The worrying disclosure was made in the 96-page Strategic Defence and Security Review, which spelled out £12bn of new defence spending alongside an eye-watering 17,000 job cuts.

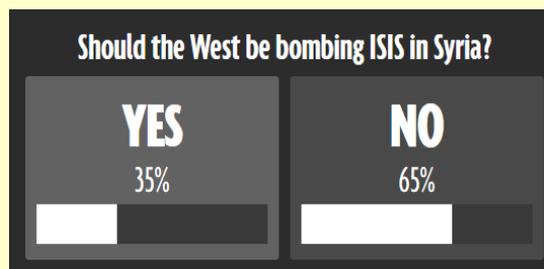
incident could happen in the UK.

A biological weapons attack could spread diseases such as anthrax, which sparked a scare when a powdered form was sent by post to journalists and senators in the US in 2001.

And spies are hard at work to prevent ISIS getting hold of radiological weapons, so-called 'dirty bombs' which spread radioactive material.

These are not the same as nuclear bombs because they use a conventional detonation, but they still contaminate cities with dangerous radiation.





Fears Al Qa'eda terrorists were planning to use dirty bombs in 2002 led to widespread speculation about the effect of such a weapon on London.

Today's defense review also revealed the cost of renewing the Trident nuclear weapons system could reach an eye-watering £41billion.

David Cameron today revealed its will now cost

against the system and it could never deter cyber-criminals or terrorists.

Jeremy Corbyn said a Labor defense policy review will look at whether it is 'right' to commit 'so much' of the defense budget to having the four Vanguard submarines at sea.

The PM prompted frenzied questions over whether MPs would be denied a vote after his review committed only to a 'debate' and annual



£31bn with a £10bn contingency - a huge price rise blamed on the "vast scale of the project".

The figure is well above the £20bn cost of renewing the four Vanguard submarines, £25bn in today's prices, which was quoted in a 2006 Ministry of Defense white paper.

Meanwhile, 17,000 Ministry of Defense civil servants will be axed as the workforce is slashed by almost 30% to 41,000 over the next five years. Other services will be privatized.

Opponents in the SNP slammed the enormous Trident price rise, revealed as David Cameron unveiled a £12bn cash injection into defense in his Strategic Defense and Security Review.

The party's Westminster leader Angus Robertson said most Scottish politicians were

reports on the submarine system.

The 96-page review said: "We are committed to delivering this vital but demanding and complex program.

"We will hold a debate in Parliament on the principle of Continuous At Sea Deterrence and our plans for Successor, and will continue to provide annual reports to Parliament."

Mr. Cameron later said there would be a vote after all - but crucially didn't say when that would be.

He told Tory MP Julian Lewis: "We will be moving ahead with the four submarines and obviously at an appropriate moment we will want to have a vote in this House."

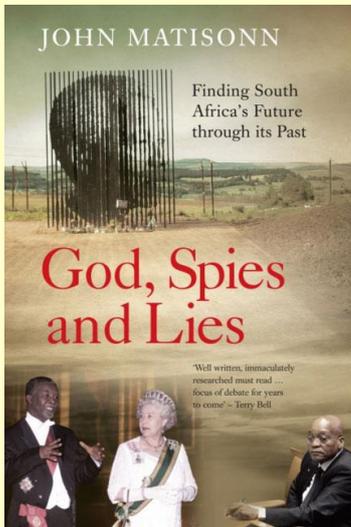


Blair and Bush went to war in Iraq despite South Africa's WMD assurances, book states

Source: <http://www.theguardian.com/world/2015/nov/30/blair-and-bush-went-to-war-in-iraq-despite-south-africas-wmd-assurances>

Nov 30 – Tony Blair went to war in Iraq despite a report by South African experts with unique knowledge of the country that showed it did not possess weapons of mass destruction, according to a book published on Sunday.

God, Spies and Lies, by South African journalist John Matisonn, describes how then President Thabo Mbeki tried in vain to convince both Blair and President George W Bush that toppling Saddam Hussein in 2003 would be a terrible mistake.



Mbeki's predecessor, Nelson Mandela, also tried to convince the American leader, but was left fuming that "President Bush doesn't know how to think".

The claim was this week supported by Mbeki's office, which confirmed that he pleaded with both leaders to heed the WMD experts and even offered to become their intermediary with Saddam in a bid to maintain peace.

South Africa had a special insight into Iraq's potential for WMD because the apartheid government's own biological, chemical and nuclear weapons program in the 1980s led the countries to collaborate. The program was abandoned after the end of white minority rule in 1994 but the expert team, known as [Project Coast](#), was put back together by Mbeki to investigate the US and UK assertion that Saddam had WMD – the central premise for mounting an invasion.

Mbeki, who enjoyed positive relations with both Blair and Saddam, asked for the team to be granted access.

"Saddam agreed, and gave the South African team the freedom to roam unfettered throughout Iraq," writes Matisonn, who says he drew on sources in Whitehall and the South African cabinet. "They had access to UN intelligence on

possible WMD sites. The US, UK and UN were kept informed of the mission and its progress."

The experts put their prior knowledge of the facilities to good use, Matisonn writes. "They already knew the terrain, because they had travelled there as welcome guests of Saddam when both countries were building WMD."

On their return, they reported that there were no WMDs in Iraq. "They knew where the sites in Iraq had been, and what they needed to look like. But there were now none in Iraq."

In January 2003, Mbeki, who succeeded Mandela as president, sent a team to Washington to explain the findings, but with little success. Mbeki himself then met Blair for three hours at Chequers on 1 February, the book relates.

He warned that the wholesale removal of Saddam's Ba'ath party could lead to a national resistance to the occupying coalition forces. But with huge military deployments already under way, Blair's mind was clearly made up. When Frank Chikane, director-general in the president's office, realised that the South Africans would be ignored, it was "one of the greatest shocks of my life", he later wrote in a memoir.

Matisonn adds: "Mandela, now retired, had tried as well. On Iraq, if not other issues, Mandela and Mbeki were on the same page. Mandela phoned the White House and asked for Bush. Bush fobbed him off to [Condoleezza] Rice. Undeterred, Mandela called former President Bush Sr, and Bush Sr called his son the president to advise him to take Mandela's call. Mandela had no impact. He was so incensed he gave an uncomfortable comment to the cameras: 'President Bush doesn't know how to think,' he said with visible anger."

On 19 March, airstrikes on Baghdad began, triggering a conflict that has dragged on for more than a decade, killing hundreds of thousands of people and contributing to the rise of Islamic State.



Mbeki's spokesman, Mukoni Ratshitanga, confirmed that Mbeki met Blair at Chequers to advise against the war and the UK's involvement in it. Blair disagreed, Ratshitanga said, insisting that he would side with Bush.

"President Mbeki informed the prime minister that the South African government was about to send its own experts to assist and encourage the Iraqis to extend full cooperation to the UN weapons inspector, Dr Hans Blix," Ratshitanga said. "He urged the prime minister to await the report of the SA experts before making any final commitment about going to war against Iraq.

"The prime minister responded to this information and suggestion by telling President Mbeki that the SA experts should operate knowing that relative to the decision-making process about the then impending war, 'it is two minutes to midnight'."

Mbeki also had a phone conversation with Bush in 2003 and tried to discourage him from going to war, the spokesman said. "President Bush said he would rather not go to war but needed a clear and convincing signal that the Iraqis did not have WMDs to enable him to avoid the invasion of Iraq.

"President Mbeki informed him about the report of the SA experts which by then had already been sent to the UN secretary general, Dr Hans Blix and the UN security council. He informed President Bush that the report of the SA experts said Iraq had no WMDs. President Bush said he did not know about the report but would obtain a

copy from the US ambassador at the UN, New York."

It is not known whether Bush did obtain a copy of the report.

Mbeki later contacted Blair to ask him to find out from the US president what would constitute a "convincing signal" from Saddam, promising that he would contact Saddam to persuade him to send such a signal, according to Ratshitanga. "President Mbeki understood from his sources and was convinced that Prime Minister Blair received his message as reported above, but did not convey it to President Bush."

Blair's office did not deny the meeting with Mbeki or the specifics of what was said. A spokesperson said: "All such information, including that based on limited and controlled access, would have been scrutinized and assessed by our intelligence agencies. Other intelligence agencies agreed that Saddam had weapons, the disagreement in the international community was what to do about it.

"We did not brush anything aside but of course had to act on the information of our own and other agencies. However, as we now know the outcome was that although he had used chemical weapons extensively against his own people and others, the program did not exist in the way that was thought."

[In an interview last month](#), ahead of the release of the Chilcot inquiry, the former prime minister apologized for the intelligence he received being wrong, and for mistakes in planning, but said he found it hard to apologize for removing Saddam.

Russia Plans To Completely Destroy Chemical Weapons by 2020, To Shut Down Two Facilities by November

Source: <http://www.ibtimes.com/russia-plans-completely-destroy-chemical-weapons-2020-shut-down-two-facilities-2161434>

Oct 29 – **Russia is going to completely destroy its chemical weapons stocks by 2020, claims the Organization for the Prohibition of Chemical Weapons (OPCW).**

OPCW Director-General Ahmet Uzumcu has said his organization has no doubt that Russia will eliminate its chemical weapons in five years. According to him, all countries were supposed to destroy toxic agents by 2012. However, financial and technical issues did not allow authorities to do it, he said.

The OPCW has decided to extend the deadline until 2020 after having discussions with member states, Russian News Agency Tass reported. Russia, which finished work at four chemical weapons disposal plants in 2015, plans to dispose all by 2020.

According to Uzumcu, **Russia has already destroyed more than 91 percent of its chemical weapons** stocks. The Turkish career diplomat will meet Russian Foreign Minister Sergey Lavrov Thursday.



Russia wants to shut down the Leonidovka plant in the Penza region and the Pochev plant (photo



below) in the Bryansk region. The Shchuchye plant in the Kurgan region will be shut down on Nov. 20 while the Maradykovsky plant in the Kirov region will be shut down on Oct. 30.

Uzumcu will attend a ceremony marking the shutdown of the Maradykovsky facility. The only chemical weapons disposal plant, which is going to be functional in the country after 2015, is the one in the Kizner region.



Earlier in October, Russia destroyed the largest stockpiles of its chemical weapons. The destruction was done at a site in the western Bryansk region, according to local media reports. A spokesperson for Russia's Federal Agency for the Safe Storage and Destruction of Chemical Weapons said Russia was going to celebrate the completion of five years of work destroying chemical munitions.

Clothing that guards against chemical warfare agents

Source: <http://www.homelandsecuritynewswire.com/dr20151001-clothing-that-guards-against-chemical-warfare-agents>

Oct 01 – Recent reports of chemical weapons attacks in the Middle East underscore the need for new ways to guard against their toxic effects. Toward that end, scientists report in the journal *ACS Applied Materials & Interfaces* a new hydrogel coating that neutralizes both mustard gas and nerve agent VX. It could someday be applied to materials such as clothing and paint.

Toxic chemicals have been used as weapons since ancient times, but it was not until the First World War that they were released in large-scale attacks. Despite international efforts to ban them, chemical warfare agents (CWA) are still deployed. **ACS notes that scientists have developed some substances which can neutralize CWAs, but they lose their effectiveness when incorporated into practical coatings such as paint.** Lev Bromberg, a research scientist in T. Alan Hatton's group, and other colleagues wanted to come up with a better solution.

The researchers developed hydrogel materials that completely broke down the nerve gas VX — one of the most dangerous and persistent CWAs — in less than twenty minutes. The materials also quickly degraded mustard gas and soman, a nerve agent that was reportedly used in the 1980s during the Iran-Iraq war. And, the researchers say, the hydrogels could be applied to fabrics or other materials without losing their ability to neutralize CWAs.

The Defense Threat Reduction Agency funded the research

— Read more in Lev Bromberg et al., “Nucleophilic Polymers and Gels in Hydrolytic Degradation of Chemical Warfare Agents,” *ACS Applied Materials & Interfaces*, Article ASAP (11 September 2015).

The German Bundeswehr CBRN Defense Command – A traditionally strong capability in a new type of organization

By Col. Henry Neumann

Source: <http://www.cbrneportal.com/the-german-bundeswehr-cbrn-defense-command-a-traditionally-strong-capability-in-a-new-type-of-organization/>

Nov 25 – Since April 2013, the new established Bundeswehr CBRN Defence Command (BwCBRNDCmd) has taken over the lead function for CBRN Defense in the Bundeswehr. Responsibilities, forces and tasks were shifted from all services to this so-called “Capability Coordination Command” in the Joint Support Service (JSS). With this concentration of CBRN in one organization, the JSS is prepared to provide the highest output with the existing and limited resources. CBRN Defense out of one hand – one commander with an overarching authority, less interfaces with other organizations, a lean hierarchy – Germany is demonstrating a modern and efficient organization within the military.

The BwCBRNDCmd comprises of the Headquarters, located at Bruchsal (between Heidelberg and Karlsruhe), two regular CBRN Defence Battalions, located at Bruchsal and Hötter (south of Hannover), two non-active battalions at the same places, and the CBRN Defense, Safety and Environmental Protection School in Sonthofen, Bavaria. Additionally, the German Detachment to the Joint CBRN Defense Centre of Excellence, located in the Czech Republic is subordinated for national issues to the command.

The Command has got three principal tasks: it is responsible for CBRN Defense policy-, concept- and capability development in the entire Bundeswehr, including all military and



civilian services; it is the force provider for all kind of operations, domestic and out of country and has to provide qualified CBRN Defense Capabilities as well as military fire fighters; last but not least the Command provides education and training to all military and civilian services and ranks in CBRN Defense (enhanced and qualified level), but also in Occupational Health and Safety, Environmental Protection and Fire Fighting.

► **Read the rest of this article at source's URL.**

Colonel Neumann began his military career in 1975 as an Officer Cadet of the German Army NBC Defense Corps. From 1975-1981 he completed his Officers Course and graduated from University with a degree in Computer Sciences. From 1981-1986 he was platoon leader of the NBC Defense Platoon in Emden and Company Commander of a NBC Defense Company in Bruchsal. From 1986-1987 he was appointed Chief of a Training Inspectorate at the NBC Defense and Self-Protection School in Sonthofen. From 1987-1991 he was Company Commander of the HQ Company 7 (GE) Panzer Division in Unna. From 1991-1994 he was desk officer for NBC defense training at the Army Office in Cologne. From 1994-1996 he commanded NBC Defense Battalion 110 in Emden. From 1997-2003 he held various assignments in the field of NBC defense and Protection issues at the Federal Ministry of Defense. From 2003-2005 Col. Neumann was Branch Chief of the Environmental and Occupational Health and Safety Branch in the CBRN Defense und Protection Issues Division of the Federal Armed Forces Joint Support Command in Cologne. In 2004 Col. Neumann was appointed deputy Brigade Commander of NBC defense Brigade 100 in Bruchsal. He was Commander of NATO's CBRN Joint Assessment Team during the NFR 4 rotation. Since 2006 Col. Neumann has been Branch Chief of the CBRN Defense, Fire Fighting and Self Protection Branch in the CBRN Defense und Protection Issues Division of the Federal Armed Forces Joint Support Command in Cologne. Col. Neumann was Chairman of the CBRN Defense Training Working Group (NTG/JSSG) from 2008-2010. In 2008 and 2009 he chaired the EDA Project Team CBRN Detection, Identification and Monitoring; in 2009 he was elected chairman of the BIO EDEP Program Preparation Group. From 2010 Col. Neumann was the Commander of German Forces in Kabul and the Liaison Officer between the German and the Afghan MoD. In 2012, he returned to the Joint Support Command as a Chief of Staff and was appointed Commissioner for the Establishment of the Bundeswehr CBRN Defense Command. On 23 April 2013, Col. Neumann was handed over the Command of the Bundeswehr CBRN Defense Command in Bruchsal.

The Syrian Army Uses Chinese-Made, Chemical Weapons?

Source: <http://eng.the-liberty.com/2015/6033/>



Nov 25 – At the Republican debate held on November 10th, Mr. Ben Carson, one of the Republican presidential candidates, made a remark to the effect that China as well as Russia has gotten involved militarily in the Syrian conflict.

After the debate, his opposing candidates and experts criticized him for lacking expertise in diplomacy, saying, “We have not seen any evidence of Chinese military involvement in Syria.”



Mr. Carson refuted their claim, saying, “There is no evidence that China is deploying troops to Syria. But China is providing various weapons to Syria.”

Who Supplies Weapons to the Syrian Army?

Can Mr. Carson’s assertion be true? The Syrian Civil War started in 2011. According to data Stockholm International Peace Research Institute (SIPRI) released in 2013, from 2006 to 2010, the five largest arm exporters to the Syrian regime were Russia (48%), Iran (21%), Republic of Belarus (20%), North Korea (9%), and China (2%). China accounted for only a small percentage.

However, a nonprofit, nongovernmental, human rights organization, Human Rights Watch, reported in 2014 that the canisters of chlorine gas the Syrian regime had used to attack its people bore the logo of China North Industries Corporation (Norinco), China’s biggest arms manufacturer.

The Assad regime has been using “chlorine bombs”, barrel-shaped bombs filled with chlorine. The use of industrial chlorine as a weapon violates the Chemical Weapons Convention.

The International Institute for Counter-Terrorism (ICT), an independent think tank in Israel, reported that 10,000 chlorine gas cylinders were transported to Syria via Iran. Norinco denied the allegation that it had exported chlorine gas to Syria, but it did not mention the possibility that Iran had ordered chlorine gas from China and had supplied it to Syria.

The Influx of Weapons to Conflict Areas Must Be Monitored

Assad’s use of chemical weapons came under fire from the international community. After that, the countries concerned agreed to urge Syria to eliminate its stockpiles of chemical weapons. However, the agreement only called for the elimination of sarin and VX nerve agent, an extremely toxic substance, and did not include chlorine gas.

European countries, the U.S., and Russia have also been selling large quantities of weapons to countries in the Middle East, and particular attention should be given to the proliferation of chemical and biological weapons. If China is selling chemical weapons to Syria for lucrative ends, allowing the Assad regime to kill its people, it would deserve criticism.

We must never provide what is regarded as weapons of mass destruction, including chemical weapons, to areas that are disturbed by internal troubles. The international community as well as China should monitor and control their weapons to prevent them from flowing into troubled areas.

Russia Tests New Chemical Reconnaissance Armored Vehicle

Source: <http://i-hls.com/2015/12/russia-tests-new-chemical-reconnaissance-armoured-vehicle/>

Dec 01 – The trials of the advanced Russian-made RKhM-5M chemical reconnaissance vehicle are in progress, Airborne Force spokesman Lieutenant-Colonel Yevgeny Meshkov said on Friday, November 27, 2015. The armored vehicle is furnished with special equipment to monitor the situation and search for radiation, chemical and biological threats to the Airborne Force’s NBC protection units, the spokesman added. “The prototypes of the advanced chemical reconnaissance vehicle designed for the Airborne Force are currently undergoing dynamic trials. The trials are being conducted to check whether the vehicle can be airdropped with all the equipment and the crew onboard with the use of special multi-canopy parachute systems,” Meshkov said.

According to the spokesman, the advanced vehicle will be able to determine the contamination level at various areas remotely and dupe precision weapon guidance systems, as well as detect biological threats quickly.

“The promising **RKhM-5M vehicle** will be designed to conduct chemical, radiation and biological reconnaissance within Airborne Force units and transmit reconnaissance data automatically,” Meshkov said.



The RKhM-5 Povoзка-D-1 chemical reconnaissance vehicle is designed to conduct chemical,



radiation and biological reconnaissance and transmit reconnaissance data to the troops control system.

The vehicle can monitor the situation at a radius of up to 6 kilometers (3.7 miles). The vehicle's design provides protection for its crew from effects of mass destruction weapons.

The chemical reconnaissance vehicle can be airdropped with its crew onboard from transport aircraft with the use of rocket-assisted and multi-canopy parachute systems.

The vehicle has a weight of 13.2 tons, a length of 6 meters, a road speed of 70 km/h (43.5 mph), a water speed of 10 km/h (6.2 mph) and endurance of 500 kilometers (310.7 miles).

The RKhM-5 chemical reconnaissance vehicle is armed with the PKT 7.62mm machine gun with an ammunition load of 1440 rounds. The vehicle's crew totals three.

From State Chemical Warfare to Chemical Terrorism

By Karmon, Ely (Dr.)

Source: <http://www.ict.org.il/Article/1530/From-State-Chemical-Warfare-to-Chemical-Terrorism>

On the backdrop of French and Belgian leaders expressing their worry concerning a chemicals terrorist attack in the aftermath of the Paris 13 November ISIS attacks in Paris please see below my presentation at the panel on "Chemical Warfare at 100" at The 4th EU Non-proliferation and Disarmament Conference, 11-12 November 2015, Brussels:

Dec 02 – Our institute, in cooperation with the French think tank CREST (Foundation de la recherche Stratégique), has conducted a comprehensive research on CBRN terrorism between the years 1998 – 2000.

Just before 9/11 our evaluation was that terrorist organizations active at the time, including Al-Qaeda (AQ), Hezbollah and major Palestinian groups, had no



CBRNE-TERRORISM NEWSLETTER – December 2015

capacities to stage what we called annihilation (WMD) attacks, only tactical minor ones, but still provoking strategic political, social and economic effects.

From the 292 incidents*incidents we identified for the last three decades, half were threats.



From the 42 real attacks 35 were chemical attacks and we evaluated that chemical terrorism was the most probable immediate threat, because the knowledge terrorist organizations already had about chemicals/explosives.

The number of chemical incidents and attacks rose significantly after the Iraq-Iran war and the second Gulf War against Iraq.

It became evident that they influenced the Aum Shinrikyo leader Shoko Asahara, and the leaders of AQ, to conduct research and stage chemical attacks.

This trend did not change even after the 9/11 attacks and the anthrax attacks in the United States in October 2001. We know now that the anthrax attack was a plot devised probably by one person with unclear goals and motivations.

The Aum Shinrikyo sarin attacks in Matsumoto in June 1994 and in Tokyo in March 1995 and the failed cyanide attacks after the dismantling of the cult were the most serious chemical terrorist events. I would stress that the Matsumoto sarin attack was actually the most sophisticated and dangerous one, but the Tokyo subway attack prevailed as the crossing of the taboo in CBRN terrorism.

It should be stressed that almost all Al-Qaeda's chemical terror plots in Europe and beyond failed, beside the 15 chlorine attacks in Iraq from October 2006 to June 2007.

But the real change in our threat assessment came following the uprisings in Libya, Syria and Iraq.

The discovery of the Libyan mustard gas base in 2011, the chaos in Syria as a result of the civil war and the fall of some chemical defensive material and possibly agents in the hands of jihadist rebels and the ISIS conquest of the huge Al Muthanna chemical facility raised the specter of their use by these terrorist elements.

The Syrian regime's use of tactical chemical attacks (sarin?) in August 2014 (1400 casualties) and the use of chlorine during spring 2014 against the civilian population and the opposition groups give legitimacy to the rebels to use the same weapons, at least in their eyes.

In July 2014, ISIS used chemical agents, probably mustard gas, against the Kurds in Kobani, Syria, before the main battle there

for the control of the city. A colleague in Israel received the first photos of this attack and we analyzed them in Israel. He later published an article about this event (see the article at <http://www.meforum.org/4852/did-isis-use-chemical-weapons-against-the-kurds>)

Since then several other attacks with chlorine and mustard gas have been staged against the Kurds in Iraq.

Salih Jasim Muhammed Falah al-Sabawi (aka Abu Malik), a chemical weapons expert who joined ISIS in 2005 was the first major ISIS operative killed, in January 2015, in a targeted U.S. strike near Mosul. He was known as a mid-level ISIS fighter who provided means for production of chemical weapons. He had worked at the Muthanna chemical weapons production facility.

I would close this short presentation by raising several questions for discussion: how much of Syrian chemical agents and devices have fallen in the hands of the rebels (see for instance the battles on the fences of the huge Al-Safira facility, in 2013 and these days); how much chemical agents, shells and facilities remained



usable in the Muthanna chemical weapon production facility; what happens with the 700 Iraqi chemists, biologists and nuclear

scientists arrested after the occupation of Iraq and their liberation?

Dr. Karmon, Ely is a Senior Research Scholar, International Institute for Counter-Terrorism (ICT), Interdisciplinary Center (IDC), Herzliya, Israel. Dr. Ely Karmon is a Senior Research Scholar at The International Institute for Counter-Terrorism (ICT) and Senior Research Fellow at the Institute for Policy and Strategy at The Interdisciplinary Center (IDC) in Herzliya, Israel. He lectures on International Terrorism and CBRN terrorism at the M.A. Counterterrorism Studies at IDC. He holds a B.A. in English and French Culture from the Hebrew University in Jerusalem (1964), a Licence in International Relations from the Institut d'Etudes Politiques and a Licence in Bantu languages from the Ecole de Langues Orientales, in Paris (1969). He earned his M.A. and Ph.D. in Political Science from Haifa University (1996). He is an International Expert to the Civil Military Disaster Medicine Committee of the International Disaster Medicine Association (IDMA), Naples, Italy.

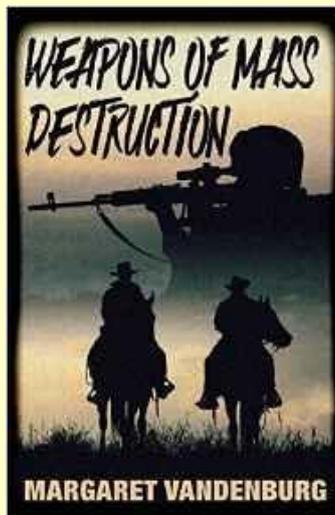
Book Review: Weapons of Mass Destruction

By Joan Baum

Source: <http://wshu.org/post/book-review-weapons-mass-destruction>

Dec 03 – A friend was looking at the title of a book I was reading - *Weapons of Mass Destruction*: “Is that about what I think it is?” Well, “yes,” I said, and “no.” The book is about American troops in Iraq in 2004. But no, because the book is not an analysis or partisan tract, but a novel. And a novel with two unusual features: It’s a story about a young marine named Billy Sinclair- a well-respected sharpshooter in his unit

who’s haunted by the recent suicide back home in Montana of his lifelong friend and hunting buddy, Pete, a Native American Sioux. *Weapons of Mass Destruction* is also, however, an authentic, meticulous account of military operations written by a woman. Margaret Vandenburg has done an impressive amount of research, in particular about boots-on-the-ground fighting in Fallujah, site of most concentrated fighting of the war. This December will mark eleven years since the second Battle of Fallujah. Vandenberg’s book underscores how this was a time when so many Americans lost their lives after losing faith in the Iraq



insurgency, in the prolonged war, and in misguided game plans about how to fight an elusive enemy. It’s amazing, and Vandenburg’s book underscores this as well, that so many patriotic young soldiers, growing cynical and depressed, still remained fiercely loyal to each other and to their platoon.

The story moves back and forth in time - Iraq, Montana – a continuous narrative, without chapter breaks, as Pete’s seemingly inexplicable suicide comes to the fore when Billy confronts suicide bombers in Fallujah. Could he have done something to prevent his friend’s death? Did Pete think he was “unfaithful” to the “the masculine ideal” within his culture when he fell in love with Billy’s sister, a woman outside his ethnicity? The question torments Billy especially because Pete’s putting a gun into his mouth took place in an aspen grove that was sacred to both of them, a place where they had exchanged ritual blood bonding. Vandenburg links Billy’s question to a larger one about war. Are we all somehow complicit in the deaths of others?

In a telephone exchange, the author said she dedicated *Weapons of Mass Destruction* to her grandfather, a Marine Corps corporal in World War I, one of only 13 to survive in a company of 120, and to a cousin, an Army staff sergeant who served in Iraq and



Afghanistan. She wanted readers to feel that the responsibility for war should lie with an entire population, not just its soldiers who, like her grandfather, maintained “an aura of secrecy” about his service. She wanted to break through that secrecy by exploring in detail not only what

happens in war but what it feels like to engage in war. And as a woman, she also wanted to break through what she calls the “sacrosanct” literary tradition that only men can write about battle. On both counts, she succeeds.

Margaret Vandenburg was born and raised in Boise, Idaho, the rattlesnake capital of the western world. She lived abroad for a couple of years, first in South Africa and then in France, before settling in New York, which has been her home for the last thirty years. Having completed her Ph.D. at Columbia University, she traveled across Broadway to Barnard College, where she is a Senior Lecturer in English specializing in Modernism and Postmodernism. Margaret is the author of novels including The Home Front, a portrait of a family facing autism, and Weapons of Mass Destruction, an Iraq War requiem. Previous publications span a wide range of genres, including historical fiction, creative nonfiction, and literary criticism. She also wrote the libretto for Ada, an opera underscoring Lord Byron’s influence on his daughter’s invention of the first computer language, which was most recently presented by the Center for Contemporary Opera.

