August 2014

CBRNE NEWSLETTER TERRORISM

E-Journal for CBRNE & CT First Responders

www.cbrne-terrorism-newsletter.com

CBRNE-Terrorism Newsletter – 2014©

August 2014

Website: www.cbrne-terrorism-newsletter.com

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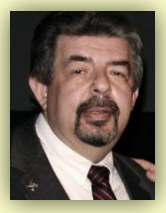


Editorial

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

Editor-in-Chief
CBRNE-Terrorism Newsletter

Dear Colleagues,

Summer 2014 is expected to be extra hot! Both in terms of environmental temperatures (currently around 40^{0}C in Greece) and geopolical safety/security tumoil!

In Africa Ebola virus disease (EVD) is marching and progressively spread to countries in the western region of this continent. Current situation boosts global research for vaccines and many experiments drugs will be tested in the field – ZMapp seems very promising! The hygiene problem is the major contributor to this local epidemic and only sporadic cases (all related to travelling in the area) are confronted in Europe, USA and Canada but also in other places. Many speak about a future connection between EVD and terrorists. Of course getting a culture or two is quite easy. Weapnization of the virus is another story since it demands expertise and high tech lab equipment and premises. What is not widely said is the possibility of "suicide bioterrorism" with sick terrorists traveling all over the world spreading the disease. That would be something difficult to address – as with all covert terrorism acts or even natural pandemics.

The Ukraine crisis is ongoing – deaths overide the 1,000 barrier; political games are into their prime and on different levels many countries – especially in Europe (and Greece) – are starting to suffer the consequences. It is always nice to play games if you are strong and far away and this is something that we all have to keep in mind when we decide to participate in extreme games as playmates. Countries should start to realize that they are in their own and despite alliances and partnerships they should always have as their primarely target the well being of their citizens. It is easy to say "Yes" all the time but it is also boring and even dangerous in the short term – when citizens will decide to leave their coaches and assume responsibility for their lives. Situations like recent embargo reveal how strong the ties are between allies (USA) and states' consortiums (EU) – so far nill! We embed the embargo, you suffer…

The Malaysian tragedy remains a mystery and most probably this case will be filed under "UFO attack" – not necessarily a Marsian attack!

Islamic State is progressing in all directions possible with no practical organized resistane both at national and international levels. Latest advance is the US air strikes against targets close to northern Iraq's oil reserves (as always) and perhaps in order to deliver a message to their unofficial protectees (I am sure you have already seen the photos of Senator John McCain posing with ISIS Chief Abu Bakr Al-Baghdadi and terrorist Muahmmad Noor published in Al Arabiya – a Muslim Middle East news paper) that they crossed the red lines agreed. Profits are great (to the rank of millions of dollars), military equipment is available by takeover procedures, "fear weapon" works efficiently and so is the systematic massacre/eradication of Christian populations living in Iraq for centuries. The new barbaric species keep on surprising our "innocent eyes" with acrocities beyond imagination resembling allien species eliminating the population of conquered Earth. Of course all these are happening thousands of miles away from us – the civilized ones! Periodically we are shocked by a decapitation (mostly because it happened to "one of us") but that is all! As usual we are forgetting that in the 21st century nothing is really very far away! Nothing!

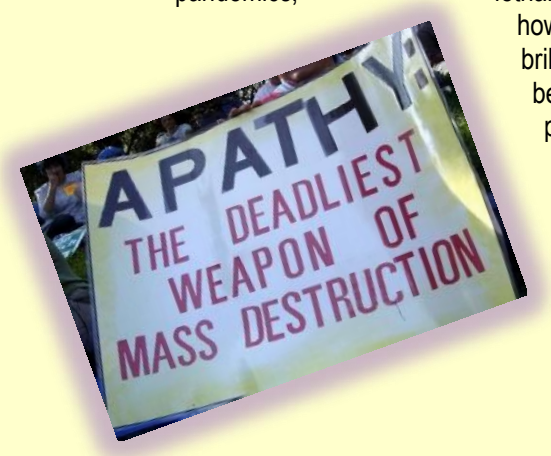
In Greece we celebrated the 10th anniversary of the Olympic Games in Athens (2004). This celebration was done in private and only by those who were actively invovled in the Games. The rest prefer to forget all about it and love to blame that era for the suffering of today. All the Olympic venues (with the execption of the Olympic Stadium) are locked and it is a miracle that they haven't collapsed yet. It is so sad to observe the post-London 2012 development – i.e. the East Village that dramatically changed the overall picture of a neglected suburb of UK's capital. Again there is no one to blame for! Most probably same Marsians who shot down the Boeing are equally responsible tor current governance impotence. You think that only Israel is facing daily bombardment? Come and live for a month in Greece to realize what ground-to-ground (tax) missiles are and how can they "kill" thousands of citizens without explosions.

There are rumors that EU would like to see European flags without a cross (i.e. Greece, Norway, Finland, Sweden, Denmark, UK, Switzerland, Iceland, Malta). King Leonidas of Sparta replies: "*Molon Lave*" (come and get it)! Even stupidity should have a limit!

Speaking about the Gaza-Israel conflict the death toll among civilians – mostly women and children – is devastating. But we forget the fact that if you use humans as shields then these consequences are inevitable. It seems that only Israel transformed "problems identified" to "lessons learned" avoiding a massive military invation into populated areas – an operation always hard to win. On the other hand Hamas is playing the same game again and again knowing beforehand that they will lose in all levels of engagement. But it seems that this is their objective. To sucrifice their own just to blame the opponents for killing children. Once upon a time chess was a classy game demanting spiritual superiority. Now it is a discusting game costing lives – innocent lives…

All over the world people are expecting summer to relax and reload their batteries I think that we are now anticipating hard winter for Nature to ease things and make operations more diffucult to accomplish. This might save some lives, kill some bugs, provide some drinking water to certain parts of the planet (if you have forgotten this is still a problem in our 21st century) and in general remind people that they should behave in a civilized manner.

In September 2014 the CBRNE-Terrorism Newsletter will "celebrate" its 10 years of presence in the field of asymmetric threats. Do not expect fireworks, CNN coverage and costly parties. How can one be happy when for 10 years he and his group are reporting on threats, bombings, assacinations, pandemics, lethal weapons and alike? How can one celebrate the moment you realize how many things could have been different if all that money and the brilliant minds behind them were used in a different way? How can we be proud of our 2014 with so much pain and blood around us? Despite pessimism of the moment, we are planning some organizational changes that will boost the Newsletter ahead and we will try our best to continue keeping global First Responders as much updated as possible.



We wish you all a happy Summer time and may logic prevail!

The Editor-in-Chief

Ted Strickland Tried To Live On The Minimum Wage For A Week, Ran Out Of Baloney

Source: http://www.huffingtonpost.com/2014/07/28/ted-strickland-minimum-wa_n_5626821.html

Ted Strickland tried to live on the minimum wage for a week, and it didn't go so well.

"I didn't make it," the former Democratic governor of Ohio wrote in Politico Magazine.

For his "Live The Wage" challenge Strickland allotted himself $77 for food, transportation and other basics. The amount is supposed to be what's left over after housing and taxes for somebody who earns the federal minimum wage of $7.25 per hour, or $290 for a 40-hour workweek.

Strickland tried to keep his expenses down but said he'd run out of cash by Thursday.

"For the week, I walked as much as I possibly could to avoid paying for transportation, skipped meals to save money -- and I ate much smaller and less healthful meals when I did eat," Strickland wrote. "Because fresh fruits and vegetables are hard to find at a price within a minimum wage budget, I turned to bread, peanut butter, bananas and bologna more than anything else."

Strickland performed the stunt to draw attention to Democratic efforts to raise the federal minimum wage, which hasn't had a boost in five years. Illinois Gov. Pat Quinn (D) has also signed up for the challenge to raise attention for a November ballot initiative.

Last year many Democrats undertook the "Food Stamp Challenge," limiting their food budgets to what a Supplemental Nutrition Assistance Program recipient gets for a week, to dramatize their opposition to benefit cuts.

Strickland, who currently works as president of the Center for American Progress Action Fund, acknowledged that he can't truly immerse himself in the world of the working poor.

"I have an apartment here in Washington and a good job," Strickland writes. "I know I'll never be able to truly walk in the shoes of a minimum wage worker, but experiencing just some of the decisions this income requires on a daily basis is enough to understand that we need to do better for these hardworking families. It's un-American that you can work and work and work and not get out of poverty."

EDITOR'S COMMENT: It might be a PR gesture! It might be a honest insight! The fact is that this politician seems to be different and more ground based. I only wished that others – especially in my country [Greece] – follow his experimentation! If not for a month, a week would do the job! After that if the shock would not be strong enough to put them in order there is always the alternative of seppuku /hara-kiri! **UPDATE:** Neel Kashkari of Goldman Sachs (saved the US banks in 2008) did the same in Fresno. Retrospective remorse? Or the new game of the rich? Time will show…

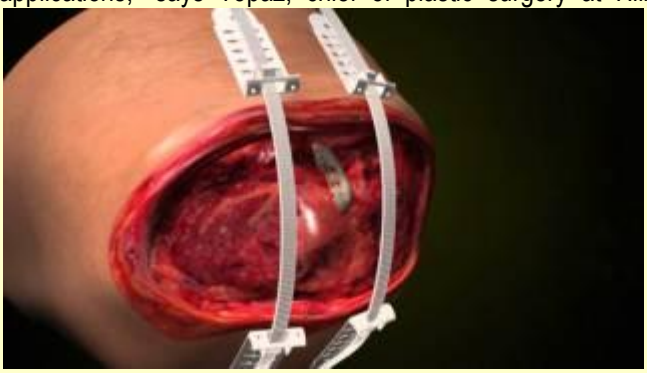
New wound-closure tech helping to heal soldiers

Source: http://www.israel21c.org/headlines/new-wound-closure-tech-helping-to-heal-soldiers/?utm_source=30_07_2014&utm_campaign=2014-07-30&utm_medium=email

Some of the soldiers wounded in Operation Protective Edge are benefiting from a brand-new Israeli technology to close open wounds quickly and temporarily prior to further evaluation and treatment.

Just on the cusp of the market, the TopClosure 3S Trauma Management System is approved by regulatory agencies in Israel, the United States and Europe for mass-casualty situations such as combat and natural disasters. Soroka University Medical Center in Beersheva is using TopClosure for incoming injuries from the Gaza conflict, according to the technology's inventor, Dr. Moris Topaz.

"We've been using it clinically already for a few years, collecting a lot of data to show the scope of applications," says Topaz, chief of plastic surgery at Hillel Yaffe Medical Center in Hadera. "It's changing the way we've been handling the closure of wounds to avoid further damage and contamination to the injured tissues."



Until now, emergency protocol for a large open wound involved cleaning and suturing, then applying a skin graft. TopClosure instead enables stretching the edges of the skin over the wound with adhesive attachment plates placed on either side and secured with an approximation strap inserted into the first and then the second plate. This fast procedure also simplifies healing substantially, Topaz tells ISRAEL21c.

"When trying to close a wound with sutures, we apply high tension to the skin," he says. "With TopClosure we can spread the tension on the skin about 100,000 times higher than we could do before."

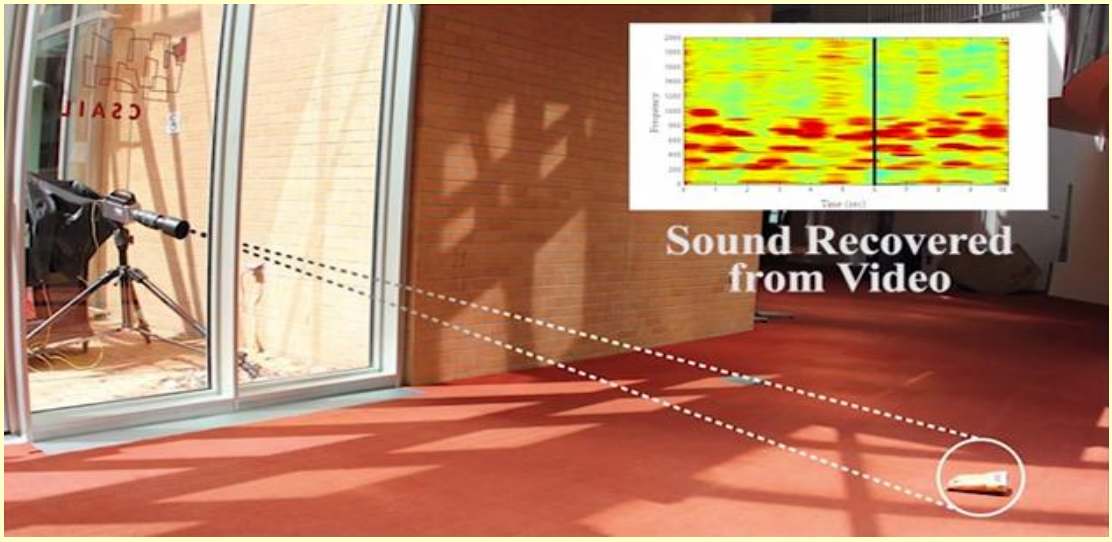
The device can be "zipped" open after the emergency situation has passed so the wound can be further evaluated and treated. This temporary wound closure system is meant to be used by medics, paramedics, surgeons and other physicians. Topaz is teaching orthopedic and hand surgeons how to use it.

"The most important thing about TopClosure is its simplicity," says Topaz. "Doctors commonly say, 'Why didn't we think of this earlier?' My wish is that it would be exposed to

every doctor and every patient as an emerging technology that can be applied anywhere in the world without sophisticated plastic surgery procedures."

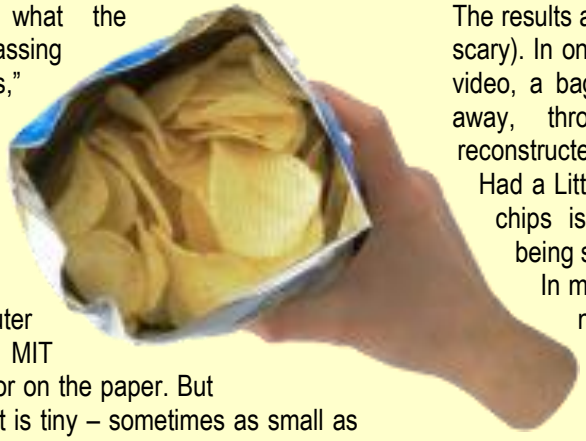
MIT researchers can listen to your conversation by watching your potato chip bag

Source: http://www.washingtonpost.com/news/speaking-of-science/wp/2014/08/04/mit-researchers-can-listen-to-your-conversation-by-watching-your-potato-chip-bag/



Imagine someone listening in to your private conversation by filming the bag of chips sitting on the other side of the room. Oddly specific, I know, but researchers at MIT did just that: They've created an algorithm that can reconstruct sound (and even intelligible speech) with the tiny vibrations it causes on video.

When sound hits an object, it makes distinct vibrations. "There's this very subtle signal that's telling you what the sound passing through is," said Abe Davis, a graduate student in electrical engineering and computer science at MIT and first author on the paper. But the movement is tiny – sometimes as small as thousandths of a pixel on video. It's only when all of these signals are averaged, Davis said, that you can extract sound that makes sense. By observing the entire object, you can filter out the noise.



This particular study grew out of an earlier experiment at MIT, led by Michael Rubinstein, now a postdoctoral researcher at Microsoft Research New England. In 2012, Rubinstein amplified tiny variations in video to detect things like the skin color change caused by the pumping of blood. Studying the vibrations caused by sound was a logical next step. But getting intelligible speech out of the analysis was surprising, Davis said.

The results are certainly impressive (and a little scary). In one example shown in a compilation video, a bag of chips is filmed from 15 feet away, through sound-proof glass. The reconstructed audio of someone reciting "Mary Had a Little Lamb" in the same room as the chips isn't crystal clear. But the words being said are possible to decipher.

In most cases, a high-speed camera is necessary to accomplish the feat. Still, at 2,000 to 6,000 frames per second, the camera used by the researchers is nothing compared to the best available on the market, which can surpass 100,000 frames per second. And the researchers found that even cheaper cameras could be used.

"It's surprisingly possible to take advantage of a bug called rolling shutter," Davis said. "Usually, it creates these artifacts in the image that people don't like." When cameras use rolling shutter to capture an image, they don't capture one single point in time. Instead, the camera scans across the frame in one direction, picking up each row at a slightly different moment.

By doing so, the camera happens to encode information at a much higher rate than its actual frame rate. For the researchers, that meant being able to analyze vibrations that should have happened too quickly for capture on film. "It kind of turns a two-dimensional low-speed camera into a one-dimensional high-speed camera," Davis explained. "As a result, we can recover sounds happening at frequencies several times higher than the frame rate of the camera, which is remarkable when you consider that it's just a complete accident of the way we make them."

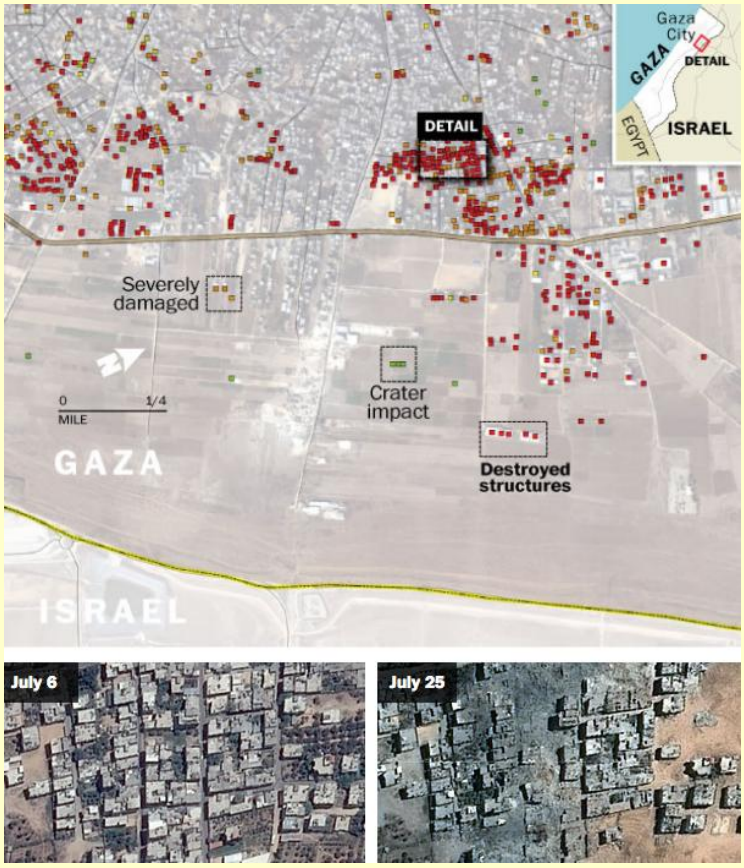
There are definitely limitations to the technology, Davis said, and it may not make for better sound reconstruction than other methods already in use. "Big brother won't be able to hear anything that anyone ever says all of a sudden," Davis said. "But it is possible that you could use this to discover sound in situations where you couldn't before. It's just adding one more tool for those forensic applications."

Davis and his colleagues care more about applications in scientific research. "This is a new dimension to how you can image objects," he said. "It tells you something about how they respond physically to pressure, but instead of poking and prodding at them, all you need is to play sound at them."

The Economics of the Gaza Situation: A Crucial Element in the Conflict and the Resolution

By Eran Yashiv

Source: http://www.inss.org.il/index.aspx?id=4538&articleid=7459



Even in changing regional circumstances, Hamas has consistently demonstrated resolute persistence in its struggle against Israel. The most recent round of fighting between Israel and Hamas, which erupted following the abduction and murder of the three teenagers; IDF actions in Operation Brother's Keeper, including the arrest of some of those released in the Shalit deal; and the revenge murder of the Arab youth occurred in an already tense environment. At the same time, the economics of the Gaza Strip has been a critical element in the events of the past month, and therefore, it is likewise a crucial piece of any lasting resolution.

The Economic Situation in Gaza on the Eve of the

Campaign

The Gaza population numbers 1.76 million people, with some 4,800 people per square kilometer, the third highest population density in the world. The infrastructures in Gaza are in poor condition and thus even in normal times there are rampant problems, particularly with electricity, water, and sewage systems. Power outages of 7-8 hours, for example, are a regular occurrence. In addition, unemployment is high: approximately 41 percent of those 15 or over were unemployed in the first quarter of 2014, as opposed to 26 percent in the West Bank. Among young people in the 15 to 29 age bracket, only 39 percent are in the work force. Of these, 32 percent are employed, 10 percent are underemployed, and 58 percent are unemployed. The corresponding figures for the West Bank are 42 percent participation, with 63 percent of these employed, 9 percent underemployed, and 29 percent unemployed.

Under these conditions, there is no possibility of production on a significant scale. According to World Bank statistics, the per capita GDP in Gaza is some $1,500-1,600 a year, versus some $3,100-3,200 in the West Bank. On a worldwide scale, Gaza ranks 174 out of 223 countries. Israel, which is ranked 32 on this scale, has a GDP of some $36,000 per capita (all of these figures are at market prices).

The poverty statistics follow from the above: The incidence of poverty is 39 percent (as compared to 18 percent in the West Bank), and the poverty line is 2,293 shekels per month for a five-person household. The incidence of acute poverty is 21 percent (compared to 8 percent in the West Bank), with the poverty line 1,832 shekels a month. Clearly with the per capita income of 400 shekels a month (about $4 a day), the standard of living is generally very low.

The Economic Situation as Motivation for War

Often economic hardship pushes nations toward military conflict or other aggression. In Gaza, the already grave economic situation deteriorated recently following the change in government in Egypt, the new government's regulations on border crossings and operations against the tunnels (which have been a "natural" response to the state of economic isolation) and stricter restrictions imposed by Israel. Indeed, Gaza is subject to a serious regime of economic sanctions imposed by Egypt and Israel. Moreover, there has been a decline in financial support for Hamas from Iran and Syria, and this has made it difficult for the government in Gaza to pay public sector salaries.

Hamas demands that a ceasefire is conditioned on lifting the siege of Gaza - demands also sounded in the negotiations with Fatah on the reconciliation government - must be seen in light of the economic plight in Gaza. It is possible that Israeli measures that intensified the deterioration of the economic situation and the lack of proactive solutions are policy errors.

The Role of Demography

The population in Gaza is young: the median age is seventeen, and three-fourths of the population is under 29. Most of the population has experienced Gaza solely as an economic backwater and a place of conflict with Israel. On the eve of the first intifada, which erupted nearly 27 years ago, more than 50 percent of the men in Gaza who were employed worked in Israel; this was an important source of income for the Gazan economy. The several bloody conflicts since then - the second intifada, Operation Cast Lead, and Operation Pillar of Defense, as well as the legacy of the Second Lebanon War - undermine efforts to lower the intensity of the conflict and achieve peace, given the cumulative impression these events have made on the young population.

Proposals for a Viable Solution

Any viable, long term solution necessarily involves a significant improvement in the economic situation. If Gazans have something to lose, their willingness to engage in conflict will be greatly diminished. Economic prosperity may well also decrease the power of Hamas and other Islamic movements.

Gaza has economic possibilities: development of tourism along the coast, development of services (including entry into hi tech, like Israeli Arabs in the north), and production of natural gas (since a significant maritime gas field was discovered in 1999). In the short and medium term, large

investments and employment of workers can be directed to developing physical infrastructures and public services.

However, a fundamental change in the economic situation means a real improvement, not just the siege lifted and some border crossings opened. Small steps will not achieve the real objective and in the long run will make matters worse. New international mechanisms, not under Hamas or Israel auspices, must be established to implement the change. These mechanisms require agreement by a number of states and international bodies to mobilize seriously for the task. This means establishing dedicated agencies with manpower and professional know-how. If a framework is not spelled out concretely, any measures will dissolve and the necessary change will not take place.

To this end, the following elements are required:

***International intervention*:** The parties generally active in the region cannot set the tone. Only an international framework that will ensure quiet and provide the necessary expertise will make possible the fundamental change required.

Infrastructure construction and restoration: The ruins of July-August 2014 should be addressed as well as the restoration and construction of infrastructures. An international agency, such as the World Bank, can set up a task force that will review the situation and set priorities over time. Within three years after work is begun, Gaza can be expected to be in reasonable shape in terms of economic infrastructures, and within 6-8 years, in good shape. This can be done, inter alia, by employing local unemployed workers. It is very important for this mechanism to be under international control, to make use of outside experts, and to publish progress reports clearly and transparently. This will promote the change in mindset that is necessary for economic advancement in the Gaza Strip. Beyond the cost of reconstructing houses and buildings that were destroyed, an investment in infrastructures of $800 million-$1 billion is needed in each of the next three years, as well as an investment of some half a billion dollars per year for 3-5 years thereafter. A positive step would be to rebuild destroyed houses and buildings so that they are of a higher standard than they were prior to their destruction. Such an action could lead to a great change in the support of the population for economic development.

Funding to advance Gaza's economy will come from Arab states and from wealthy Western countries. It is important to have a variety of donor countries in order to diversify the risks of funding. Initially, this can be done by means of an emergency fund managed by the World Bank. In the medium and long term, a specific bank can be established for the development of Gaza using the format for such institutions around the world, like those established in Eastern Europe in the 1990s after the fall of the Soviet Union.

***Oversight of inputs*:** A key issue in Israeli policy is the fear that material reaching Gaza will be exploited for military purposes. This fear was realized, even during the Israeli siege, when building materials were used to produce dozens of terror tunnels. This issue, however, is resolvable. The World Bank and other institutions have not infrequently discovered that aid reaches corrupt rulers or interest groups rather than its intended recipients. As a result, mechanisms have been developed for transferring economic aid, generally in the form of direct transfer to recipients, with receipt of the aid made conditional on the stages of progress in the project. Regarding Gaza as well, such methods can be used through moderate Arab officials and international agencies.

***Security*:** These measures cannot be implemented if there is continued violence. An international police force can be of great assistance in the early years, particularly if it cooperates with the mechanisms mentioned above, for example, with the World Bank's task force.

Actions by Palestinian Prime Minister Fayyad in the West Bank between 2007 and 2013 are proof that there can be significant economic progress when professionals lead the processes. The idea that economic advancement prevents war is rooted in Europe and was successfully applied in the second half of the twentieth century after two world wars in the first half of the century. The converse is also true: economic hardship often leads to conflict and to bloodshed.

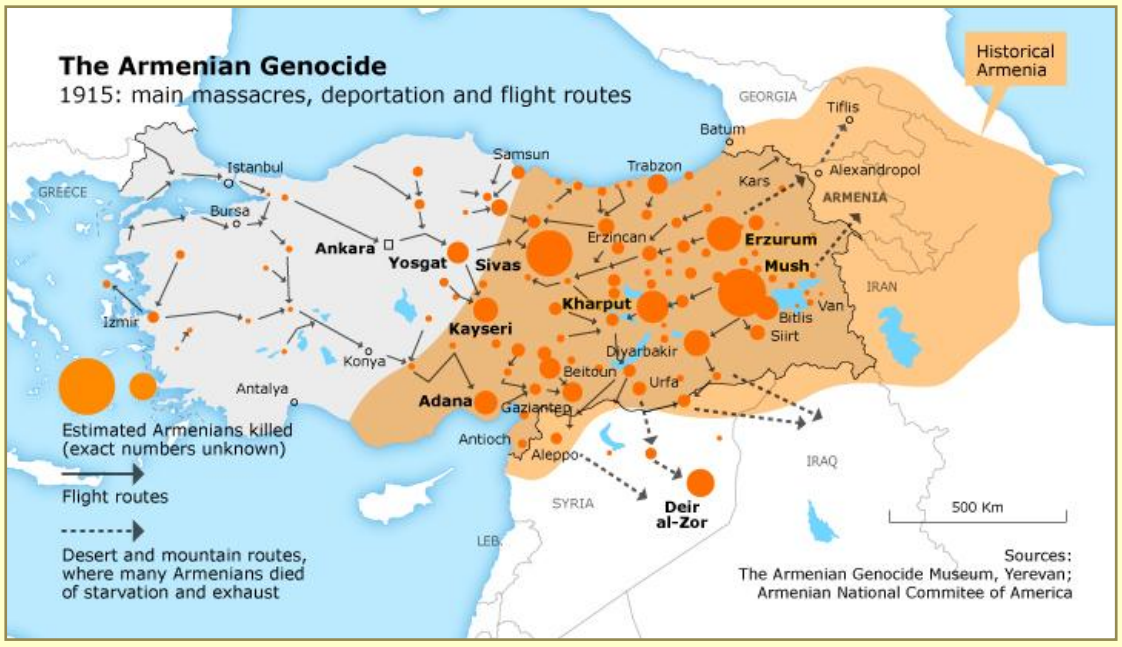
***Eran Yashiv**, a faculty member of the Eitan Berglas School of Economics at Tel Aviv University, joined INSS in March 2014 to launch a new program in economics and national security. He is a macroeconomist, mostly interested in issues relating to the labor market. His research spans a number of themes, including search and matching in the labor market (which was the major topic of his work in recent years), the labor market and financial markets, immigration issues and exchange rate economics. In 2012 and 2013, Prof. Yashiv was Chair of the Public Policy Department at Tel Aviv University. In 2013 he founded the Center for Regulation Policy at Tel Aviv University and was its first Director. For the past decade Prof. Yashiv has been a research fellow at the Center for Economic Policy Research (CEPR), at the Centre for Research and Analysis of Migration (CReAM) in University College, London and at IZA, Bonn. In recent years, he has been a consultant to the Bank of England and to the Bank of Israel on issues regarding labor markets. These were projects involving both academic, empirical work and policy prescriptions. Prof. Yashiv is involved in other policy-related activity: he is Academic Director of the Sapir Forum for Economic Policy, was the Head of the Economics program at the Taub Center, was the head of the Macroeconomics team at the 17th annual Caesarea conference (2009), and is a consultant to the Ministry of the Economy. He is also the Chair of the steering committee of the Vacancies Survey of the Central Bureau of Statistics. In this context of Israeli economic policy issues he has published numerous op ed pieces in Haaretz, The Marker, and Globes.*

A discourse of denial: memories of the Armenian genocide

By Sossie Kasbarian

Source: https://www.opendemocracy.net/sossie-kasbarian/discourse-of-denial-memories-of-armenian-genocide

people like me devote time and energy to an

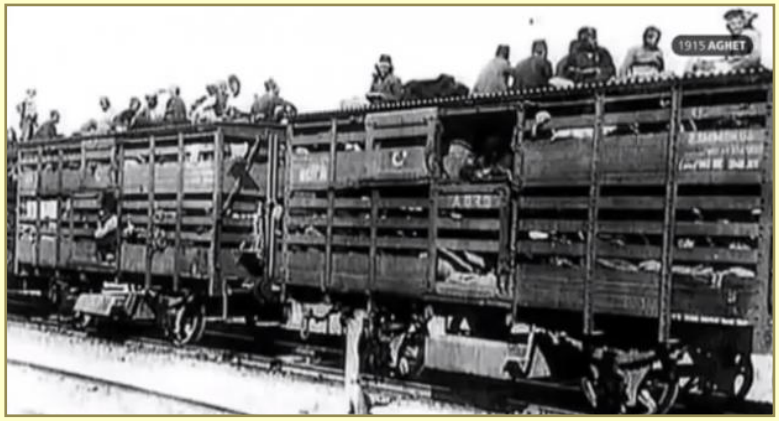


The inheritor Turkish state continues to deny the genocide of the Ottoman Armenian population in 1915. This active denialism has been stepped up in the run-up to the centenary, taking on more sophisticated strategies termed 'denial-light' by G.M. Goshgarian. As the centennial approaches, friends and colleagues seem surprised that

issue that they consider at best, tangential. There are far more zeitgeist topics to work on, especially in the pressured world of academia where your career advancement is increasingly based on 'impact' on society and policy-makers, though no one seems entirely

clear on what this is and how it can be gauged. What is obvious though is that the 100-year-old genocide of the Armenians of the Ottoman Empire is unlikely to be a subject that many deem as being of great relevance. And yet, over the years, it is this genocide and what it symbolises, that I keep returning to in my own research and politics. I am more convinced than ever that the Armenian Genocide, its denial and recognition, represent issues that are of vital importance in the study, research, teaching and practice of politics today.

Last month, Jo Laycock and I convened a workshop in the emerging field of Armenian-



Turkish Studies at Sheffield Hallam University. This new space was opened up in the academy by the pioneering Workshop of Armenian and Turkish Studies (WATS), established in 2000 at the University of Michigan in Ann Arbor by Fatma Müge Göçek, Ron Suny and Gerard Libaridian. This worked in tandem with the increasing number of scholars working on the Armenian genocide who had no hesitancy in calling it just that, with all the political and social repercussions that it brought.

There have been ground-breaking projects on the shared past of Armenians and Turks in recent years, and key to wider political developments has been the emergence of Turkish academics engaging with these issues in a critical and decisive manner. In late 2008 an 'apology campaign' mounted by four Turkish intellectuals circulated widely, gathering over 30,000 signatures of Turks and Kurds 'apologising' for the events of 1915. The works of novelists like Nobel laureate Orhan Pamuk and Elif Shafak have also had widespread international impact. They, along with other intellectuals, have inevitably been chastened by the threats from the state: Article 301 of the Turkish penal code makes it a crime to "insult the Turkish nation". Turkey has the largest number of journalists in prison, and the 'Armenian issue' remains a highly controversial topic. In January 2007, the most prominent voice for Armenians in the Turkish public sphere and symbol of Armenian-Turkish reconciliation, Hrant Dink, was murdered by nationalists, exposing a murky underworld and a 'deep state'.

Selective Memory

Growing up in the multicultural world of the Arab Gulf, I remember on many occasions wishing that I had a 'clear cut' answer to fill in the space in the 'nationality' column in my school diary. My friends were Indian, or British, Egyptian, Bahraini, Sri Lankan and so on. It seemed to me that everyone was sure of what they were and 'going home' every summer was an unproblematic statement. My stock answer of "Armenian Cypriot" was the official line, though even to my young ears this sounded both hollow and weighty. Being Armenian felt like a burden which set us aside from our friends. This was epitomised in my parents' diktat of "speak Armenian" whenever they heard my brothers and I conversing in English (it remains our natural language of communication).

Growing up outside an Armenian community also meant that every time we met Armenians anywhere, or when we returned to Cyprus where there is a vibrant Armenian community, we were aware of our failings, of not being Armenian enough. Being a 'good Armenian' meant knowing the language, culture and history, being embedded in a strong extended family, and active in Armenian community life. My dad's rows of Armenian history and literature texts (nearly all in English, reflecting his schooling in colonial Cyprus) which lined our bookshelves, and the newspapers and journals he subscribed to (mostly from the US) seemed an attempt to

document something that had been irrevocably lost.

The experience of being 'third culture kids', with an acute sense of the liminality or hybridity of identity, is of course a common one. What distinguished us from the other expatriate or mixed background kids in the 1980s was that there was no collective narrative in the public sphere to have recourse to. Few had even heard of Armenians or Armenia, which was Soviet until 1991, and foreign to us Armenians from the Ottoman, as opposed to the Russian, Empire. Our identities seemed quaint and somehow suspect, even to us. We did not fit into the nation-state model of the world; diaspora was a concept and term that had yet to be rejuvenated. We could barely articulate our own story with any knowledge or conviction, let alone present it to others. Growing up without an Armenian diasporic community meant there was no collective narrative, no accepted version of events like a Holocaust, no clear homeland or home. And alongside all these absences there was the looming presence of the Turkish state, denying us our collective memories and narratives, the platforms from which to express them and to have them heard.

At the Sheffield workshop, I realised that my childhood experience of growing up in the pre-internet age and lacking a master-narrative to counter the denialist stronghold in the public realm was shared by many of my contemporaries. Being Armenian in the diaspora was a 'fuzzy' identity whose tenets and pillars were unclear, distant or simply too foreign to relate to. The nationalist discourse espoused by Armenian diasporan political projects, however worthy, felt too formulaic, too forced (and too masculine) to relate to.

Throughout my childhood, my paternal grandmother and maternal great-grandmother shared their stories of the old country. But these stories were told sparingly, as they were invariably accompanied by great sorrow, which often overcame the sense of duty about the act of recounting. In the telling, these women were transformed into the little girls they were when they witnessed these horrors. In her final days, my paternal grandmother was more focused on stories of the shadowy family members whose lives had been cut tragically short. We particularly liked the figure of her gregarious uncle Hagop who had a flowing ginger beard, and whose booming singing would herald his arrival. My youngest brother has a touch of red in his facial hair, and so this spirited ancestor is remembered every time my brother stops shaving. Hagop, who must have been in his early twenties when he was killed, so full of vigour for a life unlived, a life that we can only imagine for him.

My grandmothers' stories were very much edited, full of gaps and holes which I rarely felt able to probe, however curious I was about details. It would be too cruel to prolong the revisiting of these tales. Editing is a skill that most of us acquire to deal with what life throws at us. My father only recently told me that his father continued for years to pay fixers in the port city of Kyrenia for any news of his relatives from whom he had been separated for decades. Every now and again there would be an alleged lead, which would mean more money shelled out and more hopeful trips to Kyrenia (with my father as a small boy in tow). My heart breaks for this man who I never met, whose cycles of hope and despair prolonged a pain that was never fully articulated or acknowledged.

Amidst the cloudy knowledge we picked up as children, it was our survivor grandmothers that made the past tangible. The grandmother as a transmitter of contested memories can act as a gatekeeper of the lived past and a connection to it. Human rights lawyer Fethiye Çetin's *My Grandmother* has been nothing short of revolutionary in its rippling impact in Turkey and beyond. Çetin's memoir deals with her grandmother's deathbed confession that she had been born Armenian and survived the genocide by being taken in by a Turkish family, keeping her secret her whole life. The powerful impact of this modest book lies in its poignant human story. Columnist Tuba Akyol stated: "stories can do what large numbers or concepts cannot do…Concepts are cold, stories can touch you inside". Ayşe Gül Altinay has written of how the book successfully uses "Arendtian storytelling to open up a creative space for historical critique and reconciliation".

The need to articulate one's story, where one came from, is essential to the dignity of the human being. Gayatri Spivak, when asking "Can the Subaltern speak?", argues

that a narrative of identity is a necessary condition for agency and subjectivity. Hannah Arendt says that the need to hear one's story from others is key to constructions of identity and also to social relations. Michel Foucault and Edward Said have brilliantly deconstructed epistemological projects, revealing the power structures and agendas they reflect and perpetuate. By denying the genocide that killed our ancestors and dispersed the remnants all over the globe, the Turkish state continues its genocide of Armenians, negating their right to have a clear and undisputed past.

A contested past means the present is only half known and owned, the future uncertain. Being able to write, read and tell our stories and to have them acknowledged and understood by others restores wholeness to ourselves and reinforces our shared humanity. Postcolonial studies was all about retrieving, reclaiming and re-appropriating histories and identities from below, which had not been written into state narratives: the lives of women, the oppressed, minorities of all descriptions, in short, those who have been excluded from master-narratives. My father, when browsing in the history section of a bookshop, would flip to the index of books he was interested in to check whether there was any entry for 'Armenians'. He was seeing whether for this author, we were worth a citation, even as a footnote in history. I did not recognise this for the political act it was then, but I sometimes find myself doing the same thing now.

All nations are built on forgetting and remembering selectively. In the Turkish case, the denial of the realities of the Ottoman past are at the foundation of the nationalist state and are constantly reproduced in the hegemonic narrative. Historically the co-existence of different narratives has not been tolerated, and even now (with the democratic opening since 2000) they are interpreted as developments that need to be suppressed, monitored and controlled. Despite this, recent oral history projects have unearthed an emerging space for counter-memories and counter-narratives. This has led to a proliferation of exciting projects in the sphere of art and culture, but also projects with a more overt political slant, which have extended to transnational civil society, despite the lack of change in high politics.

The 'decentring of the state' in the past eight years has meant that there are multiple engaged actors in Turkish civil society, some of which have been at the vanguard of challenging state discourse and leading critical initiatives on Armenian-Turkish relations. Important as these developments are, they are still confined to the tiny minority and rarely permeate beyond a self-selecting group of intellectuals, activists, artists, human rights and civil society actors. Some might say, as Chris Sisserian does, that Turkish civil society has reached "a glass ceiling of understanding" when it comes to Armenian matters; that we are preaching to the choir and there is an impenetrable boundary with the rest of the populace.

But what is happening in Turkey today goes beyond the proliferation of counter-narratives and counter-memories circulating and undermining the denialist discourse. In the last few years, there have been a number of Armenian diasporans visiting Turkey, as tourists, as pilgrims, and as detectives trying to piece together their past lives. Ani King-Underwood's powerful documentaries for Al Jazeera demonstrate the need, in her words, to "concretise memories". For her mother and aunt, the journey to find the house their mother had forcibly left behind was an essential experience which restored their own identities and confirmed that the stories they had grown up with were actually true. Finding their family home which had taken on a mythical quality in their mother's narratives, made those lives, and the past, real. The fuzzy qualities of being an Armenian originating from these lands is sharpened when there is physical evidence, in the face of denialism.

This desire for the physical 'proof' of past Armenian lives and culture in the Ottoman lands explains the recent phenomenon of the restoration of Armenian churches in Anatolia, financially backed mostly by North American diasporans. At the heart of this project (and others like it) seems the need to validate (and consecrate) the past co-existence of Armenians alongside Turks, Kurds, Greeks and others in Anatolian lands. One of the most notable of the projects has been the recent restoration of the sixteenth-century Armenian Apostolic Cathedral St. Giragos in

Diyarbakır, the biggest Armenian church in the Middle East with a capacity of 3000. It is important to recognise that in the wider Armenian-Turkish terrain, the struggle for negotiating co-existence is premised upon the perceived need to document past co-existence, and the past lives of Armenians in these, their historic homelands. The fact that these past

inhabitants were forcefully expelled or annihilated makes this is an extremely charged and complex mission. By renovating the churches, Armenian diasporans, together with their Kurdish and Turkish colleagues and associates, are physically documenting a history that official narratives challenge.

The Armenian perspective

For many of us working in these fields, there is the danger for complacency to set in. The tide has turned and the British academy feels like a very different place than it did 15 years ago thanks to the pioneers who have changed the discourse and its framing. Then, references to the 'so-called genocide' were the norm and anything Armenian was presented in the denialist framework, and thereby delegitimised and belittled. Many western diasporans have close Turkish friends and colleagues, something unimaginable even ten years ago. Our personal and political lives have been enriched and deeply blessed by these relationships. In a way, these friendships and associations hark back to the pre-genocide days, to our grandmothers' villages where Armenians and Turks (and others) were friends and neighbours, and where many Turkish families sought to save their Armenian neighbours from the savagery that was to come. And yet, beyond this small safe space that we have actively created and claimed through our friendships and activism, there is still much work to be done. I was reminded of this a few weeks ago.

A colleague told me of her English friend, a postgraduate student who had gone to Istanbul, staying at Airbandb. He had got on tremendously well with his young male hosts and their friends, who shared his left-wing politics and had taken him on a tour of Gezi park. One night, the discussion in the flat turned to 'the Armenian issue'. A huge fight ensued and the young man was asked to leave the next morning. He was shocked that his liberal, progressive and charming hosts were transformed beyond recognition, to the extent of kicking him out of the accommodation. This story while poignant in itself, is indicative of a wider reality: that Turkey's 'Armenian Opening' has been patchy, that there are chasms and dark recesses that are impossible to discuss in mainstream

company; that the protestors at Gezi Park demanding democratic freedoms are in many cases profoundly intolerant of counter-narratives and threats to the integrity of their national story.

In the same week, at a conference in Europe, I met a professor at one of our leading universities, who works on Turkey. Within minutes I was astonished to encounter a version of the 'denialist-light' argument, framed around the 'it was a war, and there were deaths on both sides' discourse. My surprise was palpable; it had been a long time since I had heard that position articulated, at least to my face. I tried to engage him in a discussion but it was clear that he had taken a position many years ago, and that it had served him well. He was not interested in hearing 'the Armenian perspective' as he called it.

The challenge here is that 'the Armenian perspective' is a moral stance, a political position, a counter-hegemonic narrative which represents the experience of the dispossessed and the marginalised. This goes well beyond the Armenian genocide and its recognition. It challenges questions of what we teach, what we write, how we research and what we believe. If the voices from below are not acknowledged and our own part in their silencing unexposed, then we are complicit in this project of denialism. That is why the acknowledgement of the Armenian genocide is a tiny cog in our commitment to an emancipatory politics which attempts to redress the balance between the powerful and the weak and rewrite pre-ordained political scripts and identities.

My thanks to my colleagues and friends who participated in the workshop of 9 June 2014, especially my co-convenor Jo Laycock. We are also grateful to Sheffield Hallam University's History Department which funded and hosted the workshop.

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Guide to Professional 3-D Printers

Source: http://www.sculpteo.com/blog/2014/07/22/list-of-professional-3d-printers/

World Ignores Christian Exodus from Islamic World

By Raymond Ibrahim

Source: http://www.meforum.org/4770/world-ignores-christian-exodus-from-islamic-world

While the world fixates on the conflict between Israel and Hamas—and while most mainstream media demonize Israel for trying to survive amid a sea of Arab-Islamic hostility—similar or worse tragedies continue to go virtually ignored.

One of the most ancient Christian communities in the world, that of Iraq—which already had been decimated over the last decade, by Islamic forces unleashed after the ousting of Saddam Hussein—has now been wiped out entirely by the new "caliphate," the so-called Islamic State, formerly known by the acronym "ISIS."

As Reuters reported:

> *Islamist insurgents have issued an ultimatum to northern Iraq's dwindling Christian population to either convert to Islam, pay a religious levy or face death, according to a statement distributed in the militant-controlled city of Mosul….*
>
> *It said Christians who wanted to remain in the "caliphate" that the Islamic State declared this month in parts of Iraq and Syria must agree to abide by terms of a "dhimma" contract—a historic practice under which non-Muslims were protected in Muslim lands in return for a special levy known as "jizya."*
>
> *"We offer them three choices: Islam; the dhimma contract—involving payment of jizya; if they refuse this they will have nothing but the sword," the announcement said.*

The amount of *jizya*-money demanded was $450 a month, an exorbitant sum for Iraq.

Hours after the demand for jizya was made, Islamists began painting the letter "n" on Christian homes in Mosul—in Arabic, Christians are known as "Nasara," or "Nazarenes"—signaling them out for the slaughter to come.

Most Christians have since fled. A one-minute video in Arabic of their exodus appears here—women and children weeping as they flee their homes—a video that will not be shown by any Western mainstream media outlet, busy as they are depicting instead nonstop images of Palestinian women and children.

