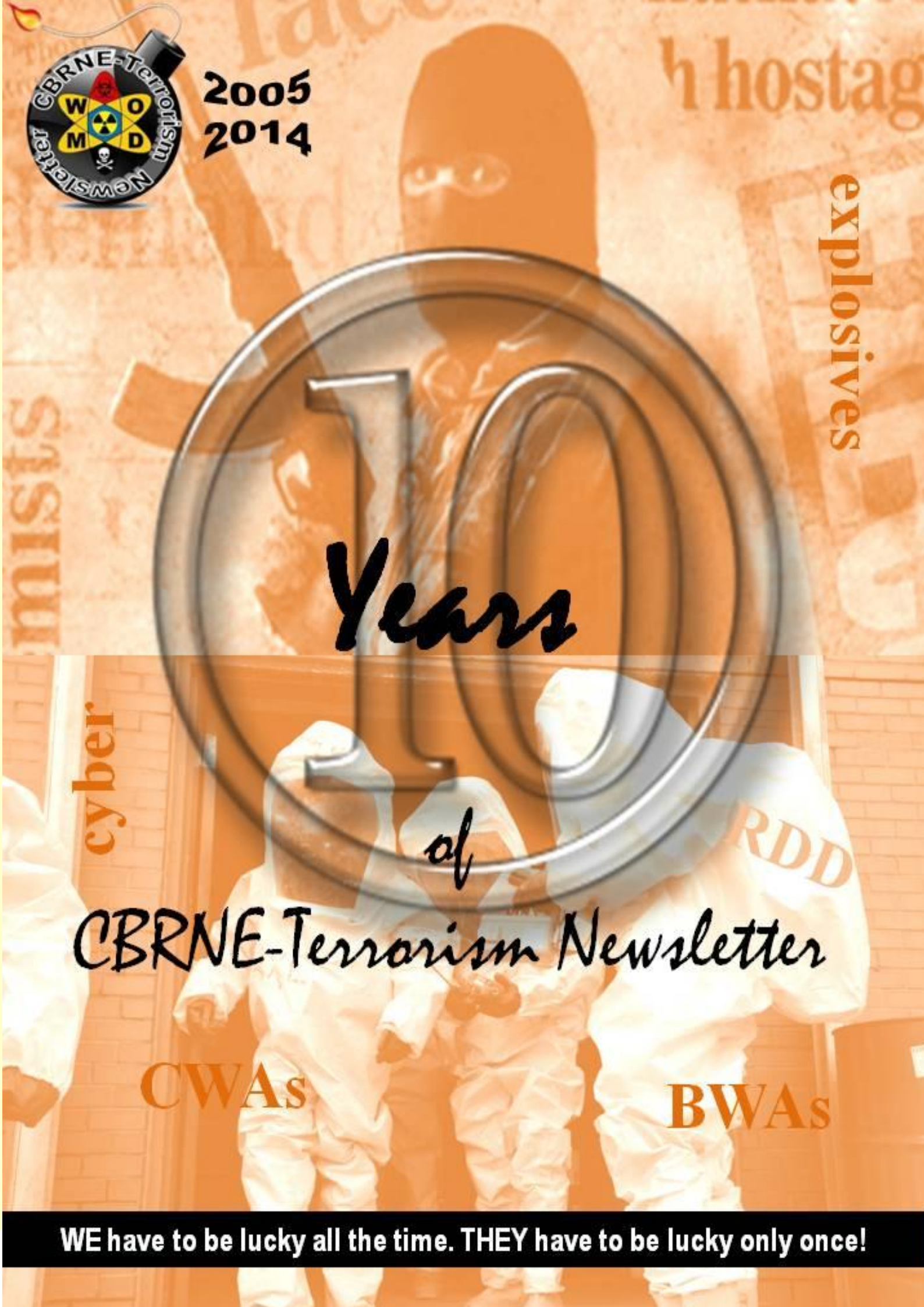
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2. Distributed to more than 700 institutions, organizations, state agencies, think tanks, defense companies, institutions and universities.

Editorial

Brig Gen (ret'd) Ioannis Galatas, MD, MA, MC
Editor-in-Chief
CBRNE-Terrorism Newsletter

Dear Colleagues,

Planet Earth is still a mess! Below is a (not complete) list of what happened in our world during April 2015:

Greek crisis: *"The concious and intelligent manipulation of the organized habits and opinions of the masses is an imortant element in democratic society. Those who manipulate this unseen mechanism of society constitute an invisible government which is the true rulling power of our country"* – Edward Bernays – Propaganda (1928). *"The media's the most powerful entity on Earth. They have the power ro make the innocent guilty and to make the guilty innocent, and that's power. Because they control the minds of the masses."* – Malcolm X. Recent exampes: articles posted by German "Bild" and "FAZ". On the other hand Spiegel Online declares that Germany is in dept of 278,7 billion euros to Greece as war reparations! Visit Greece for just a few days and experiment if you can bear the "media terrorism" we are experiencing on daily basis… On top of this, it seems that both US and EU are frustrated with the recent Greek-Russian approach and try their best to intimidate (covertly or overtly) the political orientation of a free republic to do what they are doing for their people – look for its own interests and not that of others. A good example is the announcement of "Intenational Light – 2015/1" S&R exrecise with participation of US, Turkey, Spain, **"Occupied Cyprus",** Hungary, Romania and Ajerbaijan. See what I mean?

Turkey: On April 12th (Orthodox Easter) Pope Francis marked the 100th anniversary of the slaughter of Armenians by calling the massacre by Ottoman Turks "the first genocide of the 20th century" and urging the international community to recognize it as such. Turkey immediately responded by recalling its ambassador and accusing Francis of spreading hatred and "unfounded claims." At the same time it was revealed thatTurkey allowed more than 100,000 fighters to pass through towards Syria (half of them were Chinese Turk Uighurs).

Italy/Greece: Since January 2015, 500,000 illegal immigrants fron North Africa arrived in Lampedusa Island; 170,000 in 2014. In Greece, since July 2012 when the border fence was put in place in the Greek-Turkish land brders, 100,000 illegal immigrants entered the country. After the fence, immigrant flow also zeroed. During the second semester of 2012, 6,000 immigrnats entered Greece through its sea borders with Turkey. In 2013 their number rose to 10,000 and in 2014 to 28,000. During the first 3 months of 2015, 11,000 followed the paths of illegal immigration while 1,5 milion are in a stand-by status in the coastal areas of Turkey. It is estimated that despite the efforts of border defense units 10% of them will succeed; this equals to 150,000 illegal immigrants on top of existing aprooxiamtely 2 mil added in the last decade. In 2014 one trafficer per 69 immigrants was arrested; in 2015 the analogy is one per 304 immigrants.
Are there jihadists among them? What is the critical number that might provoke an EU reaction? The problem is two fold: one side is at the countries of origin and the other lays at the receiving countries. If we cannot or wish not to solve the problems sending countries are experiencing then let us all try to solve the second. The latter will require to move our defense structures at the line between North Africa's territorial waters and international waters. No ship of any kind should be allowed (by a European naval fleet) to pass this new red line. And if they keep on sunking ships to force Europeans to save the people at sea this would now be the responsibility of African national authorities. This might work for Africa but not with Aegean Sea problem. The latter needs different approach in which Turkey should play a crusial role instead of looking on

the other side or even fasciliating their passage to Greece and EU. Changing the "rules of engagement" might be necessary although not the ultimate solution due to close proximity of porous Greek sea borders to Turkey. On top of the above death penalties should be introduced for trafficers in an effort to be intimitated or having second thoughts if the tons of money gained (really: where do all these poor people find the thousands of euros needed for the trip to "freedom and prosperity"?) worth their own lives. Distribution of immigrants within EU member-states is the third pilar – but who would like an additional problem when there are 2-3 countries that are taking all the heat in exchange of some mil of euro to do "their" job. Based on the above, practically it would be cheaper to design solve the problems in Syria and Africa than paying for managing the consequences. But who really wants peace on Earth?

Islamic state: (1) Hammered, bulldozed and ultimately blew up parts of the ancient Iraqi Assyrian city of Nimrud, destroying a site dating to the 13th century B.C.; (2) Abducted 120 children (12-15 years old) from East Mosul's districts (hostages or new blood in the fronts?); (3) Destroyed the archaeological site of Iraq's ancient city of Hatra by smashing sledgehammers into its walls and shooting Kalashnikov assault rifles at priceless statues; (5) Tranfered 1,500 jihadists from Mosul to Anbar in undetected convoyes from diferent routes under the nose of the International Coallition bombing IS insurgents.

Pakistan: Top Lashkar-e-Tayyaba terrorist Zaki-ur-Rehman Lakhvi, the mastermind of the 26/11 Mumbai terror attacks, was released from Adiala Jail in Rawalpindi (April 10). According to the intelligence note, Pak agencies, including the Army and the ISI, expressed their “helplessness” since Lakhvi’s release had been ordered by the Lahore high court.

Saudi Arabia: Top Saudi cleric on Friday denied issuing a fatwa allowing husbands to cannibalize their wives in the event of extreme hunger. On April 09, Arabic media reported that Grand Mufti Sheikh Abdul Aziz Al-Sheikh issued a fatwa – a religious ruling on matters pertaining to the Islamic law – to the effect that a man is permitted to eat his wife if doing so will save him from starvation. Compliance with the unusual decree should represent a woman's ultimate act of obedience to her husband, the ruling apparently postulated.

Kenya: University of Nairobi students were terrified (April 12) when they heard explosions – caused by a faulty electrical cable – and believed it was a terror attack, the school said. Students on the Kikuyu campus stampeded down the halls of the Kimberly dormitory, and some jumped from its fifth floor, the university said. 108 were injured and were taken to hospitals. One person died, according to the school. The confusion and panic came less than two weeks after Al-Shabaab slaughtered 147 people at a college in Garissa, Kenya.

Brazil: A new poll (April 2-3) showed Brazil's President Dilma Rousseff again has lost ground among voters, suggesting her bid for re-election in October may be more of a challenge than once had been expected. The poll showed that 38% of respondents said they would vote for Ms. Rousseff, down from 44% in the last poll in February. Another point of concern for Ms. Rousseff is that 63% of those surveyed said the president is doing less than they expected, versus 34% a year ago. The Datafolha poll showed that Brazilians also want a change of direction. The survey also showed that 72% of those questioned want the next president to pursue a different course than the one set by Ms. Rousseff during her administration. Do not forget that Rio2016 is on its way…

The good thing in the above chaos is that we did not experience any CBRNE incidents apart from usage of chlorine roadside bombs for intimidation pursposes (IS/Iraq) and chlorine barrel bombs in Syria. Perhaps this can be called progress compared with non-gender toilets at the White House!
Keep on the good work First Responders – you are the only barrier between insanity and hope for a better future for our Planet!

The Editor-in-Chief

Men and snakes

First you spit the poison and then you say how sorry you are… No further comments on little men from an EU island that introduced "conquer and divide" to the world!

Germanwings Flight 4U 9525

Source: http://www.dailymail.co.uk/news/article-3010610/French-alps-crash-French-alps-Germanwings-plane-crash-Lufthansa-GWI9525-4U9525-Airbus-A320-Barcelonnette-Alpes-Hautes-Digne-Les-Bains.html

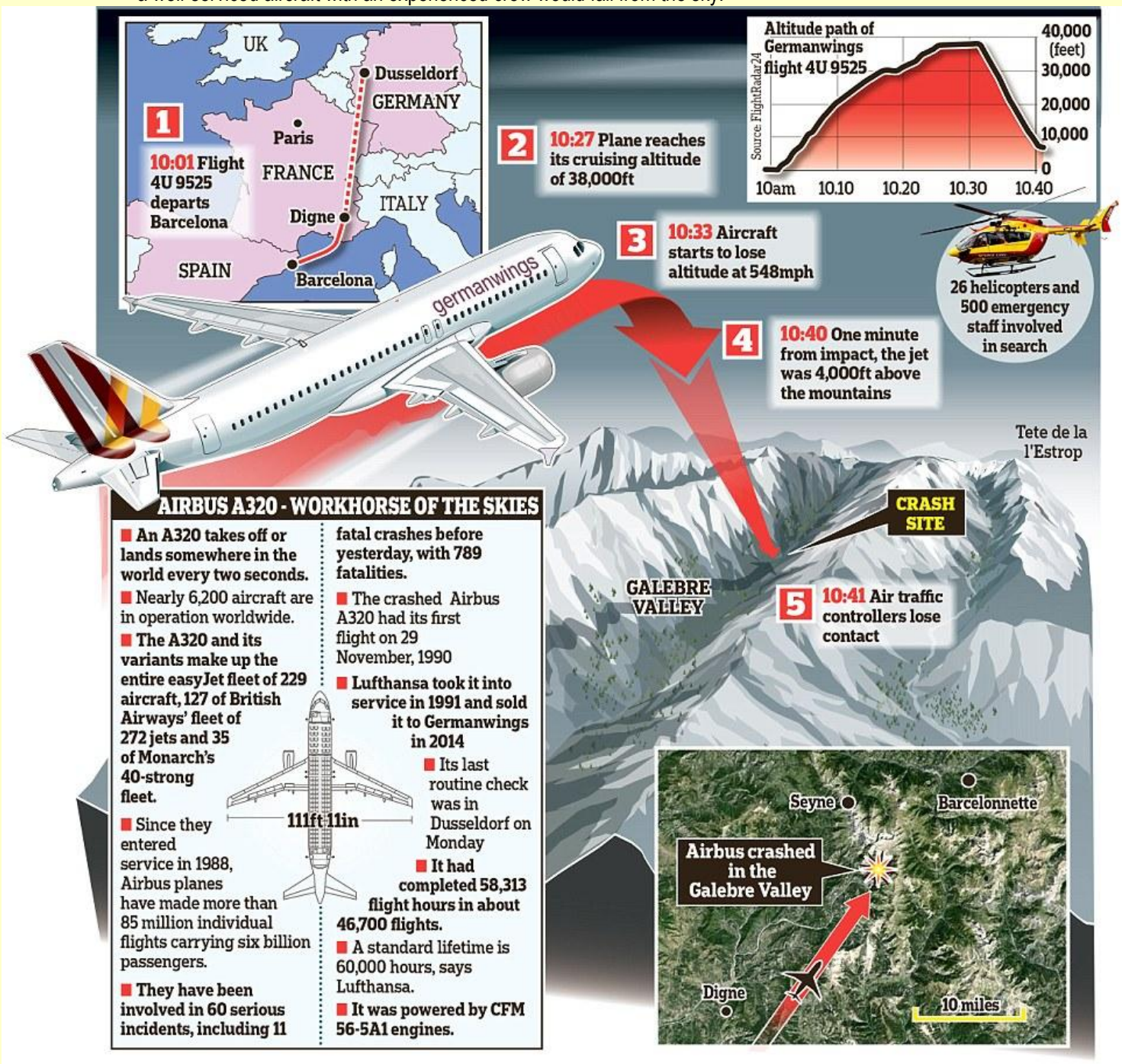
Investigators have obtained an audio recording that could unlock the mystery of the Germanwings flight that crashed in the Alps killing all 150 people board, it emerged today. Experts said they had extracted 'usable data' from the damaged black box cockpit voice recorder salvaged from the obliterated wreckage of the Airbus A320.

It is hoped the audio will help piece together the final moments of the flight which plummetted 32,000ft in eight minutes without any mayday from the pilots.

But one flight safety expert said the plane's data recorder will need to be accessed before experts are able to draw a full picture of the circumstances surrounding the crash.

One theory that emerged today suggested the plane may have crashed because the windscreen cracked, causing a sudden drop in oxygen levels that rendered the pilots unconscious.

Speaking at a press conference earlier today, Carsten Spohr, the head of Lufthansa which owns the budget Germanwings airline, said it remained 'inexplicable' that a well-serviced aircraft with an experienced crew would fall from the sky.



Lufthansa also confirmed that the 24-year-old Germanwings jet - which had clocked up more than 58,000 flying hours - had not yet received the 'life-extending' upgrade but that it would have done so at some point.

EDITOR'S COMMENT: The big question after the initial assessment of black box's recordings indicating that pilot was locked out from cabin is if it was an action of suicide (co-pilot) or terrorism. No matter what the final conclusion would be **one thing is for sure**: new regulatons will be applied regarding access to pilots' cabin – although after 9/11 locking cabin proved to be efficient in many instances, it seems that changes need to be done.

UPDATE1: There was a "deliberate attempt to destroy the aircraft," Marseille prosecutor Brice Robin says about the Germanwings crash. The most plausible explanation of the crash is that the co-pilot, "through deliberate abstention, refused to open the cabin door ... to the chief pilot, and used the button" to cause the plane to lose altitude, Robin said. He emphasized that his conclusions were preliminary.

How Mercenaries Are Changing Warfare

By Kathy Gilsinan

Source: http://www.defenseone.com/threats/2015/03/how-mercenaries-are-changing-warfare/108436/?oref=d-river

The use of mercenaries in warfare has a very long history—much longer, in fact, than the almost-exclusive deployment of national militaries to wage wars. Before the Peace of Westphalia in 1648 ended Europe's Thirty Years' War and marked the rise of the modern

state system, medieval powers from kings to popes routinely hired private fighters to do battle for them. As state governments sought a monopoly on the use of force within their territories in the 17th century, however, they moved to stamp out violence by non-state actors, including mercenaries, driving the industry underground.

Private militaries never really went away, but according to Sean McFate, a senior fellow at the Atlantic Council and associate professor at National Defense University, they have experienced a resurgence in the past 25 years. McFate himself was a contractor with DynCorp International, one of the private military companies whose rise is the subject of his recent book, *The Modern Mercenary.* Companies like DynCorp—and, more infamously, Blackwater—were major players in the U.S. military campaigns in Iraq and Afghanistan, providing logistics and other services, as well as armed guards and trainers for local armies. McFate draws a distinction between these types of support contractors, used for defense and training, and mercenaries, who stage offensive operations on behalf of a client. Nigeria has reportedly deployed mercenaries from South Africa and elsewhere in the fight against the militant Islamist group Boko Haram. In practice, however, that difference is not clear-cut. "If you can do one, you can do the other," McFate told me in a recent interview.

America's reliance on private military companies in Iraq and Afghanistan over the past decade hasn't just expanded the industry; it's also started to change the conduct of international relations. In theory, armed forces for hire give private actors the option to wage wars where governments can't, or won't. In 2008, for example, actress and activist Mia Farrow explored hiring Blackwater to intervene in Darfur, telling ABC News at the time, "Blackwater has a much better idea of what an effective peace-keeping mission would look like than Western governments." Private military companies also allow governments to disclaim involvement in politically controversial activities. "Putin is using Chechen mercenaries in Ukraine, allegedly," McFate said. "Who's going to tell him you can't do that after 10 years of war in Iraq and Afghanistan?"

What follows is an edited and condensed transcript of an interview I conducted with McFate who, as an employee of the Defense Department, wanted me to note that these are his views, not those of the U.S. government.

Sean McFate: When we think of technology of war, we think of just national armies using it, but now there's this growing industry of private actors, and they also have access to this technology. They're already using drones, in an unarmed context, like reconnaissance. It would take very little to make a kamikaze drone. And that's just going to happen at some point, which means we're talking about private air forces to some extent.

Kathy Gilsinan: How are private armies using drones?

McFate: Private navies [which some shippers employ to protect seaborne cargo from piracy] would use drones to find out where the pirates are coming from. It's hard to track the data of who's buying this globally. In 2007, 2008, some companies and even NGOs were looking at using unarmed drones to go to Darfur and to try to document massacres during the genocide there.

Gilsinan: In the book you raise the point [that private armies lower] the cost of war—and drones do a similar thing when they're employed by national armies—but that lowering the cost of war could make it more likely.

McFate: The private military industry allows you to fight wars without having your own blood on the gambling table. And drones just do that as well. If you think about this as an arms-control issue, both [drones and private military companies] should be part of the same category, because they allow national governments to get involved in fighting without actually having citizens do it. And that creates moral hazard for policymakers, because it lowers the barriers of entry into conflict.

Look at what's going on in Nigeria right now. If those mercenaries hired by Nigeria that killed Boko Haram are actually succeeding—and it looks like they are, according to reports—and there's not a whole lot of backlash in the international community, I can imagine somebody saying, well let's do

this against al-Shabab [in Somalia]. And I could also imagine private military actors showing up and saying, you know, when you hired those mercenaries in Nigeria, they were really effective but they were really expensive. I can do the exact same thing they did at one-tenth the price by using this fleet of 200 drones that are armed. So I can see a situation of arms escalation, trying to get to price points that make sense for consumers, if you will. I hate to commodify conflict that way, but that's kind of what this industry's about.

[Private armies] also can maybe do things that the national army maybe can't do. So they offer plausible deniability to policymakers. They can go and commit human-rights violations, frankly. This is a common attraction about hiring private military companies or mercenaries—that they can get away with things that you can't get away with if you're a national government.

Gilsinan: Is there any reason to expect that mercenaries would be less susceptible to the corruption and poor training that is a problem in the Nigerian military? Is a private contractor less likely to be corrupt than a government?

McFate: It's like any other industry. It depends on who the company is. Why do we assume that national militaries, by the nature of the fact that they're national, are going to be better? We have a stigma against private force that it's always bloodthirsty and torturous, and that's just not true. Would you rather be a prisoner of war by Blackwater or by the Zimbabwean military? We can't cavil too much, because there are a lot of bad-acting militaries out there who are ineffective and they commit human-rights abuse.

I think it's possible that private military actors can be really effective, and this is also why they were so common in the Middle Ages. In the Middle Ages they used to have contract warfare—you just hire a military. And they were specialized in some sort of technique that's too expensive for [a government] to maintain. You can have niches in a marketplace where they become specialists: "We do drone warfare. And we do it really really well. And here's our price tag to rent us." And if you're some small country, you can't afford to maintain that on a year-round basis, but you can rent it when you need it. And so that is an appeal of the marketplace too.

Gilsinan: I was also thinking in terms of the laws of competition. If you are a state, you have the option of one state military, which may be bad or good. But then if you can choose, say, between the Nigerian military and 75 companies that have various specialties, you might not choose your national military in all cases.

McFate: Let's not forget, a lot of the militaries around the world are very politicized. [The United States doesn't] have a terribly politicized military. A lot of countries do—like Turkey, Mexico, Nigeria—and if you're the president and you think there's going to be a palace coup by the military, maybe you

hire mercenaries to protect you. And this is what happens throughout history. So there's something called the Varangian Guard, these were Viking mercenaries that protected the [Byzantine] emperor in the Middle Ages. [In 1171-1174, King Henry II faced] a huge revolt by the nobility of half of England. He didn't trust his aristocracy so he ended up hiring all these mercenaries to put down the revolt, which they did because they would be loyal to him. So mercenaries are also useful for some clients because they're relatively apolitical. They're loyal to the paycheck. Of course that means they could be bribed, but they're loyal to the paycheck.

Gilsinan: Under what circumstances are mercenaries "safer" than public armies?

McFate: I think one of the inherent problems is one of safety. Unsupervised or unemployed mercenaries become bandits, or they engage in racketeering. Meaning they come into a town and say, "Give us a hundred thousand dollars, and we won't sack your village this month, and we'll come back next month too." And that happened in the Middle Ages. So this is the problem—they're really unsafe. Especially when they're not employed. And then how do you get rid of them?

In theory, a state should have a monopoly of force in its territory to uphold the rule of law. Which is why after the Treaty of Westphalia you started to [see] mercenaries become outlawed by states, because they didn't want the competition, they were monopolizing force quite literally. And now what's happening with all sorts of fragile states and conflict states in the world is that they've lost the monopoly of force. And the last 25 years, you've seen the growth of mercenaries. Slowly, first underground, and then a little larger, and of course the U.S. now legitimized the industry [in] Iraq and Afghanistan, and now we've got Nigeria. And tomorrow we'll have something else. You know, Putin is using Chechen mercenaries in Ukraine, allegedly. Who's going to tell him you can't do that after 10 years of war in Iraq and Afghanistan? I wouldn't be surprised if the U.S. used private military companies to train Iraqi forces to fight ISIS. The horse has fled the barn on this norm of no mercenaries, no private force.

Gilsinan: Did it ever really go away?

McFate: Mercenaries were always a part of the system, just in the 19th century and 20th century when the Westphalian system was at its zenith, they went underground, it became [a] black market for mercenaries. And we saw them come up in the '50s and '60s during the African wars of decolonization, but they were very taboo. It wasn't until after the Cold War that we started to see them become more public, the famous one being Executive Outcomes in South Africa. And now we're starting to see real mercenaries appearing all over the world in conflict markets. Extractive industries are hiring them, NGOs are hiring them, someday the UN might hire them.

As Americans, we think of it as an American phenomenon. It's not. These companies, at least the last 10 years, they had American faces, but when I was in DynCorp doing this type of work, a lot of my colleagues were from all over the world. And we're seeing a proliferation around the world, we're seeing ex-Latin American special forces showing up in the Gulf States.

Gilsinan: That gets to the question of what happens when they go home.

McFate: What happens after the contract, right? That's always the question. Some will stay in place, look for new opportunities, or make new opportunities, which happened in the Middle Ages. In the case of these private military companies in Afghanistan and Iraq, a lot of those people came from around the world, they go home to, say, Guatemala, and they can start their own private military company there. We're also seeing warlords in these places model themselves as private military companies. The end of the book talks about what this will look like, and I call it "durable disorder." A world that will have mercenaries in it will be a world with more war, because mercenaries are incentivized to do that.

Gilsinan: More war but smaller wars?

McFate: Yes. It won't be like World War III. We call this irregular war, but that's a misnomer. There's no such thing as regular versus irregular war, that's a real Westphalian construction. Most of the wars around the world are dirty, nasty, elongated, in the mud, [smaller] scale. And that's what's going to be stoked. Now the question is,

can a mercenary outfit suck the U.S. into a war someplace? In 2008, when Mia Farrow wanted to hire Blackwater to stage a humanitarian intervention in Darfur, one of the concerns was, if an American person hired a private military company to go into Darfur, could that draw the U.S. into a war with Sudan? And the answer is, of course it could. That group of people at that point was pretty circumspect, but I can imagine a future where some crazy tycoon hires a private military company to do something outrageous that is for a good cause, but something happens and now the U.S. has got to go rescue people, or stop a situation from getting worse.

Technology allows [private armed groups] to punch above their weight class. And technology's ever cheaper, ever more available, and so drones and other types of technologies—weapons systems, night-vision goggles—that's all on the open market as well. So we've got an open market for force, swishing around with these markets of technologies. Supply and demand are going to find each other, and that allows a very small group of people to do some big damage.

***Kathy Gilsinan** is an associate editor at The Atlantic, where she covers global affairs. Previously, she was an associate editor at World Politics Review.*

Seeds of Destruction: The Diabolical World of Genetic Manipulation

By F. William Engdahl

Source: http://www.globalresearch.ca/seeds-of-destruction-the-diabolical-world-of-genetic-manipulation/25303

"*Control the oil, and you control nations. Control the food, and you control the people*."* -Henry Kissenger

"*Seeds of Destruction: The Hidden Agenda of Genetic Manipulation*" by F. William Engdahl is a skillfully researched book that focuses on how a small socio-political American elite seeks to establish control over the very basis of human survival: the provision of our daily bread.

This is no ordinary book about the perils of GMO. Engdahl takes the reader inside the corridors of power, into the backrooms of the science labs, behind closed doors in the corporate boardrooms. The author cogently reveals a diabolical world of profit-driven political intrigue, government corruption and coercion, where genetic manipulation and the patenting of life forms are used to gain worldwide control over food production. If the book often reads as a crime story, that should come as no surprise. For that is what it is.

Engdahl's carefully argued critique goes far beyond the familiar controversies surrounding the practice of genetic modification as a scientific technique. The book is an eye-opener, a must-read for all those committed to the causes of social justice and world peace.

What follows is the Preface to "Seeds of Destruction: The Hidden Agenda of Genetic Manipulation" by F. William Engdahl (*available through* Global Research):

Introduction

"We have about 50% of the world's wealth but only 6.3% of its population. This disparity is particularly great as between ourselves and the peoples of Asia. In this situation, we cannot fail to be the object of envy and resentment. Our real task in the coming period is to devise a pattern of relationships which will permit us to maintain this position of disparity without positive detriment to our national security. To do so,we will have to dispense with all sentimentality and day-dreaming; and our attention will have to be concentrated everywhere on our immediate national objectives.We need not

deceive ourselves that we can afford today the luxury of altruism and world-benefaction."
George Kennan, US State Department senior planning official, 1948

This book is about a project undertaken by a small socio-political elite, centered, after the Second World War, not in London, but in Washington. It is the untold story of how this self-anointed elite set out, in Kennan's words, to "maintain this position of disparity." It is the story of how a tiny few dominated the resources and levers of power in the postwar world.

It's above all a history of the evolution of power in the control of a select few, in which even science was put in the service of that minority. As Kennan recommended in his 1948 internal memorandum, they pursued their policy relentlessly, and without the "luxury of altruism and world-benefaction."

Yet, unlike their predecessors within leading circles of the British Empire, this emerging American elite, who proclaimed proudly at war's end the dawn of their American Century, were masterful in their use of the rhetoric of altruism and world-benefaction to advance their goals. Their American Century paraded as a softer empire, a "kinder, gentler" one in which, under the banner of colonial liberation, freedom, democracy and economic development, those elite circles built a network of power the likes of which the world had not seen since the time of Alexander the Great some three centuries before Christ—a global empire unified under the military control of a sole superpower, able to decide on a whim, the fate of entire nations.

This book is the sequel to a first volume, *A Century ofWar: Anglo-American Oil Politics and the New World Order*. It traces a second thin red line of power. This one is about the control over the very basis of human survival, our daily provision of bread. The man who served the interests of the postwar American-based elite during the 1970's, and came to symbolize its raw realpolitik, was Secretary of State Henry Kissinger. Sometime in the mid-1970's, Kissinger, a life-long practitioner of "Balance of Power" geopolitics and a man with more than a fair share of conspiracies under his belt, allegedly declared his blueprint for world domination: "*Control the oil and you control nations. Control the food, and you control the people*."

The strategic goal to control global food security had its roots decades earlier, well before the outbreak of war in the late 1930's. It was funded, often with little notice, by select private foundations, which had been created to preserve the wealth and power of a handful of American families.

Originally the families centered their wealth and power in New York and along the East Coast of the United States, from Boston to New York to Philadelphia and Washington D.C. For that reason, popular media accounts often referred to them, sometimes with derision but more often with praise, as the East Coast Establishment.

The center of gravity of American power shifted in the decades following the War. The East Coast Establishment was overshadowed by new centers of power which evolved from Seattle to Southern California on the Pacific Coast, as well as in Houston, Las Vegas, Atlanta and Miami, just as the tentacles of American power spread to Asia and Japan, and south, to the nations of Latin America.

In the several decades before and immediately following World War II, one family came to symbolize the hubris and arrogance of this emerging American Century more than any other. And the vast fortune of that family had been built on the blood of many wars, and on their control of a new "black gold," oil.

What was unusual about this family was that early on in the building of their fortune, the patriarchs and advisors they cultivated to safeguard their wealth decided to expand their influence over many very different fields. They sought control not merely over oil, the emerging new energy source for world economic advance. They also expanded their influence over the education of youth, medicine and psychology, foreign policy of the United States, and, significant for our story, over the very science of life itself, biology, and its applications in the world of plants and agriculture.

For the most part, their work passed unnoticed by the larger population, especially in the United States. Few Americans were aware how their lives were being subtly, and sometimes not so subtly,

influenced by one or another project financed by the immense wealth of this family.

In the course of researching for this book, a work nominally on the subject of genetically modified organisms or GMO, it soon became clear that the history of GMO was inseparable from the political history of this one very powerful family, the Rockefeller family, and the four brothers—David,Nelson, Laurance and John D. III—who, in the three decades following American victory in World War II, the dawn of the much-heralded American Century, shaped the evolution of power George Kennan referred to in 1948.

In actual fact, the story of GMO is that of the evolution of power in the hands of an elite, determined at all costs to bring the entire world under their sway.

Three decades ago, that power was based around the Rockefeller family. Today, three of the four brothers are long-since deceased, several under peculiar circumstances.However, as was their will, their project of global domination—"full spectrum dominance" as the Pentagon later called it—had spread, often through a rhetoric of "democracy," and was aided from time to time by the raw military power of that empire when deemed necessary. Their project evolved to the point where one small power group, nominally headquartered in Washington in the early years of the new century, stood determined to control future and present life on this planet to a degree never before dreamed of.

The story of the genetic engineering and patenting of plants and other living organisms cannot be understood without looking at the history of the global spread of American power in the decades following World War II. George Kennan, Henry Luce, Averell Harriman and, above all, the four Rockefeller brothers, created the very concept of multinational "agribusiness". They financed the "Green Revolution" in the agriculture sector of developing countries in order, among other things, to create new markets for petro-chemical fertilizers and petroleum products, as well as to expand dependency on energy products. Their actions are an inseparable part of the story of genetically modified crops today.

By the early years of the new century, it was clear that no more than four giant chemical multinational companies had emerged as global players in the game to control patents on the very basic food products that most people in the world depend on for their daily nutrition—corn, soybeans, rice, wheat, even vegetables and fruits and cotton—as well as new strains of disease-resistant poultry, genetically-modified to allegedly resist the deadly H5N1 Bird Flu virus, or even gene altered pigs and cattle. Three of the four private companies had decades-long ties to Pentagon chemical warfare research. The fourth, nominally Swiss, was in reality Anglodominated. As with oil, so was GMO agribusiness very much an Anglo-American global project.

In May 2003, before the dust from the relentless US bombing and destruction of Baghdad had cleared, the President of the United States chose to make GMO a strategic issue, a priority in his postwar US foreign policy. The stubborn resistance of the world's second largest agricultural producer, the European Union, stood as a formidable barrier to the global success of the GMO Project. As long as Germany, France, Austria, Greece and other countries of the European Union steadfastly refused to permit GMO planting for health and scientific reasons, the rest of the world's nations would remain skeptical and hesitant. By early 2006, the World Trade Organization (WTO) had forced open the door of the European Union to the mass proliferation of GMO. It appeared that global success was near at hand for the GMO Project.

In the wake of the US and British military occupation of Iraq, Washington proceeded to bring the agriculture of Iraq under the domain of patented genetically-engineered seeds, initially supplied through the generosity of the US State Department and Department of Agriculture.

The first mass experiment with GMO crops, however, took place back in the early 1990's in a country whose elite had long since been corrupted by the Rockefeller family and associated New York banks: Argentina.

The following pages trace the spread and proliferation of GMO, often through political coercion, governmental pressure, fraud, lies, and even murder. If it reads often like a crime story, that should not be surprising. The crime being perpetrated in the name of agricultural efficiency,

environmental friendliness and solving the world hunger problem, carries stakes which are vastly more important to this small elite. Their actions are not solely for money or for profit. After all, these powerful private families decide who controls the Federal Reserve, the Bank of England, the Bank of Japan and even the European Central Bank. Money is in their hands to destroy or create.

Their aim is rather, the ultimate control over future life on this planet, a supremacy earlier dictators and despots only ever dreamt of. Left unchecked, the present group behind the GMO Project is between one and two decades away from total dominance of the planet's food capacities. This aspect of the GMO story needs telling. I therefore invite the reader to a careful reading and independent verification or reasoned refutation of what follows.

F. William Engdahl *is a leading analyst of the New World Order, author of the best-selling book on oil and geopolitics,* A Century of War: Anglo-American Politics and the New World Order*,' His writings have been translated into more than a dozen languages.*

Ikea's refugee shelters enter production, 10,000 units planned this year

Source: http://www.gizmag.com/ikeas-refugee-shelters-production/36738/

Designing a viable refugee shelter is one thing, but having the necessary infrastructure in place to make huge numbers of the shelter affordably and transporting it to those in need is quite another. Which is why the news that Ikea has committed to deliver 10,000 units of its flatpack refugee shelter to UNHCR (the UN Refugee Agency) could potentially prove a big deal.

Like its furniture, Ikea's Better Shelter arrives in flatpack form, and ships in just two large cardboard boxes. It can be assembled without any specialist tools in around four hours by a group of four people with some basic training. As we reported back when it was still a prototype, the shelter comprises a metal frame of pipes and connectors with stiffening wires to support walls and a roof made of plastic panels. It looks pretty lightweight but comes with an anchoring system and is sure to be more solid than a tent, and Ikea says it's rated to last around three years.

The shelter measures 17.5 sq m (188 sq ft) and comprises one space that looks suitable for accommodating even a fairly large family, if not in comfort then at least in relative safety. A roof-based aluminum shade serves to reduce solar heat gain, and there's also four small windows – though one can still imagine the inside becoming very warm in hotter climes. A small solar panel on the roof powers an interior lamp that automatically switches on when the sun sets and also feeds a USB port for charging small devices.

"The RHU is an exciting new development in humanitarian shelter and represents a much needed addition to the palette of sheltering options mobilized to assist those in need," says Shaun Scales, Chief of Shelter and Settlement, at UNHCR. "Its deployment will ensure dramatic improvement to the lives of many people affected by crises."

The shelters are due to go into production imminently and UNHCR will begin shipping them to families living in refugee camps around the world in mid-2015.

Animal behaviour could act as early warning system for earthquakes

Source: http://www.techienews.co.uk/9726201/animal-behaviour-act-early-warning-system-earthquakes/

A new research has, for the first time, established change in behaviour of wild animals prior to an earthquake – a development which scientists believe could help us with short-term seismic forecasting.

This is for the first time that researchers have used actual data gathered from a series of motion-triggered cameras located in the Yanachaga National Park in Peru to establish a visible link between change in behaviour of animals prior to increased seismic activity.

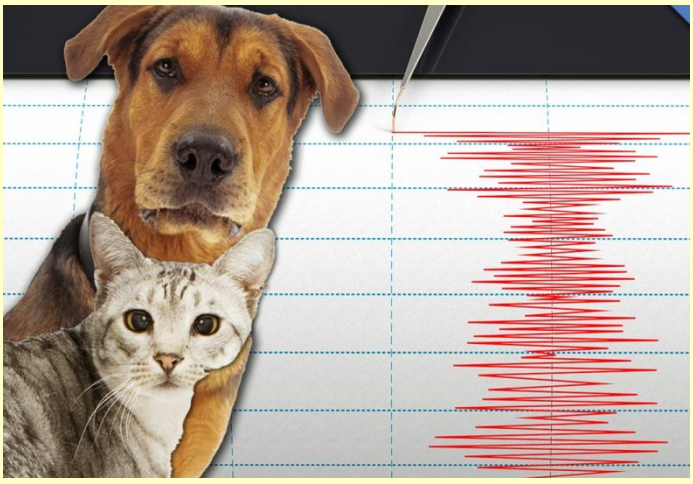
“As far as we know, this is the first time that motion triggered cameras have documented this phenomenon prior to an earthquake”, said Dr Rachel Grant, Lecturer in Animal and Environmental Biology at Anglia Ruskin University.

“The results are particularly interesting as we also found evidence of disturbances in the ionosphere in the area where the earthquake struck. We believe that both of these anomalies arise from a single cause: seismic activity causing stress build-up in the earth’s crust, leading – among other things – to massive air ionisation.”

Based on the data gathered through the motion-triggered cameras, researchers found significant changes in animal behaviour 23 days before the magnitude 7.0 Contamana earthquake that struck the region in 2011.

According to researchers, on a typical day the cameras would record between 5-15 animal sightings. However, within the 23-day period in the run-up to the earthquake, these cameras recorded five or fewer sightings. And for five of the seven days immediately before the earthquake, no animal movements were recorded at all, which the researchers say was

incredibly unusual for this mountainous rainforest region.
During the same time, researchers recorded



reflection of very low frequency (VLF) radio waves above the area surrounding the epicentre wherein they detected disturbances in the ionosphere, which started two weeks before the earthquake.
A particularly large fluctuation was recorded eight days prior to the quake, coinciding with the second significant decrease in animal activity observed in the pre-earthquake period.
Prominent among the most likely causes for the unusual animal response are positive airborne ions, which are known to be generated in large numbers at the earth's surface when rocks deep below are subjected to increasing stresses during the build-up to an earthquake.
Positive ions in the air lead to disagreeable side effects in animals and humans, such as "serotonin syndrome". This is caused by an increase in the serotonin levels in the bloodstream, and can lead to symptoms such as restlessness, agitation, hyperactivity and confusion.
Therefore the injection of positive airborne ions into the earth's atmosphere prior to major seismic activity can be expected to have a profound effect on mammals and birds, in particular those living on the ground and in burrows. At the same time, if this process occurs on a massive scale and over a wide area, the ionosphere can be affected.
Researchers are looking to extend their work in a bid to pave way for short-term seismic risk forecasting. The research has been published in journal Physics and Chemistry of the Earth.

List of aircraft accidents and incidents intentionally caused by pilots

Source: http://news.aviation-safety.net/2015/03/26/list-of-aircraft-accidents-and-incidents-deliberately-caused-by-pilots/

The following is a list of airliner accidents and incidents assumed or rumored to have been caused by a deliberate action of a pilot, compiled from the Aviation Safety Network files. General aviation aircraft are not included.

26 September 1976 – 12 fatalities
A Russian pilot stole an Antonov 2 airplane directed his aircraft into the block of flats in Novosibirsk where his divorced wife lived. (ASN Accident Description)

22 August 1979 – 4 fatalities
A 23 year old male mechanic who had just been fired entered a hangar at Bogotá Airport, Colombia and stole a military HS-748 transport plane. He took off and crashed the plane in a residential area. (ASN Accident Description)

9 February 1982 – 24 fatalities
A Japan Air Lines operated DC-8 crashed into the shallow water of Tokyo Bay after the captain cancelled the autopilot while the aircraft was on final approach to Haneda Airport, pushed his controls forward and retarded the throttles to idle. The co-pilot tried to regain

control but the aircraft crashed. The captain had recently suffered a psychosomatic disorder; preliminary reports suggested that the captain experienced some form of a mental aberration. He had been off duty from November 1980 to November 1981 for these reasons. (ASN Accident Description)

7 April 1994 - 0 fatalities
A FedEx employee was due to be fired and took a jump seat on a flight to San Jose. He was intending to murder the flight crew with hammers and then to use the aircraft for a kamikaze attack on FedEx Headquarters in Memphis. A struggle ensued and two crew members overpowered the man while the first officer maintained control of the plane. (ASN Accident Description)

13 July 1994 – 1 fatality
A Russian Air Force engineer stole the aircraft at the Kubinka Air Force Base to commit suicide. The aircraft crashed when there was no more fuel left. (ASN Accident Description)

21 August 1994 – 44 fatalities
A Royal Air Maroc ATR-42 airplane crashed in the Atlas Mountains shortly after takeoff from Agadir, Morocco. The accident was suggested to have been caused by the captain disconnecting the autopilot and directing the aircraft to the ground deliberately. The Moroccan Pilot's Union challenged these findings. (ASN Accident Description)

19 December 1997 – 104 fatalities
Silk Air Flight 185, a Boeing 737 en route from Jakarta, Indonesia to Singapore, crashed in Indonesia following a rapid descent from cruising altitude. Indonesian authorities were not able to determine the cause of the accident. It has been suggested by among others the U.S. NTSB that the captain may have committed suicide by switching off both flight recorders and intentionally putting the Boeing 737 in a dive, possibly when the first officer had left the flight deck. During 1997 the captain experienced multiple work-related difficulties, particularly during the last 6 months. Also at the time of the accident the captain was experiencing significant financial difficulties, which was disputed by the Indonesian investigators. (ASN Accident Description)

11 October 1999 – 1 fatality
An Air Botswana captain who had been grounded for medical reasons took off in an ATR-42. He made several demands over the radio and finally stated he was going the crash the plane. He caused the plane to crash into two parked ATR-42 aircraft on the platform at Gaborone Airport, Botswana. (ASN Accident Description)

31 October 1999 – 217 fatalities
Egypt Air Flight 990, a Boeing 767, entered a rapid descent some 30 minutes after departure from New York-JFK Airport. This happened moments after the captain had left the flight deck. During the investigation it was suggested that the accident was caused by a deliberate act by the relief first officer. However, there was no conclusive evidence. The NTSB concluded that the accident was a "result of the relief first officer's flight control inputs. The reason for the relief first officer's actions was not determined." The suggestions of a deliberate act were heavily disputed by Egyptian authorities. (ASN Accident Description)

17 July 2012 – 1 fatality
A commercial pilot wanted in connection with the killing of his girlfriend in Colorado Springs went up to the Saint George Municipal Airport, Utah and managed to board a Canadair RegionalJet plane and start the engines. A security guard saw the airplane starting to taxy. It reportedly struck part of the terminal building and ended up in a parking lot. The pilot then shot himself once, killing himself inside the plane.

29 November 2013 – 33 fatalities
LAM Flight 470, an ERJ-190, entered a rapid descent while en route between Maputo and Luanda and crashed in Namibia. Preliminary investigation results indicate that the accident was intentional. The captain made control inputs that directed the plane to the ground, shortly after the first officer had left the flight deck. (ASN Accident Description)

8 March 2014 – 239 fatalities
Malaysia Airlines Flight MH370 from Kuala Lumpur, Malaysia to Beijing, China went missing after all contact was lost about 40 minutes after takeoff. It is assumed to have crashed in the Indian Ocean. Experts have theorized that the accident may be the result of a deliberate action by one of the pilots, but the accident is still under investigation, also pending on finding the wreckage.

24 March 2015 – 150 fatalities
A Germanwings Airbus A320 crashed into a mountain while on a flight from Barcelona, Spain to Düsseldorf, Germany. Preliminary information from the chief Marseille prosecutor in France indicates that the captain was locked out of the flight deck and the copilot directed the airplane to a continuous descent towards mountainous terrain. (ASN Accident Description)

Is There Any Way To Screen The World's Pilots For Suicidal Tendencies?

Source: http://www.npr.org/blogs/goatsandsoda/2015/03/27/395065286/is-there-any-way-to-screen-pilots-for-suicidal-tendencies

The crash of Germanwings Flight 9525 into the French Alps earlier this week appears to have been a deliberate act carried out by a co-pilot.

It is too soon to put the label "suicide" on the co-pilot's actions. Not enough is known yet about his state of mind or what his motivation might have been. But as investigations continue, the incident raises questions about whether better mental health screening can prevent a person with suicidal tendencies from taking charge in the cockpit in the first place.

Unfortunately not, says Gregory Simon, a psychiatrist at the Group Health Research Institute in Seattle. There are basic questionnaires that can help identify people at risk of suicide. But these surveys routinely miss a major percentage of people who later kill themselves.

What's more, if a routine screening test were offered to a pilot, who knew he might lose his job if he admitted that he was thinking frequently about death, the chances of identifying someone at risk drops even more.

"For more than half of suicide attempts or deaths, we don't have any clue or signal ahead of time," Simon says. "Another important thing is that these [questionnaires] work in situations where people are seeking help and have some assurance of confidentiality. This would be different in a situation where someone's livelihood is at stake."

In the United States, there are some 500,000 known suicide attempts each year and 40,000 people die at their own hands, making suicide the 10th most common cause of death in this country. And it's not just an American problem. **Three-fourths of the world's 800,000 yearly suicide deaths occur in low- and middle-income countries.**

But preventing suicide is extremely difficult, in part because the people who succumb often die before anyone knows something was wrong.