ISIL/Da'esh and 'non-conventional' weapons of terror

Source: http://www.europarl.europa.eu/RegData/etudes/BRIE/2015/572806/EPRS_BRI%282015%29572806_EN.pdf

Briefing
December 2015



ISIL/Da'esh and 'non-conventional' weapons of terror

The European Union and its Member States must prepare for the possibility of a chemical or biological attack on their territory by the self-styled 'Islamic State' in Iraq and the Levant (known variously as IS, ISIS or ISIL, and by the Arabic acronym 'Da'esh').

Since the beginning of October 2015, terrorist attacks in Ankara, the Sinai Peninsula, Beirut, Paris and Tunis, for which ISIL/Da'esh has claimed responsibility, have cost the lives of 500 people. Immediately following the latest attack in Paris, the jihadist terrorist group threatened further attacks in European cities. ISIL/Da'esh has vowed that future strikes will be more lethal and even more shocking. This has prompted experts to warn that the group may be planning to try to use internationally banned weapons of mass destruction in future attacks. On 19 November 2015, the French Prime Minister, Manuel Valls, raised the spectre of ISIL/Da'esh planning a chemical or biological attack. At present, European citizens are not seriously contemplating the possibility that extremist groups might use chemical, biological, radiological or nuclear (CBRN) materials during attacks in Europe. Under these circumstances, the impact of such an attack, should it occur, would be even more destabilizing.

European governments and EU institutions need to be on alert, and should consider publicly addressing the possibility of a terrorist attack using chemical, biological, radiological or even nuclear materials. The EU institutions have devoted considerable efforts to preventing a CBRN attack on European soil and preparing worst-case scenarios. However, some gaps remain, in particular with regard to information-sharing among Member States.





Seveso III Directive

Source: <http://www.hse.gov.uk/seveso/>

The Seveso Directives are the main EU legislation dealing specifically with the control of on-shore major accident hazards involving dangerous substances.

The Seveso III Directive came into force on 1 June 2015, replacing the Seveso II Directive.

To implement this Directive, the COMAH Regulations 1999 (as amended) have been revoked and replaced by the [COMAH Regulations 2015](#).

This guidance is for anyone who has duties under the COMAH Regulations 2015, particularly operators of establishments, and also others such as local authorities and emergency planners. The aim of the Regulations is to prevent and mitigate the effects on people and the environment of major accidents involving dangerous substances. This guidance on the COMAH Regulations 2015 gives advice on the scope of the Regulations and the duties imposed by them.

What has changed in the third edition?

Although many duties will be familiar from the 1999 Regulations, the 2015 Regulations contain some new or changed duties including:

- the list of substances covered by the Regulations has been updated and aligned to the CLP Regulation
- some definitions have been changed
- there are transition arrangements for safety reports
- for emergency planning, there is a new requirement for co-operation by designated authorities (Category 1 responders, as defined in the Civil Contingencies Act 2004) in tests of the external emergency plan
- stronger requirements for public information including a duty for lower-tier establishments to provide public information. There are provisions for electronic access to up-to-date public information
- the domino effects duty is broader, including a duty for members of a domino group to co-operate with neighboring sites to share relevant information
- stronger requirements for the competent authority on inspection
- local authorities must now inform people likely to be affected following a major accident

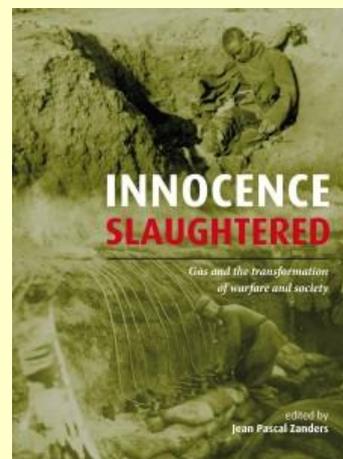
Innocence Slaughtered

Source: <http://www.the-trench.org/publications/monographs-and-edited-volumes/innocence-slaughtered/>

The introduction of chemical warfare to the battlefield on 22 April 1915 changed the face of total warfare. Not only did it bring science to combat, it was both the product of societal transformation and a shaper of the 20th century societies.

This collaborative work investigates the unfolding catastrophe that the unleashing of chlorine against the Allied positions meant for individual soldiers and civilians. It describes the hesitation on the German side about the effectiveness, and hence impact on combat operations of the weapon whilst reflecting on the lack of Allied response to the many intelligence pointers that something significant was afoot.

It goes on to describe the massive transformation that societies were undergoing as a consequence of industrialization, science and technology, and the impact these trends were to have on the emergence of what we know today as 'total war'. Chemical warfare



pitted the brightest minds from the various belligerents against each other and in some ways this competition revealed early thinking about intellectual superiority that was to define the decades after the Armistice. The ability to survive in a chemically contaminated environment was proof of a higher level of achievement. In simple terms, chemical defense equaled survival of the fittest.

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This remarkably documented historical account of the first large-scale use of chemical weapons a century ago comes as a timely reminder of the horrors and human sufferings caused by such an inhumane weapon. Indeed, after recent cases of chemical attacks in the Middle East, the already substantial international efforts to prohibit the use and possession of this weapon of mass destruction and eliminate it forever must reach their ultimate phase. This volume should help decision makers to preserve humanity from this scourge in the future.

Marc Finaud – Senior Programme Advisor, Geneva Centre for Security Policy

These excellent, accessible accounts of how the modern world started using chemical weapons is a valuable addition to the wider understanding of this issue, sadly now of renewed relevance as poison gas once again appears on battlefields. The histories of people whose experiences have not previously been widely available to non-specialists are especially welcome. So are Dr. Zanders's scholarly analyses of the world's successive efforts to ban these weapons. Most of this book recounts how the first ban failed spectacularly during World War I. Perhaps if we understand that better, the second effort to ban these things, launched only in 1997, will have a better chance.

Debora MacKenzie – New Scientist magazine

In a centennial year that commemorates the first use of chemical weapons on the Western Front, few would deny its persistent presence in modern memory. For many years, historians have tended to view the subject in national terms. Now, in this seminal collection, Professor Zanders and colleagues deepen and connect these narratives, and show how chemical warfare, shaped by industrial science, fostered new discourses of terror, shock and fear across the world. From shared experiences, lessons were learned, and norms were established, but a century later, the world has yet to see its abolition. This book is a salutary reminder of the horrors of chemical warfare and the challenge they present to mankind.

Roy MacLeod – School of Philosophical and Historical Inquiry, University of Sydney

As we commemorate the 100th anniversary of the first major use of chemical weapons in warfare in WWI, the new volume, *Innocence Slaughtered* by Jean Pascal Zanders and colleagues importantly documents the inhumane and indiscriminate nature of these

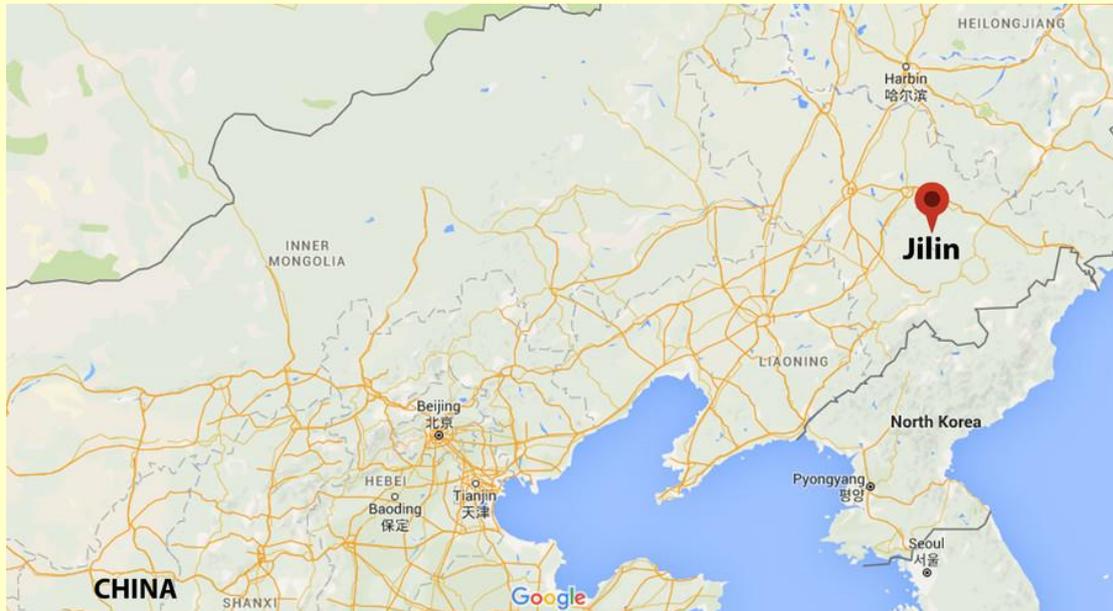


weapons of mass destruction. This historic volume is a timely reminder, while chlorine is being used in Syria, of the ghastly nature of gas warfare and why we need to abolish these weapons.

Paul F. Walker – Director, Environmental Security and Sustainability, Green Cross International

Blast causes massive fire at chemical plant in China, firefighters at scene

Source: <https://www.rt.com/news/325235-chemical-plant-china-blast/>



Dec 09 – A blast has been reported at a pesticide plant in the city of Jilin, Jilin Province in northeastern China. A fire broke out following the explosion, with emergency crews now working at the scene. At least four people were injured in the blast, CCTV reported.

Authorities have issued a warning for locals not to approach the plant, Chinese Sina news reported.

There have been no immediate reports of toxic leaks.

The incident reportedly happened around 8pm local time on Wednesday, with a large fire starting after the explosion. A [video](#) emerged online showing an orange glow lighting up the sky and emergency crews rushing to the scene. Earlier this year, China suffered from a major blast at a warehouse storing hazardous chemicals in Tianjin, also in the country's north-east. More than 170 people were killed and nearly 800 injured in a series of explosions. Staggeringly high cyanide levels were registered in the area following the incident.



In 2005, explosions at a Jilin chemical plant caused a massive evacuation of the area. Tens of thousands of residents



were forced to leave their homes. Six people were killed and dozens injured in the explosions. Following the incident, an 80-kilometer (50 miles) toxic slick appeared in the Songhua River, which for weeks flowed into the Amur River, one of the world's longest rivers.

A pesticide is a chemical or biological agent (such as a virus, bacterium, antimicrobial, or disinfectant) that deters, incapacitates, kills, or otherwise discourages pests. Target pests can include insects, plant pathogens, weeds, mollusks, birds, mammals, fish, nematodes (roundworms), and microbes that destroy property, cause nuisance, or spread disease, or are disease vectors. Although pesticides have benefits, some also have drawbacks, such as potential toxicity to humans and other species. According to the [Stockholm Convention on Persistent Organic Pollutants](#), 9 of the 12 most dangerous and persistent organic chemicals are organochlorine pesticides. Many pesticides can be grouped into chemical families. Prominent insecticide families include organochlorines, organophosphates, and carbamates. Organochlorine hydrocarbons (e.g., DDT) could be separated into dichlorodiphenylethanes, cyclodiene compounds, and other related compounds. They operate by disrupting the sodium/potassium balance of the nerve fiber, forcing the nerve to transmit continuously. Their toxicities vary greatly, but they have been phased out because of their persistence and potential to bio-accumulate. Organophosphate and carbamates largely replaced organochlorines. Both operate through inhibiting the enzyme acetylcholinesterase, allowing acetylcholine to transfer nerve impulses indefinitely and causing a variety of symptoms such as weakness or paralysis. Organophosphates are quite toxic to vertebrates, and have in some cases been replaced by less toxic carbamates. Organophosphates affect the nervous system by disrupting, acetylcholinesterase activity, the enzyme that regulates acetylcholine, a neurotransmitter. Most organophosphates are insecticides. They were developed during the early 19th century, but their effects on insects, which are similar to their effects on humans, were discovered in 1932. Some are very poisonous. However, they usually are not persistent in the environment.

It should be noted that **Nerve agents** are a class of phosphorus-containing organic chemicals (organophosphates) that disrupt the mechanism by which nerves transfer messages to organs.

Could ISIS Use Chemical and Biological Terrorism in Europe?

Source: <http://www.haaretz.com/middle-east-news/isis/.premium-1.691157>

Could Islamic State carry out chemical or biological terrorism in Europe? Yes, and it might, warns a briefing to the European Parliament, saying that the radical Islamic group has money; hundreds of scientists – some of foreign origin – on the payroll; found an abundance of deadly toxins stockpiled by the tyrants of Syria, Iraq and Libya; and could make more of its own quite easily.

"European citizens are not seriously contemplating the possibility that extremist groups might use chemical, biological, radiological or nuclear materials during attacks in Europe," writes analyst Beatriz Immenkamp in the briefing. They should.

It wouldn't be a big leap. ISIS has used mustard and chlorine gases in Iraq and Syria. And a laptop belonging to a Tunisian physicist who joined ISIS was found to contain a paper on weaponizing bubonic plague bacteria obtained from animals. The intent is there: the governments of Belgium and France are already working on contingency plans.

Moreover, it would be fairly simple for ISIS sympathizers to obtain the materials for chemical and biological attacks in Europe itself, the report says. The continent is brimming with them and security is inadequate. Israeli experts add that the group could make deadly chemicals of its own, and could be already developing the capacity to weaponize them.

DIY mass war

At least some chemical weapons, whether gaseous, liquid or solid, are fairly trivial to make. To attack the Kurds, for example, says the EU report, it appears that ISIS simply repurposed fertilizer.

Making – or obtaining – the chemical is the first stage. The second is weaponizing it. Can ISIS make its own chemical weapons?



ISIS may have manufactured crude shells containing toxic chemicals, the EU report says. "[Weaponization] can be done crudely by putting the substance into shells and firing those shells," says Dany Shoham, a specialist in unconventional weapons from the Begin Sadat Center of Strategic Studies at Bar Ilan University.

Indeed, ISIS' use of chemical weapons has been crude so far, but the group could become more sophisticated in their weaponization in the future, he suggests.

Alternatively, ISIS could capture already weaponized chemicals. It is probable that ISIS has deployed both weapons it made itself and weapons it captured, says Shoham.

As for resources: In June 2014, ISIS seized control of Muthanna, Iraq, once the Saddam Hussein regime's primary chemical-weapons production facility. American troops were supposed to have destroyed weapons there after the 2003 invasion of Iraq, but officials admitted when ISIS conquered the city that a stockpile of weapons still existed. They claimed the remaining chemical weapons had no military value. The following month, ISIS launched its first chemical attack on the Kurds in Kobani, Syria, using mustard gas, an agent that is known to have been made at Muthanna.

ISIS may also have access to weapons containing sarin nerve gas that remained in Syria, the EU report notes, as well as mustard agents and nerve agent rockets from Iraq, and chemical materials leftover from Libya programs.

It is unclear how effective these agents would be after years of storage, qualifies Ely Karmon, a specialist in terrorism and chemical, biological, radiological and nuclear weapons at the International Institute for Counter-Terrorism at the Interdisciplinary Center Herzliya. But they might still be usable.

In addition, ISIS has a lot of scientific talent on board, including some inherited from the Hussein regime, says Karmon. For instance, until his death in a coalition strike in January, ISIS had Hussein's chemical warfare expert Salih Jasim Muhammed Falah al-Sabawi, aka Abu Malik, on the payroll. The United States said Abu Malik provided ISIS with "expertise to pursue a chemical weapons capability."

Possessing chemical weapons does not necessarily mean the group can use them beyond the borders of Syria and Iraq. "Transferring chemical weapons to Europe would be difficult," says Karmon. Weaponizing chemicals within the borders of Europe would also be difficult, adds Shoham, given the likelihood of being detected by security agencies.

However, Shoham and Karmon agree that ISIS could use toxic chemicals in Europe, relatively easily, in an unweaponized form – the impact of such an attack could be devastating, notes Shoham.

Alternatively, ISIS could attack a chemical facility with conventional weapons, similar to Yassin Salhi's failed attempt to strike the Air Products chemical factory near Lyon, France, notes Karmon.

Weaponizing germs

Biological weapons – germs – are a different story. The science of bio-weaponry has come far since the millennia of yore, when besiegers might toss a disease-riddled corpse over the town walls to terrify and infect the people inside. Today's nightmare scenarios include, for example, weaponized Ebola virus that can infect through the air, rather than requiring physical proximity to infected mucous membranes, or anthrax engineered to be even deadlier than the original bacterium.

How easy is it for ISIS to procure or make biological weapons? And if they had them, would they be likely they use them?

Obtaining the bugs at the base of biological weapons wouldn't be a big problem, surmises Shoham. Suitable pathogens are readily available at academic laboratories, vaccine factories and pharmaceutical companies, all of which are civilian facilities. Even if few such institutions still exist in the ISIS territories, the group might try to get bacteria from sympathizers in Europe or the United States, Shoham says.

But for all that telltale laptop of the Tunisian physicist, ISIS would have difficulty weaponizing them, Shoham thinks – yet adds that biological terrorism can also be carried out without weaponization. For example, by releasing a pathogen into a water system.

So ISIS could get the bugs and might be able to weaponize them, or could use them as is.

But would the group resort to bio-war?



Working with biological agents is very risky for the handler, Shoham says, but adds: "I don't think this factor would constitute a bottleneck for a radical organization like ISIS."

The obstacle most likely to deter ISIS from deploying biological weapons isn't the risk of some lab technician falling ill. It's their inability to control its spread, says Karmon.

Unlike chemical and radiological weapons, one cannot target a defined set of victims with biological agents because they are contagious, he explains. Anybody using a bio-weapon runs the risk of infecting their own population. That in itself is a powerful deterrent.

Whether it would be enough to deter ISIS from using bioweapons in Europe, given the ability of bacteria to travel on planes, is anybody's guess.

Impact: The cost of war

Chemical and biological terrorism would probably cause significantly more damage than conventional terrorism, Shoham and Karmon agree.

Even in a best-case scenario, for instance that an infectious agent is detected in the water system before anyone drinks or bathes in it, just cleaning the contaminant from the water system would be very difficult, Shoham says. The EU report notes that in anticipation of this very sort of thing, Paris has stepped up security at its water facilities.

What can the West do to frustrate this threat?

It could try to limit ISIS' access to certain civilian and military installations in Syria and Iraq, says Shoham. Yet, doing this without ground forces may prove difficult.

Might the threat of a massive counter-attack by the West serve as a significant deterrent? Probably not, says Shoham.

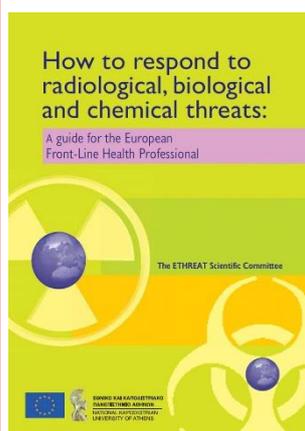
Europe can screen travelers entering the continent, says Shoham, although this is unlikely to serve as a rigorous enough preventative measure. The EU report itself suggests monitoring returning fighters and radicals in the European Union, especially any known to have "CBRN knowledge."

Aside from that, the report suggests that European nations improve preparedness, for instance by equipping rescue forces with antidotes. Europe can also increase security at key installations, which Paris for one is already doing. And, in addition, European countries can start preparing, and drilling, their populations.

During the first Gulf War, the Israeli government began handing out gas masks to the general population. They aren't effective against all forms of chemical attack, let alone biological. A full-body suit is better. But gas masks, used properly, are a good start.

EDITOR'S COMMENT: You might say: "Why another article with similar content?" Mainly because I would to comment again on EU CBRNe preparedness issues and more specifically on hospitals' CBRNe preparedness (and not because this is the field of my expertise). The fact is that after any terrorist attack (conventional or asymmetric) all victims will end up at hospitals. And hospitals should be prepared to receive contaminated mass casualties. And they are NOT! Almost every year EU proclaims research programs (i.e. FP7; Horizon 2020) offering millions of euro to consortiums providing solutions to problems under investigation. This is good! But the problem is that end products do not easily end at involved stakeholders. The second problem is that solutions/problems provided are not obligatory to EU member states. As a result many good solutions remain in closed drawers. For example, during the ETHREAT Project (2005-2008) we produced a medical manual for front-line health professionals (both civilians and military) that was supposed to be in the pockets of all medical people at hospitals' emergency departments. If you find a copy of this manual keep it because it is





collectable. It was a cheap solution that only needed to be translated into different languages. Imagine what is happening with more sophisticated or expensive solutions like sensors, robotics, UAVs/UGVs etc.

My proposal is three-fold: (1) Introduce “CBRNe Medicine” into the curricula of medical/nursing university schools; this will greatly enhance the differential diagnosis of new colleagues that one day might be confronted with the real enemy; (2) Create a “European Medical CBRNe Training Academy” for mass production of qualified front-line health professionals annually; this will provide unanimous knowledge sharing and promote interoperability and cooperation/assistance; and (3) Proclaim a “European Hospital CBRNe Response” plan and modus operandi that would be obligatory to all member states. The first proposal will cost almost nothing since all resources are already available in all universities. The second proposal will cost enough but expenses will be covered by contributions from all member states while the third one will be cost effective since it is a design project that needs only speed and brains. If we want to be a European Union we should be act accordingly and we have to do that pre-emptively instead of following bloodsheds like the recent Paris attack. Especially now that all experts consider a CBRNe Islamic State as a probably horrific possibility.

► **FYI:** The **ETHREAT manual** is available at: <http://www.cbrne-terrorism-newsletter.com/terror-medicine.php> (second publication in the right column)

Blair: Libyan extremists were poised to use thousands of chemical weapons

Source: <http://www.express.co.uk/news/world/626017/Islamic-State-weapons-Tony-Blair-Libya-war-terrorists-WMDs>

Dec 11 – **Giving evidence to the Foreign Affairs Select Committee, the former Prime Minister said the despot had 3,500 chemical aerial bombs, 23 tons of mustard gas and 1,300 tons of other chemical agents which could be used to create more weapons of mass destructions.**

Asked if Gaddafi was close to using the deadly stockpile, he told MPs, "I don't know, I hope not" before adding: "The bigger danger frankly would have not been him using it, the bigger danger would have been that stockpile falling into the hands of various extremists groups which obviously have proliferated in Libya."



Mr. Blair said he believed his decision to engage with Libya remained "important" as ISIS - also known by its Arabic acronym Daesh - had established a presence in the country in the chaotic circumstances which followed Gaddafi's removal

and death in 2011.

He continued: "Otherwise, we would have had a situation where Libya was continuing to sponsor terrorism, was continuing to develop chemical and nuclear weapons and would have remained isolated in the international community.

"I think it is important that we brought them in from the cold, as it were, and important also in today's context because I think - particularly if we had still had the residue of that chemical weapons program in Libya today, given the state of Libya today and given the presence of Isis there - it would have constituted a real risk, even today.



Libya has seen an increase in extremist violence in recent months as Islamic State fighters, under daily bombardment in Iraq and Syria, have moved some of their operations to the lawless North African state. In August, ISIS took the coastal city of Sirte, claiming it as a new 'capital' to rival Raqqa, and the terrorists behind the Tunisia beach attack in Sousse was also said to have been trained in Libya.

The former-PM added the country still poses a threat to the UK: "I can tell you today obviously Libya is a real security problem, it is a security problem for us actually here.

"But I don't think you can make the judgment as to whether it would be better if we had not intervened."

However, **Mr. Blair - who took the country to war five times, more than any other prime minister in British history** - suggested he might not have taken military action against Libya. Instead, he insisted he would have used his close relationship with the dictator to secure a transition from power.

EDITOR'S COMMENT: I was always wondering why politicians speak when they have nothing to say and most important of all why they speak after their retirement.

Extraordinary drone footage captures devastating bomb blast at Syrian chemical weapons plant

Source:<https://nz.news.yahoo.com/a/30329172/drone-captures-devastating-bomb-blast-in-syria/>



Video [Chemical weapons plant destroyed by Syrian rebels](#)

Syrian rebels have detonated a catastrophic tunnel bomb in a suburb of the nation's largest city.

The magnitude of the blast in Aleppo, which leveled a suspected Government forces chemical weapons manufacturing plant, was captured on drone footage.

The bomb exploded earlier this week in a deserted area of Aleppo, according to media reports.



The beginning of the explosion





The smoke turned orange as the blast widened

Smoke was sent hundreds of meters out, blanketing abandoned buildings nearby. Knights of the Justice Brigade, a branch of the Free Syrian Army, were behind the attack in Khalidiyah. Aleppo rebels favor tunnel bombs. One used in March to destroy an Assad intelligence HQ reportedly registered on Europe earthquake monitors.

A booby-trap burglar detector

Source: <http://i-hls.com/2015/12/four-gadgets-to-protect-you-on-the-street-or-at-home>



A small, simple-looking box which be placed anywhere in your home with no need for wiring is a blunt yet effective patent to guard your home from burglars. This device, called **Burglar Blaster**, does not require electricity and is powered by batteries which can last up to four years. The Burglar Blaster can, much like normal alarms, be activated when the residents leave home, but **what's unique about it is that when the alarm goes off alerting a burglar inside the house, the device emits pepper spray around the area – to a range of over 500 sq. meters.** According to the company, when

the owners return home, they don't even need to clean the remains.



Israel May Stop Producing Chemical Protection Kits for citizens

Source: <http://i-hls.com/2014/01/fast-draw-israel-may-stop-producing-chemical-protection-kits-for-citizens/#sthash.uRPUAHO.dpuf>



Israel knows Syria didn't destroy its chemical weapons, but still debates discontinuing the production and distribution of chemical protection kits for citizens. So what's really going on here? There's no single answer: Typical Israeli chaos, lack of understanding, lack of coordination and more.

The Defense Minister received a recommendation to halt the project, especially in light of the recent chemical weapon disarmament agreement signed with Syria. **Only 60% of citizens have chemical protection kits (2014).**

Defense Minister Moshe Yaalon holds a critical discussion today on the continuation of the production and the distribution of chemical protection kits to the Israeli public. Two months ago Yaalon received a recommendation to gradually halt the project, especially in light of the Syrian agreement.

In the discussion two major alternatives will be presented: Immediately halting production and distribution, or a more gradual process and a complete production halt only next year.

The IDF Home Front Command still has around 700,000 kits in storage, still not distributed to the public. 44% of Israeli citizens still didn't get their kits. The total cost of producing the remaining kits and distributing them is estimated at 1.3 billion shekels.

The entire discussion is meant to cover up this huge fiasco, the fact that only some of the citizens even have their kits, the fact that the project never had a proper budget and the fact that every Defense Minister only wants to counter the decisions of his predecessors. The next board of inquiry is already on its way.

Biological, chemical weapon attack unlikely says counterterrorism unit

Source: <http://www.nltimes.nl/2015/12/14/biological-chemical-weapon-attack-unlikely-says-counterterrorism-unit/>

It is unlikely that terrorist will use chemical or biological weapons to commit attacks in Europe, according to the National Coordinator for Counterterrorism and Security, the Telegraaf reports.

Last week the European Parliament released a document in which it instructs all Member States to take measures against unconventional ISIS terrorism plans, such as attacks with warfare agents and bio-weapons. **Despite this report, there is currently no reason for the Dutch government to take extra measures.**

"Of course chemical and biological weapons could be used by attackers, but there is no logical reason to prefer them as other, conventional weapons are more readily available and deployable. The history of attacks in the West also shows that", the counterterrorism unit said to the newspaper. "It is true that unconventional methods cannot be ruled out, but there are currently no indications that such attacks are being prepared for Europe. We remain alert."

EDITOR'S COMMENT: Totally agree with the comment made at the end of this article saying:

"I wonder if his dismissal of an unconventional type attack has even considered that the attack might not be classic chemical warfare agents as these are very difficult to make, the



authorities may actually have access to intelligence he has now will he have access to. He should also consider the following; the authorities are making it difficult for terrorists to access guns and explosives due to the recent attacks in Paris, this will force them to look at alternative methods, one of these methods could be industrial chemicals (unconventional). Da'esh have publicly stated that they will use all means necessary, including toxic bombs. Saying an attack is irresponsible, as it will make people think that it won't happen and therefore stop them taking the measures to mitigate against such an attack."

Sarin materials brought via Turkey & mixed in Syrian ISIS camps – Turkish MP to RT

Source: <https://www.rt.com/news/325825-sarin-gas-syria-turkey/>



CHP deputies Eren Erdem (L) and Ali Şeker attend a news conference in İstanbul on Wednesday. (Photo: Cihan)

Dec 14 – The main opposition Republican People's Party (CHP) member, Erdem, brought up the issue for public discussion in parliament last week, citing evidence from an abruptly-closed criminal case. He accused Ankara of failing to investigate Turkish supply routes used to provide terrorists with toxic sarin gas ingredients.