The Syrian Orthodox bishop of Mosul said that what is happening to the Christians of Mosul is nothing less than "genocide… not to mention the slaughters and rapes not being reported… Forcing more than a thousand Christian families out of Mosul, and turning Christian churches into Muslim mosques, is equivalent to genocide." Of course, the word genocide means to kill or make extinct a people.

Others were not as lucky to flee. According to Iraqi human rights activist Hena Edward, a great many older and disabled Iraqis, unable to pay the jizya or join the exodus, have opted to convert to Islam.

Meanwhile, the jihadis continue destroying churches and other ancient Christian holy sites in the name of their religion, and murdering any Christians they can find. Among other acts, they torched an 1800 year old church in Mosul, stormed a fourth century monastery—formerly one of Iraq's best known Christian landmarks—and expelling its resident monks.

Most recently, in Syrian regions under the Islamic State's control, eight Christians were reportedly crucified.

The Islamic State's call for Christians to pay *jizya* is not simply about money. It is about subjugation. Most Western media reporting on this recent call for *jizya* have failed to explain the accompanying *dhimma* contract Christians must also abide by. According to the Islamic State, "We offer them [Christians] three choices: Islam; *the dhimma contract*—involving payment of jizya; if they refuse this they will have nothing but the sword."

The "dhimma contract" is a reference to the Conditions of

Omar, an Islamic text attributed to the caliph of the same name that forces Christians to live according to third class citizen status.

In fact, several months back, when the Islamic State was still called "ISIS," it applied the Conditions of Omar on the Christian minorities of Raqqa, Syria. The Islamic group had issued a directive

> *citing the Islamic concept of "dhimma", [which] requires Christians in the city to pay tax of around half an ounce (14g) of pure gold in exchange for their safety. It says Christians must not make renovations to churches, display crosses or other religious symbols outside churches, ring church bells or pray in public. Christians must not carry arms, and must follow other rules imposed by ISIS... "If they reject, they are subject to being legitimate targets, and nothing will remain between them and ISIS other than the sword," the statement said [emphasis added].*

The persecution and exodus of Christians is hardly limited to Iraq. In 2011, the U.S. Commission on International Religious Freedom noted: "The flight of Christians out of the region is unprecedented and it's increasing year by year." In our lifetime alone "Christians might disappear altogether from Iraq, Afghanistan, and Egypt," all Muslim majority nations.

Under Saddam Hussein, and before the 2003 U.S. "liberation" of Iraq, more than a million Christians lived in Iraq; Mosul had some 60,000 Christians. Today there are reportedly none thanks to the new Muslim "caliphate."

In Egypt, some 100,000 Christian Copts fled their homeland soon after the "Arab Spring." But even before that, the Coptic Orthodox Church lamented the "repeated incidents of displacement of Copts from their homes, whether by force or threat. Displacements began in Ameriya [62 Christian families evicted], then they stretched to Dahshur [120 Christian families evicted], and today terror and threats have reached the hearts and souls of our Coptic children in Sinai."

In late 2012, it was reported that the last Christian in the city of Homs, Syria—which had a Christian population of some 80,000 before jihadis came—was murdered. An escaped teenage Syrian girl said: "We left because they were trying to kill us… because we were Christians…. Those who were our neighbors turned against us. At the end, when we ran away, we went through balconies. We did not even dare go out on the street in front of our house."

In the African nation of Mali, after a 2012 Islamic coup, as many as 200,000 Christians fled. According to reports, "the church in Mali faces being eradicated," especially in the north "where rebels want to establish an independent Islamist state and drive Christians out… there have been house to house searches for Christians who might be in hiding, church and Christian property has been looted or destroyed, and people tortured into revealing any Christian relatives." At least one pastor was beheaded.

One can go on and on:

- In Ethiopia, after a Christian was accused of desecrating a Koran, thousands of Christians were forced to flee their homes when "Muslim extremists set fire to roughly 50 churches and dozens of Christian homes."
- In the Ivory Coast—where Christians have been crucified—Islamic rebels "massacred hundreds and displaced tens of thousands" of Christians.
- In Libya, Islamic rebels forced several Christian nun orders serving the sick and needy since 1921 to flee and killed several Coptic Christians, causing that community also to flee.
- In Muslim-majority northern Nigeria, where hardly a Sunday passes without a church bombing, Christians are fleeing by the thousands; one region has been emptied of 95% of its Christian population.
- In Pakistan, after a Christian child was falsely accused of desecrating a Koran and Muslims went on an anti-Christian rampage, an entire Christian village—men, women, and children—was forced to flee into the nearby woods, where they built a church, to permanently reside there.

Despite all these atrocities, exoduses, and even genocides, the mainstream media seems to

spend every available moment airing images of displaced Palestinians and demonizing Israel for trying to defend itself. Yet Israel does not kill Palestinians because of their religion or any other personal aspects. It does so in the context of being rocketed and trying to defend itself from terrorism.

On the other hand, all the crimes being committed by Muslims against Christians are simply motivated by religious hate, because the Christians are Christian.

It is to the mainstream media's great shame that those who slaughter, behead, crucify, and displace people for no other reason than because they are Christian, rarely if ever get media coverage, while a nation such as Israel, which kills only in the context of self-defense, and not out of religious bigotry, is constantly demonized.

***Raymond Ibrahim**, author of* Crucified Again: Exposing Islam's New War on Christians (Regnery, April, 2013) *is a Shillman Fellow at the David Horowitz Freedom Center and an Associate Fellow at the Middle East Forum.*

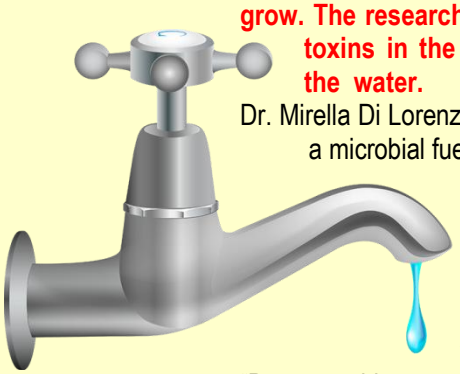
Electric bugs harnessed to detect water pollution

Source: http://www.homelandsecuritynewswire.com/dr20140812-electric-bugs-harnessed-to-detect-water-pollution

Scientists from the University of Bath's Department of Chemical Engineering have developed a low-cost device that could be used in developing countries to monitor the quality of drinking water in real time without costly lab equipment.

Current methods of detecting pollutants in water are costly, time-consuming and require specialist technical expertise. A University of Bath release reports that researchers from the University, in collaboration with Bristol Robotics Laboratory at the University of the West of England, have **created a low cost sensor using 3D printing technology** that can be used directly in rivers and lakes for continuous water quality monitoring.

The sensor contains bacteria that produce a small measurable electric current as they feed and grow. The researchers found that when the bacteria are disturbed by coming into contact with toxins in the water, the electric current drops, alerting to the presence of pollutants in the water.



Dr. Mirella Di Lorenzo, Lecturer in Chemical Engineering at Bath, explained: "When the bacteria feed in a microbial fuel cell, they convert chemical energy into electrical energy that we can measure.

"We found that when we injected a pollutant into the water there was an immediate drop in the electric current they produced. The drop was proportional to the amount of toxin present and the current is recovered once the toxin levels fell.

"This means we are able to monitor the level of pollutants in the water in real time without having to collect multiple samples and take them to a laboratory.

"Because this system uses live bacteria, it acts a bit like a canary in a mine, showing how these chemicals affect living organisms."

The effects of pollution on ecosystems are currently assessed using fish or daphnia, which is costly, takes time and is difficult to reproduce the results.

Other methods of detecting water pollutants involve mass spectrometry which is a very sensitive process but requires expensive specialist equipment and expertise, so is unsuitable for routine widespread water monitoring, and impossible in some of the developing countries that need this technology most.

Using the device, the researchers were able to detect tiny concentrations of cadmium, a pollutant used in the electronics industry, at quantities well below the accepted maximum safe levels.

— Read more in Mirella Di Lorenzo et al., "A small-scale air-cathode microbial fuel cell for on-line monitoring of water quality," Biosensors and Bioelectronics *62 (15 December 2014): 182-88*

The Biometric Future of Crossing Borders While Brown

By Rahel Aima (The Atlantic)
Source: http://www.nextgov.com/defense/2014/08/biometric-future-crossing-borders-while-brown/91097/?oref=nextgov_today_nl

When I used to enter the United States on a student visa, I would keep my papers tucked into my bag until I reached the counter. Most likely no one cared, but I still *felt* the weight of collective side-eye that comes with learning that anyone clutching a sheaf of documentation is going to take at least 10 minutes instead of the usual few. Despite my Indian passport and United Arab Emirates residency, I'm lucky to never have been denied a visa or detained for flying while brown. It's a privilege I suspect is rather gendered in a post-9/11 world.

In recent years, however, I have begun checking U.S. boarding cards for the telltale 'SSSS' which marks you as "selected for secondary security screening"—I love that it reads as a little hiss from the TSA. ("I remember when I first discovered that I was so bummed because I thought they were drawing swirly patterns for me," an Iranian-American friend told me. "Interesting follow up: I've never gotten the SSSS since I started wearing a fedora. No joke. A lot of them comment on the hat. And then assume I'm just a leisure Arab.")

Closer to home in the Arabian Gulf, I've seethed as I'm made to pay more for visas to neighboring countries like Bahrain than my travel companions with western passports, and as friends are offloaded from flights just because they're the wrong nationality. Any visions of spontaneous travel are quickly scuppered by the need to apply for a visa in advance, replete with hotel bookings and confirmed flights. And until I got a machine-readable passport a year ago, I was unable to use many self-check in kiosks, leaving me feeling all too analogue in an otherwise teched-up space.

The idea of obstacle-free travel, and being welcomed home upon arrival? I thought it was something that only happened in movies, until I started asking friends. I was surprised to find this sort of seamlessness seems to be fairly standard for U.S. citizens, especially if they're white. (A Chinese-American friend noted it happened to her only with Asian-American officials, which struck a particular chord.) Interacting with public officials anywhere, I expect to be treated just a little bit more kindly by people who look like me—a vague expectation of brown solidarity. This is never true in practice. Desi immigration officials at Heathrow are notorious for going out of their way to be especially rude to other South Asians, all the more rankling when you've watched them be perfectly civil to those right ahead of you.

As for my own countries? Indian immigration is a trying exercise in scowly grunty officiousness—eye contact seems verboten in their manual—and, frustratingly unlike most other countries, requires waiting hours in line with my compatriots as the foreigners breeze though. And to enter my adopted country of UAE, where I've lived since I was 2 years old, is to be reminded exactly where South Asians stand in its racial hierarchy. Sometimes I do my best to conduct the exchange in Arabic, to assert a sense of belonging, only to be reminded that it can never truly be my home.

In 2002, Dubai Airport introduced a new biometric electronic gate system called UAE Gate. Residents, Gulf nationals, and visitors who receive visas on arrival were all eligible for the program. It took just 15 minutes and $41 (now $55) to join, with offices all over the city as well as at the airport. Abu Dhabi followed suit in 2006, and the system was soon implemented all over the country. The way it works is pretty

simple: You scan a card to open a set of sliding translucent gates, and scan your fingerprints to open the second gate on the other side of the kiosk. They're not unlike the starting gates used in horse and dog racing, which feels rather fitting. As a child I dreamt of being a jockey, and thrilled in leaning forward during takeoff—hearing galloping hooves in the thrum of the engines before that delightful floaty weightlessness as the plane nosed its way upwards. Some stations require you to scan your boarding pass too, but you still get through immigration in under 30 seconds.

More importantly, in the age of convenience, you are spared having to interact with—or face derision from, depending on your nationality—a border official. At least that's how it's supposed to work. In theory.

* * *

I don't remember when I got an eGate card, though it was certainly magical to breeze through immigration, even if it meant you just transferred your waiting time to the baggage-claim area. I *do* remember when I started getting an "access denied" message in 2005, a fitting metaphor for both the UAE and international travel more broadly. At first I thought it was about my fingerprint scanning technique, and if I could just learn to do it right I'd be let through. The attendant official would call at me to try it again, maybe at another machine, before beckoning me over to the desk. As I backed my way out of the kiosk I'd perform what became a very familiar routine. My residence visa was in working order, and why was I getting the access denied message, I didn't understand?

As officials keyed in my details and clicked through their files, I would be told why, with the smiling flourish of a mystery solved on an otherwise monotonous day. Indian passports are identified by a letter followed by 7 numbers, but the eGate system only records the number. And denuded of that initial letter, my passport number matches that of someone on the UAE's ban list. Which means I have been permanently flagged as a result. Repeating this charade every time I entered or exited the country quickly got old, but it was still on the whole much faster than braving the teeming immigration hall, and so I continued. Over the years, I learned a little more about this person—my passport double—each time. And each time, details were reiterated—or sometimes contradicted—by several people.

He was an Indian man.

He was a criminal.

He had absconded.

He had overstayed his visa.

He had committed some kind of financial fraud.

He had issued a lot of bounced checks.

He had been deported and wasn't allowed back in.

All this had apparently happened just before the global financial crisis, and I imagined he had gotten out just in time and was busy gleefully hustling and swindling once again, perhaps back in Dubai under a new passport number. I never learned his name or very much else about him, but he made his presence felt every time I had to interface with the UAE government. Each new residence visa issued in Sharjah had to go to the capital of Abu Dhabi for security clearance, and it became so difficult to open a new bank account that I eventually abandoned the application.

Occasionally, I would be told that I could call UAE Gate's Abu Dhabi office the morning of any flight, at least three hours in advance, to get myself cleared. Upon doing this, the official would promise, my card would—surely, *definitely*—let me through. It seemed almost more trouble than it was worth, but after first hearing about this option, I tried it out the next few times I flew.

It worked zero times.

When I got that new machine-readable passport, I pranced to the UAE Gate office with renewed enthusiasm before being told that the card was linked to the visa in my old passport, and all I could do was to wait out the last year of my visa. It finally happened on a Hong Kong trip this May, and I entered and exited on my new card without any fanfare, almost disappointed after all these years when it finally worked.

And one summer during college I actually got that "welcome home" at JFK—from a grizzled old white man—shocking me into such a daze that I'm still not sure if it entirely happened.

Dubai Airport has recently overtaken Heathrow as the world's busiest for international travel, and authorities have announced that it will be upgrading to a new system using IOM, or Iris on the Move

technology. With it, identification and clearance will be essentially instantaneous. It's like an E-Zpass for humans—the passenger need only walk through it, without even having to pause to look into a camera. An interim "smarter" eGate was recently piloted in Dubai. It couples biometric passports (India doesn't issue these, of course) with a retinal scan and promises to halve the processing time down to 15 seconds. IOM is expected to be operational sometime in 2015, and the UAE Gate will soon be phased out. In spite of myself, I'll be sorry to see it go.

As for my passport doppelganger, I never felt anything more than mild irritation. Sometimes I wonder what really happened to him. He had been deported just before the global financial crisis, and perhaps he lost his job. I hope he landed on his feet. Perhaps I'll meet him one day in Dubai and never know it.

New device sniffs out billions in U.S. currency smuggled across the border

Source: http://www.homelandsecuritynewswire.com/dr20140813-new-device-sniffs-out-billions-in-u-s-currency-smuggled-across-the-border

Criminals are smuggling an estimated $30

billion in U.S. currency into Mexico each year from the United States, but help could be on the way for border guards, researchers reported. The answer to the problem: a portable device that identifies specific vapors given off by U.S. paper money.

The researchers presented the new research at the 248th National Meeting of the American Chemical Society (ACS). It is being held in San Francisco through Thursday.

In the past fiscal year, law enforcement officials say they uncovered more than $106 million in smuggled cash headed from the U.S. to Mexico. This was only a small portion of the billions that made it across the border undetected — hidden among belongings, in clothing, or elsewhere. The bulk of that currency is laundered drug money. Travelers crossing the U.S.-Mexico border are required to report cash or endorsed checks over $10,000. If they do not declare larger sums, the money that is found can be seized.

"We're developing a device that mimics the function of trained dogs 'sniffing' out concealed money, but without the drawbacks, such as expensive training, sophisticated operators, down time and communication limitations," says Suiqiong Li, Ph.D., a member of the research team.

"The system would extract gas samples from the traveler or from bags, vehicles and shipping containers. It would detect the trace currency emission signature even in the presence of car exhaust, perfumes, food and a range of temperatures, atmospheric pressures and relative humidity."

An ACS release quotes Li to say that the technique, known as the **Bulk Currency Detection System** (BCDS), should work effectively within the seconds or few minutes it takes for border inspections. It involves gas chromatography/mass spectrometry (GC/MS), a widely used analytical technique. Experts already use this method for analyzing vapors to detect drugs and explosives, as well as to investigate the causes of fires and identify unknown compounds. The current way to uncover smuggled money, however, depends on checks by guards or trained dogs, without the benefit of any devices, according to Li.

The BCDS is being designed to find the emissions signature of the currency despite the presence of strong background gases and contaminants. It would be an

automated, hidden-money screening system, using GC/MS plus solid-phase microextraction and a thermal desorption technique. BCDS would automatically extract, preconcentrate and analyze the gases, Li explains.

When developing the device, the researchers first had to figure out which gases money emits and how fast that happens. It turned out that the gases are a set of trace chemicals, including aldehydes, furans and organic acids.

"We have found that U.S. currency emits a wide range of volatile organic compounds that make up a possible 'fingerprint' that we can identify in less than a minute," explains Joseph Stetter, Ph.D., principal investigator for the study. He and Li are with KWJ Engineering, Inc. This is the first report of the feasibility of sampling emission rates with a practical, money-detecting device, he says. To capture the gases, which are specific to U.S. paper money, guards would pass a probe over clothing or into baggage. If the probe detects a high intensity of the gases, it will indicate that a large amount of money likely is present, he says.

The researchers say the device should lead to a significant improvement in detecting smuggled currency and have a strong economic impact for the United States. Stetter estimated that it would take from two to three years to develop the device for use by border guards.

Implant to protect police dogs from overheating

Source: http://www.gizmag.com/blueforce-dog-temperature-monitor/31377/

Police dogs serve many purposes for law enforcement agencies. Often times they are used for their superior sense of smell, but they are also used to apprehend suspects. As such, these animals face many risks. One, though, is not necessarily the first that comes to mind, and that is being left to overheat in police cruisers. **A company called Blueforce Development aims to fix this problem with a sensor that alerts police when a K-9's temperature reaches dangerous levels.**

According to the Pennsylvania K9 Assistance Foundation, an equal number of K-9's die in heat-related situations as gunshots when on duty. Blueforce Development believes that its K9 Life Safety Bundle can prevent these deaths from occurring.

The system includes a sensor that is surgically implanted in the dog that sends data on the animal's internal body temperature to a small receiver attached to the animal's protective gear. If the dog's temperature falls below or exceeds a value set by the dog's handler, the data is transmitted using any in-car Wi-Fi, 3G, 4G or LTE connection inside the squad car to Blueforce's cloud servers. From there, a notification is sent to the iOS or Android device of anyone subscribed via Blueforce's system to the dog in question. These notifications take the form of audible tones, vibrations, text messages, or emails.

Pricing information was not made available as of this writing, which isn't that surprising given that the system isn't being marketed at the general public, but rather towards law enforcement agencies. The

company did announce that the package will include five sensors that monitor temperature, humidity, and volatile organic compounds.

▶ **Blueforce:** http://blueforcedev.com/solutions/k9-platform/

High-tech collar aims to prevent dogs dying in hot cars

Source: http://www.gizmag.com/dog-caller-collar/23746/

A new high-tech collar aims to help prevent dogs dying in hot cars. The "Dog Caller" collar sends the owner an SMS if the dog's temperature exceeds a safe level. Developed by the Toronto Humane Society and ad-agency Rethink, the product is not intended as an excuse to leave your dog in the car, but rather as a back-up system just in case.

Developed as an "extra-curricular" project by Rethink (a company known more for its beer commercials), the product was first conceived by Aaron Starkman, a partner in the company. On a hot day last year he left his dog, Hefty in the car to run what he originally thought would be a one-minute errand. When he returned twenty minutes later the temperature of the car had soared, and the dog was suffering from terrible heat exhaustion. Fortunately Hefty survived, and it was this close call that prompted Starkman and his ad-agency to design The Dog Caller collar.

The collar is a simple fabric band with a small black box clipped to the front. Inside, a thermistor is used to constantly measure the dog's temperature, while a SIM card and coded chip allow the device to send an SMS if this temperature becomes too high (approximately 80° F or 26.7° C).

Both the Toronto Humane Society and Rethink stress that the collar is to be used only as a back-up, and not as an excuse for people to leave their dog in the car. Bottom line seems to be that people shouldn't, but inevitably will leave their dog in the car at times. "We never ever under any circumstance want anyone leaving a dog in a car," Starkman said—but "if the collar does end up saving a dog in a car, we'll obviously be thrilled in that result."

Currently in its prototype stage, the product is anticipated to be available to the public in early 2013. For those concerned about hanging an expensive piece of technology around their dog's neck, **the collar is expected to only cost about US$20.**

He could have been saved…

ok... × Police dog dies of heat stro... ×

o.uk/news/article-2344261/Police-dog-dies-heat-stroke-handler-forgets-patrol-car-parked-outside-home.html

Tragic police dog dies of heat stroke after handler forgets him in a patrol car parked outside his Georgia home

By DAILY MAIL REPORTER

PUBLISHED: 04:36 GMT, 19 June 2013 | **UPDATED:** 07:30 GMT, 19 June 2013

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A police dog named Spartacus died Monday after it was left in a hot car by its handler.

Now, the Woodstock, Georgia police officer who left the dog in the patrol car outside his home, has been placed on paid administrative leave.

The **Atlanta Journal Constitution** reports 3-year-old Spartacus, a Belgian Malinois, was found Monday night at his home in Pickens County.

A necropsy indicated the cause of death to be heat stroke.

Woodstock Police spokeswoman Brittany Duncan says the dog's handler is devastated by the loss.

More...

- Boy, 6, mauled to death by family pit bull when he was trying to climb on its back
- Too far you have taken this dog grooming: Hysterical pictures as owners dress their pets as

© woodstockga.gov

Nine years after the crash of Helios flight in an Athens' village

Flight 522 (HCY 522) of Cyprus Helios Airways was a Boeing 737-31S that crashed on August 14th, 2005 at 12:04 near Grammatiko village (East Attica – Athens). All passengers (115) and six crew

members were killed.

EDITOR'S COMMENT: I saw the flight minutes before the crash since my home is very close to the village mentioned. A very sad "mystery" incident still unsolved that could have been a real disaster if the "renegade" plane was crashed in Athens' downtown.

Woman with cocaine hidden in breast implants arrested at Madrid airport

Source: http://www.theguardian.com/world/2014/aug/15/woman-cocaine-breast-implants-arrested-madrid

A Venezuelan woman with 1.7kg of cocaine hidden in her breast implants has been arrested at Madrid airport after arriving on a flight from Colombia.
"During a check of passengers from a plane from Bogotá, the gestures and behaviour of a supposed tourist raised the suspicions of narcotics agents," police said on Friday.

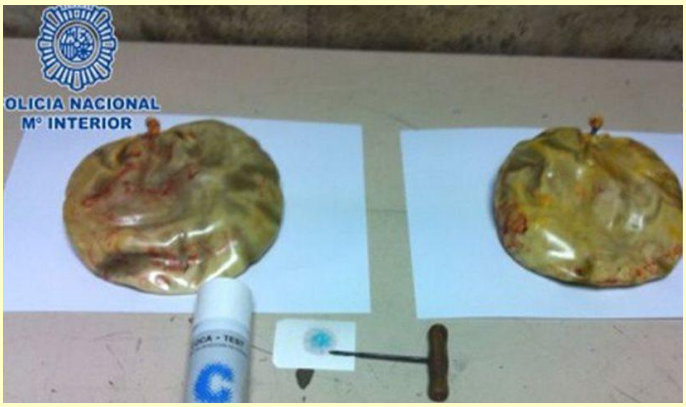
After a baggage search revealed nothing, female officers conducted a body search of the 43-year-old woman and discovered "certain irregularities and deformations in both breasts".

At that moment, the suspect started to act nervously and "confessed that she was carrying implants with cocaine inside", police said.

The woman was taken to a hospital where the implants were removed and found to contain 1.7kg (3.75lb) of the drug.

Although unusual, it is not the first time Spanish police have seen drug smugglers using breast implants to try to beat detection.

In December 2012, a Panamanian woman arriving in Barcelona from Bogotá was found with 1.4kg of cocaine in her fake breasts. Her recent insertion wounds were still bleeding under bandages.



Other techniques have included drugs hidden under wigs, mixed into a cast put on a leg, and shaped and hardened into crockery.

Spain has a special police unit that checks so-called hot flights from the main drug-trafficking countries.

So far this year, in Madrid airport alone, the squad has seized about 500kg of cocaine and 6kg of heroin, and made 189 arrests.

The War Photo No One Would Publish

Source: http://www.theatlantic.com/features/archive/2014/08/the-war-photo-no-one-would-publish/375762/

When Kenneth Jarecke photographed an Iraqi man burned alive, he thought it would change the way Americans saw the Gulf War. But the media wouldn't run the picture.

▶ **Read more at source's URL...**

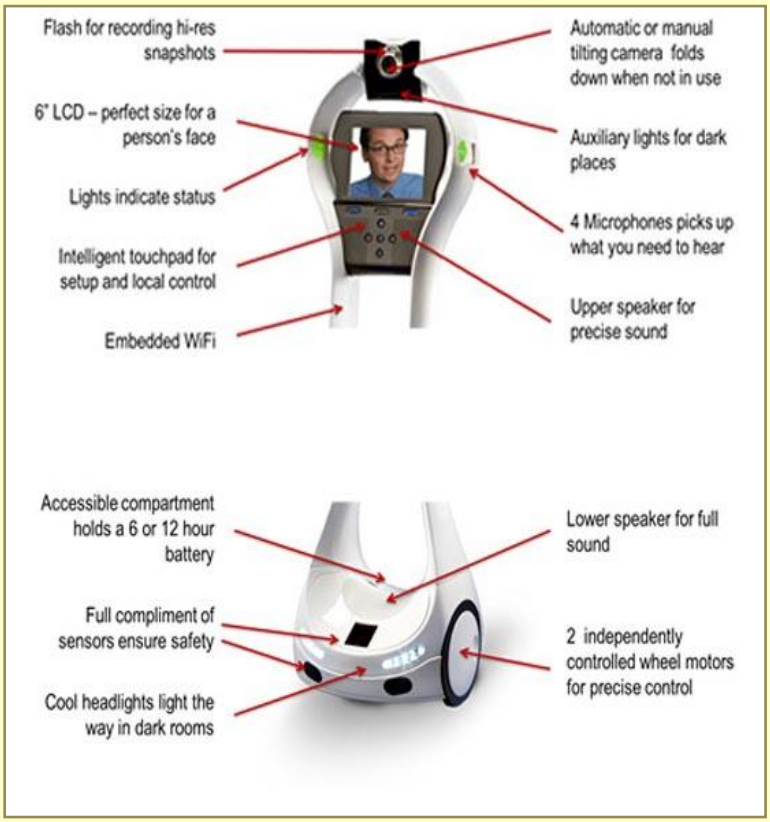
Healthcare robots bring far-away visitors closer

Source: http://www.thenational.ae/uae/health/healthcare-robots-bring-far-away-visitors-closer

VGo is a revolutionary new robot that can be found whizzing around the hallways of Amana Healthcare, a long-term care facility in Al Ain.

The healthcare provider is the first in the region to introduce the remote-control robot which replicates a person. "The idea is that you can consult with someone on the outside. We could theoretically consult someone in the United States or Germany," said Arlene Susanne Ryan, a quality co-ordinator at Amana, in Al Ain, which have partnered with VGo Communications, a US-based provider of telepresence robotics.

The robot works on Wi-Fi and has a high-resolution manoeuvrable camera. There are just two in the UAE; both at Amana health-care facilities in the UAE, said Ms Ryan, who believes this is the start of a new era for medicine in the country.



"Sometimes you are in the situation when we come across things unusual from time to time. That is just medicine. So we might end up needing to speak to an expert and say, 'Look doctor, we have this and we are not sure what it is. Can you help?'. Instead of taking patients unnecessarily out of the facility we are actually bringing doctors to them."

The hospital has already used **VGo, which works through a software application that is downloaded to an iPad or laptop, to link up with Wellington Hospital in London.** It allowed a patient who was interested in the Al Ain facility to take a virtual tour.

The robot, which cost about Dh40,000, also has a more emotive purpose.

"Family members can also log into this at home or abroad and can take the robot to a patient's room," said Nicola Costas, an occupational therapist. "They have a conversation with their relative where ever they are in the world."

Just a reminder…


Previous Blog home

The Parthenon marbles are the world's most beautiful art – and that's why we should give them back

These consummately beautiful sculptures demand a proper setting – and a trip to Athens has convinced me the Acropolis Museum is that place

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theguardian

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Posted by Jonathan Jones Monday 18 August 2014 13.32 BST

▶ **By the way: Since when a THIEVE'S name is given to STOLEN property of another nation???**

Israel arrested 93 Hamas men in West Bank over terror network targeting PA, Israel

Source: http://www.haaretz.com/news/diplomacy-defense/1.611175

The Shin Bet security service has interrogated 46 Hamas operatives in the West Bank over the past three months on suspicion of setting up a network of cells to commit attacks against Israel and to carry out a coup of the Palestinian Authority.

Altogether, 93 Hamas members have been arrested since May for alleged involvement in this network, but only 46 have been transferred to the Shin Bet for questioning.

As a result of the arrests and interrogations, the Shin Bet, police and Israel Defense Forces have seized some 600,000 shekels ($171,000); 24 rifles, mostly M-16s; six pistols; seven rocket launchers; and a large quantity of ammunition. Defense sources estimated the cost of the arms and ammunition at several million shekels.

The head of the network was **Riad Nasser**, 38, of Deir Kadis near Ramallah. Nasser did jail time in Israel in the past for his Hamas activities, then was rearrested in late 2013 and put under administrative detention. The Shin Bet began questioning him in May, and says that Nasser told his interrogators he was recruited to reestablish Hamas' military infrastructure in the West Bank back in 2010.

Nasser was recruited by **Saleh Arori**, who did 16 years in an IDF prison and was subsequently deported, the Shin Bet says. Aruri now lives in Turkey.

According to the Shin Bet, Nasser's assignment was to undermine the West Bank's stability and "even spark a third intifada." To this end, he set up Hamas cells in towns throughout the West Bank, and also in Jerusalem.

Many of the cell members were recruited by local Hamas leaders in these towns; these recruiters included several former Israeli prisoners. **An emphasis was put on recruiting people who had studied chemistry or engineering.**

The Shin Bet says the cells were also planning to topple the PA. Nevertheless, they don't seem to have progressed far toward that goal. Up to the time of their arrest, their efforts were focused mainly on acquiring arms and recruiting additional members, and the numbers of both they managed to obtain are minuscule compared to the thousands of men and thousands of rifles in the PA security services.

The network also had a branch in Jordan, headed by another former Israeli prisoner, Oudeh Zaharan, 54. The Shin Bet says Zaharan served as a liaison between the West Bank cells and Hamas officials overseas. The latter transferred hundreds of thousands of dollars to the West Bank cells for use in purchasing arms and safe houses; some of these houses were also meant to serve as rocket manufactories.

A senior Shin Bet official said the network was arrested before it could commit any attacks. He added that Khaled Meshal, the Qatar-based head of Hamas' political bureau, was aware of the effort to establish the cells, and said Israel had briefed both the PA and Jordan on the findings of the investigation.

Other key members of the network included Salah Barakat, a 35-year-old Israeli citizen and Jerusalem resident, and Dr. Majdi Mafarja, 32, who was recruited in Malaysia. Mafarja has a doctorate in computer science, specializing in encryption and cyber warfare.

EDITOR'S COMMENT: It is amazing how things change with time! Israelis arrested those planning to topple the PA! Of course they did that for their own reasons but this is "a first"!

Five-year-old girl 'banned from eating chicken sandwich by nursery staff because it wasn't "halal'

Source: http://www.dailymail.co.uk/news/article-2724720/Five-year-old-girl-banned-eating-chicken-sandwich-nursery-staff-wasn-t-halal.html

- Yasmin Jackson says her daughter Amari was 'starved' by the end of the day
- She claims the lunch was confiscated by nursery staff as it was not halal
- But nursery management deny the incident ever happened
- A Facebook post by Ms Jackson over the incident went viral
- The nursery has called police complaining of race and religious offences

Yasmin Jackson and her daughter Amari, who she claims was not allowed to eat her sandwich as the nursery has a halal meat-only policy. She is pictured with a letter from the council telling her to provide lunch

Police are now investigating possible race and religious offences against Kingsway Daycare Nursery (Mitham) after an online campaign surrounding the incident.

'Extremely important' ancient tomb discovered in Greece: Ornate burial chamber may contain remains of a senior official from the time of Alexander the Great

Source: http://www.dailymail.co.uk/sciencetech/article-2724067/Extremely-important-ancient-tomb-discovered-Greece-Ornate-burial-chamber-contain-remains-senior-official-time-Alexander-Great.html

- The tomb is situated in Amphipolis region of Serres in Greece
- Prime Minister Antonis Samaras described the find as 'extremely important'
- The tomb and its burial site is said to date back between 325 and 300 BC
- This means it could have been built during the reign of Alexander the Great
- Experts previously found ornate walls are arches leading to the tomb
- They believe it could hold the remains of a senior ancient official
- The tomb is expected to be opened in the next fortnight

▶ Read more in September's issue of CBRNE-Terrorism Newsletter.

We keep pledging to study the cause of riots like Ferguson's. And we keep ignoring the lessons

By Merlin Chowkwanyun

Source: http://www.washingtonpost.com/posteverything/wp/2014/08/18/we-keep-pledging-to-study-the-cause-of-riots-like-ferguson-and-we-keep-ignoring-the-lessons/

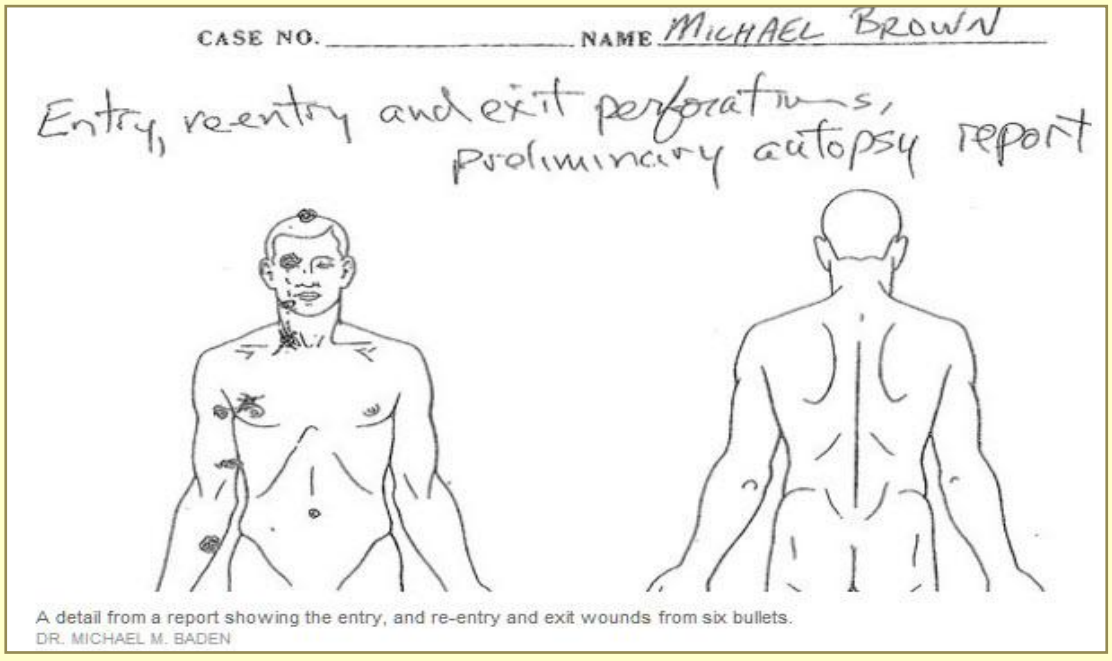
The riots in Ferguson, Mo., over the shooting of Michael Brown, arrive at a particularly ironic moment—almost 50 years after the Watts riots in the summer of 1965, also spurred by one man's encounter with law enforcement. That

uprising, along with other mass urban insurrections in the 1960s, prompted a raft of riot commissions to examine why these outbreaks had occurred. What's ironic is that they all came to the same conclusion: The riots were about far more than just the police.

Yet politicians ignored the important diagnoses and recommendations. If history is any guide, the Ferguson riots will teach us nothing. In urban affairs, it turns out, past is often just prologue.

* * *

Riot commissions followed unrest in New York, Philadelphia, Cleveland, Los Angeles, Detroit, Newark, and many others. In some ways, they were creatures of their time. Besides foregrounding police brutality, some alleged "cultural deficits" of the rioters and instigation by conspirators. (This was the Cold War, after all.) But they also hit on important, and obvious themes—the deep grievances afflicting African-Americans denied the fruits of the post-war economic boom and so-called "affluent society."

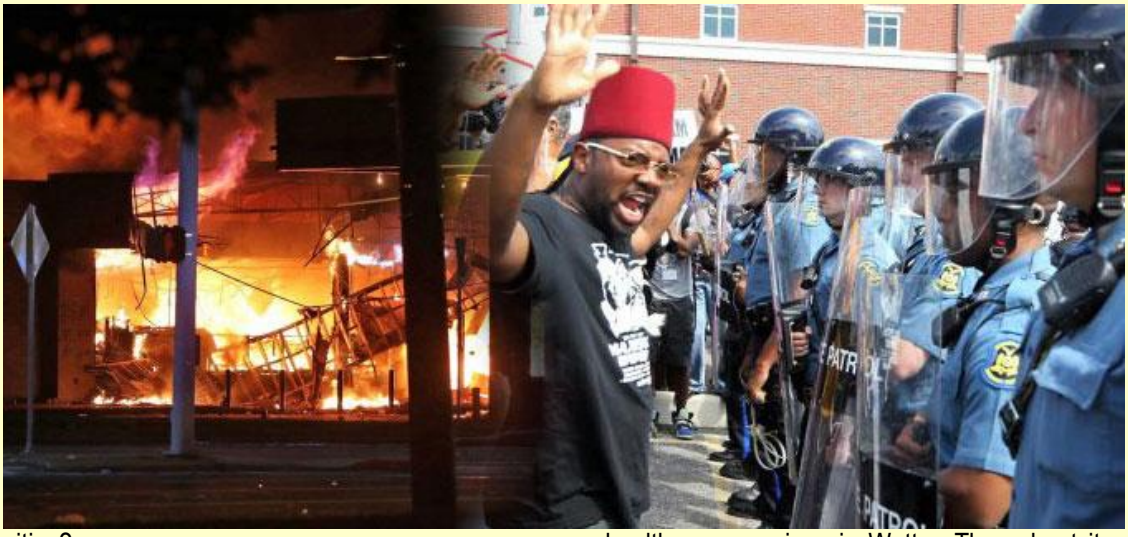


A detail from a report showing the entry, and re-entry and exit wounds from six bullets.
DR. MICHAEL M. BADEN

Commissions meticulously identified many dimensions of racial exclusion. One panel in Cleveland, where the Hough

neighborhood had erupted a year after Watts, listed "inadequate and sub-standard housing," "charging of exorbitant rents by absentee landlords," "non-enforcement of the housing code," "sub-standard educational facilities as a consequence of long neglect," "excessive food prices," and "denial of equal economicopportunities." The report on Watts had similarly highlighted chronic unemployment, education, and health care resources. It concluded with a searing call to action:

The road to the improvement of the condition of the disadvantaged Negro which lies through education and employment is hard and long, but there is no shorter route… Of what shall it avail our nation if we can place a man on the moon but cannot cure the sickness in our cities?



These regional reports culminated with the 1968 release of the Report of the National Advisory Commission on Civil Disorders. Commissioned by President Lyndon Johnson a year earlier, the Kerner Report, as it was known, discussed the same underlying causes as the previous studies. It called for "new initiatives and experiments that can change the system of failure and frustration that now dominates the ghetto" and "unprecedented levels of funding" for them. It made clear that police brutality was a final intolerable insult in a larger cycle of everyday deprivation and denial of basic needs and resources.

Shortly after the Kerner Report, the New York Times warned that "sloganeering, political promises, buckpassing and the proliferation of groups to study and restudy explosive problems will breed more frustration, more rebellion, more civil strife." Commissions around the nation (beyond just Watts) had now spewed thick, authoritative reports, and public officials pledged swift action. New York City Mayor John Lindsay, who served on the Kerner commission, remarked: "I hope that it won't be just another study, that it will lead to performance — and the key is performance." Civil rights activist Fred Shuttlesworth called the report "the first real hard-hitting statement by a body that will be listened to by the public."

But many public projects hatched in response to the 1960s riots were hampered from the start. One dramatic example was the Martin Luther King Jr. General Hospital, built in South Central Los Angeles as a response to lack of health care services in Watts. Throughout its existence, the hospital fought budgetary shortfalls that hampered its operation until, in 2007, it finally closed due to mounting quality-of-care and mismanagement scandals. Meanwhile, the programs and "unprecedented levels of funding" counseled in the 1968 Kerner Report for increasing jobs, educational quality, and affordable housing, never quite came to full fruition.

It made clear that police brutality was a final intolerable insult in a larger cycle of everyday deprivation and denial of basic needs and resources.

Those failures of follow-through help explain why so little changed. In Los Angeles, the brutal videotaped beating of Rodney King and the work of the

Independent Commission on the Los Angeles Police Department, chaired by Warren Christopher, showed how urban policing had resisted adaptation more than 25 years since Watts.

Like its antecedents, the 1992 riots in Los Angeles also grew out of frustration with broader material conditions. They occurred after two decades of slashed social spending,

economic stagnation, and fiscal austerity. When Los Angeles burned again, it did so amidst high levels of black unemployment and an urban development regime that some observers—most famously Mike Davis in his classic "City of Quartz"—argued had prioritized the needs of the city's affluent at the expense of the most marginalized.

* * *

What then, nearly 50 years after Watts, are we supposed to learn from Ferguson? The choice is a clear one, between concrete action and public policy on one hand, and endless commissions and "conversations on race" on the other. It's great that the Justice Department will investigate the Ferguson Police Department, an agency that is clearly out of control and incapable of policing itself. But if this results only in a document that sits on a shelf, its efforts will serve nobody but the politicians and civil servants who should really be held accountable for the Ferguson debacle. This was the fate of too many 1960s riot commission reports. Indeed, the recent conduct of law enforcement in Ferguson, the Bay Area, and New York City suggests that police departments are simply not learning from history.

Hedy Epstein – Age: 90!

Beyond renewing attention to the dangers of militarized and racist policing, Ferguson is a wake-up call for another reason. A majority-black suburb of St. Louis where nearly a quarter of the population lives in poverty, it reminds us of what happens when mounting racial inequality and economic deprivation are allowed to fester with few checks. The political debate today is far more constricted than it was in the era of Watts, when full employment and basic guaranteed income were still policy options in mainstream circles. It is time to widen those parameters of debate again.

If we instead choose to sit on our collective hands, we should not be surprised if Ferguson, like Watts, replays. Whatever one thinks of militant expressions of discontent, it is hard to deny just how predictable they are when they finally happen.

__Merlin Chowkwanyun__ is a Robert Wood Johnson Health & Society Scholar at the University of Wisconsin-Madison.

ISIS terrorists: We're here in Ferguson

Source: http://www.wnd.com/2014/08/isis-terrorists-were-here-in-ferguson/

A sign carried by a protester in Ferguson, Missouri, declaring the presence of the Islamic State, or ISIS, is an act of intimidation, warning Americans they should fear the Middle Eastern Islamic jihadist group even in their own homes, according to an expert.

Islam analyst Robert Spencer, whose Jihad Watch website website monitors Islamic jihad worldwide, said the sign, which says, "ISIS here," is "in line with supporters of the Islamic State taking photos of the Islamic State flag held in front of the White House and other landmarks."

"The objective is to 'strike terror into the hearts of the enemies of Allah' (Quran 8:60) and to emphasize the desire of Islamic State jihadis to strike within the U.S.," he said.

"The fact that they have supporters here in the U.S. who can hold the banner in Missouri and the sign at the White House shows that that is a very real possibility," he warned.

The Islamic State is the terror army that has taken over large areas across Iraq, killing and scattering Christians and other non-Muslims. The atrocities have included the slaughter of men, women and children, forced sex slavery and the destruction of religious sites, including what is believed to be the tomb of the prophet Jonah.

Now, in Ferguson, where mobs have been rioting for more than a week over the shooting death of a black teen by a police officer, Islamic State is claiming a presence.

Video of CNN's Jake Tapper delivering a report in Ferguson shows someone carrying the Islamic State sign down the street, keeping pace with Tapper.

Among the social media messages monitored by the paper was one from Amarka Al-Ahlam, who said, "I believe that all #IS members in America should travel to Ferguson and prepare to establish a revolutionary Islamic state."

Amreeki Witness said: "It's time to strike fear into the hearts of the oppressors. #FergusonUnderIS."

The Mail said one ISIS supporter, Mujahid Miski, said he was based in Africa. He reportedly was leading the campaign of fear, writing: "So how is democracy treating you guys? #FergunsonUnderIS."

The Mail reported, "In one message Amreeki Witness mocks the curfew police have imposed in Ferguson to bring an end to the disorder, saying: 'We IS guys hate you for your freedom, eh? Just like that freedom uplifting curfew in #Ferguson? Wake up, or they'll never let you outside.'"

Another social media jihadist wrote: "Any and all #IS members in the kufar lands – I urge you to travel to #Ferguson and form brigades there, to take the unrestful land Inshallah."

▶**FERGUSON UPDATE (Aug 19)**: Anger grows as police in St Louis shoot dead a second black man (known mentally ill?) holding a knife.

What Happens When Police Officers Wear Body Cameras

Source: http://online.wsj.com/articles/what-happens-when-police-officers-wear-body-cameras-1408320244

With all eyes on Ferguson, Mo., in the wake of the death of Michael Brown, a renewed focus is being put on police transparency. Is the solution body-mounted cameras for police officers?

