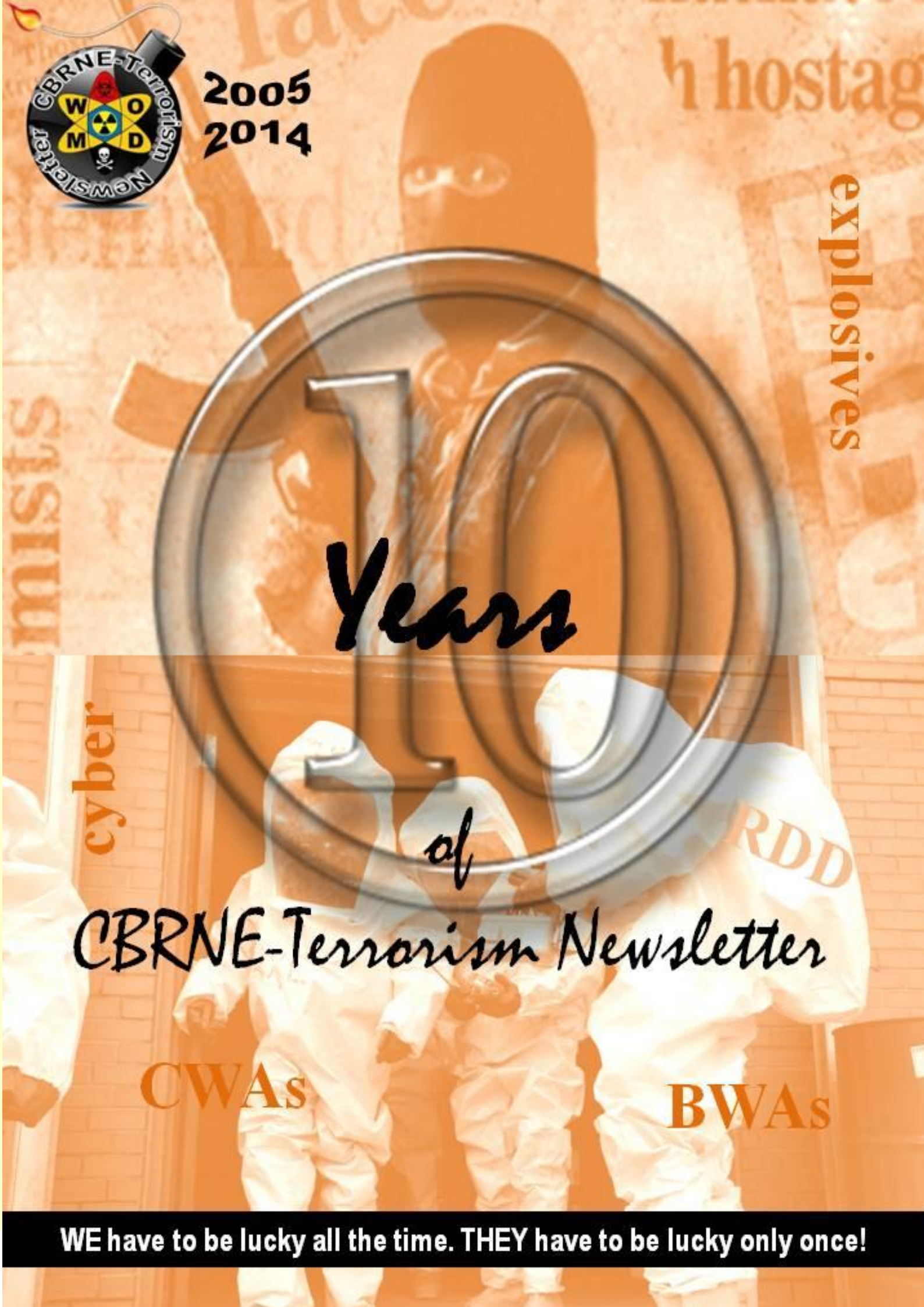
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▶ **Cover:** Nicotiana benthamiana, the plant from which ZMapp is derived.

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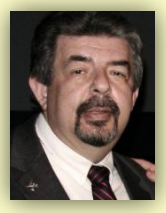
2. Distributed to more than 700 institutions, organizations, state agencies, think tanks, defense companies, institutions and universities.



Editorial

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

Editor-in-Chief
CBRNE-Terrorism Newsletter

Dear Colleagues,

This month – October 2014 – was characterized by both sides of the terror coin: Ebola virus and Islamic State's acrocities.

And while the human brutality potential is known we keep on surprised by the methodologies applied that raise the need for new taxonomy of the word "terror". Men, women, babies, crossings, decapitations, mass graves, skull football, all are there and exanding! Western world is sasmodic reacting with flame rhetory, occasional bombings, backstage negotiations, UN meetings, some ammunition drops and other childish actions. On top of all these, remote nations living in their own "green" bubbles experience the element of surprise and the consequences of the "why should anyone harm Canada? We are such nice people!"

On the other hand, Ebola scare becomes viral and all out of Africa nations experience first hand what is Africa is facing on daily basis. Our preparedness proved a bad joke and mass media love to point this out the same way they did with the current financial turmoil many EU countries are experiencing (and others are expecting in silence). And when a abscess is broken then many pathologies come to the surface. Pathologies that grew up through years of relaxing policies faciliated by people in high places that think only of today and never of tomorrow or the day after. But even when the enemy is visible their reaction is restricted by financial excuses, micro working environment debates, union oppositions that suppose to protect their own (benefits) and alike that do not promote health defense and do not protect societies and populace.

Once more those who know do not sign and those who sign do not know! Easy solutions projectable through the demanding mass media and information opium for the masses. Only that the masses have now access to information and know a lot about the problems we face. And they can understand when something is done in a professional way or it is a visible hoax or the carpet that covers all our gaps and insufficiencies.

So far medical planners proved unable to to provide an efficient health defense plan based on anthropocentric parameters. Recently I as visiting a country abroad. They had two airports in two different cities. But the Ebola isolation unit was in a third city. Why? Because it happened to be there and it was "difficult" to deploy two more at the main "entrances" [airports] to this (island) country. If this is not crazy, what is?

Ebola defense is not a real medical problem. Since there is no vaccine (yet – but coming soon; perhaps by the end of 2014) the patient relys on supportive treatment and management in an isolated establishment. The real problem is the treatment environment and the protection of those involved. Isolation facility, personal protective equipment, doning and doffing (especially) procedures, negative pressure settings (yes virus is not airborne by the book but could become airborne instantly during the vomiting process…), quarantine protocols and contaminated waste management (surely not throwing gloves at the nearby public trash can out in the public as police officers recently did in New York). If we cannot effectively deal with these aspects then the battle will be lost. If continue to avoid following SOPs to the letter, if we do not restart relying on our common logic (you were in the treatment environment of an Ebola patient dear? NO

you cannot go to a cruise booked some time ago!) then more victims will evolve and their human micro-environments (relatives, friends, other professionals) would be submitted to troubles or put their lives at risk.

Ah! There was another US school shooting today (October 25th) – this time at Marysville Pilchuck High School in Washington State by a 14 year old student (with a legal [?] gun). But writing about US school shootings is like writing there was a bombing incident in Iraq or Syria. Yes, it is not nice to write comments like this but reality is always hard unless we decide to do something about it.