"There is data in this indictment. Chemical weapon materials are being brought to Turkey and being put together in Syria in camps of ISIS which was known as Iraqi Al Qaeda during that time," Erdem told RT.

Sarin gas is a military-grade chemical that was used in a notorious attack on Ghouta and several other neighborhoods near the Syrian capital of Damascus in 2013. The attacks were pinned on the Syrian leadership, who in turn agreed to get rid of all chemical weapons

stockpiles under a UN-brokered deal amid an imminent threat of US intervention.

Addressing parliamentarians on Thursday, Erdem showed a copy of the criminal case number 2013/120 that was opened by the General Prosecutor's Office in the city of Adana in southern Turkey.

The investigation revealed that a number of Turkish citizens took part in negotiations with Islamic State (IS, formerly ISIS/ISIL) representatives on the supply of sarin gas. Pointing to evidence cited in the criminal case, he said that wiretapped phone conversations proved that an Al-Qaeda militant, Hayyam Kasap, acquired sarin.

"These are all detected. There are phone recordings of this shipment like 'don't worry about the border, we'll take care of it' and we also



see the bureaucracy is being used,” continued Erdem.

Based on the gathered evidence Adana authorities conducted raids and arrested 13 suspects in the case. But a week later, inexplicably, the case was closed and all the suspects immediately crossed the Turkish-Syrian border, Erdem said.

“About the shipment, Republic prosecutor of Adana, Mehmet Arıkan, made an operation and the related people were detained. But as far as I understand he was not an influential person in bureaucracy. A week after, another public prosecutor was assigned, took over the indictment and all the detainees were released. And they left Turkey crossing the Syrian border,” he said.



“The phone recordings in the indictment showed all the details from how the shipment was going to be made to how it was prepared, from the content of the labs to the source of the materials. Which trucks were going to be used, all dates etc. From A to Z, everything was discussed and recorded. Despite all of this evidence, the suspects were released,” he said. “And the shipment happened,” Erdem added. “Because no one stopped them. That’s why maybe the sarin gas used in Syria is a result of this.”

Speaking to RT, Erdem said that according to some evidence **Turkish Mechanical and Chemical Industry Corporation was also involved**, with some unconfirmed reports pointing in the direction of a government cover up, with Minister of Justice Bekir Bozdag’s involvement.

Certain evidence suggests Bozdag wanted to know beforehand from the sarin gas producer

when and if the Islamists will use the chemical weapon.

“When I read the indictment, I saw clearly that these people have relationships with The Machinery and Chemical Industry Institution of Turkey and they don’t have any worries about crossing the border. For example in Hayyam Kasap’s phone records, you hear him saying sarin gas many times, saying that the ateliers are ready for production, materials are waiting in trucks which were supposedly carrying club soda,” he told RT.

The parliamentarian said that now he feels like there is a witch hunt against him, after he confronted the justice minister. Bozdag, according to Erdem denied only the part that he wanted to get notified about the operations beforehand.

Furthermore, Erdem argues that the West purposely blamed the regime of Bashar Assad for the August 2013 attacks and used it as part of the pretext to make US military intervention in Syria possible. The MP said that evidence in Adana’s case, according to his judgment, proves that IS

was responsible.

“For example the chemical attack in Ghouta. Remember. It was claimed that the regime forces were behind it. This attack was conducted just days before the sarin operation in Turkey. It’s a high probability that this attack was carried out with those basic materials shipped through Turkey. It is said the regime forces are responsible but the indictment says it’s ISIS. UN inspectors went to the site but they couldn’t find any evidence. But in this indictment, we’ve found the evidence. We know who used the sarin gas, and our government knows it too,” he said.

At the same time, Erdem also accused the West and Europe in particular for providing “basic materials” to create such a powerful chemical weapon.

“All basic materials are purchased from Europe. Western institutions should question themselves about



these relations. Western sources know very well who carried out the sarin gas attack in Syria. They know these people, they know who these people are working with, they know that these

people are working for Al-Qaeda. I think is Westerns are hypocrats about the situation,” he concluded.



“ISIS would not think twice about using WMD against Western targets.”

“We have no CBRN equipment at all. My forces have no way of protecting themselves against chemical attacks by ISIS and have no way of detecting their chemical agents. They need tremendous help and support from the international community in this area.”

The Director of the Iraqi Kurdistan Zanyari Intelligence and Security Agency, Commander Lahur Jangi Talabani, discusses with Ilja Bensen, Managing Director of IB Consultancy the situation in Iraqi Kurdistan, the threat of ISIS and the fight of the Peshmerga Forces against terror. Commander Talabani, who is also the Head of the Peshmerga Special Forces, the Counter-Terrorism Group, gives an exclusive interview following the successful ousting of the ISIS forces from Sinjar and the respective supply line of ISIS between Syria and Iraq. The full interview will be published at CBNW, Issue 2016/01, which is going to be released in January 2016.

To read the whole interview, please contact Ms. Tina Naji tina@chembio.biz or subscribe to the CBNW Magazine [here](#) to receive your FREE copy. Join us at [NCT CBRNe Europe](#) to listen to the commander and meet him in person!

Da'esh as a Hybrid Threat to European Security – the CBRNe Dimension

By Alexander Frank

Source: <http://www.cbrneportal.com/daesh-as-a-hybrid-threat-to-european-security-the-cbrne-dimension/>

Dec 14 – With the tragic attacks on a concert hall and several bars and restaurants in Paris last month, the rise of Da'esh and its threat to international security has reached Europe. While countries such as Turkey, Tunisia and Lebanon are suffering devastating attacks since October 2015, it barely comes as a surprise that also major European capitals are on Da'esh's target list. U.S. President Barack Obama already stated in 2014 that Da'esh poses a 'hybrid threat' to Iraq and Syria and it seems that Da'esh extends its so-called hybrid warfare tactics to neighboring countries and European soil. Recently, this led to the statement of French Prime Minister Manuel Valls that Da'esh might consider the future usage of chemical agents against its adversaries in



Europe. Experts from the European Parliamentary Research Service (EPRS) and the NATO WMD Non-Proliferation Center agree and urge that Europe must prepare for the possibility of a chemical or biological attack as a new 'weapon of terror' of Da'esh.

But how real is the threat? What respective indications can the Paris attacks give on the change of tactics of Da'esh? A look at the concept of 'Hybrid Warfare' can help finding answers to these questions.

Hybrid Threats: A definition

In the past years, the concept of 'Hybrid Threats' and 'Hybrid Warfare' witnessed quite a hype. While the Israel-Hezbollah war in 2006 can be called one of the prime examples of hybrid warfare, the concept received more attention since the escalation of the Ukraine Crisis in 2014. The term 'hybrid threat' is commonly used as a warfare tactic including low-level conventional operations and targeted Special Forces operations against an adversary. In addition, the aggressor uses psychological warfare tactics including social and traditional media that have an influence on public perception and international opinion. It is a mix of conventional warfare, terrorism and asymmetric warfare, and other criminal actions.

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► Read the rest of this article at source's URL.

Alexander Frank works as a Consultant at IB Consultancy. He is responsible for the program development and production of all NCT events, specializing on matters related to CBRNe and EOD.

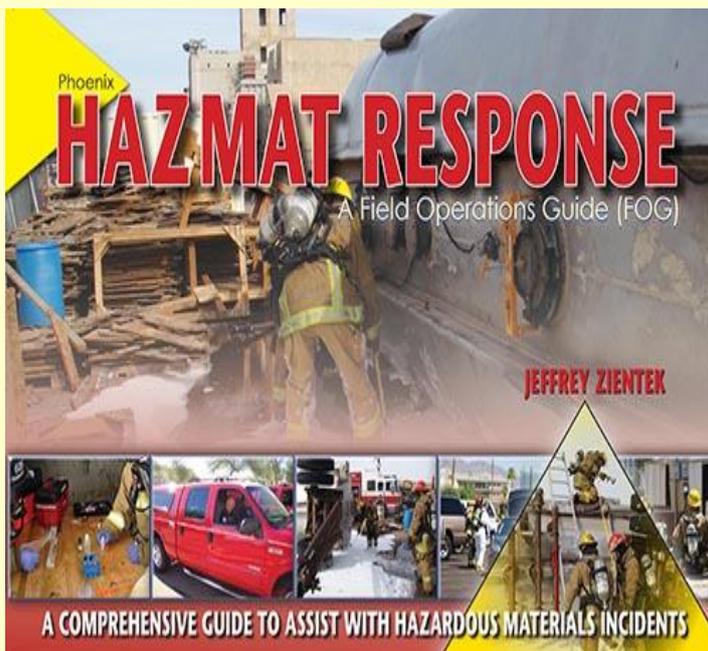
[How well do you know your railcars? << Here is the Quiz!](#)



HAZMAT/CBRN Field Operations Guide

Source: <http://www.hazmatresponseguide.com/field-operations-guide/>

This FOG can provide an easy and systematic way to plan, set-up, and work through the entire hazardous



materials incident, whether small or large-scale incidents.

Establish the Hazard Group Leader, who will then assign their teams to the needed areas (Research, Decon, Entry, etc.). Each Team will then use the reminder checklist so all aspects of their functioning portion of the incident are thoroughly covered. The checklists will develop strong leaders in each area, cover all safety aspects, and allow the Teams to operate smoothly together during the incident.

Whether a seasoned Hazmat Tech, Firefighter, First Responder, Police Officer or persons



working around hazardous materials, this book has information that can be referenced quickly to make good sound tactical decisions that will keep your responders, technicians, and civilians safe.

Chemical

Nerve Agents (G & V Agents) – Disrupt the mechanism by which nerves transfer messages to organs.

Nerve agents are also known as **organophosphates**.

- ❖ Viscosity ranges from water to motor oil in thickness.
- ❖ Vapors are denser than air.
- ❖ Absorb readily through eyes, respiratory tract, and skin.
- ❖ G Agents tend to be nonpersistent, but VX (V) is persistent. Various liquids may be added to G Agents to increase their persistence.

SIGNS, SYMPTOMS, AND TREATMENTS

Vapor	Runny nose, pupil constriction, mild difficulty in breathing <i>Large exposure:</i> Sudden loss of consciousness, convulsions, apnea, weakness/paralysis
Liquid	Nausea, vomiting, weakness, sweating <i>Large exposure:</i> Sudden loss of consciousness, convulsions, apnea, weakness/paralysis
Treatment	Atropine with pralidoxime or other pyridinium oximes (commercial auto injectors are available) Remove clothing and decontaminate
Detection	M8 and M9 paper (liquid only), M256A, CW meter

NAME	BP (°F)	VP (mmHg)	MW	IDLH	CHARACTERISTICS
Tabun (GA)	464	0.037	162.13	0.1 mg/m ³	clear to pale or dark amber liquid with fruity odor (bitter almond)
Sarin (GB)	316	2.90	140.09	0.1 mg/m ³	colorless liquid with fruity odor
Soman (GD)	388	0.40	182.17	N.D.	colorless liquid with odor like camphor or rotting fruit
Cyclosarin (GF)	239	0.068	180.0	0.05 mg/m ³	odorless to faint odor of peaches
VX	568	0.0007	267.3	0.003 mg/m ³	clear to amber liquid with sulfur odor

Nerve Gas Auto Injector Market Analysis and Forecast by End User (Military, Homeland Security) – 2020

Source: <https://www.linkedin.com/groups/2478711/2478711-6082969410694316035>

Nerve gas auto injector is important self-aid equipment which helps the soldiers to protect themselves from the effects of the chemical agents during the wars. These auto-injectors have imposed the injectable drug delivery technology which is a combination of two major segments; devices and formulation. The formulations used in these injectors are specifically administered for the prevention from the severe effects of the poisoning nerve agent “organosphosphorous”. These formulations are typically the antidotes such as atropine, pralidoximechloride, diazepam, and morphine which are filled in the devices as per the dosages to be injected in the human body.

The nerve gas auto injector is dominated by the major player Meridian Medical Technologies (U.S.) which continually innovates, design, and develops new nerve gas antidotes and auto injectors. The other market players competing in this market are Pfizer Inc. (U.S.), Owen Mumford Ltd. (U.K.), West Pharmaceutical Services Inc. (U.S.), and Ypsomed Holding AG (Switzerland).

Fourteen members of Paris synagogue poisoned

Source: <http://www.thejc.com/news/world-news/151436/fourteen-members-paris-synagogue-poisoned>



Dec 17 – **Fourteen Parisian worshippers were poisoned on Monday after their synagogue's electronic lock was daubed with poison.**

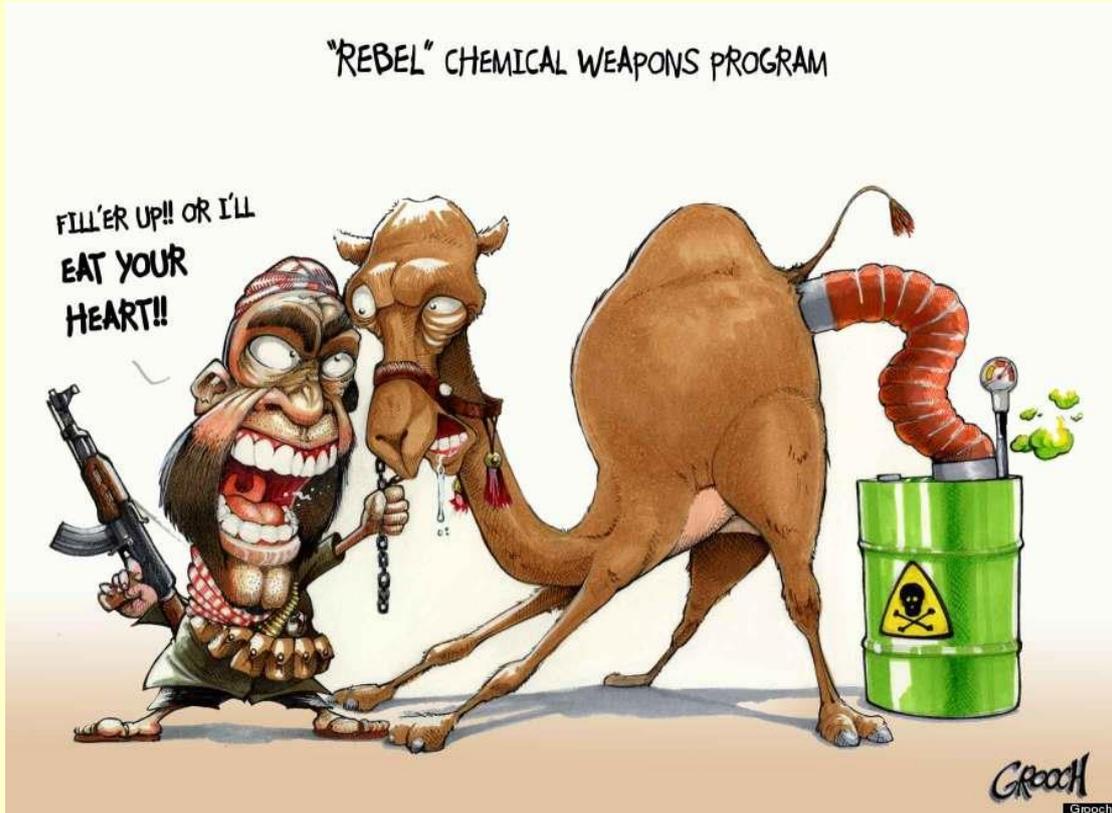
Members of the Jewish community of Bonneuil-sur-Marne, in the south-eastern suburbs of Paris, called emergency services to report a **sudden strong burning sensation in their eyes and itchy rashes on their skin.**

It is believed 25 firemen rushed to the synagogue, where they treated congregants and traced their condition to the daubed lock.



CBRNE-TERRORISM NEWSLETTER – December 2015

The substance was described as a “nonlethal irritant” and was sent to a police forensic lab for analysis. The shul, which is under police and military protection when open, is believed to have been targeted when closed with no guard present.



This could be the next weapon of mass destruction

Source: <http://qz.com/554337/this-could-be-the-next-weapon-of-mass-destruction/>



Nov 20 – The atom bomb took more than 10 years to go from scientific conception to reality. The next weapon of mass destruction could take much less.

On Thursday (Nov. 19), a special agent from the FBI met with researchers in Washington, DC to talk to a scientific panel about the risks of a powerful new genetic technology: “gene drive.” It allows scientists to, essentially, hijack the process of evolution, spreading a new gene through a population with incredible speed. And while it was developed with peaceful uses in mind, such as eradicating mosquitoes to end malaria, it could be used for ill too—it’s cheap and easy enough to master that bioterrorists could get their hands on it.

Inspired by nature

Gene drives have existed in nature for a long time. Normally, an organism has a 50% chance of inheriting any given gene from each of its parents. But certain genes can increase their own chances of being inherited. One way they do it is by having a mechanism that lets them make multiple copies of themselves in the parent’s genome.

For decades, nobody knew how to replicate this natural phenomenon. In 2003, Austin Burt, a professor of evolutionary genetics at Imperial College London, proposed a method for doing so, but his idea required a genetic tool that could precisely home in on one gene and replace it with another gene, along with the copying mechanism. At the time, no tool of required precision existed.

But then in 2012 US researchers developed just such a high-precision gene-editing tool—CRISPR-Cas9, which has opened up whole new realms of genetic engineering. By the end of 2014, researchers at Harvard University had used it to develop a gene drive in yeast that was inherited 99% of the time instead of 50%. In March, a research group at the University of California, San Diego showed that gene drives could work with 97% inheritance in fruit flies, a much more complex organism than yeast.

The risk of misuse

Genetic modification involves replacing one gene with another—to give mosquitoes a gene for resistance to the malarial parasite, for instance. Normally, a mosquito with that gene doesn’t always pass it on to the next generation. A gene drive, correctly programmed, could in theory both spread the parasite-resistant version of the gene to all the mosquito’s offspring and overwrite the non-malaria-resistant version, ensuring that the resistance never goes away. But gene drives could also be used to build a terrifying bioweapon. In theory, a terrorist wouldn’t need to create vast amounts of a lethal virus to unleash on the world. Instead, he could create a handful of mosquitoes with a gene for making a toxin, and power it with a gene drive. Soon all the world’s mosquitoes would make the toxin, and every mosquito bite would be lethal.



Hence there is talk now of regulation. Thursday's meeting was the last of six organized by the US's National Academy of Sciences to discuss how gene drives might be regulated. The aim is to deliver a report next spring. Other security experts have briefed the UN's bioweapons office about the potential risks of gene-drive-based weapons, and the US's National Science Advisory Board for Biosecurity is likely to start looking into them too. This might lead to such things as a moratorium on federal funding for gene-drive research, much like the one the US government last year imposed on research into modifying viruses.

However, Amesh Adalja, a biosecurity expert at the University of Pittsburgh who was also present at Thursday's meeting, told the health site Stat, "if a lone wolf or terrorist group is working on this, the regulation wouldn't make any difference."

Not so soon

But Austin Burt, who proposed the theoretical method for making gene drives in 2003, has said—and told Quartz—that the threat of gene drives isn't as great, or as near-term, as it might seem.

First, gene drives can work only in sexually reproducing species. We've become very good at genetically engineering microbes, for instance, which can be used either to make useful compounds like synthetic drugs, or to create nasty diseases. But the vast majority of microbes (and plants, another biotech workhorse) reproduce asexually, so you couldn't use gene drive to turn them into rapidly-spreading superbugs.

Second, the current gene drives have so far been shown to work only for one generation. Over several generations, natural mutations might destroy the copying mechanism, making the new genes peter out.

Third, we still understand only a few organisms at the level of detail needed to engineer a successful gene drive. It's taken biologists decades of work to get to know fruit flies as well as they do. Bioterrorists won't be able to simply adapt the idea to a mosquito or any other creature they please.

Still, scientists wanting to use gene drives for good aren't taking chances.

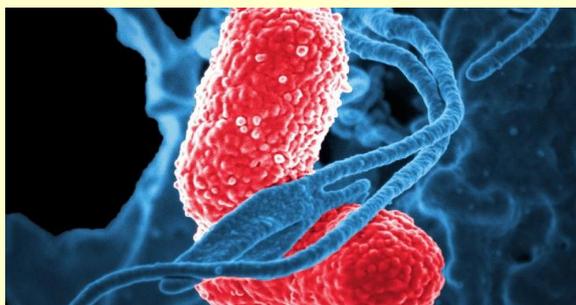
To that end, Harvard researchers recently developed two possible safeguards. In a [study](#) published on Nov. 16, they show the use of a "split drive" in yeast, where some parts of the gene drive are inserted in the yeast's DNA, and others are carried as separate strands in the yeast cell. That way, if by mistake the yeast gets out in the wild, not all the components will be inherited together, thus slowing the gene drive down.

They also developed a second gene drive—a "molecular eraser" that undid the genetic changes in 99% of the offspring that had inherited the first gene drive. So one way to regulate gene drives might be to allow their use in the wild only if they have an "undo" button like this one.

Scientists have reason to be cautious. They don't want a public backlash like the one that has surrounded genetically modified organisms. "If anyone messes up and a gene drive gets out into the wild, there will be a huge media circus," Harvard researcher Kevin Esvelt, who developed the first synthetic gene drive in yeast, told Nature. "The message will be that scientists cannot be trusted to deal with this technology, and we will be set back by years."

Is This A Bioterror Weapon From China?

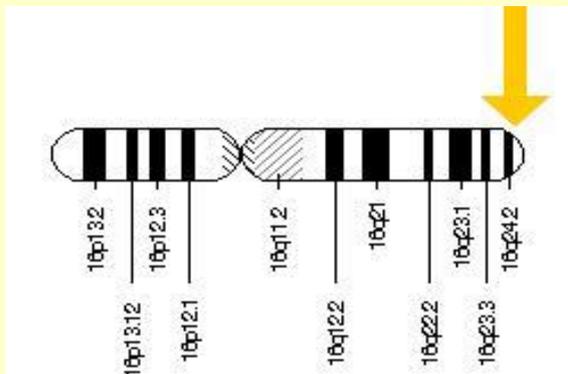
Source: <http://www.morningnewsusa.com/is-this-a-bioterror-weapon-from-china-2344971.html>



A new gene that gives bacteria the power to resist an antibiotic described by doctors as a "last resort" treatment for various infections was found among people and pigs in China. The team of scientists that made the discovery suggests "an alarming potential" for the gene to spread bacteria ranging from pneumonia to serious blood infections that have the potential to be antibiotic resistant.



The new resistance gene, called **MCR-1**, could be spread by a portable form of DNA, according to Prof. Jian-Hua Liu and his team of scientists.



MCR-1 is resistant to an old antibiotic called colistin and for doctors, this antibiotic is the “last line” of defense against various infections. The study is published in the [Lancet Infectious Diseases](#) journal.

“When they found this gene popping up in China in the animals and in the meats that they were testing and also in the patients, now they’re worried because now this germ is now strong against this last line. And so if we don’t have another antibiotic to come in, what do we do then?” Dr. Peter Lin, a family physician and medical commentator, told CBC News Network. “Although currently confined to China, mcr-1 is likely to emulate other resistance genes... and spread worldwide,” according to a warning written in the study.

The mere discovery of resistant bacteria could spark fear that a new bioterror weapon is lurking in the horizon. A germ resistant to a “last resort” treatment is terrifying especially with hints of World War 3 that could erupt in the South China Sea between the United States and its allies versus China and even Russia.

U.S. system to detect bioterrorism can't be counted on, government watchdog finds

Source: <http://www.latimes.com/nation/la-na-bioterror-defense-20151123-story.html>

The nation’s main defense against biological terrorism — a \$1-billion network of air samplers in cities across the country — cannot be counted on to detect an attack, according to a new report by the Government Accountability Office.

The BioWatch system, introduced with fanfare by President George W. Bush in 2003, has

Just this February 2015, The Guardian was in possession of a three-page memo, marked “UK secret UK eyes only.” The documents reveal that the UK government instructed its top-secret military research unit to investigate the potential use of Ebola as a weapon. The documents include requests to investigate whether the al-Qaeda and the ISIS have plans of using Ebola as a weapon against the West. According to The Guardian, the top-secret unit was tasked in October 2014 to provide “guidance on the feasibility and potential impact of a non-state actor exploiting the Ebola outbreak in West Africa for bioterrorism.”

The controversy surrounding the use of bioterror weapons has a history dating as far back as the 1950s. According to unverified classified documents, reported by Forbes in 2013, the U.S. tested a liquid spray system that could spread lethal infections such as Anthrax, Tularemia, Psittacosis and Brucellosis. **While such weapon was aimed at incapacitating enemy soldiers on the battlefield, the spray was reportedly tested among civilians, affecting to as much as 800,000 residents of San Francisco. According to Forbes, this was the most significant military experiments in the wakes of the Cold War.**

The incident elevated the use of bioterror weapon as a strategic weapon in the same capacity as the atomic bomb. The former Soviet Union was said to have loaded their intercontinental missiles with disease agents such as the Marburg virus and smallpox. When the former Soviet Union collapsed, the bioterror scientists deflected to Iran and other countries across the world.

exasperated public health officials with numerous false alarms, stemming from its inability to distinguish between harmless germs and the lethal pathogens that terrorists would be likely to unleash in an attack.



Timothy M. Persons, the GAO's chief scientist and lead author of the report, said health and public-safety authorities "need to have

reliable information" about BioWatch's "technical capabilities to detect a biological attack." The Los Angeles Times obtained a copy of the report.



A BioWatch monitor draws little attention at a Metro station in Washington, D.C.

The government has never defined the minimum capabilities, or "performance requirements," needed for BioWatch to alert authorities to a deliberate release of deadly pathogens and not be



assurance that when the system indicates a possible attack, it's not crying wolf." U.S. Homeland Security officials cannot credibly offer that assurance, he said.

"You can't claim it works," Persons said in an interview.

The Department of Homeland Security, which oversees BioWatch, has repeatedly touted the system's effectiveness while seeking to upgrade it with new technology.

The GAO report challenges the department's central claims about BioWatch. It also illuminates the nation's vulnerability to biological terrorism at a time of heightened concern about the reach and resourcefulness of Islamic State and other extremist groups.

The 100-page document, scheduled for release Monday, says that Homeland Security "lacks

fooled by similar but benign bugs that are pervasive in the environment, according to the report.

Homeland Security officials "told us that in the 12 years since BioWatch's initial deployment, they have not developed technical performance requirements against which to measure the system's ability to meet its objective," the report says.

In defending the system, the department cited computer simulations and tests in which biological agents were released in sealed chambers. The GAO said those tests were insufficient to support "conclusions about the system's ability to detect attacks."

BioWatch has not been put to the ultimate test of a real-life attack.



In a response appended to the GAO report, a senior Homeland Security official, Jim H. Crumacker, wrote that bioterrorism "remains a continuing threat to the security of our nation" and that BioWatch is the only "biosurveillance system designed to detect the intentional release" of airborne pathogens.

"The program provides public health officials with a warning of potentially hazardous biological agent release before exposed individuals would typically develop symptoms of illness," Crumacker wrote. He added, "It is important to recognize levels of uncertainty and limitations are inherent in any complex technical system."

BioWatch relies on about 600 air-collection units stationed atop buildings, in transit stations and in other public places in more than 30 urban areas. Mobile units are deployed at some major spectator events, such as the Super Bowl.

Each of the units, about the size of a small refrigerator, sucks in air and blows it over a disposable filter. Once every 24 hours, a technician removes the filter and delivers it to a public health lab for analysis. Lab personnel look for a DNA match with anthrax or any of four other pathogens considered likely to be used in a biological attack.

BioWatch was developed by U.S. national laboratories and government-hired contractors. Its deployment was accelerated after anthrax-laced letters were sent through the U.S. mail in the fall of 2001, infecting more than 20 people and killing five. The letters were ultimately traced to a U.S. Army scientist, Bruce E. Ivins, who committed suicide in 2008 as authorities prepared to seek an indictment against him.

The GAO study was requested by members of Congress after [a 2012 Los Angeles Times investigation](#) identified serious shortcomings in BioWatch, including the many false alarms and doubts about whether the system could be relied on to detect an actual attack.

The false alarms threatened to disrupt the 2008 Democratic National Convention in Denver, the 2004 Super Bowl in Houston and the 2006 National League baseball playoffs. In 2005, a false alarm in Washington prompted officials to consider closing the National Mall.

In each of those cases, public health authorities decided to disregard the BioWatch alert, sometimes after hours of tense deliberations.

Most of the false alarms have involved mistaken detection of the bacterium that causes tularemia, also known as rabbit fever, which can be fatal. BioWatch appeared to have been fooled by close cousins of the tularemia germ that pose no danger to humans, according to scientists familiar with the system.

The GAO report contradicts public statements by Homeland Security officials that the erroneous alerts were not "false positives." Those officials, in defending BioWatch, had said the system did detect something in the environment, even if it turned out to be innocuous.