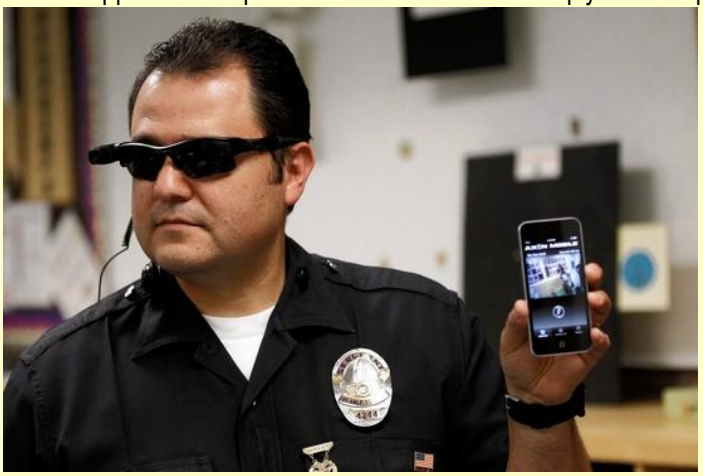
Sometimes, like the moments leading up to when a police officer decides to shoot someone, transparency is an unalloyed good. And especially lately, technology has progressed to a point that it

makes this kind of transparency not just possible, but routine.

So it is in Rialto, Calif., where an entire police force is wearing so-called body-mounted cameras, no bigger than pagers, that record everything that transpires between officers and citizens. In the first year after the cameras' introduction, the use of force by officers declined 60%, and citizen complaints against police fell 88%.

It isn't known how many police departments are making regular use of cameras, though it is being considered as a way of perhaps altering the course of events in places such as Ferguson, Mo., where an officer shot and killed an unarmed black teenager.

What happens when police wear cameras isn't simply that tamper-proof recording devices provide an objective record of an encounter—though some of the reduction in complaints is apparently because of citizens declining to contest video evidence of their behavior—but a modification of the psychology of everyone involved.



The effect of third-party observers on behavior has long been known: Thomas Jefferson once advised that "whenever you do a thing, act as if all the world were watching." Psychologists have confirmed this intuition, showing that something as primitive as a poster with a pair of glaring eyes can make test subjects behave better, and even reduce theft in an area.

One problem with the cameras, however, has been cost. Fortunately, fierce competition between the two most prominent vendors of the devices, Vievu LLC (bottom) and Taser International Inc., (top) which makes the cameras used by Rialto police, has driven the price of individual cameras down to between $300 and $400. Unfortunately, one place where expenses can mount is in the storage and management of the data they generate.

Both Taser and Vievu offer cloud-based storage systems for a monthly subscription fee. Think of it as an evidence room-as-a-service, where vendors are happy to see police departments outsource some of their most critical functions, and be subject to the same kind of vendor lock-in that can make corporate IT managers wary of the cloud.

But Taser's system stores video data on Amazon.com Inc. cloud, where prices are falling rapidly, and there isn't much about cameras from either vendor that couldn't be reproduced by an enterprising startup. Given that body-worn cameras use components from the mobile industry, where prices are ground down by scale and competition, it's possible police forces will soon be able to come up with their own solutions, or use off-the shelf products such as Google Glass.

With all eyes on Ferguson, Mo., in the wake of the death of Michael Brown, a renewed focus is being put on police transparency. Is the solution body-mounted cameras for police officers?

These are all reasons that Michael White, a professor of criminology at Arizona State University and, as the sole author of the Justice Department's report on police and body-mounted cameras, says the cameras, now a curiosity, could soon be ubiquitous. It has happened before: Taser's guns went from introduction to use by more than two-thirds of America's 18,000 police departments in about a decade. "It could be as little as 10 years until we see most police wearing these," says Dr. White.

Not everyone is happy about this possibility. After an order by a federal judge that the New York Police Department equip officers with body-worn cameras in some districts, the

Patrolmen's Benevolent Association issued a report declaring that they would be an "encumbrance." In the mid-1990s the rollout of dashboard cameras, now standard issue in most patrol cars, met the same resistance, which is why Dr. White says it is important that the adoption of this technology be accomplished through consensus.

"There is a presumption that citizens will be happy with this because it seems to provide more transparency and accountability, but that might not be the case, especially in areas where there are long-term tensions between police and their communities," says Dr. White.

Still, privacy issues abound, and rules about protecting both witnesses and police must be established and tested. Officers would have to turn on their cameras during every encounter with citizens, argues the American Civil Liberties Union, but there might be exceptions, such as when officers are interviewing victims of assault, says Dr. White.

None of these issues have stopped police forces in the U.K., where departments have a decade head start on their counterparts in the U.S., from ever-wider adoption. Police in England and Wales are engaged in large-scale trials, and the aim is to make body-worn cameras standard issue.

In the U.K., where tests with them began in 2005, studies have shown that they aid in the prosecution of crimes, by providing additional, and uniquely compelling, evidence. In the U.S., in some instances they have shortened the amount of time required to investigate a shooting by police from two-to-three months to two-to-three days.

And they represent yet one more way we are being recorded by means that could eventually be leaked to the public.

Of course, sometimes events happen that accelerate the adoption of a technological fix. **The tragic irony is that police in Ferguson have a stock of body-worn cameras, but have yet to deploy them to officers.**

Drawing lessons from "perfect heists" for national security

Source: http://www.homelandsecuritynewswire.com/dr20140820-drawing-lessons-from-perfect-heists-for-national-security

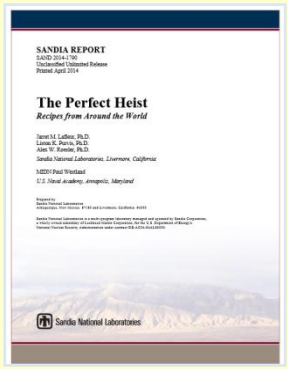
In 2003, the unthinkable happened at Belgium's Antwerp Diamond Center. Thieves broke into its reputedly impenetrable vault and made off with hundreds of millions of dollars' worth of diamonds, gold, cash and other valuables.

Through years of meticulous planning, they got past police officers less than 200 feet away, access controls into the building, a combination-and-key-lock vault door, a magnetic seal on the vault door and motion, infrared, light, and seismic detectors within the vault.

The Antwerp Diamond Center theft and other sophisticated, high-value heists show that motivated criminals can find ways to overcome every obstacle between them and their targets.

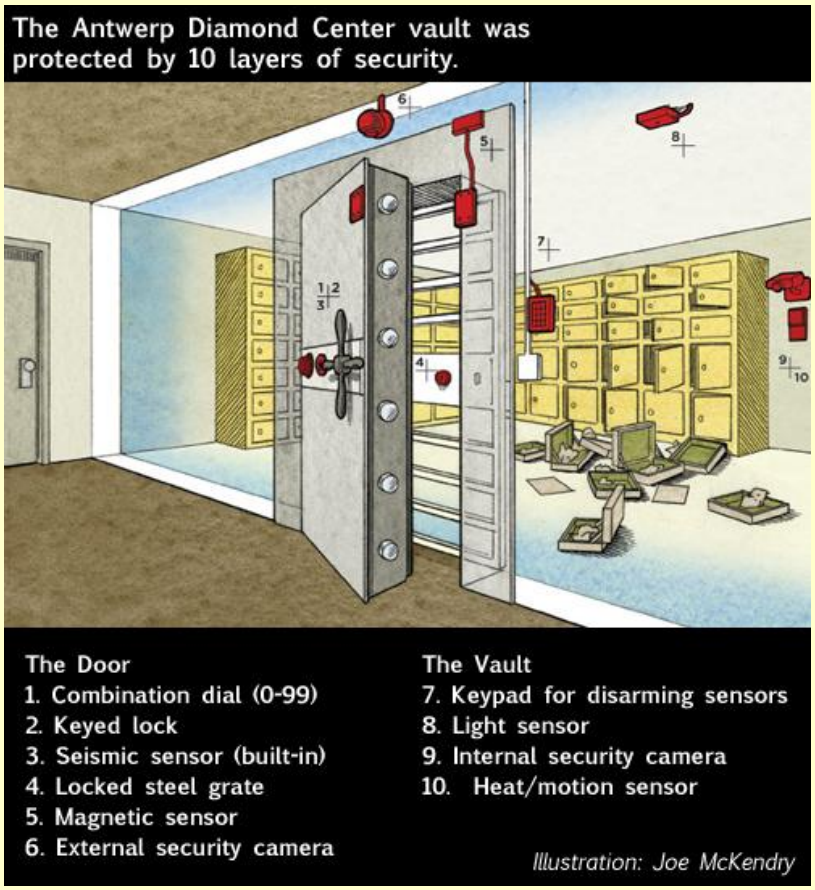
Can the Energy and Defense departments, responsible for analyzing, designing, and implementing complex systems to protect vital national security assets, learn from security failures in the banking, art, and jewelry worlds?

A Sandia Lab release reports that Sandia National Laboratories



systems analyst Jarret Lafleur set out two years ago to answer that question. "There are many insights to be gained from studying high-value heists and related crimes that could be applied to Sandia's work in physical security," he said. "Our work focuses on securing nuclear materials and other assets. Those kinds of attacks and threats are extremely rare, which is good, but give us very little historical information to draw upon."

Lafleur, Luke Purvis, manager of Sandia's National Security Systems Analysis group, and Alex Roesler, manager of the Assurance Technologies and Assessments group, published the research in a report, The Perfect Heist: Recipes from Around the World (SAND 2014-1790), which details twenty-three crimes, their categorization, and lessons learned. Lafleur also presented the "The Perfect Heist" to umerous audiences.



Compiling the crimes

Lafleur found there had not been a comprehensive study of sophisticated and high-value heists in more than two decades. "When we dug into the details, we found several areas worthy of further study that could inform our approach to physical security," he said. "Two examples are the roles of insiders in successful heists and the ways that redundancy in a security system can affect the behavior of humans in the loop."

Using public information sources, Lafleur chose twenty-three worldwide heists that occurred in the past three decades, notable for the value of assets stolen, innovation and complexity. Those include the Vastberga Helicopter Heist (Sweden, 2009), in which thieves descended from a helicopter into a cash depot by smashing through a skylight; the Isabella Stewart Gardner Museum Art Heist (United States, 1990), in which burglars posed as police officers to deceive and subdue museum guards; and the Securitas Cash Depot Heist (Britain, 2006) which saw robbers abduct the manager, his wife, and their child to force him to let them into the depot and provide key details about its security.

The release notes that Lafleur, Purvis, and Roesler compiled the results in a Heist Methods and Characteristics Database. They analyzed the results qualitatively

and quantitatively to describe the range and diversity of criminal methods and identify characteristics that are common or uncommon in such high-value heists. The analysis focused on seven areas: defeated security measures and devices; deception methods; timing and target selection; weapons employed; resources and risk acceptance; insiders; and failures and mistakes.

Deception, patience are common ingredients

While methods and implementation of the heists varied greatly, there were common factors. At least one form of deception was used in twenty-one of the heists, ranging from impersonating law enforcement to use of decoy vehicles to concealing surveillance equipment. Insiders — willing, unwitting, and coerced — played a role in the majority of cases. The Antwerp Diamond Center's building manager even provided blueprints to the heist mastermind, thinking he was just another tenant.

"I learned from this study that these thieves have a lot of patience. Most spent months and even years planning. They were very deliberate in how they defeated security measures and those methods were often very low-tech, like using hair spray to disable infrared sensors," said Lafleur. "In most of these heists, multiple security measures were defeated."

Another finding is that weapons are not needed to steal a lot of money. Four of the top five heists, in terms of value, were weaponless.

▶ **Read the Sandia Report at:** http://prod.sandia.gov/techlib/access-control.cgi/2014/141790.pdf

A breath of summer before you proceed to "Chem" and "Bio" News!

Alonissos Island – Central Greece

Skunk

Source: http://www.skunk-skunk.com/121755/The-Product

Police departments the world over periodically face an acute dilemma in confrontations with violent civil unrest: the need for effective riot control and the duty to preserve the health and safety of all, including the protesters themselves. Conventional tactics - from physical force all the way to tear gas and water cannons - have proven either ineffective, potentially lethal, or both.
Odortec, supported by a police R&D unit, developed the perfect, if highly pungent, solution: The Skunk.

There Are No Countermeasures

A non-lethal, completely non-toxic liquid spray, the Skunk is the most innovative and effective riot control method available. And there simply are no countermeasures.
This harmless deterrent consists of an extremely foul-smelling liquid, with the viscosity of water, that can be sprayed over a large area using a standard water cannon. The overpowering odor of the Skunk drives rioters away - and keeps them away - effectively shutting down any escalating situation.
Currently in regular use by law enforcement agencies, the Skunk has been field tested and proven to disperse even the most determined of violent protests.

The Most Demanding Standards

The Skunk was designed in consultation with the Israeli police to meet the most demanding operational requirements and the highest ethical standards.
The Skunk is not volatile, it's inflammable - in fact, it can even be used to put out fires in a pinch - and it poses no health hazard. In fact, despite its outrageous smell, the Skunk liquid is perfectly safe to consume. While the smell does linger in the air, there are no other long-term effects; and even clothes hit with the Skunk can be used after a simple washing.
Deployed in crowd control situations in which standard measures would involve the legal use of force, the Skunk is a far preferable alternative for quickly lowering the overall level of violence and breaking adversarial resistance.

Cost-Effective and Eco-Friendly

In addition, the Skunk is the most cost-effective solution for law enforcement agencies concerned about keeping down budgetary expenses. Deployment of the Skunk is far less costly than any special riot control equipment or compliance weapon alternatives. With the Skunk, manpower expenses are lowered dramatically, as fewer police officers can quickly and effectively restore order in relatively large area.
The Skunk is the result of years of resource-intensive development aimed at producing a law enforcement tool that is inexpensive, safe and effective, while also posing no threat to the environment.
Using 100% food-grade ingredients, the Skunk is 100% eco-friendly - harmless to both nature and people.

The Jordan Special Operation Command's Chemical Support Unit

By David Oliver

Source: http://www.cbrneportal.com/the-jordan-special-operation-commands-chemical-support-unit/

Ever since it gained its independence from Britain in 1946, Jordan has been on the frontline of the many conflicts that have raged on its borders. It is now threatened by the ongoing Israel-Palestine conflict, the ISIS insurgency in Iraq, and a civil war in Syria, which has caused more than half a million refuges to seek shelter in Jordan. Syria was also the location for the latest chemical attack by government forces on rebel fighters and innocent civilians.

The Jordanian border guards have to deal with frequent attempts to smuggle guns, ammunition and explosives from Syria into Jordan, but so far these have not included chemical weapons. However the authorities are taking no chances and the Jordanian Armed Forces have stepped up their CBRN defense training.

At the end of 2013 a mobile training team of Czech military experts from 31st Brigade of CBRN protection trained the Jordanian professionals from the armed forces, police, civil defence, Ministry of Health and other institutions. The training focused on sampling and identification of potentially lethal chemical agents. In May 2014 the Jordanian Armed Forces CBRN unit took part in the opening event of the Middle East's biggest special operations conference and exhibition, the biennial Special Operations Force Exhibition and Conference (SOFEX), which took place at the King Abdullah I Airbase in Amman. Jordan's Chemical Support Unit is part of the Special Operations Command's 61st Special Reconnaissance Regiment and was involved in rescuing hostages from a terrorist group in front of His Majesty King Abdullah II, Supreme Commander of the Jordanian Armed Forces. The Chemical Support Unit is equipped with the versatile American High Mobility Multi-Purpose Wheeled Vehicle (HMMWV), commonly known as the Humvee, and the Al-Thalab, or Fox based on a Toyota LandCruiser pickup, built by Jankel Armouring Ltd, of Surrey in England.

In June, Jordanian armed forces were involved in CBRN missions as part of the Exercise Eager Lion, a recurring, multinational exercise designed to strength military-to-military relationships, increase interoperability between partner nations and enhance regional security and stability. Exercise Eager Lion 2014 was held in Jordan and included 22 countries from five different

continents with more than 12,000 participants. The exercise is designed to provide multilateral forces with the opportunity to promote cooperation and interoperability among participation forces, build functional capacity, practice crisis management, and enhance readiness.

Prior to the exercise Canadian Special Operations Forces worked with the Jordanian military for over a year as they conducted training on CBRN equipment. They learned how to use chemical detection equipment and sampling equipment and the Jordanians took the lead on Eager Lion 2014. Capt. Chris Wood, Canadian Special Operations Ground Forces commander (CANSOFCOM) for the CBRN exercise took guidance from the Jordanian troops to accomplish the exercise. "This was not a mentorship," said Wood. "We are in this together. We are a team. Eager Lion is about integration and the Jordanians are in the lead here".

Technical and tactical proficiency on the equipment, along with integration of multinational soldiers was the objective for this mission and Wood feels they accomplished that goal. "Jordan is a very capable nation," said Wood. "It has been a great experience to work with the Jordanians in their own country. They are motivated and put in the extra hours to accomplish the mission. They are ready for any mission put in front of them".

The training completed by CANSOF-COM during the exercise was in support of the Government of Canada's Global Partnership Program and the CBRN Strategy, both of which focus on preventative measures against CBRN threats to prevent and reduce the effects of a CBRN terrorist attack and increase global security. A Jordanian Explosive Ordnance Unit and United Arab Emirates (UAE) Armed Forces were also involved in a simulated chemical explosion at a mock Internally Displaced People (IDP) camp for a chemical response plan exercise held as part of Exercise Eager Lion 2014. This exercise replicated the plan of action Jordan would take if faced with a chemical attack at one of the many refugee camps that are located in the northern region of the country, close to the Syrian and Iraqi borders. Jordanian army specialists are also part of a NATO team of evaluators from the Operational Capability Concept (OCC) programme that is responsible for evaluating units from Partnership for Peace nations to ensure they are combat ready to participate in NATO-led operations. These include an evaluation centred around a Chemical, Biological, Radiological and Nuclear (CBRN) defense unit of the participating country.

__David Oliver__ is a defense photo-journalist for more than 30 years, and member of the Independent Defense Media Association (IDMA) and the European Security and Defense Press Association (ESDPA). David is the author of 18 defense-related books, and is currently an IHS Jane's consultant editor and a regular correspondent for defense publications in the UK, USA, France, Poland, Brazil and Thailand.

Sensor Network with autonomous UAS and UGV for hazard detection

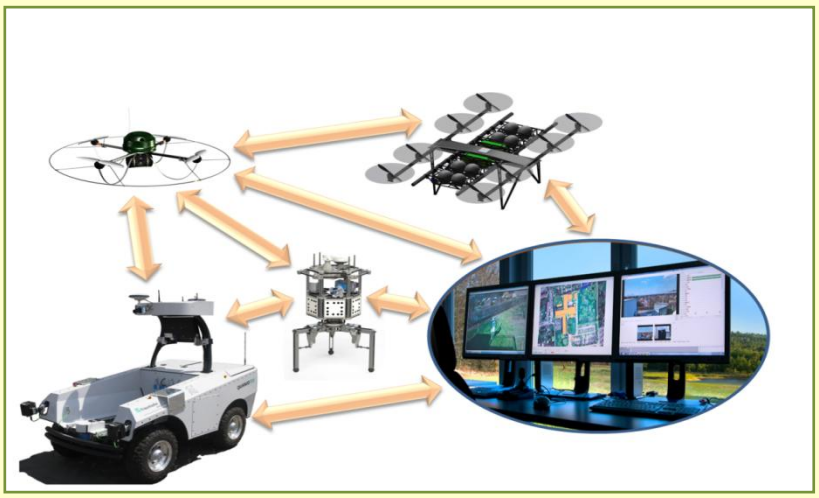
By Andreas Meissner

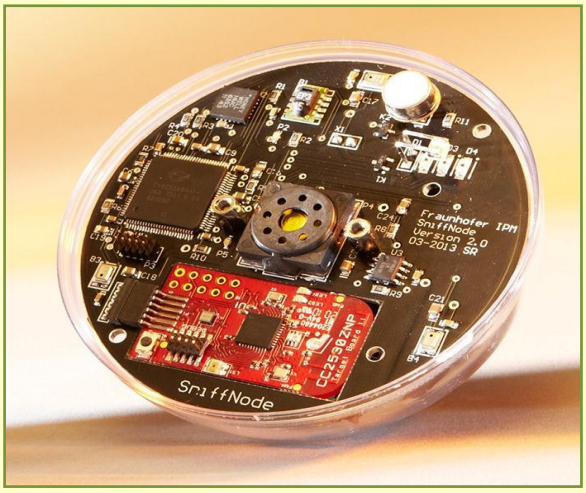
Source: http://www.cbrneportal.com/fraunhofer-seneka-sensor-network-with-autonomous-uas-and-ugv-for-hazard-detection/

When it comes to deploying sensors in a suspected CBRNe hazard area, a common question is: How to get them there? Should people be sent in, or is there another way to acquire on-site sensor data without any pre-existing infrastructure? Could a network of novel autonomous air and land-based mobile sensor carriers be a solution? Germany's Fraunhofer Gesellschaft has looked into the matter as part of its SENEKA research project, where a "sensor network with mobile robots for disaster management" has been developed. This article looks into SENEKA's basic setup and the benefits that may arise from using such a system.

SENEKA includes unmanned aerial systems (UAS) and unmanned ground vehicles (UGV) that are networked with their

peers and with a ground control station. UAS and UGV are equipped for autonomous operation, i.e. they do not require joystick-style control commands by a human operator, they rather find their way by themselves. Using a method called SLAM, simultaneous localization and mapping, they scan their environment while moving, building a digital map of their surroundings that gets more and more detailed and may also serve as an input to a situational picture presented to human experts. SENEKA's UGVs are four-wheel-drive robust vehicles dubbed "Quanjo", developed by Fraunhofer for autonomous operation in unknown terrain. UAS are based on commercially available platforms. Following a multi-sensor approach, the carriers may be equipped with cameras and with mission-specific sensors such as gas sensors. They can be used on a fly-in-fly-out (or drive-in-drive out) basis, but some UAS and UGV are additionally designed to drop special low-energy high-endurance sensor nodes at places where they are to remain on a long-term basis during the mission. Those droppable sensor nodes are a new feature of SENEKA and come in two varieties: "High-End" sensor nodes may be deployed by a Quanjo UGV with a robotic arm along its path, so areas may remain under surveillance even when the UGV has moved on. They will be collected again when the mission is over. "Best-price" sensor nodes are disposable sensors shaped like a small ball; they may be dropped by specially equipped UAS while flying e.g. over a heap of debris where sensors have to physically enter the heap in order to obtain meaningful data. Those sensor nodes will not be recovered. Figure 1 shows the SENEKA UAS and UGV sensor carriers, the high-end sensor node, a control station view and some of the communication links. Speaking about sensors, SENEKA nodes may contain commercially available sensors as well as low-energy colorimetric or photo-acoustic "SniffNode" gas sensors developed by Fraunhofer within the project. In order to establish reliable wireless communication links between the carriers, the sensor nodes, and the control station even in a hostile environment, Fraunhofer has come up with a robust radio communication system using a number of frequencies to form a multi-hop redundant network. The SENEKA control station is the hub for mission control and data analysis, normally deployed in a van-sized vehicle.





Fraunhofer believes that, once moved ahead from a research prototype to a fully developed system, SENEKA has the potential to significantly enhance the ability of hazard response teams to get their sensors to where they need to be in order to acquire meaningful data. Due to SENEKA's autonomous operation features, experts may concentrate on defining the mission and on analyzing the data instead of having to put much effort into controlling the fleet of carriers. Moreover, SENEKA reduces the exposure of responders to risk by keeping them out of the immediate hazard areas, and the SENEKA UAS may even reach otherwise inaccessible areas. Fraunhofer Gesellschaft is Europe's largest applied research organisation, and as part of its innovation model, prototype results of projects like SENEKA are made available for real-world use by partnering with industry. Approaching the end of the research project phase in late 2014, the SENEKA team is now in the process of establishing such collaboration.

Dr. Andreas Meissner *co-leads the SENEKA project and is head of business development for the Security Business Unit at Fraunhofer's Institute of Optronics, System Technologies and Image Exploitation IOSB.*

In God we Trust … or "In Luck we Depend?"

Rail car filled with chlorine stopped near the US Capitol. *Source: Jim Dougherty/Sierra Club*

Terror Threats at Chemical Plants Underestimated

By Hope Yen (Associated Press)
Source: http://abcnews.go.com/Politics/wireStory/govt-fails-vet-chemical-plants-terror-risk-24761091?singlePage=true

The government is underestimating the threat of a chemical attack on America's densely populated cities and has failed to inspect virtually all of the chemical facilities that it considers particularly vulnerable to terrorists, congressional investigators say.

The yearlong investigation by Republican staff on the Senate Homeland Security Committee paints a portrait of inspection delays, government errors in risk assessment and industry loopholes in a $595 million terror prevention program passed by Congress in 2006.

Coming a year after a massive explosion at a West, Texas, fertilizer plant, the report points to threats from the release of toxic and flammable chemicals.

Roughly half of the 4,011 high-risk facilities on the Homeland Security Department watch list are in 10 states: California, Texas, Ohio, Illinois, Pennsylvania, New York, North Carolina, Florida, Michigan and New Jersey.

Committee investigators have indicated that larger metropolitan regions such as Los Angeles, Chicago, New York and Philadelphia might be more vulnerable to a chemical attack.

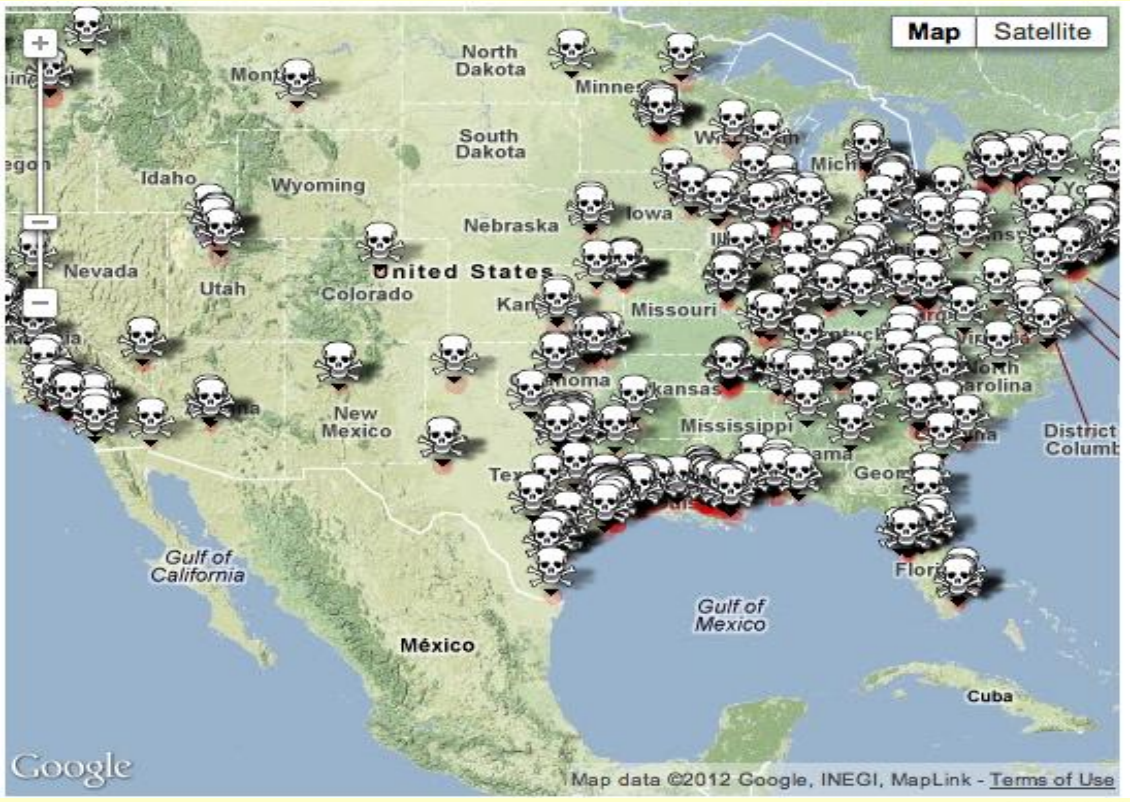
The report notes that rural accidents like the West, Texas, plant explosion "pale in comparison with the consequences of releasing large quantities of toxic gas into a densely populated city."

The U.S. effort is "a broken program that is not making us measurably safer against the threat of a terrorist attack," states the report commissioned by Sen. Tom Coburn, R-Okla.

It said widespread problems have left many of the nation's riskiest chemical facilities "effectively unregulated."

"Today - eight years later - there is little, if any, evidence to show that the more than half a billion dollars DHS has spent created an effective chemical security regulatory program," Coburn said.

The report relies in part on internal DHS documents, including a terror program



assessment completed late last year that hasn't been released, and a federal database of higher-risk facilities restricted to the public.

The study was shared with the committee's Democratic chairman, Sen. Tom Carper of Delaware, who concurred with the main findings.

Acting swiftly to address problems in the program, the Senate committee on Wednesday approved legislation to give the Department of Homeland Security more funding stability to step up its monitoring and set guidelines for chemical facilities to undertake some security measures. Currently, funding for the program is authorized by Congress from year to year.

The legislation, which now goes to the full Senate, would authorize money for the program over a four-year period. It would also allow some of the lower-risk chemical facilities in the anti-terror program to self-certify that it had met DHS guidelines as the department worked to reduce inspection backlogs for those it considered to be at the highest risk of a chemical terrorist attack.

"These facilities, and the chemicals they hold, could pose significant risks to our communities if they were exploited by those who seek to do us harm," Carper said. He added that the legislation "should go a long way in making it better and more efficient."

DHS spokesman S.Y. Lee noted that the department has stepped up monitoring efforts, having approved security plans for 750 facilities in the last two years. DHS officials have called on Congress to authorize the program over multiple years so the government and chemical companies can better plan for longer-range security.

"The Chemical Facility Anti-Terrorism Standards program is an important part of our nation's counterterrorism efforts," Lee said, adding that DHS is committed "to build on the progress it has made."

The report said that as of June 30, DHS had failed to conduct security compliance inspections on 3,972 chemical facilities, or 99 percent of the 4,011 facilities initially considered at a higher risk for terrorism. Many of these facilities are chemical manufacturers; they also include farm supply retailers or fertilizer distribution warehouses.

DHS considers a chemical facility "higher risk" based on the amount of toxic or flammable chemicals on site, such as chlorine, a corrosive, or ammonium nitrate, which can be used to make explosives.

Final rankings, on a tier of one to four, are determined based on additional information provided to the government.

The committee found that roughly 3,111 of the facilities had yet to have security plans approved despite statements to DHS officials that they would be done. Investigators said it could take years for DHS to reduce the backlog.

The report also cites a DHS-commissioned study completed late last year that raised concerns the list of 4,011 higher-risk facilities was not accurate, in some cases relying on outdated data or treating densely populated areas as lower threats due to coding errors.

Among other findings, the report points to industry loopholes. DHS grants exemptions to a number of industries, including water and wastewater treatment, which use high amounts of chlorine, a toxic chemical. While the program regulates ammonium nitrate, it does not regulate 12 other chemicals that can also be used to make explosives.

Chemical, Biological, Radiological, Nuclear, and Explosive Game-based All-hazards Management Exercise (CBRNE GAME)

Source: http://www.breakawaygames.com/serious-games/solutions/homeland/

Game Description

CBRNE Game-based All-hazards Management Exercise (CBRNE GAME) will provide a software- based, multiuser exercise where hospital employees participate in the aftermath of a Chemical, Biological, Radiological, Nuclear, and Explosive (CBRNE) event in a hypothetical community, and assume command as they manage the response of local hospitals to the mass casualties caused by the event.

Target users include civilian and military hospital managers, emergency planners,

emergency responders, public health officials, physicians, nurses, or anyone else who may be involved in the planning and management of a hospital's response to CBRNE casualties. Trainees, facilitators, instructors and subject matter experts from geographically dispersed locations may participate in a shared CBRNE GAME session as long as they have a suitable computer with internet access and logon credentials.
Given a simulated response environment and hypothetical community emergency involving hazardous agents, the players in a CBRNE GAME exercise will demonstrate simulated practical application of the concepts of:

- Chain of command,
- Communication,
- Casualty assessment,
- Patient decontamination requirements,
- Appropriate casualty care, and
- Establishing alternate treatment areas.

The system will provide unique functions for various roles within CBRNE GAME including:

- **Instructor role**: the system will provide the abilities for authorized individuals to create, modify, archive and load mission scenarios. The system will also provide that instructor role the ability to host and execute simulations governed by those mission scenarios.
- **Trainee and learner role**: the system will provide the ability to observe and participate in an execution of a CBRNE simulation from locations distributed and/or orchestrated.
- **Analyst/Admin role**: the system will provide in-game observation and after-action reporting of scenario execution. For administer user roles, the system will permit meta-functions governing the content, assets, simulations and structure of the server-based sub-systems.

Fig 1 – Triage/Decontamination environment

Military treatment facility focused CBRNE GAME development initiated in March 2011 and will continue through February 2013 with a Beta releasable product targeted for 2nd Quarter 2012. BreakAway anticipates that minimal additional tailoring and scenario creation will be necessary to serve the unique needs of civilian, commercial customers.

CBRNE GAME leverages the strengths of real time strategy entertainment games guided by BreakAway's expertise with interactive interfaces and ability to create entertaining games that serve training needs. To provide an idea of the CBRNE GAME look and feel, early concept art for CBRNE GAME is included here. The images depict a triage/decontamination environment (Figure 1), patient treatment area (Figure 2) and an administration screen showing allowable incident command actions (Figure 3).

Fig 2 – Patient treatment area

Fig 3 – Incident Command actions

Civilian hospitals need a private-sector version of CBRNE GAME to attain and retain preparedness for management of a mass casualty incident. The CBRNE GAME will

provide anytime, anywhere access to proven, realistic and effective mass casualty incident management use cases, including updates based on the most recent CBRNE incidents.

The civilian CBRNE Game will:

- Provide a dynamic learning environment (stimuli) using simulation
- Allow skill improvement through repetition
- Actively involve learners in critical decision making
- Replace live hazards with virtual hazards
- Create a community of interest to share knowledge & best practices
- Enable skill sustainment and skill adaptation based on new or evolving threats.

CBRNE GAME – Civilian Sector

For the civilian sector BreakAway will offer a web-delivered training capability that will be provided on either a subscription or single-use basis. The initial offering will support multi-player team coordination play and offer a limited number of CBRNE scenarios that will be expanded based upon end-user feedback.

The CBRNE GAME will effectively model the flow of patients through the entire hospital. Once players have logged in and have their roles assigned, they will be taken to their respective locations inside the hospital, and the management and care of patients will begin in haste. Players will maintain an omnipresent view of their respective area of responsibility, as presented through a 2D "isometric" view of the hospital. This will allow them to maintain visual contact with their staff and be able to make more effective decisions on their use.

At the conclusion of the mass-casualty event, the players will be taken to an After-Action Report screen where they can assess and discuss their hospital's overall performance. Performance will be tracked on the hospital level and not on an individual level; team performance will be the focus of the CBRNE GAME training. While Sharable Content Object Reference Model (SCORM) compliance is a desirable requirement in many training programs, it is not relevant to this game-based exercise tool both because explicit training content will not be utilized and participant individual performance will not be measured or tracked against his or her identity. The goal is hospital level assessment.

CBRNE Game Features:

- Web based delivery
- Multi-player
- Multiple Scenarios (3)
- Incident Command hierarchy
- White cell
- After Action Review
- Data mining
- Patient distribution (What percent of total are…Green, Yellow, Red)
- Patient Needs
- Patient Presentation
- Ailment Chart (Injury's associated… Triage level, MD Specialist, Final Destination, Ventilator/Monitor required)
- Difficulty Level (Time acceleration & Multipliers to adjust difficulty)
- Personnel Skill Level Task Efficiency
- Injects
- Patient Condition Modifiers
- Initial occupancy level & clear rates
- How many of, and how many beds in, each of the inpatient areas; CT, X-Ray, ICU, etc.
- Existing ED Patients
- Supply initial distribution, consumption rates, patient benefit, etc.

New rules proposed for crude oil shipments

Source: http://www.homelandsecuritynewswire.com/dr20140804-new-rules-proposed-for-crude-oil-shipments

August 04 – U.S Department of Transportation (DOT) secretary Anthony Foxx has announced that the department is proposing new rules for shipments of high-hazard crude oil by trains, as well as moving to phase out the use of older tank cars that many see as unsafe.

As the *Chicago Tribune* reports, the department is proposing new speed restrictions on "unit trains," or those that carry more than twenty tank cars of crude oil at a time. Additionally, there will be further risk assessment of rail routes, and higher standards of testing for crude coming from the Bakken region of southern Canada, North Dakota, and Montana — which often involves controversial extraction methods such as hydraulic fracturing.

Further, the DOT expects the eventual phasing out over three years of DOT-111 tank cars, at least in their current iteration, due to safety worries among some critics and officials.

"Safety is our goal," said Foxx.

The order follows a deadly year for oil train accidents, including a July 2013 derailment in Lac Megantic, Quebec resulting in the deaths of forty-seven people and a 30 April derailment in Lynchburg, Virginia. Additionally, lawmakers such as Senator Maria Cantwell (D-Wasington) have urged federal regulators to better monitor the **nearly 400,000 carloads of crude oil per year that are traveling within the country.**

As the *Tribune* mentions, the DOT also released the results of a study revealing that Bakken crude is more volatile than standard due to the hydraulic fracturing process.

Chicago mayor Rahm Emanuel applauded the efforts, saying, "Today's release of the proposed DOT Safe Transportaion of Crude Oil and Flammable Materials rule is another very important step to reduce the risk of catastrophic disasters in our cities."

The environmental group ForestEthics, however, criticized the recent proposals as "weak" and that they provide the oil industry "a license to threaten the safety of millions of American and leave communities and emergency responders holding the bag."

The rules follow after a 60-day comment period during which both oil industry and public concerns and input could be expressed.

Wi-Fi-equipped robots to see through solid walls

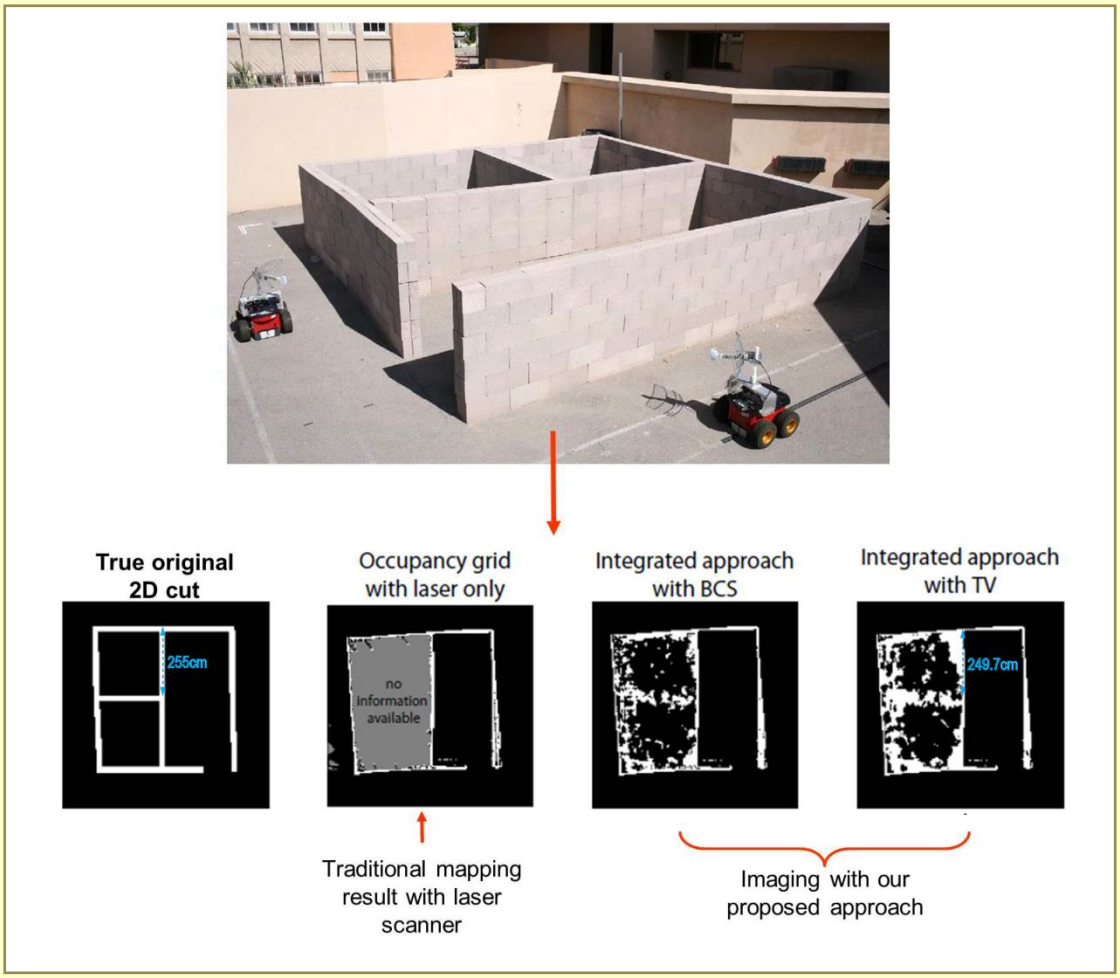
Source: http://www.homelandsecuritynewswire.com/dr20140807-wifiequipped-robots-to-see-through-solid-walls

August 07 – Wi-Fi makes all kinds of things possible. We can send and receive messages, make phone calls, browse the Internet, even play games with people who are miles away, all without the cords and wires to tie us down. At UC Santa Barbara, researchers are now using this versatile, everyday signal to do something different and powerful: looking through solid walls and seeing every square inch of what is on the other side. Built into robots, the technology has far-reaching possibilities.

"This is an exciting time to be doing this kind of research," said Yasamin Mostofi, professor of electrical and computer engineering at UCSB. A UCSB release reports that for the past few years, she and her team have been busy realizing this X-ray vision, enabling robots to see objects and humans behind thick walls through the use of radio frequency signals. The patented technology allows users to see the space on the other side and identify not only the presence of occluded objects, but also their position and geometry, without any prior knowledge of the area. Additionally, it has the potential to classify the material type of each occluded object such as human, metal or wood.

The combination of imaging technology and automated mobility can make these robots useful in situations where human access is difficult or risky, and the ability to determine what is in a given occluded area is important, such as search and rescue operations for natural or man-made disasters.

The technology, however, is not limited to robots; it can be implemented on a Wi-Fi-enabled gadget or a



Wi-Fi network. Built into an existing network the technology can be used to monitor the presence and location of objects and people throughout a built space, which opens possibilities for catching intruders, or watching over the elderly. It can also provide information for smart building applications to optimize services that depend on the level of occupancy of a building, such as heating and cooling. Further developed, the technology may even be useful in preliminary body scan and health monitoring via a WiFi-enabled handheld device — a real-life Star Trek tricorder.

▶ Read more on "Robotics" in the Special Supplement of July 2014 issue of "CBRNE-Terrorism Newsletter" available at Newsletter's website.

New regs for Monday: Dogs, anti-terrorism at chemical facilities, oil ships

Source: http://thehill.com/regulation/215229-new-regs-for-monday-dogs-anti-terrorism-standards-at-chemical-facilities-oil-ships

August 15 – Monday's edition of the *Federal Register* contains new rules for importing foreign dogs, security measures at chemical facilities, and ships transporting oil and other hazardous materials.
Here's what is happening:

Dogs: The U.S. Department of Agriculture (USDA) is moving forward with a **new rule** that restricts foreign dogs from being imported into the United States for sale.

The USDA's Animal and Plant Health Inspection Service announced Friday that foreign dogs that are sick will not be allowed in the country, meaning the owners will have to prove they are healthy and have received all their vaccinations.

The rule goes into effect in 90 days.

Terrorism: The Department of Homeland Security is pushing tougher **security standards** at high-**risk chemical facilities** to prevent a terrorist attack.

Homeland Security originally issued the Chemical Facility Anti-Terrorism Standards in 2007, but said Friday it is looking to update the rules to make them more effective.

The public has 60 days to comment.

Ships: The Coast Guard is moving forward with **new rules** for large ships that carry oil and other **hazardous substances**, known as offshore supply vessels.

The new rules for large offshore supply vessels are intended to "ensure the safe carriage of oil, hazardous substances, and individuals other than crew" on these ships, the Coast Guard wrote.

They include safety requirements for the design, engineering, construction and operation of these ships.

The rules go into effect immediately.

USPS: The U.S. Postal Service is considering **new standards** for business mail, the agency announced Friday.

The public has 30 days to comment on the proposed rules.

Export: The Bureau of Industry and Security is correcting small mistakes made in recent changes to its **export regulations**.

The changes go into effect immediately.

Texas chemical plant disaster highlights dangers at similar sites

Source: http://www.homelandsecuritynewswire.com/dr20140818-texas-chemical-plant-disaster-highlights-dangers-at-similar-sites

Following a deadly 17 April 2013 fertilizer plant explosion in West, Texas which took fifteen lives, officials from the managing company moved to shutter similar sites, including an urban one in Pennsylvania.

As the *Daily Tribune* reports, details are emerging that only a few months after the highly publicized disaster in Texas, the managers of the El Dorado Chemical Company moved to make sure five other plants "went dark."

This included the Pittsburgh facility, which was reported to have stored around thirty tons of ammonium nitrate — the combustible matter responsible for the West disaster — at the time of the 17 April incident.

The Pittsburgh site was particularly notable because it was close to both schools, residences, and a funeral home in the Fulton Street area of the city. Compounding the danger, a propane yard was also nearby.

Pittsburgh mayor Shawn Kennington said that after the Texas incident, he "Met with the police and fire chief and county officials and the two chemical companies in town to see what they were doing as far as safety precautions and to make sure that we were kept abreast of chemicals they had. We met with them on more than one occasion."

At this time, El Dorado Chemical Company and city and county officials "Agreed to put plans in place for routine inspections and

communication between the officials and companies," according to City Manager Clint Hardeman. He added that all parties were satisfied with the handling of the situation.
Some months following that, however, Hardeman discovered that El Dorado had completely closed the site and silently moved all of the chemicals.

While some — including Superintendent Judy Pollan — were relieved that the company was now gone, others questioned the danger of moving the thirty tons of chemicals around within the city. The fire chief, county judge, and emergency management coordinator knew the plant was closed, but nobody had any sense of the date. Many officials claim that the movement of the thirty-three trains carrying toxic materials through the city at the time was much more of a danger.
"They were just gone one day," said County Judge Morris Cravey.
In light of much of this, the "federal risk management emergency response laws" from the 1980s are now being seen as outdated and ineffective. One suggestion is to institute fire codes for cities smaller than 250,000 residents, which include Pittsburgh. Further, the fire marshal's office has suggested rezoning, which would eliminate arrangements similar to the those allowing a chemical plant to border schools and homes.
To date, no zoning adjustments have been made.