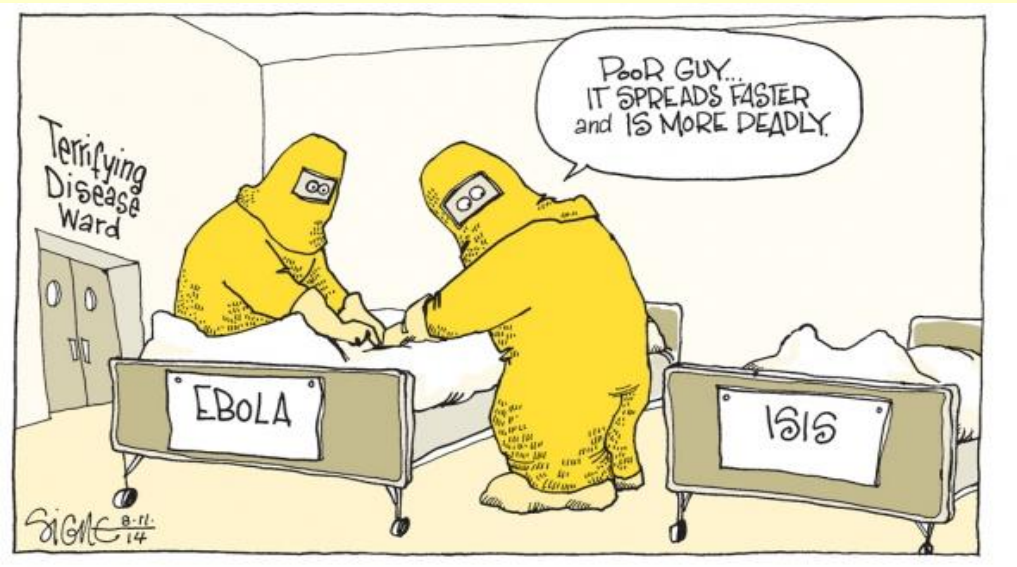
Life in Greece remains the same. Political debates for today and own survival but not for tomorrow affecting all of us! Magicians are trying to multiply rabbits coming out of the hat but the hat is empty and magics do not work any more infront of an angry boiling audience.

October was not only full of unfortunate news. The Newsletter signed a MoU with University of Rome "Tor Vergata" to provide media sponsorship but also to provide experts from its Editorial Team to the ongoing two CBRNe Master Degrees provided by the Italian University (approved by both the Organization for the Prohibition of Chemical Weapons and NATO). Similar collaboration is in progress for a second Italian University providing a MA degree on CBRNE issues.

The collaboration of the Newsletter with its readers is entering into a new phase and soon the Editor will translate into Greek a book written by a US colleague on "Ebola". Leah Robers is following Ebola for the last 10years and current epidemic/(pandemic) from the very first days of the outbreak. This e-book will be regularly updated at least until sufficient treatment would be available and the Ebola tsunami will calm down and be under control both in Africa and worldwide. Read more at the "Bio News" chapter of the Newsletter.

Let us all hope that November would be a better month!

The Editor-in-Chief



Serbian Orthodox priest denied visa to enter UK

Source (in Greek): http://www.agioritikovima.gr/

Great Britain refused to grant visa to al Serbian Orthodox priest and a group of Serbs who intented to travel to England. At the same time authorities granted visa to the Imam of Srebrenica and Bosnian Muslims who participated in the same joint mission to UK.

"We filled the same documents and tabled the same financial requirements for obtaining a visa. But the Serbs were not accepted unlike the Bosniaks which indicates a discriminatory attitude of the UK towards the Serbian people "denounced Fr. Mladjenović.

Even hodža (imam) Peštalić of Srebrenica was surprised by the flagrant different treatment of the two configurations of the group. As a result he canceled I the trip as well.

The group led by the Imam and the Orthodox priest was about to visit London, Birmingham, Nottingham and Derby and come into contact with various religious communities. The program also included a visit to the British parliament and BBC's editorial board.

This event followed two recent US diplomatic statements targeting Serbian Orthodox Church. The American ambassador expressed his discomfort for the construction of an Orthodox church in Srebrenica while he criticized Serbia's invitation to President Putin to attend the celebrations for the liberation of Belgrade.

EDITOR'S COMMENT: I searched "religion in England" on the Internet. Wikipedia denotes that: *"Christianity is the most widely practiced and professed religion in England [59.4%]. The Anglican Church of England is the established church of England, with a special constitutional position in the United Kingdom. Some other forms of English Christianity include Methodism, Roman Catholicism, Pentecostalism, and Orthodoxy."* So most probably the whole story can be attributed to simple stupidity of a certain high official. Or NOT? Because in certain cities of England the overall environment very often resembles Muslim cities (personal experience – Luton). By the way, the US Ambassador is still in Serbia? If yes, perhas he should start learning how to play chess instead of checkers.

Greece – Military Search & Rescue Dog buried with military honors

Military S&R Dog **Charlie** (SN: S-0391)
German Shepherd
Born: 08 May 2008
Died: 20 September 2014

German air force in catastrophic disrepair

Source: http://rt.com/news/183120-germany-air-force-military/

The German Air Force is in a slump with terrible funding shortages and a lack of parts, as a pessimistic report by Der Spiegel blasts it ahead of a major NATO deployment in Eastern Europe. Defense officials, however, blasted the assessment as inaccurate.

The damning report comes on the eve of NATO making big plans for edging its combined military might closer to Russia. The analysis by Der Spiegel has already caused much concern among Germany's defense community.

The confidential document was reported on in the magazine's new issue. It calls into question further strategies by Germany to take part in NATO activities in 2015.

Proponents of the view feel that with the EU taking on one of the leading roles in providing the world with some stability in these difficult times, Germany's predicament as a leading military player is a matter of great concern.

Official figures put the German Air Force at fourth in the alliance. Not true, Der Spiegel says, alluding to the country's poor state of aircraft and the embarrassing fact of having to borrow spare parts from existing planes.

With NATO concentrating more forces in the Baltic, the Germans were supposed to send six planes there next week. But Germany, NATO's second strongest member, remains uncommitted to the expansion plans (seen by some as resulting also from Berlin's worsening ties with Washington).

Under the pretext of an *"overt"* Russian threat, the alliance is pushing for a *"readiness action plan"* that will bring the Cold War military bloc closer to Russian borders than ever – despite objections from a number of NATO members.

Also noteworthy is the fact that under the alliance's agreement, each member is to spend 2 percent of its GDP on defense. Germany, however, spends only 1.3 percent, and is planning to reduce that further.

The helicopter division is also in bad disrepair: **only seven of the 67 CH-53 transport helicopters are in top condition** – that includes those currently used in Afghanistan. A similar fate befell another model.

Cargo planes have also made it into the report's statistics**: under half of the 56 C-160s are functioning correctly.**

Lashing out at Der Spiegel, the military claimed the magazine had misinterpreted the report on the state of the Air Force, which lists, among other things, aircraft requiring routine maintenance – a fact Der Spiegel apparently mistook as meaning they were inoperable.

Defense officials believe the report also doesn't match the official logs and that certain parts of the classified document are an internal matter.

Defense Minister Ursula von der Leyen's spokesperson declined to comment further, but did say the troops were *"well-equipped."*

Although Germany plans to make the aforementioned cuts to its defense budget, allies are actually calling for a more active engagement militarily. Von der Leyen agrees with the calls.