The report says that from 2003 through 2014, BioWatch generated 149 mistaken detections — all of which "have been termed false positives" by scientists at the U.S. Centers for Disease Control and Prevention and other experts the GAO consulted. The frequency of false alarms has declined since 2013, the report says.

BioWatch has cost taxpayers \$87 million over the last year, the report says. It recommends against spending more money to maintain the system in its present form, even though the air collectors and other equipment are wearing out. One possibility is to switch to an automated system, an approach that Homeland Security and a major defense contractor, Northrop Grumman Corp., have long pursued. Earlier this year, the department sought information from potential contractors about such a changeover. The GAO report suggests that such a step would be premature because Homeland Security "lacks reliable information" to make "informed cost-benefit decisions about upgrades."

Richard H. Ebright, a Rutgers University professor of chemistry and chemical biology who has focused on bioterrorism policy, said the current system is beyond salvaging.

"BioWatch has devolved into little more than a program for channeling funds from taxpayers to contractors," Ebright said by email. "The correct solution is to start afresh."



Study finds that Ebola vaccine is safe, stimulating strong immune responses

Source: <http://www.homelandsecuritynewswire.com/dr20151124-study-finds-that-ebola-vaccine-is-safe-stimulating-strong-immune-responses>

Nov 24 – A clinical trial of a **new Ebola vaccine (ChAd3-EBO-Z)** that resulted from an unprecedented global consortium assembled at the behest of the World Health Organization (WHO) has found that it is well tolerated and stimulates strong immune responses in adults in Mali, West Africa and in the United States,



according to a study published today in the journal *The Lancet Infectious Diseases*. If the vaccine is ultimately found to be safe and effective, it could offer crucial protection for contacts (family members, neighbors, etc.) of patients with confirmed Ebola disease in future epidemics, thereby helping to interrupt transmission. Larger trials of the vaccine sponsored, by GSK Biologicals, have already begun.

U Maryland reports that **the study, carried out in Mali, West Africa and Baltimore, included the first testing of this vaccine in adult health care workers and other at-risk persons in Africa.** It identified the dose to be used in subsequent clinical trials and for large-scale manufacture of the vaccine. The researchers say that if larger trials (some already ongoing at CVD-Mali) corroborate the vaccine's clinical acceptability and immunogenicity, and with evidence of protection from future field trials or from non-human primate challenge models, the

vaccine could obtain regulatory approvals to become a tool to interrupt transmission in future outbreaks. This would be achieved by vaccinating all people who have come into contact with confirmed Ebola cases. The investigators also found that the administration of a booster vaccination with another vector vaccine producing Ebola virus antigens led to further enhanced immune responses likely to be associated with long-lived protection. This "prime-boost" approach provides a way to vaccinate health care workers and other front-line workers who live in areas where Ebola poses a threat to re-emerge and who need prior enduring protection.

The trial was carried out by a group of faculty researchers within the Center for Vaccine Development (CVD) of the University of Maryland School of

Medicine (UM SOM), led by Milagritos D. Tapia, M.D. and Kirsten Lyke, M.D., collaborating closely with Professor Samba O. Sow, M.D, M.Sc., Director General of the Center for Vaccine Development of Mali (CVD-Mali, an institution jointly maintained by the Ministry of Health of Mali and CVD-UM SOM).

Drs. Tapia and Lyke are also Associate Professors in the Department of Pediatrics and Medicine, respectively, at CVD-UM SOM., provided overall coordination of this study that evaluated the experimental Ebola vaccine (ChAd3-EBO-Z) developed by the Vaccine Research Center (VRC) of the National Institute of Allergy and Infectious Diseases (NIAID), part of the National Institutes of Health, and GlaxoSmithKline (GSK). Other key partners in the study included the University of Oxford's Jenner Institute and the World Health Organization.

The study was the result of a consortium of the World Health



Organization (WHO), the VRC, the Jenner Institute at the University of Oxford, CVD-Mali, CVD-UM SOM, and GSK Biologicals (manufacturer of the vaccine).

The study also involved others at CVD-UM SOM, including Marcelo B. Sztein, M.D., and James D. Campbell, M.D., M.S., both of whom are Professors of Pediatrics at UM SOM, as well as Rezwana Wahid, Ph.D., Assistant Professor of Pediatrics at UM SOM.

“This is a crucial step on the road to using this vaccine in humans,” said Dr. Levine. “This gives us essential information that the vaccine is not only well-tolerated but the high dose stimulates strong immune responses in adults in West Africa, the global region where the Ebola outbreak was rampant last year.”

The vaccine consists of an adenovirus (cold virus) that has been modified so that, in humans, it does not cause illness and cannot multiply. It does not contain the entire virus, but a single Ebola protein. Immune responses directed against this attachment protein have been shown to be highly protective in animal studies (which are carried out under the highest level of physical containment).

“Ebola remains an urgent international public health problem. Dr. Levine and the CVD team

have done excellent work with this study. It will give us crucial data that will eventually help those who are on the front lines of the fight against Ebola,” said UM SOM Dean E. Albert Reece, M.D., Ph.D., MBA, who is also vice president of medical affairs at the University of Maryland and the John Z. and Akiko Bowers Distinguished Professor at the University of Maryland School of Medicine. “This is just one example of how our faculty are deeply involved in global health.”

The study compared the clinical acceptability and immune responses of twenty adult participants in Baltimore and ninety-one in Mali; each group was given different dosage levels of vaccine. The study found that there were no safety concerns, and recommended that further studies be carried out.

U Maryland notes that more than four decades of work have earned the University of Maryland School of Medicine CVD an international reputation for creating and testing vaccines against cholera, typhoid, non-typhoidal Salmonella, dysentery, malaria, and multiple other infectious diseases, including influenza. In addition to its research and outpatient facilities in Baltimore, the center conducts extensive research in Africa, Asia, and Latin America.

— Read more in Milagritos D Tapia et al., “Use of ChAd3-EBO-Z Ebola virus vaccine in Malian and US adults, and boosting of Malian adults with MVA-BN-Filo: a phase 1, single-blind, randomised trial, a phase 1b, open-label and double-blind, dose-escalation trial, and a nested, randomised, double-bli,” *The Lancet Infectious Diseases*, 2015.



First-ever vaccine approved via the FDA's bioterror pathway

Source: <http://www.statnews.com/2015/11/23/anthrax-vaccine-animal-rule/>

Nov 23 – A 45-year-old anthrax vaccine gained approval for [a new use](#) Monday through a regulatory path never before applied by the Food and Drug Administration for this kind of product.

The vaccine is BioThrax, which hit the market in 1970 to protect against anthrax infections for people at high risk of exposure to the deadly bacterium. The FDA says the vaccine, which is made by Emergent BioSolutions of Gaithersburg, Md., can now also be used for what is called post-exposure prophylaxis in people aged 18 to 65. If a person is suspected or confirmed to

have come into contact with *Bacillus anthracis*, BioThrax can be given in conjunction with the antibiotics that have made up the standard treatment regimen.

The FDA gave the green light using the so-called [Animal Rule](#), a tool devised in 2002, shortly after the 9/11 attacks, to help bring to market medical countermeasures in instances where efficacy cannot be ethically or feasibly tested in humans.

Anthrax fits that bill. The pathogen is high on the list of feared bioterror weapons and was the cause of the worst biological attack

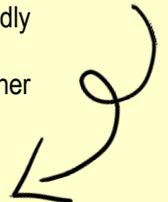


in US history. In the autumn of 2001, a number of letters laced with anthrax spores were sent to several congressional offices and media outlets. Seventeen people were infected and five died. Dr. Amesh Adalja, a senior associate at the UPMC Center for Health Security in Baltimore, Md., welcomed the approval of the new indication for BioThrax, though he noted it won't change clinical practice. The vaccine was used on an off-label basis in 2001 on the belief it would help those already exposed to anthrax. Emergent BioSolutions conducted safety testing in people but turned to rabbits to provide the FDA with evidence that giving the vaccine after exposure to anthrax increased the chances of survival. **The survival rate for rabbits treated with both antibiotics and BioThrax was 70 percent to 100 percent, depending on the vaccine dose used; rabbits only treated with antibiotics had a far lower survival rate — 44 percent and 23 percent in two different studies — according to the FDA.** The company also showed in humans and monkeys

that the vaccine produced an immune response against anthrax.

The Animal Rule was established to help the manufacturers find a way to provide the FDA with evidence that drugs and vaccines might be effective against diseases that are among the most lethal for people. A company making a vaccine to protect against respiratory syncytial virus — which causes a cold-like illness — can give people the vaccine then expose them to the virus to see if they are protected. But that kind of testing will never take place for deadly threats like Ebola, anthrax, or SARS.

Companies developing vaccines against other dangerous pathogens will likely be heartened by the news that a vaccine has finally made it through the FDA's review process using the Animal Rule. ([Nine other therapies](#) to combat bacterial, chemical, and radiological threats have been approved using the regulatory pathway, but never before a vaccine.) Every time the Animal Rule is used, Adalja said, the path becomes clearer for others.



Inside the Pentagon's biotech strike force

Source: <http://www.statnews.com/2015/11/24/darpa-biotech-infectious-disease/>



Nov 24 – **The next big thing in disease detection — a device that could stop the next Ebola outbreak in its tracks — looks like a five-pound block of gray plastic, with five buttons, a small monochrome screen, and a slot in the front for a medical sample.**

It's one of the newest projects of the DARPA Biological Technologies Office, a small, secretive Pentagon outpost that has more than a whiff of Star Trek about it. Its mission: Invest in research that sounds like science fiction.



Founded just 18 months ago, the office already has a reputation for funding risky projects the rest of the government won't touch — and for pulling the plug quickly if those projects falter. Critics say it's not the best way to advance biomedical research, which often takes a long, slow, meandering path to success. But the founding director of the biotech office, Dr. Geoffrey Ling, will have none of that. He practically boils over with impatience with small-ball goals. He demands big-time breakthroughs. "I mean, at the end of the day, if you're going to go and cure cancer, by God, cure the cancer and quit jerking around," Ling said in an interview.

His office develops projects ranging from robotic arms that can be controlled by a person's mind,



to prosthetic hands that can "feel" things, to electrical implants that send currents jolting through the nervous system to treat arthritis or other diseases. It's even working on brain implants that could one day help soldiers recover from traumatic brain injuries. Then there's the infectious disease detection device, which is about the size of a large brick and could lead to speedier diagnoses, both on the battlefield and eventually in hospitals, if it works as designed. STAT got a sneak peek in a recent visit to the DARPA biotech office, located in a low-key office building that gives little hint of the intensity of the work that goes on inside.

The tool is called a MAP device — it stands for "Mobile Analysis Platform."

To test someone for an infectious disease, you stick a sample of bodily fluid in a small port. Next, you slide a disposable card into the device. The card is coated with various reagents, which will react if they come into contact with certain pathogens. The machine makes a loud buzz and clicking noise as the sample is analyzed. The results pop up on the screen within 30 minutes — and the MAP device announces whether the patient has tested positive for an infectious disease like the flu, Middle East Respiratory Syndrome, malaria, dengue fever, or Ebola. At least, that's the concept. DARPA officials wouldn't talk much about how it has fared in early testing.

They do say that if a device like the MAP had been available at the Dallas hospital that treated a patient with Ebola last year (and the staff thought to use it), he might have been diagnosed right away — not sent home with antibiotics.

Drew Angerer for STAT - A Mobile Analytic Platform (MAP) device at DARPA in Arlington, Virginia.

There are already some effective tests for Ebola, including a quick-turnaround test based on a few drops of blood. But there have been concerns that those tests return too many false positives. And the MAP device, if it works, could prove more versatile, testing for an array of infections at once — including, in the future, sexually transmitted diseases

such as chlamydia and gonorrhea.

The ability to diagnose a patient in half-an-hour or less would be "transformative. It's an absolute breakthrough," said Col. Matthew Hepburn, the project manager. He said clinical trials would start this fall.

A magnet for Trekkies

The biological office — which was created in April 2014 to consolidate programs from two other offices — doesn't have the commanding physical presence you might expect from the Pentagon. It's in a standard, slightly-less-than-modern office building on an uncrowded street in Arlington, Va.



On the inside, though, it's full of futuristic devices and experiments — even the camera used to take visitors' ID pictures, which is encased in a tiny bulb that moves and clicks into place like an alien eyeball. And since it is the Defense Department, there's a touch of secrecy, too. Visitors aren't allowed to bring in electronics, including cameras or digital recorders, without special clearance.

The DARPA biotech office has ambitious project managers, but no one captures the swaggering, no-nonsense attitude better than Ling, a fast-talking Army physician who served in Iraq and Afghanistan. He's leaving at the end of November, after 11 years with DARPA, because he abhors the idea of getting comfortable in a job. "Bureaucracy comes from people staying in one place too long doing things the same old way. DARPA doesn't do that," Ling said.

[Drew Angerer for STAT – A MAP device and accessories are seen at DARPA.](#)

Contractors know that if they don't aim high and show results, Ling and his team will be happy to cut off their money and work with someone else.

"People will tell you, a lot of people don't like to work with DARPA because it's not a guarantee of funding. Well, so freaking what?" Ling said, his voice escalating to a shout.

"I mean, I don't want to hear about the damned mice, I don't want to hear about your damned papers, I don't want to hear, you know, what awards you got. I want to hear, did you cure the stinking disease? Right? And if you can't play in our sandbox, then don't. We will find someone who will."

The agency is widely seen as a smaller, gutsier alternative to the National Institutes of Health.

"DARPA is designed to have a high failure rate. They see their role as avoiding the natural conservatism of, say, the NIH," said Steven Block, a professor of applied physics and biology at Stanford University who has advised

the government on bio-warfare. "They embrace failure, and the NIH does the exact opposite."

He's not so sure the quick-burst approach to funding is the best way to get real advances in medical science. "These victories are hard-won, and they're slowly won," Block said.

But DARPA, which stands for the Defense Advanced Research Projects Agency, does have a track record of success; for one thing, the Internet sprang from its research. Medical products that started with DARPA



research include a portable ventilator and vaccines that are produced from plants.

'Performers,' not contractors

To the contractors, working with DARPA can be exciting and nerve-wracking at the same time. (The agency calls them "performers," not contractors — because, as Ling explains, they're expected to perform.)

"They're not interested in anything that's run-of-the-mill or incremental. They're interested in quantum advances. It's exciting to work on quantum advances," said David Ecker, divisional vice president at Ibis Biosciences, a California-based biotech company owned by Abbott Laboratories that's working on the infectious disease diagnostic device.



On the other hand, Ecker said, “they do monitor your performance very carefully.” And even though every researcher dreams of a project that achieves the kind of scientific breakthrough that DARPA wants, Ecker said, “while you’re doing them, it’s not clear that they’re going to break through anything. There could be technical showstoppers.”

Officials won’t identify any specific biotech projects where they had to pull the plug, but they also say the office is too new for most projects to reach that point. And they say they often find other uses for research that hasn’t worked out quite as planned.

The biological team has 11 full-time staff, including Ling and the eight program managers. Most of the research and development work is done by outside contractors. The diagnostic device, for example, is being developed under a \$15.5 million contract with Ibis Biosciences.

Dr. Francis Collins, the director of the NIH, said his agency is trying to learn from DARPA’s approach to “rapid-turnaround risky research.” The two agencies are working together on a project to develop biochips that can be used to assess the toxicity of drugs before they’re used on patients.

And DARPA doesn’t see itself in competition with NIH, or the National Science Foundation. It’s too small for that. DARPA’s budget is about \$2.9 billion, and the biotech office itself runs on roughly \$300 million a year. That’s just one-tenth of the current NIH budget, which is a little more than \$30 billion.

“I think that what we are is, we’re a teeny-tiny, super small, itty-bitty complementary approach,” Ling said. “If I took the \$300 million and I threw it in the same cauldron of the NIH and the NSF, it would be meaningless ... That would be an inefficient way to use the taxpayers’ money.”



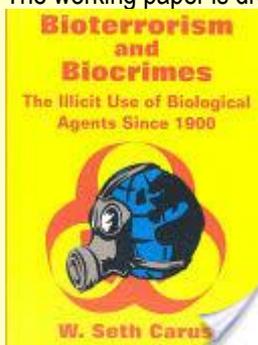
Bioterrorism and Biocrimes: The Illicit Use of Biological Agents Since 1900

Book by W. Seth Carus

Center for Counterproliferation Research, National Defense University

Source: <https://fas.org/irp/threat/cbw/carus.pdf>

The working paper is divided into two main parts. The first part is a descriptive analysis of the illicit use of biological agents by criminals and terrorists. It draws on a series of case studies documented in the second part. The case studies describe every instance identifiable in open source materials in which a perpetrator used, acquired, or threatened to use a biological agent. While the inventory of cases is clearly incomplete, it provides an empirical basis for addressing a number of important questions relating to both biocrimes and bioterrorism. This material should enable policymakers concerned with bioterrorism to make more informed decisions. In the course of this project, the author has researched over 270 alleged cases involving biological agents. This includes all incidents found in open sources that allegedly occurred during the 20th Century. While the list is certainly not complete, it provides the most comprehensive existing unclassified coverage of instances of illicit use of biological agents.



EDITOR’S COMMENT: A very interesting publication – especially the case studies presented. An example is posted below.

Case 1981-02: “Dark Harvest,” October 1981

On October 10, 1981, a package of soil supposedly removed from Gruinard Island was discovered on the grounds of the Chemical Defence Establishment located at Porton Down, Wiltshire, England. Tests of an anthrax bomb were conducted at Gruinard Island in the Hebrides during 1941, and heavily contaminated soil on the island. According to a press account, the soil was found in a paper package placed inside a bucket.



Because the bucket was located on the border of the Porton Down complex, alongside a railway line, police speculated that the soil might have been thrown from a train. An anonymous statement given to



the press indicated that a group calling itself “Dark Harvest” orchestrated the incident. According to the group, they were returning the “seeds of death” to their source. The group claimed that microbiologists from two universities landed on Gruinard Island, and with the assistance of locals had removed 300 pounds of contaminated soil. The group complained that Gruinard Island would remain uninhabitable for 200 to 1,000 years. The statement called for a survey of the island to



locate the anthrax-contaminated soil and proposed burying the soil under several feet of concrete. The group threatened to place additional packages at “appropriate places” during the next year. Subsequent tests indicated that the soil contained anthrax in low concentrations (about 10 organisms per gram of soil). The soil was consistent with other samples taken from Gruinard Island. A second package was deposited



at the site of a Conservative Party meeting on October 14, 1981. In this instance, police received an anonymous tip about the presence of a metal box containing the soil, which was located on the roof of the meeting site. Subsequent analysis indicated that the soil did not contain anthrax. The Ecology Party condemned the activities of “Dark Harvest”. According to the party’s general secretary, “Although we agree with the object of the group, which is to bring public attention to the fact that these

experiments in germ and chemical warfare leave a deadly legacy for future generations, we cannot condone their action.” The British government subsequently agreed to decontaminate Gruinard Island, although it is not known if the decision to eliminate the contamination resulted from the publicity engendered by “Dark Harvest”.

Top-secret military warning on Ebola biological weapon terror threat

Source: <http://www.theguardian.com/uk-news/2015/feb/21/top-secret-ebola-biological-weapon-terror-warning-al-qaida-isis>

Feb 15 – Scientists at the top-secret military research unit at Porton Down, Wiltshire, have been assessing the potential use of Ebola as a bioterrorism weapon, according to confidential documents.

[A three-page memo, marked ‘UK secret UK eyes only’](#), reveals that the unit, where chemical, radiological and biological threats are analyzed, was tasked with evaluating whether terrorist organizations such as al-Qaida and Islamic

State (Isis) could use the deadly virus to attack western targets.

The heavily redacted document, which has been released under the Freedom of Information Act, reveals that the unit was asked last October to provide “guidance on the feasibility and potential impact of a non-state actor exploiting the Ebola outbreak in West Africa for bioterrorism”.



CBRNE-TERRORISM NEWSLETTER – December 2015

It goes on to explain that non-state actor threat assessments are “provided by the joint terrorism analysis center”, while threats to “UK deployed

be both logistically and technically challenging for a non-state group to undertake”. It observes: “Clearly there are practical issues involved with



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forces are provided by defense intelligence”. The memo outlines three possible scenarios under which terrorists might seek to exploit the Ebola outbreak, which so far has killed more than 9,000 people in the three most affected

such a scenario that of themselves are often not insurmountable but taken together add enormously to the complexity of successfully undertaking this attack.”

A **third**, also heavily redacted, scenario “constitutes the most technically challenging of the scenarios considered here”.

Concerns that terrorist groups might look to “weaponize” Ebola have been raised by several think tanks and politicians. Last year Francisco Martinez, Spain’s state secretary for security, claimed that Isis fighters were planning to carry out “lone wolf” attacks using biological weapons. Martinez said that his belief was informed by listening in to conversations uncovered in secret chatrooms used by terrorist cells. The claim has since been played down by

 Ministry of Defence	Defence Science and Technology Strategy Secretariat Ministry of Defence (01-K) Main Building Whitehall London SW1A 2HB United Kingdom
	Telephone [MOD]: +44 (0)20 7218 8000 Facsimile [MOD]: + [REDACTED] E-mail: DST-StrategySecretariat@mod.uk
Reference: FOI2014/08681 DST Strategy 03-03-01 [REDACTED]	23 January 2015
Email: [REDACTED]	
Dear [REDACTED] Thank you for your email of 4 th November requesting the following information: *Please provide a copy/copies of all assessments made in relation to the potential for the Ebola virus being used as a weapon. By weapon I mean that the virus could be used to inflict bodily harm, physical damage or death to a human. * Please provide a copy/copies of all MOD-specific strategy documents in relation to dealing with Ebola.*	

countries, Guinea, Sierra Leone and Liberia.

The **first scenario** outlined is completely redacted, illustrating the acute sensitivity about the issue. The **second scenario** is heavily blacked out but, according to the memo, “would

others.

Jeh Johnson, the US department of homeland security secretary, said last October that “we’ve seen no specific credible intelligence



that Isis is attempting to use any sort of disease or virus to attack our homeland”.

Dr Filippa Lentzos, a senior research fellow at King's College London and an expert on bioterrorism, said terrorists looking to use the virus as a weapon would encounter problems. “It doesn't spread quickly at all,” she said. “Terrorists are usually after a bang and Ebola isn't going to give you that.”

On average, a person infected with Ebola will infect two more people. In a developed country such as the UK transmission would be even more limited.

“People with Ebola are infectious only when they show symptoms,” Lentzos said. “Could terrorists go to West Africa, get infected, then come back and sit on the tube? Sure, but they're not likely to be functional for very long. They're going to be very sick and you'll see that. So they would have only a very small window in which to operate. And in a country with a developed public health system like the UK, there would be plenty of chances to clamp down on an outbreak.”

Other biological weapons would potentially be more attractive to terrorists, experts suggested. Unlike Ebola, which requires the transmission of body fluids, anthrax spores can be dried and milled down to form tiny particles that can be inhaled.

However, even the suggestion that Ebola could be weaponized made it a potentially powerful weapon for terrorists, Lentzos suggested. “If your aim is not to kill a lot of people, or even make them ill, but instead to frighten them and

cause a huge level of societal disruption, then bioterrorism would do that. It elicits exceptionally high levels of fear, disgust and abhorrence.”

The use of pathogens as a weapon has been tried before. Following the attacks in New York and Washington in 2001, five people died in the US after opening letters laced with anthrax. In the 1980s, a cult in Oregon spread salmonella on salad bars in restaurants in an attempt to keep voters from the polls so its preferred candidates would win.

“The risk of small-scale bioterrorism attacks is possible and very likely,” Lentzos said.

Porton Down is known to have experimented with Ebola but a specific request for the laboratory to analyze the virus's potential use by “non-state agents” highlights the growing concern that terrorists are becoming increasingly inventive in their choice of weapons.

One scenario could see terrorists combining genes from different pathogens to synthetically create super pathogens that could spread disease far more effectively than Ebola. But Lentzos suggested this was unlikely. “It's pretty damn hard to make dangerous pathogens from scratch in the lab. Experts have a really hard time doing that. At this point I'm not sure that's what we need to worry about.”

Lentzos said that focusing on the terrorist threat posed by Ebola risked losing sight of the bigger picture. “To beat Ebola we have to worry less about terrorism and more about public health. Disease knows no borders.”

EDITOR'S COMMENT: I was expecting to read something about Ebola virus' survival in sperm for 3 months (or for 7-9 months according to new findings) and its bioterrorism potential, instead of terrorists specialized in genetic engineering!

Vector-borne diseases associated with migrants arriving in the EU: ECDC assesses the risk

Source: <http://ecdc.europa.eu/en/press/news/>

Oct 23 – Although cases of malaria and other vector-borne diseases in the EU may be associated with mobile populations newly arrived in Europe, such cases are not unexpected. A new [rapid risk assessment](#) fully assesses the situation, following a case of malaria reported in Sweden in a newly arrived migrant.

Activity of disease vectors such as ticks and mosquitoes is low in Europe over the winter months, which limits opportunities for the spread of vector-borne diseases such as malaria,



leishmaniasis and schistosomiasis. However, the spread of louse-borne diseases as a result of crowded living conditions may affect migrant populations over winter.

Particularly important for the prevention of secondary cases or outbreaks of vector-borne diseases is the right to health for mobile populations and universal access to public health services, as well as rapid detection and treatment of any cases that are detected.

Preparedness in the EU with regards to vector-borne diseases requires the capacity to detect possible cases in areas where competent vectors are present, alongside strengthened surveillance systems.

Ensuring the right to health, offering health education and promotion, and improving general hygiene measures for migrants and other mobile populations may also help minimize any potential impact of imported cases of vector-borne diseases in the EU.

Status of Ebola emergency preparedness in Belgium and Romania: ECDC reports identify strengths and vulnerabilities



Source: <http://ecdc.europa.eu/en/press/news>

Oct 08 – With the launch today of two additional reports on Ebola emergency preparedness in EU Member States, ECDC completes the series of publications presenting outcomes of peer-review country visits focused on supporting national authorities in reviewing their public health emergency systems.

The **two reports present the results of the country visits to Belgium and Romania** and are published ahead of the high-level conference on 'Lessons learned for public health from the Ebola outbreak in West Africa – how to improve preparedness and response in the EU for future outbreaks' which takes place in Luxembourg on 12-14 October, co-organized by the European Commission and the Luxembourg Presidency of the Council of the European Union.

The country visits on Ebola emergency preparedness were performed in March 2015 by expert teams from ECDC and from other EU Member States, in the format of peer-review discussions with national authorities and upon invitation by the countries. The focus was on preparedness activities, capacity strengthening, and lessons learned in response to the Ebola health threat. The critical areas of the case management pathway of actual or suspect Ebola cases reviewed were: points of entry,

community

preparedness, inland transportation, designated treatment hospital and medical evacuation.

The series includes two other publications launched earlier this year: A mission report with results of the country visit to Portugal; as well as a technical report with a summary of the main strengths and vulnerabilities of Ebola emergency preparedness in the three EU Member States.

Overall, the three peer-review visits identified some common good practices as well as a large degree of similarity in the challenges faced in preparing for possible Ebola cases. Common good practices included: The recognition of simulation exercises as a good tool for learning; improvements in cross-sectoral coordination while preparing for Ebola response; the use of 'one-stop shop' for information on Ebola provided to citizens; use of lessons learned from past events—such as SARS, A(H1N1) pandemic influenza, MERS CoV and avian influenza, among others. Common challenges included: Resourcing, use of case definitions, obtaining and deploying personal protective equipment, need for a comprehensive evaluation plan so that lessons learned are used to improve protocols and guidance, interoperability of plans between various sectors, among others.

Read the reports of the peer-review country visits on Ebola emergency preparedness

- [Ebola preparedness peer review mission, Romania](#)
- [Public health emergency preparedness for cases of viral haemorrhagic fever \(Ebola\) in Belgium: a peer review](#)



- [Public health emergency preparedness for cases of viral haemorrhagic fever \(Ebola\) in Portugal: a peer review](#)
- [Technical report Ebola emergency preparedness in EU Member States: Conclusions from peer-review visits to Belgium, Portugal and Romania](#)

A novel recombinant vaccine protecting mice against abrin intoxication

By Wang J, Gao S, Xin W, Kang L, Xu N, Zhang T, Liu W, and Wang J

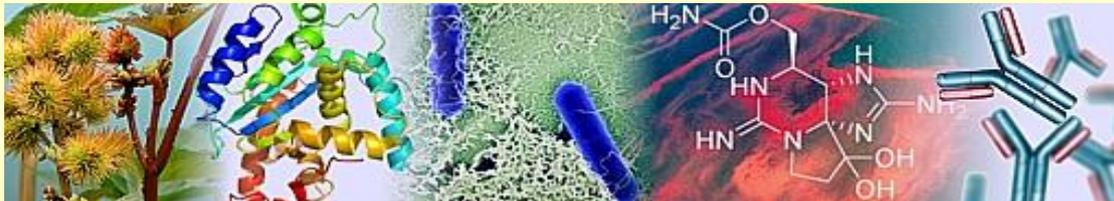
Hum Vaccin Immunother. 2015; 11(6):1361-7.