U.S. Completes Destruction of Sarin Precursors from Syria on the Cape Ray

Source: http://www.opcw.org/news/article/us-completes-destruction-of-sarin-precursors-from-syria-on-the-cape-ray/

August 13 – **All 581 metric tonnes of a precursor chemical for sarin gas that were removed from the Syrian Arab Republic and trans-loaded onto the U.S. Maritime Vessel Cape Ray in early July, have been destroyed with neutralisation technology aboard the ship while sailing in international waters of the Mediterranean Sea.** The destruction operations were continuously monitored and verified by a team of OPCW inspectors on the Cape Ray.
The OPCW Director-General, Ambassador Ahmet Üzümcü, thanked the United States for completing the destruction of the precursor chemicals in a safe and environmentally sound

manner, and for its overall contribution to the international efforts to eliminate Syria's chemical weapons programme.

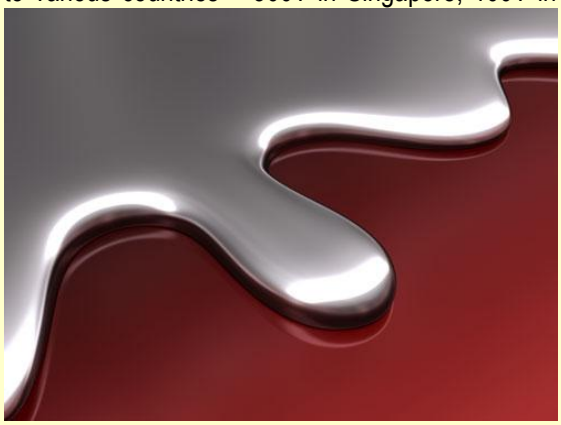
The precursor chemicals - methylphosphonyl difluoride, or DF - were neutralised with two Field Deployable Hydrolysis Systems (FDHS) that were installed on the Cape Ray for the purpose of destroying the most dangerous chemicals in Syria's stockpile. The FDHS units mix the chemicals with fresh water and reagents and then heat the mixture, which reduces the toxicity of the chemicals by at least 99.9 percent. All of the resulting effluents, or reaction mass, from hydrolysis of the DF are stored aboard the ship.

The Cape Ray has now begun operations to neutralise 19.8 metric tonnes of sulfur mustard, a blistering agent, which are all the Syrian chemicals that remain on the ship. When that has been completed, the Cape Ray will then transport the effluents from the DF and sulfur mustard for disposal at land-based facilities in Finland and Germany.

German company illegally exported waste mercury to Greece

Source: Greek defense website (www.defencenet.gr)

German company «DELA GmbH RECYCLING SOLUTIONS» illegally exported 800T of waste mercury to various countries – 300T in Singapore, 100T in Greece, The Netherlands, Switzerland (each) and 80T in Turkey. From the 100T exported to Greece, ~50T re-exported to Turkey (Istanbul) while the remaining amount is kept in a storage facility in the area of Aspropyrgos (Attica Prefecture). The German company indirectly exported waste mercury under the label of "dangerous goods" via certified transport companies – one of them is based in Greece. By overriding the strict rules governing the trans-boundary movement of hazardous waste the company increased its profits – customers paid ~5,000 euro per ton.



This is a serious environmental crime, since according to the literature, the amount of mercury contained in four thermometers, is enough to contaminate a lake of 80 square kilometers. It is also noted that mercury is a highly dangerous substance causing serious damage to humans, animals and ecosystems. The Greek Chemical State Lab stated that spilling of more than 30mL (406gr) of mercury establishes a case of emergency and the area should be evacuated immediately.

From company's website

http://www.dela-recycling.com/liquid-mercury.html

Disposal of metallic mercury

"Since March 2011 the export of metallic mercury and mercury compounds from European countries is **forbidden by law**. Furthermore metallic mercury from certain sources, for example from chlorine production is generally categorized as waste and must be disposed of. The method of disposal must ensure that there is no danger for humans or the environment.

DELA operates a patented stabilization process for metallic mercury since 2010. The process ensures that the metallic mercury is immobilized and transformed into an environmentally neutral substance. The stabilized end product which is mercury sulfide can then be safely disposed of in German salt mines. "

From Wikipedia

Source: http://en.wikipedia.org/wiki/Mercury_poisoning

Signs and symptoms

Common symptoms of mercury poisoning include peripheral neuropathy (presenting as paresthesia or itching, burning or pain), skin discoloration (pink cheeks, fingertips and toes), swelling, and desquamation (shedding or peeling of skin).

Mercury irreversibly inhibits selenium-dependent enzymes (see below) and may also inactivate S-adenosyl-methionine, which is necessary for catecholamine catabolism by catechol-o-methyl transferase. Due to the body's inability to degrade catecholamines (e.g. epinephrine), a person suffering from mercury poisoning may experience profuse sweating, tachycardia (persistently faster-than-normal heart beat), increased salivation, and hypertension (high blood pressure).

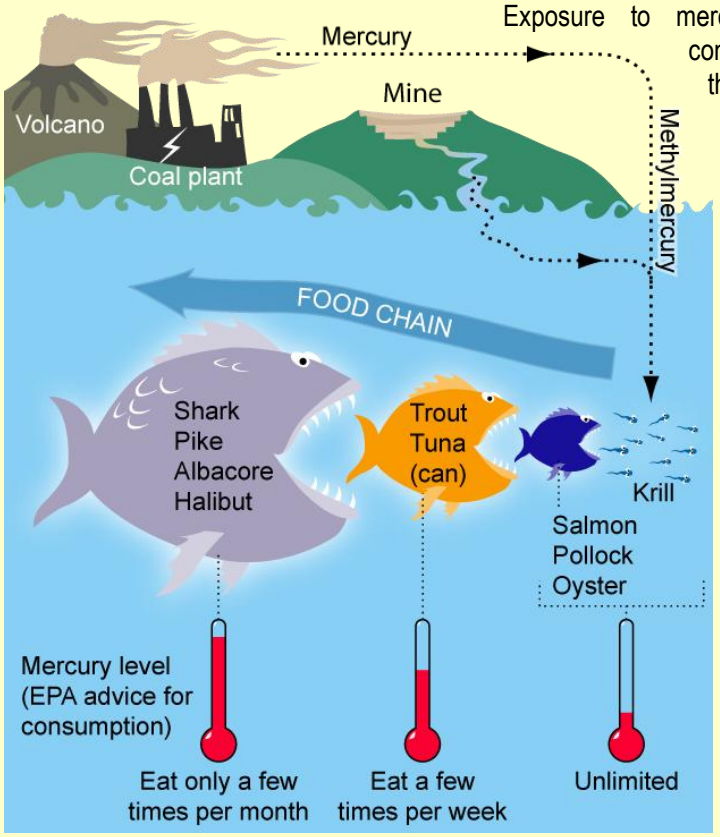
Affected children may show red cheeks, nose and lips, loss of hair, teeth, and nails, transient rashes, hypotonia (muscle weakness), and increased sensitivity to light. Other symptoms may include kidney dysfunction (e.g. Fanconi syndrome) or neuropsychiatric symptoms such as emotional lability, memory impairment, and / or insomnia.

Thus, the clinical presentation may resemble pheochromocytoma or Kawasaki disease.

An example of desquamation (skin peeling) of the hand of a child with severe mercury poisoning acquired by handling elemental mercury is this photograph in Horowitz, *et al.* (2002).

Causes

The **consumption of fish** is by far the most significant source of ingestion-related mercury exposure in humans and animals, although plants and livestock also contain mercury due to bioconcentration of mercury from seawater, freshwater, marine and lacustrine sediments, soils, and atmosphere, and due to biomagnification by ingesting other mercury-containing organisms.



Exposure to mercury can occur from breathing contaminated air, from eating foods that have acquired mercury residues during processing, from exposure to mercury vapor in mercury amalgam dental restorations, and from improper use or disposal of mercury and mercury-containing objects, for example, after spills of elemental mercury or improper disposal of fluorescent lamps.

Consumption of **whale and dolphin meat**, as is the practice in Japan, is a source of high levels of mercury poisoning. Tetsuya Endo, a professor at the Health Sciences University of Hokkaido, has tested whale meat purchased in the whaling town of Taiji and found mercury levels more than 20 times the acceptable Japanese standard.

Human-generated sources, such as **coal-fired power**

plants, emit about half of atmospheric mercury, with natural sources such as **volcanoes** responsible for the remainder. An estimated two-thirds of human-generated mercury comes from stationary combustion, mostly of coal. Other important human-generated sources include gold production, nonferrous metal production, cement production, waste disposal, human crematoria, caustic soda production, pig iron and steel production, mercury production (mostly for batteries), and biomass burning.

Small independent **gold-mining operation workers** are at higher risk of mercury poisoning because of crude processing methods. Such is the danger for the galamsey in Ghana and similar workers known as *orpailleurs* in neighboring francophone countries. While no official government estimates of the labor force have been made, observers believe 20,000-50,000 work as galamseys in Ghana, a figure including many women, who work as porters. Similar problems have been reported amongst the gold miners of Indonesia.

Mercury and many of its chemical compounds, especially organomercury compounds, can also be readily absorbed through **direct contact** with bare, or in some cases (such as methylmercury) insufficiently protected, skin. Mercury and its compounds are commonly used in chemical laboratories, hospitals, dental clinics, and facilities involved in the production of items such as fluorescent light bulbs, batteries, and explosives.

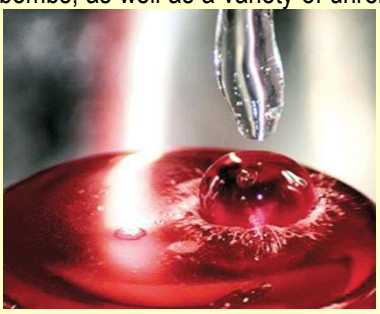
On the other hand, no scientific data supports the claim that mercury compounds in vaccine preservatives cause autism or its symptoms.

Mechanism

Mercury is highly reactive with selenium, an essential dietary element required by about 25 genetically distinct enzyme types (**selenoenzymes**). Among their numerous functions, selenoenzymes prevent and reverse oxidative damage in the brain and endocrine organs. The molecular mechanism of mercury toxicity involves its unique ability to irreversibly inhibit activities of selenoenzymes, such as thioredoxin reductase (IC50 = 9 nM).

Mercury as a weapon

Red mercury is a hoax substance of uncertain composition purportedly used in the creation of nuclear bombs, as well as a variety of unrelated weapons systems. According to the hoax, mercuric iodide is a



poisonous, odorless, tasteless, water-insoluble scarlet-red powder that becomes yellow when heated above 126 °C, due to a thermochromatic change in crystalline structure. However, samples of "red mercury" obtained from arrested would-be terrorists invariably consisted of nothing more than various red dyes or powders of little value, which some suspect was being sold as part of a campaign intended to flush out potential nuclear smugglers. The hoax was first reported in 1979 and was commonly discussed in the media in the 1990s. **Prices as high as $1,800,000 per kilogram were reported.**

EDITOR'S COMMENT: This case with illegal waste mercury is a fine example indicating that there are so many other sources for mass destruction other than CBRN agents. And they might be in the truck in front of us or in a storage facility in a densely populated area… I will follow this topic and if there are more on this I will keep you posted in the September issue of the Newsletter.

Over 2,500 9/11 Emergency Workers Have Cancer

Source: http://www.newsmax.com/Newsfront/911-workers-cancers-growing/2014/07/27/id/585157/

A growing number of Ground Zero first responders and rescuers are seeking compensation for their illnesses, and more than 2,500 of them have contracted cancer.

That toll has climbed from the 1,140 cancer cases reported just last year, according to the World Trade Center Health Program at Mount Sinai Hospital.

The program has counted 1,655 responders, out of the 37,000 police, sanitation workers and other city employees and volunteers it monitors, reports The New York Post. **And when firefighters and EMTs are added, the total rises to 2,518.**

The city's Fire Department has its own World Trade Center program, and notes there are 863 members with cancers that have been certified for 9-11 treatment.

Compensation amounts are being distributed. For example, one retired FDNY captain, at 63, received a $1.5 million award from the federal 9/11 Victim Compensation Fund during an expedited hearing in May, after contracting lung disease and inoperable pancreatic cancer while he worked at the site for a week after the attacks.

The man testified that he worries about his wife of 40 years, and hopes more cases are rushed because sufferers are not expected to last long.

The latest findings are more than twice the number of reported cancer cases up to September of last year, when epidemiologists at the Centers for Disease Control and Prevention said some 1,140 people suffered from WTC-related cancers.

"There are more cases out there, because we just know of the people in our government-funded medical programs, not those who have been treated by their private doctors," Dr. Jim Melius, who oversees health programs for 9/11 first responders at the Centers for Disease Control and Prevention, told the Daily Mail.

A estimated 60,270 people are said to be at risk of deadly diseases after inhaling dust and fumes from the World Trade Centers' lower columns and from benzene in leaking jet fuel. Other toxins include lead from 50,000 shattered computers and mercury from thousands of light bulbs that were pulverized when the buildings came down.

The retired firefighter, whose name was not provided in The Post report, said he commandeered a city bus and helped shut down the Brooklyn Bridge so he and his crew from Ladder Co. 132 could join in the dig for victims, and he knew that day a lot of them would become ill.

He retired in 2008 after lung damage left him unable to fight fires, and last year, doctors discovered an inoperable tumor wrapped around his arteries.

The 6 ft.-2 inch firefighter, now 63, weighed 240 on 9/11, but now weighs 160 pounds, and says his grandchildren give him joy but he's too weak to do much with them. He doesn't understand why responders have to wait for two years to get their awards.

The VCF has received, as of June 30, 1,145 claims listing cancer. Of

those, 881 have been deemed eligible for compensation. Most are 9/11 workers, but there are 17 downtown residents and five visitors included.
Of those, 115, cancer claimants have received a total of $50.5 million in awards, in sums ranging from $400,000 to $4.1 million, and the VCF can't say how many claimants have died.
There is an Oct. 14 deadline for cancer claims, and many more sufferers or their next-of-kin are expected to file for benefits.
According to epidemiologists, 9/11 workers have gotten cancers such as prostate, thyroid, leukemia, and multiple myeloma at higher rates than other populations.

Clay minerals may offer an answer to MRSA, other superbug infections

Source: http://www.homelandsecuritynewswire.com/dr20140729-clay-minerals-may-offer-an-answer-to-mrsa-other-superbug-infections

Superbugs, they are called: Pathogens, or disease-causing microorganisms, resistant to multiple antibiotics.
Such antibiotic resistance is now a major public health concern.
"This serious threat is no longer a prediction for the future," states a 2014 World Health Organization report, "it's happening right now in every region of the world and has the potential to affect anyone, of any age, in any country."
Could the answer to this threat be hidden in clays formed in minerals deep in the Earth?

Biomedicine meets geochemistry

"As antibiotic-resistant bacterial strains emerge and pose increasing health risks," says Lynda Williams, a **biogeochemist** at Arizona State University (ASU), "new antibacterial agents are urgently needed."
An NSF release reports that to find answers, Williams and colleague Keith Morrison of ASU set out to identify naturally occurring antibacterial clays effective at killing antibiotic-resistant bacteria. The scientists headed to the field — the rock field. In a volcanic deposit near Crater Lake, Oregon, they hit pay dirt. Back in the lab, the researchers incubated the pathogens Escherichia coli and Staphylococcus epidermidis, which breed skin infections, with clays from different zones of the Oregon deposit.
They found that the clays' rapid uptake of iron impaired bacterial metabolism. Cells were flooded with excess iron, which overwhelmed iron storage proteins and killed the bacteria.
"The ability of antibacterial clays to buffer pH also appears key to their healing potential and viability as alternatives to conventional antibiotics," state the scientists in a paper recently published in the journal Environmental Geochemistry and Health.

Open pit #10 near Crater Lake, Oregon, showing blue clay sampled by scientist Keith Morrison. Credit: Stan Williams

"Minerals have long had a role in non-traditional medicine," says Enriqueta Barrera, a program director in the National Science Foundation's (NSF) Division of Earth Sciences, which funded the research.
"Yet there is often no understanding of the reaction between the minerals and the human body or agents that cause illness. This research explains the mechanism by which clay minerals interfere with the functioning of pathogenic bacteria. The results have the potential to lead to the wide use of clays in the pharmaceutical industry."

Ancient remedies new again

Clay minerals, says Williams, have been sought for medicinal purposes for millennia. Studies of French clays—green clays

historically used in France in mineral baths — show that the clays have antibacterial properties. French green clays have been used to treat Mycobacterium ulcerans, the pathogen that causes Buruli ulcers.

Common in Africa, Buruli ulcers start as painful skin swellings. Then infection leads to the destruction of skin and large, open ulcers on arms or legs.

Delayed treatment — or treatment that does not work — may cause irreversible deformities, restriction of joint movement, widespread skin lesions, and sometimes life-threatening secondary infections.

Treatment with daily applications of green clay

poultices healed the infections. "These clays," says Williams, "demonstrated a unique ability to kill bacteria while promoting skin cell growth."

Unfortunately, the original French green clays were depleted. Later testing of newer samples did not show the same results.

Research on French green clays, however, spurred testing of other clays with likely antibacterial properties.

"To date," says Williams, "the most effective antibacterial clays are those from the Oregon deposit."

Samples from an area mined by Oregon Mineral Technologies (OMT) proved active against a broad spectrum of bacteria, including methicillin-resistant S. aureus (MRSA) and extended-spectrum beta-lactamase-resistant E. coli (ESBL).

What's in those rocks?

Understanding the geologic environment that produces antibacterial minerals is important for identifying other promising locations, says Williams, "and for evaluating specific deposits with bactericidal activity."

Nodule of Oregon blue clay, coated with red clay and sulfur crystals encased in white clay. Credit: *Lynda Williams*

The OMT deposit was formed near volcanoes active over tens to hundreds of thousands of years. The Crater Lake region is blanketed with ash deposits from such volcanoes.

OMT clays may be 20 to 30 million years old. They were "born" eons before deposits from volcanoes such as Mt. Mazama, which erupted 7,700 years ago to form the Crater Lake caldera.

Volcanic eruptions over the past 70,000 or so years produced silica-rich magmas and hydrothermal waters that may have contributed to the Oregon deposit's antibacterial properties.

To find out, Williams and Morrison took samples from the main OMT open pit. Four types of rocks were collected: two blue clays, and one white and one red "alteration zone" rock from the upper part of the deposit.

Blue clay to the rescue

The OMT blue samples were strongly bactericidal against E.

coli and S. epidermidis. The OMT white sample reduced the population of E. coli and S. epidermidis by 56 percent and 29 percent, respectively, but the red sample didn't show an antibacterial effect.
"We can use this information to propose the medicinal application of certain natural clays, especially in wound healing," says Williams.
Chronic, non-healing wounds, adds Morrison, are usually more alkaline (vs. acidic) than healthy skin. The pH of normal skin is slightly acidic, which keeps numbers of bacteria low.
"Antibacterial clays can buffer wounds to a low [more acidic] pH," says Williams, like other accepted chronic wound treatments, such as acidified nitrate. "The clays may shift the wound environment to a pH range that favors healing, while killing invading bacteria."
The Oregon clays could lead to the discovery of new antibacterial mechanisms, she says, "which would benefit the health care industry and people in developing nations. A low-cost topical antibacterial agent is quickly needed."
Answers to Buruli ulcers, MRSA and other antibiotic-resistant infections may lie not in a high-tech lab, but in ancient rocks forged in a hot zone: Oregon's once — and perhaps future — volcanoes.

Ebola virus disease

Fact sheet N°103
Updated April 2014
Source: http://www.who.int/mediacentre/factsheets/fs103/en/

Key facts

- Ebola virus disease (EVD), formerly known as Ebola haemorrhagic fever, is a severe, often fatal illness in humans.
- EVD outbreaks have a case fatality rate of up to 90%.
- EVD outbreaks occur primarily in remote villages in Central and West Africa, near tropical rainforests.
- The virus is transmitted to people from wild animals and spreads in the human population through human-to-human transmission.
- Fruit bats of the *Pteropodidae* family are considered to be the natural host of the Ebola virus.
- Severely ill patients require intensive supportive care. No licensed specific treatment or vaccine is available for use in people or animals.

Ebola first appeared in 1976 in 2 simultaneous outbreaks, in Nzara, Sudan, and in Yambuku, Democratic Republic of Congo. The latter was in a village situated near the Ebola River, from which the disease takes its name.
Genus Ebolavirus is 1 of 3 members of the *Filoviridae* family (filovirus), along with genus Marburgvirus and genus Cuevavirus. Genus Ebolavirus comprises 5 distinct species:

- Bundibugyo ebolavirus (BDBV)
- Zaire ebolavirus (EBOV)
- Reston ebolavirus (RESTV)
- Sudan ebolavirus (SUDV)
- Taï Forest ebolavirus (TAFV).

BDBV, EBOV, and SUDV have been associated with large EVD outbreaks in Africa, whereas RESTV and TAFV have not. The RESTV species, found in Philippines and the People's Republic of China, can infect humans, but no illness or death in humans from this species has been reported to date.

Transmission

Ebola is introduced into the human population through close contact with the blood, secretions, organs or other bodily fluids of infected animals. In Africa, infection has been documented through the handling of infected chimpanzees, gorillas, fruit bats, monkeys, forest antelope and porcupines found ill or dead or in the rainforest.
Ebola then spreads in the community through human-to-human transmission, with infection resulting from direct contact (through broken skin or mucous membranes) with

the blood, secretions, organs or other bodily fluids of infected people, and indirect contact with environments contaminated with such fluids. Burial ceremonies in which mourners have direct contact with the body of the deceased person can also play a role in the transmission of Ebola. Men who have recovered from the disease can still transmit the virus through their semen for up to 7 weeks after recovery from illness.
Health-care workers have frequently been infected while treating patients with suspected or confirmed EVD. This has occurred through close contact with patients when infection control precautions are not strictly practiced.
Among workers in contact with monkeys or pigs infected with Reston ebolavirus, several infections have been documented in people who were clinically asymptomatic. Thus, RESTV appears less capable of causing disease in humans than other Ebola species.
However, the only available evidence available comes from healthy adult males. It would be premature to extrapolate the health effects of the virus to all population groups, such as immuno-compromised persons, persons with underlying medical conditions, pregnant women and children. More studies of RESTV are needed before definitive conclusions can be drawn about the pathogenicity and virulence of this virus in humans.

Signs and symptoms

EVD is a severe acute viral illness often characterized by the sudden onset of fever, intense weakness, muscle pain, headache and sore throat. This is followed by vomiting, diarrhoea, rash, impaired kidney and liver function, and in some cases, both internal and external bleeding. Laboratory findings include low white blood cell and platelet counts and elevated liver enzymes.
People are infectious as long as their blood and secretions contain the virus. Ebola virus was isolated from semen 61 days after onset of illness in a man who was infected in a laboratory.
The incubation period, that is, the time interval from infection with the virus to onset of symptoms, is 2 to 21 days.

Diagnosis

Other diseases that should be ruled out before a diagnosis of EVD can be made include: malaria, typhoid fever, shigellosis, cholera, leptospirosis, plague, rickettsiosis, relapsing fever, meningitis, hepatitis and other viral haemorrhagic fevers.
Ebola virus infections can be diagnosed definitively in a laboratory through several types of tests:

- antibody-capture enzyme-linked immunosorbent assay (ELISA)
- antigen detection tests
- serum neutralization test
- reverse transcriptase polymerase chain reaction (RT-PCR) assay
- electron microscopy
- virus isolation by cell culture.

Samples from patients are an extreme biohazard risk; testing should be conducted under maximum biological containment conditions.

Vaccine and treatment

No licensed vaccine for EVD is available. Several vaccines are being tested, but none are available for clinical use.
Severely ill patients require intensive supportive care. Patients are frequently dehydrated and require oral rehydration with solutions containing electrolytes or intravenous fluids.
No specific treatment is available. New drug therapies are being evaluated.

Natural host of Ebola virus

In Africa, fruit bats, particularly species of the genera *Hypsignathus monstrosus, Epomops franqueti* and *Myonycteris torquata*, are considered possible natural hosts for Ebola virus. As a result, the geographic distribution of Ebolaviruses may overlap with the range of the fruit bats.

Ebola virus in animals

Although non-human primates have been a source of infection for humans, they are not thought to be the reservoir but rather an accidental host like human beings. Since 1994, Ebola outbreaks from the EBOV and TAFV species have been observed in chimpanzees and gorillas.

RESTV has caused severe EVD outbreaks in macaque monkeys (Macaca fascicularis) farmed in Philippines and detected in monkeys imported into the USA in 1989, 1990 and 1996, and in monkeys imported to Italy from Philippines in 1992.

Since 2008, RESTV viruses have been detected during several outbreaks of a deadly disease in pigs in People's Republic of China and Philippines. Asymptomatic infection in pigs has been reported and experimental inoculations have shown that RESTV cannot cause disease in pigs.

Prevention and control

Controlling Reston ebolavirus in domestic animals

No animal vaccine against RESTV is available. Routine cleaning and disinfection of pig or monkey farms (with sodium hypochlorite or other detergents) should be effective in inactivating the virus.

If an outbreak is suspected, the premises should be quarantined immediately. Culling of infected animals, with close supervision of burial or incineration of carcasses, may be necessary to reduce the risk of animal-to-human transmission. Restricting or banning the movement of animals from infected farms to other areas can reduce the spread of the disease.

As RESTV outbreaks in pigs and monkeys have preceded human infections, the establishment of an active animal health surveillance system to detect new cases is essential in providing early warning for veterinary and human public health authorities.

Reducing the risk of Ebola infection in people

In the absence of effective treatment and a human vaccine, raising awareness of the risk factors for Ebola infection and the protective measures individuals can take is the only way to reduce human infection and death.

In Africa, during EVD outbreaks, educational public health messages for risk reduction should focus on several factors:

- Reducing the risk of wildlife-to-human transmission from contact with infected fruit bats or monkeys/apes and the consumption of their raw meat. Animals should be handled with gloves and other appropriate protective clothing. Animal products (blood and meat) should be thoroughly cooked before consumption.
- Reducing the risk of human-to-human transmission in the community arising from direct or close contact with infected patients, particularly with their bodily fluids. Close physical contact with Ebola patients should be avoided. Gloves and appropriate personal protective equipment should be worn when taking care of ill patients at home. Regular hand washing is required after visiting patients in hospital, as well as after taking care of patients at home.
- Communities affected by Ebola should inform the population about the nature of the disease and about outbreak containment measures, including burial of the dead. People who have died from Ebola should be promptly and safely buried.

Pig farms in Africa can play a role in the amplification of infection because of the presence of fruit bats on these farms. Appropriate biosecurity measures should be in place to limit transmission. For RESTV, educational public health messages should focus on reducing the risk of pig-to-human transmission as a result of unsafe animal husbandry and slaughtering practices, and unsafe consumption of fresh blood, raw milk or animal tissue. Gloves and other appropriate protective clothing should be worn when handling sick animals or their tissues and when slaughtering animals. In regions where RESTV has been reported in pigs, all animal products (blood, meat and milk) should be thoroughly cooked before eating.

Controlling infection in health-care settings

Human-to-human transmission of the Ebola virus is primarily associated with direct or indirect contact with blood and body fluids. Transmission to health-care workers has been reported when appropriate infection control measures have not been observed.

It is not always possible to identify patients with EBV early because initial symptoms may be non-specific. For this reason, it is important that health-care workers apply standard precautions consistently with all patients – regardless of their diagnosis – in all work practices at all times. These include basic hand hygiene, respiratory hygiene, the use of personal protective equipment (according to the risk of splashes or other contact with infected materials), safe injection practices and safe burial practices.

Health-care workers caring for patients with suspected or confirmed Ebola virus should apply, in addition to standard precautions, other infection control measures to avoid any exposure to the patient's blood and body fluids and direct unprotected contact with the possibly contaminated environment. When in close contact (within 1 metre) of patients with EBV, health-care workers should wear face protection (a face shield or a medical mask and goggles), a clean, non-sterile long-sleeved gown, and gloves (sterile gloves for some procedures).

Laboratory workers are also at risk. Samples taken from suspected human and animal Ebola cases for diagnosis should be handled by trained staff and processed in suitably equipped laboratories.

WHO response

WHO provides expertise and documentation to support disease investigation and control.

Recommendations for infection control while providing care to patients with suspected or confirmed Ebola haemorrhagic fever are provided in: *Interim infection control recommendations for care of patients with suspected or confirmed Filovirus (Ebola, Marburg) haemorrhagic fever*, March 2008. This document is currently being updated.

WHO has created an aide–memoire on standard precautions in health care (currently being updated). Standard precautions are meant to reduce the risk of transmission of bloodborne and other pathogens. If universally applied, the precautions would help prevent most transmission through exposure to blood and body fluids.

Standard precautions are recommended in the care and treatment of all patients regardless of their perceived or confirmed infectious status. They include the basic level of infection control—hand hygiene, use of personal protective equipment to avoid direct contact with blood and body fluids, prevention of needle stick and injuries from other sharp instruments, and a set of environmental controls.

Table: Chronology of previous Ebola virus disease outbreaks

Year	Country	Ebolavirus species	Cases	Deaths	Case fatality
2012	Democratic Republic of Congo	Bundibugyo	57	29	51%
2012	Uganda	Sudan	7	4	57%
2012	Uganda	Sudan	24	17	71%
2011	Uganda	Sudan	1	1	100%
2008	Democratic Republic of Congo	Zaire	32	14	44%
2007	Uganda	Bundibugyo	149	37	25%
2007	Democratic Republic of Congo	Zaire	264	187	71%
2005	Congo	Zaire	12	10	83%

Year	Country	Ebolavirus species	Cases	Deaths	Case fatality
2004	Sudan	Sudan	17	7	41%
2003 (Nov-Dec)	Congo	Zaire	35	29	83%
2003 (Jan-Apr)	Congo	Zaire	143	128	90%
2001-2002	Congo	Zaire	59	44	75%
2001-2002	Gabon	Zaire	65	53	82%
2000	Uganda	Sudan	425	224	53%
1996	South Africa (ex-Gabon)	Zaire	1	1	100%
1996 (Jul-Dec)	Gabon	Zaire	60	45	75%
1996 (Jan-Apr)	Gabon	Zaire	31	21	68%
1995	Democratic Republic of Congo	Zaire	315	254	81%
1994	Cote d'Ivoire	Taï Forest	1	0	0%
1994	Gabon	Zaire	52	31	60%
1979	Sudan	Sudan	34	22	65%
1977	Democratic Republic of Congo	Zaire	1	1	100%
1976	Sudan	Sudan	284	151	53%
1976	Democratic Republic of Congo	Zaire	318	280	88%

Infection Control for Viral Haemorrhagic Fevers in the African Health Care Setting

Source: http://www.cdc.gov/vhf/abroad/vhf-manual.html

About The Manual

In 1995, an outbreak of Ebola hemorrhagic fever (Ebola HF) affected more than 300 people in and around the city of Kikwit, Democratic Republic of the Congo (formerly, Zaire); approximately 80% of the patients died. More than one-fourth of all the patients were health care workers. After the outbreak, the DRC Ministry of Health, the Centers for Disease Control and Prevention (CDC) and the World Health Organization (WHO) developed practical recommendations for carrying out viral hemorrhagic fever (VHF) isolation precautions in rural health facilities in Africa. These recommendations have been consolidated in a manual for the local health community.

Although there is still a great deal to learn about Ebola HF, two observations from the Kikwit outbreak strongly indicate that future outbreaks of this magnitude could be prevented:

- The first case occurred in January 1995, but went unrecognized as Ebola HF by health-care workers. This one case started a chain of transmission of the virus

that finally was recognized in April of that year, when many more cases appeared. The outbreak peaked in May. Thus, between January and April, there was a window of opportunity that could have allowed early detection and proper management of patients; the early response might have prevented widespread transmission of the virus.

- After an international investigation team arrived in May 1995 and worked with Kikwit medical community to introduce VHF isolation precautions as well as standard precautions, no further nosocomial transmission of the virus was documented, indicating that although Ebola HF is highly infectious, the use of these measures is effective in preventing the spread of disease.

The observations sent a strong message to the public health and medical communities in Africa and internationally: combining early suspicion of VHF and isolation precautions can help to prevent another serious outbreak of Ebola HF or other VHF in the future. The only question remaining was how these goals could be achieved in a region where resources are scarce and the health care infrastructure is either underdeveloped or deteriorating. This manual, prepared collaboratively by CDC and WHO, attempts to address the issues of early provisional diagnosis and response within a limited infrastructure. It is designed for the following uses:

- for prevention through preparedness--to help African health facilities make advance preparations for responding with appropriate precautions when a VHF case is suspected.
- for planning and conducting in-service training to strengthen standard precautions and VHF isolation precautions.
- as a rapid reference when a VHF case appears at a health facility where no previous VHF preparations have been made.

The recommendations in the manual make use of common, low-cost supplies, such as household bleach, water, cotton cloth, and plastic sheeting. Step-by-step instructions for implementing the recommendations are presented along with instructional aids for easy reference in health centers.
The manual is available in English, French, and Portuguese.

Download the Manual

- English Manual
- French Manual
- Portuguese Manual

Management of Hazard Group 4 viral haemorrhagic fevers and similar human infectious diseases of high consequence

Source: http://webarchive.nationalarchives.gov.uk/+/www.dh.gov.uk/ab/acdp/dh_130727

The Advisory Committee on Dangerous Pathogens (ACDP) has produced updated specialist guidance on the management of patients with viral haemorrhagic fever (VHF) or other infectious diseases of high consequence. The guidance will replace previous ACDP guidance issued in 1996 and provides advice on how patients suspected of being infected with a VHF should be comprehensively assessed, rapidly diagnosed and safely managed within the NHS, to ensure the protection of public health.
The guidance is applicable to the following specialist groups:

- healthcare staff in emergency departments, infectious disease departments, infection control, microbiology, acute medical units, mortuary staff;
- ambulance staff, who may be required to transport a suspected or confirmed VHF patient;
- those working in laboratories dealing with specimens from patients suspected or confirmed to be infected with a VHF virus or similar infectious agent;
- public health professionals and those in Port Health Authorities, who may be required to carry out public health actions associated with a VHF case.

As the guidance differs from the previous ACDP guidance in a number of areas, including patient risk assessment, patient management, patient containment and laboratory procedures, ACDP are inviting comments on the draft guidance document through a

technical stakeholder engagement exercise. The exercise will run from 28 October to 23 December 2011.

Please note that this is not a public consultation and is aimed at interested technical stakeholders only.

- Download ACDP VHF technical stakeholder engagement document (PDF, 894K)
- Download ACDP VHF technical stakeholder questionnaire (DOC, 80K)

Nasty chikungunya virus gaining traction in U.S.

Source: http://www.usatoday.com/story/news/nation/2014/07/30/chikungunya-virus-united-states/13358377/

Chikungunya, a mosquito-borne virus that has swept through the Caribbean in recent months, is making gains in the United States, the Centers for Disease Control and Prevention says.

The CDC issued a count this week indicating almost 400 cases have been diagnosed in non-Caribbean areas of the United States this year, all but two of them contracted outside the United States. Another 215 cases were diagnosed in Puerto Rico, where 199 were contracted locally. Florida leads the way among states, with 107 cases, and its two locally contracted cases are the only ones in the continental U.S.

"With the recent outbreaks in the Caribbean and the Pacific, the number of chikungunya cases among travelers visiting or returning to the United States from affected areas will continue to increase," the CDC said.

At least 20 New Jersey residents have tested positive for chikungunya, a mosquito-borne virus that has spread through the Caribbean. (July 30) AP

Officials said that chikungunya (pronounced chik-un-GUHN-ya) — spread by bites from infected Aedes aegypti or Aedes albopictus mosquitoes — is not contagious from person to person, is typically not life-threatening and will likely resolve on its own.

Chikungunya causes symptoms such as fever and joint pain within a week after a person is bitten by an infected mosquito. Patients can also develop severe headaches, muscle pain and swollen joints. There is no vaccine and no specific treatment.

From 2006–2013, studies identified an average of 28 people per year nationwide with positive tests for recent chikungunya virus infection. All were travelers visiting or returning to the United States from affected areas, mostly in Asia.

In late 2013, chikungunya virus was found for the first time in the Americas on islands in the Caribbean. The CDC notes that travelers can protect themselves by preventing mosquito bites. Other advice: When traveling to countries with chikungunya virus, use insect repellent, wear long sleeves and pants and stay in places with air conditioning or that use window and door screens.

The word chikungunya, from the East African Kimakonde language, translates loosely as contorted or hunched over from pain.

'Ebola is terrifying - and proves how unprepared we are for epidemics'

By Dr Alexander van Tulleken

Source:http://www.telegraph.co.uk/news/worldnews/africaandindianocean/10996512/Ebola-is-terrifying-and-proves-how-unprepared-we-are-for-epidemics.html

Ebola Virus Disease is one of those rare infections that is so sinister and appalling that it inspires Hollywood movies and bestselling thrillers.

In brief: Ebola is terrifying.

It sporadically emerges from the African jungle and is famous not for the numbers of people affected – since its discovery in 1976 we have recorded less than 3,000 infections – but for its shocking effects: untreated, the most virulent strains of Ebola virus kills 90 per cent of the people it infects. The time from infection to death can be as little as a few days, and the deaths are painful and appalling as it is a haemorrhagic fever: victims bleed uncontrollably. There is no vaccine, and no cure, so the only treat we can currently offer is "supportive care": fluids, pain relief, management of clotting problems.

The infection spreads readily and is found in all bodily fluids so patients and the bodies of the deceased have to be isolated. The virus itself is so dangerous that it can only be researched in Biosafety Level 4 facilities, meaning that there are only a handful of laboratories worldwide that can deal with it. These labs have airlocks, isolated water supplies and staff wear positive-pressure protective suits. It is also considered "weaponiseable" by the US Department of Defense: it is a Class A Bioterrorism Agent.

And now it has now made the leap, on an aeroplane, to Lagos in Nigeria, Africa's most populous city, inside a 40 year-old Liberian civil servant, who was sick on arrival and died only a few days later. Authorities are monitoring a total of 59 people who were in contact with Sawyer, including airport contacts, the Lagos state health ministry said. The hospital where he died has been shut down and quarantined.

Nigeria's airports, sea ports and land borders are on "red alert", while Liberia has closed most of its border crossings.

So, is it time to panic?

On my Facebook page and Twitter feed friends discussed their plans for the Ebola apocalypse, and one of my undergraduate students posted a "How to recognise Ebola" fact sheet (I live in New York City – will we soon need to recognise it here?) .

The current epidemic began in March this year in Northern Guinea and then spread to Liberia and Sierra Leone. It has now made the leap to Lagos. This outbreak is huge by Ebola standards: it has infected over 1,000 people, where as all the previous epidemics combined recorded only 2,300 infections. And in this epidemic over half of the people who have been infected have died.

It is in the news prominently right now because two American aid workers, Dr Ken Brantly and Nancy Writebol, have contracted the infection in Liberia. Both are expected to live as they sought care early.

So, far, so bad. We have an epidemic deadly disease with no cure that has now infected the very Westerners that were attempting to contain it – and it has moved, on a plane, to a global hub.

But this is not a disease that can easily sweep through London or New York.

It has three problems as a virus: it kills its victims too quickly and

infected people are extremely symptomatic. So unlike, for example, HIV or tuberculosis infections, where people can be contagious but asymptomatic for years, thus infecting many others, it's easy to steer clear of people with Ebola.

Secondly it's actually not that contagious. Patrick Sawyer, the Liberian man who brought Ebola to Lagos, doesn't seem to have infected anyone else – despite being extremely unwell on a crowded plane.

But we can't afford to relax.

You don't have to worry about Ebola but you do have to care. Primarily, I would argue, for humanitarian reasons – but also for reasons of self-interest. The epidemic disease is a threat which desperately needs attention, and this epidemic is revealing weaknesses in the ability of the international system to respond. Death is not the only threat posed by epidemic disease: disruption to trade and travel are potentially vast.

There are currently only two international NGOs working across a vast region of West Africa on this epidemic: Medecins Sans Frontieres (Doctors without Borders), probably the most expert medical NGO in the world, and Samaritan's Purse, a large, highly competent faith-based NGO. The work they are doing is, quite simply, heroic.

I trained in tropical medicine and I have worked in Sudan, Congo and Gabon, all countries where Ebola epidemics have occurred. These places are hard to work in at the best of times but today in Monrovia, Liberia it will be 35 degrees Celsius. The field hospitals are not air-conditioned and the staff will be clad from head-to-toe in thick, protective clothing. They will deal with death all day. These organisations need money and resources and they also need attention and support.

As well as this we need more support and funding for the World Health Organization, the UN body that is charged with managing epidemic disease.

So what can you do? You can give money and you can support political funding of these organisations. This epidemic is an opportunity to improve our regional and international co-ordination of epidemic control and the capacity of NGOs and UN agencies.

This Ebola epidemic isn't going to come to Europe but its spread and death toll is a warning that we aren't prepared for diseases that could.

Dr Alexander van Tulleken is a Humanitarian medicine expert and senior fellow at Fordham University.

Smallpox: The long goodbye

By Jeanne Guillemin

Source: http://thebulletin.org/smallpox-long-goodbye7321

July 21 – Last week, six vials of smallpox virus were discovered in a disused closet at the National Institutes of Health, where they had lain, forgotten and misplaced, for over 30 years. Some of them were found to contain live specimens, meaning that this dangerous virus—once considered to have been eradicated from the face of the planet—had the capacity to infect and spread.

At nearly the same time, on July 16, the director of the Centers for Disease Control and Prevention, Thomas Frieden, admitted to a Congressional committee that he was advised of a somewhat similar blunder at the CDC, more than *two months* after its discovery. (Members of the CDC had accidentally contaminated an innocuous strain of avian influenza with the dangerous H5N1 strain and shipped this unknown hazard to a less secure laboratory.) And not long before, dozens of CDC lab employees had been exposed to virulent anthrax bacteria.

These incidents raise doubts about government vigilance, with the case of the misplaced smallpox vials being arguably the most shocking, because the 1979 global eradication of smallpox is rightly celebrated as one of the most important public health achievements in history.

The eradication effort

The 13-year campaign to eradicate smallpox, led by the World Health Organization,

stopped an ancient scourge that as late as 1967 was afflicting 10 to 15 million people per year and killing some 2 million, most in the Middle East, South Asia, and Africa. The variola virus causing the disease could kill as many as 30 percent of those infected, and its symptomatic blistering could permanently scar its victims and even leave them blind. Easily communicable by personal contact, for centuries it had struck nomadic tribes, village communities, and urban centers with equal brutality.

As Donald Henderson, the American leader of the campaign, observed, the timing of the campaign was perfect. Nations like Afghanistan, Pakistan, Iran, India, and Uganda were in phases of relative political stability and willing to cooperate. Putting aside Cold War hostilities, the United States and the Soviet Union together donated 180 million doses of vaccine and, along with other industrialized countries, contributed much to the campaign's financial support and public health expertise. Thousands of intrepid field workers traversed rough terrain to reach settlements where smallpox still raged and, once there, isolate the sick and vaccinate those exposed.

Although altruism drove the campaign, leaders of the major industrialized states were motivated by a pragmatic fear of contagion. North America and Western Europe, where indigenous smallpox had been eliminated, still remained vulnerable to travelers arriving from countries where reservoirs of the disease persisted. The United States alone was spending over $1 million a year on childhood vaccinations, border surveillance, and quarantines—with good reason. In 1947, a fatally infected American returning from Mexico triggered a crisis in New York City that led to the emergency vaccinations of an estimated 6 million people. In 1961, a Pakistani visitor to Britain started an outbreak that required the vaccination of 5.5 million. In 1972, all of Yugoslavia was put under quarantine and 20 million people were vaccinated after a pilgrim returning from the Middle East started a chain reaction of virulent smallpox that quickly spread from Kosovo to Belgrade. The casualties were few but the bottom line was that even one smallpox case could shut down commerce, close cities, and create a financial crisis.

To be certified free of smallpox, each nation had to show the WHO that two years had elapsed since the last recorded case and that it had in place an effective surveillance system for case reporting. In October 1979, with the certification of Somalia, the job was done and the global campaign—the first to eradicate a disease—was concluded. On May 8, 1980, the final documents were signed in a festive ceremony at the Palace of the League of Nations in Geneva.

The world's last recorded death from smallpox, in 1978, happened not in Somalia, but in the United Kingdom, the result of a faulty ventilation system at the Birmingham University Medical School. The victim, a 40 year-old photographer, worked on the floor above a laboratory where researchers were doing experiments using a virulent strain isolated from a child in Pakistan.

Attempts at controlled research

In reaction to the Birmingham accident, the WHO required all states to submit their existing strains and isolates to one of two high-security laboratories: the Centers for Disease Control and Prevention in Atlanta, Georgia, or the Soviet Research Institute of Virus Preparation in Moscow. Research involving these repositories (with 229 strains of the virus in the United States and 120 in the Soviet Union) could be conducted only with WHO approval and under tight security. Before the strains disappeared, microbiologists wanted to pursue the genetic analysis of the major strains, discover paths to new vaccines and antiviral medicines, and make comparative studies with animal poxviruses (like monkey pox and camel pox) that might fill the void left by smallpox.

In 1986, with no new smallpox cases reported, the World Health Assembly, the decision-making body of the WHO, resolved to destroy the strain collections and make the virus extinct. But there was resistance to this; American scientists in particular wanted to continue their research. Meanwhile, less advantaged countries that had suffered much from the disease demanded final closure.

The scientists won.