"Indifference is not an option for a country like Germany… it is almost doomed to take on more responsibility," she said. But although she and Chancellor Angela Merkel are seen as similar in many ways, the chancellor is not likely to back this push in the upcoming defense budget of 2015.

It remains to be seen also if the current strategy of Von der

Leyen's for boosting enrolment into the military services will work: **the navy, Der Spiegel says, is still 1,400 short of personnel.**

EDITOR'S COMMENT: Also one out of 22 Sea Lynx helis (anti-submarine) are operational; only 600 first line tanks are available when Russia has more than 5,000 units; only 10 out of 33 (attack) Eurocopter Tigers are op read; only 70 out of 180 (Infantry's) Boxer MRAVs (multi-role armoured vehicles) are operational – just to name a few. It seems the financial dominace is considered enough to defend the country. But even high school kids know the importance of a strong and ready national defense even when surrounded by peaceful nations or less advanced armies. Let us all hope that nothing extraordinary will happen in the near future in our continent (at least).

US Global Power in the 21st Century: Military or Economic Imperialism?

By Prof. James Petras

Source: http://www.globalresearch.ca/us-global-power-in-the-21st-century-military-or-economic-imperialism /5404911

Despite vast amounts of imperial data to the contrary, the great majority of writers on imperialism continue to describe and analyze US imperialism strictly in economic terms, as an expansion of "capital accumulation", "accumulation on a world scale".

In fact the major and minor US imperial wars have more to do with "capital dis-accumulation", in the sense that trillion dollar flows have gone out from the US, hundreds of billions of dollars in profits from resource sites have been undermined, markets for exports have been severely weakened and exploitable productive labor has been uprooted. At the same time US imperialist state 'dis-accumulates capital', multi-national corporations, especially in the extractive sector are expanding, "accumulating capital" throughout Latin America.

This new configuration of power, the conflicting and complementary nature of 21st century US imperialism, requires that we anchor our analysis in the real, existing behavior of imperial state and extractive capitalist policymakers. The basic premise informing this essay is that there are two increasingly divergent forms of imperialism: military driven

intervention, occupation and domination; and economic expansion and exploitation of resources, markets and labor by invitation of the 'host country'.
We will proceed by examining the choices of imperial strategy, in a historical – comparative framework and the alternatives which were selected or rejected. Through an analysis of the practical decisions taken regarding 'imperial expansion' we can obtain insights into the real nature of US imperialism. The study of imperial strategic choices, past and present, state and corporate, requires three levels of analysis: global, national and sectoral.

Global Strategies: US Imperial State and the MNC

US imperial state invested trillions of dollars in military expenditures, hundreds of thousands of military personnel into wars in theMiddle East (Iraq, Yemen, and Syria), North and East Africa (Libya,Somalia), South
Asia (Afghanistan) and imposed sanctions on Iran costing the US hundreds of billions in "capital dis-accumulation".
The US corporate elite, driven out of Iraq, Syria, Libya and elsewhere where US military imperialism was engaged, chose to invest in manufacturing in China and extractive sectors throughout Latin America.
In other words the US imperial state strategists either chose to expand in relatively backward areas (Afghanistan, Pakistan, Somalia and Yemen) or imposed under-development by destroying or sanctioning lucrative extractive economies (Iraq, Libya, Iran).
In contrast the MNC chose the most dynamic expanding zones where militarist imperialism was least engaged – China and Latin America. In other words "capital did not follow the flag" – it avoided it.
Moreover, the zones where extractive capital was most successful in terms of access, profits and stability were those where their penetration was based on negotiated contracts between sovereign nations and CEO's – economic imperialism by invitation.
In contrast in the priority areas of expansion chosen by imperial state strategists, entry and domination was by force, leading to the destruction of the means of production and the loss of access to the principle sites of extractive exploitation. US military driven imperialism undermined energy companies' agreements in Iraq and Libya. Imperial state sanctions in Iran designed to weaken its nuclear and defense capabilities undercut US corporate extractive, public-private contracts with the Iranian state oil corporations. The drop in production and supply in oil in Iraq, Iran and Libya raised energy prices and had a negative impact on the "accumulation of capital on a world scale".
If imperial state decision-makers had followed the direction of economic rather than military driven policymakers they would have pivoted to Asia and Latin America rather than the Middle East, South Asia and North Africa. They would have channeled funds into economic imperialist strategies, including joint ventures, high and medium tech trade agreements, and expanded exports by the high-end manufacturing sector, instead of financing 700 military bases, destabilization campaigns and costly military exercises.
Twentieth century military imperialism stands in stark contrast to late twentieth century economic imperialism. In the mid 1960's the US announced a vast new economic program in Latin America – the Alliance for Progress which was designed to finance economic opportunities in Latin America via joint ventures, agrarian reform and investments in the extractive sector. The imperial state's military policies and interventionist policies were designed to secure US business control over mines, banks, factories and agro-business. US backing for the coups in Chile, Bolivia, Brazil, Uruguay and Peru led to the privatization of key resource sectors and the imposition of the neo-liberal economic model.
US policy in Asia under Nixon was directed first and foremost to opening economic relations with China, expanding trade agreements with Japan, Taiwan and South Korea. The 'pivot from war' to free trade led to a boom in US exports as well as imports, in private investments and lucrative profits. Military expenditures declined even as the US engaged in covert operations in Afghanistan, Angola, Nicaragua and El Salvador.
Imperial intervention combined military and economic expansion

with the latter dictating policy priorities and the allocation of resources.
The reversal set in with the US military backing of the jihadist extremists in Afghanistan and the demise of the USSR. The former set the stage for the rise of the Taliban to power and the emergence of the Al Qaeda terrorist organization. The latter led US imperial strategists to pursue wars of conquest with impunity – Yugoslavia and Iraq during the 1990's.
Easy military conquests and visions of a 'unipolar' world dominated by US military supremacy, encouraged and fostered the emergence of a new breed of imperial strategists – the neo-conservative militarists with closer ties to Israel and its military priorities than to the US extractive petrol capitalists in the Middle East.

Military versus Economic Imperialist at the 'National Level'

In the post-Cold War period, the competition between the two variants of imperialism was played out in all the nation subject to US intervention.
During the first Iraq war the balance between militarists and economic imperialists was in play. The US defeated Iraq but did not shred the state, nor bomb the oil fields. Sanctions were imposed but did not paralyze oil deals. The US did not occupy Iraq; it partioned the north –so-called"Kurdish" Iraq but left the secular state intact. Extractive capital was actively in competition with the militarist neo-conservatives over the future direction of imperial policy.
The launch of the second Iraq war and the invasion of Afghanistan marked a decisive shift toward military imperialism: the US ignored all economic considerations. Iraq's secular state was destroyed; civil society was pulverized; ethno-religious, tribal and clan warfare was encouraged. US colonial officials ruled by military fiat; top policymakers with links to Israel replaced oil-connected officials. The militarist "war on terror" ideology replaced free market, free trade imperialism. Afghanistan killing fields replaced the China market as the center of US imperial policy. Billions were spent, chasing evasive guerrillas in the mountains of a backward economy while US lost competitive advantages in the most dynamic Asian markets.
Imperial policymakers chose to align with sectarian warlords in Iraq over extractive technocrats. In Afghanistan they chose loyal ex-pat puppets over influential Taliban leaders capable of pacifying the country.