Studies that have analyzed millions of suicides show that only about 55 percent of people who kill themselves had any previous contact with a mental health professional. For those who seek help, basic questionnaires can be useful: People who say they spend more time thinking about death and harming themselves, Simon says, are more likely to kill themselves during the next year or two.

But even among people who take these surveys, results flag only about 30 percent who later kill themselves. Instead, studies

show that suicidal actions are often impulsive.
"There's a very interesting phenomenon of people who actually saw health care providers and filled out questionnaires and said no to questions about thoughts of death or harming themselves and then made suicide attempts," Simon says. "It's not an infrequent occurrence."
The lack of knowledge about suicides that involve violent events is a further obstacle to predicting an act like a pilot suicide. Of those who survive a suicide attempt — and can possibly be interviewed by researchers — 80 percent tried to overdose on pills. It's possible that people who choose to act violently have different behavior patterns.
For now, there are no brain scans, hormonal screenings or other technologies that can distinguish a suicidal person from anyone else. Instead, within certain populations, self-policing is the primary method for catching mental health issues. And for pilots, that strategy can work pretty well, says Dave Funk, a retired Northwest Airlines captain who now works as an aviation security consultant at Laird & Associates in Reno, Nev.
It's a small industry, he says. Pilots tend to work with each other repeatedly. And they keep an eye on how their colleagues are doing. In his 40 years as a pilot, Funk adds, mental health incidents in the cockpit have been exceedingly rare. Out of tens of millions of flights over the past four decades, there have previously been only five cases worldwide of a commercial pilot who was believed to have intentionally caused an airplane accident.
Instead of more mental health screening, he argues, airlines around the world need to be more vigilant about regulating what happens in the cockpit. Since Sept. 11, the FAA has required that a flight attendant sit upfront whenever one of the pilots has to use the bathroom. If the Germanwings crew had followed the same protocol, maybe the flight attendant could've opened the door from the inside and called out for help.
"The real issue here isn't this guy's mental health," Funk says. "Why was he in the flight deck by himself?"
Attempting to screen pilots more aggressively could also have the unintended consequence of driving people with mental health problems deeper underground, adds Simon. Before 2010, the FAA prohibited flying for any pilot who took antidepressants or related drugs.
As a result, plenty of pilots either lied about their medications or avoided getting treatments they needed.
"Back in the day, I had a situation where a commercial airline pilot was referred to me for treatment," Simon says. "He said he would never take medication because he would lose his license."

EDITOR'S COMMENT: A pilot goes through a series of pshycotechnical and personality tests. If he is below certain standards he is refered to a specialist for consultation and/or medications. If he fails to comply with his treatment plan as proved by missing consultations and blood drug levels then he is fired or given ground duties. It is not as simple as described above but there are scientific ways to identify those who are at risk for themselves and others (passengers). There also technical ways to control the intervention of the pilots on airplanes computer systems. The main problem (as always) is that all these changes need a deadly crash to start thinking about them…

Evidence proving that flight MH-17 was taken down by a BUK missile

Source: http://www.rtlnieuws.nl/nieuws/buitenland/evidence-proving-flight-mh-17-was-taken-down-buk-missile

For the first time there is evidence that flight MH-17 was taken down by a missile. This is proven by a forensic investigation into ammunition fragments from debris of the airplane, ordered by RTL News. International experts endorse the conclusion of this investigation: MH-17 has been taken down by a BUK missile.

▶ VIDEO: MH17 shot down by BUK missile: The definite proof

Last year correspondent Jeroen Akkermans took with him some fragments of the murder weapon from the crash site in Ukraine for investigation. The material has been examined by an independent institute that has conducted a confidential investigation.

Rusty warhead fragment. Consists of a layer of alloyed steel. Strongly deformed and folded. (picture Jeroen Akkermans / RTL News).

Investigation into the chemical composition showed that they are remains from a BUK missile, among which fragments from the warhead – the pay load. The fragment of the warhead consists of a low-quality alloy of steel common to this form of ammunition. It appears from electroscopic enlargements that a fragment shows a cast-on Cyrillic serial number from the Russian language next to a partly broken number 2.

Lab investigation. (picture Jeroen Akkermans / RTL News)

Mr Akkermans found this fragment in November of last year in a part of the hull of MH-17 near the village of Grabova in Eastern Ukraine. He was in the war zone four months after the crash to find the truth about the death of the 298 passengers and crew of flight MH-17.

'Suspicious' fragments

"The debris was still lying unattended in an extensive, not enclosed area. I found more 'suspicious' fragments among the cockpit remains. Fragments that didn't seem to belong to the airplane. Eddy van Exel not only is my camera man, but also my witness. I took the fragments for research."

International experts endorse the conclusions of the forensic investigation. Defence experts of IHS Jane's in London look into all weapon systems worldwide. They regard the damaged and deformed fragment below as a first piece of evidence. According to them the fragment directly belongs to the pay load of a 9M317 BUK missile, the modern version of the BUK 1-2 system. Expert Nicolas De Larrinaga: "From the hour-glass form we can gather all the characteristics of an impact of a 9N314 warhead fragment. This fits perfectly."

The Polish defence journalist Juliusz Sabak attributes four fragments to MH-17 and three fragments to a soviet missile. "I think it's a part of the missile that did not explode, a part of the tail."

The BUK is part of the soviet weapon arsenal, but has regularly been modernised over the years and belongs to the missile arsenal of countries such as Russia, Ukraine, Georgia and Finland. The missile has been designed to take down an airplane from the ground. It finds its target via radar in the warhead of the missile. The warhead is designed to be able to shoot like a shotgun. The flying object ends up in a conical hail of fragments. The warhead is big, with tens of thousands of fragments weighing as much as 70 kilos altogether. These parts of the missile are left in the airplane.

With deadly speed through the hull

During impact the particles go through the hull and the interior of the plane with deadly speed.

Specialist De Larrinaga recognises the deformation of the warhead fragment. "It is bent and folded in an exceptional way, which happens with objects that hit something at high speed. They bend into a mushroom shape."
Other metal particles can be attributed to the MH-17 Boeing. For example, here we see that white-hot metal particles have formed small craters in a part of the hull. Embedded deep within one of those craters there is residue of artificial insulation material, a type of rock wool that can withstand very high temperatures.
German rocket scientists Schmucker and Schiller endorse these conclusions. They have also calculated the trajectory of a BUK missile based on data which are publicly accessible and on their knowledge of missiles. Markus Schiller: "Only a BUK missile can travel the

The fragment shows part of the serial number with a broken off 2 and a Cyrillic Ц from the Russian alphabet.
The number and the letter are cast onto the fragment.
(photo Jeroen Akkermans / RTL News)

distance to the plane at such a high altitude in such a short time and inflict so much damage. The mathematics fit exactly if you match the data for a BUK missile to the MH-17 crash."

His colleague Robert Schmucker: "It is consistent with the data from the hull fragments and the trajectory of the missile that a BUK missile brought down MH-17."
This possibility was considered for some time, but as of today there is physical evidence of the murder weapon. "A lot more facts are needed for a final conclusion, however, like who is behind the attack and who is responsible for the death of 298 people," Mr Akkermans says.
The Dutch researchers hope to have some answers at the end of this year. More research and time is needed for this.
RTL News will hand over all the ammunition fragments to the Dutch Safety Board, as agreed upon. "This way, the Safety Board can judge for themselves and add the results to their own findings," says deputy editor Pieter Klein.
In a response to the RTL News investigation, the Safety Board states that the material which was found will be included in their investigation. "In their investigation the Safety Board needs the final conclusion to be corroborated by information from multiple sources. This a complicated and time-consuming process. With the information from every source it needs to be established what the connection is with the plane from Malaysia Airlines, among other things because the plane crashed in a conflict zone."
"The investigation into the crash is well under way and it focuses on many more sources than the fragments alone. Additional material for investigation is welcome, but it is important to prove beyond a shadow of a doubt that there is a connection between the material and the crashed plane."

What a lovely European Union...

Banks Rush

Here Greeks want to withdraw their savings

The simple truth: it is end of month (March 2015) and pensioners that have no e-banking access are waiting to collect their pensions outside Bank of Greece building in Athens!

The best political weapon is the weapon of terror. Cruelty commands respect. Men may hate us. But, we don't ask for their love; only for their fear.
Heinrich Himmler

Think of the press as a great keyboard on which the government can play.
Joseph Goebbels

The few and the Brave

"Dancing with the Starts" for 33 yo Noah Galloway (British veteran - Iraq).

How the Nazis led to killer co-pilot being allowed to fly: Suicidal thoughts were kept from bosses by German privacy laws brought in after WWII to end government spying on its citizens

Source: http://www.terrorismwatch.org/2015/03/how-nazis-led-to-killer-co-pilot-being.html

Strict German privacy laws which prevented doctors treating Andreas Lubitz from telling his airline about his 'suicidal tendencies' were introduced in response to Nazi rule, it has emerged.

The Germanwings pilot had been forced to stop his training

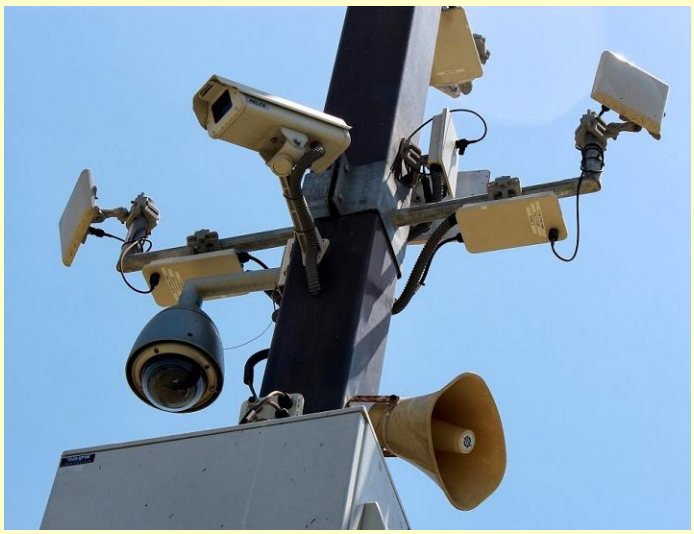
because of severe depression and had received psychotherapy for several years before last week's Alps disaster.
But German law meant it was left entirely up to him to volunteer his mental health problems to

his employer, something he failed to do with devastating consequences after tearing up a sick note for the day of the crash.
The findings from the investigation has now prompted a charged debate in Germany on a patient's right to privacy, with Chancellor Angela Merkel proposing an inquiry to re-examine the law.
Draconian legislation was initially brought in after World War Two to prevent a repeat of government spying during the Nazi era and subsequently the Stasi secret police in East Germany.
This extends far beyond confidential medical data, however, to stringent protection of someone's identity, meaning many German publications only referred to Lubitz as Andreas L, even after death.
Further data protection law traced back to 1907, which enshrines the 'right to your own picture', also means images can only be published with the individual's consent, it was reported by the Times.
With respect to medical data, the criminal code can ultimately leave doctors between a rock and a hard place.
For it only allows them breach confidentiality when they have reason to believe that sharing their knowledge could prevent 'a particularly serious crime' or a threat to someone's life.
They can face a year in prison if they wrongly breach privacy, but up to five years in jail for withholding 'credible information about the planning or commission' of serious acts like murder.
Despite the variation in sentences, doctors have tended to favour the individual's privacy.
Still reeling from last Tuesday's disaster that killed 150 people, many in Germany are now debating whether the potential to neutralise threats to public safety should trump doctor-patient privilege.
A transport policy expert from Chancellor Angela Merkel's Christian Democrats (CDU), Dirk Fischer, said strict confidentiality policy should be loosened when their patients work in sensitive fields.
Professionals such as pilots 'should only see doctors designated by their employers,' Fischer told the daily Rheinische Post.
He added that such doctors 'should be relieved of their pledge of secrecy in communication with the employer and the aviation authority'.
Member of parliament Thomas Jarzombek, also of the CDU, called for the creation of a commission of experts to study how to handle illnesses among those whose jobs mean they hold the welfare of many people in their hands.
German prosecutors said Monday that Lubitz had been diagnosed 'several years ago' with suicidal tendencies and was still in treatment.
Although his symptoms had abated, he was apparently written off sick on the day the Airbus crashed.
Media reports have indicated that Lubitz, 27, was taking medication for severe depression and was being treated for problems with his vision, possibly for a potentially career-ending detached retina.
Investigators evaluating voice recorder data say Lubitz remained silent and breathed calmly as he allegedly locked his captain out of the cockpit and slammed the plane into a French mountainside.
Carsten Spohr, the head of parent company Lufthansa, has said the airline was utterly unaware of any health issues that could have compromised Lubitz's fitness to

fly, calling him '100-percent airworthy'.
His professional performance and behaviour had never attracted cause for concern, Spohr added.
The German Medical Board has clear ethical policies on doctor-patient relations: 'Doctors must remain silent about what is told to them in confidence or what they learn in their capacity as doctors.'
It applies even after the death of a patient and includes keeping medical facts secret even from family members of the person in treatment, under penalty of up to one year in prison or a fine.
One exception, however, is when medical professionals have been excused from this duty by the patient, or when they have reason to believe that sharing their knowledge could prevent 'a particularly serious crime' or a threat to someone's life.
A doctor is also obliged to come forward in cases of 'psychiatric illnesses or a possible threat of suicide', member of parliament Karl Lauterbach, himself a physician, told the daily Bild.
The German board's head, Frank Ulrich Montgomery, urged caution in reassessing the policy.
Patient privacy is a 'cherished fact and, for all the citizens of Germany, a human right,' he said.
'You can tell a society that cares about rules when it doesn't slip into hasty action-for-action's-sake. Or populism,' weekly magazine Stern wrote in an editorial on its website.
'You can also tell a society that can handle the incomprehensible when it becomes clear it was a one-off case, extreme in every way.
'And, according to the rules of a humanitarian society, indeed - as terrible as it is - unpreventable.'
The daily Die Welt noted a change in policy could have a chilling effect on people seeking the necessary treatment.
'Police also have the right... to a frank talk with a doctor without worrying that their employer will be told.'
Meanwhile investigators sifting through the wreckage and hundreds of body parts in the French Alps were forced to resume the hunt on foot as bad weather hampered helicopter flights.
'The teams will get to the site via the path that is already in existence,' said Yves Naffrechoux from the local mountain police.
Authorities are hoping to identify more DNA from the 150 people who died, as well as locate the jet's second black box that should provide more clues as to the circumstances of the tragedy.
Forensic teams have isolated almost 80 distinct DNA strands from the shattered aircraft and have described the grim task as 'unprecedented' given the tricky mountain terrain and the speed at which the plane smashed into the rock.

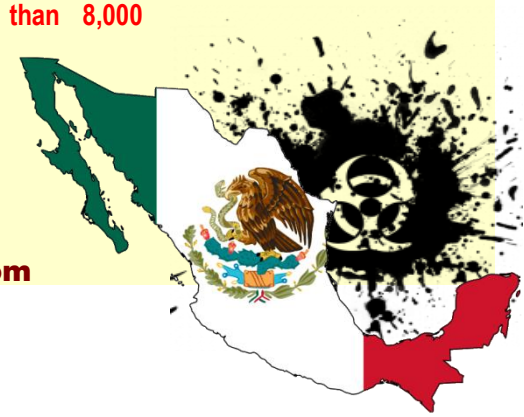
"Safe City" Mexico City

Source: http://i-hls.com/2015/03/safe-city-mexico-city



The Thales group is working on expanding the world's most advanced urban security system, referred to as the "Safe City" project. The project was set up in Mexico by a multidisciplinary team of professionals from different countries and has proven to be profitable, reliable and to decrease the violence levels suffered by the capital.

"Safe City" constitutes a network of more than 8,000



surveillance cameras which record the streets of Mexico Federal District 24 hours a day every day of the week. It operates hundreds of panic buttons to make emergency calls from, as well as a fleet of drones. All data is sent to command centers. Since the beginning of its activity more than a million incidents have dealt with, about 100,000 arrests have been made, and there has been an overall reduction of a large number of offenses**: 33% decrease in crimes of great impact and 50% decrease in vehicle theft.**

The program became fully operational in 2012, with two mobile command centers and 8,080 active cameras. The success was such that in April 2014 the authorities in Mexico announced they would double the size of the program by installing 7,000 more cameras and panic buttons or 4,300 points for emergency calls.

Even before this expansion, which is currently underway, the "Safe City" program is already considered the world's most ambitious urban safety program, for both its size and scope.

"In a complex emergency or large-scale events, the police can develop mobile command centers with special teams that maintain contact with the control unit," explained a representative from Thales. "The system can also locate and identify vehicles on the city's main streets due to its ability to read license plates," he added.

Used in order to monitor population density and movement, the system can also provide security at major events like the pilgrimage to the Basilica of Guadalupe, which attracts annually more than 6 million people.

In total and after this second extension, Mexico Federal District will have 15,000 cameras, 10,000 panic buttons, more than 10,000 speakers and one of the world's most complex urban security systems.

The Terrorism of Andreas Lubitz: Muslim vs. White Mass Murderers

By Matt Peppe

Source: http://www.mintpressnews.com/MyMPN/the-terrorism-of-andreas-lubitz-muslim-vs-white-mass-murderers/2864/

In this photo taken on Tuesday, March 31, 2015 and provided by the French Interior Ministry, French emergency rescue services work among debris of the Germanwings passenger jet at the crash site near Seyne-les-Alpes, France. Comparing the treatment of the killer Germanwings pilot Andreas Lubitz to that of France's "terrorist" Muslim killers reveals much about the mainstream media's assumptions and prejudices. (AP Photo/Yves Malenfer, Ministere de l'Interieur)

In the early months of 2015, two separate mass murders in France generated headlines worldwide for their brutality and disregard for human life. In early January, brothers Cherif and Said Kouachi entered the Paris offices of the satirical newspaper Charlie Hebdo and gunned down 11 employees, then shot dead one police officer on their way out. Last week, in an act of mass murder with more than 12 times the number of victims, 27-year-old pilot Andreas Lubitz intentionally guided the plane he was flying straight into the French Alps and killed all 150 people on board. Yet it is only the former murderous act that has been described by politicians and portrayed in the media as an existential threat and an example of terrorism.

The coverage of the Kouachi brothers downplayed their humanity by describing them as calculating, rational, indifferent killing machines. A New York Times article, titled "From Amateur to Ruthless Jihadist in France," describes "two jihadists in black, sheathed in body armor" who "gave a global audience a ruthless demonstration in terrorism." The "hardened killer(s)" were said to walk "with military precision," and "nonchalantly" take a phone call.

The article explains how French security services were unable to prevent the attacks: "The brothers appeared so nonthreatening that surveillance was dropped in the middle of last year."

Yet they had a long history of being monitored by French authorities, evidenced by the "thousands of pages of legal documents obtained by The New York Times, including minutes of interrogations, summaries of phone taps, intercepted jailhouse letters."

It is seen as a failure of the security services, who presumably should not have let the brothers out of their surveillance dragnet. Their "steadily deepening radicalism … occurred virtually under the noses of French authorities, who twice had Cherif in their grasp."

There is no blame attributed to the French socioeconomic system, which relegates most of France's Arab population to a permanent underclass of unemployment and poverty. As racial minorities in a country that holds few opportunities for people with their background, the brothers worked dead-end jobs like delivering pizzas and fish mongering. They were not able to get jobs at French investment banks or in the fashion industry. Certainly this must have produced adverse mental health effects.

There is no discussion of whether destitution and marginalization contributed to the Kouachi brothers' decision to use violence against people who, to them, apparently represented a source of humiliation.

Neither is there blame on French foreign policy, which has been complicit in arming and funding al-Qaida for many years in Libya, Syria and other countries. France's support for violent extremism abroad and its potential to create blowback at home is likewise disregarded in media analysis.

The murderous Germanwings pilot received a very different portrait in The New York Times. The title of a profile on Lubitz reads like a eulogy: "Andreas Lubitz, Who Loved to Fly, Ended Up on a Mysterious and Deadly Course."

He has a name and a passion. And unlike the "ruthless jihadists," who chose their path as criminals, Lubitz "ended up on a mysterious course" as if he was a passenger on the journey, rather than the instigator who intentionally flew 149 people to their death.

In describing the "mystery" behind Lubitz, the Times says that "the focus has turned to what had driven him to such an act — and to whether the airline industry and regulators do enough to screen pilots for psychological problems."

As was the case with Newton elementary school killer Adam Lanza, the problem is understood as one of "missed chances," in the workplace or by social services, not the police and security officials.

CNN wrote that Lanza "was an isolated young man with deteriorating mental health and a fascination for mass violence whose problems were not ignored but misunderstood and mistreated." Lubitz had reportedly been treated by psychotherapists for "suicidal tendencies" and possibly suffered from depression.

For white young men like Lubitz and Lanza, the problem was a failure of society — parents, teachers, employers, government regulators — to recognize and treat mental health problems. Implicitly they are people deserving help, not security threats deserving surveillance and monitoring. The

mental health of the killers is understood to be a cause — if not the *primary* cause — behind their actions. They were victimized by their mental health, whereas the Kouachi brothers were rational actors responsible for their actions.

Near the bottom of the New York Times article, a surviving Charlie Hebdo journalist is quoted as saying that one of the brothers told her "We don't kill women." One of the brothers also reportedly told a salesman "We don't shoot civilians." They clearly did kill civilians, but unlike either Lubitz or Lanza, they did spare lives rather than kill indiscriminately. Yet only the Kouachis are described as "hardened killers."

Why such different treatments of the massacres and the killers responsible for them? Simply put, the massacre by the Kouachi brothers can be attributed to "Islamic extremism" while the massacre by Lubitz cannot. Surely the passengers who "shrieked in terror" would not have considered themselves any less terrorized than employees of Charlie Hebdo witnessing the masked attackers with Kalashnikovs.

Orientalism in action

The Paris attacks were described by CNN, BBC, New York Times, NBC, and virtually every major Western news outlet as terrorism. But the Germanwings plane crash has not been called terrorism at all. USA Today reported that the FBI "has found no connection of anyone aboard to terrorism."

CNN reported that Lubitz "was not known to be on any terrorism list, and his religion was not immediately known."

In other words, it was not immediately know whether Lubitz was a Muslim, and, by extension, whether he was a terrorist. This connection between religion and terrorism, used in the same sentence in the CNN article, demonstrates how terrorism in common usage is understood to be about who a person is rather than what he does. Two Muslim brothers of North African heritage are terrorists when they murder 12 people, while a white German is not a terrorist when he murders 149.

Terrorism is perceived as the most heinous type of crime. Terrorists are thought to be irredeemable, subhuman creatures who do not even qualify as legitimate members of society with rights. But there is no commonly accepted definition of a terrorist, so any terrorist label is completely arbitrary. Unsurprisingly, there is a racial and cultural bias for using such a label.

Media portrayals of mass murderers are a representation of the society's attitudes towards the subjects they cover. That Muslims and Arabs engender an irrational fear is nothing new. As Edward Said explains in "Orientalism," this has a long history.

"For Europe, Islam was a lasting trauma. Until the end of the seventeenth century the 'Ottoman peril' lurked alongside Europe to represent for the whole of Christian civilization a constant danger, and in time European civilization incorporated that peril and its lore, its great events, figures, virtues and vices, as something woven into the fabric of life," Said writes.

This danger still manifests itself in the disproportionate reaction of Western nations and its people to crimes that can be attributed to Islam and Arabs. Even if, as is the case with the Kouachi brothers, they were born and raised in France, never having stepped foot in their parents' native country of Algeria. But "Frenchness" is still widely understood to be the exclusive domain of the country's Catholic population.

As Joseph Massad notes in The Electronic Intifada, French colonialists killed millions of people in Vietnam, Algeria and Madagascar, practicing inhuman forms of savagery and torture in the process. This is the context in which the Kouachi brothers and their accomplice should be compared.

"Despite the horrific magnitude of the three men's deeds, their crimes remain numerically modest and pale in comparison to with the far more cruel French Catholic and '*laic*' monstrosities that have reached genocidal proportions across the globe," Massad writes. "Had the Kouachi brothers and Coulibaly lived, however, they would have still needed many more lessons in cruelty and violent intolerance before they could become fully assimilated into true Catholic and *laic* Frenchness."

After the Charlie Hebdo shooting, more than a million people marched in Paris with 40 heads of state "in the most striking show of solidarity in the West against the threat of Islamic extremism since the Sept. 11

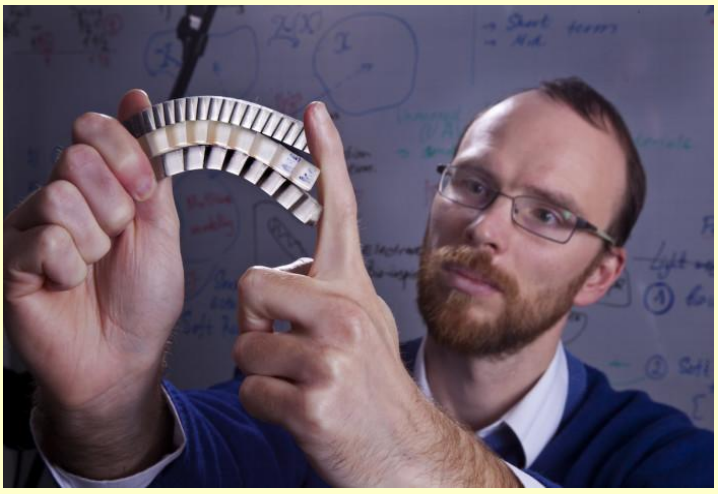
attacks," according to the New York Times.
The marchers, "people of all races, ages and political stripes swarmed central Paris beneath a bright blue sky, calling for peace and an end to violent extremism."
This in the same city where six months earlier French authorities banned marches demanding an end to Israel's massacres in Gaza, where nearly 2,200 people were killed by drone strikes, tank and naval shelling, artillery fire, and F16 bombings.
In an farcical piece of irony, Israeli Prime Minister Benjamin Netanyahu, who ordered and presided over the military assault was standing in the first row of world leaders demonstrating their "unity in outrage" during the staged march.
The framing of the Charlie Hebdo narrative as an assault by Islam against Western civilization misrepresents the violence as uniquely Islamic and uniquely evil. Any comparison of the media coverage of mass murderers must recognize that race and ethnicity drive the way those crimes are understood and portrayed.
To American and European whites, Islam has always been perceived as a force that needs to be subdued and controlled, usually through violence. It is no surprise that crimes by "Islamists" are depicted by Western media through this lens, in ways that equivalent or more serious crimes by whites are not.

Matt Peppe *writes about politics, U.S. foreign policy and Latin America on his blog. His writing has appeared in MintPress News, CounterPunch, Dissident Voice, Latino Rebels and other outlets.*

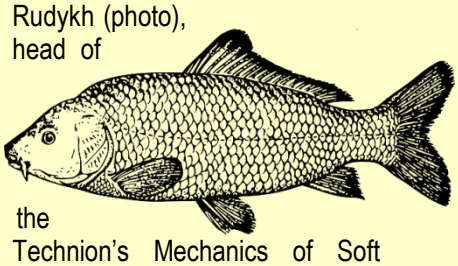
Soldiers, astronauts to be protected by tough, flexible new material

Source: http://www.homelandsecuritynewswire.com/dr20150409-soldiers-astronauts-to-be-protected-by-tough-flexible-new-material

Apr 09 – **A team of researchers has developed a revolutionary material that has superior anti-penetration properties while**



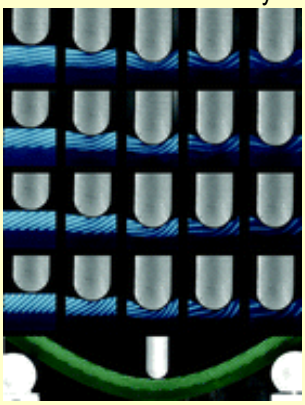
remaining flexible. Inspired by the way nature designed **fish scales**, the material could be used to make bulletproof clothing for the military and space suits that are impervious to micro-meteorites and radiation when astronauts embark on spacewalks. The joint research was conducted at the Technion-Israel Institute of Technology and the Massachusetts Institute of Technology.
An American Technion Society (ATS) release notes that a paper outlining the characteristics, test results and applications of the new material was published 20 February by the technology journal *Soft Matter*, a publication of the Royal Society of Chemistry. The research was led by Assistant Professor Stephan Rudykh (photo), head of the Technion's Mechanics of Soft Materials Laboratory.



"Many species of fish are flexible, but they are also protected by hard scales," said Rudykh. "Taking inspiration from nature, we tried to replicate this protecto-flexibility by combining two layers of materials

— one soft for flexibility and the other with armor-like scales. The secret behind this material is in the combination and design of hard scales above with soft, flexible tissue below."

Generally, strength and flexibility are competing properties, explained Rudykh. You cannot have both. However, **the research team found a way to increase the penetration resistance by a factor of 40, while the flexibility of the soft material was reduced by only a factor of five. If the application is, for example, a military uniform for combat, more flexibility can be built into the areas needing flexibility, such as the elbows and knees, while the anti-penetration properties elsewhere, such as in the upper body, can be beefed-up.**

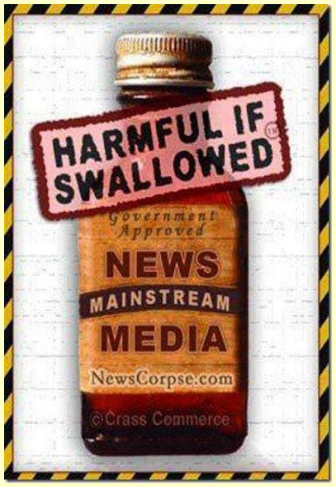


"That attribute allows for the fabric to be tailored to the wearer's body and the environment that the wearer will be facing," explained Prof. Rudykh, who carried out post-doctoral studies at MIT where he worked with 3-D printing technology before joining the Technion. "This work is part of a revolution in materials properties. Once we can gain control over a material's micro properties, using 3-D printing we can create materials of an entirely different type, each with the ability to be adjusted to fit the wearer, the need, and the environment."

The researchers have conducted initial testing on the material and are moving into dynamic tests using fast-moving projectiles, both bullets and small particles, and also testing the flexibility attribute under pressure.

"Our findings provide new guidelines for developing simple material architectures that retain flexibility while offering protection with highly tunable properties," concluded the researchers. "The tailored performance of the protective system — with characteristics that can be tuned according to the required movements at different regions of the body — draws its abilities from the microstructural geometry. The ability for a given microstructure to offer different deformation resistance mechanisms is key to achieving the multifunctional design of stiff plates and soft matrix. We found that careful selection of microstructural characteristics can provide designs optimized for protection against penetration while preserving flexibility."

— Read more in Stephan Rudykh et al., "Flexibility and protection by design: imbricated hybrid microstructures of bio-inspired armor," Soft Matter, issue 13 (20 February 2015): 2547-54.



The BBC, the Weapons Industry and War Propaganda

Source: http://www.globalresearch.ca/the-bbc-the-weapons-industry-and-war-propaganda/5441449

Apr 08 – ***Last week the Chairman of Europe's largest arms firm BAE Systems, Roger Carr, was appointed Vice Chairman of the BBC Trust. Will Carr's close ties to the arms industry "get the best out of the BBC for licence fee payers" as its mission statement promises?***

On the trust's web site we can read the following:

"*The BBC exists to serve the public, and its mission is to inform, educate and entertain. The BBC Trust is the governing body of the BBC, and we make sure the BBC delivers that mission.*"

For many years, however, the BBC has been caught delivering weapons of mass deception, lying, censoring important stories and engaging in war propaganda

on more than one occasion. Here are just a few articles we published about BBC lies and propaganda:

The BBC's Big White (Phosphorus) Lie and

BBC and Fallujah: War Crimes and Media Lies, about the BBC's biased coverage of the U.S. army's use of white phosphorus bombs against civilians in Iraq.

The Media War on Libya: Justifying War through Lies and Fabrications, about "all sorts of inaccurate reports […] fabricated by the BBC […] and other major networks."

Her Majesty's BBC's Syria Coverage: "Sorry for the Lies"…, about several BBC lies in the coverage of the events in Syria. Among others a "picture of victims of a 'massacre in Syria', shown by the BBC as proof that the government was responsible, turned out to be "photographic evidence" (taken from the BBC's photo archives) of a 2003 massacre in Iraq."

Israeli lies unchecked, Palestinian perspectives censored on BBC, about the BBC's "habit of inviting Israeli politicians or the Israeli government spokesperson […] to speak without challenge. Meanwhile, Palestinians and those who would convey a Palestinian perspective are not given the same opportunity."

MH17 Witnesses Tell BBC They Saw Ukrainian Jet. BBC Deletes Video, about a BBC Russian correspondent who "interviewed numerous eyewitnesses who described seeing a second aircraft in the sky moments before MH17's fatal crash. The BBC pulled the report. Why?"

But the mother of all BBC lies is without a doubt its 9/11 coverage of the WTC7 collapse before it happened. In a historic court judgement, Tony Rooke, a British citizen, won his law suit against the public broadcaster claiming: "The fact that the BBC reported the collapse of WTC 7 twenty-three minutes before it actually fell indicates that the UK was aware of the attacks on 9/11 before they actually happened. The direct implication is that they were working with the 'terrorists', all arguments as to who the terrorists actually were aside."

We must remember that 9/11 is the mother of all lies which holds the "War on Terrorism" narrative together. Can people expect anything else but more of the same BBC war propaganda with the arrival of the most important Chairman of the European arms industry as number two of the BBC's governing body?

In this context, supporting independent media is more important than ever. Here at Global Research, we work for you every day and no one here sits on the boards of big corporations with conflicting goals, especially not weapons firms. Our objective is to truly inform people about what is really going on in the world and shed light on media manipulations and the "fabrication of consent" for more wars.

White House Installs First Gender-Neutral Toilet

Source: http://news.sky.com/story/1462380/white-house-installs-first-gender-neutral-toilet

The White House has opened its first **gender-neutral toilet** in a symbolic gesture to signal Barack Obama's support for the lesbian, gay, bisexual and transgender (LGBT) community.

The move was announced shortly after the White House said the President wants an end to psychiatric therapies that seek to change the sexual orientation of LGBT youth.

The "all-gender" facility is in the Eisenhower Executive Office Building, where many employees have meetings and offices.

That is next door to the West Wing which houses the President's offices.

"The White House allows staff and guests to use restrooms consistent with their gender identity, which is in keeping with the Administration's existing legal guidance on this issue," White House spokesman Jeff Tiller said in a statement.
Mr Obama has taken a firm stand over the past year or so on gay and also transgender rights.
In addition to the conversion therapy stance, the President this week issued an executive order barring companies that do business with the federal government from discriminating against LGBT staff.
But the debate around transgender rights is becoming hotly contested in the US.
The number of gender-neutral bathrooms in workplaces and colleges has grown in America in recent years. At the same time some US states are considering legislation that would curb transgender people's ability to choose what restroom to use.
In Florida, the 'Bathroom Surveillance Bill' would ban transgender people from using bathrooms and locker rooms except those designated for their gender at birth.
Transgender advocates have attacked the laws as discriminatory and accused legislators in some states of "attacking the dignity and humanity of transgender and gender non-conforming people".

EDITOR'S COMMENT: Having already solved all major probems this poor palnet is facing, progress continues for a better world!
Progress: From Old French *progres* ("a going forward"), from Latin *prōgressus* ("an advance"), from the participle stem of *prōgredī* ("to go forward, advance, develop"), from *pro-* ("forth, before") + *gradi* ("to walk, go"). The verb became obsolete in British English use at the end of the 17th century and was readopted from American English in the early 19th century.
Definition: the idea that the world can become increasingly better in terms of science, technology, modernization, liberty, democracy, quality of life, etc.

Fort Hood Terror Victims Getting Purple Hearts — But No Benefits

Source: http://www.newsmax.com/t/newsmax/article/637748

The victims of the Fort Hood shootings are receiving Purple Hearts, but the military is continuing to deny benefits for the injuries that the soldiers sustained in the attack, something one man who was shot says is "unheard of."

"I think it's almost unheard of for someone to receive the Purple Heart but not have their injuries deemed combat-related," former Staff Sgt. Shawn Manning, who still carries two bullets in his body from the attack, told Fox News. "I know that was not what Congress intended to have happen, but it is what currently the Army has determined is going to happen."

Manning has also been suffering from PTSD since the Nov. 5, 2009, incident, when Maj. Nidal Hasan shot him and several other victims in a terrorist attack that has since been linked to al-Qaida.

The Defense Department initially classified the attacks as workplace violence, but changed the designation to terrorism. In this year's defense budget, the National Defense Authorization Act, there is language saying a person injured or killed in an attack inspired or motivated by a foreign terrorist organization can receive the Purple Heart and the Defense of Freedom Medal.

However, a physical evaluation board rejected Manning's appeal, saying the new law does not offer combat benefits for victims in attacks like the one at Fort Hood.

Manning said he appreciates the recognition, but the board's decision means he will lose back pay and $800 a month in benefits, and other Fort Hood survivors are facing the same treatment.

"I think you know it's a huge let down," he said. "I hope that's not what the Army had intended to do."

The Army in 2012 denied that Hasan had acted as a terrorist, and found that he had not used a military weapon, but a private semi-automatic pistol, and that the evidence "does not support that the injuries sustained were the direct result of armed conflict."

Sen. Ted Cruz, a GOP presidential candidate, Friday said it is "outrageous and it's indefensible" that Manning and the other Fort Hood victims are being refused attack benefits, reports Breitbart.

The Texas lawmaker, speaking to "Fox & Friends" from Fort Hood, the site of the Purple Heart ceremony, lambasted the Obama administration, saying lawmakers passed the legislation so the soldiers injured could get their benefits.

"It shouldn't have taken five years; this should have happened five years ago," he said. "Enough games. Five years is far too long."

Cruz said that it is his responsibility to "fight for 27 million Texans every day in the Senate," and he plans to continue to fight until all the soldiers get the benefits they deserve for fighting terrorism.

EDITOR'S COMMENT: Interesting article adding a new parameter in the definition of terrorism: "a military weapon" should be used by a terrorist to be consistent with terrorism!!! On the other hand: how do you think that the following would have felt if still alive with the current PH award status?

- Marine Sgt. Albert L. Ireland: five Purple Heart Medals in World War II and four more in the Korean War.
- Richard J. Buck: Four awards, Korean War / Four awards, Vietnam War;
- Robert T. Frederick: Eight awards, World War II;
- David H. Hackworth: Three awards, Korean War / Five awards in the Vietnam War;
- Joe Hooper: Eight awards, Vietnam War;
- Robert L. Howard: Eight awards, Vietnam War;
- William Waugh: Eight awards, Vietnam War

What Exactly Does the U.N. Accomplish?

By Jim Yardley

Source: http://canadafreepress.com/index.php/article/71106

To answer the title question as succinctly as possible only requires two words – Not Much.

Founded in 1945 as a reaction to the incredible destruction the entire world suffered because of World War II, the main goal of the newly created United Nations was clearly as

a tool to be used to prevent a sequel. Particularly after the way the United States brought the war in Asia to an abrupt halt after dropping nuclear weapons on the two Japanese cities of Hiroshima and Nagasaki.

Was the United Nations successful in preventing an exchange of nuclear weapons ever since? In reality, even though there have been no further nuclear weapons actually used, the United Nations really hasn't helped. Sovereign nations that, in fact, possessed the Bomb, and had enemies that clearly also had military weapons of the same type, certainly didn't need to rely on the U.N. to deter their enemy from using a first strike capability. The United States and the U.S.S.R. certainly had their tense moments, but no one reached out to push their launch buttons. Neither did India or Pakistan, although they are nearly always at a high state of alert in both nations and are constantly mistrustful of each other.

Does that mean that the threat of U.N. interference caused hesitation among the various players? Not really. The participants in these standoff scenarios were more hesitant because of the realization that there was a law of nature was much more effective than any intervention by diplomats.

What law of nature, you might ask? How about M.A.D.? (Mutually Assured Destruction)

There were no elaborate ceremonies to witness an event where participants signed an agreement, with the concurrence of their governments, which stated clearly "Hey, you drop anything on us, we'll drop on you and turn your country into a glowing, radioactive parking lot." These same governments did, however, use reason and logic to act as if such a document existed, and for the next sixty years, following the destruction of Hiroshima and Nagasaki, it seems to have worked. Nuclear war has been avoided, which almost all humans view as generally a good thing.

Note two things, though. First, that favorable opinion of avoiding a nuclear war this applies only to most human beings. Second, the United Nations had absolutely nothing to do with it.

Has the United Nations prevented the proliferation of nuclear weapons among nations that do not currently possess them? Of course it did – sort of. On July 1, 1968, the final form of the non-proliferation treaty was signed. There was no mention of Pakistan, India or North Korea in the treaty. All three, however, achieved that status of nuclear states thereafter. Pakistan's first nuclear test was in 1998, India's first nuclear test was in 1974, and North Korea's was in 2006.

So the non-proliferation treaty has really helped. After all, the U.N. can justifiably claim that at least Burkina Faso doesn't have any nukes, nor does Mali.

How can there be any doubt about Iran not attempting to become the next nuclear state? When can the world expect Iran to trigger their first nuclear test? And will Iran see the threat of Mutually Assured Destruction? In fact, will Iran even see the threat of M.A.D. as a bad thing?

So how is the United Nations responding to the problem of an unquestionably problematic regime as Iran in the context of also possessing such a provably weapon of mass destruction?

Well, the U.N. has passed ten Security Council resolutions that were each intended to restrain Iran in terms of their nuclear ambitions in the context of nuclear non-proliferation. These began as early as July, 2006.

The list of Security Council resolutions is as follows:

United Nations Security Council Resolution 1696 – passed on July 31, 2006
United Nations Security Council Resolution 1737 – passed on December 23, 2006
United Nations Security Council Resolution 1747 – passed on March 24, 2007
United Nations Security Council Resolution 1803 – passed on March 3, 2008
United Nations Security Council Resolution 1835 – passed on September 27, 2008
United Nations Security Council Resolution 1929 – passed on June 9, 2010
United Nations Security Council Resolution 1984 – passed on June 9, 2011
United Nations Security Council Resolution 2049 – passed on June 7, 2012
United Nations Security Council Resolution 2105 – passed on June 5, 2013
United Nations Security Council Resolution 2159 – passed on June 9, 2014

If the United Nations passed just a few more resolutions telling Iran to behave, we might be able to view these annual resolutions as the diplomatic equivalent to an Easter Egg Hunt. It might be lively, but not really accomplishing much, if anything.

The nations that are directly negotiating with Iran over their nuclear aspirations, the so-called P5+1, are not the only nations that are sanctioning Iran. Multiple other nations have joined in implementing economic sanctions against Iran.

In response to this multi-national economic assault on Iran has resulted in a rather startling reaction to the current negotiations. Although the Iranians are outnumbered by hundreds of millions of people, many of whom have significantly stronger military structures, as well as already possessing nuclear capability, it is still the Iranians who make inflexible demands on those who sit opposite them in these negotiations.

Perhaps President Obama is the only person on the planet who sees this as a rational response. In dealing with Iran, the United Nations itself seems to embody the psychiatric definition of insanity: Doing the same thing over and over, yet expecting a different result.

So exactly what is the use in having the United Nations exist at all?

It obviously doesn't do very well in that whole "Let's prevent war" thing and apparently has all but given up that idea. Unless one considers all their other, marginal efforts, aimed at creating a global government (which would probably operate about as well as the European Union) the United Nations has no reason to continue existing at all. After all, as we said at the start of this article, it doesn't accomplish much, and then only on a very good day if at all.

Jim Yardley *is a retired financial controller for manufacturing firms, a Vietnam veteran and an independent voter.*

EDITOR'S COMMENT: Lots of truth in this article. And if there was a note on inability of UN to resolve the Cyprus occupation by Turkish armed forces for decades, it would be a complete article. Of notice is also the banner of the website hosting this article – see below and I am sure you might tempted to change a word in its content!

"Swiss" soldiers are exhibited with an Albanian flag

Source: http://vnnforum.com/showthread.php?p=1823388

Military Justice investigation into a picture that shows young men in uniform Swiss Army posing with an Albanian flag. Behavior close to treason, according to some.

The military police took up the case and as soon as the young men have been identified, they will receive a letter from their commander. They face a warning, a travel ban, a fine or an arrest. [I'm sure the Albanians are pissing in their pants... Their Swiss nationality should be removed and they should be expelled to their country they love so much.]

This is not the first time that two Albanian eagle heads the headlines. In 2013, soldiers of Kosovar origin were photographed in groups in Emmen (LU) symbolizing the two-headed

eagle with their hands. They then had to explain that they were not acting against Switzerland but they wanted to show they were integrated.
Almost a third of the recruits now have foreign roots [officialy, at least 35% of people having a Swiss passport are of foreign origin] but without them there would be no Swiss Army, [complete bullshit of course] had warned Tibor Szvircsev Tresch [very Swiss...], the research center on the safety of the ETH Zurich. Plus, they are more motivated than "real" Swiss. [never miss a chance to diss the natives].

Note: Comments in blue are those of the person posted the translated version of the article.

8-foot-long carnivorous cat-eating lizards are invading Florida

Source: http://www.businessinsider.com/nile-monitor-lizards-invading-florida-2015-4

The exotic pet trade has a way of introducing destructive and potentially dangerous creatures to places in which they don't belong, and Florida's sunny, warm climate makes for a perfect home for many of these invasive species.
People buy a small snake, lizard, or colorful fish, and when it gets too big to handle, they dump it in an area in which they figure it will fit in. But if these unleashed creatures fit in too well, they not only thrive in their new homes — but without natural predators they can wreak havoc on the surrounding ecosystem, unbalancing it and potentially wiping out the native animals.
Lately we've heard a lot about the Burmese pythons and the more aggressive African rock pythons that wildlife officials' fear will wipe out the foxes, rabbits, deer, raccoons, opossums, and bobcats of the Everglades.
But another creature that Florida wildlife officers are trying to get a handle on is the **Nile monitor lizard**, a cousin of the most famous monitor lizard, the Komodo dragon, which has been spreading through the state since at least 1990.
Thousands are thought to be loose in parts of the state, but they have recently begun to appear in Palm Beach County, and officials are hoping they can eliminate the lizards in the area before they establish a firm toehold.
Wildlife officials armed with shotguns will be increasing patrols of Palm Beach County canals from once a month to four to six times a month to try to hunt the

reptiles down, according to the Sun Sentinel. **The plan is to catch or shoot the lizards on sight — they've got 20 in Palm Beach since July.**

The lizards are native to almost all of Sub-Saharan Africa and grow up to 5 feet long on average, with large specimens reaching 7 or 8 feet. **They typically have yellow markings on their back and can range in color from yellow to olive green or dark brown.**

And while they don't usually menace humans unless provoked (though one pet-education website says they "can inflict serious wounds to an inexperienced handler"), they are most definitely threats to local burrowing owls, tortoises, and other creatures. They have "even been known to eat cats," according to the Sun Sentinel.