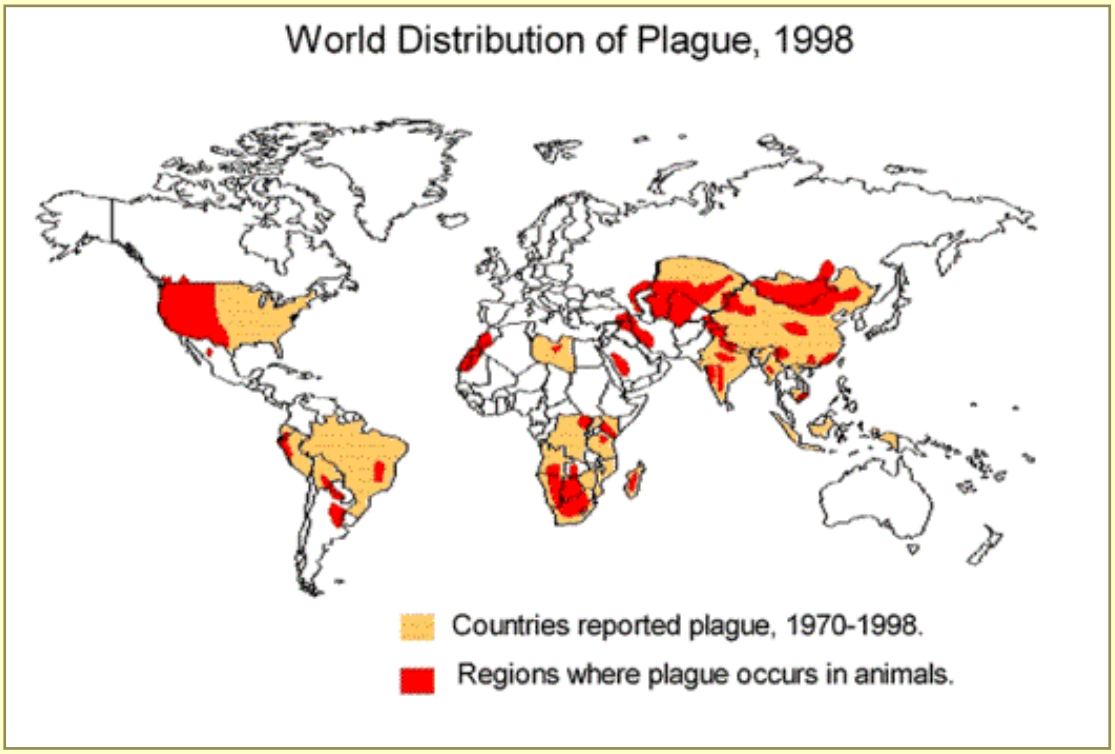
Within just a few years, the opportunity to destroy the stocks passed as the threat of smallpox reappeared in a new guise, this

time as a potential weapon developed by an old enemy and possibly acquired by a new one. Even before the collapse of the Soviet Union, British and American intelligence agencies were learning about the massive USSR biological warfare program, which included smallpox. The secret program was expanding at the same time as the WHO campaign and the establishment of the Moscow repository–and long after the Soviets had signed the 1972 Biological Weapons Convention. Could the Russians be trusted? Would terrorists gain access to the repository, which had been moved from Moscow to Novosibirsk, Siberia?

In the cease-fire after the 1991 Gulf War, international investigators found evidence that Iraq, where smallpox was once endemic, had developed a covert biological arsenal. Defenses against the disease soon became a top US priority, one that joined national security, biomedical science, and public health. In 1999, in a post-Cold War turn-around, the US government funded a series of joint smallpox research projects between the CDC and Vector, the institute in Siberia where the Soviet repository had been moved.

After the 9/11 and the 2001 anthrax letter attacks, advocates for biodefense funding, including Henderson, kept promoting the smallpox threat. In December 2002, in the lead-up to the Iraq War, the threat was taken seriously enough for President George W. Bush to announce a nationwide smallpox inoculation campaign, starting with the mandatory vaccination of 500,000 military and government employees and an equal number of voluntary health workers and first responders. Following this first phase, 10 million more volunteers at the front lines of a bioterror attack could choose to be vaccinated and then the vaccine would be available to the public at large. Early reports of adverse reactions associated with the vaccine—in the form of serious rashes, fevers, and cardiac arrests—sharply reduced participation. By March, 2003, only 30,000 volunteers had been vaccinated and in May the Iraq War was over.

But smallpox did not disappear as a terrorist threat, nor did anthrax or plague. In 2002, the US Congress began authorizing billions of dollars a year in new funding for research on "select agents" such as smallpox, anthrax, and plague to protect Americans from catastrophic bioterrorist attacks. New national centers for biodefense research were established. The funds directly



benefited research on smallpox at the CDC and at Vector in Siberia, and fostered a new generation of researchers who depend on the smallpox repositories—even though, in the absence of any incidents, the disease's threat as a biological weapon has faded and the world has been officially rid of smallpox for 34 years.

Why smallpox stocks should be destroyed

In the years since 1986, when the World Health Assembly first resolved to destroy the repositories, the science for understanding infectious diseases and inventing defenses against them has made significant advances. Overall, the trend has been away from pathogen-specific research and toward projects that investigate the molecular and cellular processes of a broad spectrum of disease types, orthopoxes like smallpox among them.

In its 2013 report on smallpox, the WHO Advisory Group of Independent Experts (AGIES) specifically noted that this trend in science had diminished the need to use the live variola virus for research. The group concluded that there was no public health need to retain the smallpox stocks, whether for the creation of new diagnostic tests, for use in animal models, or for the development of new vaccines or antiviral agents. Researchers were achieving these goals without relying on the live virus. Furthermore, DNA sequencing of 50 repository strains showed so little diversity among them that the committee also concluded that the stocks were not worth preserving in order to sequence more.

So why in May 2014, at its review meeting, did the World Health Assembly again decide to delay the destruction of the smallpox strains?

The answer lies in the opposing views of the WHO's other smallpox advisors, the members of the Advisory Committee on Variola Virus Research (ACVVR), which is dominated by US, Western European, and Russian scientists. In its 2012 report, this committee also concluded that live virus strains were no longer needed to research diagnostics or develop vaccines and that the continuation of DNA sequencing was unnecessary. Nonetheless, its members believed that the variola virus itself was needed to further explore animal models for the disease and to develop antiviral agents against smallpox, projects in which they were invested. With its two advisory committees in conflict, the WHO is organizing a third advisory committee to arbitrate the two perspectives—public health and basic science.

Not only has science moved along, but public confidence in high containment laboratories is on the wane, which is bound to influence policies regarding the smallpox stocks. In the recent past, the CDC in Atlanta has experienced power outages and other technical failures, and the organization is now in the news for laboratory mistakes that risked the lives of employees and potentially the wider public.

American and Russian officials always insist that their smallpox repositories, under WHO oversight, are well guarded. But experience tells us that scientists working in laboratories with the highest biosafety standards are still caught off guard by technical breakdowns, that their staffs make mistakes and break rules, and that a predictable institutional reflex is to cover up blunders. So why should the world continue to take chances with smallpox? The best protection for both scientists and the public is to load the autoclave and bid a final goodbye to the variola virus.

Jeanne Guillemin *is a senior advisor at the MIT Security Studies Program, a member of the World Economic Forum's Global Agenda Council on Nuclear, Biological, and Chemical Weapons, and the author of* American Anthrax, *a book about the 2001 anthrax letter attacks and their consequences.*

New York City Conducts Largest Ever Surprise Bioterror Response Drill

Source: http://newyork.cbslocal.com/2014/08/01/health-department-conducts-largest-no-notice-emergency-response-drill-in-nyc-history/

August 01 – **Officials are conducting the largest surprise bioterror drill of its kind in New York City history Friday.**

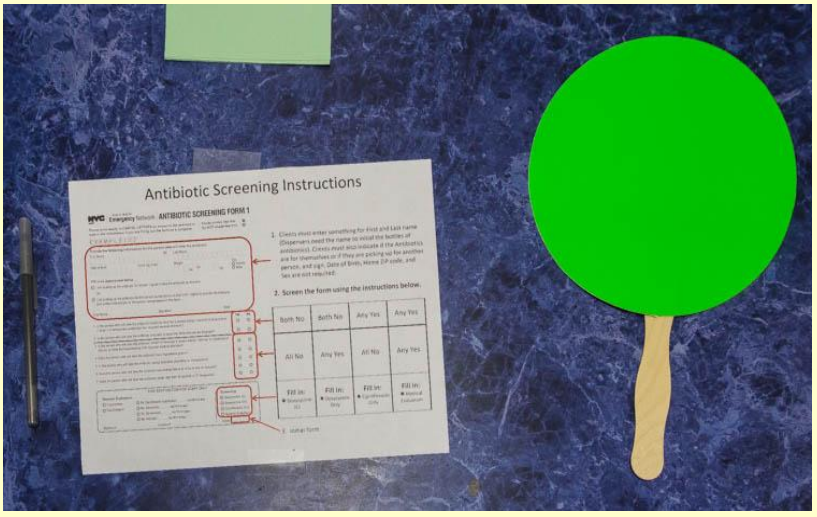
The Rapid Activation for Mass Prophylaxis Exercise (RAMPEx) is testing the city's ability to respond to the airborne release of anthrax, 1010 WINS' Al Jones reported.

More than **1,500 employees from 13 city agencies will set up 30 temporary locations** where life-saving medication would be dispensed in the event of an emergency.

Most of those people participating in Friday's drill had no advanced knowledge of the day or time of the exercise.

"When I grabbed the phone it fell out of my hands," participant Terrance Gardet told WCBS 880's Paul Murnane. "I was so excited."

The Department of Health said the surprise drill will better test and simulate a real emergency and response.



"We want New Yorkers to know that in the event of an emergency that we have plans in place, that there's no need to panic," said Dr. Oxiris Barbot, First Deputy Commissioner of the Health Department.

The 30 medicine distribution sites would be set up citywide in eight hours, Barbot said. "There are over 8 million New Yorkers, 55 million tourists and over 5 million commuters that visit this city,"

stated Police Commissioner Bill Bratton. "This exercise will provide an opportunity to work closely with our emergency response partners to develop a safety plan that includes dispensing the proper

medication in the event of a terrorist attack or public health emergency."
NYPD Deputy Chief Salvatore DiPace said bioterrorism is a big concern because its release can go undetected for hours.
"From my experience in counterrorism bio is probably the most unknown," DiPace said. "The bio is very concerning to us."

Airports scrambling to find effective passenger Ebola screening methods

Source: http://www.homelandsecuritynewswire.com/dr20140804-airports-scrambling-to-find-effective-passenger-ebola-screening-methods

Some airports in Africa have begun screening passengers for Ebola. **The current methods involves thermal screening of patients, and then subjecting passengers with an elevated temperature, a symptom of Ebola, to a blood test called a polymerase chain reaction (PCR) test. The test can take eight hours or longer to obtain lab results, and is expensive.** Aviation experts recommend screening passengers for Ebola the same way aviation security screen passengers for other threats like terrorism, but say the screening methods must be made to yield results more quickly and cheaply.

In light of the recent Ebola scare in Nigeria, where health officials confirmed that an American-born Liberian citizen, who was infected with the disease, died shortly after arriving at a Lagos airport, aviation officials will be screening passengers arriving from Sierra Leone, one of the three countries experiencing an Ebola outbreak. Passengers with an elevated temperature, a symptom of Ebola, would be subject to a blood test.
Although the presence of antibodies in the blood is a more conclusive sign of the Ebola virus, subjecting possibly thousands of passengers to a blood test is impractical and would slow international air travel.

The *National Journal* reports that the current method for the proposed blood test, called a polymerase chain reaction test, can take eight hours or longer to obtain lab results and will be expensive. South Africa recently announced that its airports will be outfitted with thermal scanners to detect feverish passengers. A similar method was unsuccessfully used in 2009 to detect passengers for fever from suspected bird flu.

Experts agree that detecting Ebola at airport checkpoints, and doing so in a relatively short amount of time, would help stop the virus from crossing international borders, but the technology to do so is currently unavailable. In June, **Douglass Simpson, CEO of Corgenix, received a $3 million National Institute of Health grant to develop a point-of-care test for Ebola.** The device would allow airport screeners to spot the virus in a feverish passenger in **just ten minutes.** "Our job is to as quickly as possible advance those tests and make them available in those zones," Simpson said. Corgenix expects to have the tests available by 2016.

Some aviation experts recommend screening passengers for Ebola the same way aviation security screen passengers for other aviation threats like terrorism. Passengers should be screened based on where they have been, and the likelihood that they have been in contact with the disease. "Prescreening would be prudent, and reasonable, based on the information available. Public health personnel would need to develop appropriate criteria that yield good results and also limit false positives. In essence, prescreening, if done appropriately, can work in any type of screening mechanism," Sheldon H. Jacobson a professor of computer science at the University of Illinois wrote to *Defense One*.

On whether aviation and health officials can prevent an Ebola outbreak in the United States, "I don't think it's in the cards that we would have widespread Ebola," Centers for Disease Control and Prevention (CDC) head Tom Frieden said. The CDC is closely monitoring U.S. groups and officials operating in West Africa who may be returning home within the next coming weeks, including Peace Corps volunteers, and medical researchers. The CDC recently confirmed that an American doctor infected with Ebola, Kent Brantly, has arrived in the country for treatment at a special isolation unit at Emory University Hospital. Nancy Writebol, a medical missionary treating Ebola patients in Liberia is also expected to arrive in the United States on Wednesday on a specially equipped medical evacuation plane.

"So it's not going to spread widely in the U.S. Could we have another person here, could we have a case or two? Not impossible," Frieden said. "We say in medicine never say never. But we know how to stop it here. But to really protect ourselves, the single most important thing we can do is stop it at the source in Africa. That's going to protect them and protect us."

There's Really No Way To Screen for Ebola at Airports

By Patrick Tucker

Source: http://www.defenseone.com/technology/2014/08/theres-really-no-way-screen-ebola-airports/90413/?oref=d-river

On Thursday, the Nigerian government announced that they had started screening passengers at international airports for signs of Ebola after a passenger showed up in Lagos suffering from the illness, which kills up to 90 percent of the people infected with it. Treatment options are extremely limited. Nigerian airport authorities will be checking passengers who just arrived from Sierra Leone, currently under a state of emergency, and they'll be looking for fever, since an elevated temperature is considered a sign of Ebola. If the passenger is presenting with higher than normal temperatures, screeners would subject the passenger to a blood test.

Ebola is moving into more countries across Africa, but not as quickly as is fear. The country of South Africa announced Thursday that they were in the process of outfitting airports with thermal scanners to detect feverish passengers. In many ways, it's a repeat of 2009, when airports around the world brought in thermal scanners to look for passengers who were presenting with fever and suspected bird flu.

The recent Ebola outbreak has already arrived in the United States, under careful observation. The CDC confirmed that at least one Ebola victim, Kent Brantly arrived back in the United States this weekend. Brantly, of Fort Worth, Texas, was working to staunch the outbreak in Liberia when he picked up the illness.

"All I am aware of, in terms of U.S. military involvement, is that we have a couple of Army researchers down in Africa, in Liberia, right now who have been for some time working on this particular virus," Kirby said.

The good news is that neither the White House nor the epidemiologists that spoke to *Defense One* expects Ebola to have nearly as deadly an effect in the U.S. as it is having in Africa, where more than 729 people have already died.

The bad news is that thermal screenings of the international flying population at airports are not likely to yield much by way of improved safety.

Here's why: fever can be a sign of a lot of different illnesses, not just Ebola. And thermal scanning proved to be a poor method of catching bird flu carriers in 2009 as well. So presenting with an elevated temperature at an airport checkpoint does not indicate clearly enough that the fevered person is carrying the deadly virus. More importantly, the incubation period for Ebola is two days. As many as 20 days can pass before symptoms show up. **That means that an individual could be carrying the virus for two weeks or longer and not even know it, much less have it show up via thermal scan.** So what good are these scanners?

> What do we have to protect us today? The same thing we have to protect us from dangerous terrorist masterminds, background screening.

"I think that thermal screeners help people feel safe," Dr. Noreen Hynes with the Johns Hopkins Bloomberg School of Public Health told *Defense One.*

The second method that the Nigerian government is taking to detect the presence of Ebola in—possibly—feverish passengers is a blood test. The presence of antibodies in the blood is a much more conclusive sign of the deadly virus. Unfortunately, subjecting hundreds or possibly thousands of passengers to a blood test for Ebola would be practically impossible in a major airport without slowing International air travel to a halt. The current method for performing one of these tests, also called a polymerase chain reaction test, can take eight hours or longer, requires results to be sent to a lab, and is prohibitively expensive in many cases.

Experts agreed that a test able to reveal the presence of Ebola on location at an airport checkpoint—and do so in a relatively short amount of time—would greatly improve authorities' ability to stop the virus from crossing international borders. One person working on that is Douglass Simpson, CEO of Corgenix, which in June received a $3 million National Institutes of Health grant to develop a point-of-care test for Ebola. Airport screeners would use it to spot the virus in a feverish passenger in just ten minutes at airports. "Our job is to as quickly as possible advance those tests and make them available in those zones," Simpson said.

It's exactly the sort of thing that could provide much more conclusive evidence of a passenger with Ebola. But it won't be in the hands of airport screeners for years. "We're several years from getting it completed," says Simpson. He hopes that Corgenix will have a rapid test for Ebola by 2016.

What do we have to protect us today? The same thing we have to protect us from dangerous terrorist masterminds: background screening.

Because the population of people who have this illness are relatively small and we have some idea of the areas that have been exposed, Ebola is an example of a threat that could be better managed at airports by picking out those people who were most likely to have encountered the disease based on where they had been.

"The nature of Ebola makes it similar to, but also different than traditional aviation threats. Aviation security protects against the flight on hand, while screening for Ebola has a longer footprint to display and protect," Sheldon H. Jacobson, a professor

of computer science at the University of Illinois, told *Defense One.*

It's a subject that he knows a lot about. In 2012, his paper *Addressing Passenger Risk Uncertainty for Aviation Security Screening* effectively showed that too much random screening at airports was making TSA and border agents less effective at their jobs. The guards were scanning, patting, and focusing on people who posed no real threat, effectively de-sensitizing them to people who may have had more intent and capacity to commit harm. **"A natural tendency, when limited information is available about from where the next threat will come, is to overestimate the overall risk in the system,"** Jacobson said in a statement around the time of the paper's release. "This actually makes the system less secure by over-allocating security resources to those in the system that are low on the risk scale relative to others in the system."

Pre-screening passengers for Ebola on the basis of where the passenger has been and

> **Despite centuries of progress, in many ways, our ability to catch disease at a border hasn't changed much since 1374 when the Black Death was laying waste to populations of Europe.**

the likelihood of coming into contact with the disease is probably a more effective means to catch it than is trying to take the temperature of thousands of people with a camera, according to Jacobson. "Prescreening would be prudent, and reasonable, based on the information available. Public health personnel would need to develop appropriate criteria that yield good results and also limit false positives. In essence, prescreening, if done appropriately, can work in any type of screening mechanism," he wrote to *Defense One* in an email.

Ebola is passed through fluids such as blood and so health care workers treating infected populations, and doing so in less than ideal settings like clinics in Sierra Leone, are the most vulnerable. Hynes says that's one reason you aren't at much less risk.

(Of course, in most cinematic depictions of a zombie outbreak, zombieism is also passed via fluids, and, as in the case of Ebola, carriers are ambulatory, or walking, for long periods of time. Published modeling has shown that a zombie outbreak would spread across a major city like Lagos in a period of four days. But zombieism, as depicted fictionally, is also accompanied by psychotic cannibalism, which serves as an accelerant to spread. Ebola is accompanied by malaise, which has the opposite effect.)

Hynes acknowledges that while the U.S. won't become like Sierra Leone, more people will be getting the illness in the months ahead. "Right now the trajectory is still in the upward mode," she said.

The issue of Ebola slipping into the United States is part of the broader, hotter discussion on border control, which entails everything from keeping potential terrorists out of the country to detecting nuclear weapons, to housing, processing and caring for the some 57,000 immigrant children who have crossed into the country illegally since Oct. 1. These are all fundamentally different challenges. Some pose mortal threats, others do not. But from a political perspective they share the border in common. That can lead to politicians who want to treat every incursion over the border with equal alarm, as Rep. Michelle Bachman, R-Minn., effectively did the other day, claiming the country's Southern border was an open invitation. "Not only people with potentially terrorist activities, but also very dangerous weapons are going to cross our border in addition to very dangerous drugs, and also life-threatening diseases, potentially including Ebola and other diseases like that."

On Thursday, a subcommittee of the House Committee on Science, Space and Technology tackled the issue in a special hearing on the technology needed to secure America's border. The hearing did not touch on Ebola, but the panelists were largely in agreement on one key point — the Department of Homeland Security has no effective means for evaluating the deployment of border technology.

While point-of-care tests for Ebola won't be deployable for at least two years, biometric facial recognition technology and other security screening technologies to detect are far more advanced, but they

have yet to be fully implemented. "The technologies are good and mature. I think one of the areas where [The Department of Homeland Security] DHS struggles is tooth to tail. Where do you have people to back up and integrate with technology to make the best effective use of it. DHS acquisition processes are maturing…but are not perfect," Jack Riley, the director of the RAND National Defense Research Institute, testified.

"We worked on an evaluation for a technology for biometric identification at airports. The technology was quite ready. It was off the shelf. It was effective. The problem was it couldn't be integrated into the human systems," testified Joseph D. Eyerman, the director for research and management at the Institute for Homeland Security Solutions at Duke University, meaning that human airport screeners couldn't use the data from the facial recognition systems, for a variety of reasons.

How to make sure screening technology is implemented at airports and other checkpoint is no simple matter, but it could become one. Riley suggested that a border czar could help make sure that the technology to catch nuclear weapons, and perhaps Ebola, isn't misspent screening immigrant children who are very unlikely to be harboring either. "We need a single point of accountability on the border so that we can begin to understand some of these large tradeoffs," Riley told *Defense One.*

When asked by committee chairman Rep. Lamar Smith, R-Texas, how they would rate Department of Homeland Security's use of border technology, the witnesses answered uniformly: "Incomplete."

Despite centuries of progress, in many ways, our ability to catch disease at a border hasn't changed much since 1374, when the Black Death was laying waste to populations of Europe. It was at this time that the Doge of Venice put in place a protocol to attempt to arrest the disease in port**. He created three so-called Guardians of Health.** They were health screeners and their job was to board ships in port and inspect crew for inflamed lymph nodes. If symptoms were found, or suspected aboard the crew, the Guardian would order the ship away from port for a period of forty days, quaranta giorni.

Not enough has changed. The current Ebola outbreak is unlikely to claim the lives of hundreds of Americans, and will likely run its course before summer of next year. The question of how to catch diseases at the border is not going to go away. But because of our innate tendency to "overestimate the overall risk in the system," we will be inclined to treat every incursion over the border as an equal threat. The next time a major outbreak hits, technology to detect it will be more advanced. Our ability to implement that technology may not be.

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, where he served for nine years. Tucker's writing on emerging technology also has appeared in Slate, The Sun, MIT Technology Review, Wilson Quarterly, The American Legion Magazine, BBC News Magazine and Utne Reader among other publications.*

Scientists support research which increases microbes' virulence, transmissibility, or host range

Source: http://www.homelandsecuritynewswire.com/dr20140804-scientists-support-research-which-increases-microbes-virulence-transmissibility-or-host-range

Amid new concerns about lab safety lapses and in a counterpoint to recent calls for restrictions on research that may render pathogens more dangerous, thirty-six scientists from several countries have issued a formal statement asserting that research on potentially dangerous pathogens can be done safely and is necessary for a full understanding of infectious diseases.

The group, which calls itself Scientists for Science, includes

the two scientists who have been most prominently associated with "gain-of-function" (GOF) research: Ron Fouchier, Ph.D., of Erasmus Medical Centre in the Netherlands and Yoshihiro Kawaoka, DVM, Ph.D., of the University of Wisconsin.

A CIDRAP release notes that GOF research refers to experiments that involve increasing the virulence, transmissibility, or host range of microbes. The statement does not refer specifically to GOF studies but clearly relates to them, though not exclusively.

Confidence in safety

"Scientists for Science are confident that biomedical research on potentially dangerous pathogens can be performed safely and is essential for a comprehensive understanding of microbial disease pathogenesis, prevention and treatment," the statement reads. "The results of such research are often unanticipated and accrue over time; therefore, risk-benefit analyses are difficult to assess accurately."

The Scientists for Science statement comes in the wake of lab safety lapses involving *Bacillus anthracis* and H5N1 avian flu at the Centers for Disease Control and Prevention (CDC) and the discovery of smallpox virus samples in a Food and Drug Administration (FDA) facility. The incidents have increased concern about lab safety in general and the risks of GOF research in particular.

On 14 Jul another group of scientists, who call themselves the Cambridge Working Group, called for a halt to research involving the creation of "potential pandemic pathogens," especially flu viruses, pending a full assessment of the risks and benefits and of whether the same information could be gained by safer methods. Two days later, the European Center for Disease Prevention and Control (ECDC) said the safety of studies that involve the generation of potential pandemic pathogens deserves more public discussion.

Signers of the Scientists for Science statement include researchers from universities and other research centers in the United States, the United Kingdom, Germany, the Netherlands, and Australia. Besides Fouchier and Kawaoka, the list includes such names as Christian Drosten of the University of Bonn, Peter Doherty of the University of Melbourne, Peter Palese of the Icahn School of Medicine at Mt. Sinai in New York City, Vincent Racaniello of Columbia University, and Andrew Pekosz of Johns Hopkins University.

More names added

The release notes that since the statement was posted last week, thirteen more individuals have added their names as "supporting scientists." They include several U.S. government scientists who signed on as private individuals. Among the latest signers are Ian Lipkin of Columbia and David Morens, Jeffery Taubenberger, and John Yewdell of the National Institute of Allergy and Infectious Diseases.

Paul Duprex, Ph.D., associate professor of microbiology at Boston University, said in an interview that the statement grew out of conversations and e-mail exchanges he had with Racaniello of Columbia and Sean Whelan of Harvard University.

He said the trio talked about "the need to be proactive in explaining what we do and deal with the fact that there are a number of people who can make things worse by scare-mongering in the public.... We came to the conclusion that we had two options: either keep our heads down or explain the importance of basic microbiological research and what it has achieved."

"That is why Scientists for Science was established and we worked on the statement iteratively with input from Yoshi Kawaoka, for example," Duprex said.

Research already regulated

The statement says that significant resources have been invested in building biosafety level-3 and level-4 labs globally and in limiting risks through regulations, engineering features, and training. "Ensuring that these facilities operate safely and are staffed effectively so that risk is minimized is our most important line of defense, as opposed to limiting the types of experiments that are done," it adds.

t goes on to say that studies on dangerous pathogens are already extensively regulated, unlike recombinant DNA research at the time of the Asilomar conference in 1975. Studies involving "select agents" are subject to federal regulations, and

research plans for other organisms are reviewed by scientists and funding agencies, while safety committees review risk assessments and mitigation plans.
"If there is going to be further discussion about these issues, we must have input from outside experts with the background and skills to conduct actual risk assessments based on specific experiments and existing laboratories," the statement says.
"Such conversations are best facilitated under the auspices of a neutral party, such as the International Union of Microbiological Societies or the American Society for Microbiology [ASM], or national academies, such as the National Academy of Sciences [NAS], USA. We suggest they should organize a meeting to discuss these issues."
The statement closes with a pledge that the group will provide scientists and the public with accurate information and will work to promote "open and unbiased discourse."

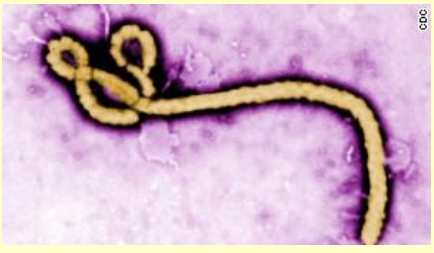
Recent events moved group to act
Duprex said he and his partners had been discussing doing something for a long time but started writing the statement about two weeks ago. He acknowledged that the Cambridge Working Group's statement was a factor in moving them to act, but said it wasn't the only one.
"That in addition to many other things crystallized why it's important for scientists to speak up," he said. However, "This is not about people fighting with each other, it's about instructive, proactive, reasonable debate."
He commented further that "Even though much of the focus and criticism is directed at so called 'gain of function' studies, as scientists we see this in a much broader perspective. We expect that www.scientistsforscience.org will be a forum for deliberation among SfS members, to discuss how to carry out experiments with dangerous pathogens safely and to share good practice."
He added that the group plans to provide facts and commentary and engage in open discourse with other scientists and the public. "We are convinced that using rhetoric or posturing to make points is counterproductive and does not serve science well. When necessary we will proactively respond to statements which are either damaging or simply erroneous."
Duprex said the group plans to approach the ASM and NAS about organizing a meeting to discuss biosecurity.

— Read more in the 28 July Scientists for Science statement; the 15 July CIDRAP News story on the Cambridge Working Group; the 16 July CIDRAP News item on ECDC statement on GOF research

Experimental drug likely saved Ebola patients

By Dr. Sanjay Gupta and **Danielle Dellorto** (CNN)
Source: http://edition.cnn.com/2014/08/04/health/experimental-ebola-serum/index.html

August 05 – On Thursday, Dr. Kent Brantly thought he was going to die.
It was the ninth day since the American missionary worker came down sick with Ebola in Liberia.

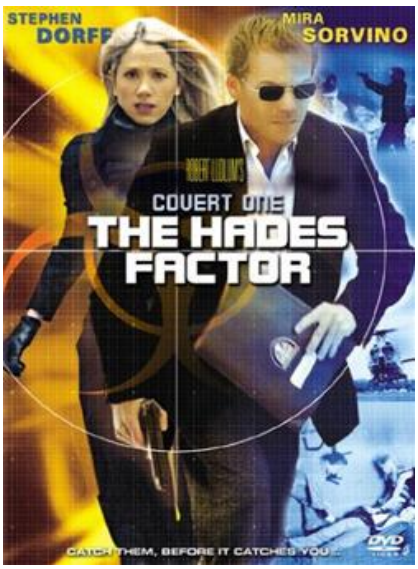


His condition worsening by the minute, Brantly called his wife to say goodbye.
Thankfully, the call was premature.
Brantly is back on his feet -- literally -- after receiving a last-ditch, highly experimental drug. Another American missionary with Ebola got the same.
Brantly's and Nancy Writebol's conditions significantly improved after receiving the medication, sources say. Brantly was able to walk into Emory University Hospital in Atlanta after being evacuated to the United States last week, and Writebol is expected to arrive in Atlanta on Tuesday.
On July 22, Brantly woke up feeling feverish. Fearing the worst, Brantly immediately isolated himself. Writebol's symptoms started three days later. A rapid field blood test

confirmed the infection in both of them after they had become ill with fever, vomiting and diarrhea.
It's believed Brantly and Writebol, who worked with the aid organization Samaritan's Purse, contracted Ebola from another health care worker at their hospital in Liberia, although the official Centers for Disease Control and Prevention case investigation has yet to be released.
The experimental drug, known as ZMapp, was developed by the biotech firm Mapp Biopharmaceutical Inc., which is based in San Diego. The patients were told that the treatment had never been tried before in a human being but had shown promise in small experiments with monkeys.
According to company documents, four monkeys infected with Ebola survived after being given the therapy within 24 hours after infection. Two of four other monkeys that started therapy within 48 hours after infection also survived. One monkey that was not treated died within five days of exposure to the virus.
Brantly and Writebol were aware of the risk of taking a new, little-understood treatment and gave informed consent, according to two sources familiar with the care of the missionary workers. In the monkeys, the experimental serum had been given within 48 hours of infection. Brantly didn't receive it until he'd been sick for nine days.
The medicine is a three-mouse monoclonal antibody, meaning that mice were exposed to fragments of the Ebola virus and then the antibodies generated within the mice's blood were harvested to create the medicine. It works by preventing the virus from entering and infecting new cells.
The Ebola virus causes viral hemorrhagic fever, which refers to a group of viruses that affect multiple organ systems in the body and are often accompanied by bleeding.
Early symptoms include sudden onset of fever, weakness, muscle pain, headaches and a sore throat. They later progress to vomiting, diarrhea, impaired kidney and liver function -- and sometimes internal and external bleeding.
The ZMapp vials, stored at subzero temperatures, reached the hospital in Liberia where Brantly and Writebol were being treated Thursday morning. Doctors were instructed to allow the serum to thaw naturally without any additional heat. It was expected that it would be eight to 10 hours before the medicine could be given, according to a source familiar with the process.
Brantly asked that Writebol be given the first dose because he was younger and he thought he had a better chance of fighting it, and she agreed. However, as the first vial was still thawing, Brantly's condition took a sudden turn for the worse.
Brantly began to deteriorate and developed labored breathing. He told his doctors he thought he was dying, according to a source with firsthand knowledge of the situation.
Knowing his dose was still frozen, Brantly asked if he could have Writebol's now-thawed medication. It was brought to his room and administered through an IV. Within an hour of receiving the medication, Brantly's condition dramatically improved. He began breathing easier; the rash over his trunk faded away. One of his doctors described the events as "miraculous."
By the next morning, Brantly was able to take a shower on his own before getting on a specially designed Gulfstream air ambulance jet to be evacuated to the United States.
Writebol also received a vial of the medication. Her response was not as remarkable, according to sources familiar with the treatment. However, doctors on Sunday administered Writebol a second dose of the medication, which resulted in significant improvement.
She was stable enough to be evacuated back to the United States.
The process by which the medication was made available to Brantly and Writebol is highly unusual.
World Health Organization spokesman Gregory Hartl cautioned that health authorities "cannot start using untested drugs in the middle of an outbreak, for various reasons."
Doctors Without Borders similarly weighed in on the side of caution.
"It is important to keep in mind that a large-scale provision of treatments and vaccines that are in very early stages of development has a series of scientific and ethical implications," the organization said in a statement.
"As doctors, trying an untested drug on patients is a very difficult choice since our first priority is to do no harm, and we would not be sure that the experimental treatment would do more harm than good."

ZMapp has not been approved for human use and has not even gone through the clinical trial process, which is standard to prove the safety and efficacy of a medication. It may have been given under the U.S. Food and Drug Administration's "compassionate use" regulation, which allows access to investigational drugs outside clinical trials.
Getting approval for compassionate use is often long and laborious, but in the case of Brantly and Writebol, they received the medication within seven to 10 days of their exposure to the Ebola virus.
On July 30, the Defense Threat Reduction Agency, an arm of the military responsible for any chemical, biological, radiological, nuclear and high-yield explosive threats, allotted additional funding to MAPP Biopharmaceutical due to "promising results."

EDITOR'S COMMENT: I was watching the other night a movie named "The Hades* Factor". "Hades virus" was **a variant of Ebola** virus! Was it a coincidence related to this article?



Covert One: The Hades Factor (a.k.a. *Robert Ludlum's Covert One: The Hades Factor*, *The Hades Factor*) is a made-for-TV thriller filmed in Toronto that first aired in 2006. Directed by Mick Jackson, the miniseries is loosely based on *The Hades Factor*, a 2000 novel written by Gayle Lynds as part of the Covert-One series created by Robert Ludlum.

Plot

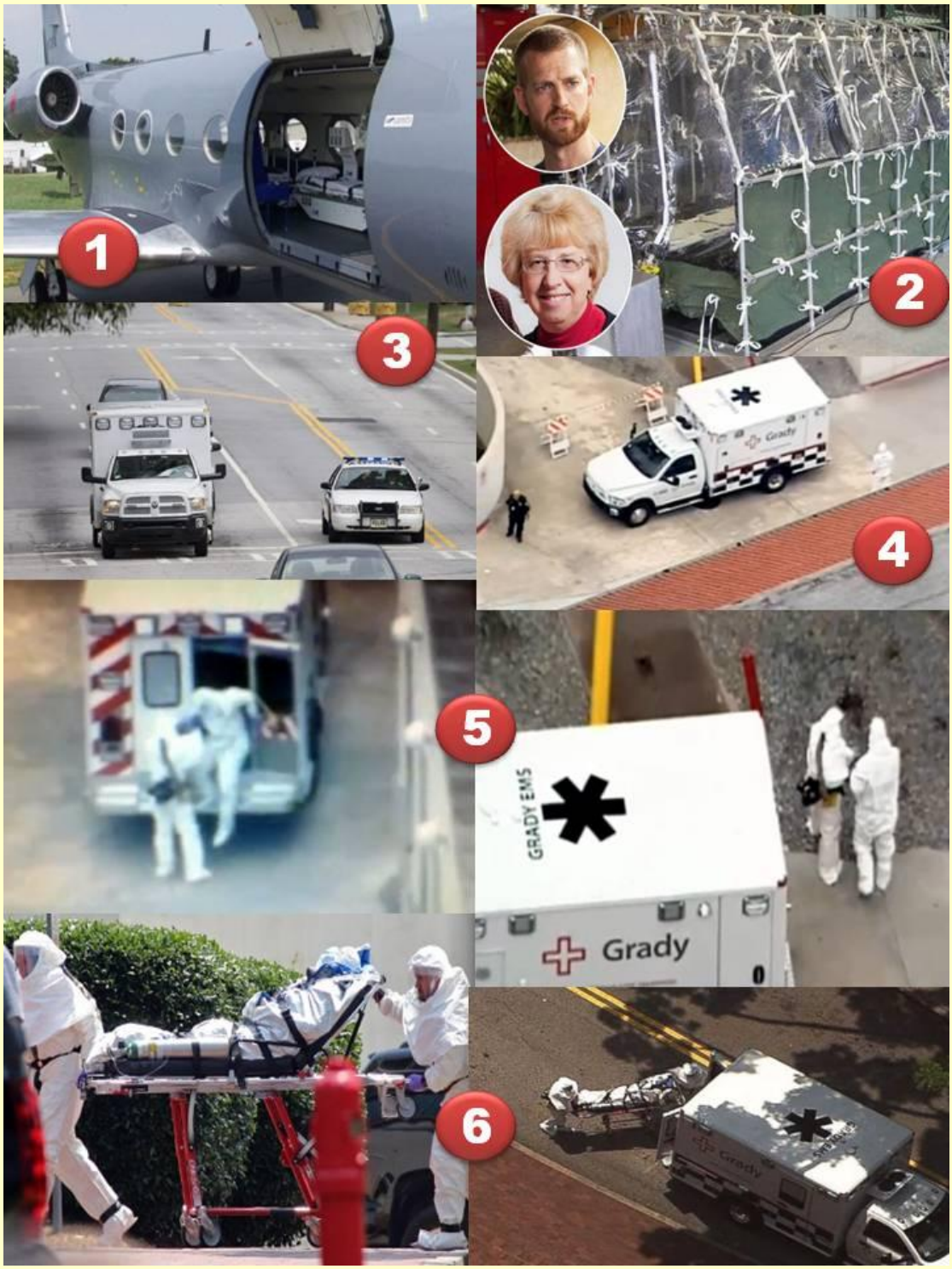
While in a retrieve operation of a virus in Berlin, the Covert One agent Rachel Russell is double-crossed by two dirty agents; she kills them and escapes, trying to find a hiding place and someone to trust to protect the vials. Meanwhile, the former Covert One agent Dr. Jon Smith is also in Berlin with his beloved fiancée Sophie Amsden participating in a congress. When three persons die with bleeding, the doctors disclose a Hades virus outbreak, an extreme rare Ebola variant. Jon and Sophie return to the USA to research a cure, and Jon discovers a huge combination of bio-terrorism and conspiracy.

* **Hades** (from Ancient Greek Ἅιδης/Ἀΐδης, *Hāidēs*; Doric Ἀΐδας *Aidas*) was the ancient Greek god of the underworld.

So rich ... and so STUPID!

Air Transportation of biohazard patients

A compilation of recent cases of two Ebola patients (a physician and a nurse) from Africa to United States.



EDITOR'S COMMENT: Observing the photos and videos related to both cases some questions/comments emerged: (1-2) Isolation tent inside airplane – a good solution. But was it necessary the moment that specialized stretchers/ICUs are available in the US market (see next photo)? (3) Why the police escort? (4) Why the police officer (figure in black) is without PPE? In the same video many press members with cameras but without

PPEs were in close proximity to arriving highly contagious patient. (5) Why the doctor had to walk? Was the PPE worn by the doctor enough? (6) Why the nurse is carried strapped like this – were they afraid that she will escape? Available solutions are more comfortable and practical (see photo below).

U.S. Health Authorities Concealing Number of Suspected Ebola Victims From Public

Source: http://www.infowars.com/u-s-health-authorities-concealing-number-of-suspected-ebola-victims-from-public/

August 05 – In an apparent attempt to avoid hysteria, U.S. health authorities are withholding details about a number of suspected Ebola victims from the public.

During a segment concerning the admission of a potential Ebola victim at Mount Sinai Hospital in New York City, CNN's Dr. Sanjay **Gupta revealed that there have been at least six cases at the hospital which prompted doctors to test for Ebola but that the details were not divulged publicly.**
"There have been about a half a dozen patients who have had their blood tested because of concern, those particular patients their stories were not made public," said Gupta, adding, "I'm not sure if that's because of heightened concern by the hospital or what that means exactly."
Gupta also appeared to suggest that patients being tested for the Ebola virus were not being kept in isolation when he stated, "This isn't the kind of thing that they worry about spreading to other patients in the hospital, spreading to people who are walking around the hospital. This is not an airborne virus."
However, at least in the case of the patient who was made public yesterday, hospital officials said the individual was immediately put into isolation as a precaution.
As we reported yesterday, despite health authorities downplaying the likelihood of Ebola going airborne, studies by Canadian scientists suggest that this is in fact likely, at least to a limited degree.
The Public Health Agency of Canada's official website also states that "airborne spread among humans is strongly suspected, although it has not yet been conclusively demonstrated."
The CDC has urged airline staff to take steps to prevent the airborne spread of the virus, including giving suspected Ebola victims surgical masks as well as directing staff to "not use compressed air, which might spread infectious material through the air."

On the trail of an Ebola cure

Source: http://www.israel21c.org/headlines/on-the-trail-of-an-ebola-cure/?utm_source=06_08_2014&utm_campaign=2014-08-06&utm_medium=email

As the most severe Ebola epidemic on record spreads through central Africa, infecting and killing hundreds of citizens and foreign aid workers, and raising the specter of outbreaks all over the world, an Israeli research team is working with survivors to develop antibodies against the lethal virus.

Dr. Leslie Lobel tells ISRAEL21c that he and fellow principal investigator Dr. Victoria Yavelsky have spent many years studying native immunity to Ebola and another equally lethal Equatorial African virus, Marburg, at Ben-Gurion University of the Negev's Center for Emerging Diseases, Tropical Diseases and AIDS.
Ebola, a hemorrhagic fever, is one of the deadliest viruses in the world. It kills up to 90 percent of its victims, while Marburg, another hemorrhagic fever, kills up to 88%.
Ebola can be spread through sweat and saliva and there is no vaccine or cure. In the latest outbreak, the worst ever, more than 670 people have died, including Americans.
"Currently we've tracked all Ebola and Marburg virus survivors in Uganda, studied their immune responses to these viruses and identified survivors with a strong immune response," he says. "We take blood samples from them and isolate monoclonal antibodies that neutralize the virus in our lab here at Ben-Gurion."
Yavelsky and Lobel's therapeutic approach was proven as a successful potential treatment by their colleagues in the US military, and at several other laboratories.

This approach is regarded as the most promising way to prevent Ebola and Marburg, and it could be available within five years.

Lobel travels to Africa about five times a year. "We have set up a base laboratory in Entebbe, with our Ugandan colleagues, so that we can process human blood samples in under 12 hours from the time of collection, which is required for our work. After the samples are tested and deemed to be non-infectious, we ship them to Israel and our team here develops antibodies from the samples," Lobel says.

With funding from the US National Institutes of Health and other resources, Lobel's lab is now getting ready to test its human monoclonal antibodies in mice and non-human primates.

This will be performed abroad because no live virus research is permitted in Israel.

Five-year plan

"We have a five-year plan and I believe we could have proof of concept with human monoclonal antibodies in monkeys in three to five years," Lobel predicts. "If we can prove it in two animal models we can eventually use it in humans."

He notes that the work being done at Ben-Gurion University is essential, since there are few studies on survivors of Ebola and there is no effective treatment thus far.

"We're quite advanced in terms of studying the immune response in survivors in central Africa to develop a prophylactic and therapeutic [approach]," he tells ISRAEL21c.

The Israeli company Vecoy Nanomedicines is developing a biomedical technology platform that tricks a virus into "committing suicide," a tactic that could neutralize viral threats like Ebola, hepatitis and HIV. However, Vecoy's Dr. Eitan Eliram tells ISRAEL21c that Vecoy has not yet found sufficient funding to go forward.

Several other experimental vaccines and therapeutic approaches to Ebola and Marburg – mostly in the United States and Canada – are in various stages of development.

The current outbreak was noticed last February in Guinea, a country that is normally outside the usual ecosystem for Ebola, according to Lobel. At the end of March, the US Centers for Disease Control sent a team to assist Guinea Ministry of Health and World Health Organization (WHO) in formulating an international response to the outbreak that is now affecting other African countries including Sierra Leone, Liberia and Nigeria.

Poor compliance with health authorities and many customary practices are thought responsible for the rapid spread of the virus. Because of international travel, however, the Ebola specter hangs over much of the world. Accordingly, WHO has been holding emergency coordination

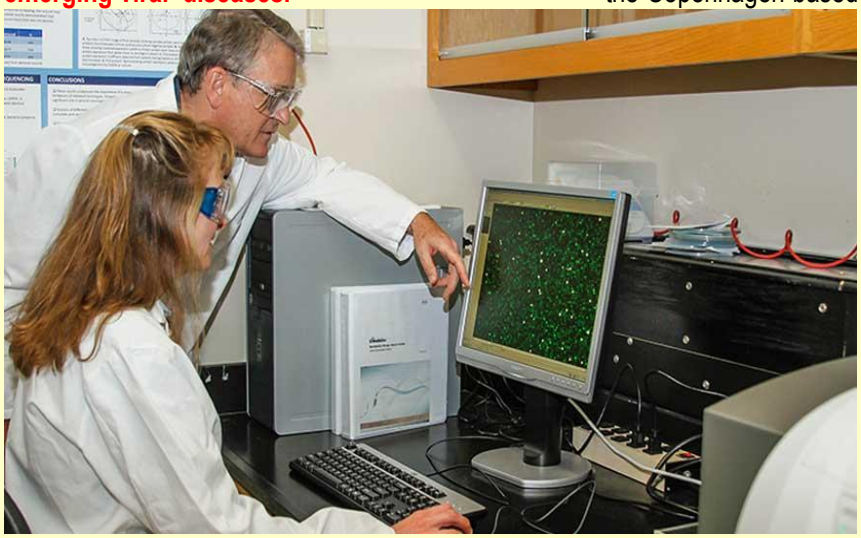
meetings in several countries, and nations such as Liberia are sealing their borders and establishing screening centers. The most affected areas are imposing quarantines.

As of the end of July, Nancy Writebol and Dr. Ken Brantly, two American aid workers stationed at a Liberian hospital, tested positive for the Ebola virus.

New technology could screen for emerging viral diseases

Source: http://www.homelandsecuritynewswire.com/dr20140806-new-technology-could-screen-for-emerging-viral-diseases

A microbe detection array technology developed by Lawrence Livermore National Laboratory (LLNL) scientists could provide a new rapid method for public health authorities to conduct surveillance for emerging viral diseases.



An LLNL release reports that this possible use of the Lawrence Livermore Microbial Detection Array (LLMDA) was studied by an international team of researchers from eight nations in a paper published late last month in the *PLOS ONE* scientific journal.