Source: <http://www.ncbi.nlm.nih.gov/pubmed/26086588>

Abrin toxin (AT) consisting of an A chain and a B chain is a potential agent for bioterrorism and an effective vaccine against AT poisoning is urgently required. In this study, AT B chain (ATB) was successfully expressed in the Escherichia coli (E. coli) and assessed the protection capacity against AT intoxication. The recombinant ATB (rATB) subunit induces a good immune response after 4 immunizations. All BALB/c mice immunized intraperitoneally (i.p.) with the purified rATB protein survived after challenged with 5 × LD₅₀ of AT. Transfusion of sera from immunized mice provided passive protection in naive mice. Furthermore, histological findings showed that immunization with rATB decreased the severity of toxin-related tissue damage. This work indicates that the rATB protein may be a promising vaccine candidate against human exposure to AT.

Toxinology

Source: <http://www.labor-spiez.ch/en/the/bs/enthebstox.htm>



Toxinology is an interdisciplinary and specialist area of the science of toxicology, which deals specifically with naturally occurring toxins, their composition and their modes of action. Unlike poisons which can also be produced synthetically, toxins (low molecular chemical compounds and complex biomolecules alike) can only be produced by living organisms, such as animals, fungi, plants and bacteria.

There is much more to the field of toxinology than the chemistry and modes of action of a toxin. Toxinology also involves the study of the biology of venom- and toxin-producing organisms, the structure and sometimes the function of a venom apparatus, as well as the use and ecological role of these compounds. Nowadays, toxins are increasingly used as research tools and as treatments for acute and chronic diseases like cancer, epilepsy, thrombosis, as well as in analgesic and anti-hypertensive medication.

Toxinology in the SPIEZ LABORATORY

All work with toxins in the Biology Division of the SPIEZ LABORATORY is carried out by the Toxinology Group.

The Toxinology Group works primarily on projects that deal with substances which feature in the Chemical Weapons Convention (CWC), in particular the protein-based plant toxin ricin and the low molecular neurotoxin saxitoxin (STX) which appear alongside classic chemical warfare agents in Schedule 1 of the CWC.

According to a list compiled by NATO, there are over 200 different toxins. At present, we work exclusively with ricin and saxitoxin, botulinum neurotoxin and staphylococcus



enterotoxin B, as these are considered among the twelve most dangerous biological warfare agents, or "Dirty Dozen", as they are also commonly known.

The Toxinology Group is involved in an ever greater number of non-military projects, particularly civil protection projects. A large number of toxins cause serious food poisoning and in worst-case scenarios could even be used in terrorist attacks on the civilian population. When food poisoning incidents are reported, the Toxinology Group carries out random tests on food samples for the presence of toxins. In doing so, the group helps medical professionals and public authorities develop a more effective response to such outbreaks.

Other fields of activity:

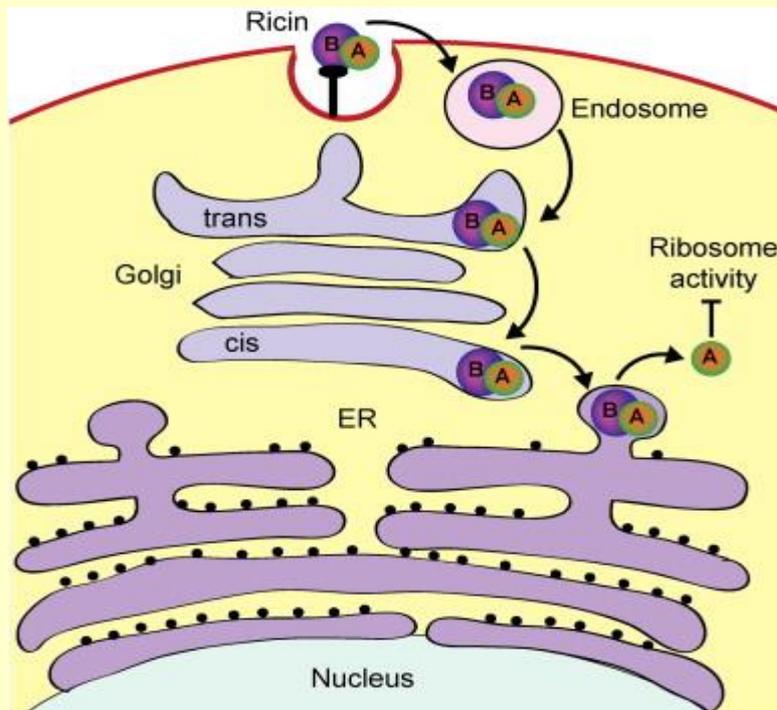
- Development and enhancement of its expertise
- Development and establishment of laboratory detection methods
- Evaluation and testing of commercial detection systems
- Advising national agencies in emergency situations
- Training of specialists from the Swiss Armed Forces NBC Defense Laboratory
- Involvement in the in-house apprenticeship program (training of young chemical laboratory technicians)
- Running of an accredited test center (STS 054)
- Creation of a national reference laboratory for ricin, BoNT, SEB and STX

Ricin detection: Tracking active toxin

By William P. Bozza, William H. Tolleson, Leslie A. Rivera Rosado and Baolin Zhang

Biotechnology Advances, Volume 33, Issue 1, January–February 2015, Pages 117–123

Source: <http://www.sciencedirect.com/science/article/pii/S0734975014001876>



Intracellular uptake of ricin and ribosome inactivation. Ricin can be internalized through clathrin-dependent and clathrin-independent endocytosis; once inside the cell ricin proceeds from the early endosome into the *trans*-Golgi network. Ricin then progresses from the Golgi into the endoplasmic reticulum (ER) through retrograde trafficking; its catalytic A-chain is released into the cytosol where it inactivates the ribosome

Ricin is a plant toxin with high bioterrorism potential due to its natural abundance and potency in inducing cell death. Early detection of the active toxin is essential for

developing appropriate countermeasures. Here we review concepts for designing ricin detection methods, including mechanism of action of the toxin, advantages and disadvantages of current detection assays, and perspectives on the future development of rapid and reliable methods for detecting ricin in environmental samples.

► Read the full paper at source's URL.



Hospitals Checking Security after St. Cloud Shooting

Source: <http://www.emergencymgmt.com/disaster/Hospitals-checking-security-after-St-Cloud-shooting.html>

Nov 24 – **Hospitals across Minnesota are re-examining their security precautions amid an increase in violence associated with unstable psychiatric patients and fallout from the October shooting of a deputy by a patient in St. Cloud.**

Hospital officials say the number of nurses and aides injured by patients or visitors spiked last year, and the St. Cloud Hospital shooting is the second hospital assault in 12 months that ended in a fatality. None had been reported by hospitals in 11 prior years.

In the case of Danny Hammond, who wrestled a gun from Aitkin County deputy Steve Sandberg and shot him on Oct. 18, federal regulators found errors in patient care by St. Cloud Hospital. But hospital and health officials around the state say they worry that a similar tragedy could befall them even under the best of circumstances.

“For many hospitals, it’s more, ‘Oh, thank God that wasn’t us,” said Carrie Mortrud of the Minnesota Nurses Association, a nursing union.

The St. Cloud shooting also laid bare frictions between hospitals and law enforcement officials over who’s responsible for security when police bring unstable detainees to hospitals. The Minnesota Hospital Association is considering a task force to clarify expectations in handling such patients.



A deadly encounter

Hammond had a history of domestic violence and an arrest warrant when he was brought to St. Cloud Hospital after a drug overdose. After regaining consciousness, Hammond expressed suicidal and homicidal desires and was placed on a 72-hour observational hold -- meaning he was not free to leave the hospital -- in a medical unit where he was monitored by a nursing aide and a deputy.

Upon learning he would be jailed after being discharged, Hammond reportedly charged the deputy and shot him. Security forces then used a stun gun to subdue Hammond, who died afterward.

A subsequent review by federal regulators faulted the hospital because a physician assistant ordered the 72-hour hold but no psychiatric care. That decision also perplexed mental health advocates.

“It’s like identifying someone with a heart attack and saying, ‘Eh, I don’t think we’ll do anything about it,?’” said Sue Abderholden of the Minnesota chapter of the National Alliance on Mental Illness.

But hospital officials said the incident underscores broader risks in mental health care

in Minnesota. Even when psychiatric care is ordered, they noted, a widespread shortage of psychiatric beds can leave volatile patients waiting for care in emergency rooms or medical floors -- often for hours or days.

These risks have worsened in the last two years, following a change in state law that gives mentally ill jail inmates priority for admission to the state’s long-term treatment facility in Anoka, said Dr. Steven Miller, who directs inpatient adult psychiatry at the University of Minnesota Medical Center.

“That’s caused problems throughout the system,” he said, “and it’s especially these very high-risk, very aggressive patients that are the most difficult for hospitals to manage.”

Violent patient-on-staff incidents at University’s psychiatric unit in Minneapolis increased nearly 60 percent from 2013 to 2014, according to figures provided to the *Star Tribune*. An ER unit in North Memorial Medical Center reported more assaults to staff last year than in the prior three years combined, a physician stated at a recent conference.

Use of tie-down restraints to subdue unruly patients also has increased, Miller said, after years of success in switching to safer



alternatives such as verbal de-escalation.

Patient placement

Hammond's case also underscores the risks of placing dangerous patients in medical wards rather than locked psychiatric units, Mortrud



said.

When he arrived at the hospital, Hammond needed intensive medical care, according to a federal Medicare report on the incident released last week. But at the time of the shooting, he was simply receiving an intravenous antibiotic, which could have been administered in a psychiatric unit, Mortrud said.

"The staff on psychiatric units are trained a lot differently and a lot more extensively on de-escalation techniques or takedowns," she said. A similar dilemma arose at the U's hospital earlier this year, when a hallucinating patient on a 72-hour hold in an unlocked medical unit left her room and fondled a patient in another room until staff intervened. Like the St. Cloud Hospital, the U subsequently faced a review by federal regulators.

Yet it can be difficult for a hospital to move a mentally ill patient with complex medical needs into psychiatric units, which are often full and ill-equipped to address those needs, said Matt Anderson of the Minnesota Hospital Association.

"Many times those patients have to be placed on a medical unit to deal with medical issues first because they are often more life-threatening," he said.

Who will pay?

Anderson said the fact that Hammond wasn't under arrest at the time he entered St. Cloud Hospital underlines an ongoing tension with law-enforcement agencies. Hospital officials suspect that law officers don't arrest mentally ill detainees before bringing them to hospitals because that would make their departments responsible for the cost of their care.

Yet leaving unstable detainees at hospitals without arresting them limits the security options, Anderson said. Law enforcement officers in hospitals have more discretion to handcuff threatening patients who are under arrest compared with hospital workers, who can restrain patients only in extreme clinical situations.

"There's a functional difference between being under arrest and

not being under arrest," Anderson said.

Whether that would have made a difference in St. Cloud is unclear; hospital officials declined to comment for this story. However, the hospital adopted policy changes following the federal regulatory review that include an expectation that police will guard any patient who is going to be arrested upon discharge.

James Franklin of the Minnesota Sheriffs' Association denied that financial interests affect arrest decisions made by front-line officers.

"Once you've got [a patient] secured at a hospital, then you go sit down and say, 'OK, what's the process? Do I have sufficient probable cause? Do I have all the evidence? Do I have all the paperwork?' These are all factors that are difficult to ascertain at 2 o'clock in the morning," Franklin said.

Many times, he said, "an officer will, what we call 'stuff and cuff' -- hold them [at the hospital] until we can get all this figured out."

Law enforcement officials, in turn, express their own frustrations with hospitals. In some instances, they say, police bring in unstable patients -- with plans to arrest them later -- only to have hospitals release them without notice because they don't meet



medical criteria for psychiatric care or 72-hour holds.

Making hospitals safer

Efforts to improve hospital security emerged in the Legislature last year following a November 2014 incident at St. John's Hospital in Maplewood. An enraged patient stormed through a ward, swinging a metal pole at nurses and chasing them. Three nurses were injured, and the patient died after police subdued him with a stun gun.

New laws require hospitals to write violence response plans, tally assaults, and train all staff on skills to identify and verbally de-escalate agitated patients or visitors.

Broader training is a good idea, Miller said, as aggressive incidents have popped up in

obstetrics or orthopedics, not just the psychiatry unit.

The state appears on pace this year to match the record 134 workers' compensation claims filed in 2014 by nurses or aides injured intentionally by hospital patients or visitors, according to the state Department of Labor and Industry.

Abderholden said the St. Cloud case demonstrates the need to provide concurrent psychiatric and medical care to patients with these dual needs -- and not to let mental health issues fester.

"Within a hospital, they argue whether they have a mental health patient or a regular patient. The reality is people often are coming in with both," she said. "You need to treat the whole person."

EDITOR'S COMMENT: Incidents like this might be considered as daily misfortunes and are part of the job in all hospitals. In November, I was waiting a colleague at the main entrance of one of the biggest hospitals in Rome, Italy and while watching the incredible traffic of people coming and going, I was thinking about the terrorist potential might have all these back-packs and trolley-bags people were carrying with them without any kind of inspection performed despite the presence of a police patrol car and a number of hospital security personnel on-site. A complete weaponry with everything inside can be transferred this way inside the hospital premises. Only ICUs had security code-operated doors. You could go anywhere inside the hospital without any difficulty or control...

FDA-approved drug protects mice from Ebola

Source: <http://www.medicalnewstoday.com/releases/302880.php?tw>

Nov 19 – The recent Ebola outbreak in West Africa has claimed more than 11,300 lives and



starkly revealed the lack of effective options for treating or preventing the disease. Progress has been made on developing vaccines, but there is still a need for antiviral therapies to protect health care workers and local populations in the event of future outbreaks.

A new study led by University of Iowa virologist Wendy Maury, PhD, suggests that gamma interferon, which is an FDA-approved drug, may have potential as an antiviral therapy to prevent Ebola infection when given either before or after exposure to the virus.

The study, published in the journal *PLOS Pathogens*, found that gamma interferon, given up to 24 hours after exposure, can inhibit Ebola infection in mice and completely protect the animals from death.

Ebola infection appears to be a stepwise process. First, the virus targets and infects macrophages or dendritic cells, two types of immune system cells found in the liver, spleen, and lymph nodes. Ebola then replicates in those cells. Following this initial infection, which happens at day 3 or 4 in non-human primates, Ebola virus is released



into the blood and infects a plethora of other different cell populations.

"It goes from an early stage with a much targeted infection of only these few cell types, to everything being infected," explains Maury, who is a professor of microbiology in the UI Carver College of Medicine. "We think what's happening with gamma interferon is that it's targeting macrophages and blocking the infection of those initial cell targets so you don't get the second round of infection."

The UI does not have a specializing BioSafety Level 4 (BSL4) lab that is required for experiment using Ebola virus, so Maury and her UI colleagues made their initial findings using a surrogate virus, which targets and infects the same cells as Ebola, but does not cause the disease. This Ebola lookalike - a sheep in wolf's clothing - consists of a less dangerous vesicular stomatitis virus (VSV) that expresses Ebola glycoproteins on its surface.

However, all of the results Maury's team found using the surrogate virus, were repeated using mouse-adapted Ebola virus in the BSL4 lab of Maury's long-time collaborator Robert Davey at Texas Biomedical Institute in San Antonio, Texas.

The team showed that gamma interferon inhibits the virus's ability to infect human and mouse macrophages, in part by blocking virus replication in the cells. **The researchers then showed that pretreating mice with interferon gamma 24 hours before exposure protects the animals from infection and death. To their surprise, the researchers found that treatment up to 24 hours after what would have been a lethal exposure also completely protected the animals from death, and the scientists could no longer detect any Ebola virus in the mouse cells.** These findings suggest that interferon gamma may be useful both as a prophylaxis and post-exposure treatment against Ebola.

The team still has to determine how late gamma interferon can be given to the mice and still prevent infection. However, the results suggest a window of time after exposure when gamma interferon may be an effective antiviral therapy "My guess is that if you delay the gamma interferon too much, you miss this window of opportunity to block the infection in macrophage cells and the gamma interferon can no longer provide protection," Maury says.

Working with Martha Monick, PhD, now a UI professor emeritus in internal medicine, Maury and lead study author Bethany Rhein, PhD, investigated how gamma interferon might be helping the cells fight off Ebola virus. They identified that expression of more than 160 genes in human macrophages are stimulated by gamma interferon. Introduction of some of these genes into cells was sufficient to prevent Ebola infection.

"This mechanistic information might suggest more precise drug targets rather than the broad effects, including adverse side-effects that are produced by gamma-interferon" Maury says.

Gamma interferon is approved by the FDA to treat Chronic Granulomatous Disease (an immune disease) and Severe Malignant Osteopetrosis.

In addition to moving the studies into larger animal models, Maury now plans to study the ability of gamma interferon to inhibit Ebola infection in conjunction with other developing antivirals.

"Right now there are no FDA-approved antiviral therapies for Ebola, but there are some being developed that target virus entry," she says. "We know that gamma interferon blocks replication but not entry into cells. So combining an entry inhibitor with gamma interferon may allow us to reduce amount of gamma interferon needed and target two different steps in the virus's life cycle, which has been shown in HIV to be critically important for controlling virus."

Global response to Ebola outbreak slammed by independent panel

Source: <http://www.medicalnewstoday.com/articles/302968.php?tw>

Nov 23 – The Ebola virus initially spreads from animals to humans, then spreads rapidly from human to human. The disease caused by Ebola virus carries a particularly high risk of death.



Upon contraction of the disease, fatality rates range from 25-90%. In total, more than 11,000 people in West Africa died during the recent epidemic.

Sierra Leone, Guinea and Liberia, some of the world's poorest countries, were worst affected.



This most recent outbreak is now on the retreat, and the time to reflect on how we handled the crisis has begun. The outbreak, which could have easily wiped out vast swathes of humanity, will certainly not be the last.

The Harvard Global Health Institute and the UK's London School of Hygiene & Tropical Medicine recently convened an independent group of 20 experts to discuss and pick apart the global reaction to the recent Ebola outbreak.

Consisting of members drawn from academia, think tanks and civil society, the group collectively reviewed the worldwide response and combined their findings. Published in *The Lancet*, the report pulls no punches and sets out a 10-point proposed plan to improve future reactions to similar emergencies.

Chaired by Prof. Peter Piot, director of the London School of Hygiene & Tropical Medicine and co-discoverer of the Ebola virus, the panel praised individual acts of courage and solidarity. However, he made it clear that the outbreak also caused:

"[...] immense human suffering, fear and chaos, largely unchecked by high-level political leadership or reliable and rapid institutional responses."

According to the findings, a greater attention to detail and a stronger, quicker response is not only essential, but also achievable.

The World Health Organization (WHO) were at the front of the firing line. The think tank puts a large burden of responsibility around their necks: WHO were aware of the outbreak in

spring but did not declare a public health emergency until August.

WHO's delay in sounding the alarm was a pivotal error, according to the team.

Recommendations to avert future pandemics

The report's 10 recommendations hope to give stronger guidance and bolster global systems in preparation for future outbreaks:

1. A global strategy should be constructed to fund, observe and maintain each nation's ability to prevent major outbreaks. It is essential that poorer countries are provided with the funding and support necessary for such strategies
2. Incentivize early flagging of outbreaks. On the other side of the coin, countries that are late to report cases should be published publicly
3. Create a separately governed WHO department with clear accountability for outbreak response
4. Construct a politically-protected Standing Emergency Committee within WHO that has the responsibility of declaring public health emergencies
5. Design an independent UN body responsible for disease outbreak prevention and response within each country
6. Develop a method to guarantee accelerated research when an emergency occurs including swift access to the benefits of that research for all
7. Creation of a globally held finance facility in order to fund research, and for essential drugs, diagnostics, vaccines, and relevant non-pharmaceutical supplies
8. Create a Global Health Committee as part of the UN Security Council that will elevate health issues and ensure swift actions in times of need
9. WHO should scale back non-essential activities and focus on their core responsibilities
10. A restructure of WHO to refocus and sharpen their abilities, including installation of leadership willing to challenge



even the most powerful nation's governments.

Another of the panel members, Mosoka Fallah, PhD, of Action Contre La Faim International, puts it rather poignantly:

"The human misery and deaths from the Ebola epidemic in West Africa demand a team of independent thinkers to serve as a mirror of reflection on how and why the global response to the greatest Ebola calamity in human history was late, feeble and uncoordinated.

The threats of infectious disease anywhere is the threat of infectious disease everywhere. The world has become one big village."

The panel's study director Suerie Moon, PhD, of the Harvard T.H. Chan School of Public Health and Harvard Kennedy School, is concerned we will fail to learn from our mistakes.

As Moon puts it, "the billion-dollar question is whether political leaders will demand the difficult but necessary reforms needed before the next pandemic."

The title of the panel's report begins: "Will Ebola change the game?" That seems to be the major concern. Is it possible for governments and institutions to admit mistakes, correct them and strive to improve? The global population hopes that they can.

UEA leads first systematic review of Ebola risks

Source: <http://www.medicalnewstoday.com/releases/303012.php?tw>

Nov 23 – Looking after people with late-stage Ebola at home puts people at greatest risk of catching it themselves - according to research from the University of East Anglia.

A new paper on risk factors for transmitting the deadly virus recommends better provision of health care facilities to ensure that people with the disease don't have to be cared for at home. The study also finds that changing funeral traditions during outbreaks - particularly to allow cremation - could help stop the spread of future outbreaks.

But the research team say that transmission in the general community is not a high risk. And that even living in the same house as someone with the virus will not put others at great risk, provided they avoid direct contact.

The research is the first systematic review into the risk factors associated with Ebola.

Researchers studied 31 reports of the disease across 10 primarily African countries dating back to 1967. Most of the data came from interviews with survivors, their close contacts, or from clinical notes.

The team investigated variables including age group, intensity of contact, and the stage of the disease.

Lead researcher Prof Paul Hunter, from UEA's Norwich Medical School, said: "This research

strengthens the evidence base for dealing with this deadly disease. Importantly, we provide a more nuanced understanding of the risks - and particularly the risks associated with indirect contact.

"Our research shows that Ebola is not very infectious in the general community, and that it does require close contact with a known case.

"We found no evidence of risk associated with casual community contact with individuals who are not yet showing symptoms.

"Even living in the same house is not that risky providing you avoid direct contact.

"Many forms of contact such as conversation, sharing a meal, sharing a bed, and direct or indirect touching, are unlikely to result in disease transmission during incubation or early illness.

"We found that infection risk is highest among those caring for a sick person at home in the later stages of infection, or preparing the recently deceased for burial.

"Urgent diagnosis and hospitalization really is the key to stopping the spread of this disease at least until a vaccine is widely available.

"Our work also shows that vaccination strategies in future outbreaks only need to be targeted at relatively close contacts of cases and health care workers."



TSRI scientists reveal potential treatment for life-threatening viral infections

Source: <http://www.medicalnewstoday.com/releases/303074.php?tw>

Nov 24 – Scientists from the Florida campus of The Scripps Research Institute (TSRI) have shown for the first time how a previously unknown process works to promote infection in a number of dangerous viruses, including dengue, West Nile and Ebola.

The new study also points to a potential treatment, an experimental antibiotic that appears to inhibit infection by these deadly viruses, all of which lack vaccines and treatments.

The study, which was published recently by the journal *Proceedings of the National Academy of Sciences (PNAS)*, was led by TSRI Associate Professor Hyeryun Choe.

"Most of these viruses use a specific molecule to enter cells," Choe said. "In the new study, we were able to show how a second molecule plays a major and previously unknown role in that process. We also show an antibiotic called duramycin inhibits the actions of this molecule. This looks to be a promising broad-spectrum antiviral strategy and deepens our understanding of the entire infection process."

Emerging Health Concern

The viruses in question belong to several families, including the flavivirus and filovirus families. Flaviviruses like dengue and West Nile viruses cause tens of thousands of deaths each year. Filoviruses like Ebola have emerged as major health concerns, particularly in tropical and subtropical areas such as the recent highly publicized Ebola outbreak in West Africa. Perhaps the greatest concern is dengue virus. More than one third of the world's population is estimated to be

at risk for dengue and more than 100 million people are estimated to be infected annually, according to recent studies.

virus and phagocytes engulf the virus. Once engulfed, the virus quickly turns the cell's own biology on its head, forcing it to produce copies of the virus.

New Insights

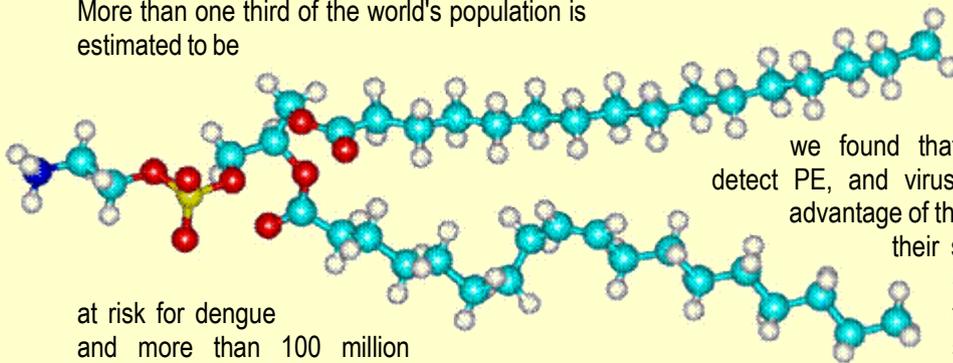
In the new study, Choe and her colleagues showed how another lipid known as phosphatidylethanolamine (PE), which is present on the viral surface, also contributes to the viral entry process.

"Despite the name, we found that PS receptors also detect PE, and viruses are able to take advantage of the abundance of PE on their surface," said Audrey Stéphanie Richard, the first author of the study and a research associate in the Choe lab.

"Through their PE, they latch onto the PS receptors on the host cell, taking control of the process and insuring entry and replication."

Duramycin blocks viral entry into the cells by binding to the virus's PE, preventing the virus from using it to latch onto the PS receptors on the cell. Duramycin, which is currently used as an imaging agent, binds specifically to PE.

Disrupting the relationship between these two molecules could open the door to new and novel antiviral strategies,



at risk for dengue and more than 100 million people are estimated to be infected annually, according to recent studies.

The viruses take advantage of the process that normally occurs during programmed cell death or apoptosis. During this process, a lipid usually found on the inner side of the cell membranes, specifically phosphatidylserine (PS), shifts to the surface. Apoptosing cells are then recognized by PS receptors on phagocytes--cells that devour invading pathogens and dying cells--and engulfed by them.

When cells are dying from a virus infection, their freshly exposed PS is grabbed by the exiting



potentially including duramycin and similar PE-inhibitors.

"This new study goes a long way in helping us understand how so-called PS receptors contribute to flavivirus and filovirus infections

and how we can block them through the PE-binding compounds," Choe said.

The study also shows that PE is exposed on the surface of apoptotic cells and promotes their uptake by phagocytes.

Development and evaluation of an up-converting phosphor technology-based lateral flow assay for rapid detection of *Francisella tularensis*

By Fei Hua, Pingping Zhang, Fuli Zhang, Yong Zhao, Chunfeng Li, Chongyun Sun, Xiaochen Wang, Ruifu Yang, Chengbin Wang, Ailian Yu and Lei Zhou

Scientific Reports 5, Article number: 17178 (2015)

Source: <http://www.nature.com/articles/srep17178>

Francisella tularensis is a potential biowarfare/bioterrorism agent and zoonotic pathogen that causes tularemia; thus, surveillance of *F. tularensis* and first-level emergency response using point-of-care testing (POCT) are essential. The UPT-LF POCT assay was established to quantitatively detect *F. tularensis* within 15 min, and the sensitivity of the assay was 10^4 CFU · mL⁻¹ (100 CFU/test). The linear quantitative range covered five orders of magnitude, and the coefficients of variation were less than 10%. Except *Shigella dysenteriae*, UPT-LF showed excellent specificity to four strains that are also potential biowarfare/bioterrorism agents and 13 food-borne pathogenic strains. Samples with pH 2–13, high ion strengths (≥ 2 mol · L⁻¹ solution of KCl and NaCl), high viscosities (≤ 50 mg · mL⁻¹ PEG20000 or $\geq 20\%$ glycerol), and high concentrations of biomacromolecules (≥ 400 mg · mL⁻¹ bovine serum albumin or ≥ 80 mg · mL⁻¹ casein) showed little influence on the assay. For practical utilization, the tolerance limits for seven powders and eight viscera were determined, and operation errors of liquid measurement demonstrated a minor influence on the strip. FtU-UPT-LF is a candidate POCT method because of its excellent sensitivity, specificity, and stability in complex samples, as well as low operation error.