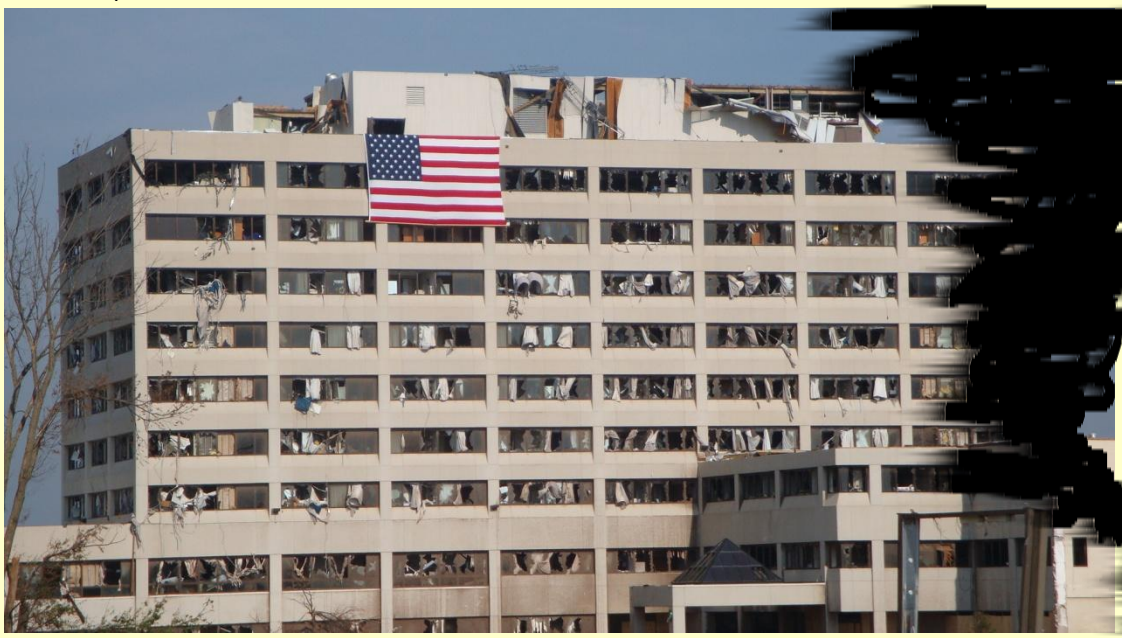
Monitors have spread far enough that they are a serious problem, according to David A. Steen, a conservation biologist who included them on a list of the "worst invasive reptiles" he chronicled for Slate. He describes the Nile monitor as a "hulking beast" that's "a voracious predator of any creature smaller than itself."

In addition to these massive lizards and the seemingly unstoppable pythons, poisonous lionfish are taking over Florida reefs.

Let's not set loose any more wild creatures that don't belong in Florida, OK?

Joplin, Missouri hospital re-built to withstand powerful tornadoes

Source: http://www.homelandsecuritynewswire.com/dr20150414-joplin-missouri-hospital-rebuilt-to-withstand-powerful-tornadoes



Apr 14 – In 2011 St. John's Medical Center in Joplin, Missouri was devastated by one of the most ferocious tornadoes in U.S history. Today, Mercy Hospital Joplin stands on the site of the former hospital, occupying a new structure designed to survive future tornadoes, with **windows that can withstand 250-mile-per-hour winds**.

The 2011 tornado left 158 people dead and destroyed several buildings. "It was just unbelievable. I mean, just the devastation and the damage to the hospital," says John Farnen, executive director of planning, design, and construction at Mercy Health System in St. Louis, the parent company of the former St. John's Medical Center and the new Mercy Hospital Joplin. "What you saw on television just couldn't do justice to when you saw it for real."

In the weeks following the

disaster, architects and engineers studied the ruins of the hospital, its torn-up roof, and

crushed generator, and took their discoveries to the drawing board. Four years later, Norman Morgan of HKS Inc., a Dallas-based architecture firm, unveils the distinctive features of the new hospital. It is covered in concrete and brick paneling and houses an underground bunker where generators and boilers are kept. Should another natural disaster strike Joplin, the reinforcements will help the hospital remain open — and not just for emergency medical care, but "to also provide essential community services as the most resistant or significant buildings in communities," says Robin Guenther, a principal with Perkins+Will, an architecture firm headquartered in Atlanta.

Guenther co-authored a report for the Department of Health and Human Services on how hospitals can better withstand natural disasters. She says that many hospitals may need to be rebuilt, particularly on the coasts, where flooding poses a risk. "Those hospitals actually need to be built upside down, meaning all of their key equipment needs to actually be on the roof," she says.

According to KCUR News, the storm reinforcements completed at Mercy Hospital Joplin added about 2.5 percent or $12 million, to the total construction costs, but Guenther says the job can be done for 1 percent of the construction costs or even less in areas less prone to storms. She admits, however, that it will be tough to convince hospitals to rebuild. "We increase the level of strength of a building wall or roof based on a disaster that causes damage, not before it happens," she says.

Harold Brooks, a meteorologist with the National Severe Storm Laboratory in Norman, Oklahoma, says that some businesses are uncertain about the actual danger posed by a tornado. "If we look at the probability of any particular structure getting hit, the most likely for, say, an F2 and greater tornado — the kind of thing that'll take the roof off of a house — is about once every 4,000 years, and that's somewhere in southern Oklahoma," he says. Brooks is reviewing the effects of climate change on tornadoes, and says rather than occurring one at a time, tornadoes are now happening more often in different places at the same time.

"Overall, if we look at an average of, say, ten years, the number of tornadoes and the locations appear to be just about the same as they would be any of the 10-year periods we look at, but the days would look different," he says. "You'd get to that same number of tornadoes by having a small number of very

big days and not very many small days."
Ron Marshall coordinates hospital preparedness for the Kansas Hospital Association,. He says his constituents understand the importance of building preventative reinforcements into hospitals, but instead of new buildings, storm-hardening will more likely happen. "We'd all love to go out and build a new tornado-safe hospital, but in today's reality of economics and health care, that's unfortunately not really an option," Marshall says.

Turkey Just Made A New National Anthem, And It Is Dedicated To The Antichrist

By Walid and Theodore Shoebat (Shoebat Foundation)
Source: http://shoebat.com/2015/04/11/turkey-just-made-a-new-national-anthem-and-it-is-dedicated-to-the-antichrist/

President Recep Tayyip Erdoğan never ceases to shock, as Nero, an archetype of Antichrist wanted a new Rome, Erdoğan's new anthem hails Erdogan himself as the reviver of a "New Turkey". Erdoğan's restless Antichrist spirit yesterday dedicates the anthem all with an Ottoman style performance as if reviving a wounded beast.

"The struggle for New Turkey is our Red Apple," Erdoğan said in reference to the lyrics in his speech. What "Red Apple" and what "New Turkey," the lyrics says it all: "We're in the race to be a global power Red apple New Turkey";

…Our goal is still the big Turkey
We're in the race to be a global power
Red apple New Turkey
Our Leader Recep Tayyip Erdogan
We got our power from Allah…
We're trying to be super power…
The name of Allah we will spread
Without ever leaving the Prophet's way
Then we're going to build us new Turkey …
Our goal is the new large Turkey
President Recep Tayyip Erdogan
Always gets his power from Allah

"Red Apple" is a symbol of Pan-Turkism and its utopian ideal denoting all Turkic lands from Turkey to Central Asia.

This is the dream of a new Sunni alliance where Turkey wants to increase their influence in all Turkic lands in Central Asia by strengthening ties with Kazakhstan, Kyrgyzstan, Uzbekistan and Turkmenistan via the Cooperation Council of Turkic-Speaking States. These are the Turkic nations and while they are separate, they are ethnically one.

The lyrics praise Erdoğan as "Our Leader," before mentioning historic tyrants like Attila the Hun, Oghuz Han and Alparslan (see full anthem in the sources section below). Also included are the Ottoman Empire's founder Osman Gazi, Mehmed the Conqueror, Selim I, Suleiman the Magnificent, Abdulhamid II and Mustafa Kemal Atatürk. Here enter the cult of Erdogan:

The anthem vows "to spread the name of Allah" reminds us of the Antichrist "he acts against the strongest fortresses with a foreign god, which he shall acknowledge, and advance its glory" (Daniel 11:39).
Erdogan vows to "spread the name of Allah" via warfare "a god whom his fathers knew not shall he honor …" (Daniel 11:38). Constantinople was Christian where they once honored the true God and instead now Turkey sings of advancing Allah, the War God and to dishonor Christ, "the God of their fathers".

Medina where residents are believed to have sung to the Prophet Muhammad upon his arrival escaping from Mecca in 622:
"O the White Glowing Moon rose over us from the Valley of Wada' and we owe it to show gratefulness where the call is to Allah."
In many incidents, Islam attempt to depict Muhammad glowing as 'Messiah' and Light of the World, so the people of Medina went to meet him with palm branches as Christ was met in Jerusalem:
The head of the Turkish National Anthem Association, İsmet Özel, one of Turkey's most

Even Turkey's current National Anthem is up for change. Polat Alemdar, the lead character of the controversial *The Valley of the Wolves* franchise, which dominated and spread violence in several Muslim nations, was seen reciting the lyrics of the National Anthem to the tune of Islam's first *Nasheed* (Muslim hymn) "*Tala' al Badr A'layna*", which literally means "The White Glowing Moon Arose Upon Us".
The hymn stems from when Muhammad (depicted glowing as the moon) came to

prominent living poets, recently suggested that the music of *The White Glowing Moon* could be better suited for the national anthem.
The Turks did not fail to bring in Hollywood actors to do the movie; Andy Garcia, Sharon Stone and Billy Zane appeared in "The Valley of the Wolves". Then you have "Soldiers of the Black Flag", founded by Polat Alemdar was also joining in the chorus to using "The Moon Arose".

The lyrics to the new Erdogan anthem (thanks to the Right Scoop):

Two thousand and twenty three, we are hundred years old
Our objective is again great Turkey
We're in the race to be a global power
The new Turkey is our Red apple
Our leader is Recep Tayyip Erdogan
Draw his strength from Allah
Two thousand and seventy one, we are thousand years old.
This new century is going to be the Turks century
We will spread Allah's name
Without leaving from the path of our prophet
We will build the New Turkey
Our leader is Recep Tayyip Erdogan
Draw his strength from the nation
Establisher of the Democracy is Martyr Menderes
Turgut Ozal made us step into a new age
He is the last link of the golden chain

Our occupation is to be superpower
We ensure peace at home, peace in the world
The New Turkey is our Red apple
Our leader is Recep Tayyip Erdogan
Draw his strength from the nation
Atilla, Oğuzhan, Gazi Alparslan
Osman Gazi, Fatih, Yavuz, Süleyman
Also Rest in peace Abdülhamid Han
The Gazi Ataturk is that founding the state
Nation's man Tayyip Erdogan
Draw his strength from the public
Turkish people is loyal to you
Our President Recep Tayyip Erdogan
Draw his strength always from his Lover
One nation, one flag, one motherland belongs to us
One State Turkey belongs to our nation
For brotherhood, independence, evenness
Our objective is New Great Turkey
Our president is Recep Tayyip Erdogan
taking his power always from Allah.

The Greeks are not 'Western'

By David Patrikarakos

Source: http://www.politico.eu/article/the-greeks-are-not-western/

Apr 22 – The imperial giant driving a wedge through European unity and the tiny state drowning in debt are locked in a controversial canoodle. Call it an Orthodox big wet kiss, but modern ties between Greece and Russia are cementing ancient ones.

More than almost any other European country, modern Greece is defined by its geography. A flank state on the southernmost tip of Europe, Greece has been considered a part of the "West" since joining NATO in 1952. But it was not until 2007, when Bulgaria joined NATO and the EU, that it gained a land border with another Western country. Nor is its modern history Western.

Greece has, in fact, a more Asiatic flavor. In 1822, a Greek nobleman called Ioannis Kapodistrias left his post as foreign minister to the Tsar of Russia and retired to Geneva where he set about beginning his life's work. Kapodistrias, who had made his name at the 1815 Congress of Vienna that brought stability to Europe after Napoleon's rampage across the continent, now turned his attention to his fiercest passion: Greek independence from the Ottoman Empire. It took all the diplomatic skills he had learned in the service of Russia, but by 1827 he had become the first governor, and many believe the founder, of the modern Greek state.

Greece had been a part of the Ottoman Empire from the mid-15th century until independence in 1830, so it never went through defining Western historical processes like the Renaissance and the Enlightenment. Other Balkan countries like the Ottoman border states of Slovenia and Croatia have, as former parts of the Austro-Hungarian Empire, more historical continuity with Europe. This allowed them to adapt to the norms of the EU more easily than Greece, a much older member state.

"This is where the rupture has occurred," says Dimitris Triantaphyllou, Director of the Center for International and European Studies at Kadir Has University in Istanbul. "This is where the doubt comes [for Greeks]: do we belong to the West or are we alone?"

On the flank, Greece has always felt unprotected. Perhaps more importantly, its threat perceptions have been consistently out of line with the majority of NATO members. During the Cold War, explains Triantaphyllou, "Greece had to worry about the north [the USSR] within the framework of its NATO alliance responsibilities; but its biggest threat has always been an expansionist Turkey. So it would pay lip service to its obligations, but whenever there was a crisis with Turkey, such as the latter's 1974 invasion of Cyprus, Greece's interests were not protected — much to its anger."

All this meant that the Soviet threat was perceived as distant. Greece also had a strong Communist tradition (which it took

a civil war to defeat), while Russia's fresh water ports in the Black Sea bordering the Aegean always ensured contacts between the two countries. As Triantaphyllou points out, Russia was never the threat to Greece that it was to Germany and the US, and the relationship was always kept alive.

Politically intertwined from the beginning, Greece and Russia are also bound together by the centuries-old religious and cultural ties of Orthodox Christianity. Even Russia's Cyrillic alphabet developed from 9th century Greek-speaking missionaries spreading the faith to their neighbours.

The affinity runs deep. Athens has long been home to intellectuals pushing for closer ties with Russia, with, until recently, little result. But their views, as embodied by the philosopher Christos Yannaras, who a few years ago wrote a piece claiming Putin was one of the greatest leaders of the early 21st century, are now finding an audience more willing to listen.

The financial crisis, and the devastating cuts the International Monetary Fund and the EU forced Greece to implement in exchange for bailout funds, has shaken faith in the existing order of things and shattered the quality of life for the majority of the population. The EU, (embodied in Greek eyes by Germany) bears the brunt of their rage.

Greece's Prime Minister, Alexis Tsipras, head of the far-left Syriza party (which came to power in coalition with the hard right Independent Greeks party, in January), now hopes to strengthen commercial links with Moscow, especially in the energy sphere. Greece imports 57 percent of its gas from Russia, while Russia has an interest in the Greek railway network and some of its ports. On April 8, Tsipras flew out to Moscow to meet with Russian President Vladimir Putin. They achieved little of note beyond promises of future cooperation.

But the trip had a symbolic importance that transcends practical agreement. For Greece's new government, it was a signal to an EU panicked by Moscow's aggressive international relations that despite the country's bankruptcy, no one would push it around. Greece, Tsipras declared, was a "sovereign nation with the indelible right to carry out its own foreign policy." And well he might. Syriza has so far failed to renegotiate Greece's bailout terms. It now faces failing to meet further loan payments in May. Unlike debt, symbolism and words come cheap.

While Tsipras is, by the standards of his own party, a moderate, Syriza's left wing led by Energy Minister Panagiotis Lafazanis – who recently described European sanctions on Russia as 'unacceptable' and promised that Greece would help to end them – is pressing for even closer ties with Moscow. Once more the question of national identity is salient.

In 1974, as Greece emerged from dictatorship, its prime minister, Konstantinos Karamalis declared that "Greece belongs to the West." The country subsequently joined the European Community and this ideal has guided Greek political thought ever since. But this sentiment has always sat uneasily next to another famous dictum of a former president, Christos Sartzetakis: "the Greeks are a nation without brethren."

"This notion is becoming very relevant now with the crisis in the language of the left," says Triantaphyllou. '"We will not be subjugated to the imperialists" is the mantra. So the already tenuous bonds that exist between Greece and the West are being loosened, and the political establishment is trying to create the conditions to support a possible bailout by Russia. Not for the first time, Greece is trying to create its own identity — if it is kicked out of the Eurozone, it has to come out with a new national idea.

And these are dangerous times for national ideas. Syriza's emerging form of neo-Hellenism sits alongside a Russia guided by an expansionist form of neo-Eurasianism, which holds that the country is closer to Asia than Europe. Both are countries unsure of their role in the world and beset by the feeling they don't belong. Both are seeking alternative paths to a 21st century identity.

This is something that Putin understands on a strategic level. After the fall of the USSR in 1991, Russia went into a period of decline that saw its international influence diminish. Putin has spent years trying to reverse this trend and as the London School of Economics' "Russia in the Balkans" Conference Report has observed, Moscow now seeks to exploit international grievances where it can find them in pursuit of this goal. In particular, it seeks leverage in Europe's soft

underbelly, the Balkans. Greece, enraged at the EU and in desperate financial trouble, is the perfect plum.

Russia has spent considerable sums projecting its soft power into Greece since the financial crisis hit. "The TV station Russia Today [RT] started becoming very popular as a source of news in Greece from 2011," says Vassilis Petsinis, a Visiting Researcher at the Herder-Institut in Germany. "Lots of RT output resonated suspiciously with the demands of Greece's 'indignados.' The mass demonstrations in 2011 echoed uncannily what RT was broadcasting; the channel gained the hearts and minds of quite a few Greeks."

"Russia is definitely looking for asymmetric Trojan horses in the region," Petsinis continues. "Hungary's Victor Orban government also had an economic crisis and also expressed resistance to EU and IMF recommendations, an opposition very much in line with popular opinion. So the Kremlin is very careful to take advantage of the state of relations with those countries and Brussels, especially tension, for its own benefit."

And the Kremlin's style of government — leader-centric with a big state at its heart — resonates across Greece's political spectrum. The neo-fascist Golden Dawn, which is now Greece's third largest party also looks at Putin's Russia as a more acceptable alternative to what it believes are discredited mainstream Western politics.

In May 2014 Golden Dawn members Artemis Mattheopoulos and Eleni Zaroulia headed a delegation that met with Alexander Dugin, a Putin advisor and the intellectual driving force of neo-Eurasianism. The goal of the trip was the "formal approach of Hellenism with Orthodox Russia," an objective that apparently expressed "the will of the Greek people for an immediate strengthening of bilateral relations" between Russia and Greece.

Russia has more to offer Greece than just soft power and gas. As a permanent member of the Security Council it can play a key role (should it be so inclined) in the continuing problem of Cyprus and several other issues in the Greek national interest. Securing a fraternal veto from Russia in the UN Security Council would be attractive for any state, let alone one with Greece's problems.

In the interim, Russian planes continue to fly over Baltic airspace, alarming NATO's top brass. Greece, as a NATO member, has its own veto that could be used in the Russian interest. The *quid pro quo* is evident.

Following the "introductory" meeting between Tsipras and Putin earlier this month, the two leaders are now reportedly set to sign a €5 billion deal for the construction of the so-called Turkish Stream gas pipeline that is planned to run from Russia through Turkey and Greece. Greece may receive significant cash up front, which may enable it to make its next debt repayments. Russia, meanwhile, gets to continue its energy dominance over Europe.

The fallout of this burgeoning rapprochement could be devastating, for both NATO and for the EU, and with it the European project. Greece is likely to be just the beginning of Russia's European political assault, and it stands as a stark warning for the dangers facing the continent — and, as many Greeks increasingly fear, for Greece itself.

"Russia is helping to foster serous doubts as to where we belong," concludes Triantaphyllou. "For the first time I am scared — scared that we might go over to the other side."

***David Patrikarakos** is a journalist and the author of* Nuclear Iran: The Birth of an Atomic State.

EDITOR'S COMMENT: I will comment on the title and the last sentence of the article above. I grew up with the mindset that "we belong to the West". West equalled "civilization" while "East" was kind of "barbarism" with nothing significant to offer in the world. An admirer of US and of many European countries I tried through life to adjust to their standards and ways of fdoing things. But life experience showed that belonging to the West was not accompanied by equal support when my country was in need. And slowly we turned out to be a "country-experiment" where all new Western games were tested with or without our approval. Of we do have our big share for allowing that to happen but the current turmoil proved that we are not considered as original Europeans and we do not obey the rules set by the rest of EU member states. We only recently started to realize that we need to care for our

homeland and not for the ambitions and gains of others. We still do not know how to do it right but it is a start and if we keep on going we might succeed to survive. In that respect I am really surprised to write that belonging to the West is not a one way street. Since our adherence to the West did not work out well, it might be a good idea to explore "East". In conclusion I am not scared if "we might go to the other side". When West had to choose between Greece (West) and Turkey (East) always choose the latter (e.g. Cyprus occupation). New partners might do the same but this time we might use the experience of the past for a better management of our future. Time will show if Greece needs to go through the ancient Phoenix experience once more and hope for a re-birth through its ashes.

The phoenix (Ancient Greek: Φοῖνιξ, phoínix, Persian: ققنوس, Arabic: العنقاء الفينيق طائر أو, Chinese: 鳳凰 or 不死鳥) is a mythical sacred firebird that can be found in the mythologies of the Persians, Greeks, Romans, Egyptians, Chinese, and (according to Sanchuniathon) Phoenicians.

A phoenix is a mythical bird that is a fire spirit with a colorful plumage and a tail of gold and scarlet (or purple, blue, and green according to some legends). It has a 500 to 1000 year life-cycle, near the end of which it builds itself a nest of twigs that then ignites; both nest and bird burn fiercely and are reduced to ashes, from which a new, young phoenix or phoenix egg arises, reborn anew to live again. The new phoenix is destined to live as long as its old self. In some stories, the new phoenix embalms the ashes of its old self in an egg made of myrrh and deposits it in the Egyptian city of Heliopolis (literally "sun-city" in Greek). It is said that the bird's cry is that of a beautiful song. **The Phoenix's ability to be reborn from its own ashes implies that it is immortal, though in some stories the new Phoenix is merely the offspring of the older one.** In very few stories they are able to change into people.

Information Sharing Vital in Responding to the Threat of Chemical Terrorism

Source: http://www.hstoday.us/briefings/daily-news-analysis/single-article/information-sharing-vital-in-responding-to-the-threat-of-chemical-terrorism/a03fc7775f06b13cf7c8fa63e8e4d2f7.html

Just a day before the 20th anniversary of the sarin gas attacks on the Tokyo subway which killed 12 and injured more than 5,00 the House Committee on Homeland Security's Subcommittee on Emergency Preparedness, Response, and Communications held a hearing to examine the threat of chemical terrorism and the steps that are being taken at all levels of government to address the threat of chemical attacks.

"A terrorist attack using chemical agents is a low probability, high consequence scenario," said subcommittee chairman Martha McSally (R-Ariz.). "A chemical attack could cause mass casualties and significant economic losses. In light of this, we must be vigilant and ensure our first responders and medical personnel are ready to respond."

Given the rise of the Islamic State (ISIS) and the threat of homegrown Islamist extremism, McSally stressed the importance of ensuring that our first responders are prepared to respond to chemical attacks.

Fire Chief G. Keith Bryant, president and chairman of the International Association of Fire Chiefs, testified that "there is a real threat" that terrorists will conduct a chemical attack on American soil and that jihadists have taken to social media to call for attacks on the US using chemicals. Moreover, the Global Islamic Media Front has published 'The Explosives Course,' which provides instruction on how to use commercially-available chemicals to manufacture explosives."

Citing US Bureau of Transportation Statistics and the US Census Bureau's 2007 Commodity Flow Survey, Bryant said **2.2 billion tons, corresponding to 323 billion ton-miles of hazardous materials, are shipped by air, road, rail and pipeline in the United States annually.** There could be devastating consequences if terrorists take advantage of weaknesses in the nation's transportation system or chemical facilities to obtain toxic chemicals for malicious purposes.

"Toxic industrial chemicals, such as chlorine, compounds containing cyanide, and anhydrous ammonia, are readily available and present in the nation's transportation system and at chemical facilities," Bryant said. "While it may not be weaponized, industrial chemicals also require little expertise or preparation to use. Finally, while in many cases, the casualty count may not be high, there would be a psychological shock to a chemical terrorist attack on American soil."

The Department of Justice and FBI have issued numerous bulletins in the past five years warning first responders to be on the lookout for precursors and designs for devices using industrial chemicals and chlorine gases for attacks in enclosed public spaces, such as restaurants and theaters.

Organizing a successful response to a terrorist attack using chemical requires the federal government share information regarding credible threats with local first responders so they know what type of attacks to prepare for. Additionally, the federal government also needs to play a role in training local agencies, EMS and fire departments on how to respond to a terrorist attack involving chemical agents.

"The federal government provides a number of critical resources to help state and local agencies, including planning resources, training opportunities and material support through funding," Bryant said. "As federal, state and local governments address tightening budget capabilities, we must focus on remaining prepared to protect our citizens from this pernicious threat."

Dr. Mark Kirk, director of the Chemical Defense Program, Office of Health Affairs, Department of Homeland Security (DHS), testified that, "Readily accessible chemicals are used in the United States by those committing 'chemical suicide,' and recently chlorine was deliberately released in a Rosemont, Illinois hotel affecting a group attending a convention."

The threat is not only chemical warfare agents. Even household chemicals can be used a potential weapons. Toxic industrial chemicals, often referred to as

"Agents of Opportunity," pose a significant risk since they are easier to synthesize than chemical warfare agents and are readily available in large quantities.

Although chemicals cause predictable toxic effects, which means a response can be planned, each incident is unique and time often inhibits emergency response planning. Chemical incidents often occur abruptly and require fast response times.

"Chemical agents can be used to kill, incapacitate large numbers of people, cause permanent or long-lasting harm, contaminate critical infrastructure and create uncertainty, fear and panic," Kirk said.

In the early stages of a chemical attack, first responders often find themselves operating "in the blind," deciphering between accurate and misleading information that prevents the responders from determining the scale of the incident.

This puts first responders in a precarious position. For example, if emergency personnel do not know the type of chemical involved in the incident, the appropriate protective garments may not be worn, putting the first responders in a dangerous situation where they could suffer injury or even death.

Similarly, Bryant said, "There may be confusion during the initial response about whether it is an actual terrorist attack or a hazmat incident, which requires that federal, state and local authorities plan, train and exercise ahead of time."

With the need for accurate information, especially in the initial stages of an attack, interagency information sharing is vital. The OHA Chemical Defense Program, for instance, seeks to build preparedness for chemical terrorism and accidents at the federal, state and local levels. OHA coordinates and shares information with various entities including the Federal Emergency Management Agency, the National Protection and Programs Directorate and DHS's Science and Technology Directorate's Chemical Security Analysis Center.

Kirk said, "We plan to partner with other agencies and relevant organizations to share our findings so that we can assist in the creation of training and education methods that will help decision-makers at all levels operate within a structured environment even during the chaotic first moments of a chemical incident, and optimize key information sharing in order to make sound critical decisions."

"However," Kirk added, "There is still important work to do on planning and preparation for an end-to-end approach that takes into account a full chemical threat short and long term effects."

Hospitals must also be prepared to respond to a chemical incident. But the question of whether hospitals are currently prepared to manage and treat the victims of a chemical attack is a difficult one to answer, according to Dr. Christina Catlett, associate director, Office of Critical Event Preparedness and Response, Department of Emergency Medicine, Johns Hopkins Hospital.

Catlett said that although the September 11, 2001 terrorist attacks and the subsequent anthrax attacks "spurred a paradigm shift in preparedness activities," there is little information that exists attesting to whether hospitals and healthcare systems are prepared to meet the threat of a chemical event.

However, according to 2008 data, only 69.6 percent of hospitals had performed an exercise involving decontamination procedures, and only 55.6 percent of hospitals had participated in a mass casualty drill involving a chemical accident or attack scenario.

With attention focused on other types of disasters, such as emerging infectious diseases, preparation for a chemical attack has fallen off the radar of many hospitals. Catlett said that, "Given the current lack of focus on chemical response in medical education, we are raising a new generation of care providers who are naïve to the threat of chemical terrorism."

Moving forward, Catlett recommended that hospitals and healthcare systems obtain new data that accurately reflects the level of preparedness for chemical events, conducting ongoing training of healthcare providers in chemical response, and that hospitals partner with the Intelligence Community in an effort to increase information sharing.

"Hospital preparedness for chemical terrorism has improved since 2001, but we cannot allow our achievements to erode due to complacency," Catlett said, noting

that, "The time has come to abandon our reactionary stance to critical events and assume a more forward-leaning posture in preparing for agents of opportunity through implementation of thoughtful preparedness initiatives such as research, education and training."

Quoting General Pershing after World War I, Catlett concluded: "'the effect is so deadly to the unprepared that we can never afford to neglect the question.'"

America is unprepared for either a biological or chemical weapons attack, and lacks the infrastructure needed to detect the threat of such an attack, the Blue Ribbon Study Panel on Biodefense recently concluded.

"Our legislative and executive branches are not capable of producing an effective reaction to an eventual biological threat," said Sen. Sheldon Whitehouse (D-RI). "The Blue Ribbon Study Panel is addressing a vital issue that government hasn't been able to rally behind."

Former Centers for Disease Control and Prevention Director Dr. Julie Gerberding acknowledged the agency had not done enough during her tenure to prepare for a threat like the recent Ebola outbreak.

Representatives from New York City, Indianapolis, Texas A&M University and the Alliance for Biosecurity presented recommendations for medically responding to chemical and biological attacks as well as outbreaks of emerging diseases like pandemic flu.

EcoHealth Alliance Executive Vice President Dr. William B. Karesh explained that biological and chemical threats endanger not just humans but animals. "Humans or livestock can't be discussed in isolation anymore," he said. "There is just one health, and one solution to stop such a cataclysmic event."

"Our world is threatened more so than ever today by terrorist groups like ISIS who can create undetectable immediate threats," added former Department of Homeland Security Secretary Tom Ridge. "Our government is delusional to think we can get by without a strong biodefense policy."

Not Crossing a Red Line: Chlorine Barrel Bombs In Context

By Al Mauroni

Source: http://warontherocks.com/2015/03/not-crossing-a-red-line-chlorine-barrel-bombs-in-context/?singlepage=1

The use of chlorine improvised explosive devices against Syrian civilians, as a weapon

of war, seems to be a subject of heated commentary. Although the United States successfully led an effort to destroy Syria's existing chemical warfare agents and associated production facilities, Assad's field commanders are now allegedly using chlorine tanks inside of "barrel bombs" to kill and panic the Syrian people. The State Department has expressed its dismay at this behavior, stating that, if verified, such a violation would have consequences. The Organization for the Prohibition of Chemical Weapons, the implementing body of the Chemical Weapons Convention (CWC), believes that chlorine was "systematically and repeatedly" used as a weapon in northern Syria, without blaming the government directly for those actions. However, as the victims have tended to be Syrian civilians and not government forces, and the mode of delivery has been by helicopter, the list of probable suspects is pretty short.

As a result of four years of civil war, Syrian deaths have climbed

to more than 200,000. Of those, perhaps one percent has been caused by chemical weapons. Nonetheless, in 2013, the Obama administration felt compelled to act against Syria when its forces used several rockets filled with sarin nerve agent to kill almost 1,500 people, viewing this violation of international norms as something that required immediate redress. Sabers were dutifully rattled, and

Washington gathered forces for an attack. The Syrian government admitted to producing chemical weapons and acceded to the terms of the Chemical Weapons Convention that same year, forestalling a U.S. military reaction. Disposal of its chemical warfare agents and dismantlement of its production facilities quickly followed. So given this fact, why are these cases of chlorine attacks happening? More importantly, is U.S. Ambassador to the United Nations Samantha Powers right when she said, "the use of chlorine weapons [is] no less evil than that of chemical weapons?" The short answer is emphatically *no*.

Let's start with a few basics. Chlorine is not named in the Chemical Weapons Convention as an inspectable chemical because it is so prevalent in industry as a basic precursor for other materials, used on the order of tens of millions of tons every year. Water treatment plants across the globe depend on chlorine to provide clean, drinkable water. It is used in the production of most pharmaceutical drugs. People across the world swim in water treated with chlorine. But it can also be toxic and even deadly. When chlorine was used by military forces during World War I, it was as an act of improvisation, and it worked – for a short while. Once troops were provided simple gas masks, they could protect themselves when they saw the telltale greenish-yellow fog slowly floating toward them. Chlorine was not a very effective chemical weapon, and that's why no nation after 1917 ever used it as a munition on the battlefield.

The Syrian government did not declare its stocks of chlorine gas as a chemical weapon when it acceded to the CWC in 2013. And it did not need to. Still, the wording of the treaty's first article makes it clear that signatories are not to use chemical weapons or engage in any military preparations to use chemical weapons. The second article defines a chemical weapon as any munition or device specifically designed to cause death or harm through the properties of a toxic chemical. Clearly, the design and use of a chlorine barrel bomb fits that description.

To a layperson, it might seem clear that the Syrian government has broken faith as a signatory of this treaty. However, this is an area best left to diplomats, since the evidence presented publicly has been circumstantial. The Organization for the Prohibition of Chemical Weapons has fact-finding missions in Syria but has still been very careful not to accuse the Syrian government of orchestrating the chlorine attacks. Despite videos of victims of gas attacks, the U.S. government has not acted against Syria. The Chemical Weapons Convention is an agreement between nation-states. Syria has not attacked any nation-states with chemical weapons. At best, this is a UN Security Council issue, and as the UN Security Council addresses this, there are some countries that do not believe that the United Nations should sanction a nation for dealing harshly with cases of civil unrest – even to this extent.

Resolution 2209, which passed the UN Security Council on March 6, 2015, states "that those individuals responsible for the use of chemicals as weapons, including chlorine or any other toxic chemical, must be held accountable" and that it will remain "actively seized of the

matter." It does not, as reporter Josh Rogin states in his article, call on the Syrian regime to cease dropping chlorine barrel bombs on civilians. It reminds Syria of its obligations under the Chemical Weapons Convention but does not accuse them of any perfidy. So that's where the UN Security Council stands. This is the realm of diplomacy.

Given these facts, what is Assad's angle?

Why would the Syrian military use chlorine barrel bombs in its attacks against the Syrian insurgents, given close international scrutiny and the relative lack of effectiveness of chlorine as a casualty-causer? There could be a number of reasons. First, it could be that Assad wants to interpret the Convention language more loosely. He's given up the production, storage, and use of militarily designed chemical warfare agents. He could blame his field commanders for using chlorine in improvised chemical weapons under their own discretion. Certainly Assad doesn't need these improvised chemical weapons to retain power – his conventional military forces and its actions are doing the overwhelming majority of killing and taking ground. At best, the use of chlorine barrel bombs represents an attempt to intimidate and terrorize the populace. At least, it represents Assad thumbing his nose at the West, asserting his dominance as a state leader to control events within his borders.

Chlorine is a minor league hazard compared to nerve agents, despite the liberal and careless use of the broad term "chemical weapons" seen in the press. The U.S. military is very busy supporting Iraqi military forces against the Islamic State, which coincidently is an enemy of Assad's government. So given Syria's compliance with the dismantling of its formal chemical weapons program, does it make sense for Western nations to use military forces to deter Assad's forces from using chlorine gas against the populace when (a) that action could aid the Islamic State in retaining or gaining ground in Syria; (b) the chlorine attacks have not significantly helped Assad nor disproportionally killed civilians; and (c) there is no international consensus – even among America's closest allies – on how to deal with the direction of Assad's civil war?

We will still hear outcries from the arms control community and the Responsibility to Protect crowd that we need to "do something." And here's my concern. Many diplomats and arms control specialists see no difference between the small-scale use of improvised chemical munitions and heavy use of Scud ballistic missiles with VX-filled warheads. They see no difference in threat between Iran and North Korea's nuclear weapons programs and China and Russia's nuclear weapons stockpiles. This is a very black and white Cold War view, one that removes the nuances from discussions on unconventional weapons and does not help us address contemporary security challenges. The fact is, nonproliferation regimes are not well-suited to address chemical terrorism or the state use of chemical weapons during internal civil unrest.

Ridiculous news titles such as "The Spector of Chemical Warfare Returns to the Middle East" unnecessarily elevate these cases of improvised chemical weapons to the status of chemical weapons' use in the Iran-Iraq conflict in the 1980s, Saddam Hussein's use of nerve gas against his own population, or Yemen's civil war in the 1960s. This comparison isn't accurate or helpful. Egypt caused perhaps 3,000 chemical casualties in Yemeni villages over a period of years, while Iran's military suffered more than 50,000 casualties from Iraqi chemical weapons. Assad is a violent and ruthless leader, and he intends to retain power by all means possible. But he is the leader of a nation-state that is also in a very volatile part of the world, and there are rules for dealing with national leaders. These incidents of using improvised chemical munitions are unfortunate, but in the end, what Assad is doing with his conventional forces is the real war crime.

When people hear the name of the city Halabjah, they think of the thousands of Kurds killed by Saddam Hussein's military, which also used chemical weapons against unprotected civilians. They overly fixate on the "horrors" of chemical warfare, not recognizing perhaps that the real crime was the organized and systematic use of conventional military forces to cause mass casualties among noncombatants. Similarly, we should not get so focused on the occasional use of chlorine barrel bombs that we overlook the real tragedy – the thousands of Syrians being killed in this brutal conflict.

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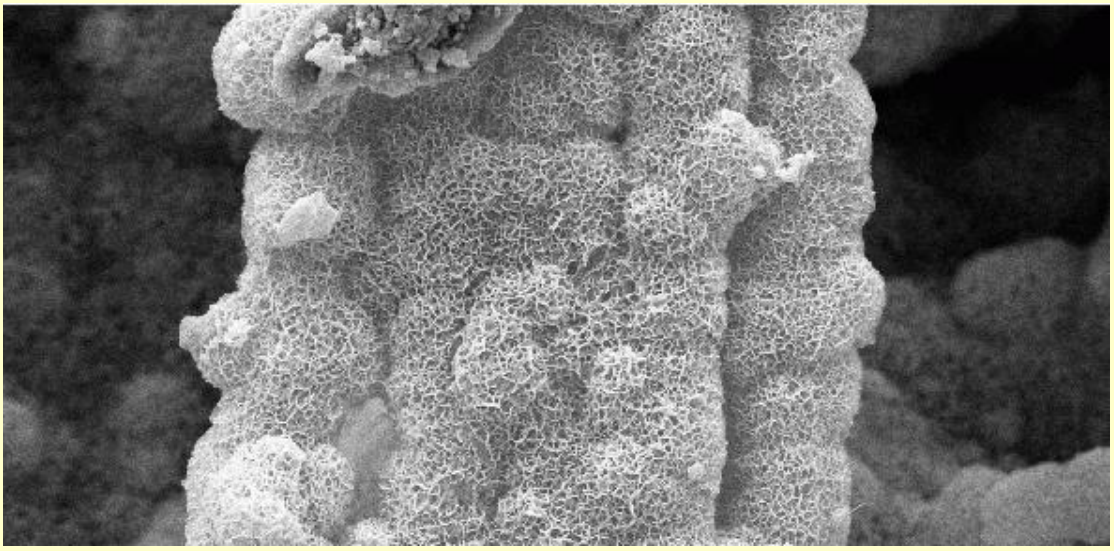
InfrastructureDamage-sensing, self-repairing concrete

Source: http://www.homelandsecuritynewswire.com/dr20150325-damagesensing-selfrepairing-concrete

March 25 – **Roads that self-repair, bridges filled with first-aid bubbles, buildings with arteries… not some futuristic fantasy but a very real possibility with 'smart' concrete.**

Skin is renewable and self-repairing — our first line of defense against the wear and tear of everyday life. If damaged, a myriad of repair processes spring into action to protect and heal



the body. Clotting factors seal the break, a scab forms to protect the wound from infection, and healing agents begin to generate new tissue.

Taking inspiration from this remarkable living healthcare package, researchers are asking whether damage sensing and repair can be engineered into a quite different material: concrete.

Their aim is to produce a "material for life," one with an in-built first-aid system that responds to all manner of physical and chemical damage by self-repairing, over and over again.

A University of Cambridge release reports that self-healing materials were voted one of the top-ten emerging technologies in 2013 by the World Economic Forum, and are being actively explored in the aerospace industry, where they provide benefits in safety and longevity. Perhaps one area where self-healing might have the most widespread effect, however, is in the concrete-based construction industry.

Concrete is everywhere you look: in buildings, bridges, motorways, and reservoir dams. It is also in the places you cannot see: foundations, tunnels, underground nuclear waste facilities, and oil and gas wells. After water, concrete is the second most consumed product on earth; ton for ton, it is used annually twice as much as steel, aluminum, plastic and wood combined.

Like most things, however, concrete has a finite lifespan. "Traditionally, civil engineering has built-in redundancy of design to make sure the structure is safe despite a variety of adverse events. But over the long term, repair and eventual replacement is inevitable," said Professor Abir Al-Tabbaa, from the Department of Engineering and the lead of the University of Cambridge component of the research project.

The United Kingdom spends around £40 billion per year on the repair and maintenance of existing, mainly concrete, structures. However, repairing and replacing concrete structures cause disruptions and

contribute to the already high level of carbon dioxide emissions that result from cement manufacturing. What if the life of all new and repaired concrete structures — and in fact any cement-based material, including grout and mortar — could be extended from an average of several decades to double this, or more, through self-healing?

In 2013 researchers in Cambridge joined forces with colleagues at the Universities of Cardiff (which lead the project) and Bath to create a new generation of 'smart' concrete and other cement-based construction materials.

"Previous attempts in this field have focused on individual technologies that provide only a partial solution to the multi-scale, spatial and temporal nature of damage," explained Al-Tabbaa. By contrast, this study, funded by the Engineering and Physical Sciences Research Council, provides an exciting opportunity to look at the benefits of combining several 'healthcare packages' in the same piece of concrete.

"Like the many processes that occur in skin, a combination of technologies has the potential to protect concrete from damage on multiple scales — and, moreover, to do this in a way that allows 'restocking' of the healing agents over time," she added.

Mechanical damage can cause cracks, allowing water to seep in; freezing and thawing can then force the cracks wider. Loss of calcium in the concrete into the water can leave decalcified areas brittle. If fractures are deep enough to allow water to reach the reinforcing steel bars, then corrosion and disintegration spell the end for the structure.

The team in Cambridge is addressing damage at the nano/microscale by developing innovative microcapsules containing a cargo of mineral-based healing agent. It is like having a first-aid kit in a bubble: the idea is that physical and chemical triggers will cause the capsules to break open, releasing their healing and sealing agents to repair the lesion.

"While various cargo and shell materials have been developed for other applications, from food flavoring and pharmaceuticals to cosmetics and cleaning products, they are not generally applicable to cement-based matrices and are far too expensive for use in concrete, which is why we have needed to develop our own," explained Al-Tabbaa.

Another challenge is to make sure the capsules will be strong enough to withstand being mixed in a cement mixer, yet fragile enough to be broken open by even the smallest of fractures. Innovative capsule production techniques are being investigated that can be scaled up to deliver the huge volumes of capsules required for use in construction.

In parallel, the team in Bath is investigating healing at the mid-range micro/mesoscale with spore-forming bacteria that act as tiny mineral-producing factories, feeding on nutrients added to the cement and facilitating calcite precipitation to plug the cracks in the concrete. Different techniques for housing and protecting the bacteria and nutrients within the cement matrix are being investigated, including the capsules that are being developed at Cambridge.

The University of Cardiff researchers are engineering "shape memory" plastic tendons into the cement matrix to close large cracks at the larger meso/macroscale through triggering of the shrinkage of the tendons by heat.

The project team are then collectively addressing repeated damage through the creation of vascular networks of hollow tubes, like the circulatory system of a living organism, so that self-healing components can continually be replenished.

The release notes that as the Cambridge researchers move closer to the best formulations for the microcapsules, they have begun collaborating with companies who can scale up the production to the levels required to seed tons of cement. Meanwhile, the three research groups are also beginning to test combinations of each of their techniques, to find the best recipe for maximum self-healing capability.

By the summer of 2015, with the help of industrial partners, field trials will test and refine the most promising combined systems in a range of real environments and real damage scenarios. This will include testing them in non-structural elements in the Department of Engineering's new James Dyson Building.

"This is when it will become really exciting," said Al-Tabbaa. "To be truly self-healing, the concrete

needs to be responsive to the inherently multi-dimensional nature of damage, over long time scales. We want concrete to be a material for life that can heal itself again and again when wounded."

Hellenic National Independence Day – March 25th, 2015

Military parade in Athens

Hellenic Joint CBRN Platoon parading during the National Day in Athens.

A good day for colleagues in Level-A PPE – heavy rain throughout the parafe! :-)

Locked and Loaded: North Korea's Scary Chemical-Weapons Arsenal

By Kyle Mizokami

Source: http://nationalinterest.org/print/feature/locked-loaded-north-koreas-scary-chemical-weapons-arsenal-12487

In recent years, North Korea's chemical weapons have taken a backseat to her nuclear weapons. They are, however, no less dangerous. The deterioration of the Korean People's Army (KPA) makes them more essential to victory than ever before. For both practical and doctrinal reasons, North Korea will almost certainly use chemical weapons in wartime, from riot control to lethal nerve gases.

Chemical weapons will be used to create a local, tactical advantage on the front lines and neutralize some advantages, such as air power. Thanks to North Korea's prodigious missiles and artillery, they can be employed beyond the battlefield as well. North Korea will likely attack South Korea (ROK) through its depth with chemical weapons, from the Demilitarized Zone to Busan.

The vast number of delivery systems would make shutting down the KPA chemical threat impossible during wartime.

North Korean Chemical-Weapons Doctrine

North Korea parses weapons of mass destruction into different usage categories. Nuclear weapons are a strategic deterrent meant to guarantee the security of the Kim dynasty. Northern nukes likely have no operational role in a wartime scenario, since their usage would cause South Korea and the United States to topple the North Korean government.

Chemical weapons, on the other hand, do have an operational role. North Korean military forces train to operate in a chemical environment on a regular basis, and North Korea manufactures its own chemical protective gear and detection systems, some of which have been found bound for Syria [4].

Chemical weapons would be used in a number of ways, but the primary goal is the suppression of enemy defenses, allowing the KPA to overcome ROK and U.S. forces. Troops fight less effectively when in chemical protective gear, and defenses are dispersed to mitigate the effects of chemical attack.

Given the unpredictability of the battlefield and chemical weapons in particular, North Korean planners will use them as early in the war as possible, when their overall picture of the battlefield is at its maximum. As the war progresses and uncertainty mounts, chemical weapons use will become less productive and even counterproductive.

Types of Chemical Agents

North Korea has a wide spectrum of agents to choose from, and would be expected to tailor its use of chemical agents to the specific task at hand. The effects of these weapons range from temporary incapacitation to death.

The South Korean Ministry of National Defense estimated in 2012 [5] that North Korea had a stockpile of between 2,500 and 5,000 metric tons of chemical weapons. Annual production is estimated [6] at 4,500 tons in peacetime and 12,000 tons in wartime.

North Korea is thought to have chemical weapons from the principle five categories: riot, choking, blood, blister and nerve agents. Riot-control agents are thought to be Adamsite (DM) [7], CN and CS gases. Riot agents and so-called "tear" gases are meant to disperse crowds and are generally nonlethal to healthy adults.

North Korea is also thought to have so-called choking/pulmonary agents, gases that act upon the respiratory system. Short-term exposure requires hospitalization; prolonged exposure is lethal. The KPA is thought to have access to both chlorine-gas and phosgene choking agents.

So-called blood agents, which act through exposure to the human bloodstream, include hydrogen cyanide and cyanogen chloride.

North Korea also has mustard gas, a blister agent, which irritates skin and mucus-production areas, such as the eyes and nose.

Finally, North Korea is believed to have highly lethal nerve agents,

which work by disrupting the human body's nervous system, resulting in asphyxiation. North Korea is believed to have stockpiles of sarin, soman, tabun, VM and VX nerve agents. According [6] to longtime analyst Joseph Bermudez, North Korea is believed to have specialized in "sulfur mustard, chlorine, phosgene, sarin and the V-agents."