"The disease symptoms for emerging viruses are often similar to those of other more common viruses, posing a diagnostic challenge to clinicians unfamiliar with the novel organism," the authors wrote. "In the case of emerging viruses, it is crucial for patient treatment and for containment of a potential epidemic to quickly identify the correct virus."

With the use of the LLMDA, combined with a DNA amplification technique developed by researchers from Denmark, the team was able correctly to identify twenty-nine different emerging viruses in both clinical and non-clinical samples.

One of LLMDA's most important advantages is that the tool can perform thousands of tests in parallel within twenty-four hours, while another method, polymerase chain reaction (PCR) — though faster — can only run dozens of tests at a time.

The paper's lead author is a researcher from the Copenhagen-based Statens Serum Institut, Denmark's equivalent of the U.S. Centers for Disease Control and Prevention (CDC).

Two LLNL scientists — bioinformaticist Shea Gardner, who designed the array, and biostatistician Kevin McLoughlin, who designed the analysis algorithm — were members of the team.

"The study shows that we are moving closer to having a robust technology that can be used for surveillance of emerging diseases," McLoughlin said. "It could be used in public health laboratories to screen samples for viruses that are unexpected in the population."

Emerging viruses are normally endemic to tropical and sub-tropical regions of the world, but increased global travel and other factors are believed to contribute to the spread of these viruses into new regions.

In the view of the paper's authors, the risk of importing rare, exotic and emerging diseases to Europe has increased.

"Some areas in Europe already maintain environmental conditions favorable to these pathogens, such as hantavirus, Crimean-Congo hemorrhagic fever virus and West Nile virus. Travelers visiting endemic areas are a potential source for spreading these diseases," the authors said.

"There is a demand," they noted, "for rapid and accurate identification of the virus to initiate specific treatment, if available, as well as appropriate case management, such as isolation and contact tracking."

The authors reported that they found the LLMDA to be sensitive and specific to a wide range of emerging viruses and to successfully identify emerging viruses present in clinical samples.

Among the viruses detected in the clinical samples were: Dengue fever, West Nile, Crimean-Congo hemorrhagic fever, Chikungunya, polyomaviruses, herpes simplex, hepatitis GB virus C and Coxsackie.

The only sample in the study that was not identified was a Dengue fever virus, in which the viral concentration was determined to be below the detection limit. However, seven other clinical samples tested with Dengue fever virus were detected.

In the study, the team used an earlier version of the LLMDA that contained some 388,000 probes that could detect 2,195 viruses and 924 bacteria.

The current version of the array, with 180,000 probes, can identify 4,377 viruses and 5,457 bacteria, as well as a combined total of more than 775 protozoa, fungi and archaea species.

Developed in 2008, the LLMDA detects microbes with the use of probes that fit in a checkerboard pattern in the middle of a 1-inch wide, 3-inch long glass slide. The instrument is seen as occupying a niche role between PCR and sequencing.

The LLMDA process starts with the purification of DNA or RNA from a sample, such as sputum or blood. The sample is next labeled with a fluorescent dye and hybridized on the microarray at 42 degrees Celsius or about 107.6 degrees Fahrenheit. In turn, a fluorescent scanner and analysis software are used to detect the probes that have lit up, identifying the presence of viral or bacterial sequences.

— Read more in Maiken W. Rosenstierne et al., "The Microbial Detection Array for Detection of Emerging Viruses in Clinical Samples - A Useful Panmicrobial Diagnostic Tool," PLOSOne (25 June 2014)

Synthetic biology and biosecurity: challenging the 'myths'

By Catherine Jefferson[1], Filippa Lentzos[1] and Claire Marris[1*]
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Front. Public Health | doi: 10.3389/fpubh.2014.00115
Source: http://journal.frontiersin.org/Journal/10.3389/fpubh.2014.00115/abstract

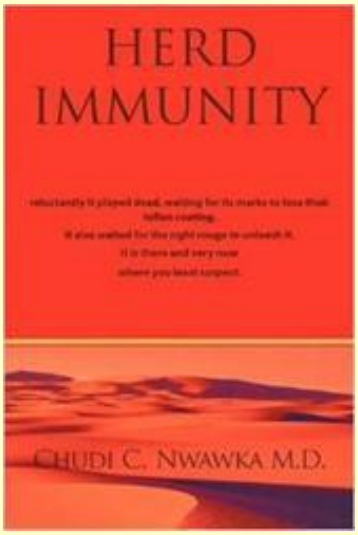
Synthetic biology, a field that aims to 'make biology easier to engineer', is routinely described as leading to an increase in the 'dual use' threat, i.e. the potential for the same piece of scientific research to be 'used' for peaceful purposes or 'misused' for warfare or terrorism. Fears have been expressed that the 'de-skilling' of biology, combined with online access to the genomic DNA sequences of pathogenic organisms and the reduction in price for DNA synthesis, will make biology increasingly accessible to people operating outside well-equipped professional research laboratories, including people with malevolent intentions. The emergence of DIY biology communities and of the student iGEM competition has come to epitomize this supposed trend towards greater ease of access and the associated potential threat from rogue actors. In this article, we identify 5 'myths' that permeate discussions about synthetic biology and biosecurity, and argue that they embody misleading assumptions about both synthetic biology and bioterrorism. We demonstrate how these myths are challenged by more realistic understandings of the scientific research currently being conducted in both professional and DIY laboratories, and by an analysis of historical cases of bioterrorism. We show that the importance of tacit knowledge is commonly overlooked in the dominant narrative: the focus is on access to biological materials and digital information, rather than on human practices and institutional dimensions. As a result, public discourse on synthetic biology and biosecurity tends to portray speculative scenarios about the future as realities in the present or the near future, when this is not warranted. We suggest that these 'myths' play an important role in

defining synthetic biology as a 'promissory' field of research and as an 'emerging technology' in need of governance.

New Bioterrorism Novel Explores Smallpox Infection; Who Will Fall Victim Next?

By Chudi C. Nwawka M.D. (Author)
Source: http://www.broadwayworld.com/bwwbooks/article/New-Bioterrorism-Novel-Explores-Smallpox-Infection-Who-Will-Fall-Victim-Next-20140806#.U-R_YGPhsxA

Recently, the smallpox virus that had been eradicated since 1977 made an appearance in a Food and Drug Administration laboratory. While no one was exposed to the virus, this raises the question of, "What if?"



Doctor and author of new book, "Herd Immunity," Chudi Nwawka presents a realistic prediction of what could happen if the decline of herd immunity continues and exposure to the smallpox virus becomes a reality once again.

"Germs do not die with their victims." Nwawka said. "To really protect and prevent, the world needed to get rid of every single smallpox germ on the face of the earth."

In "Herd Immunity" a UCLA microbiologist in search for purpose in a foreign land, finds himself seeking immunity with the Taliban at a high cost. With the U.S. lacking in herd immunity and the smallpox strand in the hands of a terrorist, a smallpox epidemic spreads quickly.

Nwawka uses this fictitious story to present how herd immunity is effective and the serious need for it. His medical knowledge and background is expressed within the novel, providing insight on the smallpox virus and the importance of vaccinations.

***Chudi Nwawka** is a practicing obstetrician and gynecologist in Illinois. He received his Bachelor of Medicine, Bachelor of Surgery at the University of Ibadan, Nigeria. Studying germs and defense against germs are the building blocks in any medical profession, so it is no wonder Nwawka felt compelled to write on the subject of immunology.*

The Ebola Virus Pandemic: "A Weapon of Mass Destruction"?

By Joachim Hagopian
Source: http://www.globalresearch.ca/the-ebola-virus-pandemic-a-weapon-of-mass-destruction/53949 76

The Department of Defense and Centers for Disease Control (CDC) classify the Ebola virus as a biowarfare agent. Reports of up to 90% of humans infected die within a very short time. Therefore, it is a very real, extremely potent potential weapon of mass destruction.

Every single day Ebola keeps cropping up in different places, eight cases spreading into Africa's most populated nation Nigeria, several more now have surfaced beyond the African continent with suspected new cases in Hong Kong and Saudi Arabia. At least six others fresh off flights from West Africa are currently being quietly tested at locations here in the US in New York, Philadelphia and Ohio. With all the latest news of the spreading outbreak understandably giving rise to public fear and panic that it is just a plane ride away now, millions if not billions on this planet are pondering whether the African pandemic might be rapidly turning

into a global epidemic spreading to every corner of the earth. Of course to reduce these concerns, the World Health Organization (WHO) and US government are busily downplaying the risks to citizens here in North America.

Is it coincidence that the first two Americans suffering from the deadly disease are now inside the US border? Is it coincidence that the most deadly outbreak of the disease in history has admittedly now killed nearly 900 West Africans already this year? Over 200 more than just a few days ago? Is it coincidence that President Obama has just signed an executive order to have the power to begin rounding up American citizens with respiratory diseases against their will? Is it coincidence that FEMA roundups are about to begin in Los Angeles, deceiving homeless people with the carrot stick of a meal to corral them into those FEMA concentration camps and Halliburton refurbished, soon to no longer be empty prisons we've been hearing about?

Throughout this last century the US government and military have a notorious track record for delving into the darkest, most sinister realms in its pathological, "cutting edge" pursuit of amassing the most powerful destructive forces on earth… from torturous mind control methods to unlawful, deceptive drug experimentation on unsuspecting soldiers acting as involuntary guinea pigs, to manipulating extreme weather events used as offensive weapons to create killer storms and droughts, to the use of potently lethal electromagnetic radio waves to alter and disturb the human mind and behavior that conceivably can even cause heart attacks.

For many decades the US military has been systematically carrying out numerous highly secretive black ops programs, from raining poisonous metals down on unsuspecting Americans as sprayed chemtrails to using poor inner city mostly African Americans in St Louis as guinea pigs directly firing radioactive volleys from urban rooftops just to see how humans react to high doses of radiation. Also throughout the 1950's into the early 1960's there was extensive atomic bomb testing in the Nevada-Utah desert sites as well as experimental weapons testing still being detonated to this day in the South Pacific, all done knowing that downwind are unsuspecting, unprotected human victims. For four decades right up until 1972, 400 poor black sharecroppers in Tuskegee, Alabama were purposely infected syphilis just to study the effects. As if that was not enough, US government scientists infected Guatemalans in the 1940's also with syphilis just to experiment with penicillin. This ultra-covert, highly unethical and illegal, malevolent practice of customarily misusing science, often at top universities with unlimited taxpayer funding to harness brilliant yet twisted scientific minds to unleash Nazi Dr. Mengele-type nightmarish experimentation on innocent human populations is nothing new. For obvious reasons it has largely been kept secret and hidden from public view and awareness. But enough concrete evidence has been uncovered over the years to show how willingly diabolical the US military consistently is toward harming even its own citizens.

Less hidden but far more devastating evil acts have been perpetrated by American armed forces on civilians throughout the world. Senselessly destroying Hiroshima and Nagasaki as densely populated Japanese cities became the first intended targets and human guinea pigs of the atomic bomb. And President Truman ordered it even knowing Japan had all but surrendered already. But even prior to the Enola Gay dropping the atomic bomb, the US has used chemical warfare killing people all over the globe with Monsanto made napalm bombs that in one single attack wiped out 100,000 Japanese citizens. Hundreds of thousands of Southeastern Asians were napalmed to death during the Vietnam War. White phosphorus has been used to melt human flesh in Iraq and Israel has used it against Palestinians. Millions and millions of innocent humans have been murdered as a result of these most heinous international crimes against humanity decade after decade after decade with complete impunity at the hands of both the US and Israeli military.

So developing biological weapons from collecting monstrously lethal specimens of the Ebola virus should come as no surprise. Or when considering this already long and extensive US military history, repeatedly guilty of human slaughter on such

mammoth, unprecedented scale, it should not be so shocking to realize the military purpose of Ebola as yet another highly destructive weapon in its vast lethal arsenal could be potentially used to eliminate an enormous segment of this planet's readily expendable current human population.

This year's first outbreak of the hemorrhagic fever virus Ebola started in February in the West African nation of Guinea. It then began spreading to Liberia and, for the first time, to Sierra Leone and now Nigeria. With the possible spread to England in attempts to trace 30,000 people who might have been exposed, and now an American death in Nigeria and two more Americans afflicted with it here in the US, Ebola has rapidly grown into what could become a global epidemic with a potential capacity to wipe out millions. According to recent statistics from the World Health Organization (WHO) released just last week, at least 672 people have died out of a total of 1,201 cases so far this year in West Africa. However, seven days later the number of fatalities has jumped to 887, a spike of over 200 deaths in just the last few days.

Because the incubation period may last ten days while the infected victim may not even be aware of any illness, the virus is highly contagious. Then what begins like typical flu symptoms of fever, later vomiting as the virus spreads rapidly inside the body causing people to succumb often within days of its onset. Victims literally die from internal bleeding that in the final stages can flow out of every orifice. It has the trappings of a ghastly zombie science fiction nightmare come true.

In 1976 the Ebola outbreak first surfaced in Zaire (now the Republic of the Congo) and then concurrently in Sudan though with different strains, killing 280 people out of 318 diagnosed in Zaire (88% mortality rate) and 151 out of 284 in Sudan (at a killing rate of 53%). During the nearly four decades since those first outbreaks, little has been learned of the disease. The origin of the virus is believed to come from infected animals such as rats, monkeys and bats, all edible meat that are a main staple and part of many Africans' diet. The so called bush meat can be a viral carrier. So humans remain at risk from animal to human transmission and of course now from human to human transmission, most often from exchange of bodily fluids.

There is no standard treatment (other than isolating the infected and quarantining those at risk). Nor is there yet an official vaccine, although Reuters just announced that as early as next month the US government will commence testing an experimental Ebola vaccine on humans after positive results were found on primates. It has been reported that the National Institutes of Health (NIH) infectious disease unit and the US Food and Drug Administration (FDA) will be running vaccine trials "as quickly as possible."

This contagious, incurable, highly fatal disease along with the typical bleeding from the eyes has people around the world reacting in horror especially with this largest outbreak to date. Both the CDC and WHO have emphasized that there is no reason for panic as far more people die from the common flu every year than the less than 2000 people killed by Ebola since its African emergence nearly four decades ago. The total numbers show two out of three humans who have been diagnosed with the Ebola virus, die from it with 1,717 deaths recorded out of a total 2,586 cases thus far. In stark contrast, 500,000 people die annually from influenza and a total of nineteen million are believed to have succumbed from the flu.

That said, it is important to disseminate accurate information of what we have come to learn about Ebola. According to the Public Health Agency of Canada:

" INFECTIOUS DOSE: 1 – 10 aerosolized organisms are sufficient to cause infection in humans."

Canadian researchers separating pigs from monkeys by wired pens found that infected pigs transmitted the virus by air to the monkeys. Also the viral organism can survive outside the host for several days at normal room temperature, evidence that the virus can stay alive on door knobs and household surfaces and be contagious for a considerable length of time.

The increased near nonstop mainstream reporting about Ebola in recent weeks is undoubtedly in part government propaganda designed to frighten people as well as perhaps take some of the heat off its number one genocidal ally Israel. The

security state typically exaggerates or fabricates crises after crises in order strengthen its control through fear tactics over the general population. It only solidifies the absolute authority and power of the police state. Add the media propensity to over sensationalize as a tool of state sponsored propaganda and sufficient excuse emerges to activate security forces to quell ensuing panic and disorder. That said, local citizens in all nations do need to stay informed of any real global danger if in fact an Ebola pandemic does break out in a neighborhood near you, whether by accident or by sinister government design.

Right in stride with the Ebola hype comes the signing of Obama's latest executive order. "Revised List of Quarantinable Communicable Diseases" allows for the "apprehension, detention, or conditional release of individuals to prevent the introduction, transmission, or spread of suspected communicable diseases," added to George Bush's 2003 Executive Order 13295. This means that anyone with respiratory problems that might include bronchitis, COPD or pneumonia can potentially be rounded up at any time. This disinformation of protecting people under benign pretense is the deceptive bait by which the totalitarian police state closes in on its stranglehold of the American populace. Every week the government is ratcheting up conditions ripe for the next manufactured crisis on domestic soil that will ultimately pave the way for martial law and the FEMA roundups of American citizens. With these latest developments, we are one step closer.

Under CDC authority not just people with respiratory problems can be apprehended and detained against their will under the protocol of being quarantined. CDC asserts that any healthy American can be detained as well based on mere suspicion that he or she might have come into contact with an infected person. This loosening of the criteria for detaining individuals opens the floodgate for Big Brother to round up virtually anyone.

In other recent related news, along with people with respiratory problems, there is a current plan in place to soon be rounding up the homeless in Los Angeles and locking them up in FEMA concentration camps with implanted RFID chips. They will be baited with a promised meal. That famous poem by Martin Niemöller comes to mind about the passivity and denial of so many German citizens in response to the series of Nazi prewar mass roundups – "when they came for the homeless, I did not speak out because I was not homeless." The Orwellian nightmare is officially underway.

Over the weekend Dr. Kent Brantly, the American doctor who contracted Ebola while treating patients in West Africa, arrived in Atlanta and under police escort was rushed off to the home of the CDC Emory University Hospital. Today another American medical worker Nancy Writebol came in on a separate flight and was wheeled into Emory Hospital. Their arrival marks the first Ebola cases on US soil. Both were given an experimental drug in Liberia that apparently is improving their condition. Last Thursday before given the drug the doctor stated he felt he was dying but had already gained enough strength to walk into the hospital in Atlanta on his own. The new drug is called **ZMapp** and was developed by the San Diego biotech firm Mapp Biopharmaceutical Inc. after showing promising signs treating monkeys infected with Ebola.

No doubt the US government is highly invested in Ebola for both potential Big Pharma profits developing a vaccine as well as for a potential "final solution" as a convenient biowarfare global population-killer. Speaking of profits, Tekmira Pharmaceuticals, a company working on an anti-Ebola drug, just received a $1.5 million cash advance from another killer corporation Monsanto. In the past Tekmira was also awarded $140 million contract from the Department of Defense (formerly known more appropriately as the Department of War). In 2010 the CDC actually did acquire a patent on the strain that erupted in Uganda in 2007 that killed 39 out of 116 infected patients. The CDC patent owning that particular strain of Ebola from Uganda known as "EboBun" has the patent number CA2741523A1 and can be viewed here.

By filing for a patent on a product, in this case a highly lethal infectious disease, the US government is acquiring a governmentally enforced monopoly to exclusively profit from the "invention." In the summary section of the EboBun

patent, it stipulates that the US government in its patent ownership has complete legal control and ownership over all other strains of Ebola virus that share 70% and higher similarity. Thus, this deadly West African strain of Ebola will soon become the US government's latest prize possession in biowarfare.

In bringing the two Ebola infected Americans back from West Africa to the CDC, in addition to optimizing their survival chance, the other all too obvious explanation is to harvest their Ebola cells for extraction that will then be used to patent the most deadly strain ever known to man. Infectious disease specialist Dr. Bob Arnot who worked on the ground in Africa with patients infected with Ebola virus recently went on television maintaining that "there is no medical reason to bring them here." To make an exclusive claim of ownership of such a highly infectious disease stolen from the afflicted seems in and of itself invasively and exploitatively sinister. Of course it raises such red flag warnings and suspicion of how the virus might actually be used or more apt misused. Typically the government is quick to explore its military application as potentially the most powerful deadly biological weapon in the entire world.

Sierra Leone recently kicked out all US Ebola researchers from Tulane University and the US Army Medical Research Institute of Infectious Diseases (USAMRIID), a known center for biowar research headquartered at Fort Detrick, Maryland. Just prior to that event two weeks ago after three nurses died from the viral hemorrhagic fever, Sierra Leone nurses working in heavily infested Kenema district actually went on strike accusing the government's Ministry of Health and Sanitation of mishandling the pandemic that is rapidly spreading. They complained that the medical workers caring for the ill are not properly protected and are suspicious that the American biowarfare team may be responsible for the recent surge in deaths. The Sierra Leone government then ordered the US bioweapons lab at Kenema to be moved due to the mounting anger of the local population blaming the Americans for infecting their citizens through their Ebola testing. Posted on the health ministry's Facebook page is the conclusion that the diagnostic kits the US researchers have been using are fake and producing false results. It legitimately asks, "Have Tulane researchers done something to endanger public health?" Meanwhile, more people are becoming infected and dying there in that Sierra Leone district hospital than any other place on the planet.

Compounding the mystery, US mainstream media reported that the Sierra Leone leading doctor died from Ebola but the Minister of Health denied that claim. WHO is believed to be taking advantage of the crisis in medical services with pressure to deploy UN security forces in order to launch a massive vaccination (and possible infection) and quarantine campaign. In response, 700 soldiers from the Sierra Leone army have been deployed setting up roadblocks to help quarantine citizens, permitting only health personnel into the hardest hit areas. Troops in Liberia have also been sent to help contain the outbreak there.

The Minister also stated that all new confirmed cases will be admitted and treated at Kailahun Hospital, not trusting what has been occurring with the presence of the US biowarfare researchers at Kenema where rates of confirmed diagnosis have soared recently. Finally the Sierra Leone government is also demanding that the CDC send the biowar lab results to the African government for analysis, implicating that the US research group may be under investigation.

A doctor employed by the French charity organization Doctors Without Borders even stated that the locals' perception that they will be killed in the Kenema hospital where the Americans have been conducting their research is "understandable," given that the hospital has become the pandemic's epicenter. Both the WHO and CDC documents admit that historically most of the Ebola victims have died at the Kenema hospital because of the questionable activities of medical staff. That sounds like an admission of guilt that the military biowarfare team instead of accurately diagnosing patients may have in fact contaminated them with the Ebola virus, possibly using the local Sierra Leone population as mere guinea pigs for their experimentation.

Back in 2009 Tulane University Ebola researchers received more than a $7 million dollar grant from NIH to fund the detection kits

allegedly used in Sierra Leone. A 2007 Tulane University release entitled "New Test Moves Forward to Detect Bioterrorism Threats" boasts of an earlier $3.8 million NIH grant that led to early test trial success of "diagnostic test kits that will aid in bioterrorism defense against a deadly viral disease." This document indicates that the Ebola biowarfare research team has been experimenting with its kits on Sierra Leone's people for at least seven years before they were ultimately banished recently.

In another astonishing development, a rogue doctor with extensive experience treating Ebola victims, anonymously released what he calls a simple treatment for Ebola – massive amounts of Vitamin C. Similar but far more extreme than scurvy, the Ebola virus essentially drains the body of all Vitamin C, thus depriving oxygenated blood that bursts capillaries and triggers internal hemorrhaging that in effect causes victims to bleed to death. This Ebola specialist maintains that there is no need for a vaccine and warns against them, adding his opinion that the Ebola outbreak in Sierra Leone was actually caused by that biowarfare research team. The doctor recommends a high dosage treatment of 500,000 mg of Vitamin C per day, emphasizing that it is not a cure but will boost the immune system giving it the strength to kill off the Ebola virus in the body.

What is most certain in all these developing stories is the rapid unfolding of global destabilizing events and developments, bogus accusations and boldface lies streaming forth everyday from the propaganda mills of mainstream media and the US government. But a closer examination of what is far more probable the actual truth indicates that so many of these simultaneous incidents are intimately related, and a mere connecting of dots spells an evil agenda promoting tighter control by a desperate security state that is now declaring war on all people who seek and speak the truth.

Joachim Hagopian *is a West Point graduate and former US Army officer. He has written a manuscript based on his unique military experience entitled "Don't Let The Bastards Getcha Down." It examines and focuses on US international relations, leadership and national security issues. After the military, Joachim earned a masters degree in Clinical Psychology and worked as a licensed therapist in the mental health field for more than a quarter century. He now concentrates on his writing.*

Ebola outbreak could inspire African terrorist groups to weaponize the virus: Experts

Source: http://www.homelandsecuritynewswire.com/dr20140807-ebola-outbreak-could-inspire-african-terrorist-groups-to-weaponize-the-virus-experts

August 07 – Recent discussions about Ebola have mainly focused on the disease as a public health hazard, but counterterrorism officials are concerned that the new outbreak could inspire terror groups, specifically those based in West Africa, to weaponize the virus. The Defense Threat Reduction Agency (DTRA) has been working with the National Institutes of Health (NIH) and biotech firm Mapp Biopharmaceutical Inc. to develop a treatment for Ebola. The "secret serum" was recently used to treat two American health workers who are infected with the virus.

As far back as 2010, the Defense Department (DOD) has been researching treatments for Ebola. Most notably, the U.S. Army's Medical Research Institute for Infectious Diseases and DOD's Joint Project Manager Transformational Medical Technologies Office signed a $140 million contract with **Tekmira** to develop a treatment for the virus. The collaboration was extended in 2013, and when the first cases of Ebola reemerged in March 2014, Tekmira was granted a Fast Track designation from the Food and Drug Administration for the development of TKM-Ebola, an anti-Ebola viral therapeutic.

"That the U.S. government takes the potential of Ebola as a bio-terror agent seriously is clear from the fact that it has invested tens of millions of dollars in vaccine and therapy research over the last decade," says Peter D. Walsh, a professor at Cambridge University. The *Washington Post* reports that Amy Derrick-Frost, a spokeswoman for

DOD, acknowledged that the department maintains research interests for protection against intentional use and natural exposure to Ebola as the virus may pose a danger to its personnel around the world. Pharmaceutical firms have few incentives to develop a treatment for Ebola since the virus is rare and naturally limited to sub-Saharan Africa; therefore research funded by DOD is vital for an Ebola treatment. **The fear of weaponized Ebola dates back decades to when the Soviet Union's VECTOR program, aimed at researching biotechnology and virology, was thought to have researched the creation of Ebola for warfare.** The *Post* reports that in 1992, a Japanese cult group called Aum Shinrikyo tried but failed to collect samples of the Ebola virus in Zaire. "Ebola is among a handful of emerging infectious diseases that have historically been explored as a potential biological weapon, and we (DOD) are closely monitoring these types of infectious diseases," Amy Derrick-Frost explained.

Though the concern for weaponized Ebola is appropriate, experts doubt that West African terror groups have the scientific skills and ambition to wage such objective, adding that Ebola is not airborne, which limits the number of casualties a terror group could target. **A 2013 essay published by Amanda M. Teckman in the *Global Policy Journal* raised concerns about weaponized Ebola, but Teckman recently noted that the danger is "not probable" because weaponizing Ebola requires the knowledge and tools to store and disperse the virus.**

Luminex's diagnostics tool used in Africa to help control Ebola outbreak

Source: http://www.homelandsecuritynewswire.com/dr20140807-luminex-s-diagnostics-tool-used-in-africa-to-help-control-ebola-outbreak

Austin, Texas-based Luminex Corporation the other day announced that U.S. Army Medical Research Institute of Infectious Diseases (USAMRIID) Diagnostics Division is working on rapid diagnostics for the Ebola virus using Luminex xMAP Technology. Luminex's MAGPIX system was recently deployed to Africa to support research efforts to control the current outbreak.

The recent Ebola outbreak has so far claimed 729 lives across Guinea, Liberia, Nigeria, and Sierra Leone according to the World Health Organization. Ebola virus disease is a severe, often fatal illness in humans characterized by the sudden onset of fever, intense weakness, muscle pain, headache, and sore throat. Early diagnosis is critical for proper management of the illness and prevention of spread.

The assays, developed by USAMRIID Diagnostics Division and run on the **MAGPIX system**, test serum samples for the presence of viral antigens (proteins) as well as antibodies directed at these antigens. Results of the assays provide information about replication of the virus and the immune response of the host, respectively. In a study conducted in rhesus macaques, Dr. Abbe Ames and colleagues showed that some animals may be able to limit the replication of the virus, and thus have a better chance of survival. Understanding the pathophysiology of the Ebola virus may assist in the development of countermeasures against the disease that could save lives.

"Our open architecture instruments provide researchers a flexible tool for assay development that can advance their research goals," said Patrick J. Balthrop, president and chief executive officer of Luminex. "Understanding the functional progression of a

virus is extremely valuable information. Luminex is proud to support researchers, clinicians and biosurveillance professionals and their important work in the global effort to combat infectious diseases."

Quantities of experimental Ebola drug used in U.S. too small to be shipped to West Africa

Source: http://www.homelandsecuritynewswire.com/dr20140808-quantities-of-experimental-ebola-drug-used-in-u-s-too-small-to-be-shipped-to-west-africa

Nigerian health authorities said yesterday that West African patients infected with the Ebola virus will not have access to experimental drugs being used to treat American cases of the disease for several months, if at all.

Health minister Onyebuchi Chukwu told a press conference he had asked the U.S. health authorities about the unproven medicines used on two American doctors who became infected while treating patients in Liberia, but was told such small quantities of the drug existed that West Africa would have to wait for months for supplies, even if they were proved safe and effective.

The two Americans, Dr. Kent Brantly and Dr. Nancy Writebol of the evangelical Christian organization Samantha's Purse, were given the drug ZMapp after being flown to the United States, and appear to be recovering.

A spokesman for the U.S. Centers for Disease Control and Prevention (CDC) said that "there are virtually no doses available" and they would take several months to manufacture (see CDC's 2014 Ebola Outbreak: Information and Updates).

The *Guardian* reports that even if supplies of ZMapp do become available, medical ethicists are divided over whether they should be used in the current Ebola outbreak in West Africa. The World Health Organization (WHO) has called a meeting of experts next week to formulate guidelines for doctors and drug companies considering shipping experimental drugs to the four countries hit by the disease.

"We are in an unusual situation in this outbreak. We have a disease with a high fatality rate, without any proven treatment or vaccine," said Dr. Marie-Paule Kieny, assistant director general at the WHO. "We need to ask the medical ethicists to give us guidance on what the responsible thing to do is."

Professor Jeremy Farrar, director of the Wellcome Trust, noted there were critical ethical questions to consider. He called for the fashioning of "rigorous protocols for the study of experimental interventions," so that African countries could have the same opportunities to consider them as western ones and to ensure there would be equitable access to any treatment that worked.

Jonathan Ball, professor of molecular virology at Nottingham University, told the *Guardian* that there were many questions.

"Giving unlicensed and untested (at least in humans) treatments and vaccines is a very thorny ethical issue," he said. "The infected US healthcare workers are receiving a type of treatment (antibodies that specifically target the virus) that has a reasonably long safety track record, so it isn't surprising — given the high fatality rate in the current outbreak — that they are happy to receive the therapy.

"But not all drugs are safe — that's why we have very stringent clinical trials. One could argue that the current outbreak provides a perfect arena in which to test new drugs, but that isn't without risk. We don't know their safety, we don't know if they are likely to work — sure, they have been tested in animals, but these studies don't always tell us what will happen in humans."

Some of the new treatments have not been tried with human at all, said Professor Tom Solomon, director of the U.K. National Institute of Health Research (NIHR) health protection research unit in emerging and zoonotic infections. It is usual for drugs to be tried in healthy volunteers first, in case of side-effects.

"The difference here is the desire for this 'first in man' experiment to be for a patient with the disease," he told the *Guardian*.

"What is key is that if these new experimental drugs are going to be used, then this should only be done in the context of a clinical trial. Otherwise the worry is that we will have tried these drugs, including putting people through the potential risk of experimental treatments, and still be none the wiser about which are effective."

Paul Hunter, professor of health protection at the University of East Anglia, said most doctors in a situation like that of West Africa would want to try a drug that might work.

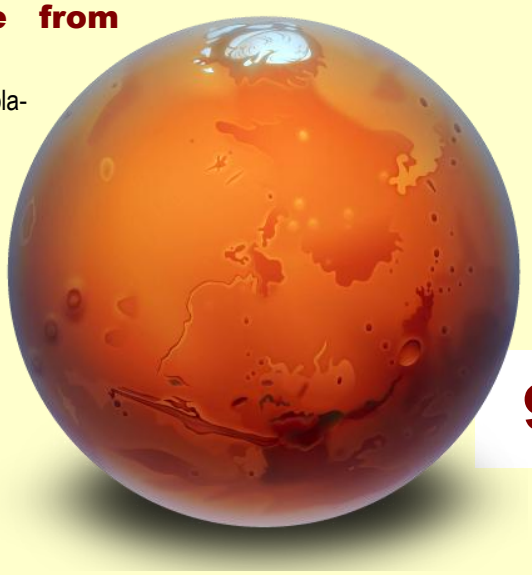
"In my view, the ethical case is unequivocal. If a patient is likely to die and an experimental therapy has a reasonable chance to prevent death, then it should be given.

"However, this does not mean that any old drug could be given. For an experimental compound to be given, there should be good prior evidence that the therapy will work, the patient or his relatives should give informed consent wherever possible and whenever the therapy is given proper records must be kept and the outcome reported to WHO," he said.

EDITOR'S COMMENT: With a fatality rate close to 90%, too much ethics equally bad for the health of the poor and under-developed fellow citizens! Medical ethicists are not bad people – only too perfectionists! And every exaggeration might be also harmful…

Did the deadly Ebola virus come from space?

Source: http://www.mirror.co.uk/news/weird-news/deadly-ebola-virus-come-space-4023678#.U-Wl7GPhsxA



August 08 – The deadly Ebola virus could have come from space, an expert has claimed.
The bug may have made its way to Earth on a meteorite.
Ashley Dale, a ascientist at Bristol University, said there was "every chance" the virus had come from space.
He told the Daily Star: "Ebola could have come from outside this planet.
"We have meteorites from Mars landing on our planet every year, and we know bacteria can survive the journey.
"There is every chance Ebola arrived on this planet from somewhere in space."
The first European Ebola victim returned home in a sealed plastic chamber yesterday.
Missionary Miguel Pajares, 75, was rushed to hospital in Madrid after being repatriated on a military plane from Liberia in west Africa.

Ebola: First European victim returns home in sealed plastic chamber

Source: http://www.mirror.co.uk/news/world-news/ebola-first-european-victim-returns-4018138#.U-WmIGPhsxA

A Spanish priest has become the first person carrying the deadly Ebola virus to be brought back to Europe for treatment.
Missionary Miguel Pajares, 75, was rushed to hospital in Madrid after being repatriated on a military plane from Liberia in west Africa.
He was put in quarantine on Saturday after testing positive for the killer disease.
Mr Pajares, who had been treating patients infected with Ebola at a hospital where his Catholic humanitarian group works, was flown back to Spain with a nun who although uninfected, was also quarantined.
The pair were due to be taken to an isolation ward at Madrid's Carlos III hospital after tests at an air force base in Madrid.

Twelve medical staff working in three shifts will care for them in a building which has been cleared of other patients.

Mr Pajares' condition overnight was said to have deteriorated with local reports saying he was on a drip

and was now unable to walk unaided.
The priest's brother Emilio said he was "worried but happy" about the transfer.
Mercedes Vinuesa, director general of public health in Spain, downplayed fears over the repatriation by insisting: "The safety protocols we will use guarantee minimum risk."

Since breaking out earlier this year, the Ebola virus has killed 932 people in four west African countries.
The World Health Organisation says there has been at least 1,711 cases of the disease, which has no proven cure, this year.
Two American aid workers repatriated earlier this week after being diagnosed with Ebola are said to be showing signs of improvement.
Mr Pajares had worked as a missionary in Africa for nearly five decades and was due to return to Spain for good in September.
Speaking before he was flown back he said: "I'd like to return because we have a very bad experience of what's happened here.
"We are abandoned. We want to go to Spain and be treated like people."

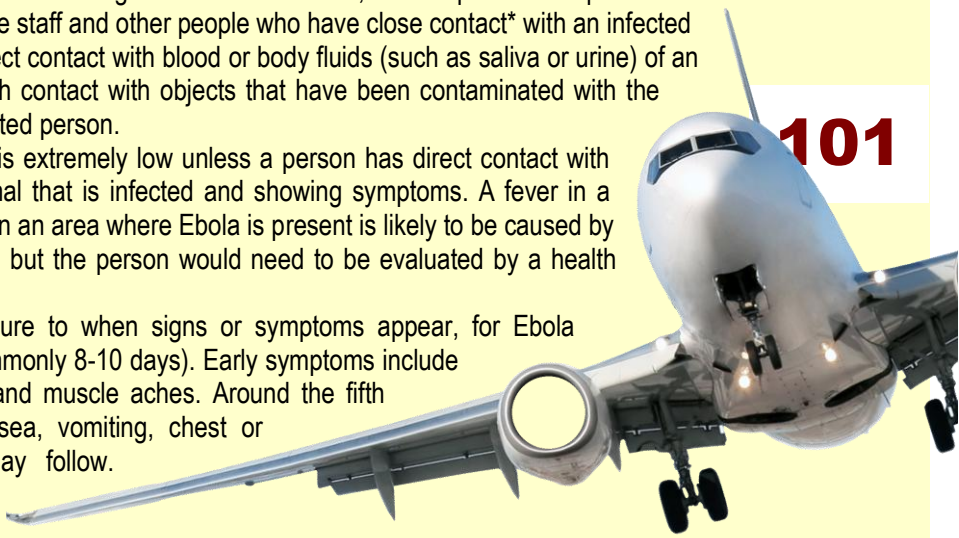
EDITOR'S COMMENT: I am glad that Europeans are doing better than their American colleagues. As I already mentioned in previous comment on biohazard transportation, this is the right and safe way to transfer a victim with Ebola.

Ebola Guidance for Airlines

Source: http://www.cdc.gov/quarantine/air/managing-sick-travelers/ebola-guidance-airlines.html

Centers for Disease Control and Prevention
CDC 24/7: Saving Lives. Protecting People.™

Ebola virus disease (also known as Ebola hemorrhagic fever) is a severe, often-fatal disease caused by infection with a species of Ebola virus. Although the disease is rare, it can spread from person to person, especially among health care staff and other people who have close contact* with an infected person. Ebola is spread through direct contact with blood or body fluids (such as saliva or urine) of an infected person or animal or through contact with objects that have been contaminated with the blood or other body fluids of an infected person.



The likelihood of contracting Ebola is extremely low unless a person has direct contact with the body fluids of a person or animal that is infected and showing symptoms. A fever in a person who has traveled to or lived in an area where Ebola is present is likely to be caused by a more common infectious disease, but the person would need to be evaluated by a health care provider to be sure.
The incubation period, from exposure to when signs or symptoms appear, for Ebola ranges from 2 to 21 days (most commonly 8-10 days). Early symptoms include sudden fever, severe headaches, and muscle aches. Around the fifth day, a skin rash can occur. Nausea, vomiting, chest or abdominal pain, and diarrhea may follow. Symptoms can become increasingly severe and may include difficulty breathing or swallowing, bleeding inside and outside the body, and multi-organ failure.
The prevention of Ebola virus infection includes measures to avoid contact with blood and body fluids of infected individuals and with objects contaminated with these fluids (e.g., syringes).

Stopping ill travelers from boarding aircraft

People who have been exposed to Ebola virus disease should not travel on commercial airplanes until there is a period of monitoring for symptoms of illness lasting 21 days after exposure. Sick travelers should delay travel until cleared to travel by a doctor or public health authority.
Airlines should consider using their own authority (for U.S. airlines, and foreign airlines serving the United States Federal Register[PDF - 74 pages], Department of Transportation 14 CFR Part 382) to deny boarding of sick travelers if Ebola is suspected.

Management of ill people on aircraft if Ebola virus is suspected

Use the following precautions if an ill traveler (passenger or crew) has symptoms consistent with Ebola and was recently in a country with Ebola:

- Keep the sick person separated from others as much as possible.
- Provide the sick person with a surgical mask (if the sick person can tolerate wearing one) to reduce the number of droplets expelled into the air by talking, sneezing, or coughing.
- Give tissues to a sick person who cannot tolerate a mask. Provide a plastic bag for disposing of used tissues.
- Wear impermeable disposable gloves for direct contact with blood or other body fluids.

Universal Precaution Kits: Airplanes traveling to countries affected with Ebola should carry Universal Precaution Kits, as recommended by the International Civil Aviation Organization[PDF - 30 pages] (ICAO), for managing ill onboard passengers.

Visit CDC's Infection Control Guidelines for Cabin Crew Members on Commercial Aircraft for more information on practical measures cabin crew members can take to protect themselves, passengers and other crew members.

Reporting Ill Travelers

The captain of an aircraft bound for the United States is required by law to report to the Centers for Disease Control and Prevention (CDC) before arrival any deaths onboard or ill travelers who meet specified criteria. This is consistent with mandatory reporting requirements of ICAO (ICAO document 4444 and Annex 9, Ch. 8, of the Chicago Convention).

CDC staff can be consulted to assist in evaluating an ill traveler, provide recommendations, and answer questions about reporting requirements; however, reporting to CDC does not replace usual company procedures for in-flight medical consultation or obtaining medical assistance.

CDC routinely conducts contact investigations to alert other passengers and crew of their exposure to ill travelers with certain diseases who were possibly contagious on their flight.

General Infection Control Precautions

Personnel should always follow basic infection control precautions to protect against any type of infectious disease.

What to do if you think you have been exposed

Any airline crew, cleaning or cargo personnel who think they were exposed to Ebola either through travel, assisting an ill traveler, handling a contaminated object, or cleaning a contaminated aircraft should take the following precautions:

- Notify your employer immediately.
- Monitor your health for 21 days. Watch for fever (temperature of 101.5°F/38.6°C or higher), severe headaches, muscle aches, diarrhea, vomiting, rash, and other symptoms consistent with Ebola.

When to see a health care provider

- If you develop sudden fever, chills, muscle aches, severe diarrhea, vomiting, rash, or other symptoms consistent with Ebola, you should seek immediate medical attention.
    - Before visiting a health care provider, alert the clinic or emergency room in advance about your possible exposure to Ebola virus so that arrangements can be made to prevent spreading it to others.
    - When traveling to a health care provider, limit contact with other people. Avoid all other travel.
- If you are located abroad, contact your employer for help with locating a health care provider. The U.S. embassy or consulate in the country where you are located can also provide names and addresses of local physicians.

Guidance for Airline Cleaning Personnel

Ebola virus is transmitted by close contact* with a person who has symptoms of Ebola. Treat any body fluid as though it is infectious. Blood or body fluids on interior surfaces can spread Ebola if they get into your eyes, nose, or mouth. Therefore, hand hygiene is the most important infection control measure. Wear disposable impermeable gloves when cleaning visibly contaminated surfaces.

For any ill traveler on board an aircraft, even if Ebola is not considered, the airline's ground and cleaning crews should be notified so that preparations can be made to clean the aircraft after passengers have disembarked. When cleaning aircraft after a flight with a patient who may have had Ebola, personnel should follow these precautions:

- Wear impermeable disposable gloves while cleaning the passenger cabin and lavatories.
- Wipe down lavatory surfaces and frequently touched surfaces in the passenger cabin, such as armrests, seat backs, tray tables, light and air controls, and adjacent walls and windows with an Environmental Protection Agency (EPA) registered cleaner/disinfectant that has been tested and approved for use by the airplane manufacturers.
- Special cleaning of upholstery, carpets, or storage compartments is not indicated unless they are obviously soiled with blood or body fluids.
- Special vacuuming equipment or procedures are not necessary.
- Do not use compressed air, which might spread infectious material through the air.
- If a seat cover or carpet is obviously soiled with blood or body fluids, it should be removed and discarded by the methods used for biohazardous material.
- Throw used gloves away according to the company's recommended infection control precautions when cleaning is done or if they become soiled or damaged during cleaning.
- Clean hands with soap and water (or waterless alcohol-based hand sanitizer when soap is not available) immediately after gloves are removed.

Guidance for Air Cargo Personnel

Packages should not pose a risk. Ebola virus is spread through direct contact with blood or body fluids (such as urine or saliva) from an infected person.

- Packages visibly soiled with blood or body fluids should not be handled.
- Cargo handlers should wash their hands often to prevent other infectious diseases.

* **Close contact** is defined as having cared for or lived with a person with Ebola or having a high likelihood of direct contact with blood or body fluids of an Ebola patient. Close contact does not include walking by a person or briefly sitting across a room from a person.

FDA authorizes use of unapproved Ebola virus test

Source: http://www.homelandsecuritynewswire.com/dr20140811-fda-authorizes-use-of-unapproved-ebola-virus-test

August 11 – As Ebola continues to spread throughout West Africa, the Food and Drug Administration (FDA) has authorized the use of an unapproved Ebola virus test developed by the Department of Defense for use in individuals, including U.S. military personnel and responders, who may be at risk of infection because of their work with individuals who might have the virus. "Specifically, the test is intended for use in individuals with signs and symptoms of infection with Ebola Zaire virus, who are at risk for exposure to the virus or who may have been exposed to the virus," FDA spokeswoman Stephanie Yao said in a statement. The Test-tube diagnostic test is one of the Pentagon's investment in developing a vaccine or cure for Ebola.

Tekmira and BioCryst Pharmaceuticals, recipients of funding for Ebola treatments from the Defense Threat Reduction Agency, both have therapeutic candidates for early stage Ebola.

Tom Frieden, head of the Centers for Disease Control and Prevention (CDC) has assured that the chances of an Ebola

outbreak in the United States are low, despite the admission of two infected American aid workers to a containment unit at Emory University Hospital. Both of those workers have received ZMapp, an experimental treatment developed by Mapp Biopharmaceutical Inc., for use with individuals infected with Ebola.

The *Los Angeles Times* notes that individuals infected with the Ebola virus will develop flu-like symptoms such as fever, vomiting, muscle aches, and weariness, but as the virus continues to multiply and destroy the cell that line blood vessels, patients will suffer bleeding and possible organ failure. Of the 1,711 individuals reported to be infected in West Africa, roughly 55 percent have died.

Health officials expect to approve an Ebola vaccine by the end of 2015. "There are a few vaccines in the pipeline," said Dr. Anthony Fauci, head of the National Institute of Allergy and Infectious Diseases. The most promising vaccine in the development process was designed by the Vaccine Research Center, an arm of the National Institutes of Health (NIH). "We've tested it in monkeys," Fauci said. "The results were quite impressive."

The NIH is also supporting the Crucell biopharmaceutical company and Profectus Biosciences in their development of an Ebola vaccine. Thomas Jefferson University is also developing a candidate Ebola vaccine based on "the established rabies vaccine," the NIH reported.

The first recipients of an approved vaccine would be healthcare providers who work with Ebola patients, as they face the highest risk of infection.

Interim Guidance for Specimen Collection, Transport, Testing, and Submission for Patients with Suspected Infection with Ebola Virus Disease

Source: http://www.cdc.gov/vhf/ebola/hcp/interim-guidance-specimen-collection-submission-patients-suspected-infection-ebola.html

CDC is working with the World Health Organization (WHO), the ministries of health of Guinea, Liberia, and Sierra Leone, and other international organizations in response to an outbreak of EVD in West Africa, which was first reported in late March 2014. As of August 4, 2014, according to WHO, a total of 1,711 cases and 932 deaths (case fatality 55-60%) had been reported across the three affected countries.This is the largest outbreak of Ebola virus disease (EVD) ever documented and the first recorded in West Africa.