Extractive versus Military Imperialism in Latin America

Latin American neo-liberalism went from boom to bust in the 1990's. By the early 2000's crisis enveloped the region. By the turn of the century US backed rulers were being replaced by popular nationalist leaders. US policymakers stuck by their neoliberal clients in decline and failed to adapt to the new rulers who pursued modified socially inclusive extractivism. The US military imperialists longed for a return of the neo-liberal backers of the "war on terrorism". In contrast, international multinational extractive corporations were realists – and adapted to the new regimes.
On a global scale, at the beginning of the new millennium, two divergent tendencies emerged. US military imperialism expandedthroughout the Middle East, North Africa, South Asia and the Caucuses, while Latin American regimes turned in the opposite direction – toward moderate nationalism, and populism with a strong emphasis on poverty reduction via economic development in association with imperial extractive capital
In the face of these divergent and conflicting trends, the major US extractive multi-national corporations chose to adapt to the new political realities in Latin America. While Washington, the imperial state, expressed hostility and dismay toward the new regimes refusal to back the "war on terror" (military imperialism) the major MNCs, robust embrace of economic imperialism, took advantage of the investment opportunities opened by the new regimes' adoption of a new extractivist model, to pour billions into the mining, energy and agricultural sectors.

The Specificities of Extractive Imperialism in the Era of "Post Neo-Liberalism"

Extractive imperialism in Latin America has several specific characteristics that sharply demark it from earlier forms agro-mineral imperialism.

(1) Extractive capital is not dominated by a single imperial country-like the Spanish in the 18t century, the British in the 19thcentury or the US in the 20th century. Imperial extractive capital is very diverse: Canadian, US, Chinese, Brazilian, Australian, Spanish, Indian and other MNCs are deeply involved.

(2) The imperial states of the diverse MNC do not engage in "gun boat diplomacy" (with the exception of the US). The imperial states provide economic financing and diplomatic support but are not actively involved in subverting Latin American regimes.

(3) The relative weight of US MNCs, in the new imperial extractivism is much less than it was a half century earlier. The rise of diverse extractive MNC and dynamism of China's commodity market and deep financial pockets have displaced the US, the IMF and WB and established new terms of trade with Latin America.

(4) Probably the most significant aspect of the new imperial extractivism is that its entry and expansion is by invitation. The Latin American regimes and the extractive MNCs negotiate contracts – MNC entry is not unilaterally imposed by an imperial state. Yet the 'contracts' may result in unequal returns; they provide substantial revenues and profits to the MNC; they grant large multi –million acre tracts of land for mining or agriculture exploitation; they obligate the national state to dispossess local communities and police/repress the displaced. But they also have allowed the post-neo-liberal state to expand their social spending, to increase their foreign reserves, to eschew relations with the IMF, and to diversify their markets and trading partners.

In regional terms extractive imperialism in Latin America has "accumulated capital" by diverging from the military imperialism practiced by the US in other regions of the world political-economy. Over the past decade and a half, extractive capital has been alliedwith and relyies both on post-neoliberal and neoliberal regimes against petty commodity producers, indigenous communities and other anti-extractive resistance movements. Extractive imperialists do not rely on 'their' imperial state to quell resistance- they turn to theirnational political partners.

Extractive imperialism by invitation also diverges from the military imperial state in its view toward regional organizations. US military imperialism placed all its bets on US centered economic integration which Washington could leverage to political, military and economic advantage. Extractive capital, in the great diversity of its 'national identity', welcomed Latin American centered integration which did not privilege US markets and investors.

The predominance of economic imperialism, in particular the extractive version, however, needs to be qualified by several caveats.

US military imperialism has been present in several forms. The US backed the military coup in Honduras overthrowing the post neo-liberal Zelaya government; likewise it supported an "institutional coup" in Paraguay.

Secondly, even as MNC corporations poured capital into Bolivian mining and energy sectors, the US imperial state fomented destabilization activity to undermine the MAS government. And was defeated and the agencies and operatives were expelled. The crucial issue in this, as well as other, instances is the unwillingness of the MNC's to join forces with the military imperialists, via boycotts, trade embargoes or disinvestment. Clearly the stability, profitability and long-term contracts between the Bolivian regime and the extractive MNC counted for more than their ties to the US imperial state.

US military imperialism has expanded its military bases and increased joint military exercises with most Latin American armed forces. Indoctrinated military officials can still become formidable potential allies in any future 'coup', if and when the US "pivots" from the Middle East to Latin America.

US military imperialism in its manifest multiple forms, from bankrolling NGO's engaged in destabilization and street riots in Venezuela, to its political support of financial speculators in Argentina and rightwing parties and personalities in Brazil, has a continuous presence alongside extractive imperialism. The success of the latter and the eclipse of the former are based in part on two contingentcircumstances. The

US serial wars in the Middle East divert attention away from Latin America; and the commodity boom fuels the growth of extractive capital. The economic slowdown in China and the decline of commodity prices may weaken the regimes in opposition to US military imperialism.

Paradoxically, the weakening of the ties between the post-neo-liberal regimes and extractive imperialism resulting from the decline of commodity prices is strengthening the neo-liberal socio-political forces allied with US military imperialism.

Latin America's Right Turn: The Co-Habitation of Extractive and Military imperialism?

Throughout Latin America the post-neoliberal regimes which ruled for the better part of a decade and a half face serious challenges – from consequential social opposition at the micro-level and from aggressive political-economic elites at the macro-level. It is worthwhile to survey the prospects for a return to power of neo-liberal regimes allied with military imperialism in several key countries.

Several factors are working in favor of a return to power of political parties and leaders who seek to reverse the independent and inclusive policies of the post neoliberal power bloc.

First the post-neo-liberal regimes development strategy of depending on foreign extractive capital, perpetuated and strengthened the economic basis of imperialism: the 'colonial style' trade relation, exporting primary commodities and importing finished goods, allowed the agro-mineral elites to occupy key positions in the politico-social structure. With the decline in commodity prices, some post-neoliberal regimes are experiencing fiscal and balance of payments shortfalls. Inflation and cuts in social expenditures adversely affect the capacity of the post-neo-liberal regimes to retain popular and middle class electoral support.

The divergences between post-neoliberals and economic imperialism are accentuating with return of the neoliberal right. The agro-mineral sectors perceive an opportunity to rid themselves of their power and revenue sharing agreements with the state and to secure even more lucrative arrangements with the advance of the neo-liberal right which promises tax and royalty reductions, deregulation and lower wage and pension payments.

Secondly, the post-neo-liberal regimes' alliances with the building , construction, and other bourgeois sectors, was accompanied by corruption involving pay-offs, bribes and other illicit financial transactions designed to finance their mass media based electoral campaigns and patronage system which ensured electoral majorities. The neo-liberal right is exploiting these corruption scandals to erode the middle class electoral base of the post -neo-liberal regimes.

Thirdly, the post-neo-liberal regimes increased the quantity of social services, but ignored their quality – provoking widespread discontent with the inadequate public educational, transport, and health services.

Fourthly, inflation is eroding the decade long advance of wage, pension and family allowances. The post-neo-liberal regimes are caught between the pressures to "adjust" –to devalueand impose fiscal 'austerity' as proposed by the international bankers and lose mass support, or to engage in deeper structural changes which require among other things, changes in the extractive dependence model and greater public ownership. The crises of the post-neo-liberal regimes is leading to irresolution and opening political space for the neo-liberal right which is allied to military and economic imperialism.