Delivery Systems

North Korea has a multitude of ways to deliver chemical weapons to targets, ranging from long-range missiles to commandos. Pyongyang will have the ability to attack targets in South Korea and beyond, from locations not just near the DMZ, but theoretically as far as the Russian and Chinese borders.

An important factor to consider in this discussion is the relatively short ranges involved in-theater. **The Korean peninsula is relatively short; from Hyesan on the North Korean/Chinese border to the southern tip of South Korea is less than 500 miles**, or the distance from Portland, Maine to Baltimore, Maryland. Pyongyang to the DMZ is only 100 hundred miles and only 120 miles to Seoul.

Rockets and missiles are one way North Korea could deliver chemical weapons and have the longest reach. As of 2014, the U.S. Department of Defense estimates [8] North Korea has less than one hundred short-range missile launchers of all types, including the **Toksa/KN-02** [9] Viper (a derivative of the Russian SS-21 Scarab) with a range of 75 miles, and its collection of **Scud** missiles, with a maximum range of 185 to 625 miles. Toksas and Scuds would have to be based close to the border.

North Korea also has less than fifty launchers for its No Dong missiles. Developed using Scud technology, No Dong has a range of 800 miles, making it useful for striking from deep inside North Korea against South Korea and Japan.

Artillery is by far the most numerous chemical-weapons delivery system. North Korea is believed to have [10] 5,100 multiple rocket launchers and 4,400 self-propelled artillery pieces. Rocket artillery of 122-millimeter or greater and field artillery of 152-millimeter or greater would be capable of firing chemical shells. The majority of Pyongyang's artillery would be capable of delivering chemical strikes.

The North Korean People's Air Force is capable of delivering chemical weapons by air, but its aging fleet of airplanes are less reliable and less likely to get through South Korean defenses than other means. They will also be heavily in demand for conventional missions. Nevertheless, it has eighteen Su-7BMK "Fitter" and thirty-two Su-25 "Frogfoot" aircraft that could carry out chemical strikes.

North Korea's large number of special forces and their importance to any war plan make it likely they would work with chemical weapons to some extent. Trained in infiltration techniques, North Korean infiltrators could be used to deliver chemical weapons or exploit the chaotic aftermath of a chemical attack.

There may be ways North Korea plans to disseminate chemical weapons that remain undiscovered. Chemical agents

could be delivered by submarine or drone. North Korea could even use new, undiscovered tunnel systems to launch chemical attacks behind South Korean lines.

Targets

North Korea will use chemical weapons to alter the correlation of forces the way other countries use high technology. The most important targets would be South Korean forces directly across the border, manning the country's impressive border defenses. Attacks such as these in support of a ground offensive would seek to break through and facilitate the push on Seoul and beyond.

Air bases would be key targets for chemical strikes, as shutting them down, even temporarily, would negate the tremendous advantage the United States and South Korea have in terms of air power. **Daegu Air Base (arrow), home of the Republic of Korea Air Force's F-15K fighter bombers, and the American bases of Kunsan and Osan would likely be hit hard by North Korean missiles.**

South Korean ports, such as Busan, will also be the targets of strikes, as these will be the nodes through which American reinforcements will flow. Chemical weapons could be used against ROK Army reservist depots, delaying the firming up of reinforcements for the front.

North Korean Special Forces could even use chemical weapons against civilian targets. Attacks on politicians, infrastructure and other high-value civilian targets could cause panic and a loss of confidence in the government. Attacks similar to to the 1995 sarin gas attack [11] in Tokyo, Japan could lower civilian morale and cause panic. A panicked civilian population will create serious problems, as civilians clog the roads attempting to flee the fighting.

Finally, U.S. facilities in Asia beyond the Korean peninsula will come under chemical attack. Chemical attacks on Kadena Air Base, Misawa Air Base and Yokota Air Base in Japan would staunch the flow of U.S. airpower into the region. (There is little downside to attacking Japanese territory, since the Japanese do not have offensive weapons.) Similarly, attacks on facilities at Yokosuka, Atsugi and Sasebo would target U.S. Navy forces. Guam, a base for American submarines and bombers, is in reach of longer-range North Korean missiles, such as Taepodong.

Conclusion

Would North Korea chance using chemical weapons? The deterioration of the conventional North Korean military makes the use of gas more necessary than ever. The KPA has few "force multipliers" to enhance its effectiveness on the battlefield and even fewer that only it alone would use.

It's long been thought that chemical-weapons use would invoke "massive retaliation" by the United States and South Korea. However, short of employing nuclear weapons, the latter powers will already be using everything at their disposal to defeat a KPA invasion force. From the North Korean point of view, as long as the nuclear threshold is not crossed, there's little political downside to using chemicals.

The failure of the West to respond to chemical use in Syria has shown that warnings about "red lines" and the use of gas are hollow. There are great differences between gassing Syrian civilians and American troops, but it's clear that some of the taboo of using chemical weapons has worn off.

North Korea's chemical-weapons threat is real and the likelihood of their use in wartime is high. Once war is underway, the best way for U.S./South Korean forces to mitigate their effects would be to degrade North Korea's command and control and take the offensive. If the NK general staff is unable to send orders and receive accurate

intelligence, it will find it difficult to plan chemical strikes. A fast-moving UN offensive may also catch slow-moving artillery and missile units.

The most effective means overall of mitigating Pyongyang's chemical threat may be to bargain the weapons away ahead of time. If the North could be persuaded to give up most or all of its chemical weapons, it would lessen the threat to civilians and soldiers in wartime, both on the Korean peninsula and abroad. That would involve talking to North Korea [12], something the Obama administration has not been too interested in doing. If the world wishes to do away with North Korea's chemical weapons, it needs to start talking to the reclusive country now.

Links

[1] http://nationalinterest.org/feature/locked-loaded-north-koreas-scary-chemical-weapons-arsenal-12487
[2] http://nationalinterest.org/profile/kyle-mizokami
[3] http://twitter.com/share
[4] http://38north.org/tag/el-entisar/
[5] http://www.nti.org/country-profiles/north-korea/chemical/
[6] http://38north.org/2013/10/jbermudez101013/
[7] http://en.wikipedia.org/wiki/Adamsite
[8] http://www.defense.gov/pubs/North_Korea_Military_Power_Report_2013-2014.pdf
[9] http://en.wikipedia.org/wiki/OTR-21_Tochka
[10] http://nautilus.org/napsnet/napsnet-special-reports/mind-the-gap-between-rhetoric-and-reality/
[11] http://en.wikipedia.org/wiki/Tokyo_subway_sarin_attack
[12] http://nationalinterest.org/feature/america-time-talk-north-korea-11648
[13] https://twitter.com/KyleMizokami
[14] https://www.flickr.com/photos/rapidtravelchai/
[15] http://nationalinterest.org/tag/north-korea
[16] http://nationalinterest.org/tag/chemical-weapons
[17] http://nationalinterest.org/topic/security

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Assad Regime Drops Chlorine Barrel Bombs As Jabhat al-Nusra, Rebels Battle For Idlib

Source: http://www.ibtimes.com/assad-regime-drops-chlorine-barrel-bombs-jabhat-al-nusra-rebels-battle-idlib-1857938#.VRJvcxvXgBk.linkedin

People in Idlib governorate in northwestern Syria are used to barrel-bomb attacks. After four years of civil war, the indiscriminate bombings with barrels full of explosive dropped from helicopters are nothing new. But the bombing Tuesday in the center of Binnish, a town just outside the city of Idlib, was different. **People ran to the shelters built in the basements of their homes, but that didn't save them. The bomb was filled with toxic chlorine gas, a substance so heavy it sinks to a building's lowest level and seeps into the shelter.** About 20 minutes later a second barrel bomb fell on the neighboring town of Qminas.

Syrian President Bashar Assad's forces are the only faction in the country with an air force, making it likely it was they who carried out the chemical attack, according to volunteer rescue organization Syria Civil Defense. Members of the group's branch in Idlib were at the scene in Binnish and could smell the chlorine.

"In the middle of the city of Binnish there are families, with

women and children. It was in the middle of the city, so there is nowhere else to go," said Ola Suliman, spokesperson for Syria Civil Defense and member of MayDay Rescue, an international organization supporting volunteer rescue efforts in war zones. "The barrels cannot be targeted, because they are freely dropped. So they just drop it on the city and it hits wherever it hits."

"The reason why the regime is bombing those

areas heavily is because the rebels are now attacking Idlib city to liberate it from the regime," Suliman said. "So the regime is responding by bombing the civilians with chemical barrels."

International Business Times was not able to independently verify these reports, but did obtain several photos of children suffering symptoms akin to those of a chlorine attack. The group claimed the photos were from Tuesday's attack.

Syrian President Bashar Assad's forces are accused of carrying out the attack. Syria Civil Defense

Roughly 30 people were injured in the attack in Binnish, many of them women and children, with symptoms that varied from nausea to the inability to breathe. The feeling of suffocation is a common symptom in chlorine attacks and is always much worse in children. Doctors have yet to confirm the number of injuries in Qminas. A third attack was also reported, but Syria Civil Defense has not yet confirmed.

The Assad regime surrendered most of its chemical weapons last year after a gas attack in Ghouta that killed hundreds of civilians, many of them children. However, chlorine is not banned under the Chemical Weapons Convention as it can be used as a cleaning agent; it is also easily produced. Chlorine can be used as a weapon in concentrated quantities. Symptoms of chlorine attacks include teary eyes, a burning feeling in the throat, the sensation of suffocation and a headache.

Assad's forces have been under attack by a coalition of rebel groups aligned with al Qaeda-affiliate Jabhat al-Nusra, called the Army of Conquest. Islamist rebel groups Ahrar al-Sham and Suqor al-Sham Monday merged forces to fight the regime, becoming one of the most effective rebel factions with access to roughly 15,000 fighters around the country, according to the Brookings Institution. Islamist rebel group Jund al-Aqsa is also reported fighting the regime in Idlib, along with forces from Jabhat al-Nusra.

Rebels Tuesday carried out at least five suicide attacks on regime checkpoints in Idlib. Nusra reportedly launched an attack using a U.S.-

provided TOW missile, which it seized from formerly U.S.-backed moderate rebel group Harakat Hazm when the latter dissolved last month. Militants also claimed they captured five regime soldiers during battles in Idlib.

The battle for Idlib was ongoing as of Tuesday night, and some feared continued rebel and regime fighting on the ground would result in additional air attacks in civilian areas.

"Barrels containing chlorine is the new thing that the regime is using in Idlib. It's ongoing," Suliman said. "As the time advances, I think we will see more of that tonight. There have been rumors around Idlib that there are more coming."

Syria destroys three chemical weapons sites

Source: http://www.terrorismwatch.org/2015/03/syria-destroys-three-chemical-weapons.html?utm_source=feedburner&utm_medium=email&utm_campaign=Feed%3A+terrorismwatch%2FJTvK+%28Terrorism+Watch%29

March 26 – **United Nations: Syria has destroyed three of its 12 chemical weapons production sites but is unable to dismantle three other facilities because of security conditions,** the OPCW chemical watchdog said in its latest report.

The report by the Organisation for the Prohibition of Chemical Weapons (OPCW) was released on Wednesday to the UN Security Council, which is overseeing efforts to dismantle Syria`s chemical weapons program.

Syria has agreed to destroy seven aircraft hangars and five underground structures identified by the OPCW as chemical weapons production sites but there have been delays caused by logistical problems.

In the report obtained by AFP, OPCW director general Ahmet Uzumcu said his team of experts was able to verify that three tunnels have been destroyed and that work on dismantling a fourth underground structure was under way.

"Currently, **one underground structure and two hangars** are not accessible owing to the security situation near these sites," he wrote in the report dated March 23.

Despite this hurdle, Uzumcu said he expected the destruction of all five underground tunnels to be completed by June.

Concerning the hangars, work has begun on five sites and explosives are to be delivered soon to begin demolishing the structures.

"The Syrian authorities have continued to extend the necessary cooperation" for the dismantling of the 12 sites, the report added.

The Security Council is due to discuss progress in dismantling Syria`s chemical weapons program at a meeting on April 2.

GMU Summer Program in International Security, CBRN Threats

Source: http://globalbiodefense.com/2014/04/29/gmu-summer-program-in-international-security-cbrn-threats/#sthash.AELeD3lQ.dpuf

George Mason University is offering a Summer Program in International Security for professionals, students, and faculty in related fields to get up to speed on a range of important topics in terrorism; chemical, biological, radiological and nuclear (CBRN) weapons; and global health security.

Courses are taught by world-renowned experts from the Mason faculty, as well as from the private and public sectors.

The program is divided into three weeks, each of which focuses on a different "big" topic in the dynamic world of international security. Each week is composed of a three-day course that sets the stage for the week by taking a high-level look at the topic, followed by a two-day course that delves deeper into specific aspects of the topic.

- CBRN Weapons: Science & Policy (July 7-9, 2014)
- CBRN Weapons: Export Controls (July 10-11, 2014)
- 21st Century Terrorism: Emerging Trends and Evolving Tactics (July 14-16, 2014)
- Terrorism Analysis: Quantitative and Qualitative Research Methodologies (July 17-18, 2014)
- Pandemics, Bioterrorism, & International Security (July 21-23, 2014)
- Biosurveillance: National & International Levels (July 24-25, 2014)

Participants are welcome to take just one course but the program structure makes it possible to combine courses to cover more ground efficiently. Participants may find it particularly useful to plan on attending both courses in a given week. Discounts are

available for anyone registering for multiple courses. Discounts are also available for previous summer course attendees, groups of 3 or more from the same organization, and Mason alumni. A discounted registration rate is available until May 15.
The program attracts professionals from the full spectrum of public and private sector backgrounds, both domestic and international, and provides opportunities for participants to socialize and build relationships.
The Summer Program in International Security is designed for professionals and academics from all backgrounds whose responsibilities intersect with the realm of international security broadly defined, including those responsible for preventing, preparing for, responding to, or predicting threats posed by terrorism, the proliferation of weapons of mass destruction, and/or pandemics.
Past participants have included policy makers; security analysts from the government, private sector, and non-government organizations; executives from private industry; public health officials; law enforcement officers; homeland security and emergency management practitioners; military personnel; researchers in the life sciences; media professionals; and academics from many disciplines.

International Security Program Instructors

CBRN Weapons: Science and Policy	Pandemics, Bioterrorism, International Security	21st Century Terrorism
• Bidwell • Ferguson • Koblentz • Kristensen • MacDonald • Ward	• Franz • Hoyt • Koblentz • Kuhn • Weiner • You	• Ackerman • Blair • Dugan • Hahn • Neumann

Gary A. Ackerman is the director of the special projects division at the National Consortium for the Study of Terrorism and Responses to Terrorism (START). Prior to taking his current position, he was research director at START, and before that was the director of the Weapons of Mass Destruction Terrorism Research Program at the Center for Nonproliferation Studies in Monterey, California. His research encompasses various areas relating to terrorism and counterterrorism, including terrorist threat assessment, terrorist technologies and motivations for using chemical, biological, radiological, and nuclear (CBRN) weapons, radicalization processes, and the modeling and simulation of terrorist behavior. Ackerman was a member of the WMD Expert Advisory Group of the Information Sharing Environment initiative, Office of the Director for National Intelligence (2007-2008), and has testified on terrorist motivations for using nuclear weapons before the Senate Committee on Homeland Security in April 2008. He has also headed more than ten large government-sponsored research projects in the past five years. Mr. Ackerman possesses a diverse academic background, including past studies in the fields of mathematics, history, law, and international relations. He received his PhD in war studies from King's College in London and his masters in international relations (with a concentration in strategic studies) at Yale University.

Christopher A. Bidwell is the senior fellow for Nonproliferation Law and Policy at the Federation of American Scientists. He recently retired from the U.S. Navy where his last key assignment was as national security counselor at an internal DoD think tank (DTRA-ASCO) dedicated to the study of WMD and nonproliferation issues. He is also an accomplished civilian litigation attorney and has focused his efforts on the interplay between law and WMD for the last several years. He is especially knowledgeable on issues related to attribution, deterrence, WMD free zones, sanctions, anticipatory self-defense and the Middle East region in general. He has lectured or spoken at several universities and academic fora throughout the world on nonproliferation issues and has taught courses on nonproliferation at Georgetown University. Trained as an attorney, he is an active member of the California Bar and currently serves as chair of the Nonproliferation, Arms Control and Disarmament Interest Group of the American Society of International Law.

Charles P. Blair is a Washington, D.C.-based university instructor, researcher, writer, and thinker specializing in terrorism and the history, technical underpinnings, and potential futures of Weapons of Mass Destruction. As a visiting student in Moscow in 1985, Blair witnessed firsthand the closing salvos of the Cold War and, since

the end of that era, has worked on issues relating to globalization and the concomitant diffusion and diversification of WMD in the context of the rise of mass casualty terrorism incidents. Teaching graduate-level classes on both terrorism and the technology of WMD at Johns Hopkins University and George Mason University's Biodefense Program, Blair is also a columnist for the Bulletin of the Atomic Scientists. With regard to recent works: In November 2012 Blair completed a two-year study (under the auspices of the Department of Homeland Security): "Terrorist Nuclear Command and Control." An accompanying two-year DHS-backed study explored the U.S. extreme right-wing and radiological and nuclear terrorism. Having begun in 2011, Blair continues his open source research and writings addressing Syria- its chemical weapons and the various terrorist and insurgent groups active in the Levant that possess both the capability and motivation to use unconventional weapons (see here).

Laura Dugan is an associate professor and director of graduate studies in the Department of Criminology and Criminal Justice at the University of Maryland, and is an active member of the National Center for the Study of Terrorism and the Response to Terrorism. Her research examines the consequences of violence and the efficacy of violence prevention/intervention policy and practice. She also designs methodological strategies to overcome data limitations inherent in the social sciences. Dr. Dugan is a co-principal investigator for two important ongoing event-based datasets: the Global/Terrorism Database (GTD) and the Government Actions in Terrorist Environments (GATE) dataset. The GTD is the most comprehensive source of terrorist incidents, as it records all known attacks across the globe since 1970. The GATE data record government actions related to terrorists and their constituencies for a select set of countries since 1987. Dr. Dugan's research has been published in top journals in criminology and sociology. She has also published in political science and public policy journals. She received her PhD in public policy and management from Carnegie Mellon University in 1999; her MA in statistics from Carnegie Mellon University in 1998; her MA in public policy and management from Carnegie Mellon University in 1995; and her BFA in applied media arts from Edinboro University of Pennsylvania in 1987.

Charles D. Ferguson is the president of the Federation of American Scientists (FAS). Founded by Manhattan Project atomic scientists, FAS works at the intersection of science and national security policy. With more than twenty years experience in policy and national security, Dr. Ferguson has researched and written extensively on energy policy, nuclear nonproliferation, missile defense, and prevention of nuclear and radiological terrorism. Prior to FAS, Dr. Ferguson worked as the Philip D. Reed senior fellow for science and technology at the Council on Foreign Relations (CFR). Before his work at CFR, he was the scientist-in-residence in the Monterey Institute's Center for Nonproliferation Studies, where he co-wrote (with William Potter) the book The Four Faces of Nuclear Terrorism (Routledge, 2005). While working at the Monterey Institute, he was the lead author of the report Commercial Radioactive Sources: Surveying the Security Risks, which was the first in-depth, post-9/11 study of the "dirty bomb" threat. This report won the 2003 Robert S. Landauer Lecture Award from the Health Physics Society. Dr. Ferguson has consulted with Sandia National Laboratories and the National Nuclear Security Administration on improving the security of radioactive sources as well as advising other national laboratories. He has worked as a physical scientist in the Office of the Senior Coordinator for Nuclear Safety at the U.S. Department of State. In May 2011, his book Nuclear Energy: What Everyone Needs to Know was published by Oxford University Press. He graduated with distinction from the United States Naval Academy, served in the U.S. nuclear Navy as a nuclear engineering officer, and earned a PhD in physics from Boston University. He has previously taught as an adjunct professor at Georgetown University's School of Foreign Service and the Johns Hopkins University's Natonal Security Program.

David R. Franz, DVM, PhD, served in the U.S. Army Medical Research and Materiel Command for 23 of 27 years on active duty and retired as colonel. He served as commander of the U.S. Army Medical Research Institute of Infectious Diseases (USAMRIID) and as deputy commander of the Medical Research and Materiel Command. Prior to joining the Command, he served as group veterinarian for the 10th Special Forces Group (Airborne). His current standing committee appointments include the Department of Health and Human Services National Science Advisory Board for Biosecurity (NSABB), the National Academy of Sciences Committee on International Security and Arms Control, the National Research Council Board on Life Sciences, and the Senior Technical Advisory Committee of the National Biodefense Countermeasures Analysis Center. Dr. Franz was the chief inspector on three United Nations Special Commission biological warfare inspection missions to Iraq and served as technical advisor on long-term monitoring. He also served as a member of the first two US-UK teams that visited Russia in support of the Trilateral Joint Statement on Biological Weapons and as a member of the Trilateral Experts' Committee for biological weapons negotiations. Dr. Franz was technical editor for the Textbook of Military Medicine on Medical Aspects of Chemical and Biological Warfare released in

1997. He serves as a senior mentor to the program for Emerging Leaders at the National Defense University. He also serves on the Board of Integrated Nano-Technologies, LLC. Dr. Franz holds an adjunct appointment as professor for the department of Diagnostic Medicine and Pathobiology at the College of Veterinary Medicine, Kansas State University. The current focus of his activities relates to the role of international engagement in the life sciences as a component of national security policy. Dr. Franz holds a DVM from Kansas State University and a PhD in physiology from Baylor College of Medicine.

Gordon M. Hahn is the author of the well-received books *Russia's Islamic Threat* (Yale University Press, 2007) and *Russia's Revolution From Above, 1985-2000* (Transaction Publishers, 2002), the forthcoming *The 'Caucasus Emirate' Mujahedin: Global Jihadism in Russia's North Caucasus and Beyond* (McFarland Publishers, 2014), various think tank reports, and numerous articles in academic journals and other English and Russian language media. He has taught at Boston, American, Stanford, San Jose State, and San Francisco State Universities, as well as a Fulbright Scholar at Saint Petersburg State University, Russia. Dr. Hahn writes and edits the "Islam, Islamism, and Politics in Eurasia Report" at CSIS archived at https://csis.org/node/33013/publication.

Kendall Hoyt, PhD, is an assistant professor at the Geisel School of Medicine at Dartmouth where she studies U.S. biodefense policy and biomedical R&D strategy. She is also a lecturer at the Thayer School of Engineering at Dartmouth College where she teaches a course on technology and biosecurity. She is the author of *Long Shot: Vaccines for National Defense*, Harvard University Press, 2012. She serves on the National Academy of Sciences Committee on the Department of Defense's Programs to Counter Biological Threats and on the advisory board of the Vaccine and Immunotherapy Center at Massachusetts General Hospital. Kendall Hoyt received her PhD in the history and social study of science and technology at the Massachusetts Institute of Technology in 2002 and was a fellow in the international security program at the Belfer Center for Science and International Affairs at the Harvard Kennedy School of Government from 2002-2004. Prior to obtaining her degree, she worked in the International Security and International Affairs division of the White House Office of Science and Technology Policy, the Washington, D.C. office of McKinsey and Company, and the Center for the Management of Innovation and Technology at the National University of Singapore. For more information, see http://engineering.dartmouth.edu/people/faculty/kendall-hoyt.

Gregory D. Koblentz, MPP, PhD, is an associate professor in the Department of Public and International Affairs and deputy director of the Biodefense Graduate Program at George Mason University. During 2012-2013, he was a Stanton Nuclear Security Fellow at the Council on Foreign Relations. Dr. Koblentz is also a research affiliate with the Security Studies Program at the Massachusetts Institute of Technology and a member of the Scientist Working Group on Chemical and Biological Weapons at the Center for Arms Control and Non-Proliferation in Washington. He previously worked at Georgetown University, the Executive Session for Domestic Preparedness at Harvard University, and the Carnegie Endowment for International Peace. He is the author of *Living Weapons: Biological Warfare and International Security* (Cornell University Press, 2009) and co-author of *Tracking Nuclear Proliferation (Carnegie Endowment for International Peace*, 1998). He serves on the editorial boards of *Nonproliferation Review, World Medical and Health Policy*, and *Global Health Governance*. His teaching and research interests focus on international security, weapons of mass destruction, terrorism, and homeland security. He received his PhD from the Massachusetts Institute of Technology, his masters in public policy from the John F. Kennedy School of Government, and his BA from Brown University. For more information, see http://pia.gmu.edu/people/gkoblent.

Hans M. Kristensen is director of the Nuclear Information Project at the Federation of American Scientists where he provides the public with analysis and background information about the status of nuclear forces and the role of nuclear weapons. He specializes in using the Freedom of Information Act (FOIA) in his research and is a frequent consultant to and is widely referenced in the news media on the role and status of nuclear weapons. His collaboration with researchers at Natural Resources Defense Council (NRDC) in 2010 resulted in an estimate of the size of the U.S. nuclear weapons stockpile that was only 13 weapons off the actual number declassified by the U.S. government. Kristensen is co-author of the Nuclear Notebook column in the Bulletin of the Atomic Scientists and the World Nuclear Forces overview in the SIPRI Yearbook. The Nuclear Notebook is, according to the publisher, "widely regarded as the most accurate source of information on nuclear weapons and weapons facilities available to the public." Between 2002 and 2005, Kristensen was a consultant to the nuclear program at the Natural Resources Defense Council in Washington, D.C., where he researched nuclear weapons issues and wrote the report "U.S. Nuclear Weapons In Europe" (February 2005) and co-authored numerous articles including "What's Behind Bush's Nuclear Cuts" (Arms Control Today, October 2004) and

"The Protection Paradox" (Bulletin of the Atomic Scientists, March/April 2004). Between 1998 and 2002, Kristensen directed the Nuclear Strategy Project at the Nautilus Institute in Berkeley, CA, and he was a special advisor to the Danish Ministry of Defense in 1997-1998 as a member of the Danish Defense Commission. He was a senior researcher with the Nuclear Information Unit of Greenpeace International in Washington D.C. from 1991 to 1996, prior to which he coordinated the Greenpeace Nuclear Free Seas Campaign in Denmark, Norway, Finland, and Sweden.

Jens H. Kuhn, MD, PhD, PhD, MS, is managing consultant at Tunnell Government Services, Inc., Bethesda, MD, and lead virologist (contractor) at NIH/NIAID's new maximum-containment facility, the Integrated Research Facility at Fort Detrick (IRF-Frederick) in Frederick, MD. Dr. Kuhn specializes in highly virulent viral pathogens. He is the author of *Filoviruses: A Compendium of 40 Years of Epidemiological, Clinical, and Laboratory Studies* (Vienna: Springer, 2008) and co-author of *The Soviet Biological Weapons Program: A History* (Cambridge: Harvard University Press, 2012), and has studied and worked, among other countries, in Germany, Russia, South Africa, and South Korea. In the US, he rotated through the Arthropod-borne Infectious Disease Laboratory (AIDL), the Centers for Disease Control and Prevention (CDC), and the US Army Medical Research Institute of Infectious Diseases (USAMRIID). Dr. Kuhn was the first Western scientist with permission to work in the former Soviet biological warfare facility SRCVB "Vector" in Siberia, Russia, within the U.S. Department of Defense's Cooperative Threat Reduction (CTR) Program. Dr. Kuhn was a contributor to the Center for International and Security Studies at Maryland's Controlling Dangerous Pathogens Project and a member of the Center for Arms Control and Nonproliferation's CBW Scientist Working Group. He is currently chair of the International Committee on Taxonomy of Viruses (ICTV) *Filoviridaeand Mononegavirales* Study Groups, a member of the editorial boards of Applied Biosafety- Journal of the American Biological Safety Association, Archives of Virology, Journal of Bioterrorism and Biodefense, PLoS ONE, and Viruses, and was a member of the National Academy of Sciences' Committee on "Animal Models for Assessing Countermeasures to Bioterrorism Agents." Dr. Kuhn received his MD and one PhD (Medical Sciences) from the Charité in Berlin and his other PhD (biochemistry) from Freie Universität in Berlin. For more information on the Integrated Research Facility, see http://www.niaid.nih.gov/about/organization/dcr/ocsirf/Pages/OCSIFR.aspx.

Bruce W. MacDonald is an adjunct professor at the Johns Hopkins University teaching in the national security program and an independent consultant providing technology and policy management services to government and the private sector. He lectures on strategic posture and space/cyber security issues at the U.S. Institute of Peace and has been selected to lead a DTRA-sponsored study on the Chinese Challenge to Crisis Stability in Space. He is an adjunct senior fellow at the Federation of American Scientists. He was senior director to the U.S. Strategic Posture Review Commission, a bipartisan body headed by former Defense Secretaries Perry and Schlesinger. He was project leader and final report author for the Council on Foreign Relations' study of China, Space Weapons, and U.S. Security. Mr. MacDonald was assistant director for National Security at the White House Office of Science and Technology Policy and served as Senior Director for Science and Technology on the National Security Council staff. Previously, he was a professional staff member of the House Armed Services Committee for Air Force acquisition, space, and missile defense issues and earlier was senior national security adviser to Senator Bumpers of Arkansas. He also worked for the State Department as a nuclear weapons, space and technology specialist in the Bureau of Politico-Military Affairs, where he chaired the Interagency START Policy Working Group, served on the U.S. START delegation in Geneva, and also dealt with space and missile defense issues. He started his career as a staff scientist at a defense contractor working on advanced missile defense concepts. Mr. MacDonald graduated with honors in aerospace engineering from Princeton University and received two masters degrees from Princeton, one in aerospace engineering/rocket propulsion and the other in public and international affairs. He is a member of the Council on Foreign Relations and the American Institute of Aeronautics and Astronautics.

Peter Neumann is professor of security studies at the Department of War Studies, King's College London, and serves as director of the International Centre for the Study of Radicalisation (ICSR, www.icsr.info), which he founded in early 2008. Neumann has authored or co-authored five books, including *Old and New Terrorism*, published by Polity Press in 2009; and *The Strategy of Terrorism* (with MLR Smith), published by Routledge in 2008. He is the author of numerous peer-reviewed articles, dealing with different aspects of terrorism and radicalization, especially "homegrown" radicalization in Western countries. Shorter articles and opinion pieces have appeared in, among others, the *New York Times*, *Der Spiegel*, *Wall Street Journal*, and the *International Herald Tribune*. In addition, he has led research projects and written influential policy reports about issues such as online radicalization, prison-based de-radicalization programs, and terrorist recruitment in Europe. The most recent–"Preventing Violent Radicalization in America"–was published in June 2011 by the Bipartisan Policy

Center in Washington, D.C., where Neumann served as visiting scholar.

Keith B. Ward is a leading expert on chemical and biological defense. Dr. Ward obtained a BS in physics from Texas A&M in 1965 and worked as a solid state physicist for General Dynamics Corporation, Ft. Worth, before returning to graduate school at Johns Hopkins University. His graduate education included training in developmental neural embryology with emphasis on amphibian retino-tectal electrophysiological mapping. In addition he studied protein crystallography under Professor Warner E. Love, and prepared and completed the first x-ray structure analyses of single crystals of human sickle-cell hemoglobin. He was awarded a PhD in biophysics in 1974, and was a NRC postdoctoral fellow in protein crystallography from 1974-1976, studying with Dr. Wayne Hendrickson, in Dr. Jerome Karle's Laboratory for the Structure of Matter (LSM) at the Naval Research Laboratory (NRL). Dr. Ward became an assistant professor of chemistry at the University of Wisconsin-Parkside in 1976. He taught general chemistry, biochemistry, and physical chemistry, as well as establishing a protein crystallography lab depending exclusively on undergraduate research students. His molecular modeling group was the first to port 3- D protein modeling software to high performance Evans and Sutherland graphics engines coupled to IBM mainframes. He was granted tenure and promoted to associate professor in 1981. In 1984 Dr. Ward rejoined LSM at NRL as team leader of the macromolecular crystallography and molecular modeling group. Efforts focused on understanding the structure and function of proteins involved with marine bioluminescence, chemical agent-degrading enzymes, and phospholipases A2 toxins. He became a NASA flight principal investigator in 1993, and his group developed remote controlled protein crystallization systems for both space shuttle and space station experiments. In1995 Dr. Ward became a scientific officer at The Office of Naval Research (ONR), where he served as chair of the Biomolecular and Biosystems group within the Cognitive, Neural, and Biomolecular Science and Technology Division. He managed a basic research portfolio in Novel Biomolecular Materials and directed the Biocentric Technologies applied research program. He served as the ONR Point of Contact for Nanobiotechnology and for Explosives Sensing, and as the Naval Representative to the Joint Services Technical Panel for Decontamination and to the JWSTP Chapter on Combating Terrorism. He received the Navy Meritorious Civilian Service Award in 2003. In 2003, ONR detailed him to serve as program manager for Chemical and Biological Countermeasures in the DHS S&T, Homeland Security Advanced Research Projects Agency (HSARPA). In January, 2005 he became office director, CBRNE defense office within HSARPA and in October, 2006 was appointed leader, Chem- Bio R&D Section, within the chemical and biological division of DHS S&T.

Sanford L. Weiner is a research affiliate in the Center for International Studies at the Massachusetts Institute of Technology, and a visiting fellow at Imperial College, University of London. For several decades he has done international comparative policy studies of public health agencies, and research on national security policies and environmental policies. He has published on policymaking at the Centers for Disease Control, the phase-out of CFCs, toxic substance control, and innovation in the Air Force. He is currently studying responses to pandemic flu in Europe and the United States, and the politics of alternative energy projects. He directs a Professional Education summer course at MIT on "Technology, Innovation and Organizations." He has also taught in professional education courses for the Royal Society Technology Fellows (London), the National University of Singapore, UC San Diego, and in Stockholm. Before MIT he was on the research staffs of the School of Public Policy at UC Berkeley, the Health Policy Center at Brandeis, and the Harvard School of Public Health.

Edward H. You, MS, is a supervisory special agent in the FBI's Weapons of Mass Destruction Directorate, Biological Countermeasures Unit. Mr. You is responsible for creating programs and activities to coordinate and improve FBI and interagency efforts to identify, assess, and respond to potential intentional biological threats or incidents. These efforts include expanding FBI outreach to the biological sciences community to address biosecurity. Before being promoted to the Weapons of Mass Destruction Directorate, Mr. You was a member of the FBI Los Angeles Field Office Joint Terrorism Task Force and served on the FBI Hazardous Materials Response Team. Mr. You has also been directly involved in policy-making efforts with a focus on biosecurity. He holds *ex officio* positions on the NIH National Science Advisory Board for Biosecurity (NSABB) and the Synthetic Biology and Engineering Research Center Strategic Advisory Board. He is also an active working group member of the National Security Council Interagency Policy Committee on Countering Biological Threats; is the FBI representative on the Executive Order 13546 Select Agent Program Federal Experts Security Advisory Panel; and presented, on behalf of the FBI, to the Presidential Commission for the Study of Bioethical Issues regarding biosecurity and synthetic biology. Mr. You is also the FBI representative on the National Academies Institute of Medicine's Forum on Microbial Threats. Prior to joining the FBI, Mr. You worked for six years in graduate research focusing on retrovirology and human gene therapy at the University of Southern

California, Keck School of Medicine. He subsequently worked for three years at the biotechnology firm AMGEN Inc. in oncology research. Mr. You received a certificate from the Harvard University Kennedy School of Government's National Preparedness Leadership Initiative Program. He also holds a masters in biochemistry and molecular biology from the University of Southern California and a bachelor of science in biological sciences from the University of California, Irvine.

Hot-Zone Forensics: The C.S.I. of CBRNE

By Frank G. Rando
Source: http://www.cbrneportal.com/hot-zone-forensics-the-c-s-i-of-cbrne/

"The more outre' and grotesque an incident is the more carefully it deserves to be examined"
Sir Arthur Conan Doyle, *The Hound of the Baskervilles, (Sherlock Holmes #5)*

"You know my methods. Apply them."
Sir Arthur Conan Doyle, *The Sign of Four, (Sherlock Holmes # 2)*

March 31 – Forensic science is the application of multidisciplinary scientific concepts, principles and techniques to matters of the law. From ballistics and latent fingerprints to blood spatter evidence to the very cutting edge of

DNA analysis, the forensic sciences have had a critical and successful role in solving even the most sophisticated and complex crimes.
In counterterrorism operations, forensics has gained an essential role in areas such as explosive event investigations, biological and chemical agent characterization, failure analysis and computer modeling, and DNA identification of victim and perpetrator remains, eg. 9/11 fatalities and Osama bin Laden's postmortem investigation.
Evidence is something *legally* and *procedurally* submitted to a competent tribunal as a means of ascertaining the truth in an alleged matter under investigation. Forensic science generally seeks the truth by thoughtful, meticulous, systematic and purposeful collection, preservation and analysis of direct and trace physical evidence, and interfaces with corroborative evidence, such as eyewitness testimony. Eyewitness testimony, cannot be discounted, as the witness may have observed, sensed, personally seen, smelt heard, felt, or tasted-such as a witness reporting a strange-looking vapor cloud in the vicinity of downed victims or a feeling of ocular or throat irritation or violent coughing during an event. He or she may be able to describe the perpetrators or other characteristics relevant to the event. In addition, other forms of evidence may include documentary, photographic, video and/or audio evidence seized by military operators or law enforcement authorities during a raid.

▶ Read the rest of the article at source's URL.

***Frank G. Rando** possesses over 30 years of real world experience as a public safety professional,clinician, educator ,emergency and crisis manager ,author and consultant in the areas of tactical ,disaster and operational medicine, weapons and tactics, law enforcement /criminal investigations ,counterterrorism, hazardous materials management and emergency response ,toxicology,*

environmental safety and health,and health care and public health emergency management.

Catalyst Destroys Common Toxic Nerve Agents Quickly

Source:http://www.domesticpreparedness.com/Training/University_Updates/Catalyst_Destroys_Common_Toxic_Nerve_Agents_Quickly/

March 28 – Evanston, IL - Northwestern University scientists have developed a robust new material, inspired by biological catalysts, that is extraordinarily effective at destroying toxic nerve agents that are a threat around the globe. First used 100 years ago during World War I, deadly chemical weapons continue to be a challenge to combat.

The material, a zirconium-based metal-organic framework (MOF), degrades in minutes one of the most toxic chemical agents known to mankind: Soman (GD), a more toxic relative of sarin. Computer simulations show the MOF should be effective against other easy-to-make agents, such as VX.

The catalyst is fast and effective under a wide range of conditions, and the porous MOF structure can store a large amount of toxic gas as the catalyst does its work. These features make the material promising for use in protective equipment worn by soldiers, such as gas masks, and for destroying stockpiles of chemical weapons, such as those currently building up in Syria.

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

MOFs are very porous, so they can capture, store and destroy a lot of the nasty material, Farha said, making them very attractive for defense-related applications.

The study, the first to demonstrate zirconium MOFs as effective weapons against nerve agents, will be published March 16 by the journal Nature Materials.

"Simple changes to the nerve agent's molecular structure can change something that can kill a human into something harmless," said Farha, a research professor of chemistry in the Weinberg College of Arts and Sciences. "GD and VX are not very sophisticated agents, but they are very toxic. With the correct chemistry, we can render toxic materials nontoxic."

Metal-organic frameworks are well-ordered, lattice-like crystals. The nodes of the lattices are metals, and organic molecules connect the nodes. Within their very roomy pores, MOFs can effectively capture gases, such as nerve agents.

The Northwestern MOF, called NU-1000, has nodes of zirconium -- the active catalytic site where all the important chemistry takes place. The organic ligand gives the material its important structure by connecting the nodes, but it does not participate in the catalysis of the nerve agent.

The zirconium node selectively clips the phosphate-ester bond in the nerve agent, rendering it innocuous. With the critical bond broken, the rest of the molecule is left alone. The bond is broken through the process of hydrolysis, a reaction involving the breaking of a molecule's bond using water. The MOF can use the humidity in the air.

In their study, the researchers first tested their catalyst against a GD simulant, called DMNP, and found the MOF degraded half of the target in less than 1.5 minutes. Next, they tested the MOF against GD and

found the catalyst degraded half of the nerve agent in less than three minutes. These half-lives are very impressive, Farha said, and show how well the catalyst is working.

They also tested the zirconium cluster alone, without the cluster being in the MOF structure, and the catalyst was not as effective at degrading the nerve agent. This shows the importance of the MOF scaffold.

The research team's experimental and computational results suggest that the extraordinary activity of NU-1000 comes from the unique zirconium node and the MOF structure that allows the material to engage with more of the nerve agent and to destroy it. The researchers expect the MOF to be effective against other easy-to-make chemical warfare agents with phosphate-ester bonds, such as VX.

NU-1000 is inspired by the enzyme phosphotriesterase, which is found in bacteria. The natural enzyme has two zinc ions bridged by a hydroxyl group as the active catalytic site. Farha and his colleagues wanted to make a much more potent and stable catalyst, so they used zirconium ions instead of zinc.

"We are learning from nature, but trying to do better by making more robust materials," Farha said. "The natural enzyme does precisely the same chemistry, but its lifetime is very short -- it cannot survive under the conditions soldiers are deployed in."

Even though the synthetic catalyst yields the same weapons-degradation product as the enzyme, it does so by a means that is much less dependent on the exact structure and composition of the chemical weapon target. The next step, therefore, is to determine the extent to which the artificial catalyst functions as a broad-spectrum catalyst.

Farha added, "Our catalyst is fantastic compared to other catalysts, but there is still more work to be done."

The paper is titled "Destruction of Chemical Warfare Agents Utilizing Metal–Organic Frameworks."

In addition to Farha, other authors of the paper are Joseph E. Mondloch (co-first author), Michael J. Katz (co-first author), Pritha Ghosh, Peilin Liao, Wojciech Bury, Randall Q. Snurr and Joseph T. Hupp, from Northwestern; William C. Isley III and Christopher J. Cramer, from the University of Minnesota; George W. Wagner, Morgan G. Hall and Gregory W. Peterson, from the U.S. Army Research, Development and Engineering Command; and Jared B. DeCoste, from Leidos, Inc.

DRS Technologies to Develop Improved CBRN Threat Protection Systems with New Beth-El Teaming Agreement

Source: http://www.prnewswire.com/news-releases/drs-technologies-to-develop-improved-chemical-biological-radiological-and-nuclear-threat-protection-systems-with-new-beth-el-teaming-agreement-300058424.html

March 31 – DRS Technologies, a Finmeccanica Company, announced the signing today of a teaming agreement with the world's leading supplier of chemical, biological, radiological, and nuclear (CBRN) filtration products to deliver state-of-the-art environmental control and protection systems to the warfighter.

The agreement between DRS Technologies and Israel-based Beth-El Industries brings together exceptional technologies from both companies to provide protection systems for combat vehicles and multiple types of shelters utilized in forward operating bases.

In today's combat environment, improving protection levels for weapons of mass destruction is not something to be taken lightly. DRS understands that, and developing an improved CBRN protection system to address these increasing threats demonstrates its commitment to this country's uniformed men and women around the world.

As a supplier of environmental conditioning systems for military vehicles and shelters for more than 20 years, DRS has designed and manufactured specialized heating and air conditioning equipment for military applications including tactical shelter-based environmental control units, environmental control systems for military vehicle platforms, mobile, ground-based flight line air conditioners and rugged mobile shelters and trailers.

"Beth-El is excited to work with DRS in a joint effort to provide a superior CBRN filtration system to the U.S. Warfighter," said Jehudah Fehlauer, head of marketing and sales and business development for Beth-El.
"DRS is always striving to offer the best protection for our troops. Partnering with Beth-El Industries allows us to provide superior products," said Roger Sexauer, president of the DRS Maritime & Combat Support Systems group. "We look forward to expanding our protection systems for the warfighter and giving them an extra peace of mind as we leverage the world's best filtration technology and combine it with our world-class environmental systems," Sexauer continued.
Beth-El has been designing and manufacturing CBRN collective protection filtration systems for the past 40 years. For more than ten years they have exported their technology for use by over 60 armies worldwide including many NATO forces. As a result their CBRN systems have been tested and qualified by international standards institutes from countries all over the world. For more information about Beth-El, please visit the company's website at www.beind.com.

CBRN Common Training Curriculum

Source: http://cbrn.netseven.it/?page_id=100

In the final phase of the **"CBRN Integraded Response Italy" Project**, based on the results of the mapping activity, the implementation of the two table-top exercises and the gap analysis, the Partners will deliver and validate an outline of training curricula on 'CBRN security incidents' for Italian law enforcement agencies and first responders.

▶ **Read the full report at:** http://cbrn.netseven.it/?post_type=document&p=611

ISIS Turns to Chemical Weapons As It Loses Ground in Iraq

Source: http://www.thefiscaltimes.com/2015/02/22/ISIS-Turns-Chemical-Weapons-It-Loses-Ground-Iraq

Feb 22 – A few weeks ago, the US Central Command announced that an air raid had killed an ISIS chemical weapon expert in Mosul. The ISIS operative, Iraqi engineer Mahmoud al-Sabawi, used to work at Saddam Hussein's chemical weapons program before he joined al-Qaeda in Iraq after the 2003 US led invasion.
The idea that ISIS terrorists have access to chemical weapons brings back images of the genocide inflicted on the Kurds by Saddam Hussein in the late 1980's. The Halabja Massacre killed up to 5,000 and injured between 7,000 and 10,000 more.
If ISIS jihadists have a stash of chemical weapons, they won't hesitate to use them on the Kurdish people or anyone else who has challenged their authority. Since President Obama has just asked

Congress to for additional war powers to fight ISIS, it is important to know if the enemy has such weapons.

ISIS's chemical weapons aspiration dates back to the very early roots of the group. Abu Musab al-Zarqawi, the late Jordanian terrorist and the founder of ISIS predecessor organization al-Qaeda in Iraq was very interested in acquiring chemical weapons and using poisons in terrorist attacks.

Zarqawi was born in Jordan in 1967 where he was involved in several terrorist plots and spent several years in prison. He also traveled twice to Afghanistan to join the Afghan Jihad. Around the year 2000 and during his second term in Afghanistan, he arranged a deal with Osama bin Laden that enabled him to establish a training camp in the eastern Afghan city of Herat for Jordanian extremists without pledging allegiance to al-Qaeda. His organization researched the making and usage of poisons and chemical weapons.

When the US invasion of Afghanistan took place in October 2001 -- following the 9/11 attacks -- Zarqawi fought against the Americans, then reportedly fled to Iran and then Iraq. There, he had reportedly developed a relationship with a Kurdish Iraqi extremist group called Ansar al-Islam.

Ansar al-Islam was established in September 2001 and it controlled a small area in the semi-autonomous Kurdistan Iraq by the Iranian border. Just like Zarqawi, the group was supported by al-Qaeda but it was independent. It was also very interested in developing and using chemical weapons and poisons in terrorist attacks.

In 2002 and in early 2003, Ansar al-Islam's activities prompted a disagreement among President Bush's advisors over whether or not to strike its camps in northern Iraq. The US Defense department favored the action, but the State department opposed. Bush sided with the later.