EVD is one of numerous viral hemorrhagic fevers (VHF). It is a severe, often fatal disease in human and nonhuman primates. EVD is spread by direct contact with the blood or secretions (urine, feces, semen, breast milk, and possibly others) of an infected person or exposure to objects that have been contaminated with infected secretions. The incubation period is usually 8–10 days (rarely ranging from 2 to 21 days). Patients can transmit the virus while febrile and through later stages of disease, as well as postmortem.
U.S. hospitals can safely manage a patient with EVD by following recommended isolation and infection control procedures. Standard, contact, and droplet precautions are recommended for management of hospitalized patients with known or suspected EVD.
Potentially infectious diagnostic specimens are routinely handled and tested in U.S. laboratories in a safe manner, through adherence to standard safety precautions as outlined below.

Infection Control for Collecting and Handling Specimens

It is expected that all laboratorians and other healthcare personnel collecting or handling specimens follow established standards compliant with the **OSHA bloodborne pathogens standard**, which encompasses blood and other potentially infectious materials. This includes wearing appropriate personal protective equipment (PPE) and adhering to engineered safeguards, for all specimens regardless of whether they are identified as being infectious.
Recommendations for specimen collection: full face shield or goggles, masks to cover all of nose and mouth, gloves, fluid resistant or impermeable gowns. Additional PPE may be required in certain situations.
Recommendations for laboratory testing: full face shield or goggles, masks to cover all of nose and mouth, gloves, fluid resistant or impermeable gowns AND use of a certified class II Biosafety cabinet or plexiglass splash guard, as well as manufacturer-installed safety features for instruments.

When Specimens Should Be Collected for Ebola Testing

Ebola virus is detected in blood only after onset of symptoms, most notably fever. It may take up to 3 days post-onset of symptoms for the virus to reach detectable levels. Virus is generally detectable by real-time RT-PCR from 3-10 days post-onset of symptoms, but has been detected for several months in certain secretions. Specimens ideally should be taken when a symptomatic patient reports to a healthcare facility and is suspected of having an EVD exposure; however, if the onset of symptoms is <3 days, a subsequent specimen will be required to completely rule-out EVD.

Preferred Specimens for Ebola Testing

A minimum volume of 4mL whole blood preserved with EDTA, clot activator, sodium polyanethol sulfonate (SPS), or citrate in ***plastic*** collection tubes can be submitted for EVD testing. Do not submit specimens to CDC in glass containers. Do not submit specimens preserved in heparin tubes. Specimens should be stored at 4°C or frozen. Specimens other than blood may be submitted upon consult with the CDC by calling the Emergency Operations Center at 770-488-7100.
Standard labeling should be applied for each specimen. The requested test only needs to be identified on the requisition and CDC specimen submission forms.

Storing Clinical Specimens for Ebola

Specimens should be stored at 4°C or frozen.

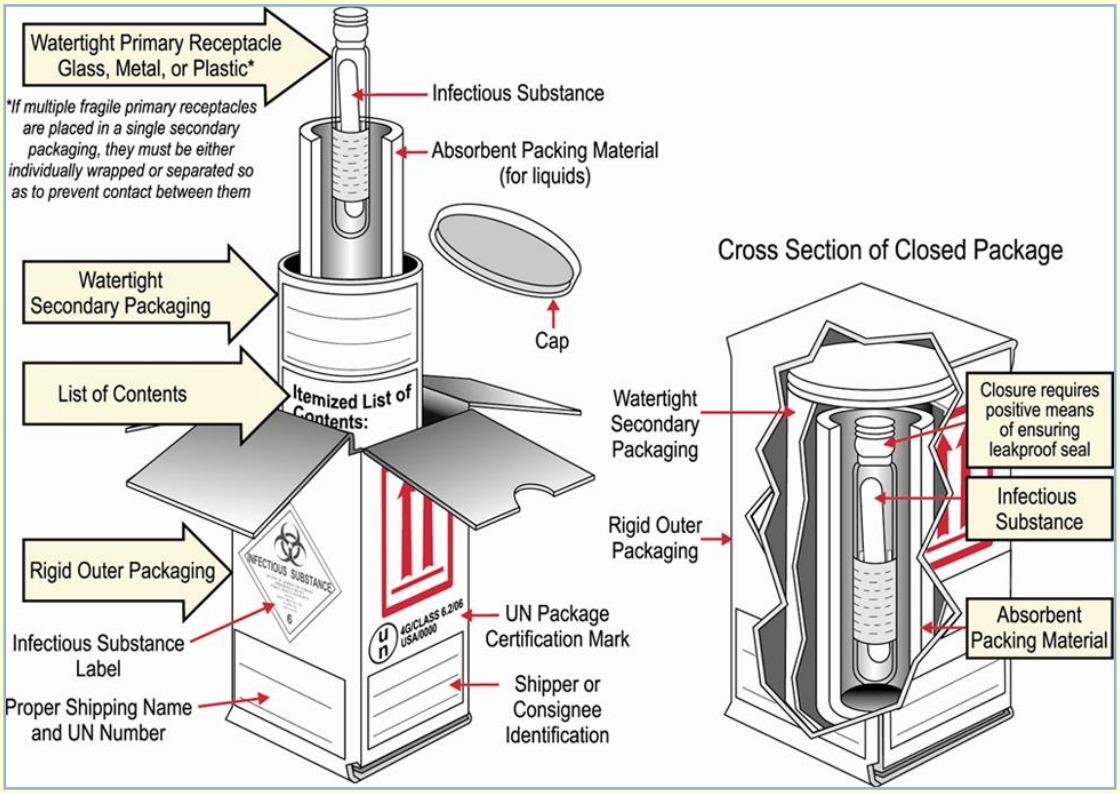
Diagnostic Testing for Ebola Performed at CDC

Several diagnostic tests are available for detection of EVD. Acute infections will be confirmed using a real-time RT-PCR assay (CDC test directory code CDC -10309 Ebola Identification) in a CLIA-accredited laboratory. Virus isolation may also be attempted. Serologic testing for IgM and IgG antibodies will be completed for certain specimens and to monitor the immune response in confirmed EVD patients (#CDC-10310 Ebola Serology).
Lassa fever is also endemic in certain areas of West Africa and may show symptoms similar to early EVD. Diagnostic tests including but not limited to RT-PCR, antigen

detection, and IgM serology may be utilized to rule out Lassa fever in EVD-negative patients.

Transporting Specimens within the Hospital / Institution

In compliance with 29 CFR 1910.1030, specimens should be placed in a durable, leak-proof secondary container for transport within a facility. To reduce the risk of breakage or leaks, do not use any pneumatic tube system for transporting suspected EVD specimens.



Packaging and Shipping Clinical Specimens to CDC

Specimens collected for EVD testing should be packaged and shipped without attempting to open collection tubes or aliquot specimens. Specimens for shipment should be packaged following the basic triple packaging system which consists of a primary receptacle (a sealable specimen bag) wrapped with absorbent material, secondary receptacle (watertight, leak-proof), and an outer shipping package.

Barriers to rapid containment of the Ebola outbreak

Source: http://www.who.int/csr/disease/ebola/overview-august-2014/en/

August 11 – The outbreak of Ebola virus disease in west Africa continues to evolve in alarming ways, with no immediate end in sight. Many barriers stand in the way of rapid containment.
The most severely affected countries, Guinea, Liberia, and Sierra Leone, have only recently returned to political stability following years of civil war and conflict, which left health systems largely destroyed or severely disabled.

Lack of capacity makes infection control difficult

This lack of capacity makes standard containment measures, such as early detection and isolation of cases, contact tracing and monitoring, and rigorous procedures for infection control, difficult to implement. Though no vaccine and no proven curative treatment exist, implementation of these measures has successfully brought previous Ebola outbreaks under control.
The recent surge in the number of cases has stretched all capacities to the breaking point. Supplies of

personal protective equipment and disinfectants are inadequate. The outbreak continues to outstrip diagnostic capacity, delaying the confirmation or exclusion of cases and impeding contact tracing.
Diagnostic capacity is especially important as the early symptoms of Ebola virus disease mimic those of many other diseases commonly seen in this region, including malaria, typhoid fever, and Lassa fever.
Some treatment facilities are overflowing; all beds are occupied and patients are being turned away. Many facilities lack reliable supplies of electricity and running water. Aid organizations, including Médecins Sans Frontières (Doctors without Borders), which has provided the mainstay of clinical care, are exhausted.

Managerial framework for Ebola

Last week, the WHO Director-General, Dr Margaret Chan, announced a new managerial framework designed to ensure that WHO's emergency response is fully staffed, drawing on personnel in all WHO regional and country offices, for an around-the-clock response.
The Ebola virus is one of the world's most virulent pathogens. Personal protective equipment is essential, but in short supply. It is also hot and cumbersome, severely limiting the number of hours that medical and nursing staff can work on an isolation ward. On present estimates, a facility treating 70 patients needs a minimum of 250 health-care staff.

Fear is hard to overcome

Six months into the outbreak, fear is proving to be the most difficult barrier to overcome. Fear causes contacts of cases to escape from the surveillance system, families to hide symptomatic loved ones or take them to traditional healers, and patients to flee treatment centres. Fear, and the hostility it can feed, have threatened the security of national and international response teams.
Health-care staff fear for their lives. To date, more than 170 health-care workers have been infected and at least 81 have died.
Outbreak control is further compromised when fear causes airlines to refuse to transport personal protective equipment and courier services to refuse to transport properly and securely packaged patient samples to a WHO-approved laboratory.
Fear has spread well beyond west Africa, leading some to suggest that imported cases, also in wealthy countries, could ignite widespread infections in the general population. In countries with well-developed health systems, such a scenario is highly unlikely, given the epidemiology of the Ebola virus and experiences in past outbreaks.

Transmission

The Ebola virus is highly contagious, but is not airborne. Transmission requires close contact with the bodily fluids of an infected person, as can occur during health-care procedures, home care, or traditional burial practices, which involve the close contact of family members and friends with bodies. In Guinea, around 60% of cases have been linked to these burial practices, with women, who are the principal care-givers, disproportionately affected.
The incubation period ranges from 2 to 21 days, but patients become contagious only after the onset of symptoms. As symptoms worsen, the ability to transmit the virus increases. As a result, patients are usually most likely to infect others at a severe stage of the disease, when they are visibly, and physically, too ill to travel.

Vigilance means better detection

On the positive side, fear has led to a very high level of vigilance and clinical suspicion worldwide, as seen in the number of false alarms at airports and in emergency rooms. Such a high level of alert further increases the likelihood that any imported case will be quickly detected and properly managed, limiting onward transmission.
This pattern was clearly seen during the 2003 SARS outbreak. Of the total number of cases during that outbreak, 98% occurred in the four countries affected prior to the WHO global alert issued on 15 March. The high level of vigilance and preparedness that followed that alert helped the additional 26 outbreak sites with imported cases to prevent onward transmission or hold it to just a handful of cases.
Also on the positive side, the presidents of the hardest-hit countries have made outbreak

containment a top national priority. Several extraordinary measures have been introduced over just the past few days, though it is too early to assess their impact.

In some areas, the inclusion of social anthropologists on outbreak teams is helping to reduce fear and change behaviours. The fact that no effective medical treatment exists has enforced the desire of families to care for patients in their homes or turn to traditional healers. Many communities now understand the importance of managing symptoms through supportive care. Evidence that early detection and supportive care greatly improve prospects for survival is a powerful incentive to seek medical care.

Last week, an Emergency Committee, convened under the provisions of the International Health Regulations, met to consider all the evidence and unanimously agreed that this outbreak meets the criteria for declaring it a public health emergency of international concern (PHEIC). On Friday, 8 August 2014, Dr Margaret Chan accepted that advice and declared the outbreak a PHEIC. The committee also advised Dr Chan that:

- the Ebola outbreak in west Africa constitutes an 'extraordinary event' and a public health risk to other States;
- the possible consequences of further international spread are particularly serious in view of the virulence of the virus, the intensive community and health facility transmission patterns, and the weak health systems in the currently affected and most at-risk countries;
- a coordinated international response is deemed essential to stop and reverse the international spread of Ebola.

A 2-year old Guinean boy who died last December is Ebola outbreak's Patient Zero: Researchers

Source: http://www.homelandsecuritynewswire.com/dr20140812-a-2year-old-guinean-boy-who-died-last-december-is-ebola-outbreak-s-patient-zero-researchers

August 12 – **A recent report on the Ebola outbreak suggests that a two-year-old boy who died on 6 December 2013 in a village in Guéckédou, Guinea might be the virus's Patient Zero. Guéckédou borders Sierra Leone and Liberia, where Ebola has infected more than 1,700 people.**

According to the study, which was published in the *New England Journal of Medicine* and reported by the *New York Times*, a week after the boy died, his mother died from a similar illness, followed by the child's three-year-old sister and then his grandmother. All suffered from fever, vomiting, and diarrhea, but no one, including local health workers, suspected Ebola. Mourners at the grandmother's funeral are suspected to have spread the virus after catching the disease from individuals who prepared the body for burial or interacted with the family.

No one has absolute knowledge on how the first human contracted this recent strain of Ebola, but the virus is known to infect non-human primates, which may then have been transmitted to humans through handling of contaminated raw meat. Ebola is also known to infect fruit bats without harming them, so some researchers suggest that fruits infected with contaminated bat droppings may have been eaten, leading to the virus in humans.

As poor and weak health care systems in West Africa adapt to take care of Ebola patients, doctors fear that deaths from malaria and other diseases could rise as Ebola drains resources. Past Ebola outbreaks have been limited to small villages, but this recent outbreak originated in West Africa, a region reported to have never experienced Ebola before, so health workers are not prepared to deal with the outbreak.

As of Monday, West African countries have placed restrictions on many border crossings, and immigration agents abroad are conducting screenings at checkpoints. The *Daily Star Sunday* reported that

border agents in the United Kingdom are threatening to go on strike, claiming that not enough is being done to protect them from infection from passengers arriving at Heathrow and Gatwick airports. A U.K. Border Force spokesman responded ,saying that "our priority remains the security of the border, which includes helping protect public health and we have well-established procedures for dealing with infectious diseases. We are working closely with partners such as Public Health England to minimize any potential risk and Border Force officers have already been given guidance on how to identify and safely deal with suspected cases of Ebola."

EDITOR'S COMMENT: I always wonder of the importance of "Patient Zero" or the index case as it's clinically known. Below is some info from someone with the same question in mind after watching the film "Contagion":

So, why do the infectious disease experts trip over themselves to find Patient Zero? Why don't they just deal with the cases at hand? Two main reasons. ***One****, the earlier in the outbreak of a disease that the scientists can identify the first human carrier, the better their chances of controlling and dampening the outbreak. By determining exactly where Patient Zero travelled and who they came into contact with, epidemiologists are often able to track the spread of an infectious disease, and undertake procedures to isolate and treat the people who might be carriers. If this is done early enough, before the disease has spread to too many individuals or to "super-carriers"–human vectors who, by virtue of their profession or disposition are likely to infect many others–the outbreak can be artificially "shutdown" before it runs its natural devastating course. It really is a race against time.*

While the first reason concerns the onward trajectory of the disease, the ***second*** *looks back to its origin. By identifying Patient Zero, epidemiologists have a strong chance of locating the exact place where the first infection happened. Often harmful viruses exist in some natural "reservoir" such as a population of wild animals like bats or civet cats, and somehow this virus ends up coming into contact with Patient Zero. Learning about the environment in which Patient Zero fell sick can often lead to the identification of the source of the virus, which allows preventative steps to be taken to stop future epidemics. In Contagion the scientists eventually discover that "The wrong bat met the wrong pig", leading to poor Paltrow Gwynth's infection when a chef shakes her hands after handling contaminated pork.*

▶**Source:** http://creepytreehouse.wordpress.com/2012/05/19/why-is-it-important-to-identify-patient-zero-in-disease-outbreaks/

Experimental Ebola Treatment Being Used

By Eric Toner, MD

Sources: www.upmc-cbn.org | www.UPMCHealthSecurity.org

It has been reported that 3 foreign aid workers infected by Ebola virus in west Africa (2 American healthcare workers and a Spanish priest) were treated with the experimental drug ZMapp™. The 2 Americans have survived, but the Spaniard has died. There are now reports that the drug is being made available to some infected Liberian physicians as well. The question has been raised in the media whether the drug should be made more widely available to infected people in Africa.[1] The answer depends on a number of clinical issues, such as whether the drug is safe and effective; ethical issues, such as whether adequate informed consent can be obtained and how patients should be prioritized; regulatory issues, if used in the US or elsewhere; and logistical issues, such as how much is available, how quickly could manufacturing be

ramped up, and whether the drug can be practically delivered to patients in Africa. In this brief report, we summarize what has been published so far about this drug.

What Is ZMapp™?

ZMapp™ is a cocktail of 3 monoclonal antibodies that target 3 distinct glycoproteins on the Ebola virus. The 3 monoclonal antibodies are produced by genetically modified tobacco plants into which human-mouse hybrid anti-Ebolavirus genes have been inserted. The plant then produces the antibodies, which can be extracted. [2,3] Next-generation monoclonal antibodies such as these are being developed as therapy for a variety of infectious diseases.[4]

Safety and Efficacy in Humans Have Not Been Established

The drug has shown promise in nonhuman primate studies for both treatment of illness and postexposure prophylaxis but has not yet entered human trials. Therefore, neither safety nor efficacy has been established. The 3 Ebola patients treated recently are the first 3 humans to receive this drug. Whether the drug has had an impact on their clinical course is unclear because the patients also received other treatments, including convalescent serum in at least one case, and up to a third of Ebola patients recover with just good supportive care. No human dosing studies have been conducted, so the optimal dosage has not been determined. It is also not clear at what point in the clinical course the drug is effective. Furthermore, assuming that the drug has some efficacy in humans, it is not known whether it will affect the clinical course in patients who may not have access to basic supportive care. It will take much larger formal clinical trials to know if the drug is helpful or not.

Informed Consent

Informed consent is crucial in clinical trials, especially when safety has not yet been established. Consent is more even more fraught when the patient is seriously ill with a potentially deadly disease. It might be reasonable to assume that physicians and other healthcare workers would be better able than patients to understand the complexities of informed consent for use of an untested drug.

Regulatory Issues

There is a clear process in the US for compassionate use of an experimental drug in an extreme circumstance such as this. The process is different in other countries, and the process, if it exists, in the Ebola-affected countries is unknown.

Manufacturing Issues

Because the drug has not yet entered human trials, the amount of drug that has been produced is quite small. The producer of the drug reports that its supply is now exhausted. How long it would take to manufacture hundreds or thousands of additional doses is not clear.

Delivery Issues

Most drugs require a reliable delivery chain. Potency is often affected by extreme heat. Whether proper conditions can be maintained throughout the delivery chain in the affected regions is unknown.

Other Drugs and Vaccines

Several other drugs that use entirely different mechanisms of action are also in early development as are Ebola vaccines. All of these countermeasures involve the same difficult issues as ZMapp™ when being considered for use in this crisis.

Conclusion

Desperate times may indeed call for desperate action, and in this extreme circumstance it is not unreasonable to consider the use of an untested countermeasure. But to the extent that the many issues outlined above can be minimized, the less difficult the decision becomes. Given the very limited information available and many unanswered questions, clinicians and authorities are right to be very cautious about using these drugs at this time.

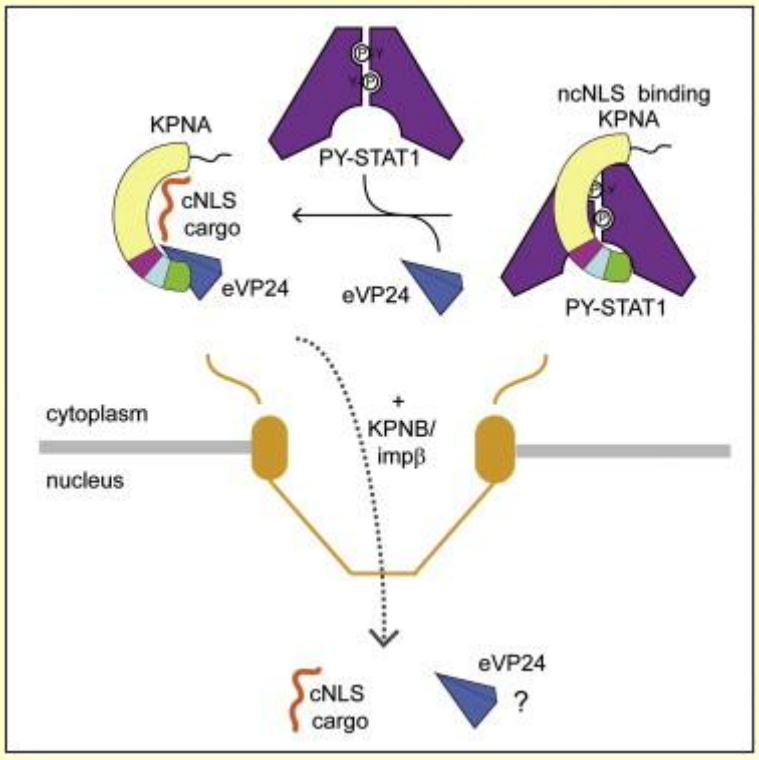
References

1. Associated Press. Experimental Ebola drug: Questions and answers about ZMapp. CBS News website, August 12, 2014. http://www.cbsnews.com/news/experimental-ebola-drug-questions-and-answers-about-zmapp/. Accessed August 13, 2014.
2. Pettitt J, Zeitlin L, Kim do H, et al. Therapeutic intervention of Ebola virus infection in rhesus macaques with the MB-003 monoclonal antibody cocktail. *Sci Transl Med* 2013;5(199):199ra113.
3. ZMapp information sheet. Mapp Biopharmaceutical website. Undated. http://www.mappbio.com/zmapinfo.pdf. Accessed August 13, 2014.
4. Gronvall G, Rambhia K, Adalja A, et al. *Next-Generation Monoclonal Antibodies: Challenges and Opportunities*. Report by the UPMC Center for Health Security. February 2013. http://www.upmchealthsecurity.org/our-work/pubs_archive/pubs-pdfs/2013/2013-02-04-next-gen-monoclonal-antibodies.pdf. Accessed August 13, 2014.

Uncovering how Ebola virus disables immune response

Source: http://www.homelandsecuritynewswire.com/dr20140814-uncovering-how-ebola-virus-disables-immune-response

August 14 – One of the human body's first responses to a viral infection is to make and release signaling proteins called interferons, which amplify the immune system response to viruses. Over time, many viruses have evolved to undermine interferon's immune-boosting signal, and a paper published yesterday in the journal *Cell Host & Microbe* describes a mechanism unique to the Ebola virus that defeats attempts by interferon to block viral reproduction in infected cells.



Cell Press reports that the newly published **study explains for the first time how the production by the virus of a protein called Ebola Viral Protein 24 (eVP24) stops the interferon-based signals from ramping up immune defenses. With the body's first response disabled, the virus is free to mass produce itself and trigger the too-large immune response that damages organs and often becomes deadly as part of Ebola virus disease (EVD).**

The study was led by scientists from Washington University School of Medicine in St. Louis in collaboration with researchers from the Icahn School of Medicine at Mount Sinai and the University of Texas Southwestern Medical Center.

"Our study is the first to show how Ebola viral protein 24 defeats the signal sent by interferons, the key signaling molecules in the body's early response to Ebola virus infection," said Christopher F. Basler, Ph.D., Professor of Microbiology at the Icahn School of Medicine at Mount Sinai, and an author of the newly published paper. "These newfound details of Ebola biology are already serving as the foundation of a new drug development effort, albeit in its earliest stages," said Dr. Basler, also a researcher within the Mount Sinai Global Health and Emerging Pathogens Institute.

"We've known for a long time that infection with Ebola virus obstructs an important arm in our immune system that is activated by molecules called interferons," said senior author Gaya Amarasinghe, Ph.D., Assistant Professor of Pathology and Immunology at Washington University School of Medicine in St. Louis. "By determining the structure of an eVP24 in complex with a cellular transporter, we learned how Ebola does this."

Ebola defeats immune defenses early in infection

The study spotlights the part of the body's defense system that fights infection called innate immunity, the mix of proteins and cells that most quickly recognizes an invasion by a virus. This part of immunity keeps a virus from quickly reproducing inside cells.

To trigger an effective, early response to viral infection, interferons must pass on their signal to other cells. This occurs through other messengers inside cells as part of interferon signaling pathways, with the last of these messengers turning on genes inside the nuclei of cells to drive the immune response.

The current study determined the structure of eVP24 when bound to its cellular targets, transport proteins called karyopherins. The study used these structures to show how, in place of interferon's natural downstream signal carrier phosphorylated STAT1, eVP24 docks into the karyopherins meant to escort STAT1 into cell nuclei where it turns on interferon-targeted genes. By elegantly interfering at this stage, eVP24 cripples innate immunity to cause EVD.

In 2006, Dr. Basler and colleagues found that the Ebola virus suppresses the human immune response through eVP24, but not how. Through of combination of molecular biology techniques, cell studies and tests that reveal protein structures, the current team led by Dr. Amarasighe defined the molecular basis for how eVP24 achieves this suppression.

Understanding exactly how the Ebola virus targets the interferon pathway could help guide drug development moving forward. Dr. Basler describes how it may be possible to find an antibody or molecule that interferes with eVP24, or that works around its competition with STAT1, such that treatment of patients with extra interferon, long used against the hepatitis C virus for instance, might become useful against the Ebola virus.

"We feel the urgency of the present situation, but still must do the careful research to ensure that any early drug candidates against the Ebola virus are proven to be safe, effective and ready for use in future outbreaks," said Dr. Basler, who is also principal Investigator of an NIH-funded Center of Excellence for Translational Research (CETR) focused on developing drugs to treat Ebola virus infections.

— Read more in Wei Xu et al., "Ebola Virus VP24 Targets a Unique NLS Binding Site on Karyopherin Alpha 5 to Selectively Compete with Nuclear Import of Phosphorylated STAT1," Cell Host & Microbe 16, no. 2 (13 August 2014): 187-200

▶ More about this important study at:
http://www.cell.com/cell-host-microbe/fulltext/S1931-3128%2814%2900263-7

Highlights

- Structure of Ebola virus VP24 bound to the C terminus of karyopherin alpha 5 (KPNA5)
- VP24 binds a unique nonclassical NLS binding site in KPNA5
- VP24 and phosphorylated STAT1 share a common binding site on KPNA5 binding
- VP24 competes with nuclear import of phosphorylated STAT1 to counter STAT signaling

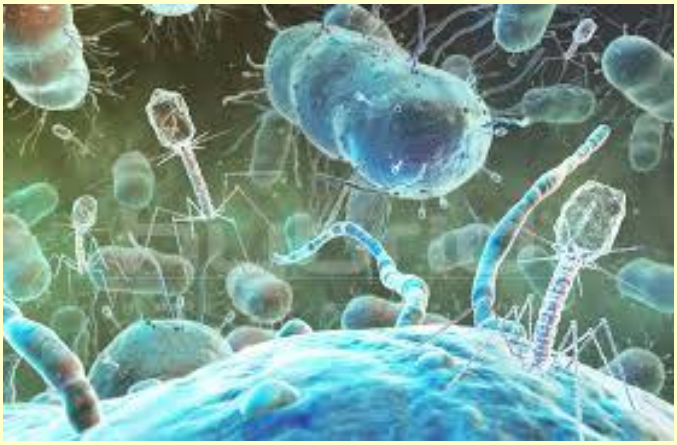
Summary

During antiviral defense, interferon (IFN) signaling triggers nuclear transport of tyrosine-phosphorylated STAT1 (PY-STAT1), which occurs via a subset of karyopherin alpha (KPNA) nuclear transporters. Many viruses, including Ebola virus, actively antagonize STAT1 signaling to counteract the antiviral effects of IFN. Ebola virus VP24 protein (eVP24) binds KPNA to inhibit PY-STAT1 nuclear transport and render cells refractory to IFNs. We describe the structure of human KPNA5 C terminus in complex with eVP24. In the complex, eVP24 recognizes a unique nonclassical nuclear localization signal (NLS) binding site on KPNA5 that is necessary for efficient PY-STAT1 nuclear transport. eVP24 binds KPNA5 with very

high affinity to effectively compete with and inhibit PY-STAT1 nuclear transport. In contrast, eVP24 binding does not affect the transport of classical NLS cargo. Thus, eVP24 counters cell-intrinsic innate immunity by selectively targeting PY-STAT1 nuclear import while leaving the transport of other cargo that may be required for viral replication unaffected.

Biologists Choose Sides In Safety Debate Over Lab-Made Pathogens

Source: http://www.npr.org/blogs/health/2014/08/13/339854400/biologists-choose-sides-in-safety-debate-over-lab-made-pathogens



A smoldering debate about whether researchers should ever deliberately create superflu strains and other risky germs in the interest of science has flared once again.

Proponents of the work say that in order to protect the public from the next naturally occurring pandemic, they have to understand what risky infectious agents are capable of — and that means altering the microbes in experiments. Critics argue that the knowledge gained from making new strains of these germs isn't worth the risk, because a lab-made pathogen might escape the laboratory and start spreading among people.

Now, as scientists on both sides of the dispute have formed groups that have issued manifestos and amassed lists of supporters, it looks like the prestigious will step in to weigh the risks and benefits.

"I don't think we have adequately involved the public so that they understand the possible consequences of mistakes, or errors, or misadventures in performing this kind of science."

Dr. David Relman, Stanford University microbiologist

A representative of the National Institutes of Health, which funds this research, says that NIH, too, is "giving deep consideration to the many views expressed by various highly respected parties" about the best way forward.

In a recent in "," the journal's editor-in-chief, , urged his colleagues to "lower the level of rhetoric and focus on the scientific questions at hand."

Scientists have passionate debates all the time, but it's usually about the meaning of some experimental result, says Casadevall, a microbiologist at the Albert Einstein College of Medicine in New York.

"What is different here is that we are facing a set of intangibles," he says. "And because they involve judgment calls at this point, people are often weighing the risks and the benefits very differently."

, a microbiologist at Stanford University, thinks the risks of making a new strain of flu virus that has the potential to cause a pandemic are very real.

"I don't think we have adequately involved the public," Relman says, "so that they understand the possible consequences of mistakes, or errors, or misadventures in performing this kind of science — the kinds of consequences that would result in many, many people becoming ill or dying."

"These viruses are out there. They cause disease; they have killed many, many people in the past. We bring them to the laboratory to work with them."

Paul Duprex, Boston University microbiologist

Controversial work on lab-altered bird flu was halted for more than a year in a , after two labs generated new, more contagious forms of the bird flu virus H5N1. Eventually, after federal officials promised more oversight, the experiments started back up and the controversy quieted down. But key questions were never answered, Relman says.

"One of the big issues that has not been advanced over the last two years is a discussion about whether there are experiments that ought not to be undertaken and, if so, what they look like," he says, noting that scientists keep publishing more studies that involve genetically altered flu viruses. "You know, every time that one of these experiments comes up, it just ups the ante a bit. It creates additional levels of risk that force the question: Do we accept all of this?"

Last month, Relman met in Massachusetts with others who are worried. They formed the and issued a statement saying that researchers should curtail any experiments that would lead to new pathogens with pandemic potential, until there's a better assessment of the dangers and benefits.

By coincidence, they released their official statement just as the public started hearing news reports of various , such as a forgotten vial of smallpox found in an old freezer, and mishaps involving anthrax and bird flu at the Centers for Disease Control and Prevention.

What's more, the unprecedented Ebola outbreak has reminded the public what it looks like when a deadly virus .

All of this led a different band of scientists to also form a group — to publicly defend research on dangerous pathogens.

"There are multiple events that have come together in a rather unusual convergence," says , a microbiologist at Boston University.

He sees the recent reports of lab mistakes as exceptions — they don't mean you should shut down basic science that's essential to protecting public health, he says.

"These viruses are out there. They cause disease; they have killed many, many people in the past," Duprex says. "We bring them to the laboratory to work with them."

Duprex helped form a group that calls itself The group's position statement emphasizes that studies on already are subject to extensive regulations. It says focusing on lab safety is the best defense — not limiting the types of experiments that can be done.

Whenever questions about safety are raised, Duprex says, scientists have one of two options. They can keep their heads down, do their experiments and hope it will all go away. Or, he says, they can proactively engage the public and provide an informed opinion.

His group has taken the latter approach, "because ultimately we're the people working with these things."

Each of these two groups of scientists now has a website, and each website features its own list of more than a hundred supporters, including Nobel Prize winners and other scientific superstars.

One thing that almost everyone seems to agree on is that, to move forward, there needs to be some sort of independent, respected forum for discussing the key issues.

The American Society for Microbiology has the prestigious National Academy of Sciences to take the lead. A representative of the Academy says NAS does plan to hold a symposium, later this year. The details are still being worked out.

, a microbiologist at the University of Wisconsin, Madison who is president of ASM, says a happened back in the mid-1970s, when brand-new technologies for manipulating DNA forced scientists and the public to tackle thorny questions.

"And I think that is a productive exercise," Donohue says, "to have scientists and the public, sitting around the table, making sure each one understands what the benefits and risks are, and putting in place policies that allow these types of experiments to go on so that they are safe and so that society can benefit from the knowledge and innovation that comes out of that work."

Ebola: between public health and private profit

By Bob Rigg

Source: https://www.opendemocracy.net/opensecurity/bob-rigg/ebola-between-public-health-and-private-profit

Known to the international community since 1976, why has the world dragged its feet for decades to find a vaccine for ebola–and where has the money gone for public health research?

Fears of ebola spread to the US. Will this finally galvanize action to find a (affordable) cure for the virus? Demotix/Richard Levine. All rights reserved.

The current focus of public attention is on the unprecedented west African outbreak of ebola, a virulent disease with a high mortality rate that can be accompanied by the almost complete breakdown of normal bodily functions, as well as by extreme incontinence and bleeding from all orifices. A horrific way of dying.

Of the five types of ebola, the currently active Zaire ebolavirus is the most aggressive and lethal, with an extremely high mortality rate up to about 90%. But mass media are not asking possibly the most fundamental question about ebola–given that ebola has been known to the international health community since 1976 (featuring in about 34 outbreaks), why was a vaccine not developed long ago?

The answer lies in the unwillingness of western pharmaceutical companies wedded to high profits to consider the undoubtedly costly investment in vaccines and treatments for infectious diseases that are rampant in the poorest countries of the world, mostly in Africa.

The speed and unpredictability of the current outbreak has confronted the world with the fearsome possibility that this disease could even spread to the US and the west. As soon as ebola was perceived to be no longer confined to Africa, the world–which has until now turned its back on ebola and a number of other tropical infectious diseases–was galvanized into action. There is a significant risk that the mythical global village might become an uncomfortable reality.

The present head of the World Bank, whose professional life began with handling an infectious disease outbreak in Haiti, has announced that the World Bank will donate $200 million to an ebola fund to be administered by the World Health Organisation (WHO). The WHO has set itself a target of $100 million, of which only $30 million has so far been contributed by its member states.

From 'African infection' to global pandemic

Until recently, this ebola outbreak was concentrated in Guinea, Liberia, and Sierra Leone, three of the poorest countries in the world. Liberia is ranked 179 on the UN Human Development Index, with an average life expectancy of 56.11; Liberia is ranked 175, with a life expectancy of 60.6, while Sierra Leone is at rock bottom, at 183, with a life expectancy of 45.56. All these

countries have been ravaged by war and conflict, and are amongst the most corrupt in the world. Poverty is widespread, communication is limited; borders are not just porous, but practically non-existent. Many people live in remote small communities completely out of touch with everything.

One unsettling feature of the current outbreak lies in the fact that ebola has also taken root in some large cities, where it is much harder to identify and eradicate. Because there is little faith in the thoroughly discredited public institutions, any government-declared ebola emergency is often taken with a grain of salt. Even those health workers who commit to the fight against ebola frequently lack the most basic forms of protection–unsurprisingly, about 100 health workers have already died. The surviving health professionals live with the knowledge that their commitment can lead to a nasty death, with whose symptoms they are all too familiar. Laboratory workers and other support staff are reluctant to have contact with blood, urine and stool samples, out of fear of the consequences.

The WHO will initially focus on sending in teams of well-equipped infectious disease specialists who, notwithstanding their expertise, will nevertheless be functioning in a less than optimal environment. One WHO doctor already in Africa confessed that he had to overcome resistance from his wife when he responded to a call for volunteers.

The WHO's declaration of a "public health emergency of international concern" now authorises it to intervene in the affected countries, to support and strengthen their capacity to respond to this crisis, due to the "serious and unusual nature of the outbreak and the potential for further international spread". Reputable non-governmental organisations such as Medecins Sans Frontieres have criticised the slow international response, saying that the virus is "out of control". It is not generally understood that the WHO's declaration empowers it to intervene directly in each of the African countries involved in the outbreak, requiring relevant local authorities to actively cooperate with it.

The degree of chaos and confusion reported by reliable non-governmental organisations suggests that even the WHO's man on the ground in the region is either out of touch or is being economical with the truth. Only a major concerted intervention by large numbers of well-qualified and well-equipped outside experts can hope to keep the lid on this cauldron of toxic uncertainty. Even if such an intervention is forthcoming, and quickly, it may be too late.

The primordial western terror of ebola is best exemplified by the current furious debate in the US, with some claiming that the Centres for Disease Control (CDC) acted irresponsibly when inviting infected US doctors back to the US for high quality care, allegedly exposing the entire population of the west to a possible outbreak.

Restricting the global health agenda

Because the west has until now perceived ebola as an African infection, it has been reluctant to fund research into an ebola vaccine. Now that ebola could possibly morph into a worldwide pandemic, the west is coming up with considerable resources, to contain the outbreak and to produce a vaccine. If the rigorous standard procedures for testing such vaccines continue to be applied, it could take two years before a vaccine is available.

If an ebola outbreak has by then escaped Africa and has established itself outside Africa, including in the west, demand for the vaccine would vastly exceed supply. The company selected to produce the vaccine would take full advantage of this situation, driving prices and profits through the roof. The weak would go to the wall, unvaccinated, while the powerful immunised themselves.

It can take as long as 21 days for identifiable ebola symptoms to develop. The latency period normally lasts about 6-10 days. During this period ebola is normally indistinguishable from the flu. Ebola becomes infectious only when its first symptoms have developed. And the earliest symptoms of ebola–very high temperature, vomiting, and diarrhea–are not exactly confined to ebola. This is when there is a considerable risk of infection and contamination.

If ebola spreads to the west, with its large anonymous conurbations, it would be difficult to control. In the absence of a vaccine, the probability of deaths would increase greatly. At this stage,

western media are filled with uninformed chatter about vaccines and serums. Several companies have been working to develop an ebola vaccine, but in the US, where most of this research is concentrated, most have been denied funding by the National Institutes of Health (NIH).

It is also true that the enormous cost of tests mandated by the FDA until now, sometimes running into hundreds of millions of dollars, has been a significant factor in pharmaceutical companies' reluctance to test new vaccines. The FDA is now under pressure to review or even to abandon this policy in relation to ebola.

Chemical vs biological fears

It has emerged that much of the funding for ebola research has aimed, not at protecting Africans and others from highly infectious tropical diseases, but at protecting western governments from the possible deliberate use of biological agents by non-state entities, or terrorists. Funding that is unavailable for public health purposes is suddenly miraculously available for national security.

Since 11 September, western governments have been fiercely lobbied by pharmaceutical companies which, out of naked self-interest, have raised alarm in high places by hyper-inflating the threat to the west from biological agents in the hands of terrorist groups. This alarm, with its far-reaching economic and health consequences, has been concealed from the general public.

For example, a UK company called Acambis persuaded governments of a serious risk that smallpox might be deliberately used by terrorists. Acambis went one step further, convincing many governments that they had to prepare for mass vaccination if they wanted to protect their populations. The fact that a much cheaper policy of containment had helped WHO eradicate smallpox from Africa was conveniently overlooked.

Acambis invested a lot of money into lobbying senior public health officials in ways that stretched the concept of medical ethics. Enormous quantities of smallpox vaccine were ordered by gullible governments on the advice of these senior public health officials, as Acambis shareholders laughed all the way to the stock exchange, and Acambis was eventually sold to a US company for a fancy price. Since the smallpox vaccine has a limited life expectancy, those governments that bought it were also committing to replace their stocks at regular intervals. It was money for jam.

Governments may have been hoodwinked into spending many hundreds of millions of dollars on a public health fiction devised by the public relations representatives of immensely profitable pharmaceutical companies.

Although today's terrorist organisations are much better funded and organised than their counterparts in the aftermath of 9/11, it can be contended that terrorist use of biological agents is unlikely in the present environment. Biological agents are very blunt instruments at best. Once released and dispersed, they cannot be confined to enemy populations, and can spread like wildfire. It is quite possible that they may eventually come back to bite the very organisations which released them, medically and politically.

Moreover, since the war in Syria, we know that terrorist groups can now produce chemical weapons, which are strategically much more promising than biological agents. They can be targeted at specific areas and populations, and their capacity to generate fear and terror is undiminished.

Various US and Canadian private companies and institutions have worked to develop an ebola vaccine, but have so far been denied the NIH funding which, in the US, is the precondition for phase one trials on human beings. Excited at the possibility of an international move to enhance preparedness for this outbreak of ebola, pharmaceutical companies will already be lobbying senior public health officials to secure a contract to develop and produce an ebola vaccine. Given growing international concern about a possible international ebola pandemic, the sky will be the limit for the companies cutting each other's throats for this plum contract.

US observers recently pointed out that, "right now, more money goes into fighting baldness and erectile dysfunction than hemorrhagic fevers like dengue or ebola." A table of global pharmaceutical spending in 2013 shows that "neglected diseases" including ebola received almost no funding.

At its session on 24 May 2013 the World Health Assembly in Geneva adopted

resolution WHA66.12 listing 17 neglected tropical diseases. In supporting this resolution, which interestingly enough did not list ebola as a neglected tropical disease, WHO Director-General Dr Margaret Chan spoke eloquently about and pleaded for the demise of neglected tropical diseases: "The size of the problem is immense as these diseases have always inflicted immense suffering to more than one billion poor 'voiceless and faceless' people, causing stigma and social exclusion particularly for women and children who 'suffer in silence.'"
Dr Margaret Chan's heartfelt plea went unnoticed outside of the World Health Assembly, like previous pleas of this kind.
The time has come for the BRICS governments, which collectively wield considerable economic power, to demonstrate their commitment to the developing world by establishing a well-endowed fund whose aim is, in consultation with WHO and relevant centres of expertise for infectious diseases, to stimulate research into and development of effective and inexpensive vaccines and treatments for infectious diseases afflicting the population of developing countries.
They would fund the development of independent research institutes and production facilities to produce vaccines and medicines for sale to poor countries at below cost, and to developed countries for two or three times the cost price.
This would go some way towards rectifying the historical imbalance between developing and developed worlds in this regard. It would also enormously strengthen the political/economic relationship between BRICS states and developing countries.

Bob Rigg *is former senior editor, Organisation for the Prohibition of Chemical Weapons and former chair, NZ National Consultative Committee on Disarmament. He is a freelance researcher and writer specialising in nuclear issues, the Middle East, Central Asia, and US foreign policy.*

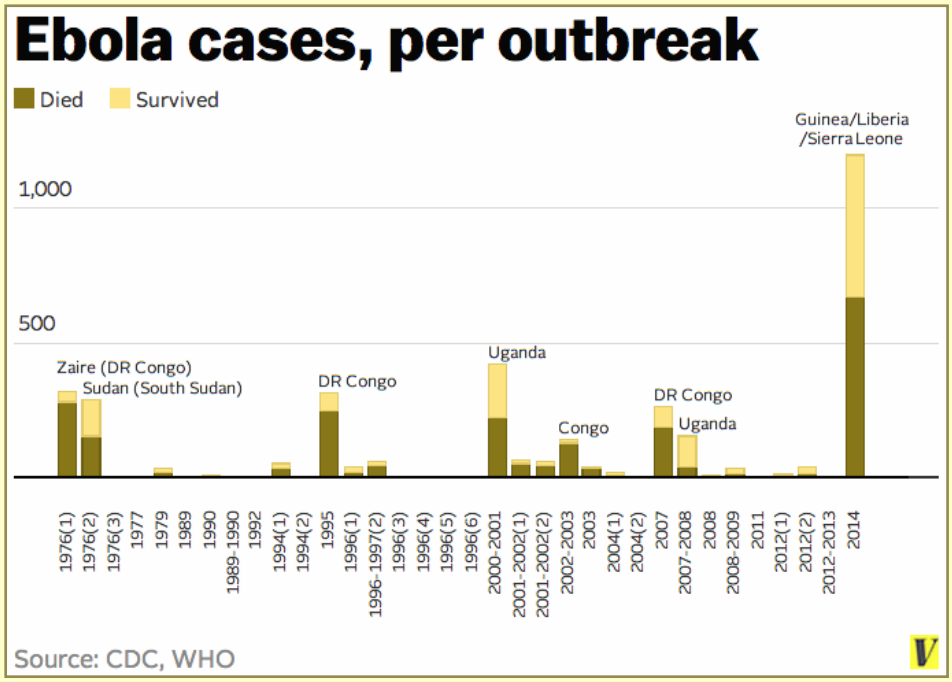
Containing the international spread of Ebola

By Sanjaya Senanayake
Source: http://www.homelandsecuritynewswire.com/dr20140815-containing-the-international-spread-of-ebola

The West African Ebola virus outbreak is already the largest of its kind, both in terms of numbers and geography. And with the most distant parts of the world less than a day's flight away, it isn't too difficult to imagine Ebola virus spreading.
If someone infected with Ebola virus vomits, bleeds, or has diarrhea on a flight, there is an opportunity to transmit the infection to others on the plane.
Air travel has already introduced Ebola virus into Nigeria's bustling metropolis of Lagos. The sick passenger died in Lagos at the end of July but the infection had already spread to nine other people.
Some countries, such as the Ivory Coast and Saudi Arabia have banned incoming flights from Guinea, Sierra Leone, and Liberia, the Ebola-affected countries. Other countries may follow.
The World Health Organization (WHO) does not recommend a general ban on travel to countries not affected by Ebola. But ease of access to air travel means all countries, including Australia, need to be vigilant for possible imported cases.