Military imperialism, which was weakened by the popular uprisings at the turn of 20th century is never absent. US military imperialism is first and foremost powerfully entrenched in two major countries: Mexico and Colombia. In both countries neo-liberal regimes bought into the militarization of their societies, including the comprehensive and deep presence of US military-police officials in the structures of the state.

In both states, US military and economic imperialism operates in alliance with paramilitary death squads, even as they proclaimed "a war on drugs". The ideology of free market imperialism was put into practice with the elimination of trade barriers, widespread privatization of resources and

multi-million acre land grants to MNC.

Through its regional clients, US imperialism has a springboard to extend its influence. Mexican style 'militarized imperialism' has spread to Central America; Colombia serves as a launch-pad to subvert Venezuela and Ecuador.

Where dissident regimes emerged in regions claimed by militarized imperialism, Honduras and Paraguay, military and civilian coups were engineered. However because of the regional concentration of US military imperialism in the Middle East it relies heavily on local collaborators, political, military and economic elites as vehicles for "regime change".

Extractive imperialism is under siege from popular movements in many countries in Latin America. In some cases, the political elites have increasingly militarized the contested terrain. Where this is the case, the regimes invite and accept an increased imperial military presence, as advisers, and embrace their militarist ideology, thus fostering a "marriage" between extractive and military imperialism. This is the case in Peru under President Humala and Santos in Colombia.

In Argentina and Brazil, the moderate reformist policies of the Kirchner and Lula/Rousseff regimes are under siege. Faltering export earnings, rising deficits, inflationary pressures have fueled a neo-liberal offensive, which takes a new form: populism at the service of neo-liberal collaboration with military imperialism. Extractive capital has *divided* - some sectors retain ties with the regime, others, the majority are allied with rising power of the right.

In Brazil, the Right has promoted a former environmentalist (Silva) to front for the hardline neo-liberal financial sector – which has received full support from local and imperial mass media. In Argentina, the imperial state and mass media have backed hedge fund speculators and have launched a full scale economic war, claiming default, in order to damage Buenos Aires' access to capital markets in order to increase its investments in the extractive sector.

In contrast Bolivia, the extractive model par excellence, has moved successfully to oust and weaken the military arm of imperialism, ending the presence of US military advisers and DEA officials, while deepening and strengthening its ties with diverse extractive MNCs on the one hand, and on the other consolidating support among the trade unions and peasant-Indian movements.

In Ecuador the extractive regime of Correa has diversified the sources of imperial capital from the US to China, and consolidated his power via effective patronage machinery and socio-economic reforms.

The US-Colombian military threat to Venezuela and Ecuador has diminished, peace negotiations with the FARC are advancing and the regime now faces trade union and Indian-peasant opposition with regard to its extractive strategy and corporatist labor reforms.

In both Ecuador and Bolivia, imperial militarism appears to lack the vital strategic military-civilian allies capable of engineering a regime change.

The case of Venezuela highlights the continuing importance of imperial militarism in shaping US policy in Latin America. The pivot to a military policy, was taken by Washington prior to any basic social reforms or economic nationalist measures. The coup of 2001 and lockout of 2002 were backed by the US in response to President Chavez forceful rejection of the "War on Terrorism". Washington jeopardized its important economic stake, petrol investments, in order to put in place a regime in conforming to its global military strategy.

And for the next decade and a half, the US imperial strategy totally ignored investment, trade and resource opportunities in this wealthy petrol state; it chose to spend hundreds of millions in financing opposition NGO, terrorists, electoral parties, mass media and military officials to effect a regime change. The extractive sector in the US simply became a transmission belt for the agencies of the militarized imperial state. In its place, Russia and China, interested especially extractive sector signed multi-billion dollar contracts with the Venezuelan state: a case of extractive imperialism by invitation – for economic and security reasons.

Apart from the ideological conflict over US militarist expansion,

Venezuela's promotion of Latin American centered regional integration, weakened US leverage and control in the

region. In its struggle against Latin American centered regional organizations and to regain its dominance, US imperialism has upgraded its economic profile via the Trans-Pacific Alliance, which includes its most loyal neo-liberal allies – Chile, Peru, Colombia and Mexico. The global eclipse of economic – driven imperial expansion in favor of the military has not totally displaced several key economic advances in strategic countries and sectors in Mexico, Colombia and Peru.

The privatization and denationalization of the biggest and most lucrative public petrol company in Latin America, PEMEX, the Mexican giant, opens up enormous profitable opportunities for US MNC. The rapid appropriation of oil fields by US MNC will enhance and compliment the militarization of Mexico undertaken by the US military-security apparatus.

The Mexican example highlights several features of US imperialism in Latin America.

Imperial militarization does not necessarily preclude economic imperialism if it takes place within an existing stable state structure. Unlike the imperial wars in Iraq and Libya, the military imperialist policies in Mexico advanced via powerful local political clients willing and able to engage in bloody civil wars costing over 100,000 civilian deaths in over a decade. Under the aegus and guidance of US imperial rulers, the US and Mexican military devastated civil society, but safeguarded and expanded the huge mining and manufacturing enclaves open to economic imperialist exploitation. Militarization contributed to weakening the bargaining rights of labor – wages have declined in real terms over the decades and the minimum wage is the lowest in the hemisphere.

Mexico highlights the crucial role that collaborator elites play in imperial capital accumulation. Mexico is an excellent example of 'imperialism by invitation' – the political agreements at the top impose 'acquiescence' below. The extraordinary levels of corruptionwhich permeates the entire political class, solidifies the longstanding links between Mexican political-business elite, the MNC and the security apparatus of the imperial state. Extractive imperialism is the principal beneficiary of this "triple alliance".

In the case of Mexico, militarized imperialism laid the groundwork for the expansion of economic imperialism.

A similar process, involving 'triple alliances' is operative in Colombia. For the past decade and a half, militarized-imperialism poured over $6 billion in military aid(Plan Colombia) to finance the dispossession, assassination, arrest and torture and of over 4 million Colombians, including the killing of thousands of trade union and social movement leaders.

The scorched earth policy, backed by a substantial US military mission operated through the existing state apparatus and with the active support of the agro-mineral and banking elite ,aided by nearly 40,000 member paramilitary death squads and drug traffickers laid the groundwork for the large scale entry of extractive capital – particularly mining capital.

Military imperialism preceded the long-term, large scale 'invasion' by economic imperialism in the form of a free trade agreement and multi-million acre land grants to mining MNC.

This general pattern was repeated in Peru. The 'war on terror" under Fujimori and the subsequent liberalization of the economy, under three subsequent Presidents, culminated in the massive primarization of the economy under President Humala – who deepened and extended the expansion of imperial extractive capital.