When the Americans invaded Iraq in March 2003, they raided the camps of Ansar al-Islam in northern Iraq and uncovered labs where the group was experimenting with chemicals and poisons. In the meantime, Zarqawi rose up to be the leader of the deadliest insurgency group, named in 2004 to lead al-Qaeda branch in Iraq. Zarqawi was by then able to acquire more resources to continue his chemical weapons program, which included access to Saddam Hussein's former engineers, funding from several sources including hostage taking and taxes on businesses, materials from Saddam Hussein's looted factories and weapons caches, and lands that insurgents who reported to him controlled.

"Zarqawi assigned Abu Mohammed al-Lubnani and an engineer called Ammar al-Ani to handle the chemical weapons profile", said Hisham al-Hashimi, ISIS analyst at the Iraqi National Security Advisor office. Al-Lubnani was Zarqawi's second in command.

"Special development units were built on farms…to the north of Baghdad. However, all the development experiments failed due to difficulties in acquiring basic manufacturing materials or local replacements. They were also unable to control the strength of the explosion once the chemicals or poisonous stuff burned or melted," added al-Hashimi.

Zarqawi's terror wasn't limited to Iraq. U.S. officials believe that Zarqawi trained others in the use of poison (ricin) for possible attacks in Europe. On April 26, 2004, Jordanian authorities announced they had broken up an al-Qaeda plot to use chemical weapons in Amman. Among the targets were the U.S. Embassy, the Jordanian prime minister's office and the headquarters of Jordanian intelligence. The Jordanian authorities seized 20 tons of chemicals.

When Zarqawi was killed in an air raid in Iraq in 2006, his successors Abu Ayoub al-Masri and Abu Omar al-Baghdadi continued the terror organization's chemical project. The two men established the Islamic State of Iraq in October 2006. In that month, a series of Chlorine bombings began in Iraq. **More than a dozen attacks with Chlorine took place between October 2006 and June 2007.**

- In October 2006, a car bomb carrying two 100-pound chlorine tanks detonated, wounding four Iraqis in Ramadi.
- In January 2007, a suicide bomber drove a dump truck carrying chlorine tank killing 16 people by the explosives, not by the chlorine.

- In February 2007, a suicide bombing in Ramadi involving chlorine killed two Iraqi security forces and wounded 16 other people. A bomb blew up a tanker carrying chlorine north of Baghdad, killing nine and made 148 others ill. A pickup truck carrying chlorine gas cylinders exploded in Baghdad, killing at least five people and hospitalizing over 50.
- In March 2007, three separate suicide attacks used chlorine in one day. The first attack occurred in Ramadi, when a truck bomb wounded one US service member and one Iraqi civilian. A second truck bomb detonated in Fallujah, killing two police officers, leaving a hundred Iraqis with signs of chlorine exposure.
- Another chlorine-laden truck bomb exploded south of Fallujah, killing six and injuring 250. On another day, suicide bombers detonated a pair of truck bombs, one containing chlorine in Fallujah. It left 14 American forces and 57 Iraqi forces wounded.
- In April 2007, a chlorine-laden suicide truck bomb detonated in Ramadi, leaving 27 dead. Thirty people were wounded. Many more suffered breathing difficulties. A chlorine truck bomb detonated in western Baghdad, killing one Iraqi and wounding two others. A tanker laden with chlorine exploded in Ramadi, killing six people and wounding 10.
- In May 2007, a chlorine bomb exploded in a village of in Diyala province, killing 32 people and injuring 50. A suicide truck bomb exploded his vehicle outside Ramadi, killing two police officers and wounding 11 others.
- In June 2007, a car bomb exploded in Diyala. The gas sickened at least 62 US soldiers.

The attacks in Iraq were poorly executed because much of the chemical agent was rendered nontoxic by the heat of the explosives. The attacks resulted in hundreds of injuries but were not a feasible way of inflicting large loss of life. Their primary effect was widespread panic, with many civilians suffering non-life threatening injuries. Higher levels of exposure can cause fatal lung damage; but because the gas is heavier than air, it will not disperse, and it is ineffective as an improvised chemical weapon.

In all the previous attacks and others, the ISIS experiments ultimately failed. Unless the target is enclosed and has been hit directly by the gas, the gas won't be particularly lethal.

The American forces attacked ISIS factories in al-Tarmiya in 2008. They killed Abu Gazwan al-Hayali, who supervised and protected the engineers and specialists there. But they didn't find any ready to produce materials or important raw materials, al-Hashimi added.

ISIS Rethinks Its Chemical Strategy

In 2010, the Iraqi and American forces killed Zarqawi's successors. That opened the door for Abu Bakr al-Baghdadi to rebuild his dismantled jihad organization. When the Syrian revolution broke out in 2011, he seized the opportunity to expand and gradually his organization grew into ISIS. In June 2014, they were able to capture the city of Mosul.

With the fall of massive areas in northern and western Iraq, ISIS was able to control a key area north of Baghdad that used to produce chemical weapons under Saddam. However, the site was empty. The UN inspection teams had destroyed and cleared the site completely from the industrial tools and the main materials that could be used to make chemical or biological weapons, according to the UN teams' reports.

When the US led alliance started to bomb ISIS positions in Iraq and in Syria after August 2014, ISIS

lost its momentum in Iraq. Since October, ISIS has suffered a series of defeats on every front in Iraq. This weakened position could explain why ISIS chemical ambitions have been recently renewed.

In late January 2015 in one of ISIS bomb-making factories in Mosul, something went wrong while preparing a chlorine bomb. "ISIS members informed the nearby residents to close their doors and windows. They said a gas leak was caused by an air raid. But there were no air raids...people were panicked," said Maouris Milton, a blogger from Mosul.

A few days later, On January 29, ISIS tried to extract some chemical and poisonous waste buried carefully by UN teams in Tikrit. But the concrete structure around the burial site stood as an obstacle despite numerous attempts to destroy it with explosives, Hashimi recalled.

Currently, the man in charge of ISIS chemical weapons is an Egyptian engineer with an MS from Cairo. It is believed that he operates somewhere in an agricultural area in southern Baghdad. Hashimi says his assistant was killed by a US air raid a few weeks ago.

Chemical and Biological Terrorism in Latin America: The Revolutionary Armed Forces of Colombia

By Mariano C. Bartolome and Maria Jose Espona
National Defense School, Buenos Aires, Argentina
Source: http://www.asanltr.com/newsletter/03-5/articles/035c.htm

For more than three decades, Colombia has suffered from a blood-shed domestic conflict. Three insurgent groups, the Revolutionary Armed Forces of Colombia (FARCs)[1], the National Liberation Army (ELN) and the United Self-defenses of Colombia (AUC) are fighting against the State for the monopoly of violence and territorial control. Currently the insurgency is present in more than 70% of the country.

The FARCs appeared in the mid '60s, with almost 15,000 active members distributing their activities in more than 60 "fronts" all over the country. The ELN, on a smaller scale, has 5,000 troops that are distributed in almost 35 "fronts". Finally, the AUC comprises several self-defense groups which emerged at the end of the '70s, because of the State's failure to provide peasants a proper level of security against guerrilla forces.

Moreover, the Colombian conflict cannot be separated or unlinked from the drug-trafficking issue. The cocaine crop case and its processing and subsequent marketing in foreign markets began to be relevant in Colombia in the early '80s specifically via two organizations or cartels: the Medellin and Cali, respectively.

Colombia currently produces 80% of the world's cocaine. It also supplies 70% of the cocaine and 65% of the heroine marketed in the USA, thus having a virtual monopoly on the US drug market. It is estimated that the revenues from drug-trafficking in Colombia represent from 3.5% (minimum hypothesis) to 6.5% (maximum hypothesis) of the Gross Domestic Product (GDP), and are equivalent to 25% to 35% of the legal exports of the country.

In recent years, the expansion of coca crops has been observed

mainly in areas under guerrilla control. This is due to the fact that the FARCs collect taxes ("gramajo") from the drug-traffickers, for the protection of the crop. It also operates their own drug business using drug plantations and trafficking. The drug revenues obtained by this organization, according to various sources, are from US$ 300 million and US$ 600 million annually.

In the late '90s, the control on a vast jungle area, the so called "Demilitarized Zone" and virtually a "State within a State" - equivalent to Switzerland's size - was granted to the FARCs by the then President Pastrana. Within this area are the major coca plantations, laboratories for processing and covert landing strips for distribution.

In the year 2000, the Colombian Government's Executive Branch implemented a complex program to combat the drug problem - the Colombia Plan. This plan involved the eradication of the coca and poppy plantations with a crop substitution scheme; a direct fighting scheme against trafficking gangs and insurgency groups; and the enforcement of legal institutions (judiciary branch, police, etc.). The Colombia Plan is now in its stage of full implementation and has already achieved impressive first results.

Recently, the President of Colombia closed the so called "Demilitarized Zone".

Use of CB agents as weapons

Historically, in the Colombian armed conflict, the first insurgent group to use banned arms was the ELN. Through the so-called Training Camps of Popular Arms (TAP), their fighters were trained with arms and non-conventional tactics by both local and foreign instructors who had earlier gained their expertise in countries such as Vietnam, Cuba and the Soviet Union.

The FARCs followed this trend afterwards, although they chose an alternative source for specific knowledge, the Irish Republican Army (IRA). The IRA played a key role in the implementation and different uses of the "explosive cylinder" (adapted propane gas cylinders) as a main armament of the FARCs, evolving from explosive to incendiary modes and ending up in its use as a chemical weapon[2].

According to a report made by the National Defense System of Information (SIDEN), the incendiary cylinders emerge in the Colombian conflict by the end of the 90's. In what could be the first attack of its kind, on March 24, 1998, the Puerto Lleras (Meta department) police department was attacked by the FARCs' force of 43 guerrillas who used the cylinders with glue and plastic substances which caused serious injuries to two children and an official.

In similar events, the FARCs also used as explosives - white phosphorous, petrol and tar. Substances such as glue, tar or rubber have the effect of adhering in flames to the clothes or skin of the military, their vehicles or buildings[3].

As regards the IRA, in mid August 2001, the Colombian army captured three members of this European organization and charged them with training fighters of the main guerrilla force of the country in the use of explosives and the construction of non-conventional weapons. The IRA members, who carried two false British passports and an Irish passport, had been in the so called "Demilitarized Zone" training the FARCs.

On this occasion, the Chief of the Colombian Army, General Jorge Mora, found that the FARCs gave the IRA drugs, money and weapons in exchange for training. Although the weekly Voz, the voice of the FARC's, said that the IRA members had visited the area only to "talk and exchange opinions", traces of explosives were found on the clothes of the arrested members.

The inquiry carried out by the Colombian authorities on this case, together with the one made at the same time by the Irish reporters, made it possible to establish that during the 90's, around 25 IRA members visited Colombia in order to train local terrorists in the use of explosives. According to the daily Evening Herald of Dublin, three FARCs defectors confessed to having been trained in explosive tactics by a five member - IRA cell. Three of them were arrested, the other two might have fled through Venezuela, and then returned to Ireland[4].

Chemical weapons: Cyanide

Records on the use of chemical agents for offensive purposes by the Colombian guerrilla groups, date back to December 2000. On that occasion, the ELN attacked

the police department in Cajibío (Department of Cauca), with pipettes loaded with sulfuric acid and ammoniac. Two civilians and two uniformed officials died[5].

The next year, the bombing carried out by the FARCs on September 2 at the location of San Adolfo (Department of Huila), 370 km from Bogota, might had been the scenario of the use of chemical weapons. In this case, four policemen died after inhaling a gas that a local military chief, Col. Francisco Caicebo, described as "toxic". Supporting such hypothesis, none of the corps presented external body wounds.

The events in San Adolfo were clarified almost a year later, after many expert reports performed by Colombian and American governmental agencies. The reconstruction of the facts showed that when 20 policemen confronted a terrorist block, more than ten policemen were kidnapped after running out of ammunition. These policemen, who had inhaled toxic gases - that contained cyanide in the formula, probably cyanogen chloride[6]- during the confrontation were taken to a closed facility, where five of them were forced to drink liquids that combined with the gases generated pulmonary edemas. Four officials died, while five survived with permanent after effects.

In addition, two days after the confrontation, the Colombian Army intercepted communications from the FARCs, where a guerrilla explained to his chiefs details of the attack with chemical agents in San Adolfo, receiving congratulations for these actions[7].

Regarding the details of this guerrilla action, the expert reports confirmed that initially the FARCs had thrown against police facilities bombs, in the form of hand-grenades, composed of explosives and a compound of cyanide inside plastic containers. The Colombian Institute of Legal Medicine had detected in the autopsy of the officials who died in the confrontation a "chemical pneumonitis by exposure", adding in the report: "It is confirmed that the death was caused by the inhalation of chemical substances that produced the break of lung tissue, producing a pulmonary edema with a significant increase of size and weight".

Moreover, the American Defense Department's Pathology Institute, while analyzing pulmonary tissue samples from the dead policemen, found that cyanide concentrations exceeded 5 milligrams. Concentrations of 3 milligrams are considered lethal[8]. Lastly, after all these expert reports were revealed, the Colombian Prosecutor's Office opened a case against the leader of the FARCs, Manuel Marulanda Vélez (aka "Tirofijo") and nine other guerrillas under the charge of using chemical weapons against State forces.

Another different use of cyanide as a weapon by the FARCs is filling ammunition heads, specially made hollow for this purpose. Evidence of this methodology was obtained during "Pegasus Operation", a military action launched in late 2002 in the province of Soto (Santander Department) in order to find underground stockpiles of weapons belonging to many of the FARCs fronts. This ammunition, which contained the chemical agent, killed the victims[9].

The most recent evidence suggest that the filling of the ammunition heads with chemical agents is a tactic that is now being adopted by the ELN. In mid-March 2003, 200 rounds of 7.62 mm ammunitions with these features were seized from this organization in Alto Basilio (Antioquía)[10].

Chemical weapons: Agricultural toxic agents

Both the FARCs and the ELN have used chemical agents as weapons to poison fresh water resources used by the civil population.

On February 22, 2002 in Pitalito (Department of Huila), authorities found that the local water pipeline had been polluted with an unidentified but suspected chemical agent. The chemical substance, that had been delivered in one of the pipeline's inlets located in the spot named Bruselas, showed a high concentration of chromium, sodium and nitrate. The expert reports pointed out that the ingestion of this water would have caused serious damage in vital organs of the victim, possibly death, depending on the concentration of the ingested chemical substances.

This attack did not produce victims, since local authorities had previously learned of the attempt via interception of the FARCs' communications, where the water pipeline had been declared a "military target" and could be contaminated. According to the manager of the public companies

of Pitalito: "we avoided a catastrophe"[11] by taking swift actions.
A second event of similar characteristics to the situation in Pitalito took place a month later in the town of Libornia, located at 100 km from Medellín. In the water tanks that feed the water pipeline, an important quantity of the toxic component parathion was delivered, a substance used to fumigate crops. The early detection of the attack prevented casualties, although the town remained 24 hours without fresh water while the tanks and pipelines were cleaned. As in the case of Pitalito, the attack was attributed to the FARCs[12].

Biological weapons: Human feces

There are records on the use of human feces as biological agents with offensive intentions, that date back to 1998. According to a report by the SIDEN, on March 6 of that year explosives were detonated, which were placed by ELN guerrillas near a patrol car of the Army in Cúcuta (north Santander). This resulted in the death of a soldier. The autopsy and other expert reports carried out by specialists from Legal Medicine confirmed that the attackers "used fecal material in explosive devices, causing a high degree of contamination in wounds"[13].
In mid 2002, evidence suggested that the Colombian insurgence could employ rudimentary forms of biological weaponry. During the first days of June, in the context of an offensive action with bombs in the region of Cundinamarca, the police inactivated in Silvania a cylinder bomb charged with 5 kilos of homemade explosive R1, potassium chlorate, aluminum powder, sawdust, scraps of iron and "a mix of clay with human feces".
The danger of these explosive devices are that, when exploding, they produce lethal skin and organic infections to the person affected by its splinters. For this reason, the police declared that if the bomb has exploded, it would have triggered "a tragedy of great proportions"[14].
Human feces is also used in filling hollowed ammunition warheads. "Operation Pegasus", already mentioned in this paper, provided concrete evidence of this issue.

Conclusions

By and large, this paper demonstrates that the two assumptions identified in the abstract are false; i.e., that a potential use of chemical and biological weapons by terrorist organizations should be a "massive destruction" modality; and that there are no records of Latin American terrorist organizations attempting to use chemical or biological weapons in order to cause massive damage.

- Currently, the FARCs are a clear example of the existence of Latin American insurgent organizations inclined to an offensive use of chemical and biological agents, with intensity levels below "massive destruction".
- More specifically, the meaning of this pattern of actions by the FARCs must be analyzed in four different levels, although interrelated: a tactical level, related to the development of the Colombian conflict; a legal level, related to the compliance of international rules; a technical level, referred to the chemical and biological agents used; and a psychological level, related to the effect in subconsciousness of the opponents to the FARCs.
- Regarding the Colombian conflict, the use of chemical and biological agents as weapons by insurgent organizations has not shown any concrete benefit to its users. On the contrary, it has produced a degradation of the conflict and a greater damage, totally unnecessary, to the civil population.
- Legally, the offensive use of chemical and biological weapons constitutes a clear violation of the rules in force in Humanitarian International Law, that were formulated to be applied in interstate armed conflicts, but which are also binding to all parties involved in internal conflicts.
- Specifically, we observe a clear violation of sections 35 and 51 of Protocol I of the Geneva Convention. The first prohibits the use of weaponry and combat methods that cause unnecessary suffering to its victims and generates significant damage to the environment. The second condemns indiscriminate attacks, referring to aggressions that do not affect only military targets, but also civil individuals or assets.
- However, the Geneva Convention is not the only international institution

violated by these actions. The same applies to the 1925 geneva Protocol and Chemical Weapons Convention.
- From a technological point of view, the pattern of actions by the FARCs shows clearly that biological and chemical weapons could be used by subnational groups, without the possession of advanced technical skills and facilities and equipment.
- The obvious physiological impact of the risk of being attacked with non conventional weapons is a fear factor that could paralyze the official response against insurgency groups.

References are available at source's URL.

Chlorine attacks continue in Syria with no prospect of Assad being brought to account

By Brett Edwards and Mattia Cacciatori

Source: http://www.homelandsecuritynewswire.com/dr20150409-chlorine-attacks-continue-in-syria-with-no-prospect-of-assad-being-brought-to-account

For more than a year, there have been numerous reports of chemical weapons attacks in Syria. This includes reported incidents which occurred in late March, as thousands of Syrians fled the city of Idlib in the face of a government-rebel stand-off. According to witnesses, chemical weapons were used.

These allegations come on the heels of a year's worth of similar incidents in which rebel and government forces stand accused of using industrial chemicals such as chlorine against civilians and troops alike. A recent report has found with a "high degree of confidence" that chlorine attacks took place in three Syrian villages in the summer of 2014. A UN Human Rights Council Inquiry into Syria also found that there were "reasonable grounds" to believe that government helicopters carried out chemical attacks during this period.

The international response has been superficially demonstrative. At the beginning of March 2015, almost a year after those attacks, the UN Security Council finally adopted a resolution that condemns the use of chlorine as a weapon. Steps such as these are to be welcomed for reaffirming the abhorrence of these weapons and the importance of the international prohibition against them.

But resolutions do not imply immediate action. The use of chlorine as a weapon in Syria

goes on — and there is so far little evidence that the world's major powers have the wherewithal to bring those responsible to justice.

Intervention

The Syrian people have fallen victim to astounding international inertia and impotence. Until a viable alternative to the Assad regime emerges, its leader will remain in place, propped up by international allies who have their own strategic interests in Syria and who are desperate to avoid a repeat of the chaos in Libya following NATO intervention.

Still, one of the few key areas of practical agreement between the United States, Russia, and Syria's neighbors in the Middle East has been the need to take existing chemical weapons stockpiles out of the Syrian equation. After a diplomatic intervention by Vladimir Putin, this culminated in the destruction at sea of a large volume of chemical weapon agents and precursor chemicals.

At the same time, Syria acceded to an impressive watchdog regime imposed by the Organization for Prohibition of Chemical Weapons (OPCW), designed to ensure that states are not developing chemical weapons, as well as to oversee the destruction of any pre-existing stockpiles.

These were rare triumphs for international diplomacy and weapons control, but they depended more on an overlap of strategic interests than a shared sense of moral outrage at chemical weapons *per se*.

Just say no

Indeed, in May 2014, China and Russia vetoed a Security Council resolution that would have referred Syria to the International Criminal Court — the only route through which a legally binding international investigation can be launched.

That veto came despite the huge volumes of evidence pointing towards the culpability of the Assad regime for a host of war crimes, which has been steadily compiled and released by NGOs, security services and the UN Commission of Inquiry.

Indeed, there have even been attempts to block the UN Security Council from formally receiving evidence. Iran, for example, recently tried to stop the communication of findings from a fact-finding OPCW mission in Syria.

It is also very unlikely that anything approaching explicit attribution will be dealt with in any ongoing or future OPCW investigations into Syria, as long as current political realities prevail. While there is scope for discussing the source of chemical weapons attacks under the chemical weapons treaty, pursuing this too tenaciously risks politicizing the gathering of evidence — and that in turn could damage the whole global weapons control regime.

This delicate balance means that Assad and those responsible for the use of chemicals by his forces will only be held accountable following regime change. That time is bound to come eventually, but when this will happen is anyone's guess.

In the meantime, those who want to see the Assad regime face justice are still trying to find ways around the veto on the ICC referral, with calls for a special ad hoc tribunal similar to the one constructed for the former Yugoslavia.

Advocates for that approach hope that Russia and the Assad regime could be persuaded to agree to one, since tribunals typically prosecute a wider range of suspects. This is because, they argue, that larger ad hoc tribunals make the prosecution of both government *and* opposition forces more likely.

No impunity

In March 2015, the UN Commission of Inquiry also started circulating the details of suspects to national level prosecutors. National level prosecution could potentially play a role in dealing with those who flee the country following the fall of the Assad regime (as well as foreign fighters returning to home countries). However, it is unlikely that all states will be given the list of names and equally it is likely that some states will provide refuge for certain suspects.

In the meantime, continued geopolitical wrangling over Syria leaves those documenting the continuation of war crimes there almost completely powerless to stop what is happening. For now, the best we can hope for is that relevant organizations are allowed to continue to gather evidence for future trials —— and that pressure

is put on all states to prosecute suspected perpetrators. This is to ensure that those who are committing such atrocities know that they will eventually be held to account.

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Family of 4 nearly dies in villa after being poisoned by a chemical "like sarin gas" while on vacation

Source: https://www.intellihub.com/family-4-nearly-dies-villa-poisoned-chemical-like-sarin-gas-vacation-report/

Apr 04 – A family of 4 (father, mother, and 2 children) are in serious condition after Terminix, a pest control company, fumigated an adjacent downstairs resort rental unit for insects and rodents, reports say. The father, his wife and 2 boys, 14 and 16, were air evaced to the mainland shortly after they were found drastically sick. The father was initially in a coma and according to reports currently can't speak. The 2 boys and the mother were reported to have suffered multiple seizures and blood was reported to have been found in at least one of the boys lungs.

The Delaware family was in the middle of their 9-day vacation at a local luxury resort villa, owned by Sea Glass Vacations, which runs just shy of $1200 per night, when they were found in serious condition after being poisoned with a purported toxic chemical similar to a "sarin gas" named Methyl Bromide, which was applied during a fumigation process which took place in the proximity around Mar. 18., CNN reported.

However against all logic, Methyl Bromide, which is listed by the EPA as being a "highly toxic" substance, may have been used by Terminix near cohabiting humans, guests, and resort staff, forcing the company to release the following statement to CNN Saturday:

"[...] Looking into this matter immediately and cooperating with authorities. We're thinking about their family and join the community in wishing them a speedy recovery"

The family's attorney was quoted by CNN's Sara Ganin saying, "This is the most horrifying story in the world." It's sad to see that vacationers well-beings are being overlooked during such a common extermination practice.

ISPM 15 markings on a pallet from China. The MB indicates the wood has been fumigated with methyl bromide to kill pests. (Oaktree b)

Additionally it was reported that the agent Methyl Bromide is not even suited for indoor use, raising a red flag to some.

A criminal investigation, conducted by the U.S. Dept. of Justice, is currently underway

Now, drones to be used to disperse mobs in Lucknow, India

Source: http://timesofindia.indiatimes.com/city/lucknow/Now-drones-to-be-used-to-disperse-mobs-in-Lucknow/articleshow/46794530.cms

Drones will soon perform a special task in the state capital apart from functioning as eyes in the sky with the Lucknow Police planning to use them for dispersing mobs.

These little unmanned mini-choppers are already in use in various sensitive parts of Uttar Pradesh for taking aerial snaps, but for the first time the hi-tech gadget will be used to control unruly crowds.

"We have purchased five drone cameras with capacity of lifting two kg weight. **They can be used to shower pepper powder on an unruly mob in case of any trouble**," Senior Superintendent of Police Yashasvi Yadav told PTI here today.

The drone camera, he said, made its debut in the city when the district administration deployed the device for surveillance last year during Muharram and also during the Lucknow Mahotsav and Republic Day parade.

If North Korea Collapses, What Happens to Its WMDs?

By Robert J. Peters

Source: http://thediplomat.com/2015/04/if-north-korea-collapses-what-happens-to-its-wmds/

North Korea's weapons of mass destruction (WMD) pose a number of challenges, particularly how to find and secure those weapons if the regime collapses. This paper will look briefly at 1) North Korea's nuclear, chemical and biological programs; 2) activities coalition forces might conduct in a collapse scenario; and 3) challenges posed by an operation to eliminate the North's WMD.

The North Korean Nuclear, Chemical and Biological Weapons Programs

North Korea's WMD programs date back decades and are believed to have produced significant stockpiles of weapons. According to open sources, North Korea likely has upwards of 10-16 weapons today and potentially up to 100 by the end of the decade. While it is hard to know the degree of their sophistication, it is a safe assumption that they are low-yield (about 10 kilotons), non-boosted, first generation weapons. Few outside of North Korea have a sense of where the warheads and fissile material are stored, given the scarcity of intelligence information coupled with North Korea's proclivity to develop hardened and deeply buried

facilities and storage depots. This lack of understanding about the locations of nuclear weapons storage will make finding them before they can be employed or moved in a collapse scenario enormously challenging.

The same intelligence limitations apply to the North Korean chemical weapons (CW) program. While our knowledge about North Korea's CW stockpile remains limited, it is safe to assume that the North has been producing first generation blister, choking, and nerve agents, and conceivable that they have a limited number of more advanced binary agents such as VX or GB. Moreover the North Koreans probably have CW-armed artillery shells and possibly bulk agent positioned north of the demilitarized zone (DMZ). It is also possible that such shells and bulk agent are located elsewhere in the country, which would further complicate any foreign military movements deep into North Korean territory. While it is impossible to ascertain with confidence how much CW Pyongyang has produced, a reasonable guess would put the North's annual production capability in the low tens of thousands of metric tons of material.

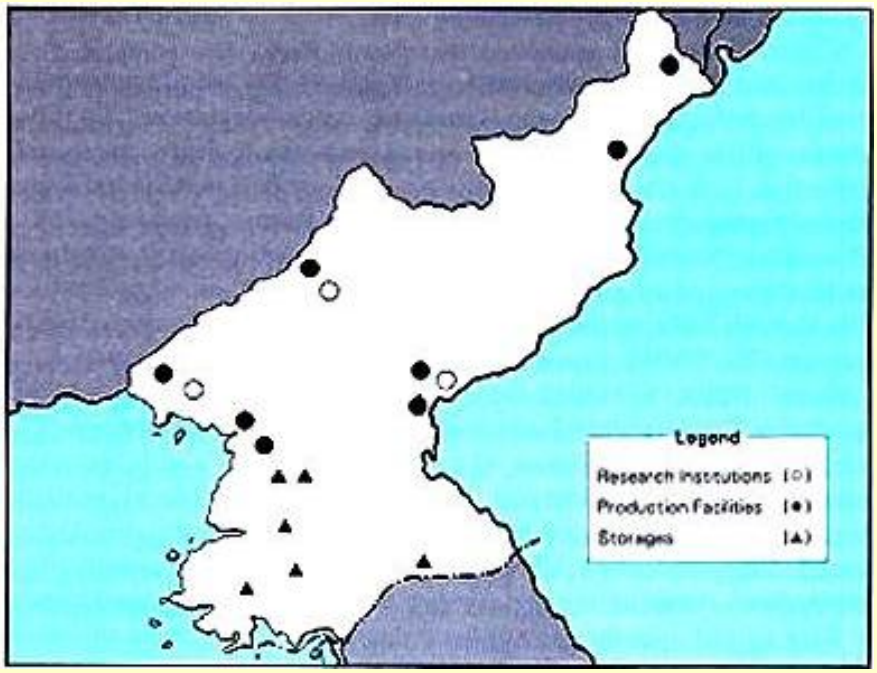
We know next to nothing of the North Korean biological weapons (BW) program, but they could well be producing BW—or even keeping large stockpiles of agent, as did the Soviets. South Korean officials in recent years have speculated that North Korea could produce anthrax or smallpox but there is little evidence that these statements are anything more than speculation.

Eliminating the North Korean WMD Programs

Should the United States have to engage in post-regime collapse operations or participate in a counter-offensive aimed at neutralizing an incursion of the Korean People's Army (KPA) into South Korea, there are a number of challenging tasks that coalition forces may have to perform simultaneously. **These will include:** 1) locating, isolating and eliminating WMD program elements); 2) managing the consequences (to include humanitarian assistance, decontamination, disaster relief, etc.,) of possible WMD attacks; 3) missile defense; 4) locating, seizing and securing weapons depots; 5) rendering constituted WMD safe through dismantlement of the warhead or weapon delivery mechanism; 6) maritime interdiction to prevent leakage off the peninsula; 7) stopping movement of people and materials of concern along land borders; and 8) dismantlement of possible proliferation networks so that materials of concern or even weapons do not move out of the theater in the midst of a chaotic security environment (such an effort will inevitably take time but should begin soon after the onset of hostilities or regime collapse).

Of course, these operations will likely be done in conjunction with other conventional missions that may be occurring simultaneously, such as humanitarian

assistance/disaster response, defeating KPA remnants, force protection and a possible non-combatant evacuation of American citizens out of theater — potentially all while wearing equipment to protect coalition forces from chemical attack, should they be operating in a chemically or biologically contaminated environment. In short, trying to do all of this successfully and near simultaneously could prove too much for coalition forces.



While it is unknown how many chemical, biological or nuclear production plants, depots, storage sites and related facilities exist in North Korea, coalition forces will have to secure these facilities in a timely fashion. Failure to do so could enable the use or transfer of these weapons to hostile actors. That mission requires these forces to identify, locate, secure, disable and destroy WMD programs in non-permissive environments (where an adversary is actively engaged in combat operations) or semi-permissive environments (certain areas of operation are non-contested, but contain pockets of irregular or organized armed resistance such as was the case during worst days of the Iraqi insurgency).

The Department of Defense's mission to locate and secure adversary WMD programs began to mature in earnest after the 2003-2005 search for Iraqi WMD. Since then, DOD has updated the concept of operations, force structure and policies accordingly. Should coalition forces execute a WMD-elimination operation on the Korean peninsula, the 8th Army (comprised primarily of the Second Infantry Division) stationed in South Korea likely would request technical forces from the United States Army, such as Nuclear Disablement Teams (the United States has two 11-man teams comprised of Army 52 Nuclear Physics Specialists, Medical Officers, etc.), technical escort units (capable of examining chemical and biological facilities), planners from the U.S. Strategic Command's (STRATCOM) Standing Joint Force Headquarters Elimination (SJFHQ-E), subject matter experts from across the U.S. government, as well as certain specialized South Korean units to form a Combined Joint Task Force for Elimination (CJTF-E). The CJTF-E would be tasked with executing the WMD-elimination mission.

N Korea's CWA facilities

The CJTF-E's job would be to go to suspected WMD sites, examine them for additional intelligence (primarily to locate other sensitive WMD-related sites, such as for weapons storage), secure related materials and disable/destroy sensitive program related equipment. North Korean personnel with specialized knowledge would be sent to another location within theater for further debriefing. The CJTF-E almost certainly would be augmented with personnel from across the U.S. government, such as the Departments of Energy, Homeland Security, Justice, Health and Human Services, as well as the Intelligence Community on an as needed basis.

There are limitations on what a Joint Task Force for Elimination can do. There are a large number of unidentified sites in North Korea and, as was noted earlier, the United States and its allies do not know the precise location of key storage facilities. Second, DOD has a very limited number of technical units and experts capable of conducting these operations. Third, the problem of translating technical Korean into English will be a monumentally challenging task given the specialized nature of the

language, the sheer number of documents these teams are likely to uncover, and the dearth of American Korean-language speakers. The most time consuming and manpower intensive operational task of the elimination mission will be exploitation and site characterization. These efforts will require Nuclear Disablement Teams and/or technical escort units to enter a suspected WMD site, detain any personnel encountered, search for documents or media that can provide additional information and conduct a physical survey of the facility in order to locate and identify WMD-related equipment or materials. Personnel, media and documents seized will have to be reviewed, analyzed or debriefed in order to determine not only the nature of the site, but also the location of other heretofore unknown WMD facilities. This process will require Korean-language translators who are conversant in technical aspects of WMD production, and may well be time consuming, repetitive, and by its very nature, extraordinarily challenging.

Moreover, since most sensitive DPRK sites will be heavily guarded, it may be hours, days or even weeks before the CJTF-E can gain access to those sites, whether they come from the air (with an Air Assault brigade), from the sea (with a Marine Air Ground Task Force) or behind ground maneuver forces. As a result, high-demand assets such as Nuclear Disablement Teams or technical escort units may find themselves exploiting a single WMD site for intelligence and therefore unable to move to other high-priority sites for an extended period.

Taking these challenges into account, there are a number of additional problems that could occur in the course of a WMD-elimination operation. To begin with, the United States may not have the required elimination or general purpose forces in theater in order to begin that effort should North Korea collapse quickly. This lack of forces in theater could result in a delayed start to elimination operations and allow the North Korean regime or its remnants time to use WMD against coalition targets with potentially catastrophic impacts. Alternatively, a failure to secure North Korean WMD in a timely fashion could enable regime elements to trade WMD technologies, know-how, materials or even constituted weapons to third parties in exchange for safe passage out of theater. This potential for WMD proliferation could itself trigger an additional crisis of the first order.

Secondly, finding adequate manpower to execute a WMD elimination mission will prove enormously challenging. In addition to the limitations imposed by the finite number of Nuclear Disablement Teams and technical escort units, the sheer number of potential WMD sites will require an enormous amount of general purpose forces to provide site security, transportation, logistics, communications and other critical capabilities. They will need to stay with technical units throughout the exploitation and site characterization phase as well as to prevent sensitive materials from being diverted (as occurred in 2003 with Iraqi weapons and explosive caches). Since even a small site might require as much as 600 men to provide physical security, and large sites such as the Yongbyon nuclear installation far more than that, the United States could quickly find itself unable to provide the necessary manpower.

Of course, not all sites will require ongoing security. Some may be safely abandoned, while others can be entombed through high-explosive detonation, or simply kept under surveillance through the use of air-breathing overhead reconnaissance assets (although these assets are themselves finite resources). However, the sheer number of sites, combined with real limitations in the number of technical units capable of conducting WMD elimination operations, means that manpower-intensive WMD exploitation operations may create conditions in which American forces find themselves unable to secure, characterize, or even locate critical WMD sites of concern. Moreover, the need to expend significant manpower resources and time conducting these operations combined with the bleed off of personnel needed to protect sites of concern, particularly if coalition forces come across large-scale chemical weapons depots north of the DMZ, potentially could impede the movement or even combat the effectiveness of coalition forces while potentially allowing time for the transfer WMD out of theater.

In addition to these very real challenges, there will likely be high-level policy decisions that will

have to be addressed during a crisis. Such issues could include: 1) how do allied forces reach high-priority sites in areas beyond their control; 2) are the United States and its allies willing to make trade-offs between the need to protect the lives of American and coalition forces and the need to secure suspected high-priority sites where nuclear weapons may be stored and which likely will be heavily defended by elite North Korean forces; and 3) since the South Korean Army will constitute the vast majority of ground forces, and therefore will probably secure a number of suspected nuclear sites before American forces arrive, what implications does that hold for the nonproliferation regime, particularly if South Korean units stumble upon North Korean nuclear weapons, technology, or design information?

A Rough Road Ahead

While much of the current discussion on unification of the peninsula rightly focuses on challenging political, economic, and social tasks, the collapse of North Korea will pose a significant security challenge for the United States, South Korea, Northeast Asia, and the international community. A near-term and potentially very significant challenge will be securing Pyongyang's WMD capabilities. Given uncertainties about the location of a number of critical WMD program elements, the lack of specialists capable of deploying into an unstable and still dangerous WMD environment, the enormity of the operational challenges associated with the elimination mission, and the importance of securing these materials before they are used or proliferated out of theater, a WMD-elimination operation against North Korean assets could prove to be one of the hardest challenges facing the United States and South Korea. Indeed, the enormity of these tasks and challenges coupled with very significant manpower requirements could prove insurmountable.

Robert Peters *is a Research Fellow at the Center for the Study of Weapons of Mass Destruction.*

Cold Packs on Cheeks, Hands and Feet May Help Combat Heat Stroke

84

Source:http://www.medscape.com/viewarticle/842966?nlid=79909_1362&src=wnl_edit_medn_emed&uac=82598DG&spon=45

Symptoms of heat stroke may be eased by applying cold packs to the cheeks, hands and feet, a study suggests, potentially offering a new way to help lower body temperatures in overheated athletes.

"The cheeks, palms, and soles of the feet are special areas," with blood vessels that don't contract when cold packs are applied, helping to remove heat from the skin surface and cool body temperatures, said study co-author Dr. Grant Lipman, a researcher in emergency medicine at Stanford University in California.

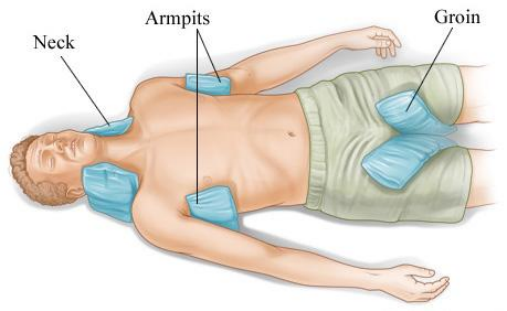
Lipman and colleagues tested a new method for applying cold packs to overheated athletes to see if their alternative might be more effective than the traditional placement of cold packs on the skin over large blood vessels in the neck, groin and armpits.

They dressed ten healthy men in insulated military clothes designed to trap body heat, then asked the men to walk on a treadmill for 30 to 40 minutes in a room heated to about 40 C (104 F).

Each man did the treadmill test three times, with at least one day between trials to allow for rest and recovery. First, they finished with no treatment to help lower their body temperature. Then they got cold packs the traditional way, applied at the neck, groin and armpits. Last, they received cold packs using the new method, placed on the cheeks, hands and feet.

The average body temperature after the treadmill test was 39.2 C (102.6 F), the authors report in an article online now in the journal

Wilderness & Environmental Medicine.
Without any treatment, the men cooled by an average of 0.3 degrees Celsius after five minutes and by a total of 0.42 degrees (to 101.8 F) after 10 minutes.
Ice packs on the usual spots cooled the men by an average of 0.4 degrees after five minutes and 0.57 degrees after 10 minutes (to 101.5 F). With ice packs on the hands, feet and cheeks, the decline in body temperature was steeper: 0.6 degrees after five minutes and 0.9 degrees after 10 minutes (to 100.9 F).



One limitation of the study is related to ethics - the researchers couldn't induce heat stroke so they instead tested the new cooling method by giving the men hyperthermia (heat exhaustion), which isn't as dangerous and is easier to reverse.

The experiments also relied on young, healthy volunteers, even though the majority of heat stroke deaths occur in the elderly.
Even so, the findings suggest that the new method could be used to help cool down overheated athletes, particularly as a treatment started in the field and continued by paramedics on the way to the hospital, Lipman said by email.
Because the temperature-lowering effect was only about one degree after 30 minutes, though, the cold packs regardless of placement may not work fast enough help a heat stroke victim, said Dr. Edward Otten, a professor of emergency medicine at the University of Cincinnati. "That would be too slow and too little to make a difference."
The new placement method for cold packs might be useful for less severe heat illness, and work well at rehab stations for firefighters or soldiers, or for cooling tents at marathons and other athletic events, said Otten, who wasn't involved in the study.
"Intuitively it makes sense to place cold packs on large blood vessels because most of the blood volume is going through them," Otten said in an email. "However, microcirculation in the palms, soles and cheeks is such that heat transfer works more efficiently through them."

EDITOR'S COMMENT: Interesting article applicable also to heat stress FRs in PPE are occasionally experiencing.

First WWI gas attack produced new horrors, changed warfare

Source: http://www.msn.com/en-us/news/world/first-wwi-gas-attack-produced-new-horrors-changed-warfare/ar-AAbeEui?utm_content=buffer459f1&utm_medium=social&utm_source=linkedin.com&utm_campaign=buffer

Apr 19 – As a spring breeze wafted into his trench, commander Georges Lamour of the French 73rd infantry saw something almost surreal drift his way. A yellow-green cloud.
He barely had time to react. "All my trenches are choked," Lamour cried into the field telephone to headquarters. "I am falling myself!"
These were the last words heard from Lamour. World War I, and warfare itself, were never the same.
Chlorine gas — sent crawling in favorable winds over Flanders Fields from German positions — sowed terror and agony for the first time on April 22, 1915. The era of chemical weaponry had dawned. The weapon of mass slaughter came to symbolize the ruthlessness and, many say, futility of the 1914-1918 Great War.
"It is a new element in warfare. It is indiscriminate," said Piet Chielens, curator at the In Flanders' Fields Museum in nearby Ypres. And what's more, he said, "you create psychological terror."
Foaming at the mouth, crazed and blinded, the French soldiers fled in all directions — sucking for oxygen, finding poison instead. The chlorine seeped into body fluids and ate away at eyes, throat and lungs. Some 1,200 French soldiers were killed in the chaos of that first 5-minute gas attack and the fighting that followed. Lamour, like scores of

comrades, was never found.
"You drown in your own lungs," Chielens said.
Today, cyclists crisscross these same fields and farmers plow around monuments honoring the first gas victims. On Tuesday, the 2013 Nobel Peace Prize-winning Organization for the Prohibition of Chemical Weapons will hold a commemorative meeting close to the fields. The organization today monitors reports that chlorine gas has repeatedly been used in Syria's civil war.

"NOTHING TO REPORT"
A century ago Tuesday, German forces gathered their best and brightest at army headquarters in Tielt, some 30 miles behind the front line, for a momentous discussion.

© AP Photo/Virginia Mayo In this photo taken on Thursday, April 9, 2015, director of the In Flanders Fields Museum Piet Chielens looks at postcards of victims of the first gas attacks of World War I, during an interview in his office at the museum in Ypres, Belgium…

Commanders had already been waiting 10 days for favorable winds, huddled in a patrician mansion lined with maps and dotted with landscape models. Tension had steadily risen after the Schlieffen Plan to smash through Belgium and take Paris by storm bogged down in Flanders and northern France. Germany was bent on breaking the stalemate of trench warfare. All options were open.
Holding back some German commanders was their sense of military honor. Some argued that deploying more troops would achieve a bigger breakthrough.
Fritz Haber, a chemical expert and future winner of the Nobel Prize in Chemistry, preached for more gas for more shock and awe. Others wondered if gas could be trusted to work as advertised.
Exasperated, Chief of General Staff Erich von Falkenhayn decided: Tomorrow we use the gas, or not at all.
Across the line, Lamour's French forces were reporting from the trenches: "Rien a signaler" — nothing to report. That might have been different had they been able to peer a bit further across no-man's land — at how German troops had dug in, under cover of night, more than 5,000 gas cylinders with tubes pointing their way.
The next morning, German trenches were filled with soldiers ready to pounce once the gas had cleared. The plan was to release the chlorine in the frosty morning hours, when it would cling best to the surface and give soldiers a full day to advance. But a windless morning came and went. The breeze picked up only in the afternoon. At 5 p.m. the gas cylinders were opened, with devastating effect.
Once the gas cleared, the soldiers jumped out and made more progress than they had in months. Men, horses, rats, even insects — all lay dead or choking before them.
"The effect of that gas was enormous," said historian Ann Callens. "Even the German troops and certainly the German generals were completely astonished."
"In one hour's time, they had a gap of more than 6 kilometers (4 miles) So the town of Ypres was nearly in their hands," said Callens, author of "Gas! Ieper 1915, the first gas attack."
Dusk was closing in fast though and lack of full confidence in gas came to haunt the Germans that day.

"The German army command has no great belief in this new weapon," Chielens said. "So they don't have a big infantry division behind it. That is not enough to result in a complete breakthrough."
After April 22, the surprise factor evaporated and the stalemate endured.

In this photo taken on Saturday, June 14, 2014, visitors look at a display of World War I gas masks from different countries at the In Flanders Fields Museum in Ypres, Belgium. Chlorine gas - sent crawling in favorable winds over Flanders Fields from German positions - sowed terror and agony for the first time on April 22, 1915. The era of chemical weaponry had dawned. The weapon of mass slaughter came to symbolize the ruthlessness and, many say, futility of the 1914-1918 Great War.

"IT SEEMS PRETTY CERTAIN WE SHALL RETALIATE"

But the genie was out of the bottle. The Germans needed only to look at how the prevailing westerly winds bent Flanders' stately trees toward their own positions to know that gas would inevitably come drifting their way. They could celebrate a momentary victory, but the war was about to become a lot uglier for both sides.
Laurence Cadbury of the British chocolate dynasty had come to Flanders to help as an ambulance driver. Cadbury, a pacifist Quaker, had an immediate grasp of what the Germans' use of the gas horror meant.
"It seems pretty certain we shall retaliate," he wrote to his parents only one week after the initial German attack. "After all, it is no use appealing to anyone."
The first use by allied forces came in September, when the British unleashed poison gas on the Germans at the battle of Loos, just across from Ypres in northern France.
Rival armies ultimately launched 146 gas attacks in Belgium, which covered only a small patch of the Western Front. The Germans used about 150 tons of gas in their first attack. Germany ultimately used 68,000 tons. The Allies used even more: 82,000 tons.
The lethal power of more sophisticated gases increased the horror by the month, even as the improvement of gas mask designs required more and more poison to be deployed. The invention of gas shells fired by artillery eliminated dependence on favorable winds.
The last gas attack came just three days before the armistice of Nov. 11, 1918. Historians estimate that more than 1 million soldiers were exposed to gas — and 90,000 killed.

"MON BIEN CHER GEORGES"

Peace brought no end to the suffering caused by the weapon.
"A lot of the effects did not kill you but they were lasting. You have chronic bronchitis, pneumonia," Chielens said. "The veterans of the war took it with them to their graves."

Dormant shells littered farmland. Even today, farmers suffer health problems after digging up this toxic harvest.

Memorial surrounded by standing stones commemorates those who lost their lives as a result of the first gas attacks during World War I in Steenstrate, Belgium. The cross marks the fields where troops faced the first use of poison gas during World War I on April 22, 1915. Chlorine gas - sent crawling in favorable winds over Flanders Fields from German positions - sowed terror and agony for the first time on April 22, 1915. The era of chemical weaponry had dawned. The weapon of mass slaughter came to symbolize the ruthlessness and, many say, futility of the 1914-1918 Great War.