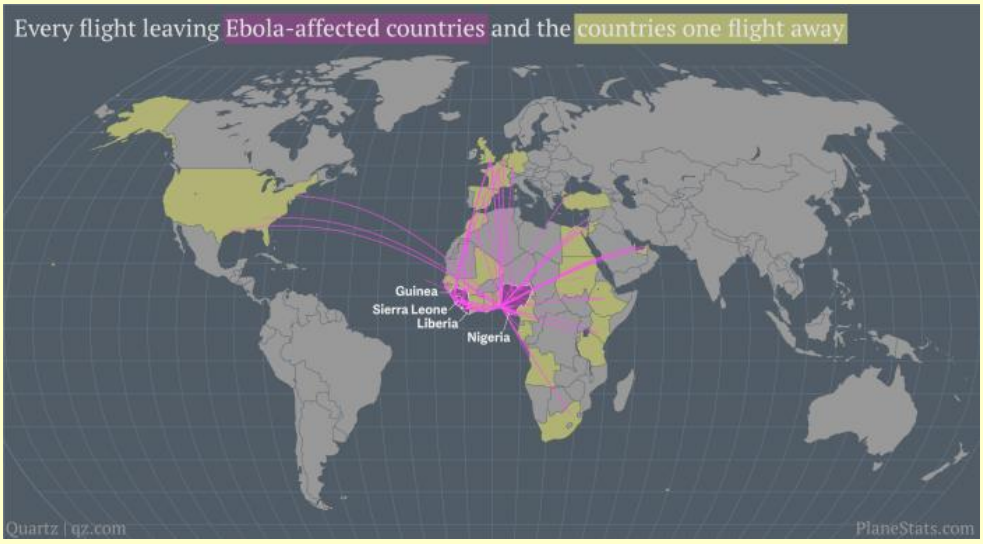
The illness
Knowing the incubation period of an infectious illness is important to determine if it is safe to bring a suspected case out of quarantine.
The incubation period of an infection refers to the time interval between becoming infected and becoming sick. Some infections have an incubation period of only a few days while others can last for years, such as tuberculosis. For Ebola virus infection, the incubation period is between two and twenty-one days.
Ebola virus infection has a fearsome reputation among the general population for quickly causing uncontrolled and ubiquitous bleeding. But while this can occur, infection usually begins as a flu-like illness with fevers, muscle aches, and generally feeling lousy. Australians with seasonal

influenza would report similar symptoms.



In West Africa, malaria presents in this way. If health-care workers didn't know there was an Ebola virus outbreak going on, they would almost certainly attribute these symptoms to another illness.

As the infection progresses, people can develop a variety of symptoms ranging from diarrhea, vomiting, abdominal pain, a cough, breathing difficulties, red eyes, and swelling.



Around day five of illness, a rash may appear. People who recover tend to improve six to eleven days into the illness. In the current outbreak, this happens around 45 percent of the time (1,848 cases and 1,013 deaths as of 9 August), which is higher than previous outbreaks.

For the other 55 percent of cases, however, the organs and blood clotting system of the body shut down as an irreversible decline sets in, leading to death.

The infectiousness of Ebola virus

In infections such as influenza, cases may be infectious to other people before they feel unwell. People with Ebola virus infection, on the other hand, are only infectious after becoming sick. This makes it just a little easier for health authorities to limit transmission.

In the current outbreak in West Africa, human-to-human transmission is responsible for the ongoing epidemic. Contact with infected body fluids through broken skin or mucous membranes (e.g., the eyes and mouth) can transmit the virus to others. This even applies to dead bodies, which makes funerals potentially dangerous.

No definite human-to-human transmission has been demonstrated through breathing, unlike infections such as measles, chicken pox, and influenza. But a study in animals suggested that the Zaire strain of Ebola virus could be transmitted from pigs to monkeys through air. The significance of this for human-to-human transmission isn't clear.

International response

With one billion people travelling overseas each year, it's never been easier for an infection in one part of the world to reach another.

The WHO last week announced that the Ebola outbreak met the conditions for a "public health emergency of international concern" and recommended countries with Ebola check everyone leaving the country for possible infection. This is called "exit screening" and involves measures such as questionnaires, information sheets and measuring the temperature with thermal scanners.

In countries that don't have Ebola, the WHO stated there should be "no general ban on international travel or trade" to those countries with Ebola.

It also recommended all countries have the capacity to identify and deal with travelers coming back with a fever from a nation with Ebola. This is called "entry screening" and often involves the same strategies used in the "exit screening".

During the SARS outbreak, however, both exit and entry screening strategies failed to detect many cases. The virus spread from Asia to various parts of the world, especially to Canada.

There may not have been many cases of SARS among travelers to explain its limited detection on airport screening. But there were other possibilities too that can be applied to Ebola virus as well as SARS. Some infected people may be in the incubation period so they genuinely aren't sick at the time of the trip.

Alternatively, some people might be sick but would not declare their illness for fear of quarantine. They may have evaded the thermal scanners by taking medication to hide their fever. Others with the illness may naturally not have had a fever at the time of thermal scanning.

But despite the limited detection rate of the airport screening process during the SARS outbreak, it was still thought to be a useful way to educate incoming travelers about what to do and where to go if they became sick.

Sanjaya Senanayake *is Associate Professor of Medicine, Infectious Diseases Physician at Australian National University.*

Ebola vaccine to be tested on humans

Source: http://www.homelandsecuritynewswire.com/dr20140815-ebola-vaccine-to-be-tested-on-humans

August 15 – **Efforts to test an Ebola vaccine on humans have reached a milestone when BioProtection Systems, through its parent company, NewLink Genetics Corporation, confirmed that it is prepared to launch the first human safety trial of a vaccine, which the company licensed after it was developed by scientists at the Public Health Agency of Canada.** The company has also arranged to manufacture tens of thousands of vaccine doses within "the next month or two," Dr. Charles Link, NewLink's chief executive, said.

msn News reports that last week, BioProtection Systems received $1 million from the U.S. Defense Threat Reduction Agency (DTRA) for more preclinical toxicology studies, and to step up manufacturing to allow human trials to begin quickly. "DTRA said, 'we want this to move quickly,'" Link said. "Before that, I'd have said it would take eight to 10 months before we could launch human studies, but now it's a matter of weeks."

The NewLink vaccine replaces the genes from vesicular stomatitis virus (VSV), a pathogen found in livestock, with a gene from the Ebola virus. The Ebola gene then develops a harmless protein that sits on the virus's outer coat. Scientists believe that after VSV is injected, the body's immune system will recognize the Ebola protein as foreign, and will begin making antibodies that destroy Ebola viruses, all of which have the protein.

The current Ebola outbreak has killed roughly 1,000 people in West Africa, and health officials fear that the virus could spread. As a result, pharmaceuticals and health agencies have stepped up efforts to develop vaccines and treatments, which for years had been moving at a slow pace.

Public health agencies, including the World Health Organization, the Food and Drug Administration (FDA), and the Centers for Disease Control and Prevention (CDC) have shown strong support for an Ebola vaccine and treatment.

NewLink is now awaiting confirmation from the CDC, the National Institutes of Health, and Walter Reed Army Medical Center about where to conduct human trials. The company reserved doses from ongoing studies in lab animals, so there would be no need to wait for manufacturing to take place before testing its vaccine on humans. The human trials would require between twenty to 100 healthy volunteers to get sufficient data. Members of the military and medical workers working in West Africa are the likely participants of the trial, but NewLink awaits FDA approval before the trial can proceed in the United States. "I have never seen the FDA so supportive," Link said, adding that he expects to receive FDA approval soon. The FDA could not confirm discussions about medical products under development, its spokeswoman Erica Jefferson said.
NewLink, the CDC, and WHO are also considering hosting human safety trials on medical workers in West Africa, Link said. "We're here to help and do whatever we can" in the disastrous Ebola outbreak, Link added. "My team has been told to get it done tomorrow."

Texas Medical Center considering "reverse quarantine" to prevent Ebola infections

Source: http://www.homelandsecuritynewswire.com/dr20140815-texas-medical-center-considering-reverse-quarantine-to-prevent-ebola-infections

The Texas Medical Center (TMC), home to more than fifty health care institutions (it is considered the world's largest medical district), is **considering using a preventive measure, known as reverse quarantine, to keep potentially at-risk employees and students from spreading Ebola to other medical staff or patients.** Concerned that the Ebola outbreak could reach Texas, hospital executives are reviewing their emergency management plans, usually reserved to guide more than 100,000 employees at TMC during hurricanes and tropical storms.

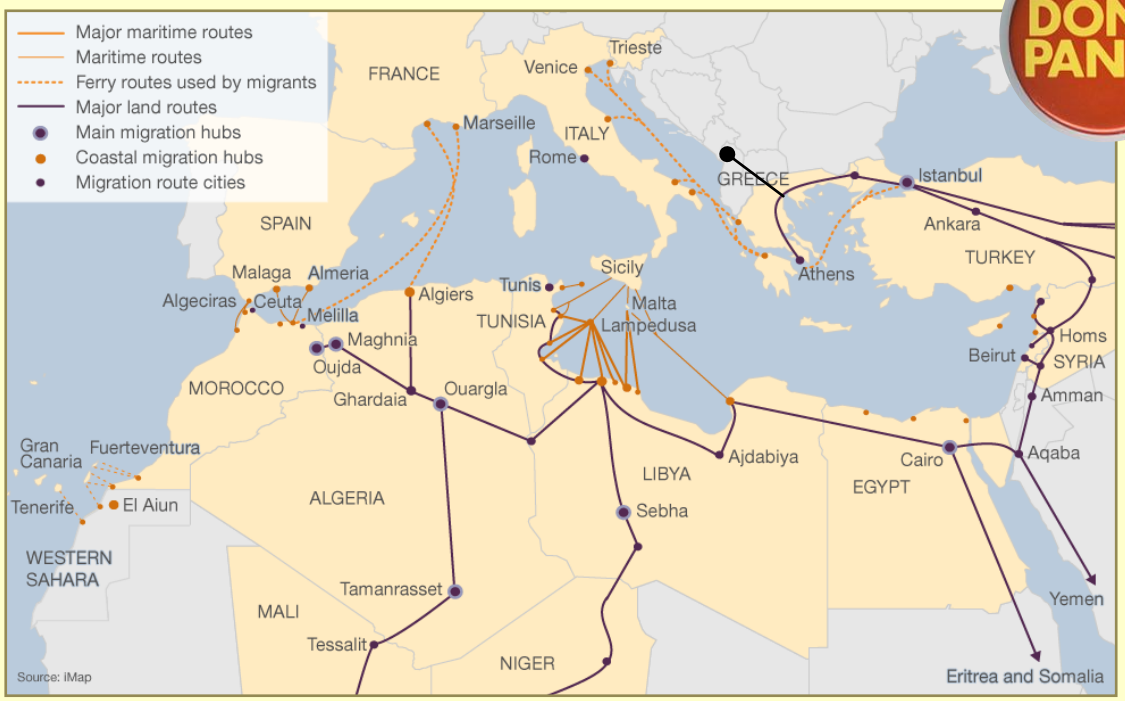
The reserve quarantine was once used on Dr. Tom Wheeler, when he returned to Houston from a visit in Mexico in 2009, during the height of the H1N1 epidemic. Upon his return, the Baylor College of Medicine's (BCM) pathology chief was told by his employer to stay home for a day before he returned to work. "I was just told to stay at home, no special precautions," said Wheeler. "I came to work the next day."

TMC attracts thousands of students, and healthcare professionals from around the world, putting the campus at risk for Ebola. Dr. Kenneth Mattox, Ben Taub Hospital's chief of staff and a distinguished service professor at BCM, who have helped advise nearby hospitals on emergency management during hurricanes, proposed that BCM staff who have traveled to West Africa, should stay away from patients upon their return to Houston for twenty-one days. "I have recommended that there be strong consideration that this be done in the interest of public health," Mattox told the*Texas Tribune* on Monday. BCM has not decided on whether to take that approach. "The reverse quarantine Dr. Mattox mentioned is one option, but no policy has been put in place at Baylor College of Medicine at this time," said Glenna Picton, a spokeswoman for the college.
University of Texas Health Science Center (UTHSC), which is also located in TMC, is advising the school's health officer to contact students returning to campus from West Africa, and urge them to look for symptoms including fever, headache, joint and muscle aches, weakness, vomiting, and diarrhea. "Our primary concern was the notion that we have faculty or students who might have traveled to this area," said Robert Emery, UTHSC's vice president of safety, health, environment and risk management. "If you have traveled, these are things we would like you to do."

Ebola – Europe

(As of August 17, 2014)

Source: various



Illegal immigration routes towards Europe

Albania

Albanian police arrested 40 illegal immigrants, five of whom are suspected of being infected with the disease. They were taken to a local hospital where they will be examined. The immigrants are from the African country of Eritrea, where there have been no confirmed cases of ebola so far. They first arrived to Greece, and then reached the territory of Albania, which is usually used as a transit to Western Europe.

Serbia

Meanwhile, 14 people in Serbia were put under surveillance because of the possibility of infection with ebola. They are persons who have returned from Africa, mainly from Nigeria, Guinea, Liberia and Sierra Leone. Upon arrival at the airport such passengers undergo health checks and within 24 hours they are advised to seek epidemiologist advice to monitor their condition for 21 days, the incubation period of the disease.

Romania

StandartNews English recalls, that previously a romanian man was also treated with ebola symthoms but was found having malaria instead.

France

A member of France's national assembly, Patrick Balkany, also claims that there are several cases of Ebola now in France being hidden from the public though the French government is pushing back on the reports. More than 30% of France's immigrant population comes from Sub-Saharan Africa.

Spain

Spanish health authorities in the eastern Valencia region of Spain activated (August 16th) alert protocols on Saturday night over a new possible case of Ebola after a young Nigerian man was admitted to a hospital in the city of Alicante with fever and "several other

symptoms" of the disease. If confirmed, this would be the first case of Ebola virus reported in Spain.
Father Miguel Pajares, a Spanish priest, died last week in a Madrid hospital after being repatriated from Liberia where he was infected with the disease.

Portugal
While laboratory analyses have quashed concerns that a Portuguese national who recently visited Liberia may have contracted the Ebola virus and brought it back to Portugal, Portuguese immigration and health authorities have nonetheless guaranteed all "procedures appropriate to the situation at hand are ongoing and planned" to deal with an outbreak should it be necessary.

Italy
Fake message on **Facebook** (reproduced by 26,000 users) regarding cases of **Ebola** in the illegal immigrants' (from N Africa) center at Lampedusa Island, spread panic and caused **10mil euro damage** due to tourist reservations' cancellations!

UK
An asylum seeker was suspected of having the deadly Ebola virus after developing symptoms within days of arriving in Britain from Libera, it has emerged. The man, who was awaiting processing at an immigration centre run by security company G4S in Gatwick, was feared to be carrying the disease, which has killed more than 700 people in West Africa. Immigration staff isolated the man and tested him for Ebola earlier this week, but he did not have the infection.
A man was previously tested for the Ebola virus in Birmingham but he, and another man who took himself to hospital fearing he had the virus, were both given the all clear.

Scotland
A woman from Sierra Leone has been tested for the Ebola virus in Scotland after falling ill at an immigration removal centre. She was being held at the Dungavel Detention Centre in South Lanarkshire and was taken to hospital for tests that later on proved to be negative.

EDITOR'S COMMENT: The illegal immigration – EVD nexus is the primary concern for Europe – not the EVD itself despite the fact that not vaccine is available in the market – so far. Especially for the "gate-countries" like Spain, Italy and Greece.

Hospitals in the U.S. Get Ready for Ebola

Source: http://www.nytimes.com/2014/08/16/health/hospitals-in-the-us-get-ready-for-ebola.html

At Tampa General Hospital, a staff member in a full-body, fluid-resistant protective suit, which the hospital intends to issue if doctors there need to care for Ebola patients. Credit Jock Fistick for The New York Times
Hospitals nationwide are hustling to prepare for the first traveler from West Africa who arrives in the emergency room with symptoms of infection with the Ebola virus.
Dr. Thomas R. Frieden, director of the Centers for Disease Control and Prevention, has said such a case is inevitable in the United States, and the agency this month issued the first extensive guidelines for hospitals on how recognize and treat Ebola patients.

The recommendations touch on everything from the safe handling of lab specimens to effective isolation of suspected Ebola patients. But one piece of advice in particular has roused opposition from worried hospital administrators.

The C.D.C. says that health care workers treating Ebola patients need only wear gloves, a fluid-resistant gown, eye protection and a face mask to prevent becoming infected with the virus. That is a far cry from the head-to-toe "moon suits" doctors, nurses and aides have been seeing on television reports about the outbreak.

Some hospital officials are skeptical of the new advice. "It's not going to be enough for my health care workers to feel comfortable going into an isolation room," said Peggy Thompson, the director of infection prevention at Tampa General Hospital.

If a suspected Ebola patient arrives at her hospital, Ms. Thompson intends to outfit staff members in fluid-resistant jumpsuits with bootees, taped seams and hoods. They cost about $175 per dozen. She has not decided how many to order.

Faced with "copious amounts" of vomit or diarrhea, the C.D.C. acknowledges that leg coverings or double gloving might also be needed.

But, "We don't always know when a patient is going to vomit," Ms. Thompson, a former nurse, pointed out. "You get into that situation quickly, so you better go into the room prepared for that exposure."

The Ebola virus is spread through contact with body fluids, such as those in blood, sweat, saliva or feces. While it is not an airborne virus like the flu, contaminated droplets can be released briefly into the air during procedures performed on infected patients, such as the insertion of a breathing tube. In that case, the C.D.C. recommends the use of air-purifying respirators.

In recent weeks, C.D.C. officials have said repeatedly that any hospital in the United States can safely provide care for a patient with Ebola by following their exacting infection-control procedures and isolating the patient in a private room with an unshared bathroom.

"What's needed to fight Ebola is not fancy equipment," Dr. Frieden said in a message posted during a Twitter chat with concerned members of the hospital staff. "What's needed is standard infection control, rigorously applied."

Nancy E. Foster, the vice president of quality and patient safety policy at the American Hospital Association, agreed that gloves, gown, face mask and eye protection are "perfectly fine" and called the C.D.C. guidance the "best advice."

But Dr. Michael V. Callahan, an infectious disease specialist at Massachusetts General Hospital who has worked in Africa during Ebola outbreaks, does not think it is wrong for hospitals to opt for more protective equipment.

The minimal precautions recommended by the C.D.C. "led to the infection of my nurses and physician co-workers who came in contact with body fluids," Dr. Callahan said. "I understand the desire to maintain absolute protection in U.S. hospitals."

Dr. Justin Fairless, an emergency physician in Tulsa, Okla., said that health care workers in Africa "are wearing the highest level of protection, but the C.D.C. recommendation lets us go down to the lowest level of protection."

Dr. Fairless is considering buying his own air-purifying respirator to pair with a head-to-toe coverall. "I am not comfortable going to see an Ebola patient wearing a paper mask that doesn't cover my entire face," he said.

He is hardly alone. In recent weeks, several hospital workers have expressed concerns, asking why head coverage is not necessary and suggesting their emergency department doctors would get hard-to-tear hooded suits.

A specimen is handled at the hospital's microbiology lab, where any testing for the Ebola virus would be conducted. Credit Jock Fistick for The New York Times

Dr. David Kuhar, the health care and worker safety team leader for C.D.C.'s Ebola response, argued that caring for patients in Africa is "very different" from caring for those in a hospital in the United States.

"In a field setting, there may be many patient beds close together, as well as behind you," he said. "It would be very difficult, or impossible, to predict when you may be exposed to infectious bodily fluids, so you might want equipment to cover your back and head, to protect your exposure."

Yet until recently, the health care workers tending to Dr. Kent Brantly and Nancy Writebol, the aid workers infected with Ebola in Liberia, were outfitted in head-to-toe protective suits at Emory University Hospital in Atlanta — which in no way resembles an African field hospital.

On Wednesday, Dr. Phyllis E. Kozarsky, a professor of medicine and infectious diseases at Emory, disclosed that the nurses had shed their full-body gear and were following "what C.D.C. guidance says for the management of these patients."

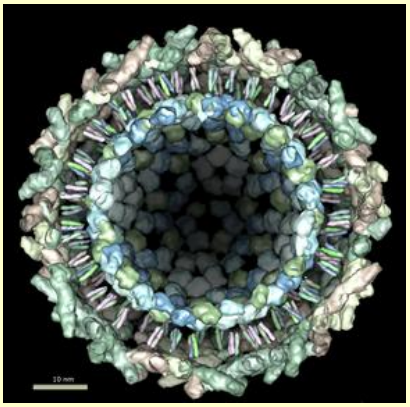
High-tech protective gear may pose dangers of its own, experts noted. It may be difficult to remove a hood or respirator, for instance, without accidentally touching the wearer's face or eyes, giving the virus an entry point.
Hospitals purchasing head-to-toe gear may find another unforeseen risk: cleaning it.
"It's easier to grab a new disposable than to repeatedly clean the nooks and crannies of devices," said Dr. Mark D. Rowland, medical director of epidemiology for St. Francis Health System in Tulsa.

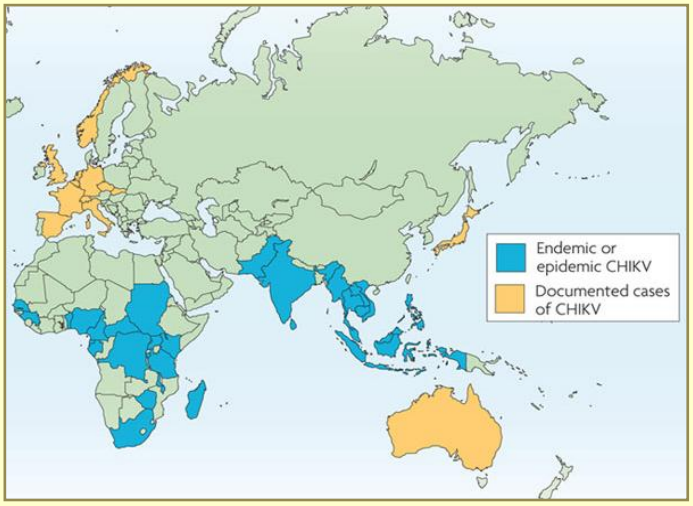
What sort of protective equipment to wear, and who should wear it and when, is only one of the most pressing of dozens of logistical issues now facing hospitals. Already, triage nurses at some hospitals are asking emergency room patients about recent travel to Guinea and Sierra Leone.
Those with fevers or other suspicious symptoms probably do not have Ebola, said Dr. Melvin Weinstein, chief of infectious diseases at Rutgers Robert Wood Johnson Medical School. But now, he said, "we have had to think about how to transport blood specimen to the lab" and keeping technicians safe.
On Aug. 5, more than 5,400 health care professionals were called into a briefing about Ebola hosted by the C.D.C.
Hospital administrators and infection control specialists asked dozens of questions. Is the virus in breast milk or semen? (Yes to both.) Can the soiled linens of an Ebola patient be cleaned off-site without spreading the virus? (Unknown.)
In response, agency officials are scrambling to develop additional guidance on handling laundry, patient waste and the bodies of any American patients killed by Ebola.
"Just in case," Dr. Kuhar said.

CHIKV Challenge: Forecasting the spread of infectious disease

Source: http://www.homelandsecuritynewswire.com/dr20140818-chikv-challenge-forecasting-the-spread-of-infectious-disease

August 18 – The Chikungunya virus (CHIKV) is on the move. Spread among humans by mosquitoes, and spread across



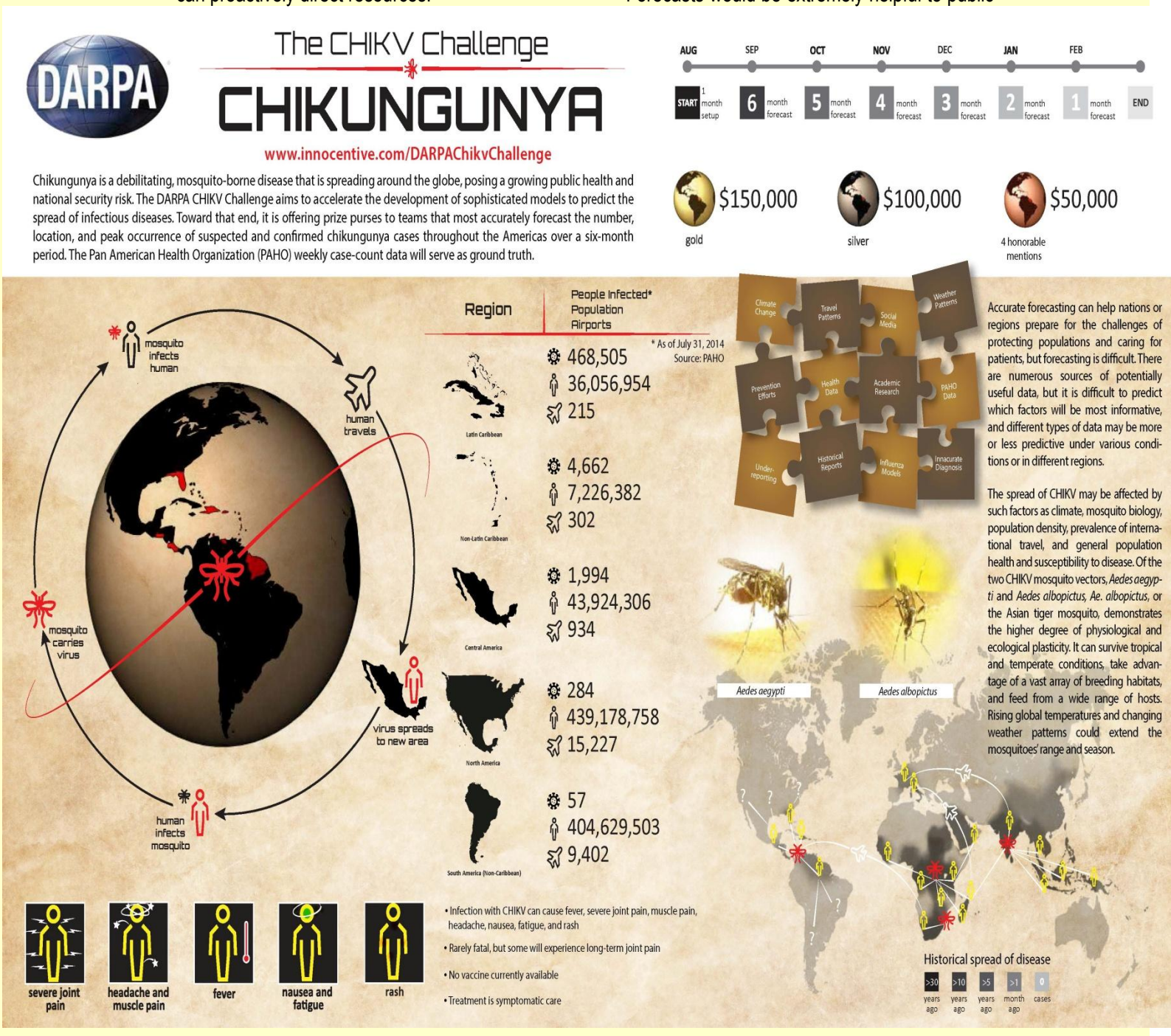


geographic boundaries by humans who travel, the virus — which causes a debilitating illness — is now expanding through the Western Hemisphere. Governments and health organizations could take proactive steps to limit its spread if they had accurate forecasts of where and when it would appear. DARPA's CHIKV Challenge asks teams to create models to deliver such forecasts for all of the countries and territories in the Americas and the Caribbean over a six-month period starting in September 2014. The winning team will take home $150,000, with additional cash prizes for runners-up.
DARPA notes that Chikungunya causes fever, severe joint and muscle pain, nausea, fatigue, and rash in infected individuals. Although some candidate vaccines are being tested, there is currently no treatment beyond symptomatic care. Prevention includes avoidance of mosquito bites and

vector control (that is,, mosquito eradication). The disease poses a growing public health and national security risk, underscoring the need to accurately forecast the number, location, and peak occurrence of cases so health officials can proactively direct resources.

incorporated into a forecast, but it is difficult to predict which will be most informative, especially as different types of data may be more or less predictive under various conditions or in different regions.

"Forecasts would be extremely helpful to public



Modeling the future spread of infectious diseases is extremely challenging. Many current infectious diseases models tend to be based on historic data. There are numerous sources of potentially useful data that could be

health officials in containing infectious diseases, but it is really difficult. The science of forecasting is a work in progress. It's akin to trying to solve a jigsaw

puzzle with some of the pieces missing and a vague sketch of what the finished image should look like," said COL Matthew Hepburn, the DARPA program manager for the CHIKV Challenge. "Identifying and acquiring the right data points and figuring out how to link them requires interdisciplinary coordination."

In fact, one goal of DARPA's challenge is to inspire the creation of teams drawn from multiple disciplines, including not only specialists in public health and infectious disease, but also experts in mathematics, meteorology, entomology, computer science, and bioinformatics, among other fields.

DARPA runs prize-based challenges to accelerate progress in scientific and technological domains it perceives as lagging behind national needs, and to ensure that the full diversity of America's innovative potential is brought to bear on pressing national security issues.

DARPA says that such challenges often attract individuals and consortia that might have never previously contributed to government research efforts or considered how their expertise might be applied to the national security domain.

"The CHIKV Challenge is exciting on many levels," Hepburn said. "For one, Chikungunya is already here in the Americas, so teams are going to have to work at the speed of an epidemic to build their models. But equally exciting, we believe this effort could lead to the creation of tools that work even faster than the speed of an epidemic, giving us the opportunity to act effectively before an infectious disease actually arrives and spreads."

At the conclusion of the Challenge, the winning teams will be invited to attend an end-of-study meeting with government experts from various partner agencies with an interest in predictive modeling. A robust and scalable forecasting capability could find application in a variety of sectors, including emergency response and humanitarian assistance, in addition to public health

The CHIKV Challenge is open to individuals eighteen years of age or older. A participant may compete individually or as part of a team. Only one submission per team may be submitted.

▶ **Read more about the DARPA Forecasting Chikungunya Challenge at:**
https://www.innocentive.com/ar/challenge/9933617?cc=DARPApress&utm_source=DARPA&utm_campaign=9933617&utm_medium=press

The CDC contracts Emergent BioSolutions for $18.9 million smallpox treatment

Source: http://www.homelandsecuritynewswire.com/dr20140818-the-cdc-contracts-emergent-biosolutions-for-18-9-million-smallpox-treatment

August 18 – Rockville, Maryland-based Emergent BioSolutions last week announced that the Centers for Disease Control and Prevention **(CDC) has contracted the company for the supply of Vaccinia Immune Globulin Intravenous (VIGIV) into the U.S. Strategic National Stockpile (SNS).** VIGIV is a therapeutic licensed by the U.S. Food and Drug Administration (FDA) for the treatment of complications due to smallpox vaccination. The contract options, valued at $18.9 million over three years, provide for work required to maintain FDA licensure of VIGIV and to collect plasma for future manufacturing.

"Emergent's ongoing integration of the Cangene operations has ensured continuity in the fulfillment of our procurement and development contracts with the U.S. Government," said Adam Havey, executive vice president and president biodefense division of Emergent BioSolutions.

"With respect to VIGIV, which remains a critical component of the government's biodefense program, we are pleased that CDC has exercised these contract options and look forward to implementing the required activities that we anticipate will enable future manufacturing of VIGIV."

The company says that this contract modification increases the total contract value to $36.6 million. The scope of the contract, originally awarded to Cangene Corporation, which Emergent acquired in February 2014, was to maintain the ability to manufacture licensed VIGIV, with annual options to conduct additional services to support licensure

maintenance activities for the product and to allow for additional manufacturing and plasma collections. VIGIV was first delivered into the SNS in 2002 and was subsequently licensed in the U.S. by FDA in 2005 and in Canada by Health Canada in 2007.

Ebola Update – As of August 19, 2014

Source: http://www.afro.who.int/en/clusters-a-programmes/dpc/epidemic-a-pandemic-alert-and-response/outbreak-news/4258-ebola-virus-disease-west-africa-19-august-2014.html

	New [1]	Confirmed	Probable	Suspect	Totals (by Country)
Guinea					
Cases	24	396	140	7	543
Deaths	14	252	140	2	394
Liberia					
Cases	48	200	444	190	834
Deaths	53	178	202	86	466
Nigeria					
Cases	3	12	0	3	15
Deaths	0	4	0	0	4
Sierra Leone					
Cases	38	775	34	39	848
Deaths	17	326	34	5	365
Totals					
Cases	113	1383	618	239	2240
Deaths	84	760	376	93	1229

1. New cases were reported between 14 and 16 August 2014.

Woman suspected of Ebola infection on Abu Dhabi flight died of cancer

Source: http://www.thenational.ae/uae/health/woman-suspected-of-ebola-infection-on-abu-dhabi-flight-died-of-cancer

August 19 – Etihad Airways has disinfected one of its planes as a precaution after health officials said a Nigerian passenger who died after flying into Abu Dhabi may have been infected with the Ebola virus.
"HAAD [Health Authority – Abu Dhabi] said that although she displayed symptoms consistent with an Ebola viral infection, her existing medical condition provided an adequate medical explanation for her death, and the UAE Ministry of Health stated that there is no risk to the community, fellow passengers or airport staff as a result of this incident," an airline spokesman said on Tuesday.
On Sunday, Haad said the **35-year-old woman was travelling from Nigeria to India for cancer treatment.**
Nigeria is one of many West African countries battling to contain the virus that, as of last week, had killed 961 people, according to the World Health Organisation.
The woman's husband and five medics who resuscitated her are in isolation pending the result of Ebola testing on the patient. They are all well with no symptoms, Haad said.

The Ministry of Health assured the public that there is no risk to the community, to fellow passengers on the plane from Nigeria and those in the airport, reported state news agency Wam.

Injectional anthrax - new presentation of an old disease

By T Berger[1,2], M Kassirer[1], A A Aran[1,3]

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2. Department of Internal Medicine D, Rabin Medical Center, Beilinson Hospital, Petah-Tikva, Israel
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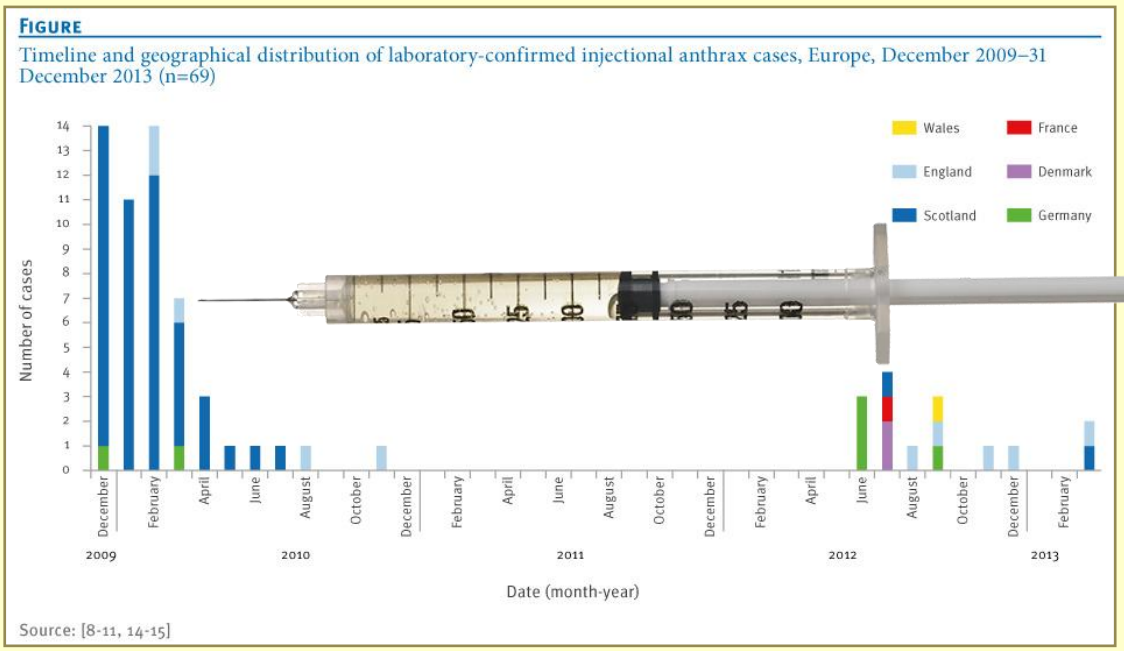
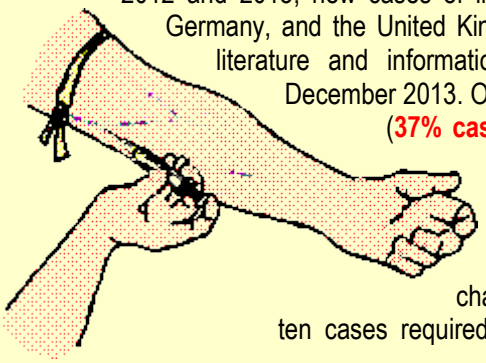
Eurosurveillance, Volume 19, Issue 32, 14 August 2014

Source: http://www.eurosurveillance.org/ViewArticle.aspx?ArticleId=20877

Bacillus anthracis infection (anthrax) has three distinct clinical presentations depending on the route of exposure: cutaneous, gastrointestinal and inhalational anthrax. Each of these can lead to secondary



bacteraemia and anthrax meningitis. Since 2009, anthrax has emerged among **heroin users** in Europe, presenting a novel clinical manifestation, 'injectional anthrax', which has been attributed to contaminated heroin distributed throughout Europe; before 2009 only one case was reported. During 2012 and 2013, new cases of injectional anthrax were diagnosed in Denmark, France, Germany, and the United Kingdom. Here we present a comprehensive review of the literature and information derived from different reporting systems until 31 December 2013. Overall 70 confirmed cases were reported, with 26 fatalities (**37% case fatality rate**).The latest two confirmed cases occurred in March 2013. Thirteen case reports have been published, describing 18 confirmed cases. Sixteen of these presented as a severe soft tissue infection that differed clinically from cutaneous anthrax, lacked the characteristic epidemiological history of animal contact and ten cases required complimentary surgical debridement. These unfamiliar characteristics have led to delays of three to 12 days in diagnosis, inadequate treatment and a high fatality rate. Clinicians' awareness of this recently described clinical entity is key for early and successful management of patients.



▶ **Read the full paper at source's URL.**

Five Things Africa Must Learn From The Ebola Outbreak

Source: http://www.ventures-africa.com/2014/08/five-things-africa-must-learn-from-the-ebola-outbreak/

More than a thousand lives lost, over two thousand infected, three countries ravaged, a fourth's toll rising, the whole continent held hostage, and the world in panic; yet the Ebola epidemic rages on with health agencies struggling to bring it under control.

It all began nine months ago in a tiny village in Meliandou, Guéckédou Prefecture in Guinea, before spreading to neighbouring Liberia and Sierra Leone and then made landing in Nigeria thanks to the lack of a cure, dilapidated healthcare systems, slow and uncoordinated government response, ineffective institutions, poor sensitization, and pervasive ignorance and poverty.

Finally the world is taking the Ebola epidemic serious with the World Health Organization labelling it an international health emergency, the US and Canada remembering that they have trial drugs and vaccines and China realising it could help the continent where it is the highest investor. Sadly these things only began to happen after two Americans got infected and the spread to foreign countries, a la Nigeria, became a huge possibility.

Using E.B.O.L.A as an acronym, here are five lessons that this epidemic has taught African countries:

E-nvironment: As African governments focus on creating 'enabling environments' for the boom of businesses and investments, it is imperative that they recognise the fundamental importance of sanitised urban and rural environments as well as effectively monitored forests and waters. Ebola has proven that even a sick wild animal inside the farthest forest can be the spoiler alert of a region's development economic progress.

The Ebola virus was first identified in 1976 with two simultaneous outbreaks in Sudan and the Democratic Republic of Congo (then Republic of Zaire) – in a village situated near the Ebola River, from which the disease takes its name. Since then there have been repeated **reoccurrence** of the virus across the DRC, Uganda and Gabon, before the current outbreak in Guinea, Sierra Leone, Liberia, and Nigeria.

Even though it has been known from the first incidence that the Ebola outbreak initiates from human contact with blood or bodily fluids of carrier animals like fruit bats, monkeys or other wild animals, in addition to the fact that all outbreaks begin from rural areas with proximity to forests, very little have been done by the affected countries or regions to control or better monitor the environment to prevent outbreaks.

Most transmissions have started with farmers who hunt wild animals as bush-meat or locals who buy and consume them. But despite bush-meat hunting and consumption being commonplace across sub-Saharan Africa, there's hardly any government in the region that has put in place mechanisms to regulate the type and guarantee the safety of livestock been hunted and consumed.

Environmental problems in Africa are not limited to rural areas however; most urban areas across African countries are plagued with huge waste disposal problems, lack of effective drainage systems- and blockage of the few available, poor levels of sanitations especially within densely populated slums, among others. All it takes for a health epidemic is a

combination of some of these environmental hazards with a transmissible deadly virus like Ebola.
African governments have to, with the tragic experience of this Ebola epidemic, put proper environmental management among their top priorities. Before the current Ebola epidemic in West Africa, the virus had affected east and central Africa; these areas previously affected share no border with the countries currently being ravaged. This means the virus could spring up in any other part of sub-Saharan Africa where the carrier animals exist, the only way to stop that is to begin to take our environment, forests, and wildlife areas more seriously.

B-etter Healthcare: In much of Africa, effective healthcare system and proper healthcare delivery are not just inexistent but widely perceived as implausible. Already struggling with countrywide poor and inadequate infrastructures, rural areas in many African countries lack health centres and hospitals while the urban centres often have theirs overstretched, understaffed and underequipped.

Guinea, Sierra Leone and Liberia are examples of this milieu with their inefficient nay inexistent healthcare systems and centres contributing greatly to the uncontrollable spread of the Ebola virus. Same was the case in Sudan, Congo and Uganda when they were hit by Ebola outbreaks. Sadly the situation of healthcare delivery systems in these countries is still largely inadequate, evidenced by repeated outbreaks and high fatalities of the Ebola virus as well as other viral outbreaks.
Still, it is a matter of priorities, African countries and its governments must begin to take serious the provision of efficient universal healthcare. Nigeria for example, where- before the Ebola outbreak -public hospitals have been shut down due to Doctors' strike, is remarked as a country where its wealthy elites go to luxury private hospitals or fly abroad for health issues as minute as "medical check-ups".
The Ebola epidemic has shown just how crucial keeping even the poor masses in the rural areas healthy is to the health-safety of the entire nation, especially the seemingly detached wealthy elites.

O-n Your Own: there is a popular Nigerian phrase "you are on your own oh", often abbreviated as OYO. It is used to remind a person that his problems are his to solve. This Ebola epidemic and the cavalier intervention from the western world is a reminder for Africa that its problems and the way the continent solves them are primarily its business.

If there's any lesson Africa must learn from this Ebola outbreak and the world's response to it, it is that – at the end of the day "everyone is on his own". African countries have to stop folding their hands and looking to the west to solve their problems.

As much as the World Health Organization (WHO) has been rightly criticized for its slow reaction to the Ebola epidemic, the African governments and regional groups bear the ultimate responsibility for this tragedy.
It is shameful that despite the fact that Ebola has been recurrently claiming hundreds of African lives for close to four decades, very little have been done by Africans to find a cure, an effective means of prevention, or a systematic way of caring for victims of the virus. Same way Africa has been at the backseat of the fight for the eradication of malaria, or the cure for HIV/AIDS, Lassa Fever etc, even though Africans dominate the front seat of victims of these sicknesses.
Although it is deeply disturbing that the US only decided to reveal that they had Ebola trial drugs after two of their own got infected, African countries must learn from this that in the end, it all about national interests. After all, the trial drugs were only been researched in the first place because of the fear of Ebola been used as a biological weapon against the US, and not to save Africa.
As the Ebola-hit African countries continue to scramble for any Ebola treatment out there, they and indeed all African countries, individually and as a group, must begin to find their own efficient cures for not just health but also socio-political and economic problems.

L-ack of Information kills: The massive deceit of Nigerians by an unfounded rumour that salt and water, if drank and bathed with, immunizes from Ebola, showed the pervasive lack of knowledge of the Ebola virus by the general populace. That rumour reportedly led to the death of two Nigerians who consumed salt in large quantities, an example of how virulent misinformation can be.

Government and the civil society of the three worse-hit countries have been roundly criticised both locally and internationally for not doing enough sensitization. Journalist Wade Williams bemoaned this lack of sensitization in his piece in the **New York Times** about his coverage of theEbola crises in Liberia.

Rather than spread information about how people could protect themselves, he wrote, Liberian authorities were quarantining information about the disease. "We journalists had to turn to the United States Embassy's April 4 advisory to American citizens, warning against contact with blood, body fluids or contaminated items", he lamented.

The lack of sensitization created doubts, spurred myths, and failed to discourage practices, like washing of corpses, which further fuelled the spread of the outbreak. Absence of correct information also gave room for misinformation that exaggerated the possible ways of contracting the virus and skyrocketed panic in the affected countries.

A-ct: On other days Government sluggishness is undoubtedly the chief-hinderer of Africa's development, with Ebola it became the accelerant of the virus' spread. Not only were the governments of the Ebola-hit countries not proactive, the pace of their reaction was virtually a standstill.

It took authorities in Guinea four months (December 2013 to March 2014) and an estimated 86 casualties for the country to realize that it had an Ebola outbreak, and then another four months to declare it a national emergency, after more than 300 lives have already been lost.

Liberian authorities, albeit doing nothing to prevent the virus from crossing into the country, spent more time preventing journalists from covering the Ebola epidemic than preventing the virus' continued spread. At one time in April Liberia's President Sirleaf, criticized for travelling abroad in the midst of the outbreak, declared that "while it (Ebola) is a concern, there is no need for panic". Now there is; only in recent weeks did the government realise that it should restrict the movement of people from the area most hit by the epidemic.

The Sierra Leonean government did not perform any better; while the death toll from Ebola in the country was at 192, the government had only one Ebola testing centre in the whole country. The insensitivity of the government was so infuriating that it caused an open criticism from the country's very influential religious leaders' bloc. The country's nurses also went on strike in the same period to protest over poor safety measures and a ridiculously low insurance cover (said to be $20 at that time).

Even though Nigerian authorities have been applauded for their relatively quick reaction to the entrance into the country of the Liberian Ebola carrier Patrick Sawyer, the country's failure at being proactive have made it a scapegoat for other countries to learn from and screen incomers from the Ebola-hit region. That nonchalance by Nigerian Authorities, even after the Ghana scare, to check incomers from Ebola-hit countries (given that Patrick Sawyer was reportedly physically sick) has dragged the country of 170 million and its prime city (Lagos) of 21 million into the mud of deadly virus which is already making its mark by killing three and infecting a close to a dozen Nigerians.

Quick and effective pro-action, action and reaction are exercises that African countries must begin to exert not just to prevent deadly outbreaks like Ebola but also to foresee and nip in diverse societal challenges in the bud.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