► Read the full paper at source's URL.

A compensation system for vaccine injuries is needed for diseases such as Ebola

Source: <http://www.medicalnewstoday.com/releases/303288.php?tw>

Dec 01 – As one part of a comprehensive plan to promote vaccine development for diseases of poverty, such as Ebola, there needs to be a plan to lessen the risks of litigation and liability and ensure recipients of vaccines are fairly compensated in the rare instances that they are harmed. A compensation system for vaccine injuries, based on no-fault principles and, most likely, overseen by the World Bank, could represent a solution to this problem argue Amir Attaran and Kumanan Wilson of the University of Ottawa, Ontario, Canada in a Policy Forum article published in *PLOS Medicine*.

The recent devastating Ebola outbreak has revealed myriad systemic deficiencies in health systems, international institutions, drug

development and global readiness for public health emergencies. While there are substantial technical challenges in developing vaccines the lack of arrangements for vaccines to be deployed rapidly without hesitation because of liability due to iatrogenic harm also represents a potential barrier for vaccine deployment for future outbreaks.

Solutions to the liability issue include the country experiencing the public health emergency indemnifying the vaccine supplier, or using the United Nations' immunity from lawsuit to shield the vaccine supplier as was done during the H1N1 pandemic. However, the authors argue that a superior



option is for the international community to establish a no-fault compensation fund for novel vaccines released on an emergency basis to low-income countries.

The authors conclude, "[w]e think it is not too ambitious in the available time before an Ebola vaccine is available for routine use to create an international no-fault vaccine injury compensation program, disbursed upon the advice of an expert panel agreeing as to causality, and funded through the World Bank's

residual influenza trust funds, plus possibly other Ebola-specific contributions. In the intermediate term, such an arrangement should be institutionalized through the World Bank, its access to insurance markets, and its proposed Global Pandemic Emergency Facility. In the long term, countries should be given assistance to devise no-fault compensation systems within their domestic law, so as to obviate the need to manage liability at the international level."

As 2nd anniversary nears of Ebola breakout in West Africa, nurse provides firsthand account of combating Ebola

Source: <http://www.medicalnewstoday.com/releases/303202.php?tw>

Nov 25 – International nurse volunteers responding to the Ebola outbreak in West African encountered death on nearly every shift and worked under conditions that challenged their ingenuity in providing even basic care. That is according to one nurse's account in *American Journal of Nursing*, published by Wolters Kluwer, which provides a rare glimpse of the realities clinicians and patients with Ebola faced inside one Ebola Treatment Unit (ETU).

Nurses overcame these obstacles to provide aggressive, compassionate care, achieving a survival rate of 40 percent for patients at an ETU in Liberia, according to a feature article by Deborah Wilson, RN. By sharing her experience, she hopes "to convey a sense of what it's like to work during an Ebola outbreak, and to put a human face on this devastating epidemic."



Inside the ETU: Challenging Conditions, Lifesaving Care

Ms. Wilson describes what she encountered during her five-week assignment as nursing team manager of an ETU in Foya, Liberia. It took three days of travel by planes, jeeps, and canoes to reach Foya, where Médecins Sans Frontières (MSF, or Doctors Without Borders) had set up one of seven ETUs near the epicenters of local outbreaks. Efforts focused on providing "aggressive" supportive care while keeping the team safe from infection.

The ETU consisted of two small hospital buildings surrounded by a tent city. It was divided into "high-risk" and "low-risk" zones which were separated by orange plastic mesh fences. Besides patients, only staff wearing personal protective equipment (PPE) were permitted in the high-risk zone, where any paper used to record patient information became soaked with chlorine disinfectant solution. Nurses quickly learned to call out patients' vital signs and other findings over the fence to

another nurse, who recorded all the information for later entry on the patient's chart.

The need for PPE was a major obstacle in providing patient care. Ms. Wilson writes, "It is extraordinarily difficult to establish an IV line in a dehydrated patient by generator-powered light while double gloved, with one's goggles fogging." Being able to touch patients only with gloved hands "profoundly limited nurses' ability to establish human connections."

Inside the high-risk zone, patients with confirmed or probable Ebola lay on mattresses on the concrete floor. "It was rare to get through a round without finding a patient who had passed away," Ms. Wilson writes. "This was hard to bear, as these patients died alone, without the presence of their family and friends." Members of the ETU's psychosocial team played a key role in providing emotional and psychological support, as well as facilitating communication among patients, staff, and family. The team urged a



change in policy so that family members, wearing PPE, were able to visit patients inside the high-risk zone. Ms. Wilson believes that this not only promoted patient recovery, but also helped to reduce fears and stigma about what was going on inside the ETU.

During its four months of existence, the ETU at Foya admitted 384 confirmed cases of Ebola virus disease. Of these, 154 patients recovered and were sent home, a 40 percent survival rate. In the article, Ms. Wilson discusses the efforts made to support patients' further recuperation at

home, as well as to promote their re-acceptance into their communities. She also emphasizes the need for ongoing efforts to recover from the Ebola epidemic, including rebuilding local health systems and trust in health services and authorities.

"As an international community, we cannot forget West Africa," she concludes. "Rather, we must continue to provide support to the affected countries and their people as they recover and begin to flourish again."



Blood levels of Ebola virus are predictive of death

Source: <http://www.medicalnewstoday.com/releases/303380.php?tw>

Dec 01 – **The levels of virus in the blood (viremia) for patients with Ebola virus disease (EVD) are strong predictors of fatality, according to a study published in *PLOS Medicine* this week.** The study, conducted by the teams of Amadou Alpha Sall (Institut Pasteur, Dakar, Senegal) and of Simon Cauchemez (Institut Pasteur, Paris, France) and scientists from Guinea and Canada, found that in the week following symptom onset, viremia remained stable, and that **the case fatality ratio (CFR, the proportion of deaths from the disease to total cases) increased with level of viremia.**

The researchers used laboratory, clinical, and demographic data for 699 patients with confirmed EVD hospitalized in the Conarky area of Guinea between March 2014 and February 2015 to model the association between viremia and CFR. They found the CFR for patients with low, intermediate, and high viremia was 21%, 53%, and 81%, respectively. Compared to adults 15-44, children under 5 years old and adults 45 and over had higher CFR, but children 5-14 had a lower CFR. They also noted that when the average viremia increased tenfold in July 2014, CFR increased as well, by 14%. The authors caution that these findings may not translate to cases outside the hospital setting.

By knowing the relationship between viremia and CFR, researchers will be able to more accurately assess the efficacy of treatments for EVD in nonrandomized trials, and by stratifying participants by viremia group Cauchemez and colleagues estimate researchers will be able to reduce the sample size needed for randomized trials by 25%.

The authors say: "This finding suggests that heterogeneity in historical CFR estimates among patients, ETCs, and over time may at least partly be explained by variations in viremia and underscores that more valid estimates of the influence of other factors, including treatment effects, might be obtained by adjusting for differing levels of viremia among patients."

Islamic State and Biological and Chemical Terrorism: Good Propaganda or Real threat?

By Sandra Maksimovic-Sara

Source: <http://outbreaknewstoday.com/islamic-state-and-biological-and-chemical-terrorism-good-propaganda-or-real-threat-75662/>

Dec 03 – Weapons of mass destruction have been always considered as the worst weapons ever, especially if we analyze the possible effects of biological and chemical terrorism. People cannot be prepared enough for that kind of weapon and consequences are unlimited. Just one simple thought about the militarizing of

microbes or chemical agents and the abuse of those in some new asymmetric war, lead us to the one dark, cold and scary world.

In such a kind of world, security drowns itself into the ocean of insecurities and instead of feeling



that we are safe, we have the feeling that we are endangered all the time.

Islamic State of Iraq and Syria, we usually call it ISIS-ISIL-DAESH is one of the parallel subjects in the global politics. It is enough big and somehow institutional to be taken as a state actor but, at the same time, it is based on



terrorism and should be understood as a terrorist system. It adopted the previous state infrastructure of the region it rules but it also implemented new terrorists schedule, which keeps the community overall into the permanent fear. Terrorist attacks that have happened recently in Paris, and the rising of jihadist's patriotism around the Europe and the US, show us that terrorism has its own seed in our fields. Terrorism is not anymore the fictional rhetoric of some unknown counter terrorism experts, it is reality which knocks on our doors, hits our neighborhoods, and ruins our lives and the future of our societies. The war in some far away Middle East transfers itself into our ground. Terrorism is here as well as the terrorists are among us.

The years of wrong ME policy, made by many western countries, caused that diplomacy to fail. As a result of that, we have thousands of immigrants who want to come into our lands and to bring their chaos into our yards. Instead of some kind of peace over there, we have now terrorism spots everywhere.

The terrorists of DAESH changed their modus operandi. All terrorists play on fear. These terrorists play on chaos, based on fear and inability of the states to deal with the security risks. They don't want to attack national symbols

of the country they chose as a target; they want to attack the weakest chain, people by themselves, on the ordinary places and in the normal time. They want to infect the blood of the state, its residents.

They can shoot at the people who are having a nice time in the park, or at those who are having dinner in restaurants or who are partaking in sports. Nobody is safe but also nobody specifically is endangered. The method of their terrorist engagement is somehow changed but the goal is still the same – panic. To open the door for a panic among people who become aware that state is not capable to protect them and that there is no cure for terrorism.

How far can they go?

Now, let's ask ourselves how far the terrorists of DAESH could with their intention to hurt us in the name of their religious beliefs? We already know that they will do all they can to cause distortions in our systems but it is also very important to have in mind that giving them too much attention in media and glorifying their "skills for destruction" give them some sort of power to do what they do or at least to not give up. The similar power was discovered among the typical psychopaths. They could only feel alive through the public attention. They would consider it as an admiration, grown from fear. They would feel themselves as masters of some person's destiny. They would go further and further....till the moment they make a mistake and they are caught. Unfortunately, many of innocents pay for that "sick theater". Terrorists don't have targeted individuals and typical deep psychopath's elements, but their fanatical convictions and death cult ideology, open the Pandora box for all of us.

Some journalists claim that DAESH extremists could be able to produce and to misuse biological or chemical weapons against population in the chosen western country. Some experts believe that they possess conditions for producing effective chemical agents and also to develop biological weapons program. **From**



my point of view, all of these stories should be kept in cheap tabloids because non-conventional terrorism is not as easy as it is presented to the public.

Besides, for a biological and chemical terrorist attack, there must be some know-how and background and a professional approach, which is so far away from impatient aggressive Islamic terrorists gathered in DAESH. They want fast track acts and fast track results. For a nerve agent, they need to have technical conditions and skilled scientists with previous successful projects on developing ricin, lewisite, and mustard gas in such quantity and quality what would be enough for causing real damage.

German intelligence service informed in August that some Kurdish fighters have been exposed to the mustard gas in the battle ground in northern Iraq, against DAESH. That amount wasn't much so it couldn't be taken as a serious threat to the rest of humanity by DAESH terrorists. We could also think that old biochemical facilities in Iraq and Syria could be transformed in the military objects for biological and chemical start up program. Some Israeli sources came up with information that Syria has had Bacillus anthracis and ricin but that there is no evidence it was used offensively.

On the other side, Iraq has had long history of non-conventional weapons policy and attempts to develop it and take regional power for itself. Under Saddam Hussein, both programs were upgraded through the daily research and very intelligent biotechnology engineers. Those objects for those weapons of mass destruction were more than successful in producing the blister agent mustard, nerve agent tabun, sarin, cyclosarin and VX. The Iran-Iraq war (1980-1988) is also famous as the first battle ground in the history, with use of the nerve agent. Referring to the collections of pathogens, Iraq was recorded as a possessor of hemorrhagic conjunctivitis virus, human rotavirus, camelpox virus and Bacillus anthracis.

The Nuclear Threat Initiative analysts write that during the Saddam Hussein's government, Iraq produced at least 19,000 liters of botulinum toxin, 8,500 liters of anthrax solution, and 2,000 liters of aflatoxin. **The question is what happened with all of these quantities and where were they stored?**

Nowadays with DAESH attempting to get the biological and chemical weapons, we are faced with the shadow of the new non-conventional terrorism.

Real threat or war propaganda?

We should divide the real threat and the war propaganda. It is a real fear that DAESH terrorists could find a way to make or to buy biological and chemical agents, but the chance is very low. Not many terrorists are professionals in this field of warfare, not many of them know how to deal with it. They need great logistic and expertise and lot of time to plan and to perform all they want which is not their choice at this moment.

They rather choose to be "praised" in media hoax like they are able to discover the deadliest virus ever and they is so intelligent to start the real Apocalypse. The worst they can make is to test small amount of chemical agent against the ground fighters or to experiment with biological agents which could be used against agriculture of some country or its water supply. The serious biological terrorism incidents or heavy bioterrorism attacks with misuse of the deadly bacteria or virus, I wouldn't expect so soon in the future or wouldn't expect from them. They do not have capability for such a kind of act. They do not have expertise. They are too much religious obsessed to choose to use scientifically advantages against the kafirs.

But, we need to be prepared for anything what comes down the road. We need to enhance the cooperation among intelligence service network so the possible top information regarding this issue could be exchanged and shared in the short period of time. Borderless terrorism requires borderless intelligence service work too. It is the end of the year and many states are making budget projects for the next year. It is very logical to note that some of them misuse the "fear from terrorism" in the public to increase the defense budget under the explanation that terrorism must be stopped.

Terrorism should have been stopped earlier than it transferred itself into the fictive state. Now, it seems to be a hyper terrorism and like a cancer metastasizing, it is everywhere. Considering weapons of mass destruction mobilized in the Islamist s war



machinery, we need to consider first the lack of technical equipment and professional background so we would be able to conclude

that the future of that kind of terrorism is so far away from local media predictions.

Sandra Maksimovic-Sara, has an MA in Biological Counter Terrorism Studies, with special interests of researching and writing about Biological Weapons, Biosecurity and Biodefense. Sandra hails from Serbia.

EDITOR'S COMMENT: Reading the short resume of the author I would expect a more thorough analysis of the question posed herein. I will only agree about the bioterrorism potential mainly because it does not deliver immediate results (mass casualties) while it hides the possibility to erase themselves as well. There is not a single word about the RDD potential related to the radioactive material (40kg) confiscated from University of Mosul. In conclusion articles like this satisfies the ears of those keep on believing that "it will not happen to us" and "reassures" global populace that the threat is not real. But the unexpected always happens one way or the other.



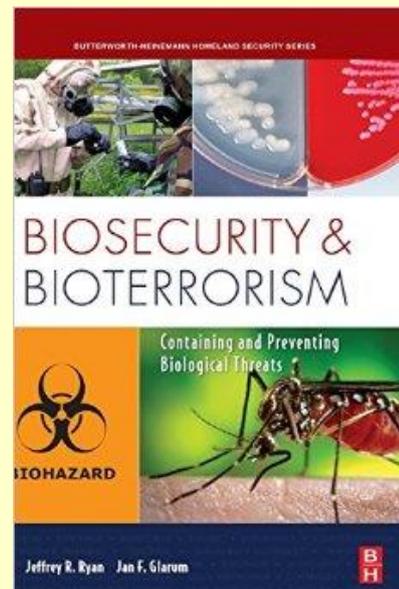
Biosecurity and Bioterrorism: Containing and Preventing Biological Threats

By Jeffrey R. Ryan and Jan F. Glarum (Authors)

Source: <https://www.asisonline.org/ASIS-Store/Products/Pages/Biosecurity-and-Bioterrorism-Containing-and-Preventing-Biological-Threats.aspx>

Biosecurity and Bioterrorism is the first book to take a holistic approach to biosecurity with coverage of pathogens, prevention, and response methodology. The book is organized into four thematic sections: **Part I** provides a conceptual understanding of biowarfare, bioterrorism, and the laws we have to counteract these; **Part II** investigates known bioagents and the threat from emerging diseases; **Part III** focuses on agricultural terrorism and food security; **Part IV** outlines international, U.S., and local initiatives for biodefense and biosecurity. Case studies illustrate biodefense against both intentional terrorism and natural outbreaks. The authors address the hazards in the context of vulnerability assessments and the planning strategies government and industry can take to prepare for and respond to such events.

Emergency managers, security managers in the food industry, public health professionals, and first responders will find this book to be a must-have.



Duration of Ebola virus RNA persistence in semen of survivors: population-level estimates and projections

Eurosurveillance, Volume 20, Issue 48, 03 December 2015

By RM Eggo, CH Watson, A Camacho, AJ Kucharski, S Funk and WJ Edmunds

Source: <http://www.eurosurveillance.org/ViewArticle.aspx?ArticleId=21326>

Ebola virus can persist in semen after recovery, potentially for months, which may impact the duration of enhanced surveillance required after interruption of transmission. We combined recent data on viral RNA persistence with weekly disease incidence to estimate the current number of semen-positive men in affected West



African countries. We find the number is low, and since few reported sexual transmission events have occurred, the future risk is also likely low, although sexual health promotion remains critical.

Nov 09 – In this study, a negative binomial distribution is fitted to recent data on persistence of Ebola virus (EBOV) RNA in semen after Ebola virus disease (EVD) symptom onset in EVD survivors. Given the prior reported incidence of EVD in each affected region of Guinea, Liberia, and Sierra Leone, the fitted distribution is used to estimate and model the number of men in these countries with EBOV RNA present in semen, in each week since mid-2014. According to this, the total number of EBOV RNA semen-positive individuals in January 2016 would be low (n=73; 95% confidence interval (CI): 15–331). Since few reported sexual transmission events have been documented [1], the future risk of such transmission is also likely low.

Modelling Ebola virus RNA persistence in semen

EBOV can persist in immunoprivileged sites within the body after recovery from infection, specifically in semen [1,2]. Post-recovery sexual transmission (PRST) of EBOV via semen has been documented in the ongoing West African outbreak [3]. Understanding potential EBOV shedding after recovery is critical to determining duration of surveillance of survivors, and may impact the length of enhanced surveillance following the interruption of transmission in a country; which currently begins 42 days after the final case and lasts 90 days [4]. Sierra Leone is currently the only country in West Africa in the enhanced surveillance period, which began on 7 November 2015.

In a separate study, ninety three men had one semen test two to 10 months after onset of confirmed EVD symptoms [1]. Samples were tested by reverse transcription-polymerase chain reaction (RT-PCR) for the presence of EBOV RNA. A positive test by RT-PCR means that viral RNA is present, but does not necessarily mean that infectious virus is present in the sample. The number of positive, negative, or indeterminate samples was reported by month since onset of EVD symptoms and we took the number of days to be the mid-point of each month.

► Read the rest of the full paper at source's URL.

ISIS militants are spreading 'flesh eating bug' across Syria as Islamic State becomes riddled with disease

Source: <http://www.mirror.co.uk/news/world-news/isis-militants-spreading-flesh-eating-6950489>

Dec 04 – Islamic extremists are spreading a flesh eating bug across war-torn Syria, according to health experts.

The bug is being spread as a result of ISIS militants slaughtering innocent people and dumping their bodies in the street.

Known as **Leishmaniosis disease**, there have been 500 reported cases in Syria over the last year.

Dilqash Isa, who works for the Kurdish Red Crescent, said: "As a result of abominable acts by ISIS that included the killing of innocent people and dumping their corpses in streets, this is the leading factor behind the rapid spread of Leishmaniosis disease."

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Dilqash Isa, who works for the Kurdish Red Crescent, said: "As a result of abominable acts



by ISIS that included the killing of innocent people and dumping their corpses in streets, this is the leading factor behind the rapid spread of Leishmaniosis disease. We did not have knowledge about this deadly



disease before. We have been fighting on the battlefield for almost four years and this disease



basically generated from embattled areas of Tal Hamis, Hon and Qosa."

Also among those who have warned about health issues in Syria is The World Health Organization (WHO).

It claims that there are 13 million Syrians in need of humanitarian aid.

A statement read: "Despite our best efforts, health needs are escalating, and more than four years of crisis is causing the Syrian health system to deteriorate.

"We're seeing increasing trauma cases, rising mental health needs, reproductive health issues and both communicable and non-communicable diseases.

"A cholera outbreak has arisen in neighboring Iraq – reminding us all that disease outbreaks have a tendency to afflict countries already afflicted by protracted crises.

"WHO is prepositioning medical supplies and putting preparedness measures in place to forestall potential spread into Syria."

EDITOR'S COMMENT: Most probably the eye-catching title does not correlate with reality. War comes with huge sanitary problems and both leishmaniosis and cholera come with it. The side problem is that these organisms might travel together with immigrants entering Europe – and most probably soon they will be trapped in Greece following the isolated reactions of countries in the area (Balkans, EU) and the tragic concentration camps that are hosting them.

Genetic engineering and biological weapons

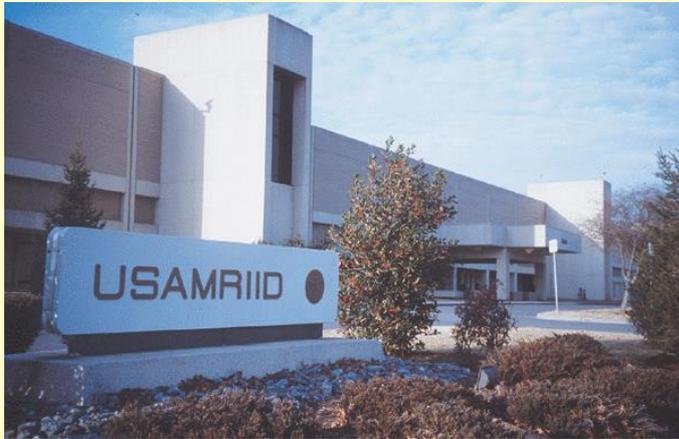
By Jan van Aken, Edward Hammond (The Sunshine Project, Hamburg, Germany Austin, Texas, USA)
Source: <http://embor.embopress.org/content/4/6S/S57>

2003 – Rapid developments in biotechnology, genetics and genomics are undoubtedly creating a variety of environmental, ethical, political and social challenges for advanced societies. But they also have severe implications for international peace and security because they open up tremendous avenues for the creation of new biological weapons. The genetically engineered 'superbug'—highly lethal and resistant to environmental influence or any medical treatment—is only a small part of this story. Much more alarming, from an arms-control perspective, are the possibilities of developing completely novel weapons on the basis of knowledge provided by biomedical research—developments that are already taking place. Such weapons, designed for new types of conflicts and warfare scenarios, secret operations or sabotage activities, are not mere science fiction, but are increasingly becoming a reality that we have to face. Here, we provide a systematic overview of the possible impact of biotechnology on the development of biological weapons.

The history of biological warfare is nearly as old as the history of warfare itself. In ancient times, warring parties poisoned wells or used arrowheads with natural toxins. Mongol invaders catapulted plague victims into besieged cities, probably causing the first great plague epidemic in Europe, and British settlers distributed smallpox-infected blankets to Native Americans. Indeed, the insights into the nature of infectious diseases gained by Louis Pasteur and Robert Koch in the nineteenth century did not actually represent a great breakthrough in the use of infectious organisms as biological weapons. Similarly, the development of a bioweapon does not necessarily require genetic engineering—smallpox, plague and anthrax are deadly enough in their natural states. But the revolution in biotechnology, namely the new tools for analysing and specifically changing an organism's genetic material, has led to an increased risk of biowarfare due to several factors. First, the expansion of modern biotechnology in medical and pharmaceutical research and production has led to a worldwide availability of knowledge and facilities. Many countries and regions, where 30 years ago biotechnology merely meant brewing beer and baking bread, have established



high-tech facilities for vaccine or single-cell-protein production that could be subverted for the production of biological weapons. Today, nearly all countries have the technological potential to produce large amounts of pathogenic microorganisms safely. Second, classical biowarfare agents can be made much



more efficiently than their natural counterparts, with even the simplest genetic techniques. Third, with modern biotechnology it becomes possible to create completely new biological weapons. And for technical and/or moral reasons, they might be more likely to be used than classical biowarfare agents. These possibilities have generated new military desires around the world, including within those countries that have publicly renounced biological weapons in the past. This paper deals predominantly

with the last two factors, and with the use of real-life examples, we shall discuss the possibilities for such military abuse of biotechnology.

The US Army Medical Research Institute of Infectious Diseases in Fort Detrick, Maryland, is the centre of the USA's defensive research on biological weapons. (© (2001) Jan van Aken/Sunshine Project.)

By using genetic engineering, biological researchers have already developed new weapons that are much more effective than their natural counterparts. Countless examples from the daily work of molecular biologists could be presented here, not least the introduction of antibiotic resistance into bacterial pathogens, which today is routine work in almost any microbiology laboratory. Indeed, many research projects in basic science show—sometimes unwillingly and unwittingly—how to overcome current scientific and technological limits in the military use of pathogenic agents. Furthermore, genetic engineering is not merely a theoretical possibility for future biowarfare: it has already been applied in past weapons programmes, particularly in the former Soviet Union. One example is the USSR's 'invisible anthrax', resulting from the introduction of an alien gene into *Bacillus anthracis* that altered its immunological properties ([Pomerantsev et al., 1997](#)). Existing vaccines proved to be ineffective against this new genetically engineered strain.

...genetic engineering will not necessarily have a major role in the early stages of a biowarfare programme. In debates about genetic engineering and biological weapons it is often stated that natural pathogens are sufficiently dangerous and deadly, and that genetic engineering is not necessary to turn them into more effective biological weapons. This is indeed true in that biological weapons can be used without genetic engineering—or, for that matter, without any scientific knowledge—as has been shown by their effective use in past centuries. In fact, genetic engineering does not necessarily have a central role in the early stages of a biowarfare programme. The development of reliable, effective biological weapons requires an intense and resource-demanding research programme that must, step by step, solve increasingly complex problems: the procurement of virulent strains of suitable agents, the mass production of the agents without loss of pathogenicity, and the development of an effective means of delivery. In particular, the third step is very demanding, and has rarely been accomplished, with the exception of the huge former biowarfare programmes in the USA and the USSR. Even Iraq, after several years of an active biowarfare programme, had developed only rudimentary methods of delivery. From this perspective, genetic engineering is a step taken relatively late in the development of biowarfare potential, which most probably will not be taken before the first, essential steps are solved. Indeed, we know only from the massive biowarfare programme in the former Soviet Union that pathogens have been genetically modified to increase their effectiveness as bioweapons, but there may have been other, so far undetected, attempts elsewhere.

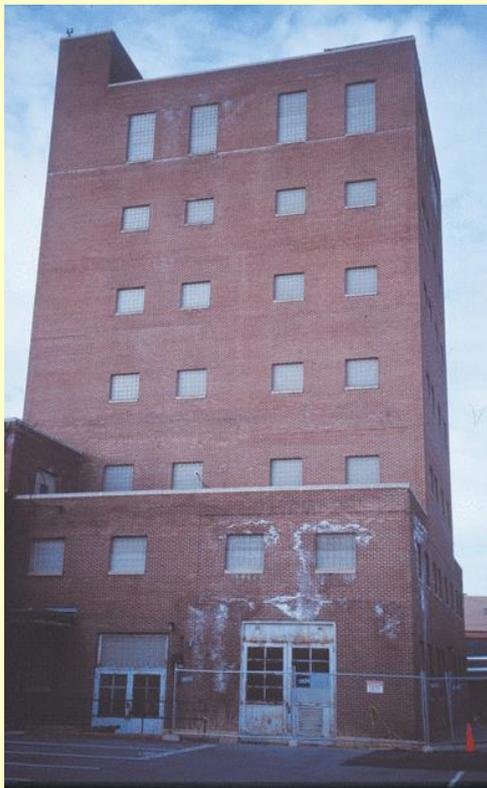


The so-called '8-ball', a 1 million litre steel ball built in 1949 in which the US Army tested the effectiveness of biological weapons. The ball is in Fort Detrick, Maryland, and is a 'historical monument' today. (© (2001) Jan van Aken/Sunshine Project.)



By contrast, it must not be underestimated that hardly any natural pathogens are really well suited to being biowarfare agents from a military point of view. Such a bioweapon must fulfil a variety of demands: it needs to be produced in large amounts, it must act fast, it must be environmentally robust, and the disease must be treatable, or a vaccine must be available, to allow the protection of one's own soldiers. This explains why only a minority of natural pathogens are

suitable for military purposes. Anthrax is of course the first choice because the causative agent, *B. anthracis*, fulfils nearly all of these specifications. However, potential victims of an anthrax attack can be treated with antibiotics even several days after an infection. Therefore, only a minority of the infected persons will die from an anthrax attack in most instances, as has been shown by the anthrax attacks in 2001 in the USA. However, a very simple genetic intervention could produce much more drastic and deadly results.