The French army told Georges Lamour's wife, Angele, that he either died from gas or was taken prisoner. She kept believing her husband was alive.
Month after month, she wrote letters to "Mon bien cher Georges." On May 2, 1918, three years after his presumed death, she still wrote: "Is springtime coming so late for you as it is for us?"
Sometimes, their three children took to pen and paper.
Lamour's son Etienne wrote on Dec. 8, 1915: "Mon cher papa, Mama allowed me to write you today because I came in first in the school exams, first in the division's literary contest, and second in German."

20th CBRNE troops destroy 75,000 pounds of explosives

Source: https://www.dvidshub.net/news/159984/20th-cbrne-troops-destroy-75000-pounds-explosives#.VTZ2sZOTLz5

Soldiers from two U.S. Army Explosive Ordnance Disposal companies eliminated more than 75,000 pounds of explosives during operations in New Mexico over the past month.
The 734th EOD Company demolished 15,000 pounds of explosives at White Sands Missile Range, New Mexico and the 741st EOD Company destroyed 60,000 pounds of ordnance at New Mexico Tech's Energetic Materials Research Testing Center in Socorro, New Mexico.

The EOD companies are assigned to the 20th CBRNE Command (Chemical, Biological, Radiological, Nuclear, Explosives), the only Defense Department formation that combats CBRNE threats around the globe. **Based on 19 posts in 16 states, 20th CBRNE Soldiers and civilians** serve with joint, interagency and allied partners around the globe to combat CBRNE threats ranging from Weapons of Mass Destruction to improvised explosive devices (IEDs).

Since the command was activated in 2004, 20th CBRNE EOD troops have defeated more than 50,000 IEDs in Iraq and Afghanistan.

Part of 20th CBRNE Command's 71st EOD Group and 84th EOD Battalion, the two EOD companies cover more than 992,000 acres on Fort Bliss, Texas, and White Sands Missile Range, New Mexico.

Stationed on Fort Bliss, the companies also conduct Defense Support to Civil Authorities missions with law enforcement agencies in New Mexico, Arizona and the nine western most counties of Texas.

"My teams were afforded the opportunity to practice disposal procedures on an array of missiles, rocket motors and warheads," said Capt. Nathan S. Vail, the commander of the 734th EOD Company.

Vail said the mission on White Sands Missile Range gave his EOD technicians the chance to learn more about missiles and their components.

"We don't frequently deal with missiles at Fort Bliss beyond the occasional response to a misfired TOW missile," said Vail, a native of Alta Loma, California, who served in Afghanistan. "The ordnance we trained with at White Sands Missile Range was much larger and the demolition procedures were more in-depth."

Vail added that safety was the top priority for his five EOD teams involved in the mission.

"We typically deal with lesser quantities and much smaller items," said Vail. "The scale of the demolition training required a lot of coordination to ensure proper use of material handling equipment as well as safety precautions, such as fire and medical emergency services on standby."

Soldiers from the 741st EOD Company prepare to destroy ordnance at New Mexico Tech's Energetic Materials Research Testing Center in Socorro, N.M.

Capt. Sean R. Ashby, the operations officer for the 741st EOD Company, said the demolition mission at the Energetic Materials Research Testing Center came about by a call from the U.S. Navy's EOD Detachment in Dahlgren, Virginia.

Ashby called the Energetic Materials Research Testing Center one of the nation's premier explosives development, research and testing facilities.

"There was an excess of ordnance items that had been tested on or were waiting to be tested," said Ashby. "Some items had been there for so long or had been experimented on multiple times that they became degraded and dangerous."

"We demolished 252 ordnance items," said Ashby, a native of Upper Marlboro, Maryland, who has deployed to Afghanistan and conducted a Humanitarian Mine Action mission in Tajikistan.

Ashby said the operation made his EOD Soldiers better by exposing them to a wide variety of explosives.

"Operations like this make our unit more combat effective by giving EOD Soldiers exposure to real-world, hands-on training on ordnance items that may be seen on the battlefield," said Ashby. "IEDs are dangerous but there are still plenty of ordnance items that can kill you if not handled properly."
"Not only do these operations give EOD Soldiers training on ordnance identification but they also give them experience that they can later call upon for large-scale demolition operations," said Ashby.

Brig. Gen. JB Burton, the commanding general of 20th CBRNE Command, said the missions were another example of the real-world operations 20th CBRNE Soldiers and civilians conduct around the globe daily.
"Our 20th CBRNE Command Soldiers and civilians not only support military operations around the world but they also safeguard the homeland from CBRNE threats," said Burton, a native of Tullahoma, Tennessee. "They are the absolute best at what they do."

Report: Most Chemical Facilities Still Vulnerable to Terrorist Attack

Source: http://www.chem.info/news/2015/04/report-most-chemical-facilities-still-vulnerable-terrorist-attack

Apr 21 – Most chemical facilities in the U.S. have yet to adopt federal anti-terrorism guidelines and remain vulnerable to attack, according to a recent report published in the International Journal of Critical Infrastructures.
The U.S. Department of Homeland Security established its Chemical Facility Anti-Terrorism Standards in 2007 in response to concerns following the Sept. 11 terrorist attacks.

The study by researchers at Indiana University-Purdue University Indianapolis, however, found that **as of 2013, only 40 of the nation's 3,468 chemical facilities designated by DHS saw their final plans approved** — and that "the pace of adoption and implement is yet to pick up."
Maria Rooijakkers and Abdul-Akeem Sadiq argued the slow pace of implementation jeopardizes the typically dense populations near chemical plants, as well as the economy due to the importance of chemicals in a wide array of industries.
They recommended that the chemical industry and DHS officials work together more closely to speed up the implementation process, and suggested that local officials develop their own preparedness plans.

▶ **Read more about the report at:** http://www.eurekalert.org/pub_releases/2015-04/ip-hcs041515.php

Full Circle: Chlorine Now Chemical Weapon of Choice in Syria

Source: http://abcnews.go.com/International/wireStory/full-circle-chlorine-now-chemical-weapon-choice-syria-30439899?singlePage=true

Exactly one century ago Wednesday, German troops opened the taps on a line of chlorine tanks to send a poisonous cloud drifting across no man's land and into World War I Allied trenches. The gas blinded soldiers and made them retch, vomit and choke, combining with bodily fluids to destroy their lungs.
Today chemical warfare has come full circle.

Reports from Syria about chemical weapons used in that conflict also involve chlorine — a widely available substance that has legitimate industrial and commercial uses. Both government forces and insurgents deny accusations of using the gas.

A report last year by a fact-finding mission set up by the Organization for the Prohibition of Chemical Weapons said a toxic chemical, almost certainly chlorine, was used repeatedly in attacks on villages in Northern Syria.

"Leaves on plants ... wilted 'like autumn leaves,'" it cited witnesses as saying. "In one case, a child standing close to the impact site died later because of exposure to the toxic chemical."

British Foreign Secretary Philip Hammond said the report's findings pointed to the regime of President Bashar Assad using chlorine as a weapon.

Both sides denying using chemical weapons while accusing the other of poison attacks.

There was no point in denying it a century ago in Flanders Fields.

The first large-scale use of chlorine as a weapon, at Ieper, Belgium, on April 22, 1915, unleashed massive use of gas by both Germany and the Allies during the last three years of the 1914-1918 war. Chemical weapons killed nearly 100,000 and injured around 1 million more during the conflict.

The horrific scale of World War I gas casualties — and the suffering they caused — helped launch what has been hailed as one of the most successful disarmament campaigns in history. It culminated in the 1997 Chemical Weapons Convention and creation of the Hague-based Organization for the Prohibition of Chemical Weapons. The watchdog with 190 member states won the Nobel Peace Prize in 2013.

The OPCW's director-general, Ahmet Uzumcu, said in a recent speech that all chemical weapons across the 98 percent of the world covered by his organization's members will be destroyed "within this decade."

"That amounts to more than 70,000 metric tons of chemical agent," Uzumcu said. "To put this figure into perspective, it takes only one drop of much of this agent to kill an adult instantly."

Despite that success and global condemnation of poison gas and nerve agents, deadly chemical attacks have continued throughout the past century.

Iraqi dictator Saddam Hussein was the worst offender. He was accused of using mustard gas and the nerve agent taubun in his country's war with neighboring Iran, as well as his 1987-88 crackdown on Iraq's Kurdish minority.

The most notorious case was in the village of Halabja, where some 5,000 people were killed by poison gas.

Photos taken after the Halabja attack on March 16, 1988, showed bodies of men, women, children and animals lying in heaps on the streets.

While the state-organized attack on Halabja shocked the world, a deadly nerve agent attack on the Tokyo subway marked the emergence of a new threat: terrorists getting their hands on toxins.

In 1995, 13 people were killed and about 6,000 sickened when packages containing the nerve agent sarin were leaked on five separate subway trains by members of the Aum Shinrikyo cult.

Meanwhile, the world's two biggest owners of chemical weapons, the United States and Russia, are methodically destroying their stockpiles.

Russia has destroyed about 86 percent of its stockpile, and the U.S. about 90 percent. Russia is expected to finish destruction by the end of 2020 and the U.S. by September 2023.

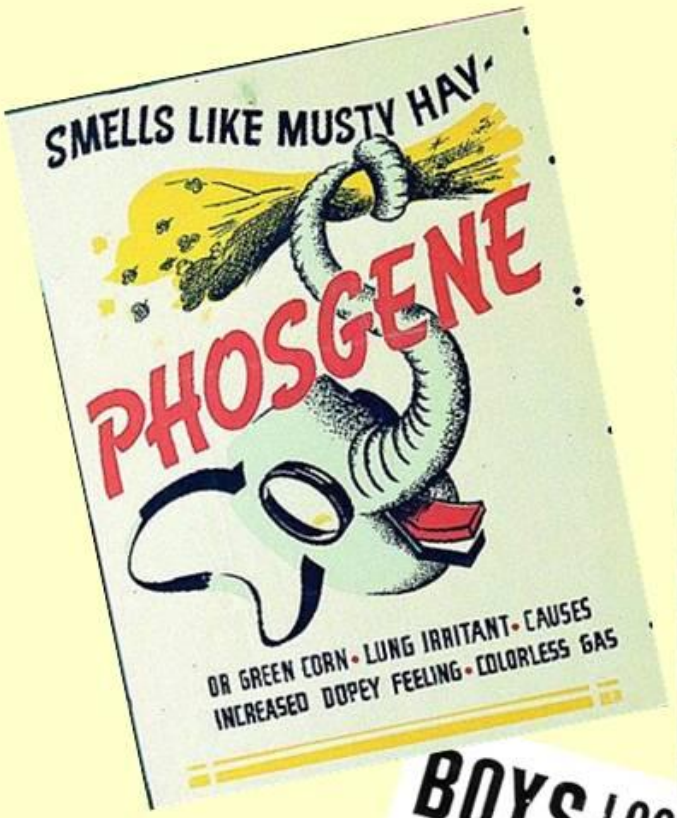
Syria joined the OPCW in 2013 to ward off the possibility of U.S. airstrikes after President Assad was accused of a deadly chemical weapons attack on a Damascus suburb. The country admitted owning about 1,300 tons of chemical weapons and ingredients for making toxic gas and nerve agents.

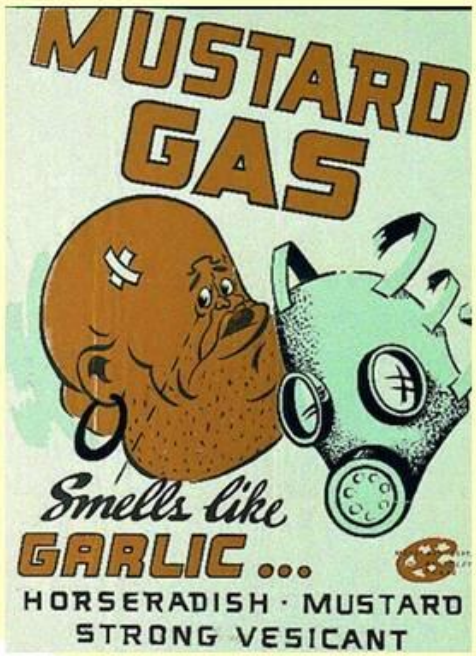
An unprecedented international effort swung into action to remove the most dangerous chemicals from the country and destroy them all, though questions remain about whether the Assad regime reported all its stocks to the OPCW.

While the days of nations building up huge stockpiles of chemical weapons appear to be largely over, fears of chemical attacks using chlorine are not — as recent reported use of the chemical in Syria underscores.

"So we come back to entities not engaging in the development or

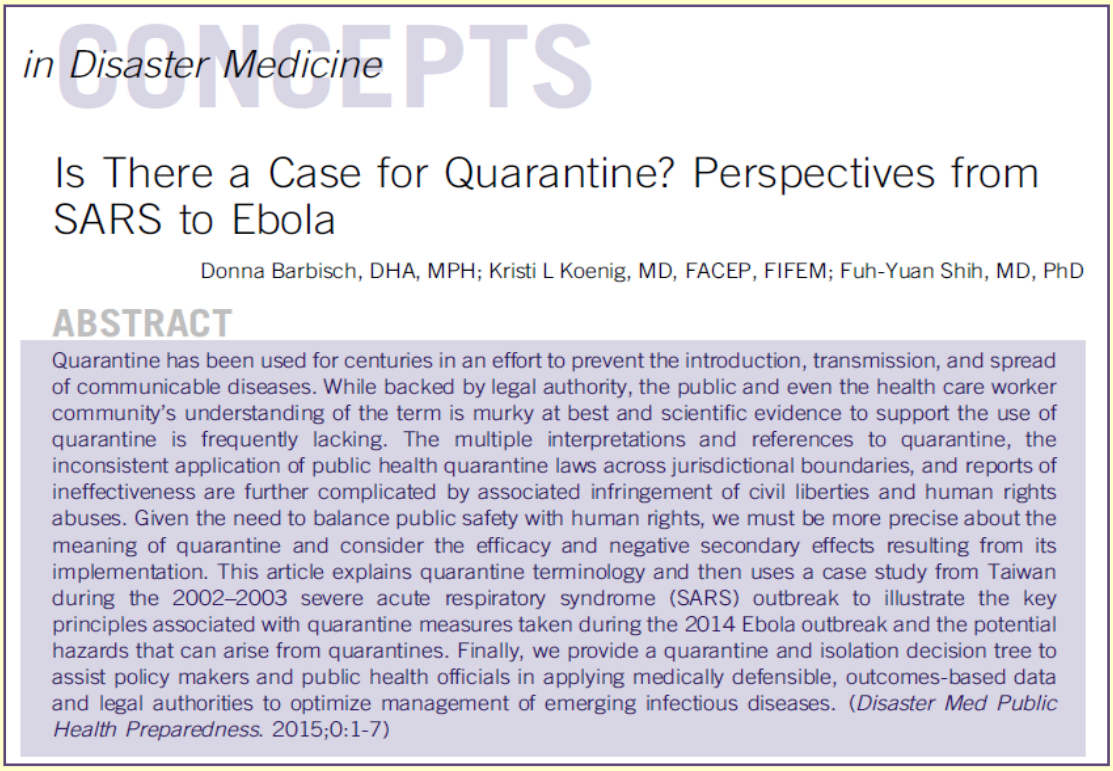
production of warfare agent but using what is available ... 'off the shelf,'" said chemical weapons expert Jean Pascal Zanders. "It's almost a logical outgrowth of the success of chemical disarmament that one would go back to some very elementary things."





Is There a Case for Quarantine? Perspectives from SARS to Ebola

Source: http://escholarship.org/uc/item/2hw70775



in Disaster Medicine

CONCEPTS

Is There a Case for Quarantine? Perspectives from SARS to Ebola

Donna Barbisch, DHA, MPH; Kristi L Koenig, MD, FACEP, FIFEM; Fuh-Yuan Shih, MD, PhD

ABSTRACT

Quarantine has been used for centuries in an effort to prevent the introduction, transmission, and spread of communicable diseases. While backed by legal authority, the public and even the health care worker community's understanding of the term is murky at best and scientific evidence to support the use of quarantine is frequently lacking. The multiple interpretations and references to quarantine, the inconsistent application of public health quarantine laws across jurisdictional boundaries, and reports of ineffectiveness are further complicated by associated infringement of civil liberties and human rights abuses. Given the need to balance public safety with human rights, we must be more precise about the meaning of quarantine and consider the efficacy and negative secondary effects resulting from its implementation. This article explains quarantine terminology and then uses a case study from Taiwan during the 2002–2003 severe acute respiratory syndrome (SARS) outbreak to illustrate the key principles associated with quarantine measures taken during the 2014 Ebola outbreak and the potential hazards that can arise from quarantines. Finally, we provide a quarantine and isolation decision tree to assist policy makers and public health officials in applying medically defensible, outcomes-based data and legal authorities to optimize management of emerging infectious diseases. (*Disaster Med Public Health Preparedness.* 2015;0:1-7)

WHO, worried about damage to West Africa's economy, delayed declaring Ebola an emergency

Source: http://www.homelandsecuritynewswire.com/dr20150324-who-worried-about-damage-to-west-africa-s-economy-delayed-declaring-ebola-an-emergency

March 24 – **The World Health Organization (WHO) for two months delayed labeling the Ebola outbreak a global emergency for fear of damaging the economy of Guinea and neighboring countries, according to leaked documents and memos from the organization**.

According to the AP, WHO's Geneva headquarters received numerous e-mails by mid-April 2014 from staffers in Guinea calling for help with an epidemic which had already killed 100 people and was likely to spread. In an e-mail from Jean-Bosco Ndihokubwayo, an Ebola expert with WHO's Africa office to a WHO official in Geneva, he described the situation as taking a critical turn because many health workers at Donka Hospital in Guinea's capital, Conakry, had been exposed to the virus. "What we see is the tip of an iceberg," he wrote, later requesting the help of six veteran outbreak responders, writing in all capitals in the email's subject line: "WE NEED SUPPORT."

WHO official Stella Chungong warned the Geneva office that terrified health workers might abandon Donka Hospital and that new Ebola cases were appearing out of nowhere. "We need a drastic … change (of) course if we hope to control this outbreak," she said.

WHO eventually sent Pierre Formenty, an Ebola expert to the region, but many of the other staffers sent to Conakry "had no idea how to manage an Ebola

epidemic," according to Marc Poncin, mission chief for Doctors Without Borders (DWB), the group that led the Ebola outbreak response until WHO declared a global public health emergency in August.

Before the declaration, in early April WHO spokesman Gregory Hartl told reporters that "this outbreak isn't different from previous outbreaks." In a Twitter post, Hartl wrote "You want to disrupt the economic life of a country, a region, (because) of 130 suspect and confirmed cases?"

The *Guardian* reports that in June 2014, WHO officials discussed whether to declare a global health emergency as such a declaration "ramps up political pressure in the countries affected" and "mobilizes foreign aid and action," read an internal document. WHO, however, was already preoccupied with other outbreaks, including polio, which was a high political priority. There were also issues with the Guinean government, which according to WHO documents, was reporting only confirmed Ebola cases and not those suspected or probable, in an effort to downplay the dangers and avoid alarming foreign workers in the mining industry.

Dr. Sylvie Briand, head of WHO's pandemic and epidemic diseases department acknowledged that her agency made wrong decisions, but said postponing the declaration made sense at the time because it could have had catastrophic economic consequences "What I've seen in general is that for developing countries, it's sort of a death warrant you're signing," she told the AP.

Critics of WHO's actions before August 2014 argue that declaring an international emergency functions as a global distress call, one that no world leader could ignore. "It's important because it gives a clear signal that nobody can ignore the epidemic any more," said Dr. Joanne Liu, DWB's international president. In a meeting at WHO headquarters on 30 July, Liu told WHO chief Dr. Margaret Chan: "You have the legitimacy and the authority to label it an emergency … You need to step up to the plate."

After WHO declared an international emergency on 8 August 2014, the United States sent 3,000 troops to west Africa to help build Ebola field hospitals, Britain and France also pledged to help build Ebola clinics, China sent a fifty-nine-person lab team, and Cuba sent more than 400 health workers. Dr. Bruce Aylward, WHO's top Ebola official still maintains that labeling the Ebola outbreak a global emergency would not have been a magic bullet. "What you would expect is the whole world wakes up and goes: 'Oh my gosh, this is a terrible problem, we have to deploy additional people and send money,'" he said. "Instead what happened is people thought: 'Oh my goodness, there's something really dangerous happening there and we need to restrict travel and the movement of people.'"

New vaccine for Ebola found to provide long-lasting immunity

Source: http://www.medicalnewstoday.com/articles/291454.php

March 25 – **Scientists have a developed a new vaccine that can provide long-lasting immunity against Ebola virus and could potentially be used to reduce infection from the virus among wild African ape populations.**

As well as protecting great apes, the study, published in *Vaccine*, also has implications for future human vaccination against Ebola virus.

"Given the impact of Ebola virus on African ape numbers in the wild, and the role of apes as a route of Ebola virus transmission to humans via the bush meat trade, such a vaccine would be a win-win for humans and wild apes alike," says corresponding author Dr. Michael Jarvis.

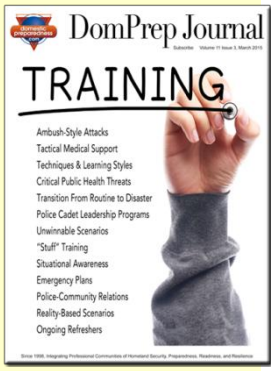
African apes are one of the main sources of Ebola virus transmission to humans. Preventing infection among ape populations could reduce the likelihood of future outbreaks among humans. Additionally, Ebola virus is regarded as a major threat to wild ape survival and a successful vaccine could help stabilize endangered populations.

In the multi-institutional study, researchers developed a vaccine based on the cytomegalovirus (CMV) - a common virus capable of infecting almost anyone, that rarely causes symptoms. CMV is typically only a concern for pregnant people or

people with weakened immune systems.
The benefits of basing a vaccine on CMV are that it is effective in provoking an immune response, is species-specific and can also spread easily from individual to individual.
One of the biggest hurdles for achieving high vaccine coverage among wild African apes is that many of them live in remote and inaccessible regions, making conventional vaccination almost impossible. A CMV-based Ebola virus vaccine could spread through wild ape populations, conferring high levels of immunity without the need for direct contact.
"We must walk before we can run, but this study provided a little skip," says Dr. Jarvis. "However, this disseminating approach does potentially provide a workable solution to a currently intractable problem of achieving high vaccine coverage in inaccessible ape populations."

Immunity provided by the vaccine protected against Ebola virus for at least 119 days

The work of the researchers is based on an earlier study conducted in 2011, in which they demonstrated the capacity for a CMV-based vaccine to provide protection from Ebola virus in a mouse challenge model.
Like the majority of mouse studies involving Ebola virus, the 2011 study only assessed protection from Ebola virus in the short-term following vaccination. The time period observed is typically 6 weeks after a vaccine is administered.
For the present study, the researchers assessed immunity against Ebola virus for a much longer period. The team demonstrated that the CMV-based vaccine provided long-term immunity, with Ebola virus-specific responses maintained for over 14 months following just one dose. Immunity provided by the vaccine lasted for approximately 4 months (119 days).
The next step for the researchers will be to trial the vaccine in the macaque Ebola virus challenge model, considered to be the "gold standard" in testing vaccines in a model comparable to virus transmission among great apes and humans.
Questions remain that will need answering before a vaccine can be developed for direct use in humans. The researchers have to examine what level of immunity is conferred by disseminated CMV-based vaccines, as up until now the vaccine has only been administered directly.
For now though, the research offers promise. The long-lasting immunity provided by the vaccine in its current form is both crucial to the eventual success of a disseminating vaccine and an attractive characteristic for any vaccine made to be used in humans.
Recently, *Medical News Today* reported on the story of a doctor from the US who was found to be clear of Ebola virus after receiving an experimental emergency vaccine. The doctor had previously received a needle stick injury while working in an Ebola treatment unit, placing them at high risk of infection.



DomPrep Journal (March 2015)

Source: http://www.domesticpreparedness.com/pub/docs/DPJMarch15.pdf

Hospital Threats – More to Address Than Just Donning & Doffing

By Craig DeAtley

An American flown from Sierra Leone lies in critical condition at the National Institutes of Health in Bethesda, Maryland. In another case, a nurse who contracted Ebola when caring for a patient is suing Texas Health Resources for not properly training its employees. As these examples demonstrate, biological threats to healthcare workers still exist, and the training must go beyond simply donning and doffing.

The experiences over the past year with Ebola have once again highlighted the lengths to which healthcare facilities must go to protect their staff, including the use of personal protective equipment (PPE). However, Ebola is not the only clinical situation requiring PPE. Hospital personnel, otherwise designated as "first receivers" – by the Occupational Safety and Health Administration (OSHA) – who perform decontamination on patients affected by chemical or radiologic exposure also require protection. Regardless of the threat, each hospital is required to have a comprehensive program that addresses a variety of issues related to PPE. The OSHA Best Practices for Hospital Based First Receivers of Victims from Mass Casualty Incidents Involving the Release of Hazardous Substances is a widely used document to help healthcare facilities, especially hospitals address a variety of response issues including donning (putting on) and doffing (removing) PPE.

Craig DeAtley, *PA-C, is director of the Institute for Public Health Emergency Readiness at the Washington Hospital Center, the National Capital Region's largest hospital; he also is the emergency manager for the National Rehabilitation Hospital, administrator for the District of Columbia Emergency Health Care Coalition, and co-executive director of the Center for HICS (Hospital Incident Command System) Education and Training. He previously served, for 28 years, as an associate professor of emergency medicine at The George Washington University, and now works as an emergency department physician assistant for Best Practices, a large physician group that staffs emergency departments in Northern Virginia. In addition, he has been both a volunteer paramedic with the Fairfax County (Va.) Fire and Rescue Department and a member of the department's Urban Search and Rescue Team. He also has served, since 1991, as the assistant medical director for the Fairfax County Police Department.*

Preparedness: Moving Beyond The Stockpiling of Stuff

By Andrew Roszak

Equipment, plans, and personnel are only as good as their ability to perform when needed. When disaster strikes, it is imperative that local, state, and federal levels of government, emergency management, volunteer organizations, and healthcare coalitions are all operationally ready and trained to use all of the "stuff" they have acquired over the years.

For many years, the prevailing focus of preparedness programs focused on "stuff" – for example, personal protective equipment, ventilators, generators, plans. Preparedness planners were evaluated based on how much stuff could be acquired and stored, only to watch it expire. For too long, being prepared meant being "fully stocked." However, all of the stuff in the world cannot make up for a lack of trained professionals with the knowledge and expertise to lead responses.

Shifting Strategies – From Stockpiles to Real-World Application

Over the past few years, there has been a growing national movement away from measuring stuff and toward measuring actual operational capacity to recognize triggers, activate systems, and

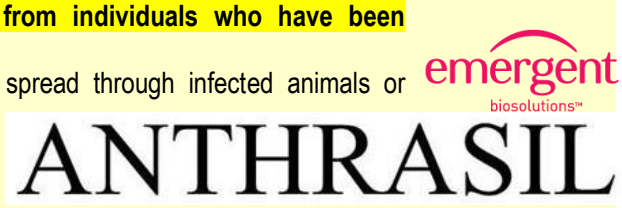
Andrew Roszak, JD, MPA, EMT-P*, serves as the senior director for environmental health, pandemic preparedness and catastrophic response at the National Association of County and City Health Officials (NACCHO). Prior to his position at NACCHO, he provided support for Super Bowl 46 and the Indianapolis 500 as the senior preparedness advisor for the Health and Hospital Corporation of Marion County, Indiana, and the MESH Coalition. Previously, he served as senior advisor for the U.S. Department of Health and Human Services (HHS) at the Health Resources and Services Administration and at HHS's Emergency Care Coordination Center. During the 110th and 111th Congresses, he served as a Winston Health Policy Fellow in the U.S. Senate, on the Budget and Health, Education, Labor and Pensions (HELP) Committees. Immediately beforehand, he served two years in the Office of Health Protection at the Illinois Department of Public Health and eight years as a firefighter, paramedic, and hazardous materials technician in the Chicago-land area. He has an AS in paramedic supervision, a BS in fire science management, a Master of Public Administration and a Juris Doctorate degree. He is admitted to the bars of Illinois, District of Columbia, and the U.S. Supreme Court.*

New FDA drug approval may help in a bioterrorism attack

By Dr. Manny Alvarez

Source: http://www.foxnews.com/health/2015/03/25/dr-manny-new-fda-drug-approval-may-help-in-bioterrorism-attack/

March 25 – **An infusible drug designed to treat patients who have been exposed to anthrax has been approved by the U.S. Food and Drug Administration (FDA), health officials announced Wednesday. The drug, Anthrasil, is made of antibodies from individuals who have been vaccinated against anthrax**.



Anthrax is a serious infectious disease that, while rare, can spread through infected animals or contaminated animal products. However, in the case of a bioterrorism attack, Bacillus anthracis, the bacteria that causes anthrax, can be used in powders, sprays, food and water to spread the microscopic spores. The spores cannot be detected by sight, smell or taste. Bacillus anthracis is considered by the Centers for Disease Control and Prevention (CDC) to be a Tier 1 biological agent because of its potential for mass casualties.

One has to remember that once an inhalation anthrax exposure has occurred, the mortality rate is at 80 percent or higher, according to the FDA. Up to this point, we have only had very limited use of antibiotics in treating the disease once the patient has been exposed and is exhibiting symptoms. That is why when there's a suspicion of an anthrax attack, patients are quarantined and quarters are immediately sealed.

In this chaotic world we live in today, with so many attacks around the world, this is a welcome finding by this Canadian company, Cangene. I hope that the FDA continues in their efforts to develop new types of medication to eliminate the potential effects of a bioterrorism attack.

Dr. Manny Alvarez *serves as Fox News Channel's Senior Managing Editor for Health News. Prior to this position, Alvarez was a FNC medical contributor.*

MassBio panel tackles perils of drugs for bioterrorism and superbugs

Source: http://www.bizjournals.com/boston/blog/bioflash/2015/03/massbio-panel-tackles-perils-of-drugs-for.html?page=all

March 26 – A panel this morning at the annual meeting of MassBio featured (from the left) David Lubner, CFO of Tetraphase Pharmaceuticals; Tim Hunt, senior VP for public affairs at Cubist; Kendall Hoyt, assistant professor of medicine at Dartmouth; Chris Garabedian, CEO of Sarepta Therapeutics; and Steve Gilman, former CSO at Cubist.

Last fall, at the height of the media attention on the Ebola outbreak in West Africa, Microsoft co-founder Bill Gates pledged $50 million from his foundation to fight the problem. That was followed a month later by a $25 million pledge from Facebook founder Mark Zuckerberg. Executives in the biotech industry, however, were underwhelmed.

"The first reaction of those in the industry was, it's missing a zero. Or two," said Chris Garabedian, CEO of Sarepta Therapeutics (Nasdaq: SRPT) at a panel today at the annual meeting of the Massachusetts Biotechnology Council.

The observation on the lack of funding available for research on life-saving drugs that need to be developed quickly in response to fast-spreading infectious diseases was one of the main themes in the panel, titled, "From Bioterrorism to Superorganisms: Perils, Pitfalls and Promise." Featuring executives from local biotech firms that work in the specialized world of infectious diseases, the panel was headed by former chief scientist at Cubist Pharmaceuticals, Steve Gilman. The discussion covered not only potential bioweapons, like Ebola or the Marburg virus, but fast-

moving diseases that can spring up and pose a threat within a few weeks or months, such as new strains of bacteria that are resistant to existing drugs.

Kendall Hoyt, assistant professor of medicine at the Geisel School of Medicine at Dartmouth, said that in this specialized field of drug development, "it's not just about innovation. It's about the timeliness of innovation."

She said such diseases are scary for two reasons: "One is, it's entirely new. You're starting at square one," she said. "Secondly, it's not hypothetical. It happened and it will happen again."

While the U.S. Food and Drug Administration has made strides in recent years to streamline approval of drugs to fight antibiotic-resistant bacteria, there's still a lot of work needed to create a regulatory system that's both predictable and able to approve needed drugs quickly. Gilman said one problem is the lack of patients to advocate for such drugs to the FDA. "You don't get advocacy from patients when they live or die in two weeks," he said.

Compounding that is that while several branches of the federal government work to develop antidotes for infectious diseases, the burden remains with the FDA to make sure the drugs are safe, and that agency is by nature risk-averse.

Garabedian said when Sarepta first started getting funding from the Department of Defense for its Marburg virus program, the intent was to try and develop a drug that could be used with troops in a few years. But the path to approval outlined by the FDA would not see approval of anything before 2020.

"I think we need a more comprehensive approach between the various federal agencies where the FDA is covered, because it falls on them if something goes wrong," he said.

Tim Hunt, senior vice president for public affairs at Cubist (which sold to Merck & Co. for $8.4 billion in January), said that there is a "mis-alignment" of the costs of drugs. Those which improve a patient's quality of life, such as for the new crop of multiple sclerosis treatments, can sell for $50,000 each, while a life-saving antidote for a deadly disease might not fetch $3,000, he said.

That fact means there are few incentives for investors to put money into badly-needed infectious disease drugs, and the government has to step up to do its part, said panel members. But changes in recent years have started to make the field of antibiotics — largely ignored for the past several decades — more attractive as an investment.

David Lubner, CFO of Watertown antibiotics developer Tetraphase Pharmaceuticals (Nasdaq: TTPH), said that when the company was founded in 2006, recent launches of anti-bacterial drugs has been "really underwhelming" compared to the cost to develop them. But the FDA has lowered the bar for approval of such drugs in the past few years, making it cheaper to run the necessary trials, said Lubner. Then, he said, Cubist made its high-profile acquisitions of Optimer Pharmaceuticals and Trius Therapeutics for a combined $1.6 billion, proving that antibiotics firms could be profitable investments.

"I think that (Tetraphase) has grown in valuation not only because we've advanced our drug into late-stage trials, but because of what Cubist did," he said. "People ask us, 'Can you be the next Cubist?' We think we can."

Bioweapons do not offer the same deterrence value nukes offer

Source: http://www.homelandsecuritynewswire.com/dr20150331-bioweapons-do-not-offer-the-same-deterrence-value-nukes-offer-experts

Biological and nuclear weapons are both considered weapons of mass destruction, but only nuclear weapons currently serve as a deterrence. Some security experts have proposed the idea of nations adopting non-contagious biological weapons as a new form of deterrence. The new model "could work well if deterrence required threatening large human populations" without posing the risk of a global catastrophe like nuclear winter or a pandemic, writes Seth Baum, executive director of the Global Catastrophic Risk Institute.

The consequences of starting a global biological arms race are troubling enough, but the concept of replacing nuclear weapons with

biological weapons as a form of deterrence is flawed for three main reasons: uncertainty of effects, availability of defenses, and the need for secrecy and surprise.

According to Gregory D. Koblentz, an associate professor in the Department of Public and International Affairs and deputy director of the Biodefense Graduate Program at George Mason University, nuclear weapons instantaneously destroy their targets, causing predictable levels of harm. Biological weapons, however, take time to germinate and their effects can be unpredictable due to their sensitivity to environmental conditions and the importance of pathogens-host interactions. Furthermore, the inability to test the realistic effects of biological weapons, unless human experimentation is conducted, prevents nations from fully understanding how biological weapons will play out in a real life attack.

There are also no known practical defenses against the effects of a nuclear attack. A biological attack, on the other hand, can be countered with measures taken before, during, and after the attack. "Biological weapons use has been always uncertain, invisible, and delayed due to factors such as the incubation period," according to a 2008 paper by Francisco Galamas. The*Bulletin of the Atomic Scientists* notes that because diseases have an incubation period of days to weeks, defenders may have time to detect an attack using sensors and biosurveillance systems. Masks and filters can prevent exposure to biological agents and vaccines can also be used to protect citizens and soldiers days or weeks before an attack. As a result, the effects of a biological attack are not absolute, and they can be curbed by a well-prepared defender. For this reason, nations relying on biological weaponsfor deterrence will have little confidence in their ability to launch catastrophic retaliatory strikes against an adversary.

During the cold war, the superpowers were able to flaunt their nuclear capabilities for deterrent purposes because doing so did not provide adversaries with improved means of defending against them. Biological weapons, however, have limited value as deterrents due to the need for states to hide their biological weapons programs for fear that the adversaries might develop defenses. Secrecy counters the goals of deterrence.

In his 2008 paper, Galamas suggests that new biotechnology techniques may enhance the deterrence capability of biological weapons, but Koblentz notes that while biological weapons have the ability to inflict great harm against an adversary, currently "they are unable to offer states an 'assured' capability for doing so." Biological weapons do not measure up to the deterrence characteristics of nuclear weapons.

— Read more in Seth Baum, "Deterrence, without nuclear winter," Bulletin of the Atomic Scientists (9 March 2015); Seth Baum, "Winter-safe Deterrence: The Risk of Nuclear Winter and Its Challenge to Deterrence," Contemporary Security Policy 36, no. 1 (2015): 123-48; and Francisco Galamas, "Biological Weapons, Nuclear Weapons and Deterrence: The Biotechnology Revolution," Comparative Strategy 27, no. 4 (31 October 2008): 315-23.

EDITOR'S COMMENT: "Dangerous" thoughts…

Identifying infectious diseases at the point-of-care

Source: http://www.homelandsecuritynewswire.com/dr20150401-identifying-infectious-diseases-at-the-pointofcare

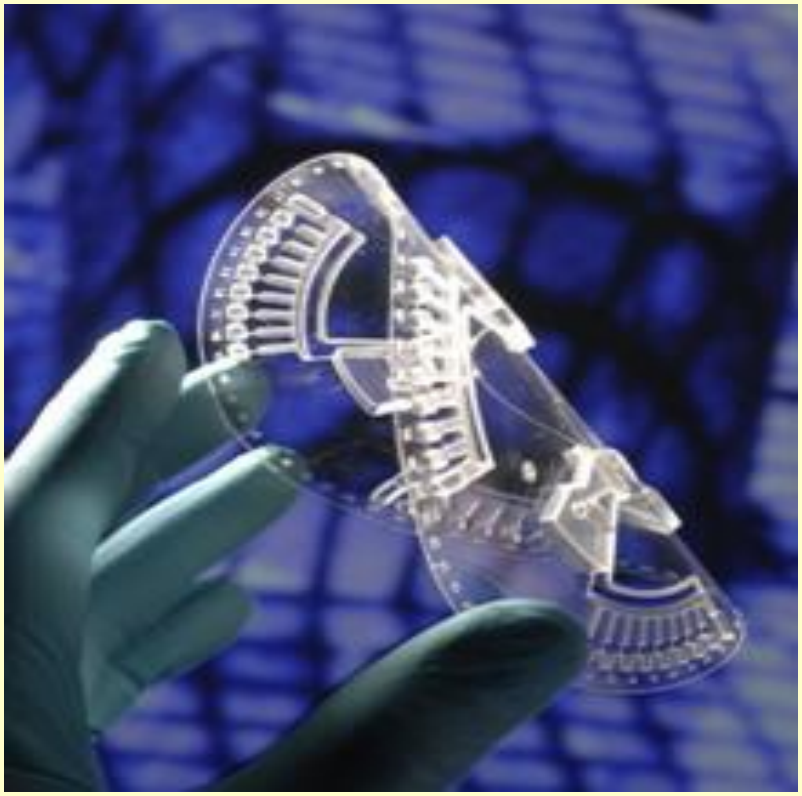
Apr 01 – **A major problem with current testing for infectious diseases in Africa is that it focuses on individual diseases and cannot reliably discriminate among them.** Since most infectious diseases have the same feverish symptoms, diagnosis is often inaccurate, resulting in thousands of deaths and increased resistance to antimicrobial drugs.

Clinical surveys show that up to 30 percent of patients are treated for malaria without even being infected by it. Considering the approximately 200 million malaria cases worldwide, it is vital that accurate diagnostic tools are developed to distinguish between infectious diseases such as malaria, typhoid, dengue fever and

pneumonia, so the right therapies are applied.

A CORDIS release reports that the EU's EUR 2.9 million DISCOGNOSIS project has come up with a new diagnostic tool: an easily-portable lab-on-a-disc, which can test for several tropical diseases at the same time, discriminate among them, and guide healthcare personnel to proper patient treatment.

Plastic disposable disc (left) inserted into the Point-of-Care detection platform (right)



"It is a very simple and cheap system that can be used in regions with low medical infrastructure," explained the project's coordinator Dr. Konstantinos Mitsakakis of the Department of Microsystems Engineering (IMTEK) at Freiburg University in Germany. "Results can be obtained from a finger prick of blood in just one hour, whereas lab culture currently takes up to three days."

Identifying the disease at the molecular level

The doctor or nurse injects the patient's blood sample onto a plastic disc, the "LabDisk," which is roughly the size of a CD, and then places the disc in the "disc player." The device weighs just two kg, making it perfect for transportation to remote villages. The disc has pre-stored biochemical components, which allow fully automated analysis.

The blood sample is processed on disc and centrifugally distributed into microfluidic chambers where the disease pathogens can be identified from their DNA/RNA — whether it be from parasites (malaria), bacteria (typhoid or pneumonia) or viruses (dengue).

This generic point-of-care platform can be applied to many other infectious diseases for example Ebola, only by changing its bio-components. Early diagnosis can help limit the effects of an extended epidemic.

The researchers will validate the diagnostic device in the field, before the three-year project ends in October 2015, and have chosen two locations: the Pasteur Institute in Dakar, Senegal (with 'bio-banked' samples); and the Medical Center in Bunia, Democratic Republic of Congo (with recruitment and testing of around 100 patients).

Commercializing the technology worldwide

The economics of the LabDisk are very promising. Costs are currently estimated to be up to $10 per disc per patient, assuming some millions discs are manufactured, which is cheaper than a complete set of multiple infectious disease testing procedures currently in use in Africa.

The DISCOGNOSIS team is now seeking to increase the number of patients that can be tested simultaneously. Not only will this be more cost-effective, but it would prove a vital help in handling future epidemics.

Other follow-up activities include performing clinical trials and developing remote connection

of the LabDisk player to a central database. "This could mean very important progress, not just for patient management, but also for epidemiological mapping of regions and countries, as we will be able to monitor the frequency and distribution of various infectious diseases," Mitsakakis points out.

Global health experts outline lessons to be learned from Ebola epidemic

101

Source: http://www.medicalnewstoday.com/releases/291533.php?tw

In the year since the World Health Organization (WHO) was first notified of an outbreak of what proved to be Ebola virus disease in the west African country of Guinea, more than 24,000 cases have been reported and over 10,000 individuals have died - primarily in Guinea, Liberia and Sierra Leone. Moreover, countless non-Ebola deaths have occurred as a result of the closing of health systems in those countries, and an international aid effort has invested billions of dollars in control efforts.

In a paper published in the open-access journal *PLOS Medicine*, experts in global health from the Massachusetts General Hospital (MGH) Center for Global Health and the O'Neill Institute for National and Global Health Law at Georgetown University, write that, while the international response to the epidemic included unprecedented measures that appeared to be gaining control of the outbreak by the end of 2014, the past year has also revealed critical weaknesses in the global public health system.

"Had (the WHO and the United Nations) responded earlier and more effectively after the first signs of an uncharacteristic outbreak, it is likely that the number of lives lost, the impact on health infrastructure, and the magnitude of the eventual response could have been drastically diminished," the authors write. "It is incumbent upon the global public health community to identify gaps revealed during the early stages of the epidemic so that we improve our collective ability to detect and respond early to the inevitable next emergency disease."

Specific recommendations made by the authors - lead author Mark Siedner, MD, MPH, and Hilarie Cranmer, MD, MPH, MGH Center for Global Health; and Lawrence Gostin, JD, and John Kraemer, JD, MPH, O'Neill Institute - include the following:

- Greater attention to the specific capabilities of health systems in affected localities when determining the presence of a public health emergency.
- Adjustment of WHO criteria for public health emergencies of international concern to give

greater weight to a country's need for international assistance, less to the potential for spread across borders, and the flexibility to tailor recommendations to the particular situation.

- Greater involvement of local authorities, organizations, public health and community leaders to develop culturally appropriate measures and maintain public trust.
- Providing sufficient resources - financial and personnel - to mount an adequate response, possibly through the establishment of a permanent global emergency fund and corps of health workers trained to respond to international crises.
- Supporting the development of health systems in sub-Saharan Africa and other low-income countries capable of providing both the routine services required to maintain a population's health and an adequate initial response to public health emergencies.

In their conclusion, the authors note that the delayed response to the early stages of the epidemic illustrates "not only the danger posed by disease outbreaks in states with weak health systems but also their widespread impact in an increasingly globalized world. . . . The power of global health law and global health institutions will remain seriously unrealized and deeply compromised if the Ebola epidemic does not spur fundamental reform."

Phase 1 trial of first Ebola vaccine based on 2014 virus strain shows vaccine is safe and provokes an immune response

Source: http://www.medicalnewstoday.com/releases/291521.php?tw

March 27 – Results from the first phase 1 trial of an Ebola vaccine based on the current (2014) strain of the virus are published in *The Lancet*. Until now, all tested Ebola virus vaccines have been based on the virus strain from the Zaire outbreak in 1976. The results suggest that the new vaccine is safe, and provokes an immune response in recipients, although further long-term testing will be needed to establish whether it can protect against the Ebola virus.

A team of researchers, led by Professor Fengcai Zhu, from the Jiangsu provincial center for disease prevention and control in China, tested the safety and immunogenicity of a novel Ebola vaccine, based on the 2014 Zaire Guinea Ebola strain, and delivered by a virus-like structure (known as a recombinant adenovirus type-5 vaccine). The experimental vaccine was developed by Beijing Institute of Biotechnology in Beijing, China, and Tianjin CanSino Biotechnology in Tianjin, China.

120 healthy Chinese adults were randomly assigned in equal numbers to receive placebo, a low dose, or high dose of the vaccine. The randomised, double-blind, placebo-controlled, phase 1 clinical trial took place at one site in Taizhou County, Jiangsu Province, China.

28 days after vaccination, 38 out of 40 participants in the low-dose group and all 40 of those in the high-dose group had a positive immune response to the vaccine, with participants in the high-dose group producing higher quantities of antibodies than those in the low-dose group. No specific immune response was recorded in the placebo group.

The study does not show whether the level of immune response observed might ultimately be able to offer protection against Ebola virus, and previous trials of this type of vaccine have suggested that pre-existing immunity to the virus vector used to deliver the vaccine may affect its ability to protect against the virus. However, the high dose of vaccine used in the study appeared to partly circumvent pre-existing immunity to the vector, because participants in the high-dose group had a 100% response rate, with no resultant increase in adverse events.

Nonetheless, it will only be possible to assess the vaccine's protective ability with further trials in Africa, say the authors. Moreover, previous research has indicated that this type of vaccine may increase the risk of HIV

acquisition, so future trials will need to take this into account.

According to Professor Zhu, "On the basis of our findings, we believe that the Ebola vaccine we assessed has some potential, and a significant advantage of this type of vaccine is that stable and much easier to store or transport in tropical areas with inadequate cold-chain capacity, such as Africa. However, whether this candidate vaccine could become a final vaccine for widespread use against Ebola outbreaks is still uncertain, because of the issues of HIV-1 acquisition rates and the pre-existing immunity, especially in west Africa. More evidence from clinical trials is needed about these concerns. Furthermore, these results only assess immune response up to 28 days, so we plan to assess the persistence of the specific immune response by following up the vaccine recipients of this study."*

No serious adverse events were recorded during the 28 days of follow-up, although participants in the high dose group were more likely to report pain and redness at the injection site, with a smaller number reporting mild fever and vomiting. The incidence of adverse reactions was in line with findings from previous studies of other viral-vectored Ebola vaccines.