The economic downturn in some of the post-neo-liberal economies, namely Brazil, Argentina and Venezuela, and the rightward moving political spectrum, has opened a window of opportunity for US economic imperialism to work in tandem with the rising neo-liberal political opposition. The military option, a military coup or US military intervention is not on the horizon for the present time. The central focus of imperial state decision makers regarding regime change is a combination of overt electoral and covert 'street intervention': adopting 'populist', moralist and technocratic rhetoric to highlight corruption in high offices, inefficiency in the delivery of social services with claims of bureaucratic interference in the operations of the market. Business disinvestment, financial speculation on the currency and negative mass media propaganda

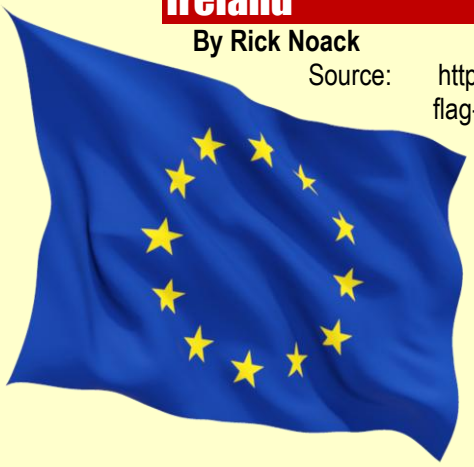
has coincided strikes and protests against shortages and lag between wage and price increases.
Despite costly and failed imperial wars in the Middle East, despite a decade of military retreat in Latin America, economic imperialism is advancing via the electoral route; it already has established a formidable array of allies among the political regimes in Mexico, Colombia and Peru and is posed to re-establish neo-liberal allies in Brazil, Argentina and Venezuela.

Conclusion

Imperialism as it has evolved over the past quarter of a century cannot be understood as a 'unified whole' in which the two basic components, military and economic are always complimentary. Divergences have been graphically illustrated by the imperial wars in the Middle East, South Asia and North Africa. Convergences are more obvious in Latin America, especially in Mexico, Colombia and Peru, where 'militarization' facilitated the expansion of extractive capital.
The theoretical point is that the nature of the political leadership of the imperial state has a high degree of autonomy in shaping the predominance of one or another strand of the imperial expansion. The capacity for imperial capital to expand is highly contingent on the strength and structure of the collaborator state: militarized imperialism that invades and destroys states and the fabric of civil society has led to disinvestment; in contrast economic imperialism by invitation in neo-liberal collaborator states has been at the center of successful imperial expansion.
The ambiguities and contradictions intrinsic to the post-neo-liberal extractivist based development model have both constrainedthe military component of imperialism while expanding opportunities for economic imperial accumulation. Accumulation by invitation, and accumulation by dispossession are simply 'moments' in a complex process in which political regime changes intervene and establish the locations and timing for refluxes and influxes of capital.
The rise of new economic imperialist powers like China competing with established imperial powers like the US, has led to alternative markets and sources of financing, which erodes the effectiveness political, military and diplomatic instruments of imperial coercion.
Regional variations in political configurations, imperial priorities and choice of instruments of power, have deeply influenced the nature and structure of imperialism. And as the world historic record seems to argue, military driven empire building in the Middle East has been a disaster while economic driven imperialism shows signs of rapid recovery and successes in Latin America.

James Petras *is a Bartle Professor (Emeritus) of Sociology at Binghamton University, New York. He is the author of more than 62 books published in 29 languages, and over 600 articles in professional journals, including the American Sociological Review, British Journal of Sociology, Social Research, and Journal of Peasant Studies. He has published over 2000 articles in nonprofessional journals such as the New York Times, the Guardian, the Nation, Christian Science Monitor, Foreign Policy, New Left Review, Partisan Review, TempsModerne, Le Monde Diplomatique, and his commentary is widely carried on the internet. His publishers have included Random House, John Wiley, Westview, Routledge, Macmillan, Verso, Zed Books and Pluto Books. He is winner of the Career of Distinguished Service Award from the American Sociological Association's Marxist Sociology Section, the Robert Kenny Award for Best Book, 2002, and the Best Dissertation, Western Political Science Association in 1968. His most recent titles include Unmasking Globalization: Imperialism of the Twenty-First Century (2001); co-author The Dynamics of Social Change in Latin America (2000), System in Crisis (2003), co-author Social Movements and State Power (2003), co-author Empire With Imperialism (2005), co-author)Multinationals on Trial (2006). He has a long history of commitment to social justice, working in particular with the Brazilian Landless Workers Movement for 11 years. In 1973-76 he was a member of the Bertrand Russell Tribunal on Repression in Latin America. He writes a monthly column for the Mexican newspaper, La Jornada, and previously, for the Spanish daily, El Mundo. He received his B.A. from Boston University and Ph.D. from the University of California at Berkeley.*

Even an E.U. flag sparks Islamist terrorism worries in Northern Ireland



By Rick Noack

Source: http://www.washingtonpost.com/blogs/worldviews/wp/2014/09/30/even-an-e-u-flag-sparks-islamist-terrorism-worries-in-northern-ireland/

The Flag of the European Union flies outside of the European Parliament in Strasbourg, France, on June 30. (Patrick Seeger/EPA)

The Islamic State's black and white flag has become one of the most recognizable symbols for the Iraq and Syria-based extremist group, and it has popped up in places as diverse as London and New Jersey.

Given the immense fear that surrounds the group and others like them, when **locals in Holywood, Northern Ireland, raised the alarm about an Islamist-style flag flying over a house Sunday, police felt compelled to investigate.**

What they found wasn't quite what they expected, however. According to the Associated Press, when police knocked on the door of the owner of the house, he explained to them it was not an Islamist symbol he was flying – but that of the European Union.

Speaking to police officers, the homeowner in question explained he had raised the E.U. flag to celebrate Europe's dominance and victory over the U.S. at the Ryder Cup, a popular golf competition (Holywood is golfer Rory McIlroy's hometown). He was presumably no Islamist extremist.

There are few, if any, similarities between the Islamic State flag and the one belonging to the European Union. The militants' trademark flag features a black and white Arabic inscription, while the EU flag is blue background with yellow stars.

It would not the first time that flags led to outrage in Northern Ireland, of course. In 2013, riots broke out after the Belfast City Council decided to stop flying the British Union Jack flag over the city hall throughout the year. **Earlier this summer, a Ku Klux Klan flag was erected in Belfast** in a separate incident which was widely portrayed as an expression of racist tensions in the region.

However, E.U. officials may have other reasons to be concerned. **Not only did the caller apparently not recognize the flag – it appears the police officers who responded may have failed to recognize it too.**

The Associated Press quoted Belfast councilman Andrew Muir as saying that "you couldn't make it up."

***Rick Noack** writes about foreign affairs. He is an Arthur F. Burns Fellow at The Washington Post.*

UW Medical School Modifies Policy to Welcome Illegal Immigrants

Source: http://www.universityherald.com/articles/11701/20141001/uw-medical-school-modifies-policy-illegal-immigrants.htm

University of Washington School of Medicine has followed other American higher educational institutions in granting admissions to illegal immigrants.

"We felt we were really catching up to the rest of the UW," said Carol Teitz, associate dean for admissions at the medical school. "It's the right thing to do," said Benji Perin, a third-year UW medical student, who led the effort to alter the school policy, Seattle Times reports.

Besides UW, at least 35 other medical schools welcomed undocumented students, who are registered in the federal Deferred Action for Childhood Arrivals (DACA) program. In addition to being enrolled in DACA, medical-school applicants must also meet certain residency requirements for their state.

DACA, created two years ago by the Obama administration, provides them a temporary quasi-legal status. The program temporarily suspends deportation and permits participants to work in the U.S.

Opponents claim that DACA weakens the U.S. immigration law by temporarily providing legal status to people who entered the country illegally. Plus, it triggers fierce competition for the few medical-schools seats available.