Until 1969, the US Army produced anthrax spores for offensive warfare in this building at Fort Detrick, Maryland. (© (2001) Jan van Aken/Sunshine Project.)

In addition, another important restriction of bioweapons might be overcome by genetic engineering techniques in the future. Today, access to highly virulent agents and strains is increasingly regulated and restricted. In particular, smallpox, which was eradicated more than 20 years ago, is officially only stored at two high-security laboratories in the USA and Russia, and it is at present virtually impossible to gain access to these virus stocks. But considering the rapid development of molecular biology, it is only a question of time before the artificial

synthesis of agents or new combinations of agents becomes possible. This danger was highlighted last year by a worrying article in *Science*: a research team at the State University of New York in Stony Brook chemically synthesized an artificial polio virus from scratch ([Cello et al., 2002](#)). They started with the genetic sequence of the agent, which is available online, ordered small, tailor-made DNA sequences and combined them to reconstruct the complete viral genome. In a final step, the synthesized DNA was brought to life by adding a chemical cocktail that initiated the production of a living, pathogenic virus.



In principle, this method could be used to synthesize other viruses with similarly short DNA sequences. This includes at least five viruses that are considered to be potential biowarfare agents, among them Ebola virus, Marburg virus and Venezuelan equine encephalitis virus. The first two in particular are very rare viruses that might be difficult to acquire by potential bioweaponers—according to rumours, members of the Japanese cult Aum Shinrikyo, famous for the nerve gas attack on the Tokyo subway, tried unsuccessfully to get their hands on Ebola virus during an outbreak in former Zaire in the 1990s. Using the method that has been published for polio, such a group or an interested state could theoretically construct Ebola virus in the laboratory. However, it should be noted that this method is complex, and probably only a few highly trained experts would be able to master this technique, at least for the time being.

The polio virus itself is not an effective biological weapon, but the experiment shows the tremendous potential of genetic engineering and also highlights its problems, particularly when applied to smallpox. The current risk assessments with regard to this virus rate the likelihood of an attack as being rather low, because it is highly unlikely—although not completely impossible—that countries other than Russia and the USA have access to it. If it should become possible to rebuild variola major, the smallpox virus, in the laboratory from scratch—and the virus's genome sequence is available from biological databases—this risk could change greatly. Smallpox is an ideal biological weapon, particularly for terrorist groups, because it is highly infectious and lethal and there is no effective treatment available. The relative safety that can be assumed today will then be gone.

However, the method for creating polio virus artificially cannot be directly transferred to the smallpox virus. The variola genome, with more than 200,000 base pairs, is far bigger than that of polio, and even if it were possible to recreate the full smallpox sequence *in vitro*, it could not easily be transformed into a live infectious virus particle. But there might be other ways. It would, for example, be possible to start with a closely related virus, such as monkeypox or mousepox, and to alter specifically those bases and sequences that differ from human smallpox. Some months ago, researchers documented for the first time that the sequence of a pathogenicity-related gene from the vaccinia virus could be transformed through the targeted mutation of 13 base pairs into the sequence of the corresponding smallpox gene ([Rosengard et al., 2002](#)). It is probably only a matter of time before this technique is applicable to full genomes, and then we shall have to reconsider our current assessment of the smallpox threat. Considering the extreme danger that smallpox poses to a now largely unvaccinated human population, it seems at least questionable to make the smallpox sequence available on the World Wide Web.

However, the genetic enhancement of classical pathogens is only a small part of the broad array of possibilities that new biomedical techniques have created. From the point of view of disarmament, another trend is much more alarming: new types of biological weapons are becoming possible that were entirely fictitious until a few years ago. This is especially true of so-called 'non-lethal' weapons that are designed for use outside classical warfare. The danger is that these new possibilities generate desires even in countries that previously renounced the use and development of classical biological weapons.

The global norm against biological weapons, laid down in the 1925 Geneva Convention and the 1972 Biological and Toxin Weapons Convention, clearly contributed to the fact that few countries have been engaged in research into offensive biowarfare during recent decades. This moral barrier seems to be lower for 'non-lethal' weapons that are targeted against materials or drug-producing plants. Indeed, today's technical possibilities are creating a new interest in this area that might be leading to a new biological arms race. In the following paragraphs, we document three real examples of biological and chemical weapons development that are now being pursued by democracies in the Western world. All three examples have been researched and extensively published by the Sunshine Project (further reading is available at www.sunshine-project.org).

Considering the extreme danger that smallpox poses to a now largely unvaccinated human population, it seems at least questionable to make the smallpox sequence available on the World Wide Web

The US military has repeatedly discussed possible uses of biotechnology for warfare scenarios, including the development of material-degrading microorganisms to destroy fuel, constructional material or stealth paints ([Strategic Assessment Center of Science](#)



[Applications International Corporation, 1995](#); [US Army War College, 1996](#)). This idea is based on the fact that natural microorganisms are able to degrade nearly every material and are already being used to detoxify environmental pollution. The natural organisms are rather slow-acting and unreliable, but, with the help of genetic engineering, the development of much more effective organisms might become possible—probably effective enough to be used as biological weapons ([Sayler, 2000](#)). The specific interest of military researchers in material-degrading microbes is due to the synergistic effects of two concurrent developments: first, the military, particularly in the USA, has a renewed interest in these non-lethal weapons for use in media-sensitive military operations so that visible civilian victims can be avoided; second, rapid developments in biotechnology provide the technological basis to change natural microorganisms into anti-material microbes. New technological possibilities met new military concepts in the USA and led to a renewed interest in weapons that, until recently, had been banned and rejected.

In 1998, it became public that the US Naval Research Laboratory in Washington DC was developing genetically engineered fungi with offensive biowarfare potential. They isolated natural microorganisms that degrade a variety of materials, such as plastics, rubber and metals, and used genetic engineering to make them more powerful and focused—one of these genetically engineered microbes can destroy military paints in 72 hours. The principal investigator at the Naval Research Laboratory, James Campbell, described possible applications of this technology in his presentation at the 3rd Non-Lethal Defense Symposium in 1998. Among them were “microbial derived or based esterases [that] might be used to strip signature-control coatings from aircraft, thus facilitating detection and destruction of the aircraft” (www.dtic.mil/ndia/NLD3/camp.pdf). This work is purportedly defensive in nature, although no threat has been articulated, and continuing research by the US Navy and Army continues to strive towards taking these weapons from the laboratory to the field. Just a few years later, in 2002, several research proposals by the US military that were clearly offensive in nature became public.

New technological possibilities met new military concepts in the USA and led to a renewed interest in weapons that, until recently, had been banned and rejected

About a decade ago, the USA also increased their efforts to identify microorganisms that kill drug-producing crops; by the late 1990s, this research focused largely on two fungi. The testing of one, *Pleospora papaveracea*, against opium poppy, was conducted in Tashkent, Uzbekistan, with financial and scientific support from the USA, and was completed in 2001. Pathogenic *Fusarium oxysporum* strains developed in the USA to kill coca plants were scheduled for field tests in Colombia in 2000, but international protests halted this project. These fungi provide a quintessential example of the hostile use of biological agents. In Colombia, the biggest areas of coca and opium poppy cultivation are in combat zones, and the ‘War on Drugs’ is part of the country’s continuing armed conflict. These biological agents are lowering the political threshold for the use of biological weapons and are likely to have tremendous environmental and health impacts. The pursuit of crop-killing fungi as weapons would be a further slide down a slippery slope that, by following the same logic, could easily lead to the use of other plant pathogens, animal pathogens or even non-lethal biological weapons against humans ([van Aken & Hammond, 2002](#)).

The third example is not about biological weapons but new types of chemical, or rather biochemical, weapons. As in the other examples, the revolution in biomedicine created new desires in the East and the West, and there are already new weapons under development that violate international treaties. This area came under the spotlight of the international media after the use of psychoactive substances in the Moscow hostage crisis last year, causing the death of more than 170 people. These supposedly ‘non-lethal’ chemical weapons had been developed as early as the 1950s, particularly a substance called ‘BZ’, known in the US army as ‘sleeping gas’. But BZ caused very different effects in different individuals and was considered to be unreliable, leading to its banishment from the US chemical arsenal in the late 1960s. Today, however, modern neurobiology provides comprehensive knowledge about a broad range of neuroreceptors and manifold psychoactive substances that make ‘non-lethal’ chemical weapons attractive for the military once more. For instance, the US Marine Corps recently investigated the potential military usefulness of calmatives such as benzodiazepines and $\alpha 2$ -adrenoreceptor agonists. However, the identification of suitable substances is only one part of the renewed chemical weapons research in the USA. Recently published documents



show that the US military forces are also developing new delivery devices for chemicals with a range of more than 2.5 km—a distance that makes sense only for warfare scenarios as opposed to police operations, in which ranges from 10 to 50 m for tear gas grenades are common. The Chemical Weapons Convention prohibits any use of chemicals, including ‘non-lethal’ chemicals, in warfare situations. Even the use of tear gas is prohibited because of the enormous danger of escalation. In a specific combat situation, the attacked side will be unable to identify the nature of the chemical used and might feel tempted to retaliate in kind with potentially lethal chemicals.

Molecular biology and genetic engineering are still in their infancy, and more technical possibilities will arise in the years to come—for military abuse too ([Fraser & Dando, 2001](#)). More efficient classical biowarfare agents will probably have only a marginal role, even if the genetically engineered ‘superbug’ is still routinely featured in newspaper reports. More likely and more alarming are weapons for new types of conflicts and warfare scenarios, namely low-intensity warfare or secret operations, for economic warfare or for sabotage activities. To prevent the hostile exploitation of biology now and forever, a bundle of measures must be taken, from strengthening the Biological and Toxin Weapons Convention to building an awareness in the scientific community about the possibilities and dangers of abuse. Any kind of biotechnological or biomedical research, development or production must be performed in an internationally transparent and controlled manner. In cases in which military abuse seems to be imminent and likely, alternative ways to pursue the same research goal have to be developed. Furthermore, as we mentioned above with regard to the smallpox genome sequence, it might also be necessary to apply restrictions to certain research and/or publications.

References

1. Cello, J., Paul, A.V. & Wimmer, E. (2002) *Chemical synthesis of poliovirus cDNA: generation of infectious virus in the absence of natural template*. *Science*, 297, 1016–1018.
[Abstract/FREE Full Text](#)
2. Fraser, C.M. & Dando, M.R. (2001) *Genomics and future biological weapons: the need for preventive action by the biomedical community*. *Nature Genet.*, 29, 253–256.
[CrossRefMedlineWeb of Science](#)
3. Pomerantsev, A.P., Staritsin, N.A., Mockov, Y.V. & Marinin, L.I. (1997) *Expression of cereolysine ab genes in Bacillus anthracis vaccine strain ensures protection against experimental hemolytic anthrax infection*. *Vaccine*, 15, 1846–1850.
[CrossRefMedlineWeb of Science](#)
4. Rosengard, A.M., Liu, Y., Nie, Z. & Jimenez, R. (2002) *Variola virus immune evasion design: expression of a highly efficient inhibitor of human complement*. *Proc. Natl Acad. Sci. USA*, 99, 8808–8813.
[Abstract/FREE Full Text](#)
5. Saylor, G. (2000) *Field applications of genetically engineered microorganisms for bioremediation processes*. *Curr. Opin. Biotechnol.*, 11, 286–289.
[CrossRefMedline](#)
6. *Strategic Assessment Center of Science Applications International Corporation (1995) Biotechnology — Military Applications*. SAIC. Available under FOIA from the authors.
7. *US Army War College (1996) Summary Report on ‘Biotechnology Workshop 2020’, 29 and 30 May 1996*. SAIC, document number 96-6963. Available under FOIA from the authors.
8. van Aken, J.P. & Hammond, E. (2002) *Closing loopholes in the Biological Weapons Convention*. *Med. Confl. Surviv.*, 18, 194–198.
[Medline](#)



ISIS army of scientists set to wage chemical and biological war on West: Experts warn weapons of mass destruction 'have been carried undetected' into European Union

Source: <http://www.dailymail.co.uk/news/article-3347671/ISIS-army-scientists-set-wage-chemical-biological-war-West-Experts-warn-weapons-mass-destruction-carried-undetected-Europe-Union.html>

Dec 06 – ISIS has recruited experts with chemistry, physics and computer science degrees to wage war with weapons of mass destruction against the West, a shocking European Parliament report has claimed. The terror organization, according to the briefing document, 'may be planning to try to use internationally banned weapons of mass destruction in future attacks'.



The document, which was compiled in the aftermath of the deadly attacks on Paris claimed that ISIS has already smuggled WMD material into Europe.

Experts fear that ISIS will be able to exploit a failure of EU governments to share information on possible terrorists.

Already, British police forces have been conducting exercises on how to deal with various types of terrorist attack. But the EU report claims that government should 'consider publicly addressing the possibility of terrorist attack using chemical, biological, radiological or even nuclear

materials'.

The report, ISIL/Da'esh and 'non-conventional' weapons of terror warns: 'At present, European citizens are not seriously contemplating the possibility that extremist groups might use chemical, biological, radiological or nuclear (CBRN) materials during attacks in Europe. Under these circumstances, the impact of such an attack, should it occur, would be even more destabilizing.'

Rob Wainwright, head of Europol said after the attacks on Paris: 'We are dealing with a very serious, well-resourced, determined international terrorist organization that is now active on the streets of Europe.'

'This represents the most serious terrorist threat faced in Europe for 10 years.'

Mr Wainwright warned that ISIS had serious capabilities in terms of resources and manpower.'

Nomi Bar-Yaacov, Associate Fellow in Chatham House's International Security Department said: 'There is a very real risk of ISIS using unconventional weapons in Europe and beyond.'

Wolfgang Rudischhauser, Director of the Weapons of Mass Destruction Non-Proliferation Centre at NATO said: 'ISIS actually has already acquired the knowledge, and in some cases the human expertise, that would allow it to use CBRN materials as weapons of terror.'



The report claims 'ISIL/Da'esh has recruited and continues to recruit hundreds of foreign fighters, including some with degrees in physics, chemistry and computer science, who experts believe have the ability to manufacture lethal weapons from raw substances.'

EU governments have been warned to watch out for 'other radicalized individuals, who have access to, or work in, sensitive areas'.

Intelligence services have also been warned to screen returning Jihadi fighters for 'specialist CBRN knowledge'.

The shocking study claims that 150 cases of nuclear or radiological trafficking are reported annually.

Worse still: 'CBRN substances have been carried undetected into the European Union.

'Interpol's monthly CBRN intelligence reports show numerous examples of attempts to acquire, smuggle or use CBRN materials.'

India – 17 children eat castor oil seeds, fall ill in Ratlam

Source: <http://timesofindia.indiatimes.com/city/indore/17-children-eat-castor-oil-seeds-fall-ill-in-Ratlam/articleshow/50044688.cms>

Dec 04 – As many as 17 children of a family fell ill after consuming castor oil seeds, mistaking them for almonds, and were rushed to a hospital in Ratlam district of Madhya Pradesh on Friday.



The children, hailing from Gharad village on Indore road, were admitted to the government children's hospital in Ratlam, official sources said.

One the victims, Kapil told the police that his grandmother Kanchan Bai and aunt Anita offered castor oil seeds to them, mistaking them to be almonds, when he returned from school on Thursday evening. He shared it with his friends playing in the playground. The children started vomiting and felt drowsy late in the night.

Family took them to the block medical officer, who called for ambulance and referred them to Ratlam.

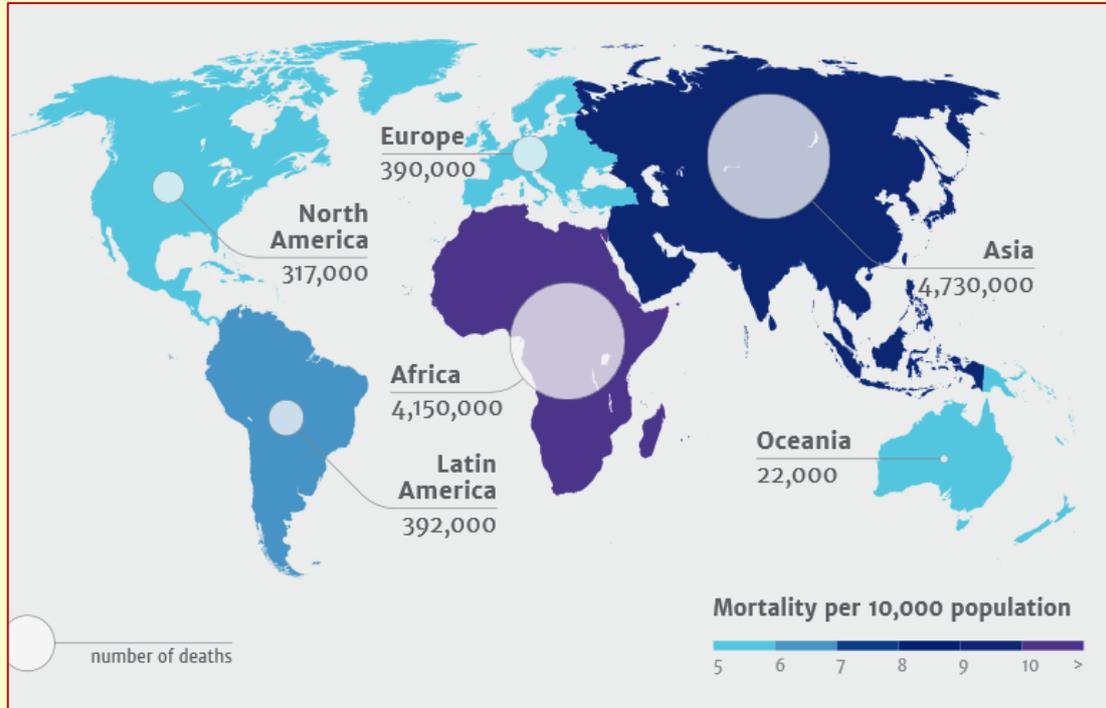
Civil surgeon Dr, Anand Chandekar said the entire village is being surveyed to check if any other child has eaten the seeds too. However, no such case other than these have been reported.

Admitted children are out of danger, he added.



Rise of drug-resistant infections to cost millions of lives, trillions of dollars

Source: <http://www.homelandsecuritynewswire.com/dr20151208-rise-of-drug-resistant-infections-to-cost-millions-of-lives-trillions-of-dollars>



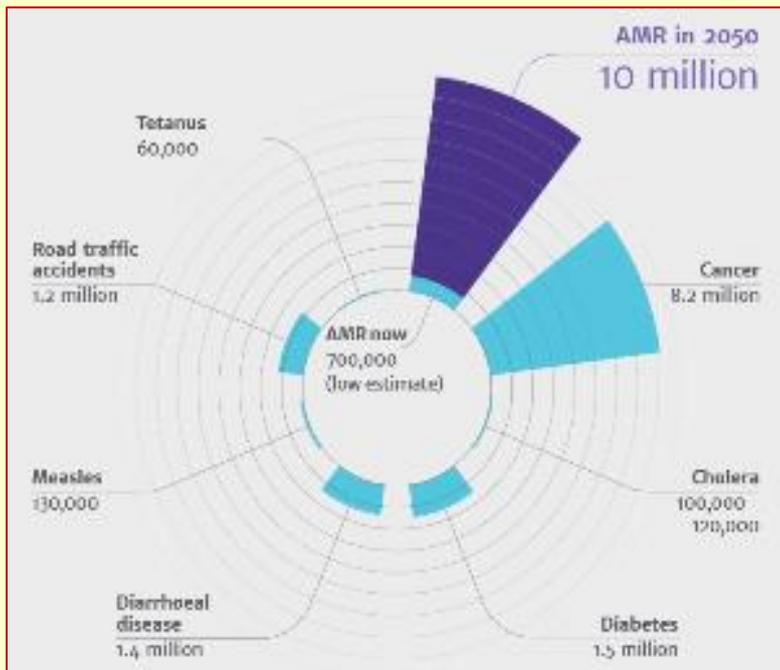
Dec 08 – Drug-resistant infections could kill an extra ten million people across the world

world around \$100 trillion in lost output: more than the size of the current world economy, and roughly equivalent to the world losing the output of the U.K. economy every year, for thirty-five years.

This enormous human and economic cost was set out in the first paper published by the Review on Antimicrobial Resistance in December 2014.

The Review notes that it was established to produce analysis of the global problems of antimicrobial resistance (AMR), and to propose concrete actions to tackle these internationally. The Review has so far published its recommendations on the initial steps that the world could be taking toward solving this global problem, and the Review's first proposals of how governments around the world should act collectively to stimulate the

development of new antibiotics.



every year by 2050 if these infections are not tackled. By this date they could also cost the



The Review says it is engaging widely and internationally as it refines these ideas and work toward publishing further papers during 2015 looking at wider aspects of the AMR problem — including the use of diagnostics, surveillance, infection control, alternative treatments, and the use of antibiotics in agriculture. This will form the basis of the Review's final report to the U.K. prime minister, with recommendations for global solutions, by the spring of 2016.

AMR is a complex global issue which cannot be solved by any one country acting in isolation. In this regard the Review believes that China has a great opportunity to bring the world together in the fight against AMR when it hosts the G20 in 2016.

— *Read more in [Antimicrobials in Agriculture and the Environment: Reducing Unnecessary Use and Waste \(Review on Antimicrobial Resistance, December 2015\)](#).*

Online 'recipes' for bird flu virus add to bioterrorism threat

By Raina MacIntyre

Source: <http://www.smh.com.au/comment/online-recipes-for-contagious-diseases-means-australias-bioterrorism-threat-is-real-20151208-gli97v>

Dec 09 – Despite continuing global efforts to contain avian influenza, or bird flu, the means of engineering this potentially deadly H5N1 virus to render it transmissible to humans is freely available on the internet. So too are similar instructions for engineering a virus like the "Spanish flu", which killed some 50 million people in the pandemic of 1918-19.

The digital floodgates opened in 2011 when a peak US regulatory watchdog came down in favor of scientists seeking to publishing their work engineering the H5N1 virus. The decision to uphold such "scientific freedom" was and remains, highly contentious among the global scientific community. Its implications, however, are readily available as online "recipes" for potentially dangerous viruses, which add a new risk to the already considerable challenges of maintaining global biosecurity in the 21st century. For all the recent advances in biomedical science, drugs, vaccines and technology, this is a challenge we remain ill-equipped to meet.

As long as micro-organisms can mutate and change, life on earth will always be vulnerable to epidemics. Whether they are deliberately, accidentally or naturally seeded,

The new report provides an overview of the use of antibiotics in animals and agriculture, and the role that manufacturing and use of antimicrobials play in bringing these into the wider environment. It calls for three interventions: First, a global target needs to be set to reduce use of antibiotics in food production and that we should reassess which antibiotics should be used in both animals and humans. Second, it recommends that there be minimum standards set to limit the release of active pharmaceutical ingredients during the manufacturing process. Finally, it proposes that there be improved surveillance to monitor the situation with respect to both these issues and to help to inform global standards and targets.

contagious diseases can race around the world in a matter of days or weeks causing immense personal, social and economic harm. H5N1 bird flu first "jumped" from poultry to humans in Hong Kong in 1997 and outbreaks since in Asia, Europe, Africa, North America and most recently in Egypt, have resulted in millions of poultry infections, over 800 human cases and many deaths.

The catastrophic West Africa Ebola outbreak last year merely reinforces the need for well-coordinated global response systems. This most severe of all viral hemorrhagic fevers appeared in March 2014 for the first time in West Africa, but the alarm was not sounded by the World Health Organization until mid-August – despite a known 90 per cent fatality rate and severely weakened healthcare systems in the war-torn African regions first hit. As the authoritative British medical journal *The Lancet* recently concluded, Ebola



exposed our "dangerously fragile global system for outbreak response.

The shortcomings of global efforts to contain Ebola, at a cost of at least 11,000 lives, have been raked over by many investigating agencies since. Various compounding factors have been blamed, not least of which was poor co-ordination and collaboration and, at times, even conflict among the many agencies and stakeholders deployed to help. This doesn't just mean frontline health workers. It can also take armies, lawyers, police, managers, transport and logistics experts, to name just a few, to contain an epidemic. In effect, our global system failed to alert us to act urgently, and did not effectively enable us to work together when we did respond.

We must be better prepared for the next crisis. Unstoppable globalized trade, a "just in time" economy, mass people movements and rapid urbanization – plus the effectiveness of aircraft as vectors for disease – mean we are all interconnected. With global warming, the range of natural disease vectors like mosquitoes is expanding. More frequent extreme weather events will inevitably leave affected communities vulnerable to outbreaks of disease

on the back of natural disasters. We must also now factor in the darker threat of bioterrorism.

In Australia, we have just taken the first step towards building a new collaborative global approach. A new UNSW-led National Health and Medical Research Centre of Research Excellence for Integrated Systems for Epidemic Response (ISER) is the first center of its type in the world, and our mission is just as unique. We will bring together Australian and international leaders in field epidemiology and epidemic response, military experts, international law and risk science experts and government and non-government agencies to ensure the many vital aspects of epidemic control are both effectively coordinated – and supported by the best research – long before they come together in the field.

With Australia's terrorism threat level currently at "probable" and easy access to online "recipes" for contagious diseases, bioterrorism is a real threat. Every step we take now to work together more effectively across disciplines and across borders helps build our common defenses against the many risks posed by contagious diseases.

Raina MacIntyre is Professor of Infectious Disease Epidemiology at UNSW and the director of the National Health and Medical Research Centre of Research Excellence for Integrated Systems for Epidemic Response.



Non-absorbable, expandable, hemostatic sponge for temporary internal use

Source: <http://www.revmedx.com/#!xstat-dressing/c2500>

XStat® is a first-in-kind hemostatic device for the treatment of gunshot and shrapnel wounds. XStat works by injecting a group of small, rapidly-expanding sponges into a wound cavity using a syringe-like applicator. Each sponge contains an x-ray detectable marker. In the

wound, the XSTAT sponges expand and swell to fill the wound cavity within 20 seconds of contact with blood. This creates a temporary barrier to blood flow and provides hemostatic pressure.

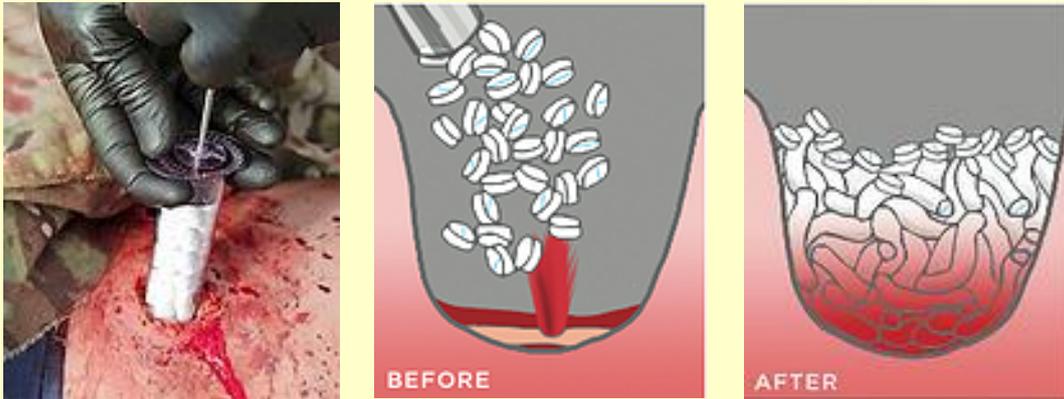
"When a product is developed for use in the battlefield, it is generally intended to work in a worst-case scenario where advanced care might not be immediately available," said William

Maisel, M.D., M.P.H., acting director of the Office of Device Evaluation in the FDA's Center for Devices and Radiological Health. "It is exciting to see this technology transition to help civilian first responders control some severe, life-threatening bleeding while on the trauma scene."

XSTAT



Indications for Use:



NSN 6510-01-632-9440

- XSTAT 30 is a hemostatic device for the control of severe, life-threatening bleeding from junctional wounds in the groin or axilla not amenable to tourniquet application in adults and adolescents.
- XSTAT 30 is a temporary device for use up to four (4) hours until surgical care is acquired. It should only be used for patients at high risk for immediate life-threatening bleeding from, hemodynamically significant (Advanced Trauma Life Support class 3 or 4 hemorrhagic shock), non-compressible junctional wounds, and when definitive care at an emergency care facility cannot be achieved within minutes



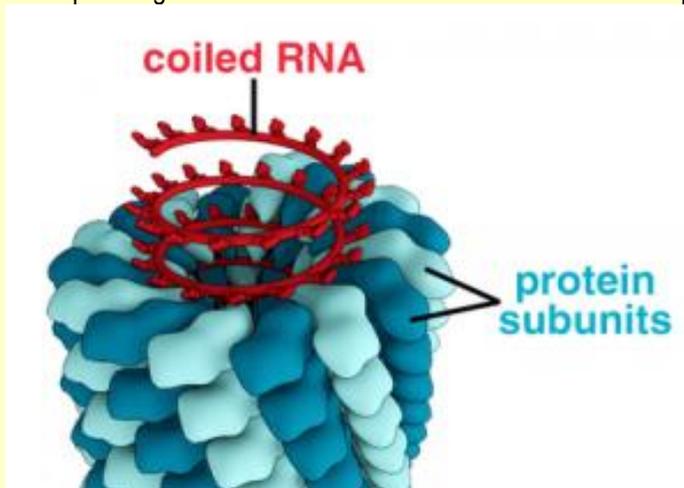
- XSTAT 30 is NOT indicated for use in: the thorax; the pleural cavity; the mediastinum; the abdomen; the retroperitoneal space; the sacral space above the inguinal ligament; or tissues above the clavicle.