Writing in a linked Comment, Andrea Marzi from the National Institute of Allergy and Infectious Diseases, National Institutes of Health, Hamilton, USA, and Darryl Falzarano from the University of Saskatchewan, Saskatoon, Canada, say, "This adenovirus type-5 Ebola vaccine vector is an example of how quickly existing vaccine platforms can be modified to incorporate a new virus strain, and moved, with minimum testing in animals, into trials in humans during a crisis situation. However...ultimately, the effectiveness of all these vaccines will only become clear when they proceed to phase 2 efficacy trials in outbreak regions."

The study was funded by China National Science and Technology, Beijing Institute of Biotechnology, and Tianjin CanSino Biotechnology.

Whole virus vaccine for Ebola found to effectively protect monkeys

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Source: http://www.medicalnewstoday.com/articles/291552.php?tw

March 27 – A group of scientists have developed a whole Ebola virus vaccine that can successfully protect monkeys from the virus and is capable of preparing the immune system with the full range of viral proteins and genes.

The vaccine, detailed in the journal *Science*, was developed using a novel experimental platform at the University of Wisconsin-Madison that allowed the researchers to safely study the virus in laboratory conditions.

"In terms of efficacy, this affords excellent protection," says Prof. Yoshihiro Kawaoka, a professor of pathobiological sciences at the University of Wisconsin-Madison School of Veterinary Medicine. "It is also a very safe vaccine."

Whole virus vaccines have been used in the past to prevent other serious diseases, including hepatitis, human papillomavirus-mediated cervical cancer, influenza and polio. Using inactivated whole viruses provides the immune system with the complete range of viral proteins and genes, improving the likelihood of the virus triggering a strong immune response.

Earlier attempts to develop an inactivated whole Ebola virus vaccine, using irradiation and the preservative formalin, were ultimately unsuccessful and failed to protect monkeys from the virus. As a result, these attempts were abandoned.

Developing a new experimental platform from which to work with the virus has helped these researchers to be successful this time round. Devised in 2008, the new system enabled the team to work safely with Ebola virus by deleting a key gene called VP30 which allows the virus to make a protein required for it to reproduce.

Ebola virus only consists of eight genes and relies heavily on the

molecular mechanics of host cells to proliferate around the body.

Using monkey kidney cells engineered by the researchers to express VP30, the team could safely use the virus as a starting point for the development of treatment for it. The whole virus vaccine devised by Kawaoka and his team was also chemically inactivated with hydrogen peroxide.

Although the vaccine has not been tested in humans, successful tests have been conducted with cynomolgus macaques - considered to be the "gold standard" in testing vaccines in a model comparable to virus transmission among humans. "It's the best model," Kawaoka states. "If you get protection with this model, it's working."

The tests were conducted at the National Institutes of Health (NIH) Rocky Mountain Laboratories, a facility in Hamilton, MT, in collaboration with another group led by Heinz Feldmann of NIH. The laboratories are biosafety level 4 - the highest level of biological safety, designed for the study of dangerous and exotic microbes.

A number of other vaccines for Ebola virus are currently being trialled. These include:

- A DNA-based plasmid vaccine
- A live attenuated virus from the family of viruses that causes rabies
- A vaccine based on a replication incompetent chimpanzee respiratory virus
- A vaccine based on a vaccinia virus.

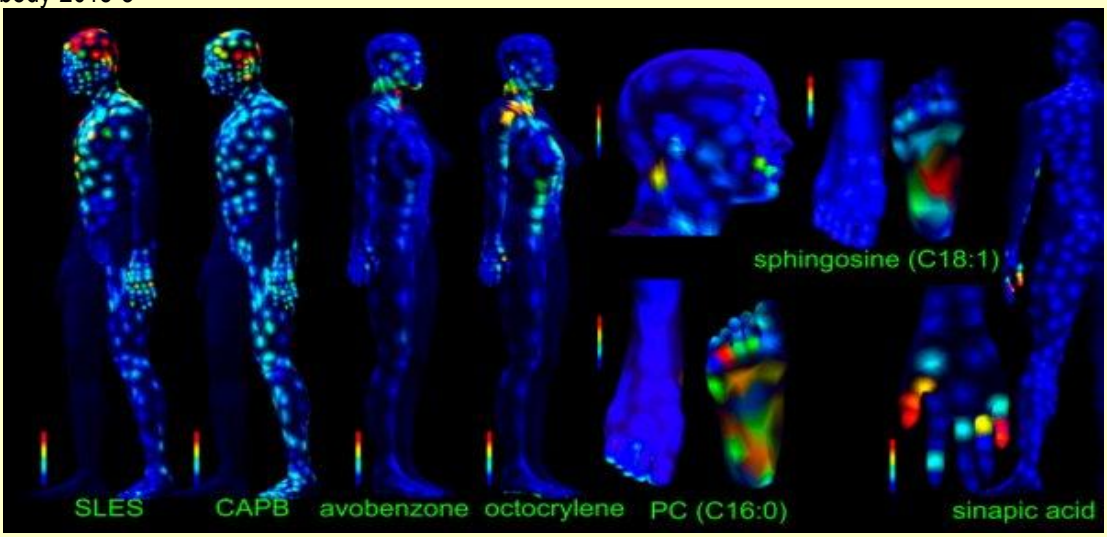
Each of these vaccines works to express or prime host cells with crucial Ebola proteins. However, Kawaoka believes that each of these different vaccines has shortcomings regarding their safety and method of delivery. The new whole virus vaccine will hopefully be unaffected by these limitations.

While the researchers have overcome the problems experienced by previous attempts at developing a whole virus vaccine, it will still be some time before the vaccine is ready to be rolled out. Human trials need to be conducted, and these are both complex and highly expensive.

Vaccinating humans is not the only goal for Ebola virus researchers. Recently, *Medical News Today* reported on a group of scientists who have developed a new vaccine that could potentially be used to reduce infection from the virus among wild African ape populations.

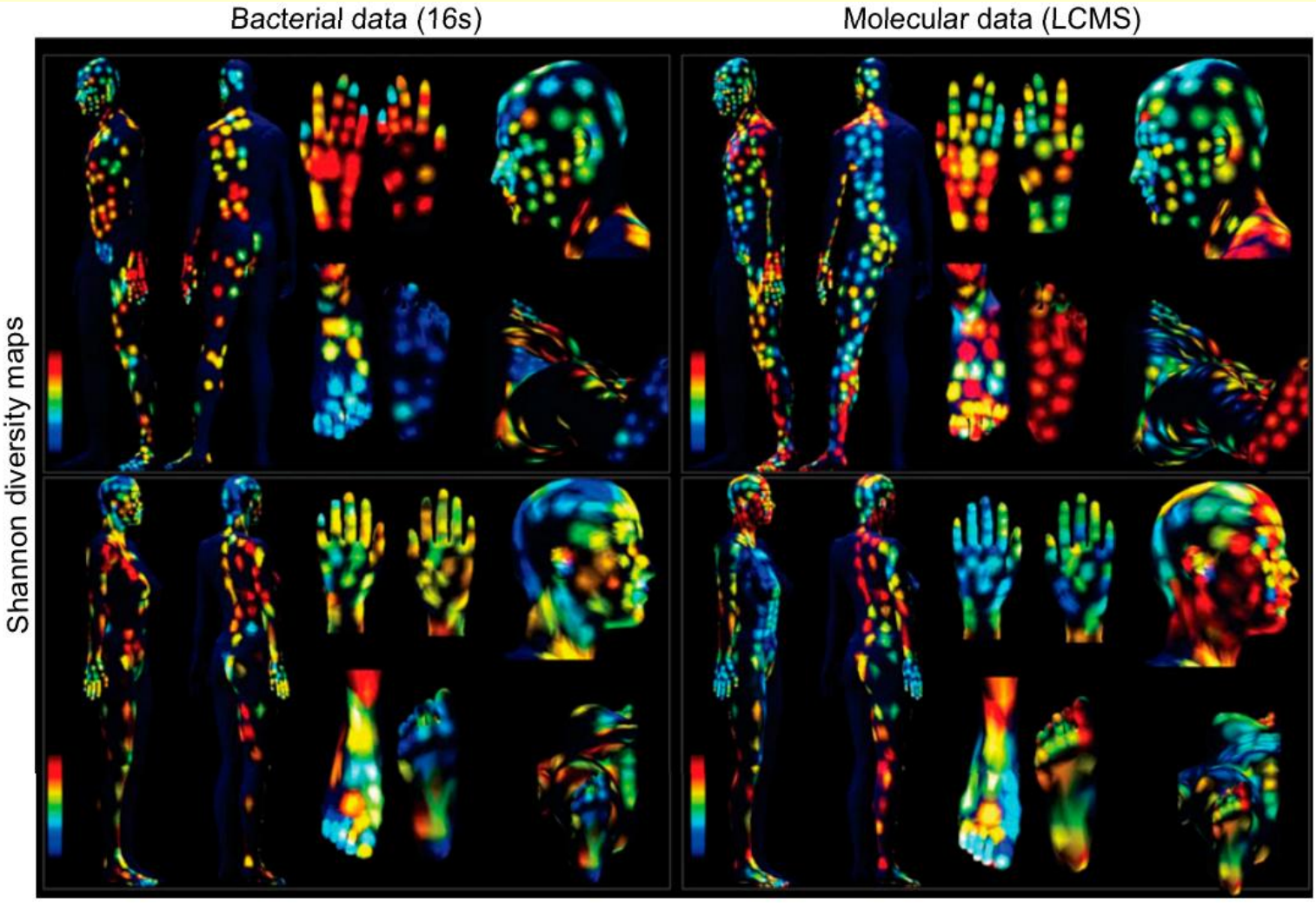
Crazy maps reveal colonies of bacteria and chemicals all over the human body

Source: http://www.businessinsider.com/these-maps-show-colonies-of-bacteria-all-over-the-human-body-2015-3



Chemicals stay on our body, even days or weeks after use. In this photo you can see high concentrations of sodium lauryl ether sulfate on the head, even though the subject hadn't washed their hair in days and we shed millions of cells every day. On the woman's neck there are high concentrations of avobenzone, which is found in sunscreen — even though again, that hadn't been used in days.

Our largest and most exposed organ — our skin — is covered in and composed of not just human skin cells but also about a trillion bacteria (and even more viruses) along with molecules from chemicals we come into contact with every day.



Researchers just mapped the "chemical topography" of human skin in order to figure out what exactly is living and settling on there and how those skin cells, bacteria, and chemicals interact.

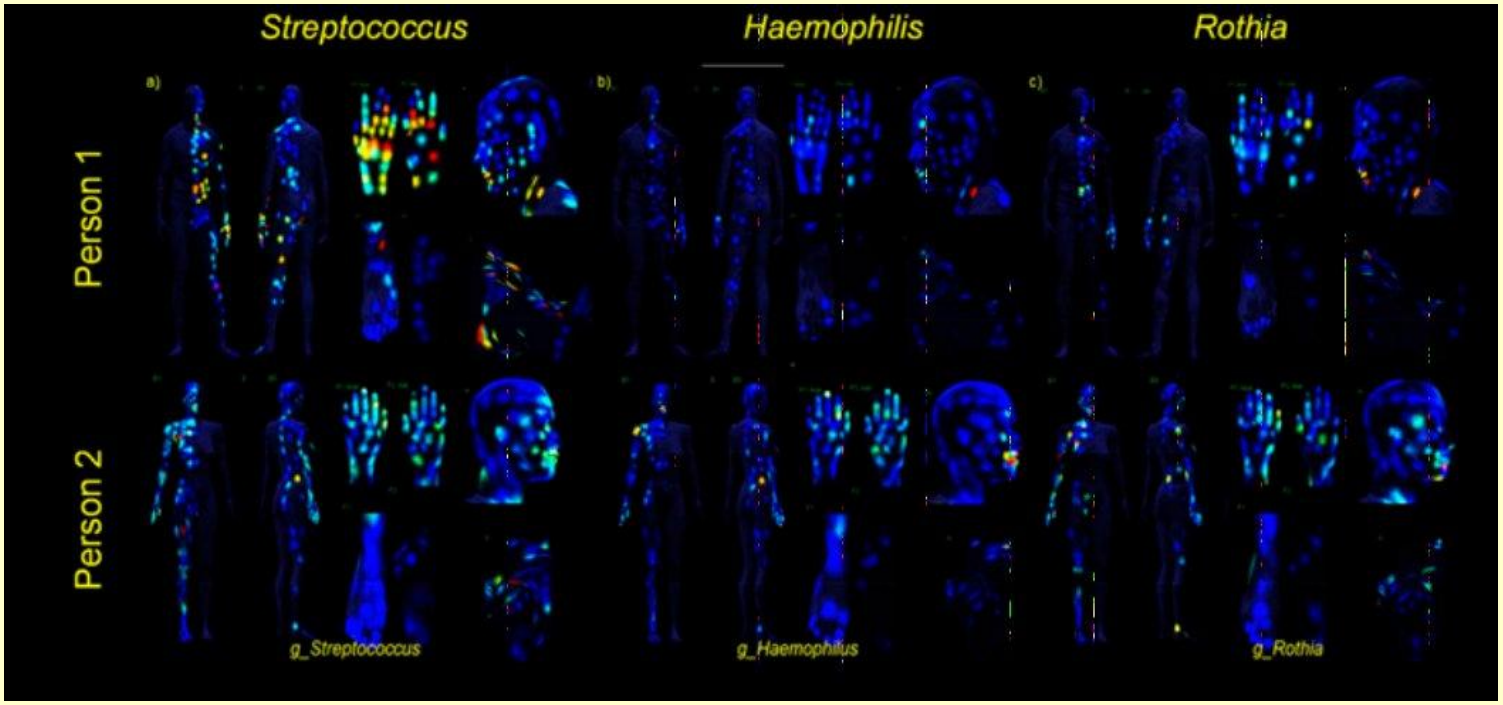
We have different types of bacterial communities all over and inside our bodies, and while scientists have previously created maps of the skin microbiome, this was the first map to look at what these bacteria are doing and how they interact with the chemicals we're exposed to in day-to-day life.

To create these maps, researchers asked a man and a woman (person 1 and person 2, respectively) to skip bathing, shampooing, moisturizing, and using almost all cosmetics for three days (the woman did use deodorant during that time). After three days, they took samples from 4o0 individual spots on each person's body so they could run two different types of analyses to see what they found.

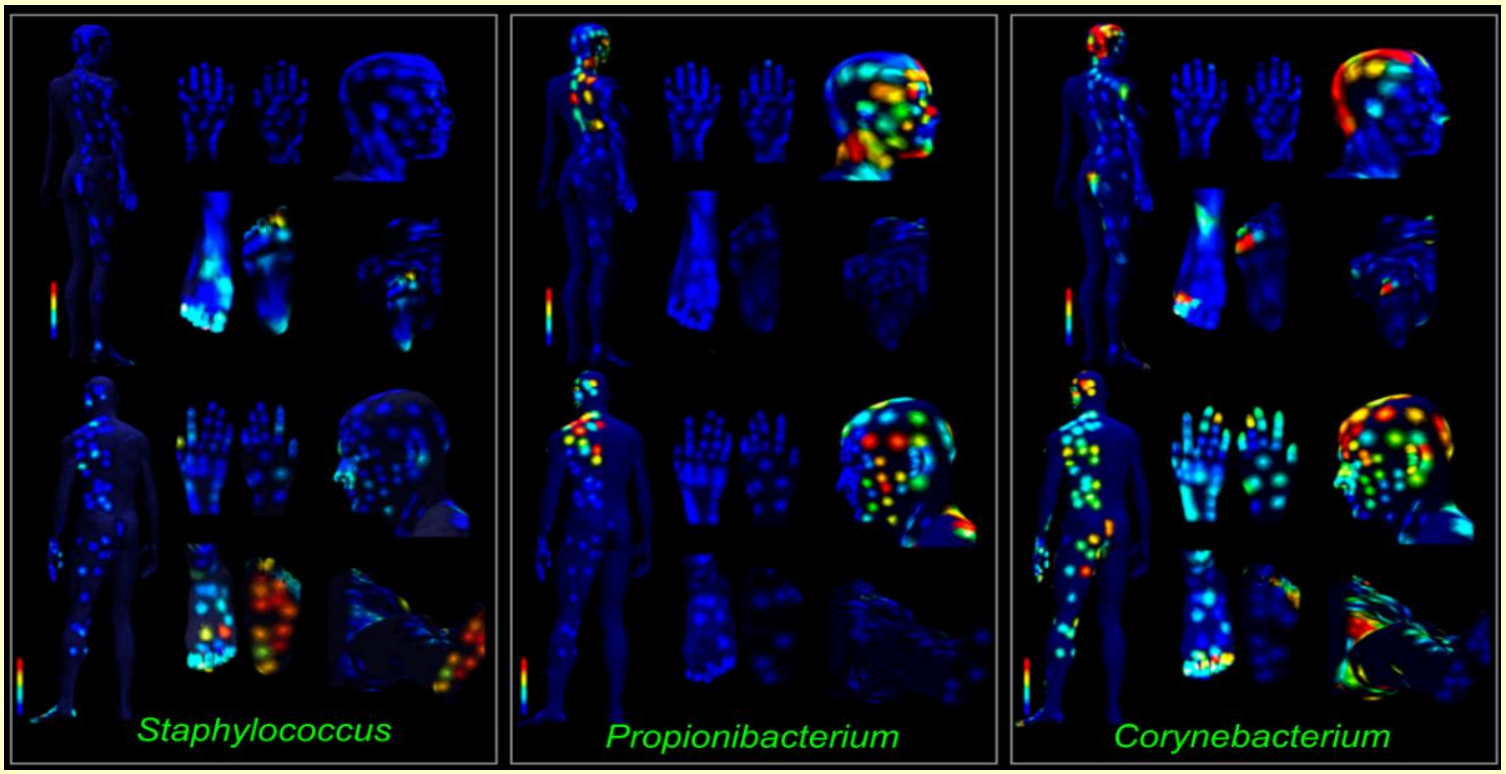
It's important to note that these maps are only representative of two people — there is likely a huge variety of bacterial and chemical diversity among humans. Part of the goal here was to show that these 3D topographical maps could be created, which they did successfully, but they also found all kinds of other interesting things. One intriguing finding? The cosmetic products that touch our skin, like soap and shampoo, seem to leave chemical residue that stays on skin for days, weeks, or longer.

The image below takes a look at the bacterial diversity and general chemical diversity on the skin of both subjects — the red spots have the highest concentrations of different bacterial species or chemicals, the blue the lowest.

These images show the diversity of bacteria and other molecules found on different parts of the skin for both the man and the woman studied. The color scale goes from lowest diversity of species found at



blue to highest diversity at red. Hands, which touch everything, carry lots of bacteria and chemical molecules.



Other maps show where species of bacteria are most highly concentrated.
We even carry dangerous bacteria like Staph, which can cause serious infections. They found it in moist body parts like both subjects' feet, under the woman's breast, and on the man's nose.

So what does this all help show us?

It'll help us understand how the chemicals we expose ourselves to (especially cosmetic ones) affect the communities of bacteria on our skin over time. The researchers write in the study they published these maps in that this could help us understand how "variation in this complex ecosystem impacts human health and disease."

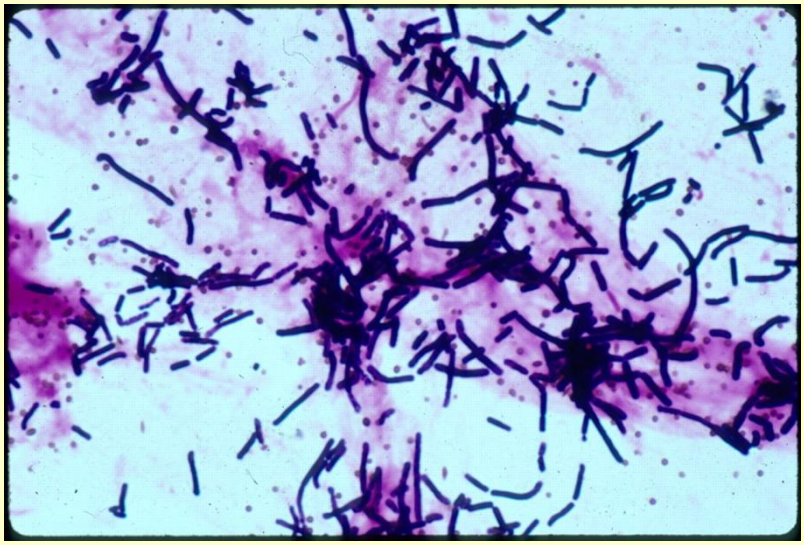
We'll be able to study whether bacteria are appearing in certain areas in response to chemicals we put on our skin, and one of the researchers involved in the study told Wired that we may eventually have a database that shows how certain bacterial and molecular communities are signs of disease.

We could even find that we all have our own unique microbe/molecular footprint, like a fingerprint that can be gathered with a cotton swab — Wired reports that that's already being tested in crime labs.

New detection method for bacterial toxin

Source: http://www.homelandsecuritynewswire.com/dr20150402-new-detection-method-for-bacterial-toxin

Apr 02 – **The *Bacillus cereus* bacterium is one of the potential causes of food poisoning. A recent study in *Analytical and Bioanalytical Chemistry* shows that this versatile pathogen produces nineteen different variants of a poison that causes nausea and vomiting in human beings.**



This variety could explain why some cases are relatively benign and others can result in death. Across Europe, the number of food poisoning cases caused by the *Bacillus* species is on the rise. While unpleasant, infections resulting from *B. cereus* are usually not life-threatening. Depending on the toxin that is released by the bacteria, patients suffer either from diarrhea or from nausea and vomiting. The results can be more serious, however, with death occurring in some very rare cases.

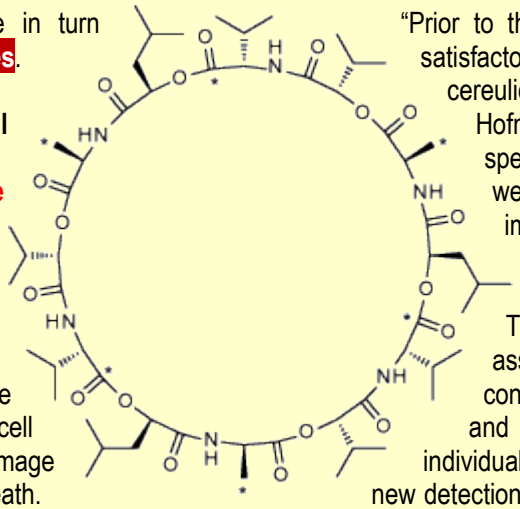
The form of the illness that causes nausea and vomiting is known as emetic. The toxin responsible for this is cereulide. A TUM release reports that researchers from Technische Universität München (TUM) and the University of Veterinary Medicine in Vienna have now developed a method for detecting this toxin. In the process, they identified eighteen additional variants to add to the cereulide already known to scientists.

Ready meals increase the risk of food-borne infections

Recently, around 100 children and staff contracted a *B. cereus* infection at a number of daycare centers near Paderborn in Germany. It turned out that they had all eaten rice pudding supplied by the same caterer. It is known that consuming pre-prepared meals increases the risk of food poisoning. **The types of foods most likely to harbor *B. cereus* are starchy staples like rice, pasta and potatoes.**

"A poor temperature management often plays a role," explains Prof. Thomas Hofmann from the Chair of Food Chemistry and Molecular Sensory Science. "The bacteria multiply, for example, in food that has been pre-cooked and then not heated up enough, or else not adequately cooled down beforehand."

In addition, *B. cereus* can produce spores that can survive high heat — and which are still capable of producing viable bacteria at lower temperatures. These then often form bacterial toxins, which are in turn heat-stable — like **cereulides**.



Toxin attacks cell membrane

The toxin attacks the membrane of living cells. As for their structure, cereulides are like pincers grasping a potassium ion. The potassium ions alter the electric potential at the cell membrane, resulting in damage to the membrane and cell death.

"The toxicity of the individual types of cereulides depends on their chemical structure. The more lipophilic they are, the easier it is for them to attach to the membrane composed of fatty acids," says Prof. Siegfried Scherer, head of the Chair for Microbial Ecology.

New detection method is being evaluated

"Prior to this project, there was no satisfactory method of detecting the cereulide toxin in food," relates Hofmann. "With our mass spectrometry-based process, we have created an important starting point for the reliable detection of the toxic bacteria."

This will make it easier to assess the risk inherent in contaminated products — and the role played by the individual cereulide variants. The new detection method is currently being jointly evaluated at European level together with the U.S. Food & Drug Administration (FDA), and preparations are being made for its deployment.

— Read more in Sandra Marxen et al., "Chemodiversity of cereulide, the emetic toxin of Bacillus cereus*," Analytical and Bioanalytical Chemistry 407, no. 9 (March 2015): 2439-53.*

Military's Ebola Vaccine Tests Safe

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By Patrick Tucker

Source: http://www.defenseone.com/technology/2015/04/militarys-ebola-vaccine-tests-safe/109096/?oref=d-skybox

Apr 01 – Months of clinical trials have shown a military-supported Ebola vaccine to have 'robust' effectiveness to stop future outbreaks.

An experimental Ebola vaccine appeared to be safe and effective in clinical trials, a U.S. Army research lab announced Wednesday. The vaccine worked fast and strong enough that an Army official from the lab said it could be deployed to future Ebola hotspots on short notice to quickly defuse outbreaks.

The announcement comes after months of trials that began in October in Africa. Researchers at Walter Reed Army Institute of Research and at the National Institute of Allergy and Infectious Diseases, or **NIAID, performed two independent studies involving 52 volunteers, 28 of whom received the test vaccine while the rest received a placebo. Within two weeks, 93 percent of the vaccinated group showed the antibody response for which the researchers were hoping, meaning that their bodies had developed the capacity to fight off an Ebola infection. All of the vaccinated volunteers showed the response within a month.**

"We saw a robust immune response following a single dose of the vaccine, which could be particularly useful in outbreak interventions," said Army Col. Stephen Thomas, senior author on the paper and the research institute's deputy commander, in a press release.

The experimental vaccine is dubbed VSV-EBOV. VSV stands for vesicular stomatitis virus, a disease that hits cattle, primarily, but also horses, rodents and pigs. It does not have a big affect on humans. Researchers swapped one of the key proteins in the Zaire Ebola virus for one in the VSV. That allowed them to produce the desired antibody

effect without giving people Ebola.
Other tests in Gabon, Kenya, Germany, and Switzerland showed similarly promising results. The Army Medical Research Institute of Infectious Diseases and the Department of Defense Chemical Biological Defense Program also supported the effort to develop the vaccine.
The study's findings will be published in a *New England Journal of Medicine* paper on April 2nd.

Patrick Tucker *is technology editor for Defense One. He's also the author of The Naked Future: What Happens in a World That Anticipates Your Every Move? (Current, 2014). Previously, Tucker was deputy editor for* The Futurist *for nine years. Tucker has written about emerging technology in* Slate, The Sun, *MIT* Technology Review, Wilson Quarterly, The American Legion Magazine, *BBC* News Magazine, Utne Reader, *and elsewhere.*

To Protect Ourselves From Bioweapons, We May Have to Reinvent Science Itself

By Patrick Tucker (see above)
Source: http://www.defenseone.com/feature/bioweapons/

In January 2012, a team of researchers from the Netherlands and the University of Wisconsin published a paper in the journal *Science* about airborne transmission of H5N1 influenza, or bird flu, in ferrets. The article changed the way the United States and nations around the world approached manmade biological threats.
This was not the researchers' intent.
The team had altered the virus's amino acid profile, allowing it to reproduce in mammal lungs, which are a bit colder than bird lungs. That small change allowed the virus to be transmitted via coughing and sneezing, and it solved the riddle of how H5N1 became airborne in humans.

The U.S. government initially supported the work through grants, but members of Congress, among other critics around the world, responded to the publication of the research with alarm and condemnation. A *New York Times* editorial described the experiment as an "Engineered Doomsday." So the researchers agreed to a voluntary moratorium on their findings. In October, the White House Office of Science and Technology Policy announced that it would halt funding for research into how to make diseases more lethal — so-called "gain-of-function" studies — and asked anyone doing such research on deadly diseases to cease and desist.

Hopefully, before anything happens, the good guys will get better at new pathogen detection and immunity soon — both to prevent this scenario and naturally emerging infectious diseases.
George Church, Harvard Medical School

The White House moratorium was not a direct response to the original University of Wisconsin study so much as it was an answer to a series of embarrassing incidents that included improperly handling contaminated wastes, accidentally shipping dangerous pathogens, and "inventory holdovers" at government labs. Nevertheless, the Wisconsin study features prominently in the current discussion within government and labs around the world about the costs and benefits of certain types of scientific inquiry.
Why do research on how to make the world's most dangerous viruses and bugs more lethal? The answer varies tremendously depending on who is asking and for what purpose the research is taking place. While experts differ in their views on how and where such work should be done, there is wide agreement that the barriers to entry for new

biological creations, including ones that could kill millions of people, are decreasing.

Today, there is little international enforcement of limitations on bioweapons. For chemical materials like sarin gas, the Chemical Weapons Convention provides a treaty-based legal framework for stopping proliferation, and a watchdog group, the Organization for the Prohibition of Chemical Weapons, to investigate potential violations. No similar watchdog exists around biological weapons. Few countries have ratified the Biological and Toxin Weapons Convention, for instance; among the no-shows is Syria, where President Bashar al-Assad's regime is suspected of harboring strains of smallpox for research.

"In light of this, it is indeed Assad's biological weapon complex that poses a far greater threat than his chemical-weapons complex," wrote bioweapons expert Jill Bellamy van Aalst and GlobalStrat managing director Olivier Guitta in *The National Interest* in 2013. Some of the biological research that the Assad regime was conducting was based in Homs, Van Aalst and Guitta wrote, putting smallpox samples or possibly rudimentary bioweapons within reach of the Islamic State, or ISIS.

Dangerous Research And Unknown Unknowns

The genetic engineering of deadly pathogens is not the sort of thing that a terrorist or would-be supervillain could easily attempt in a kitchen. But the quickening pace of genetics research has plenty of scientists worried. Suzanne Fry, director of the Strategic Futures Group at the Office for the Director of National Intelligence, told a group at last month's SXSW technology conference in Austin, Texas, that synthetic biology was a big concern among many of the technologists she's been interviewing recently. "Some very, very prominent scientists have said that that worries them very much," she said.

George Church, a Harvard Medical School researcher widely considered a father of modern genetic research, offered a somber assessment of the future of genetically engineered bioterror. "How would we have calculated the odds of the events on 9-11-2001 on 9-10-2001?" he said via email, "or the Aum Shinrikyo [Tokyo subway attacks]? Hopefully, before anything happens, the good guys will get better at new pathogen detection and immunity soon — both to prevent this scenario and naturally emerging infectious diseases."

Members of the Department of Defense's Ebola Military Medical Support Team dress with protective gear during training at San Antonio Military Medical Center in San Antonio.

There's a difference between building better detection kits and figuring out how to engineer new and more lethal versions of familiar viruses. But these areas of exploration are not always distinct. The best and most reliable Ebola detection devices work off of the virus's unique genetic signature, giving a level of certainty unmatched by fever scanners and other symptom trackers. A new Ebola-like pathogen with a unique genetic signature might be undetectable to the most up-to-date devices and methods.

The H5N1 case shows how a once-difficult challenge is becoming exponentially easier because published results move so quickly in the age of digital interconnection, according to Gaymon Bennett, an Arizona State University religious studies professor and biotechnology expert who has written extensively on synthetic biology.

"It took specialized facilities and millions of dollars" for University of Wisconsin researchers to figure out how create the amino acid sequence that would allow the virus to reproduce in mammal lungs, he said. "But once you publish the sequences … once they've done that work, it would take a competent physician a few thousand dollars and few weeks to reproduce the result."

Richard Danzig, a former Navy secretary, says that he understands the impetus towards moratoriums. He points to the years following the Manhattan Project, when research was classified and researchers monitored, as an example of a research control regime that worked. But today, the Internet makes implementing a similar control regime much harder, Danzig said at a 2013 Atlantic Council event. "Our capabilities to control information seem inadequate, so that the distortive effects of those kinds of controls tend to outweigh, I think, the positive effects," he said. "It turns out that the information leaks in a hundred ways or is independently recreated in a global world

outside the reach of your jurisdiction."

For the military, the reasons to conduct gain-of-function research may outweigh reasons to suppress it. Military leaders are fond of saying that they don't want to ever find themselves in a fair fight – they always want the advantage. In the context of biological threats, that means understanding how to weaponize Ebola even if international laws and treaties, like the Geneva Convention, prohibit the use of such weapons in the field.

Last year, the Pentagon's Defense Advanced Projects Research Agency, or DARPA, opened a biological technologies office to explore issues such as synthetic biology and epidemiology. Its work includes everything from creating new high-energy density materials from organic matter to exploring how diseases spread and become more dangerous. DARPA Director Arati Prabhakar recently said she created the office because of the rising potency of biotechnology powered by information technology. "When I say I see the seeds of technological surprise in that area, that's exactly what I mean. Hugely powerful technologies are bubbling out of that research." Prabhakar said the agency constantly considers the political and scientific controversies surrounding biotechnology research, but that it isn't in the interests of DARPA or the nation to hold back because of controversy. "We're responsible to be in those areas but we're also responsible for raising those issues and convening that dialogue. What we've done that's been very helpful is tap experts in different areas. We have experts in neuroethics, other experts who are very smart in synthetic biology and law, policy and societal issues … but DARPA is not going to make up answers to these societal choices. That's a much broader undertaking."

The cheapest and most effective way to do that research is to open it up to more scientists and better publication opportunities. If the U.S. doesn't, someone else might.

"It's a huge dilemma for our military," said Gary Marchant, professor of emerging technologies, law, and ethics at Arizona State University. He spoke at New America Foundation's Future of War conference in February. (*Defense One* is a media partner of the foundation's.) "We know that there's going to be people out there who won't follow those same self-imposed restrictions. To understand what those threats are and be able to counter them do we need to make the monster ourselves? And when we do this stuff, do we publish it?"

The problem of how to control bioterror information in the Information Age is complex and important enough to cause a shift in science itself, according to some members of the research and university community. At very least, it's enough to prompt a change in the way in which some scientific research happens.

Our capabilities to control information seem inadequate, so that the distortive effects of those kinds of controls tend to outweigh, I think, the positive effects.

Richard Danzig, former Navy Secretary

One of the basic principles of science is the idea that all research conducted in accordance with sound scientific methods – and that does not directly harm any humans or put them at risk – adds value to civilization. Of course, a terrorist or nation-state could use the product of such research to harm innocents. But the potential for misuse should not prevent the research in the first place.

The Wisconsin study has caused some to question the infallibility of that centuries-old approach.

Predicting What Science Will Do Before It Does It

Instead of trying to figure out how to contain potentially dangerous bioterrorism discoveries, one alternative gaining support is trying to predict – or at least try to forecast or model – the outcomes of research before it occurs.

"We've been working on a tool in our consortium of science policy and outcomes where we've been thinking through: How would you think about the implications of a technology at the time that it became scientifically feasible …

not doable but feasible … how would you think through all of the implications and then guide the evolution of the technology so that you then get these … unalterable outcomes that could effect the entire species," ASU president Michael Crow said at the Future of War conference.

He envisions that this tool, called Real-Time Technology Assessment, or RTTA, would expand the different inputs that go into the discussion that universities, labs, research communities and individuals have about what research to pursue. Some of the inputs might be social, some technical, some political and so on. Importantly, says Crow, the effect of the assessment would not necessarily be to limit or torpedo any particular effort or give sociologists veto power over what sort of topics chemists pursue. Rather, the intent is to create the fullest picture possible of the total effects of the research. "Image that we avoid conflict in the future by re-thinking how we do science now. Not taking away the fundamental discovery of aspect."

David Guston, an ASU political science professor, invented the RTTA concept in a seminal paper co-written with Daniel Sarewitz. The authors describe the tool as a system that uses opinion poling, focus groups, and futurist methodologies like scenario planning and socio-technical mapping to explore ways that different people may respond to the scientific or technological innovation under consideration.

RTTA is "about using a fairly traditional set of social science research tools to help create more thoughtful consideration on the part of scientists and engineers of the choices they make in the laboratory," Guston said.

If the process works correctly, the researchers – and everyone who may be harmed or benefit from the research – has a clear and shared understanding of how the technology, innovation, or experiment may change life on this planet, no matter who undertakes it.

Why do we need it?

By way of example, Guston cited some of Church's work: the Harvard researcher recently unveiled a novel strain of E. coli bacteria that needs an artificial amino acid to survive, and so the amino acid serves as an on/off switch. The paper that Church co-wrote with several other authors marks a foundational contribution to the future development of synthetic life forms. It shows one method by which humans can assert control over the survival and reproducibility of human-engineered organisms at the genetic level. Sounds like an obvious safety feature that should make its way into all future synthetic biology research, right? It is — until you consider how even benign innovations can change in the hands of resourceful adversaries. Such consideration doesn't fall within the parameters of the normal research process, but it's precisely what RTTA seeks to provide.

"Because the threat of the spread of such organisms is reduced in this way, it is possible that bad actors who want to create a dangerous novel bioweapon would be able to practice doing so without the risk that would normally accompany working with bacteria that could reproduce outside the lab and therefore be safer and more secure in developing that weapon," Guston wrote. "The real trick is to ask these questions as the research is going on, and not once you have the product in hand."

Guston and Sarewitz shy away from the word "prediction," preferring "anticipation." RTTA does have some very predictive elements, though it's far from prognostic. "RTTA explicitly distances itself from prediction—if reliable prediction were possible, RTTA wouldn't be necessary. RTTA is a corrective, however, to the common notion that because scientific and technological futures are not knowable in detail, nothing can be done to anticipate or prepare for them," said Sarewitz.

Guston and Sarewitz have received a fair amount of pushback from the mainstream scientific community for this idea.

"When Dan and I first generated these ideas in 2000-01, we submitted a proposal to the National Science Foundation that contained the rudiments of this work," he said. "The reviewers were mostly quite hostile to the ideas we were espousing, indeed seeing them as hostile to the idea of free science in some instances. Over the years that we have presented this work, I have received numerous questions about whether this means that I'm hostile to basic, or to fundamental, or to curiosity-driven research, and the answer is no, that's beside the point. What we're talking about here is a coherent and self-

conscious version of what goes on anyway, with a broader aspect of participation and understanding of what relevant expertise is."
To Guston, the RTTA is really just a modern version of common-sense safety precautions, like goggles, biosafety suits, or the institutional review board. "Creating risk for people outside of the laboratory is not part of the scientific ethos," he said.

When I say I see the seeds of technological surprise in that area, that's exactly what I mean. Hugely powerful technologies are bubbling out of that research.
DARPA Director Arati Prabhakar

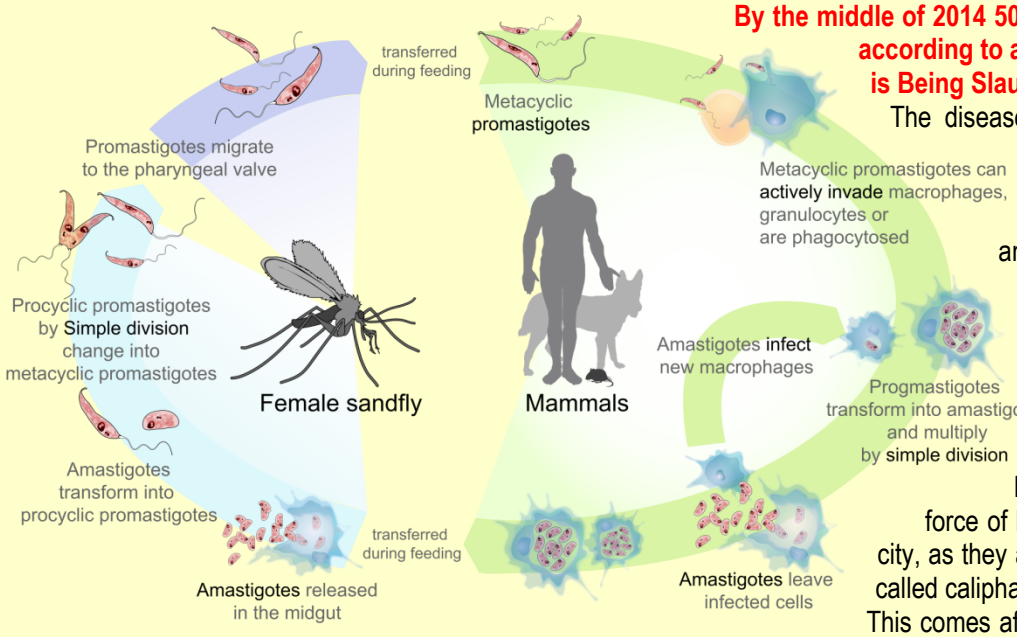
Gain-of-function research remains open to a very small number of labs, as does genetically engineering new and forms of E. coli, or researching the genetic root of autobiographic memory, extreme height, etc. But biological knowledge is just knowledge. Today's Kickstarter project on engineering glowing plants (by injecting them with the enzyme luciferase) is tomorrow's billion-dollar blockbuster drug or bioweapon.
It may be time to start talking about science differently – at least when it comes to national security. The good news is this: if the current predicament conclusively reveals anything about the future, it's that science will survive even these attempts to better predict it.

Could the Islamic State be wiped out by a deadly FLESH-EATING disease?

Source: http://www.express.co.uk/news/world/567597/Islamic-State-Raqqa-Syria-Flesh-eating-disease

The self-declared Islamic State capital is currently in the throes of an epidemic and a number of members of the Islamic State have reportedly been infected.
Efforts are reportedly being made to prevent the further spread of the Leishmaniasis skin disease, which is highly virulent, in the IS stronghold.
Although organisations began work to combat the disease, this became impossible after IS is claimed to have closed down their city offices.
They also confiscated equipment and arrested officers trying to help fight the condition which can be deadly.

The first case of the disease, which is caused by protozoan parasites, was discovered in September 2013.



By the middle of 2014 500 people had been affected, according to a network of activists 'Raqqa is Being Slaughtered Silently.'

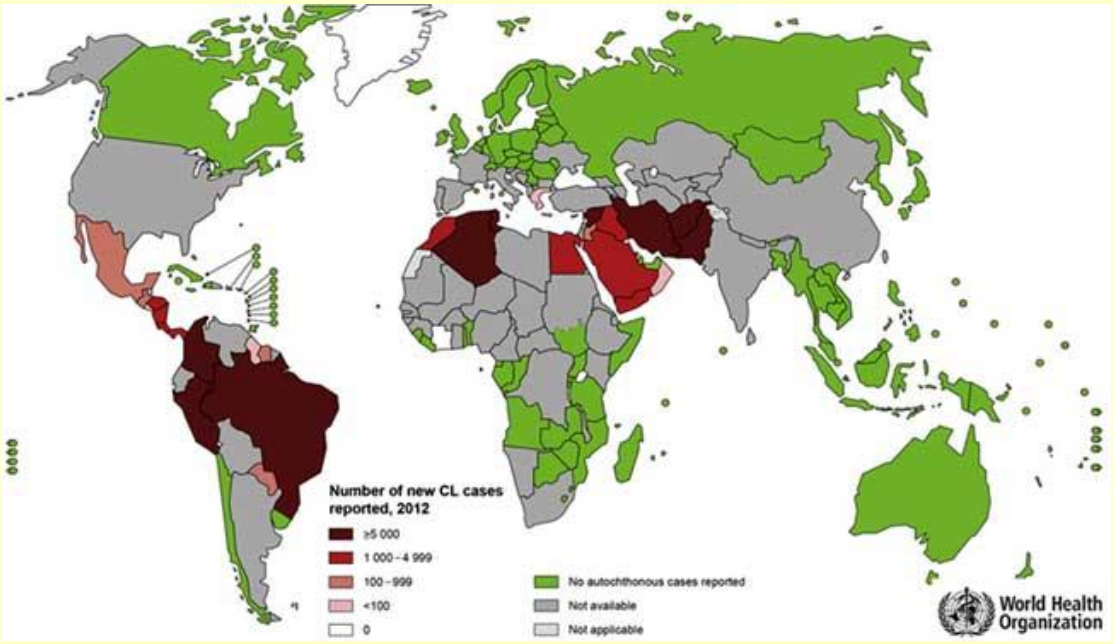
The disease is spread by flies that are attracted by the rubble and rubbish of war.

It can sometimes be fatal and can also cause significant damage to parts of the body it affects.

More than 2,500 cases have been recored in the north-east of Raqqa.

IS is said to have a residual force of between 3,000 to 5,000 in the city, as they attempt to strengthen their so-called caliphate.

This comes after World Health Organisation



reported that Syria's health system had collapsed, meaning that disease was spreading rapidly through a country already plagued by violence.

Travelers Are Bringing a Superbug into the United States

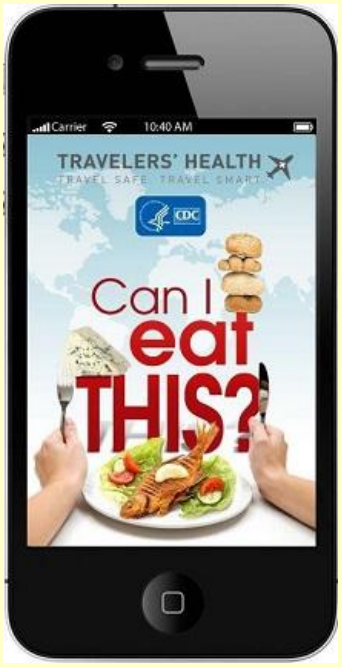
Source: http://time.com/3768800/superbug-shigellosis-antibiotic-resistance/

Some international travelers are bringing back and spreading a bacteria that's resistant to the drugs used to treat it, the U.S. Centers for Disease Control and Prevention (CDC) reported on Thursday in an investigation published in the CDC's *Morbidity and Mortality Weekly Report*. **The bug, called s*higella sonnei*, causes an estimated 500,000 cases of diarrhea in the U.S. each year,** and the CDC reports that between **May 2014 and February 2015, a drug-resistant strain infected 243 people in 32 states and Puerto Rico.** When

investigating clusters of shigellosis—the infection caused by shigella—in Massachusetts, California and Pennsylvania, the CDC discovered that 90% of the cases were resistant to an antibiotic called ciprofloxacin (Cipro), which is the drug of choice when treating shigellosis.

Most *shigella* strains are already resistant to other drugs used to treat it, and public health experts have noted that a Cipro-resistant strain is spreading worldwide. The bacteria can spread very quickly and are commonly discovered in places like childcare centers and nursing homes, according to the report.

"Drug-resistant infections are harder to treat and because *Shigella* spreads so easily between people, the potential for more—and larger—outbreaks is a real concern," said CDC director Dr. Tom Frieden in a statement. Frieden added that the recent outbreaks reveal a "troubling **trend" of infections in the U.S.**



The CDC was first alerted to a new strain of s*higella* in December 2014 and discovered in the lab that it was resistant to Cipro. The CDC then investigated several large clusters of s*higella* infections across the United States. Nearly 100 cases were from an outbreak among homeless people in San Francisco, and others were related to international travel. Infection can be common among people who travel to developing countries.