However, students argue that diversity of aspirant doctors enhances medical care. "There was a time when people were anxious about the increased competition from women coming to medical school," Perin said.

Daniel Low, a third-year medical student, said that there has never been an attitude of "us versus them" signifying that DACA students could snatch seats away from native students. "We're all 'us' - we all live in Washington, went to school together and care deeply about providing the best health care possible to our community," Low said. "So there is no 'them.' "

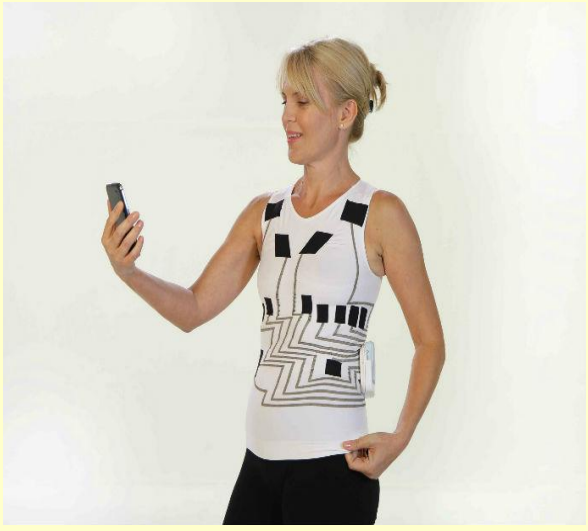
The inspiration to lobby the UW administration for policy change came from a Seattle Times story about a UW graduate who could not apply for medical school because he was brought in to the U.S. illegally from Mexico as a baby. "It was indeed a group of very enterprising students," Teitz said.

The state of Washington has always been pro-immigrant compared to others in the country. In 2003, a Washington state law allowed in-state tuition to undocumented students who grew up in the state.

EDITOR'S COMMENT: Everything for the illegal! Everywhere in the world! But in 2013 I was asked for 7K to be enrolled in the special visa project for foreigners holding postgraduate degrees etc. And it was not sure If I would be finally given permission to work in the US.

A T-shirt that monitors your heart

Source: http://www.israel21c.org/headlines/a-t-shirt-that-monitors-your-heart/?utm_source=Israel21c+Weekly+Newsletter&utm_campaign=4c9a06b570-2014_10_01&utm_medium=email&utm_term=0_a2ed5ed71b-4c9a06b570-250351849



A novel electrocardiogram device built into a shirt could cut precious time off confirming a cardiac event needing immediate intervention.

The first product in the hWear line of smart-digital garments by Israel's HealthWatch Technologies created a buzz at the recent annual meeting of the American Telemedicine Association and is expected to be marketed as an FDA Class II medical device by the end of 2014.

The fully washable hWear shirt is interwoven with a mixture of high-tech nylon threads and conducting fibers placed in the same locations where the 12-15 leads of an ECG machine would be attached to the

body, explains Dr. Dov Rubin, vice president for marketing and business development.

ECG signals collected passively by the textile sensors are constantly analyzed for cardiac events such as arrhythmias and ischemia, via medical devices such as a Holter monitor or a Bluetooth unit snapped onto the side of the shirt. An alert to the patient's and doctor's smartphone is automatically generated if any of these are detected or if the wearer falls or is immobile for an unusual amount of time.

The game-changing aspect is that cardiac patients won't have to be hooked up to a machine and covered with adhesives. Most importantly, if a patient blacks out or experiences chest pain, all the medical data showing what happened just before and just after has already been transmitted to the doctor.

"A cardiologist will never diagnose a heart attack without seeing a full 12-lead ECG," Rubin tells ISRAEL21c. "Time is of the essence. **From the moment you detect chest pain till the moment they put you on the table to treat it, every 30-minute delay causes a 7.5 percent increase in mortality.** That's a fresh statistic from the *New England Journal of Medicine*."

Cockpit technology

Wearable technology usually refers to strap-on or clip-on fitness monitors such as Fitbit or Apple's new iWatch, or Itamar Medical's EndoPat fingertip vascular monitor and WatchPat device for diagnosing sleep apnea. In fact, Rubin was formerly CEO of Itamar. After spending five years successfully commercializing its non-invasive technologies, he moved on to the monitoring device of the future – the smartphone.

On the side of the hWear shirt, snaps hold the telemetry unit (photo).

"I like to say that we restored the 'wear' into wearables, simply because we offer a traditional T-shirt," says Rubin. "All you have to do is wear it. One or two other companies have come up with T-shirt concepts that monitor heart rate and motion, but they're used for fitness monitoring, not as a medical device. As far as I know, we are the only ones in the medical arena."

HealthWatch expects to sell hWear in several countries through distributors. Eventually, you'll be able to buy the shirt in the corner pharmacy or subscribe to a service that will provide the garment and the monitoring.

The three-year-old bootstrapped company of eight people – half of them textile experts – is based in Kfar Saba and was founded by former Israel Air Force Col. Yoram Romem, who previously cofounded the high-tech parking payment solution Pango and headed several international software companies.

Romem's experience flying airplanes led to the creation of HealthWatch, says Rubin. "In the cockpit there's a master caution button that lights up if a subsystem is failing, to help the pilot focus," Rubin explains. "He wondered why humans couldn't have a master caution button to focus attention on a problem in our own systems."

The product was developed with the input of Prof. David Hasdai, director of the coronary care units at the Rabin Medical Center in Petah Tikva.

Is it fair to blame the West for trouble in the Middle East?

By Anne Aly

Source: http://www.homelandsecuritynewswire.com/dr20141006-is-it-fair-to-blame-the-west-for-trouble-in-the-middle-east

For at least a decade, attempts to understand why some young Muslims living in Western countries turn to violence in the name of religion have raised questions about Western foreign policy in the Middle East. Many blame the United States' foreign policy. The Islamic State uses anger and grievance against Western intervention as a powerful recruiting tool.

But is it really fair to blame Western foreign policy for the state of affairs in the Middle East?

There is some truth to the argument that anger at foreign policy and the West's engagement with the Arab world is at the heart of Muslim anger, as well as a driver of radicalization among Muslim youth.

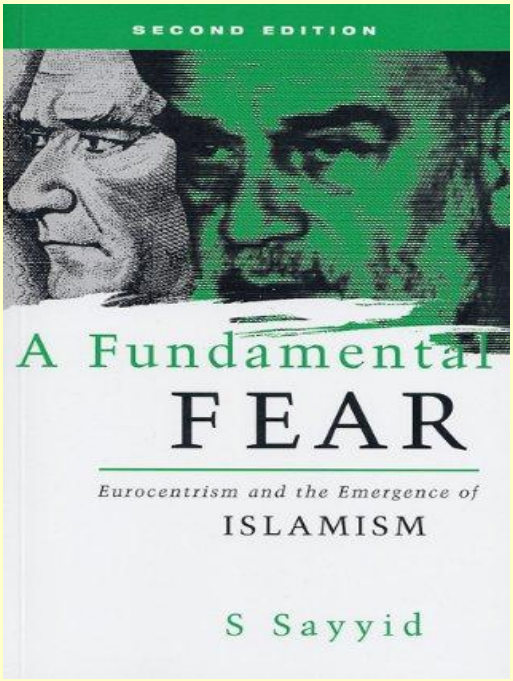
The "war on terror" — a phrase first used by President George W. Bush just after the September 11 attacks in 2001 — was arguably a dismal failure.