Plant virus to make Ebola detection more accurate

Source: <http://www.homelandsecuritynewswire.com/dr20151211-plant-virus-to-make-ebola-detection-more-accurate>

Dec 11 – According to the World Health Organization (WHO), the Ebola outbreak that started in West Africa in 2014 has sickened nearly 30,000 people, killing about one third of them. Detection of the Ebola virus is currently the only way to keep the disease from spreading.



Structure of Tobacco Mosaic Virus // Source: dhs.gov

In the past, Ebola diagnostic tests, or assays, have been considered reliable only up to a point. The Ebola virus does not use DNA to store its genetic code. It uses a chemical cousin, called RNA, and extracted RNA degrades easily; one little mistake at the start of a test can ruin the whole thing.

With support from a National Science Foundation (NSF) Rapid Response Research grant, biomedical engineer Nicole Steinmetz has teamed up with breast cancer researcher

Ruth Keri to pioneer a novel process that could ultimately make detection of Ebola much more accurate.

The NSF says that while neither of the Case Western Reserve University researchers has worked with Ebola before, both are experts at developing diagnostic tests for diseases. In this case, they are using the tobacco mosaic virus (TMV) to make what is called a “positive control” for Ebola tests. The goal is to reduce the number of “false negative” results. The researchers are also working to make a simple diagnostic test for use in the field.

“Nanomanufacturing research generates a range of ‘platform’ nanoscale manufacturing technologies, and in this case, biological species such as virus, DNA and proteins are used as platforms to fabricate novel nanoscale materials and structures, and to integrate them into nano-enabled devices and systems, such as Ebola diagnostics,” explains Khershed Cooper, program director for nanomanufacturing and scalable nanomanufacturing in the NSF Engineering Directorate’s Division of Civil, Mechanical and Manufacturing Innovation. “We call it bio-inspired nanomanufacturing. Professor Steinmetz’s research falls under this paradigm—her ‘bioengineered virus’ is an outcome of bio-inspired nanomanufacturing.” This project is part of a set of NSF research projects related to Ebola.

U.S. capability for treating Ebola outbreak sufficient but limited

Source: <http://www.homelandsecuritynewswire.com/dr20151211-u-s-capability-for-treating-ebola-outbreak-sufficient-but-limited>

Dec 11 – The United States has sufficient capacity for treating another outbreak of the Ebola virus, but financial, staffing and resource challenges remain a hurdle for many hospitals and health systems attempting to maintain dedicated treatment centers for highly infectious diseases, according to new study released the other day. The research was published online in *Infection Control & Hospital Epidemiology*, the journal of the Society for Healthcare Epidemiology of America (SHEA).



“In the past year, the United States saw an intense effort across the country to rapidly expand the capacity for high-level isolation patient care,” said John Lowe, a lead author of the study. “Our study shows an unprecedented increase in the number of high-level isolation beds across the country and found a variety of approaches to achieving this capability.”



SHEA says that following the 2014 U.S. outbreak, which killed one patient and sickened two healthcare workers, the Centers for Disease Control and Prevention (CDC) designated fifty-five sites to treat Ebola Virus Disease, including nine regional centers in major metropolitan areas, with total capacity of approximately 120 beds. Prior to this, the vast majority of hospitals were inadequately prepared to care for patients with suspected or confirmed Ebola. Under the direction of CDC, sites have expanded their capabilities, yet remain “limited” in overall capacity. The study recommends further investigation of whether the U.S. has dedicated sufficient resources, proper staffing and training to manage a potential outbreak.

Researchers from the University of Nebraska Medical Center, Harvard Medical School, Emory University, New York-Presbyterian Hospital, and Indiana University School of Public Health surveyed the capabilities and capacity of all the designated Ebola treatment centers and received responses from 47 or 85 percent. The researchers found that while the development of the centers heightened nationwide preparedness levels, challenges remained in

providing the necessary treatment, and often strained an institution’s capacity, especially in key areas such as waste disposal, staffing and pediatric care:

- **Waste disposal:** Responses highlight the extremely high cost of disposing of large quantities of highly infectious waste that is generated by even a single Ebola patient.

The costs associated with the installation of proper onsite waste disposal equipment, including incinerators, is approximately \$100,000 and only eleven institutions reported having this capability; the remaining centers must transport the waste for disposal offsite and would have to spend millions of dollars to do so, while also increasing the risk of exposure of the pathogen to staff during the packaging and transportation process.

- **Staffing:** Large numbers of staff are needed to care for an individual patient due to the intensity of treatment, the extended need for personal protective equipment, and the necessity to limit work shifts in the patient room to 2-4 hours to combat physical and mental fatigue. Because staff participation in Ebola treatment centers is voluntary, scheduling and back-fill issues become complicated, as does the question of how to sustain a fully-trained team when a treatment unit is unoccupied.

- **Patient populations:** To date, no pediatric patients with Ebola have been treated in the United States. Because of this, not much is known on the level of resources and staffing that would be needed. Additionally, survey responses show the majority of centers have much more capacity to handle adult patients and do not plan care for pediatric patients, highlighting the need to distinguish capacity for each population.

“We have strengthened our nation’s ability to properly contain a highly unlikely outbreak of Ebola. However, the ability to treat outbreaks of other infectious viruses which are airborne, such as Severe Acute Respiratory Syndrome (SARS) and Middle East Respiratory Syndrome (MERS) would be challenging,” said Lowe.



Nearly all of the centers surveyed have also volunteered to participate in a U.S. Highly Infectious Disease Network to continue to

advance this field through peer review and consensus efforts to further develop the national capacity for high-level isolation care.

Low-cost bioactive paper detects blood types in under a minute

Source: <http://www.gizmag.com/bioactive-paper-blood-type/40772/>



Determining a blood type to ensure compatibility ahead of a transfusion isn't straightforward at the best of times, but in regions of the world where proper medical equipment is unavailable it is nigh on impossible. A new, bioactive piece of paper (Group Legible Immunohematology Format (GLIF) card) promises to change that, however, with the ability to analyze just a few drops of blood and identify somebody's blood group in as little as one minute.

Hydrogel infused with snake venom stops bleeding within seconds

Source: <http://www.gizmag.com/hydrogel-snake-venom-bleeding/40057/>



infused with snake venom (South American pit viper) that is drawn to the wound and shuts down bleeding within 6 seconds.

Major, uncontrolled blood loss can have major ramifications everywhere from the battlefield to the operating theatre. While blood-clotting medications can be used to stem the flow, often their purpose is thwarted by conflicting anti-coagulating drugs that thin the blood instead. But now scientists from Rice University have developed a promising new hydrogel (SB50)



Cretan IAMA herbal supplement

Source: <http://www.chaniapost.eu/2015/11/17/cretan-iama-herbal-supplement-available-at-pharmacies/>

Dec 15 – The food supplement with immune strengthening properties, that was created by researchers at the University of Crete in Greece, consisting of three popular Cretan aromatic herbs, was released on



the market last week under the name of **CRETAN IAMA**.



The supplement in capsule form is produced in Greece by the Swiss Galenica and is available at pharmacies as a food supplement.

Professor of Medicine at the University of Crete Christos Lionis and his research team have developed an oil extract consisting of dittany or Erontas (*Origanum dictamnus*), thyme and sage, which are widely known for their beneficial impact on the human body. Their research,



which has been ongoing for around 15 years was originally mentioned in the Lancet medical journal in 1999.

In a recent article entitled “Reporting effectiveness of an extract of three traditional Cretan herbs on upper respiratory tract infection: results from a double-blind randomized controlled trial,” that was published in the *International Journal of Ethnopharmacology* this year, Professor Lionis and his team bolstered the effects of the aforementioned herbs and expanded their effectiveness in the prevention and treatment of respiratory infections, such as the common cold and the flu.

EDITOR’S COMMENT: Not because it is a Greek product, but I will try lama (=remedy) this winter and let you know how well it works!

Reporting effectiveness of an extract of three traditional Cretan herbs on upper respiratory tract infection: results from a double-blind randomized controlled trial.

J Ethnopharmacol. 2015 Apr 2;163:157-66. doi: 10.1016/j.jep.2015.01.030. Epub 2015 Jan 30.

By Duijker G¹, Bertsias A², Symvoulakis EK³, Moschandreas J⁴, Malliaraki N⁵, Derdas SP⁶, Tsikalas GK⁷, Katerinopoulos HE⁸, Pirintzos SA⁹, Sourvinos G¹⁰, Castanas E¹¹ and Lionis C¹²

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Source: <http://www.ncbi.nlm.nih.gov/pubmed/25645191>

Abstract

ETHNOPHARMACOLOGICAL RELEVANCE: Observations from the island of Crete, Greece suggest that infusions of traditional Cretan aromatic plants, well known for their ethnopharmacological use in Eastern Mediterranean region and Near East, could be effective in the prevention and treatment of upper respiratory tract infections, including viral-induced infections. The aim of this study was to report the effectiveness of an essential-oil extract of three Cretan aromatic plants in the treatment of cases with an upper respiratory tract infection.

MATERIALS AND METHODS: A double blind randomized controlled trial was implemented between October 2013 and February 2014. An essential-oil extract of Cretan aromatic plants in olive oil (total volume of 15ml of essential oil per litre of olive oil) was administered as 0.5ml soft gel capsules, twice a day, for 7 days. Placebo treatment was 0.5ml olive oil in soft gel capsules. Eligible patients were those presenting for clinical examination in the selected setting with signs and symptoms of upper respiratory tract infection that had begun within the previous 24 hours. Real-Time Polymerase Chain Reaction (PCR) was used for the detection of respiratory viruses. The primary outcome was the severity and duration of symptoms of upper respiratory tract infection, assessed using the Wisconsin Upper Respiratory System Survey (WURSS-21) questionnaire. A secondary outcome of interest was the change in C-reactive protein (CRP) status.

RESULTS: One hundred and five patients completed the study: 51 in the placebo group, and 54 in the intervention (treated) group. Baseline characteristics were similar in the two



groups. No statistically significant differences were found in symptom duration or severity between the two groups, although small and clinically favorable effects were observed. When the analysis was restricted to subjects with a laboratory-documented viral infection, the percentage of patients with cessation of symptoms after 6 days of treatment was 91% in the intervention group and 70% in the control group ($p=0.089$). At baseline, one third of the patients in each group had elevated CRP levels. At follow-up, the respective proportions were 0% in the intervention group and 15% in the placebo group ($p=0.121$). The data were also in a favorable direction when 50% and 80% symptom reduction points were considered for specific virus types.

CONCLUSIONS: Compared with placebo the essential-oil extract of three Cretan aromatic plants provided no detectable statistically significant benefit or harm in the patients with upper respiratory illness, although descriptive differences were identified in favorable direction mainly in the virus-positive population.

The Growing Threat of Bioterrorism Borne from the Surge of Global Terror

By Adam J. Bernier

Source: <http://www.cbrneportal.com/the-growing-threat-of-bioterrorism-borne-from-the-surge-of-global-terror/>

Dec 14 – 2015 has seen a resurgence in marauding terrorist firearms attacks (MFTA) demonstrating the willingness of terrorist organizations to commit heinous atrocities against innocent civilians. The threat of continued terrorist attacks is exacerbated by the sheer volume of followers who subscribe to this monstrous behavior and the breadth of expertise and skill they contribute beyond force multiplication. Intelligence agencies and governments worldwide are struggling to counteract the surge of MFTAs, while balancing the need to prioritize the potential types of low probability, but high consequence attacks with weapons of mass destruction (WMDs). MFTAs are one iteration of terrorism; employing WMDs, especially biological weapons, are another iteration of terrorism that continues to represent a clear and present danger to society.



There is plenty of consensus that the use of biological weapons by non-state actors remains a tangible reality. The recent report of the Blue Ribbon Study Panel on Biodefense, *A National Blueprint for Biodefense: Leadership and Major Reforms Needed to Optimize Efforts*, described the possible use of biological weapons as “real and growing”. The report further states that “[biological] weapons that once consumed a great deal of time and resources to make now take far less,

and it is reasonable to believe that what the United States could accomplish more than 40 years ago, [individuals] can accomplish now”. [1] NATO and Interpol leaders concur on the presence of this serious threat in statements and testimony following the November 13th Paris attacks. [2] Previously, the authors came to a similar conclusion in a three part series that took a cursory look at the potential for the abuse of advances in biotechnology and synthetic biology applications. [3] The premise, which the authors still firmly believe today, is that rapid advances in technology have made the development of biological weapons more accessible, cheaper, and quicker to create (e.g., basic gene editing kits are sold for less than US\$200 and advertised as streamlined for users who even have “zero experience with biotechnology”). [4]

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► Read the rest of this article at source's URL.



Adam J. Bernier is the president of Apex Strategies LLC, a Washington DC consulting firm. He holds a Master's degree in counter-terrorism and homeland security and is a subject matter expert on national security issues related to terrorism and WMDs. He supports efforts to counter extremism and WMD threats as well as strengthening response capabilities for responding to catastrophic incidents.

This article was co-authored with Patrick P. Rose director for pandemic and catastrophic preparedness at the National Association of County and City Health Officials. Rose holds a Ph.D. in infectious diseases and is a subject matter expert on national security issues related to public health security.



FDA clears military traumatic wound dressing for use in civilian population

Source: <http://www.homelandsecuritynewswire.com/dr20151216-fda-clears-military-traumatic-wound-dressing-for-use-in-civilian-population>

Dec 16 – Last week the U.S. Food and Drug Administration cleared the use of the XSTAT 30 wound dressing, an expandable, multi-sponge dressing used to control severe, life-threatening bleeding from wounds in areas that a tourniquet

“When a product is developed for use in the battlefield, it is generally intended to work in a worst-case scenario where advanced care might not be immediately available,” said William Maisel, acting director of the Office of

Device Evaluation in the FDA's Center for Devices and Radiological Health. “It is exciting to see this technology transition to help civilian first responders control some severe, life-threatening bleeding while on the trauma scene.”

XSTAT 30 is cleared for use in patients at high risk for immediate, life-threatening, and severe hemorrhagic shock and non-compressible junctional wounds, when definitive care at an emergency care facility cannot be achieved within minutes. XSTAT 30 is not indicated for use in certain parts of the chest, abdomen, pelvis, or tissue above the collarbone.

The dressing can be used for up to four hours, which could allow time for the patient to receive surgical care. The device is available in packages of one or three syringe-style applicators containing 92 compressed, cellulose sponges that have an absorbent coating. The sponges expand and swell to fill the wound cavity, creating a temporary physical barrier to blood flow. The number of sponges needed for effective hemorrhage control will vary, depending on the size and depth of the wound. Each applicator can absorb about a pint

cannot be placed (such as the groin or armpit) in battlefield and civilian trauma settings. The clearance expands the device's indication from use by the military only to use in adults and adolescents in the general population.

The FDA says that early control of severe bleeding may prevent shock and may be life-saving. According to the United States Army Institute of Surgical Research, **30 to 40 percent of civilian deaths by traumatic injury are the result of hemorrhaging. Of those deaths, 33 to 56 percent occur before the patient reaches a hospital.**



of blood, and up to three applicators may be used on a patient.

The FDA notes that it cleared XSTAT 30 through the 510(k) review process after the manufacturer demonstrated the product was

substantially equivalent to the XSTAT, which was granted marketing authorization for battlefield use in April 2014.

XSTAT 30 is manufactured by [RevMedX, Inc.](#), in Wilsonville, Oregon.

Senior Russian security officials exhibit “gunslinger gait”: Experts

Source: <http://www.homelandsecuritynewswire.com/dr20151216-senior-russian-security-officials-exhibit-gunslinger-gait-experts>

Dec 16 – Experts have discovered a new gait pattern among several top Russian officials, including President Vladimir Putin and Prime Minister Dmitry Medvedev. The researchers term this “gunslinger’s gait” because it may be triggered by KGB or other forms of weaponry training.

The gait features a consistently reduced right-sided arm swing, highlighted in video material that accompanies the paper (see links below).

Writing in the Christmas issue of *The BMJ*, the researchers say this distinct walk could



be mistaken for early Parkinson’s disease and they advise doctors to keep this in mind when assessing patients.

BMJ reports that movement disorders enthusiasts Professor Bas Bloem and colleagues often scrutinize the way people walk — and noticed several YouTube videos of Russia’s president Vladimir Putin, showing a clearly reduced right-sided arm swing on a series of different occasions.

Reduced arm swing can be a sign of early Parkinson’s disease, raising the question whether Putin — and the other Russian top

officials — might all be in an early phase of this disease too.

Searching for other possible explanations, the researchers encountered a training manual of the former Russian KGB, giving the following instruction on how operatives should move in the field: “When moving, it is absolutely



necessary to keep your weapon against the chest or in the right hand. Moving forward should be done with one side, usually the left, turned somewhat in the direction of movement.”

The researchers wondered whether this could explain Putin’s



gait, since he had received KGB training earlier in life.

If this were true, then it would be reasonable to expect a similar gait “abnormality” in other Russian officials who might have received similar instructions during weaponry training by the KGB or by other military or intelligence agencies.



The researchers searched YouTube for videos of other Russian officials, with surprising results. An asymmetrically reduced arm swing was identified in several highly ranked Russian officials, including not only Putin, but also Prime Minister Dmitry Medvedev, two former ministers

of defense (Anatoly Serdyukov, and Sergei Ivanov), and Anatoly Sidorov, a senior military commander.

Rather than interpreting this gait pattern as being pathological, “we feel that there is another - and perhaps more plausible — explanation, namely a behavioral adaptation resulting from military or intelligence training,” write the authors.

BMJ notes that they found other examples of a reduced arm swing related to weaponry training. For example, **cowboys of the Wild West, depicted in movies, also frequently have a reduced arm swing.**

“We propose that this new gait pattern, which we term ‘gunslinger’s gait,’ may result from a behavioral adaptation, possibly **triggered by KGB or other forms of weaponry training where trainees are taught to keep their right hand close to the chest while walking, allowing them to quickly draw a gun when faced with a foe,**” they explain.

“This should be included in the differential diagnosis of a unilaterally reduced arm swing,” they conclude.

— Videos: [President Vladimir Putin](#); [Prime Minister Dmitry Medvedev](#); [Anatoly Serdyukov](#) (minister of defense 2007-12); [Sergei Ivanov](#) (minister of defense 2001-07, present chief of the presidential administration of Russia); [Anatoly Sidorov](#) (current commander of the Western Military District)

— Read more in Rui Araújo et al., “Gunslinger’s gait”: a new cause of unilaterally reduced arm swing,” [British Medical Journal](#) (BMJ) (14 December 2015): 351.

Bioterrorism in a Technologically Advanced World

By Christina M. Flowers

Source:http://www.domesticpreparedness.com/Industry/Private_Sector/Bioterrorism_in_a_Technologically_Advanced_World/

Recent advances in genetics, genomics, and biotechnology could have devastating implications for bioweapons and genetically engineered diseases. As such, these developments raise the question of whether it makes sense to pull attention away from “classic” biothreat targets, in favor of more technologically advanced options. Immediacy and ease of use may be determining factors.

Dec 16 – Terrorism over the past few decades has accelerated into a major strategy of contemporary conflict, and those who utilize its tactics will continue to exploit developments in emerging technologies. It is imperative then to advance preparedness practices as well as to meet this increased sophistication. However, with constrained budgets, limited time, and so many other threats to plan for, it can be difficult to determine where to best localize efforts. Bioterrorism especially raises concerns because biological pathogens can be difficult to understand even in their most basic, natural state. Still, it can be argued that advances in genetics, genomics, and biotechnology could have disturbingly equal impacts on things like prion-based bioweapons,

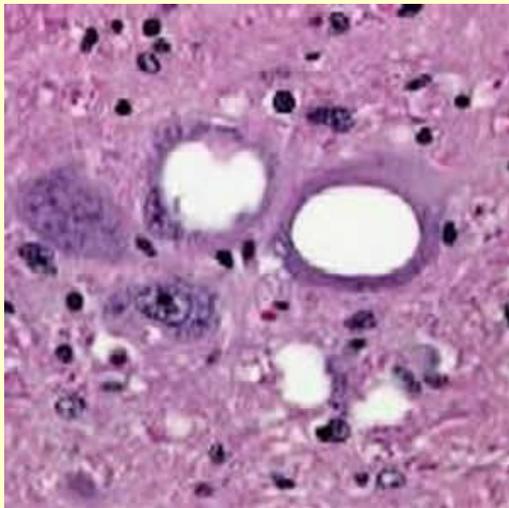


agroterrorism, and genetically engineered diseases, just to name a few. This raises the question, “Does it make sense to pull attention away from ‘classic’ bioterror targets in favor of the more technologically advanced options?”

Prion-Based Bioweapons

Transmissible spongiform encephalopathies (TSEs) are diseases caused by prions, which are misfolded proteins devoid of nucleic acids (DNA or RNA), yet still highly infectious. Prions are known to cause fatal neurodegenerative disease and are highly resistant to heat, harsh chemical treatments, and irradiation. [Recombinant prions](#) can be bound to other substances in order to be spread through the air, or persist for years in the soil.

[Symptoms of infection](#) are a byproduct of brain degeneration, where “spongy” holes in brain



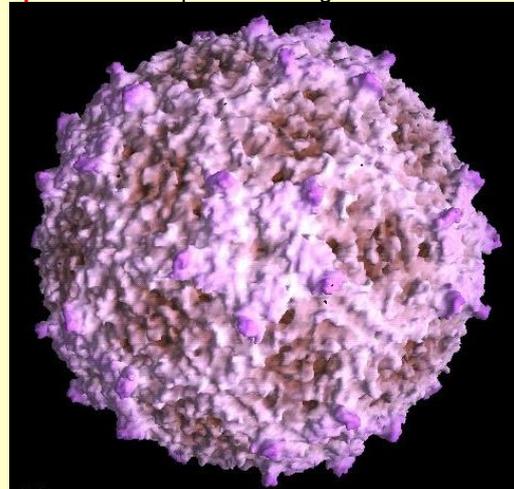
matter cause sudden personality changes, impaired thinking, difficulty in performing normal functions such as speaking or swallowing, and sudden movements such as twitching or tremors. There are no treatments to halt the progression of TSEs, only to alleviate symptoms as the disease progresses. Fatality rates are described as 100 percent. The most notable TSEs in humans are Creutzfeldt-Jakob disease, kuru, and fatal familial insomnia.

With such a destructive resume, prions appear initially to be a relatively ideal terrorist weapon, except that their incubation periods prior to manifestation of clinical symptoms can take up to 40 years or more. With such an extended latency, the risks associated with handling the infectious particles relative to the immediate effects associated with their dissemination do not add up. In addition, because terrorists

traditionally prefer to announce their involvement within a timely manner after an attack, it would be theoretically just as psychologically impactful to institute a hoax event, or to defer to something immediate or broadly recognized by the general population.

Agroterrorism

Diseases in agriculture have far-reaching economic impacts on any country affected. For example, the 2001 British outbreaks of hoof-and-mouth disease (HFM) – a highly infectious [aphthovirus](#) spread through cloven-hoofed



animals – resulted in the slaughter of over 6 million livestock and the loss of an estimated \$5.4 billion in tourism revenue. In the United States, farmers are currently battling highly pathogenic avian influenza (HPAI) H5 infections in poultry – shedding light on the biosecurity issues surrounding mass poultry production facilities, which could serve as entry points and transmission routes for previously unknown diseases.

As devastating as these losses are, it is not highly likely that responses to such incidents would change if terrorists as opposed to natural causes perpetrated these events. The HFM outbreak in Britain had a net economic effect of less than [0.2 percent](#) of the country's gross domestic product, and the HPAI outbreak in the Midwestern United States has gone relatively underreported, except in relation to the increased price of eggs and



Thanksgiving turkeys. This is not to say that the effects are not damaging, or that the media would not have a field day with alternate reporting strategies, or that formal retaliation of some kind (as a direct result of the terrorist action) would not be pursued. It is just not “ideal” in the scope of a terrorist weapon deployed in search of policy change, or to illicit massive amounts of fear.

There would be a higher likelihood of destruction and coercion possible in certain foreign nations where specific cash crops contribute heavily to the overall gross domestic product (GDP). In these scenarios, it would be feasible that an invasive species bioweapon could cause significant loss, and thereby make more sense as a potential weapon. The problem (for terrorists) then is that no nation that relies on the same product would likely release such a weapon unless they had the safeguards themselves to counteract it. In traditional bioterrorism, this is typically seen as vaccines, antivirals, or antibiotics. In the scope of agroterrorism, it would have to take on the form of resistance mechanisms – innate or applied to the plants or livestock affected – or through some other medicinal cure. The amount of time, money, and effort required for such safeguards leaves the use of such tactics questionable.

Genetically Engineered Diseases

Of course, the above scenarios assume that an unscrupulous geneticist has not already dedicated his or her life’s work to addressing these caveats. Therein lies the real concern, which is probably the hardest one to plan around in regards to preparedness efforts: genetically engineered diseases.

There are multiple ways biothreat pathogens could be potentially manipulated using modern technology. These range from inserting a small piece of plasmid DNA into bacteria with the intention of changing the bacteria’s virulence or pathogenic properties, to replacing a single gene (otherwise known as gene therapy) with the intention of possibly eluding existing vaccines. There is even the theoretical possibility of cutting and pasting gene sequences together to create brand new [synthetic organisms](#).

However, swapping genes is also not as easy as it sounds. Molecular pathways influence

many different components of the bacteria or viruses’ life cycles, and in many unpredictable ways. What might make the virus more virulent might also hinder its ability to evade the immune system. What might make the bacteria more environmentally hearty might also prevent them from replicating so quickly. The possibilities are endless, and not likely to yield mutations that “Mother Nature” herself has not already taken into consideration. For example, RNA viruses – such as Ebola – circumvent deleterious mutations by replicating with mutations in such high numbers that problematic mutations are able to “revert” to their original states. Influenza virus is also highly genetically variant (hence why flu shots are needed every year, as opposed to only once or twice as a child), and has found many opportunities to jump from one type of organism to another – such as from a bird or pig to a human.

The Next Step

Still, these topics vastly underrepresent the broad scope of what communities could potentially face in the future. It is difficult to determine what needs to be done next and, frankly, it depends on one’s job profile. At the highest levels of the military and government, scientists will continue to conduct investigative research. It is imperative for the brightest minds to use their knowledge for good and to preserve humanity. In the private sector, security-based companies will continue to innovate, provide recommendations, and work with the highest echelons of preparedness leadership across the country and the world. All efforts must stay “one step ahead” of whatever warfighters, responders, and citizens are faced with in the future.

At the routine surveillance and response levels, though, little can be accomplished by worrying about the specifics of such threats until they have been deemed credible by higher authorities. After all, many agencies and organizations have difficulty executing effective detection and response mechanisms for the existing “traditional” bioterrorism threats – for example, Ebola, anthrax, botulism, ricin, smallpox, plague, tularemia, Q-fever, and Marburg. These threats are the ones that are current, viable, and persistent. As



such, continued training and exercises in handling biohazardous substances and other infectious agents – such as sample collection methods, specimen handling, isolation and quarantine procedures, field-forward detection

and identification of biothreat agents, and interagency coordination plans for large-scale biohazard attacks – will be the most essential tactics for combating all future incidents as they occur.

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Tula hantavirus infection in a hospitalized patient, France, June 2015

By JM Reynes, D Carli, N Boukezia, M Debruyne and S Herti

Eurosurveillance, Volume 20, Issue 50, 17 December 2015

Source: <http://www.eurosurveillance.org/ViewArticle.aspx?ArticleId=21338>

We report an infection with Tula virus in June 2015, leading to hospitalisation, in a patient living approximately 60 km east of Paris with no previous remarkable medical history. Clinical symptoms were limited to a fever syndrome with severe headache. The main laboratory findings included thrombocytopenia and elevated transaminase levels. Based on S (small) gene sequence analysis, the strain affecting the patient was closely related to strains detected in Central Europe, especially to a south-east German strain.

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