The CDC says international travelers should wash their hands "meticulously" and be cautious about food and water consumption. Travelers can download the CDC's app, **"Can I Eat This?"** as a guide for what's safe to eat while traveling.

Antibiotic resistance is becoming a growing global problem; in September 2014, President Obama signed an executive order to create a task force to tackle the issue of antibiotic-resistant bacteria.

Testing Bioweapons: the Catch-22

By Martin Furmanski

Source: http://thebulletin.org/winter-safe-deterrence-debate/testing-bioweapons-catch-22

In his posting for this roundtable, Seth Baum asked for a further discussion of several issues: one was the impact of technological advances, another how dismantling the Biological Weapons Convention might threaten global catastrophe.

No matter what technical advances may develop, biological weapons are fundamentally different from conventional, chemical, and nuclear weapons, because they depend upon species-specific biological characteristics, rather than broad phylum-specific biological processes affected by chemical weapons or physical and radiological effects. Bioweapon agents are fragile compared to other weapons, subject to rapid degradation during dispersion. This means candidate bioweapons must be tested on humans, and in the open air.

Scientists, quite naturally, are accustomed to drawing conclusions based on laboratory tests performed in defined, highly constrained systems where variables are controlled or excluded; this is, after all, the scientific experimental method. It is a mistake, however, to assume that laboratory tests alone can insure the development of effective bioweapons.

The US and UK offensive bioweapons program found repeatedly that laboratory tests were fraught with pitfalls and were insufficient alone to predict the behavior of bioweapons.

Bioweapon aerosols must traverse the open air. In 1946, at the remote Suffield proving ground in Canada, bioweapon scientists were chagrined to find that after relatively short downwind travel, bioweapon agents, though viable in laboratory cultures collected downwind, were unable to cause infection in exposed animals. Dealing with this "infectivity/viability dissociation" became a central focus of the US bioweapons program. Major technical installations, including **the million-liter "8-ball" sphere at Camp Detrick**,

were constructed to allow the release of BW agents in controlled conditions and to sample the results at various post-dispersal intervals. Side-by-side exposures of human subjects (see below), non-human primates and other laboratory animals were made. Eventually open-air "proof tests" of biological agents produced downwind infections at the isolated Dugway Proving Ground in Utah and in the open Pacific Ocean off Johnston Island.

The utility of these proof tests was largely invalidated when in the late 1960s workers at Porton Down in the UK found that bacteria and viruses, including bioweapon pathogens, when exposed to outdoor air in a bio-secure apparatus sometimes showed episodes of dramatic loss of viability compared to their survival in closed containers. This was termed the "open air factor" and was linked temporally to conditions favoring importation of air from distant metropolitan areas. Studies in urban areas showed the open air factor to be ubiquitous and characterized as a synergistic combination of ozone and hydrocarbon fragments (olefins) typical of motor-vehicle associated photochemical smog. Its effect disappeared in confined spaces such as buildings or laboratory apparatuses such as the 8-ball. At concentrations of a few parts per billion, the open air factor was capable of rapidly reducing bacterial and viral viability by several orders of magnitude.

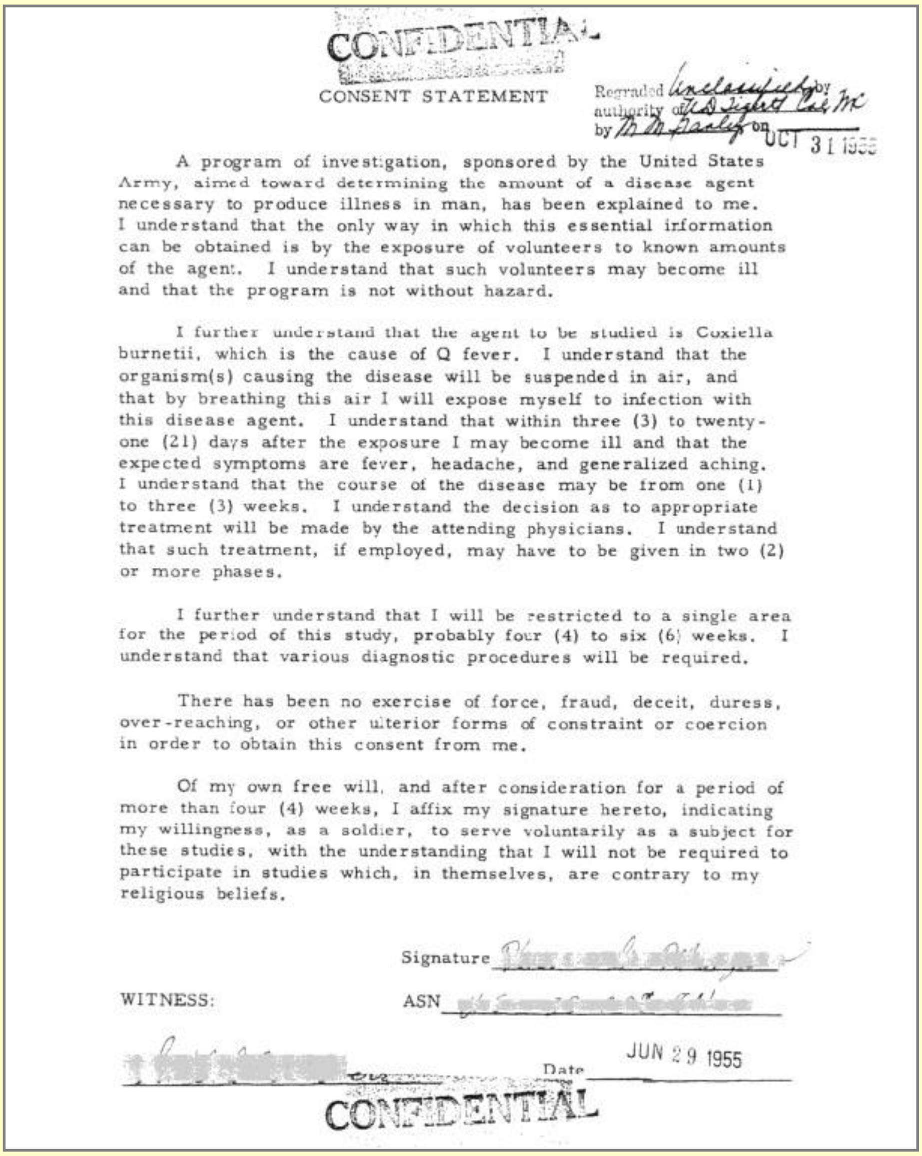
Since weapons of strategic deterrence would target urban areas, the existence of the open air factor would seem to deal a fatal blow to most bioweapon agents as candidate deterrent weapons. It also emphasizes that even elaborate, expensive laboratory investigations and field tests in isolated areas cannot model effectiveness in combat conditions.

A valid human dose-response curve with a "downwind" infectivity profile is essential to calculating design and targeting protocols for the strategic deterrent bioweapons Baum proposes. The US program acquired this data by exposing humans to bioweapon agents (with the 8-ball, for example), but with an important Catch-22. The agents so used had to be amenable to rapid and reliable cure with specific therapy. This meant that these agents were of limited lethality: tularemia, typically characterized as "potentially lethal" by bioweapon advocates, had only a two to seven percent fatality rate if untreated, and nil if treated with common antibiotics.

Experimentation on humans is fraught with ethical pitfalls and has a disgraceful history. Bioweapon programs are no exception. Most egregious was the Japanese program of 1935 to 1945, which used human captives almost to the exclusion of laboratory animals. At least 3,000 captives, and likely several fold more, perished in ultimately fatal experiments.

The US program's human experiments in the 1950s and 1960s would not be ethically acceptable today. In 1957, a university hospital was contracted to determine the infective dose of tularemia, and it intentionally infected "members of our staff or

suitable volunteer patients from the wards of the medical service." An Army mobile lab determined the inhalation dose/response curves of bioweapon agents by using "volunteer" prisoners. Intensive studies were run on approximately 2,300 **Operation Whitecoat** volunteers, who were conscripted Seventh-day Adventist conscientious objectors. These vulnerable populations are excluded from human studies today.



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CONSENT STATEMENT

Regraded Unclassified by authority of ... by ... on OCT 31 19..

A program of investigation, sponsored by the United States Army, aimed toward determining the amount of a disease agent necessary to produce illness in man, has been explained to me. I understand that the only way in which this essential information can be obtained is by the exposure of volunteers to known amounts of the agent. I understand that such volunteers may become ill and that the program is not without hazard.

I further understand that the agent to be studied is Coxiella burnetii, which is the cause of Q fever. I understand that the organism(s) causing the disease will be suspended in air, and that by breathing this air I will expose myself to infection with this disease agent. I understand that within three (3) to twenty-one (21) days after the exposure I may become ill and that the expected symptoms are fever, headache, and generalized aching. I understand that the course of the disease may be from one (1) to three (3) weeks. I understand the decision as to appropriate treatment will be made by the attending physicians. I understand that such treatment, if employed, may have to be given in two (2) or more phases.

I further understand that I will be restricted to a single area for the period of this study, probably four (4) to six (6) weeks. I understand that various diagnostic procedures will be required.

There has been no exercise of force, fraud, deceit, duress, over-reaching, or other ulterior forms of constraint or coercion in order to obtain this consent from me.

Of my own free will, and after consideration for a period of more than four (4) weeks, I affix my signature hereto, indicating my willingness, as a soldier, to serve voluntarily as a subject for these studies, with the understanding that I will not be required to participate in studies which, in themselves, are contrary to my religious beliefs.

Signature ____________

WITNESS: ASN ____________

____________ Date JUN 29 1955

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So if non-contagious lethal biological weapons are legitimized, how are the essential human tests to be accomplished? Intentional exposure to untreatable lethal bioweapon agents would clearly fail ethical standards and would hardly attract many volunteers, unless participation were considered religious martyrdom. Covert testing on unwilling "disappeared" humans at "dark" sites is a chilling possibility and tragically not very farfetched, even for democracies, given the recent experience with torture.

Baum asks, apparently seriously, how the exit by nuclear powers from the Biological Weapons Convention by could result in proliferation of bioweapons. I will allow another participant to address the political aspects of this rather obvious consequence of his proposal. Of course many non-nuclear nations would be motivated to at least try to develop bioweapons.

The trying is more of an issue than the chances of success. The risks of escape from laboratories of dangerous pathogens and the risks of developing new strains with "gain of function" capabilities is currently of great concern. These risks would only increase as classified bioweapon labs proliferated without inspection or accountability. There is no guarantee that any nation, once committed to develop a bioweapon capability, would necessarily comply with Baum's arbitrary restriction of avoiding contagious pathogens. And as Baum acknowledges, release of contagious bioweapon agents, intentional or accidental, would be a grave threat indeed.

One must remember the failure of the elaborate technical apparatus of the US bioweapons program to predict the real world effects of candidate bioweapons was the result of stringent constraints on release of agents into the environment and a real (if flawed in retrospect) commitment to the protection of the human test subjects, bystanding civilians, and military personnel.

A pariah state or well-funded extra-national organization that felt no such constraints could avoid the trouble and expense of laboratory studies and just fashion "best guess" candidate bioweapons, release them on "enemy" territory (or less

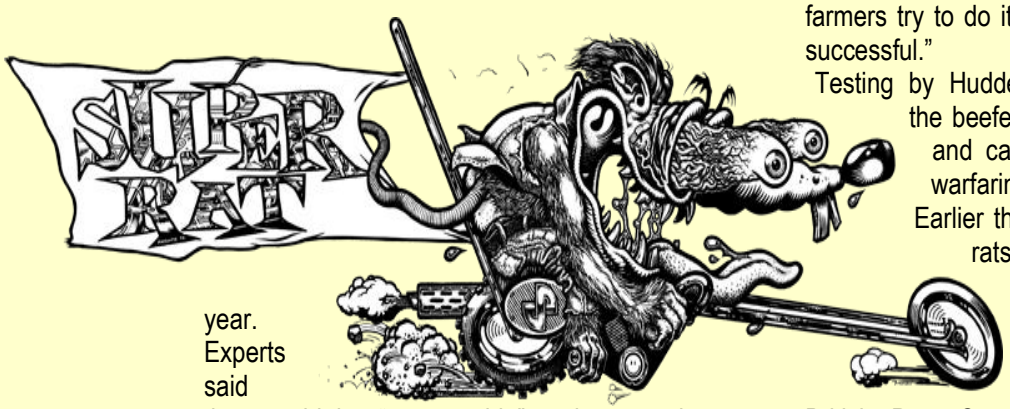
provocatively, on some neutral territory), and watch the results. The Assad regime's use of improvised chemical weapons on its own rebellious citizens exemplifies this risk. Even nominally responsible nations could perform deniable, untraceable field tests using anonymous releases. And if a nuclear-armed nation were to receive such an attack, it might well consider it a threat to its national survival (or the sentinel wave of an emerging bioweapons attack that would) and mount a nuclear response against the presumed perpetrator.
Hello nuclear winter.

***Martin Furmanski** is a medical doctor and medical historian whose major research interests are investigating the development, use, and allegations of use of chemical and biological weapons. His medical training is in pathology and laboratory medicine, including microbiology and toxicology.*

160m unstoppable rats invade UK: Pests are immune to top poison

Source: http://www.bluelight.org/vb/threads/753994-160m-unstoppable-rats-invade-UK-Pests-are-immune-to-top-poison

A plague of 160 million mutant super rats will hit Britain by the end of the year unless stronger poisons can be used against them, pest experts have warned.
Hordes of mutant super-rats may reach a massive 160million in Britain by the end of the year.



Experts said they could be "unstoppable" and are urging authorities to allow a stronger poison to destroy the two-foot-long monsters.
They claim that by next year the rodents could outnumber Brits by two-to-one.
The population will double from 80m by the end of 2015 unless an emergency plan is launched.

Gavin Lindsay, from Anglo Scottish Pest Control, said: "The population of rats is definitely increasing, especially in agricultural areas.
But whereas we used to do 70% of our work on farms, nowadays it's only around 10%. A lot of farmers try to do it themselves but are not as successful."
Testing by Huddersfield University revealed the beefed up animals have mutated and can survive poisons such as warfarin.
Earlier this year, a swarm of mutant rats immune to poison invaded Swindon, Wilts. And pest controllers said the vermin are gorging on potatoes.
Kevin Higgins, of the British Pest Control Association, said: "It's driven by the availability of food. The more food, the more rodents it will attract."
Meanwhile vet Pete Wedderburn warned rats carrying Weil's disease could pass it on to humans by urinating on potatoes, causing organ failure and internal bleeding.

Rat related health hazards & diseases

Source: http://www.aaanimalcontrol.com/ratdiseases.htm

Plague: One of the most historically dangerous rat-borne diseases is the bubonic plague, also called "Black Plague," and its variants. Transfer occurs when fleas from the rats bite human beings. Fleas transported on rats are considered responsible for this plague during the Middle Ages, which killed millions.

Hantavirus Pulmonary Syndrome (HPS): Hantavirus pulmonary syndrome (HPS) is a deadly disease transmitted by infected rodents through urine, droppings, or saliva. Humans can contract the disease when they breathe in aerosolized virus. HPS was first recognized in 1993 and has since been identified throughout the United States. Although rare, HPS is potentially deadly. Rodent control in and around the home remains the primary strategy for preventing hantavirus infection.

Murine Typhus: Murine typhus (caused by infection with R. typhi) occurs worldwide and is transmitted to humans by rat fleas. Flea-infested rats can be found throughout the year in humid tropical environments, but in temperate regions are most common during the warm summer months. Travelers who visit in rat-infested buildings and homes, especially in harbor or riverine environments, can be at risk for exposure to the agent of murine typhus.

Rat-bite fever (RBF): Rat-bite fever (RBF) is a systemic bacterial illness caused by Streptobacillus moniliformis that can be acquired through the bite or scratch of a rodent or the ingestion of food or water contaminated with rat feces.

Salmonella enterica serovar Typhimurium: As its name suggests, it causes a typhoid-like disease in mice. In humans S. Typhimurium does not cause as severe disease as S. Typhi, and is not normally fatal. The disease is characterized by diarrhea, abdominal cramps, vomiting and nausea, and generally lasts up to 7 days. Unfortunately, in immunocompromized people, that is the elderly, young, or people with depressed immune systems, Salmonella infections are often fatal if they are not treated with antibiotics.

Leptospirosis: Leptospirosis is a bacterial disease that affects humans and animals. It is caused by bacteria of the genus Leptospira. In humans it causes a wide range of symptoms, and some infected persons may have no symptoms at all. Symptoms of leptospirosis include high fever, severe headache, chills, muscle aches, and vomiting, and may include jaundice (yellow skin and eyes), red eyes, abdominal pain, diarrhea, or a rash. If the disease is not treated, the patient could develop kidney damage, meningitis (inflammation of the membrane around the brain and spinal cord), liver failure, and respiratory distress. In rare cases death occurs.

Eosinophilic Meningitis: Eosinophilic meningitis is an infection of the brain occurring in association with an increase in the number of eosinophils, white blood cells that are associated with infection with worms that penetrate into the body. The organism most commonly causing eosinophilic meningitis is a rat lung worm called angiostrongylus cantonensis.

October 2014 – In a study published earlier this month, scientists used DNA analysis to examine 133 commensal Norway rats caught in the heart of New York City. Not only did the scientists discover the rats to be infected with bacterial pathogens known to cause acute or mild gastroenteritis in people, such as *E. coli* and *C. difficile*, they also found infectious agents, including Seoul Hantavirus, linked to fever causing illnesses. Extending their search, the scientists identified 18 unknown species related to viruses that cause disease in humans. Most frightening of all, two of these new species, appeared to be similar to the **hepatitis C virus**.

While it's not entirely clear the rats can pass these new viruses, including Hep C, onto humans, generally speaking, it doesn't bode well. “Our findings indicate that urban rats are reservoirs for a vast diversity of microbes that may affect human health and indicate a need for increased surveillance and awareness of the disease risks associated with urban rodent infestation,” noted the authors in their conclusion.

▶ **Read more about this study at:** http://mbio.asm.org/content/5/5/e01933-14

The Limits of Technology in Fighting Ebola

Source: http://www.nextgov.com/emerging-tech/2015/04/limits-technology-fighting-ebola-and-next-outbreak/109252/?oref=ng-HPriver

A year after the recent Ebola outbreak was first reported, the federal government is assessing how experimental technology -- wrist-worn devices that automatically monitor patients' vital signs, for instance -- could help contain it or a future health crisis.

As the outbreak continues in parts of Western Africa, the U.S. Agency for International Development and other agencies are still investing and prototyping new devices, often looking to the private sector and the general public for ideas. Federally-funded research projects include wearable monitors and new personal protection equipment suits, among others.

At a Thursday event hosted by USAID and the White House Office of Science and Technology and Policy, agency representatives discussed how collaboration and crowdsourcing could advance health-related technology.

But gaps still remain, the innovators concede.

"We need to achieve real-time biosurveillance capability," National Security Council Senior Director Amy Pope said at the event. "We just don't have it."

The conversation took place just weeks after USAID Chief Innovation Officer Steve VanRoekel, the former federal chief information officer, stepped down from his post.

Last year, USAID, along with the Defense Department and the Centers for Disease Control and Prevention, kicked off the Ebola Grand Challenge, providing investment opportunities to technologists with creative and potentially viable inventions.

So far, the agency has funded about 15 of these projects, out of about 1,000 submissions, said Wendy Taylor, the director of USAID's Center for Accelerating Innovation and Impact.

Among ideas that have won USAID funding is **a PPE suit with a simpler removal process -- with a zipper in the back and tabs on the sleeves -- designed to minimize health care workers' exposure to contaminants such as vomit.**

Researchers from Johns Hopkins University are developing the suit; its breathing mask is arranged so patients can see more of the health care workers' faces, and it includes a cooling system pumping dry air into the suit. (DOD is currently working on a test-plan for these and other suit prototypes to

ensure they can withstand potential contamination.)

USAID is also backing a wrist-worn vital signs monitoring system, developed by the

Scripps Translational Science Institute. In conjunction with a predictive analytics platform developed by PhysIQ, the system could eventually predict health events so they could be addressed sooner. Another lower-cost vital signs monitor prototype, called the MultiSense Memory Patch, is a Band-Aid-shaped adhesive sensor, mounted on the patient's sternum.

"The idea of having that constant monitoring of all patient vitals remotely -- having an ability to relieve the health care workers so they can focus on other parts of care can really be quite powerful," Taylor said.

The Resilient Africa Network (a collective of various global universities, funded by USAID) is designing a **well-ventilated and modular tent, meant to create makeshift hospitals.**

During the event, USAID's innovation specialist Eric King noted that improvements in data collection are also integral to containing the outbreak. For instance, nonprofit eHealth Africa operates hotlines in affected parts of West Africa to gather information on reported or potential cases, he said.

Chris Weasler, Facebook's director of global connectivity, noted that his company along with Cisco and nonprofit consortium NetHope were setting up broadband Internet access in Ebola treatment facilities, so responders could actually access and use the new technologies being prototyped.

He added that Facebook has also been pushing educational material about Ebola and emergency numbers, where users could report dead bodies, in affected parts of the world.

But a handful of representatives from health organizations noted that while advanced technology might be useful in theory, some of the new concepts are only feasible with a reliable Internet connection and working electricity, and aren't always viable in the field.

"These innovations are much needed," said virologist Joseph Fair, an adviser at Fondation Merieux, a nonprofit dedicated to fighting infections disease. But he added, "*during* an outbreak is not the time to roll them out."

A durable vaccine for Ebola

Source: http://www.homelandsecuritynewswire.com/dr20150410-a-durable-vaccine-for-ebola

Apr 10 – **A new study shows the durability of a novel "disseminating" cytomegalovirus (CMV)-based Ebola virus (Zaire ebolavirus; EBOV) vaccine strategy that may eventually have the potential to reduce ebolavirus infection in wild African ape species.**

The multi-institutional study is led by Dr. Michael Jarvis at Plymouth University, and is published in *Vaccine*.

African apes serve as a main source of ebolavirus transmission into the human population. As a consequence, the prevention of ebolavirus infection in African apes could reduce the incidence of future human ebolavirus outbreaks. Ebolavirus is also highly lethal to African apes, and is regarded as a major threat to the survival of these populations in the wild. Such a 'disseminating' vaccine offers hope for both stabilizing these endangered ape populations and protecting humans against the devastating effects of Ebola.

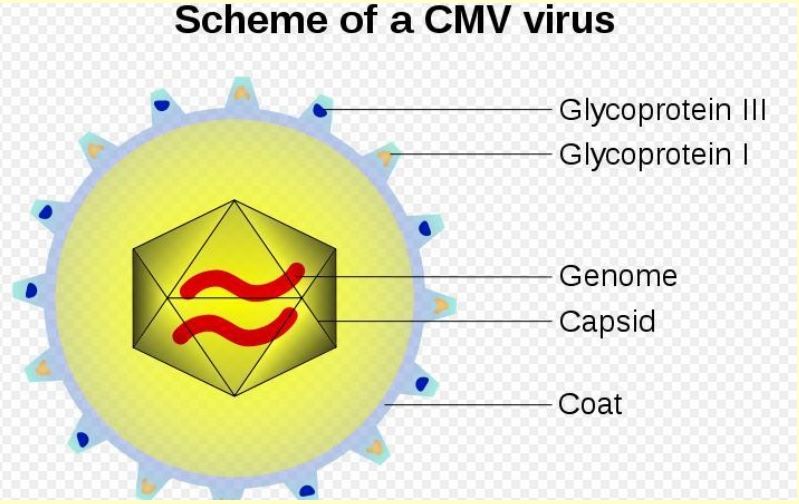
A Plymouth University release reports that the innovative approach may overcome the major hurdle to achieving high vaccine coverage of these animals. They live in of some of the most remote, inaccessible regions of the world which make conventional, individual vaccination near impossible.

Apart from being very immunogenic (able to provoke an immune response) and species-specific, CMV can also spread easily from individual to individual, a process which remains remarkably unaffected by prior CMV immunity. This is the basis of the team's current innovative strategy of using a CMV-based ebolavirus vaccine that can spread through wild ape populations as a means to provide high levels of protective ebolavirus-specific immunity without the need for direct vaccination.

The current publication expands on a 2011 study, in which the same collaborative research team first showed the ability of a CMV-based vaccine to provide protection against Ebola virus in a mouse challenge model.

Most Ebola virus vaccine mouse studies, including this earlier 2011 study, have only assessed protection against Ebola virus infection shortly after vaccination (generally within six weeks post-vaccination). The present study showed that immunity induced by CMV is extremely long-lasting, with Ebola virus-specific immune responses being maintained for greater than fourteen months (equivalent to half the life span of a mouse) following only a single dose of the vaccine.

Importantly, immunity induced by the CMV vaccine was able to provide protection against Ebola virus at least until 119 days (approximately four months) post-vaccination.



Long-lasting immunity will be critical for the eventual success of this disseminating vaccine approach. It is also an attractive characteristic for a (albeit non-disseminating) CMV-based Ebola virus vaccine for direct use in humans, which is an additional area of development of the current collaborative research group.

The next step, which is nearing completion, is to trial the vaccine using CMV in the macaque EBOV challenge model (regarded as the "gold standard" for testing vaccines in a model translatable to Ebola infection in great apes and humans). The results from this study further support the utility of this approach and will be published in the next few months. Many questions clearly remain, including the nature of the immunity conferred by disseminated CMV vaccines (in the current study mice were directly inoculated).

"We must walk before we can run, but this study provided a little skip," said Dr. Michael Jarvis, corresponding author on the study from Plymouth University Peninsula Schools of Medicine and Dentistry. "However, this disseminating approach does potentially provide a workable solution to a currently intractable problem of achieving high vaccine coverage in inaccessible ape populations. Given the impact of ebolavirus on African ape numbers in the wild, and the role of apes as a route of ebolavirus transmission to humans via the bush meat trade, such a vaccine would be a win-win for humans and wild apes alike."

The release notes that to this end the project has been incorporated

as a component of an international research program, which includes key players such as the World Wildlife Fund and National Institutes of Health, which are dedicated to driving the project forward to mobilization.

— Read more in Yoshimi Tsuda et al., "A cytomegalovirus-based vaccine provides long-lasting protection against lethal Ebola virus challenge after a single dose," Vaccine 33, no. 13 (24 March 2015).

Ebola Review

Source: http://www.mastercbrn.com/uploads/various/20150327124097 4285_EBOLA_2015_paper.pdf

Hindawi Publishing Corporation
International Journal of Microbiology
Volume 2015, Article ID 769121, 12 pages
http://dx.doi.org/10.1155/2015/769121

Hindawi

Review Article

Ebola Virus Disease 2013-2014 Outbreak in West Africa: An Analysis of the Epidemic Spread and Response

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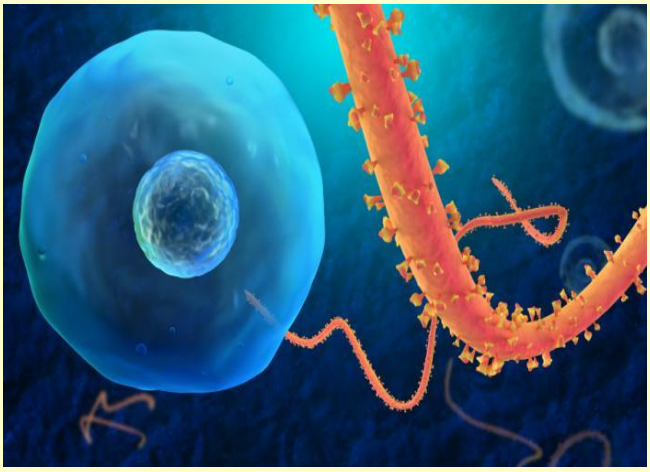
Ebola 'no deadlier than it was 40 years ago'

Source: http://www.medicalnewstoday.com/articles/292314.php?tw



Apr 14 – A new study by investigators from the University of Manchester in the UK finds that although the Ebola virus has mutated since the first outbreaks almost 4 decades ago, it has not become any deadlier.

Ebola virus disease (EVD) first appeared in 1976 through two outbreaks - one in Sudan and the other in the Democratic Republic of Congo.

The current Ebola outbreak - first appearing in March 2014 - has been the most

severe since the virus' discovery, infecting more than 25,000 people worldwide and causing more than 10,000 deaths.

The severity of the current outbreak has led researchers to suggest the Ebola virus has evolved to become deadlier. But in a new study published in the journal *Virology*, Prof. David Robertson and colleagues from the University of Manchester found that while the virus has evolved, it is no more deadly than it was in 1976.

In humans, Ebola is known to be caused by four virus species that are a part of the *Filoviridae* genus. *Zaire ebolavirus* has been identified as the strain responsible for the current Ebola outbreak.

For their study, Prof. Robertson and colleagues analyzed the evolution of the Ebola virus using a computational model that had previously been created to assess changes in human immunodeficiency virus (HIV).

Mutations in Ebola virus have not made it any more or less deadly

Applying the model to every Ebola outbreak since 1976, the team was able to assess any changes in the RNA of the Ebola virus and predict how these changes affect the viruses' potency.

To their surprise, the researchers found that while the Ebola virus has mutated over the past 40 years, the mutations have not made it any more or less virulent, suggesting that the higher death toll in the current outbreak is not because the Ebola virus is deadlier.

Study author Prof. Simon Lovell, of the Faculty of Life Sciences at the University of Manchester, says the fact the function of the Ebola virus has remained the same means outbreaks of the disease are likely to reoccur.

However, the researchers say their findings can be viewed as positive overall; they suggest that vaccines and treatments developed in the current outbreak are likely to remain effective in future outbreaks.

"It also means that methods to successfully tackle the virus should work again, so hopefully in the future an outbreak can be stopped from spreading at a much earlier stage," says Prof. Robertson.

The researchers say that as well as identifying whether a virus has become deadlier, it is equally as important to determine whether it has become less potent.

Because Ebola is a deadly virus, its symptoms can be identified early. Lower potency, however, would mean the virus would likely be identified at a later stage, posing a lower chance of successful treatment. In addition, longer identification of symptoms means increased opportunity for the virus to spread.

Commenting on their findings, Prof. Lovell says:

"Our study demonstrates the vital role computational analysis can play during a virus outbreak. As scientists our role is to worry about the potential changes our research tool allows us to map what is happening within a virus and the consequences of any changes.

Ebola will occur again, and it's only through such close monitoring that we will contain it and ultimately eradicate it."

Earlier this month, *Medical News Today* reported on a study revealing that an Ebola vaccine may enter human trials after it was found to protect eight monkeys against infection.

New tool to diagnose Ebola uncovers some surprises

Source: http://www.medicalnewstoday.com/releases/292096.php?tw

Abdominal pain, fever and unexplained bleeding - which are commonly believed to indicate infection with the Ebola virus -- are not significantly predictive of the disease, according to the results of a study examining a new Ebola Prediction Score published online in *Annals of Emergency Medicine* ("Derivation and Internal Validation of the Ebola Prediction Score for Risk Stratification of Patients with Suspected Ebola Virus Disease").

"Not surprisingly, contact with a suspected or confirmed Ebola patient was the strongest independent predictor of having Ebola," said lead study author Adam Levine, MD, MPH, of Rhode Island Hospital in Providence, R.I. "What was surprising was that abdominal pain in combination with other Ebola-like symptoms actually turned out to be negatively predictive of Ebola.

This may be because those patients actually had another disease like typhoid, which is more likely to cause abdominal pain."

Current World Health Organization and Medecins san Frontieres symptoms lists for Ebola include fever, nausea with vomiting, diarrhea, fatigue, abdominal pain, loss of appetite, muscle pain, joint pain, headache, difficulty breathing, difficulty swallowing, hiccups, unexplained bleeding and exposure to a suspected or confirmed Ebola patient within 21 days. However, Dr. Levin's Ebola Prediction Score tool demonstrates that just six of those symptoms together -- contact with an infected person, diarrhea, loss of appetite, muscle pain, difficulty swallowing and absence of abdominal pain -- accurately predicted infection with Ebola.

Diagnosing Ebola remains a significant challenge because initial symptoms are similar to those of many other diseases. This is the first study to empirically derive and internally validate a clinical prediction model for laboratory-confirmed Ebola. The Ebola Prediction Score can be used by clinicians in the context of an active Ebola epidemic for the purpose of separating patients in an isolation center.

"The current Ebola outbreak in West Africa is the largest on record and has overwhelmed the capacity of both local health systems and the international community," said Dr. Levine. "The Ebola Prediction Score will help clinicians risk-stratify patients already meeting one or more suspect definitions of Ebola. Given the devastation this epidemic has already caused, a low-cost, point-of-care test that can rapidly and definitively exclude Ebola in patients should be a research priority."

Ebola has affected 24,000 persons during the current epidemic, which is the largest recorded outbreak of Ebola in history. Over 10,000 people have died in West Africa, mainly in Sierra Leone, Liberia and Guinea.

Ebola survivors 'safe sex warning' issued by WHO

Source: http://www.bbc.com/news/health-32284629

Apr 15 – The WHO has urged Ebola survivors to be even more cautious during sexual contact to ensure the virus is not passed on to their partners.

The warning comes after a survivor was found to have traces of Ebola in his semen almost six months after recovery. This is some 90 days later than previously documented.

It is unclear whether Ebola can still be spread at this point. But officials have launched further investigations to evaluate the risks.

New evidence

There have been no proven cases of Ebola being transmitted through sexual contact with survivors during this or previous outbreaks.

But according to Dr Nathalie Broutet, a medical officer at the World Health Organization, the recent case prompted experts to strengthen their advice.

Dr Broutet told the BBC: "The patient is the first we have seen where there is a trace of virus present in semen beyond three months.

"This made us change our recommendations to go beyond three months."

The new advice says: "For greater security and prevention of other sexually transmitted infections, Ebola survivors should consider correct and consistent use of condoms for all sexual acts beyond three months until more information is available."

It builds on previous guidance suggesting abstinence or safe sex up to 90 days after symptoms first develop.

But Dr Broutet cautioned further analysis must be done.

"Even though the sample was positive for fragments of the virus this does not prove it was passed on sexually.

"We need to be very careful and need more clarity about this," she said.

Scientists are planning to send the sample to the Centres for Disease Control in the United States to see if the traces of Ebola they found are active and capable of being spread.
And Dr Broutet is helping to set up studies in Sierra Leone and Guinea to offer male survivors further checks.
According to the WHO, there is no current evidence to suggest that active Ebola virus is present in vaginal fluids once someone has recovered.
Ebola is known to spread through close contact with the bodily fluids of a person who has the active virus and shows symptoms of the disease - such as a high fever.
Experts emphasise that people who have recovered from Ebola do not pose any risks to the general public and should not be isolated.

New Laws for New Threats Like Drones and Bioterrorism

By Gabriella Blum and Benjamin Wittes
Source: http://www.wsj.com/articles/new-laws-for-new-threats-like-drones-and-bioterrorism-1429297143

Insect-size drones are busily being developed. Pictured, a close-up of the tiny Black Hornet drone, used by the British military in Afghanistan, at a Royal Air Force station near Lincoln, U.K., in January 2014. Photo: Nigel Roddis/Getty Images

You walk into your shower and see a spider. You don't know whether it is venomous—or whether it is even a real spider. It could be a personal surveillance mini-drone set loose by your nosy next-door neighbor, who may be monitoring the tiny octopod robot from her iPhone 12. A more menacing possibility: Your business competitor has sent a robotic attack spider, bought from a bankrupt military contractor, to take you out. Your assassin, who is vacationing in Provence, will direct the spider to shoot an infinitesimal needle containing a lethal dose of poison into your left leg—and then self-destruct.
Meanwhile, across town, an anarchist molecular-biology graduate student is secretly working to re-create the smallpox virus, using ordinary laboratory tools and gene-splicing equipment available online. Not content to merely revive an extinct virus to which the general population has no immunity, he uses public-source academic research to make it more lethal. Then he

infects himself and, just as his symptoms start, strolls around the airport to infect as many people as he can.

These scenarios may sound fantastical, but they are neither especially improbable nor particularly futuristic. Insect-size drones are busily being developed throughout the defense establishment, in academic facilities and by private firms. Slightly larger drones are widely available for purchase on the open market, some already rigged with cameras. Making such drones lethal is just the next step, and it isn't that complicated.

As for our anarchist molecular biologist, the National Science Advisory Board for Biosecurity said back in 2006 that the "technology for synthesizing DNA is readily accessible, straightforward and a fundamental tool used in current biological research." That was a lifetime ago in scientific terms.

The technological platforms associated with robotics, genetics and synthetic biology are enriching every facet of our society. But as President Barack Obama recently lamented about cybersecurity, "one of the great paradoxes of our time" is that "the very technologies that empower us to do great good can also be used to undermine us and inflict great harm."

Together, these new technologies create a world in which every individual, company, group and state can pose a threat to every other individual, company, group and state anywhere around the globe.

These technologies don't just empower countries and major terrorist groups to attack invisibly from remote positions. In 2011, Luis Mijangos, an illegal immigrant in Orange County, Calif., pleaded guilty to computer hacking and wiretapping and was sentenced to six years in prison. According to the Justice Department, Mr. Mijangos tricked scores of women and teenage girls into downloading malware onto their computers, which let him use the infected computers' webcams to take intimate images and videos of his victims. He then used those images to "sextort" the victims into giving him more pictures and videos. FBI computer forensics specialists identified more than 100 computers infected by Mr. Mijangos, used by roughly 230 individuals, at least 44 of them underage, according to court documents. Many other victims probably remain unidentified.

All this challenges our security—and the way we think about the state itself. The liberal state was predicated on a social contract: We give up a certain amount of liberty to a government, which promises in turn to protect us. But that promise is becoming increasingly difficult to keep as more Big Brothers—and lots of Little Brothers too—come to command awesome technological powers.

For the state as we know it to endure, we'll have to adapt some of the most basic organizing principles of governance, both domestic and international. Take the relationship among privacy, liberty and security, which we tend to see as a zero-sum game in which promoting one comes at the expense of another. But in our emerging world of diffuse, high-tech threats, that relationship won't involve opposition but a weird new combination of tension and mutual reinforcement.

Enhancing government surveillance powers may turn out to promote not only security but also privacy and liberty—if we are, say, more afraid of someone like Mr. Mijangos than we are of the FBI. And it may take the National Security Agency, which can monitor billions of emails and telecommunications, to spot an anarchist trying to engineer a killer virus or to ensure that the drone winging toward the South Lawn of the White House is a harmless prank, not a terrorist plot.

At the same time, the government's own technologically multiplied powers increasingly need to be checked. Big Brother is still a menace of his own. And we, the super-empowered citizens of the 21st century, have a growing role to play here. After all, it wasn't the NSA that uncovered GhostNet—a major cyberespionage network targeting governments all around the world, widely thought to be run by China—but a group called the Information Warfare Monitor, a collection of private and university researchers.

The government used to be our sole provider of security. That is clearly coming to an end. Companies such as Google and Facebook, which store troves of private information, are also key to our privacy and security. By handing them our personal

information and communications, we are asking them to protect us—our homes and our families—in a way we once thought was the state's job. And the state cannot protect us without help from such companies. This explains why U.S. surveillance law now requires that technology companies help U.S. authorities wiretap suspects.

The traditional social contract is under pressure not only from within the state but also from outside it. Islamic State recruits Europeans through social media. Another convicted California "sextortionist" abused girls in Ireland and Canada. U.S. drone operators in Nevada bomb targets a world away. And in 2001, a team of virologists in Germany and France constructed an Ebola virus from three strands of complementary DNA.

Still, today's international legal order remains very much boundary-centered. It gives countries the power to legislate and enforce laws within their territories but allows relatively little latitude to regulate the conduct of foreign subjects abroad—and even less latitude to actually enforce their laws beyond their borders.

Threats that routinely span borders will force states to routinely reach across their borders through legislation that governs foreign conduct, surveillance of citizens in foreign countries, and even targeted killings. A growing number of states are already claiming that more of their laws should apply beyond their territories—for instance, by unilaterally defining cyberattacks or cybercrimes and by enforcing their domestic laws against foreign offenders acting overseas. To avoid turning the world into the Wild West, we must ensure that this increased unilateralism is checked by greater international cooperation: better governance for fragile states, more information-sharing among states and more effective means of enforcing laws where jurisdictions are unclear.

The old social contract has its roots in the security dilemmas of the Enlightenment era. In our new era, everyone is simultaneously vulnerable to attack and menacing to others. That requires a different, more complex social contract—one that we are just starting to imagine.

Ms. Blum, a professor at Harvard Law School, and Mr. Wittes, a senior fellow at the Brookings Institution, are the co-authors of "The Future of Violence," recently published by Basic Books.

Nigeria – Mystery disease, which kills within 24 hours of infection

Source: http://www.homelandsecuritynewswire.com/dr20150421-mystery-disease-which-kills-within-24-hours-of-infection-so-far-claims-30-in-nigeria

Apr 21 – **A "mysterious" disease which that kills patients within twenty-four hours of infection has so far claimed at least thirty lives in a south-eastern Nigerian town, the Nigerian government said.**

"Twenty-three people were affected and eighteen deaths were recorded," the Ondo state health commissioner, Dayo Adeyanju, said on Saturday.

Earlier, the government spokesman for the state, Kayode Akinmade, reported that seventeen infected patients died within twenty-four hours of infection.

"Seventeen people have died of the mysterious disease since it broke out early this week in Ode-Irele town," Akinmade told AFP.

The *Guardian* reports that the disease, the **symptoms of which include headache, weight loss, blurred vision, and loss of consciousness, killed the victims within a day of falling ill.**

Akinmade said that laboratory tests have so far ruled out Ebola or any other virus.

Meanwhile, the World Health Organization said it had information on fourteen additional cases, of which twelve had already died.

"Common symptoms were sudden blurred vision, headache,

loss of consciousness followed by death, occurring within twenty-four hours," WHO spokesman Tarik Jasarevic told AFP, adding that an investigation was ongoing.
Gregory Hartl, another WHO spokesman, said that a preliminary report indicates that **all those infected began showing symptoms between 13 and 15 April.**
The Nigerian government said that health officials and experts from the government and aid agencies, as well as WHO epidemiologists, had arrived in Ode-Irele to test samples taken from the bodies of those who died and look for answers.
Ondo state's health commissioner Adeyanju told the *Guardian* that he and his officials had gone on a "field visit with the WHO, Unicef, NCDC (Nigerian Centre for Disease Control). This was basically a case search to unravel the cause (of the disease)," he said.
WHO's Jasarevic said blood and urine samples had been taken from two victims and cerebrospinal fluid from another.
"All samples have been sent to Lagos University Teaching Hospital this morning, and results are still pending. Investigations are still ongoing," he said.

WHO admit faults over Ebola response, suggest areas for improvement

Source: http://www.medicalnewstoday.com/articles/292675.php?tw

Apr 20 – **The leaders of the World Health Organization have published a statement admitting to faults in the organization's handling of the Ebola outbreak that began in December 2013.**
The statement from the World Health Organization (WHO) Director-General, Deputy Director-General and Regional Directors outlines eight valuable lessons that WHO have learned while dealing with the Ebola crisis.

These are:

- That new diseases and old diseases in new contexts "must be treated with humility and an ability to respond quickly to surprises"
- That health gains such as fewer child deaths, control over malaria and more women surviving childbirth "are all too easily reversed when built on fragile health systems"
- That current national and international capacities and systems cannot cope with large-scale outbreaks
- That WHO's engagement with affected communities and cultures was inadequate. "This is not simply about getting the right messages across; we must learn to listen if we want to be heard," the directors write. "Empowering communities must be an action, not a cliché"
- That the global surveillance and response system "is only as strong as its weakest links" and that "a disease threat in one country is a threat to us all"
- Recognizing the need to coordinate with other organizations and work in partnership when WHO lacks capacity
- That incentives are needed "to encourage the development of new medical products for diseases that disproportionately affect the poor"
- The importance of communication - "of communicating risks early, of communicating more clearly what is needed, and of involving communities and their leaders in the messaging."

How will WHO improve their disease outbreak response?
Taking onboard constructive criticism of the WHO response, the directors also use the statement to make a series of promises concerning improvements to their emergency response.
One such improvement will be to develop "a directing and coordinating mechanism" to bring together the world's resources for rapid and effective response to disease outbreaks and humanitarian emergencies, as well as expanding WHO's core staff working on disease outbreaks.
WHO will also combine the expertise of public health scientists, health workers,

logisticians, project managers, social scientists, communication experts and community workers with the creation of a Global Health Emergency Workforce. Teams working as part of the Global Health Emergency Workforce will be trained and certified responders available immediately in the event of an emergency.
To ensure that adequate domestic and international resources are available before the next outbreak, WHO will establish a Contingency Fund to allow the organization to respond more rapidly to disease outbreaks.
The directors write that they will boost support to countries to develop the minimum core capacities to implement the International Health Regulations. These regulations are "the international framework for preparedness, surveillance and response for disease outbreaks and other health threats."

Recommendations for world leaders
Finally, the WHO directors urge world leaders to take the following steps:

- Take disease threats more seriously - invest in prevention and essential public health systems. "We do not know when the next major outbreak will come or what will cause it. But history tells us it will come"
- Remain vigilant, as the Ebola outbreak is far from over and support to the affected countries must be sustained. Ebola could easily spread again
- Re-establish the services, systems and infrastructure that have been devastated in Guinea, Liberia and Sierra Leone. "This recovery must be country-led, community-based and inclusive"
- Be transparent in reporting. "Speedy detection facilitates speedy response and prevents escalation"
- Invest in research and development for diagnostics, drugs and vaccines related to neglected diseases with outbreak potential.

"The Ebola outbreak that started in December 2013 became a public health, humanitarian and socioeconomic crisis with a devastating impact on families, communities and affected countries," write the WHO leaders. "It also served as a reminder that the world, including WHO, is ill-prepared for a large and sustained disease outbreak."

They conclude:
"This is our commitment; together we will ensure that WHO is reformed and well positioned to play its rightful role in disease outbreaks, humanitarian emergencies and in global health security."

EDITOR'S COMMENT: Is admitting that one is wrong, enough? (despite the last "usual" paragraph)

How best to test Ebola treatment

Source: http://www.medicalnewstoday.com/releases/292408.php?tw

An unconventional clinical trial design might have advantages over classical trials for testing treatments for Ebola virus disease (EVD), suggests a study published this week in *PLOS Medicine*. The work of an international team led by John Whitehead of Lancaster University, UK and Ben Cooper of Oxford University, UK, provides much-needed data to inform a debate on the scientific and ethical justification for non-randomized EVD trials that has taken place in the editorial pages of a number of medical journals in past months.
The researchers compared three different scenarios using analytic methods and computer simulations and report that, compared with two different approaches using all randomized trials, **a multi-stage approach (MSA) that includes a component without randomization has the potential under certain circumstances to reduce patient harm and the time to roll-out of an effective treatment for EVD.**
Although alternative evaluation designs are possible, the researchers suggest that beginning with a non-randomized phase II stage can be the quickest way to triage potential treatments and to decide how to test them further. For treatments that show strong evidence of benefit, it might even be possible to recommend the treatment without undertaking an RCT, they suggest.

While stressing that "RCTs are usually the best method for evaluating interventions", the researchers argue that "the current Ebola epidemic in west Africa is an unprecedented situation where there is substantial uncertainty that RCTs can be conducted successfully and safely". "Given these operational concerns and the results of our analysis", they say, "the MSA--which begins with a less operationally challenging design and yet retains the ability to provide robust and informative results--must be considered."