American and British intelligence agencies have both reported that the U.S.-led invasion of Iraq has actually increased the number of Islamist terrorists. The belief that the war on terror was a thinly disguised attempt to attack Islam was no longer limited to conspiracy theorists and 9/11 "truth seekers." Instead, it became popularized among Muslims around the world.

However, to *solely* lay blame for the rise of a global and increasingly violent Jihadi movement on Western intervention ignores other crucial factors that allow extremism to take root and spread.

The origins of extremism

In his book *A Fundamental Fear: Eurocentrism and the emergence of Islamism*, Dr. S. Sayyid



describes five arguments that explain the spread of what is commonly called Islamic fundamentalism, Islamism or militant Islamism.

- Islamism is a response to the failure of Arab leaders to deliver meaningful outcomes to their people.
- Lacking opportunities for political participation, Arab citizens turned to mosques as public spaces for political discussion. As a result religion became the language of politics and of political change.
- Post-colonialism also failed the Arab middle class, as the ruling elite continued to hold power and wealth.
- Rapid economic growth in the emerging Gulf States increased the influence of conservative Muslim governments. At the same time, the expansion of the oil-based Gulf economy brought about uneven economic development, the response to which was growing support for Islamism as a mode of expression for internal grievances.
- Finally, the spread of Islamism has also been due to the effects of cultural erosion and globalization contributing to a Muslim identity crisis.

So the current state of affairs in the Middle East is not simply an outcome of Western intervention and the U.S.-led invasion of Iraq in 2003.

Western foreign policy in the region has no doubt influenced the current situation. But the conditions for the spread of militant Islamism have come from attempts to deal with the crisis within: a crisis that is as much political in nature as it is religious.

Filling a power vacuum

In terms of politics, the traditional seats of power in the Arab world have been toppled, creating a void and opening opportunities for other Arab nations to vie for power.

With the decline of Egyptian power and ongoing chaos in Syria and Iraq, the Gulf states have emerged as the most economically and politically stable influences in the region.

Gulf state competition, particularly between Abu Dhabi and Doha, has become one of the defining features of the Middle East. While Doha supports the Syrian revolution as well as the Muslim Brotherhood in Egypt, Libya and Tunisia, Abu Dhabi stands guarded against a foreign policy approach that strengthens Islamists.

Qatar, on the other hand, has been known to provide significant financial assistance to violent

Islamist groups, including groups linked to Al Qaeda. It has also failed to act on wealthy citizens accused of financing terrorist

organizations to the tune of millions of dollars.
Angered by its support for extremist groups, the United Arab Emirates, Bahrain and Saudi Arabia all withdrew their ambassadors from Qatar in March this year.
The political struggle for power has also played out as a struggle for religious space in the Arab world. Here, the declining role of Saudi Arabia as the traditional seat of religious authority and knowledge has contributed, as Saudi Arabia also struggles to contain extremist Islamist elements within its own brand of Islam.
Links have been made between Wahhabi Islam that originated in Saudi Arabia and the ideological frame of the Jihadist movement. Such accusations have prompted Saudi Arabia to examine the Wahhabi Jihadist connection, leading to a review of religious programs and school curricular in the kingdom.

Seeing beyond a "clash of civilizations"

The Middle East is a complex mix of culture, religion, politics and history. To continue to engage with the Arab world on the basis of flawed assumptions that neatly divide it into the camp of moderate Islam and the camp of extreme Islam feeds into an equally flawed analysis of the conflict as a clash of civilizations.
It may be tempting to oversimplify the conflict as a battle of the West against Islam, just as it is tempting to overstate its origins in the history of Western intervention and foreign policy.
However, more nuanced analyses should also take into account the various internal factors that created the conditions for the spread of extremist Islamist ideologies in the first place. Such analyses are necessary to developing understanding of how to address the ongoing threat of non-state terrorism to national and international security.

Anne Aly is Research Fellow in extremism, radicalization and online extremism at Curtin University.

EDITOR'S COMMENT: One sentence "American and British intelligence agencies have both reported that the U.S.-led invasion of Iraq has actually increased the number of Islamist terrorists" is "our" contribution to the problem (not a word for Afghanistan). **And the rest of the article** to blame the Arab world for the all the bad things happening today (and tomorrow; and the day after)…

A crime-fighting "magic" marker pen picks up hidden fingerprints

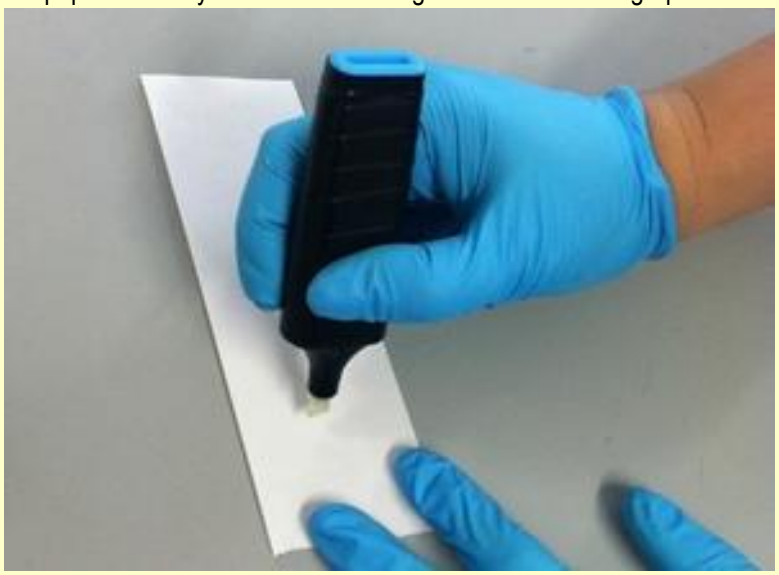
Source: http://www.homelandsecuritynewswire.com/dr20141008-a-crimefighting-magic-marker-pen-picks-up-hidden-fingerprints

A crime-fighting "magic" marker pen that can identify the hidden properties of receipts containing fingerprint deposits within a matter of seconds is one of the innovative gadgets developed by scientists at the University of Leicester that will be demonstrated at the Knowledge Transfer Network's (KTN) Applications of Forensic Science Research and Development Technology Showcase 2014 event today (8 October) in London.
A University of Leicester release reports that the pen, which has been developed by Dr. John Bond OBE from the University of Leicester's Department of Criminology, provides forensic experts, police,

and criminal investigators with an easy-to-use method of determining whether a receipt, such as those from petrol stations, supermarkets and ATMs, is printed on thermal paper.

The pen works by initiating a chemical reaction on the paper that changes its color if it is thermal.

Once identified as thermal paper, another gadget Bond will be showing at the event comes into play - a specially designed light source for identifying fingerprints on thermal paper that can be used to catch criminals by the paperwork they have been touching.



Dr. Bond explained: "The 'magic' marker pen works by impregnating the paper with a small amount of a chemical that I discovered will react with the dye, changing its color. This chemical is mixed with others in the marker to provide a viscous liquid, ideally suited for application with a marker-type pen.

"The idea is that a small corner of the receipt could be marked with the pen and if it changes color it is thermal paper. Touching a small corner of the receipt will minimize the potential destruction of any fingerprints on the paper, helping to retain forensic evidence. The pen-like shape of the device will be handy to have in the pocket for technicians to apply as and when it is needed."

The conventional method of treating non-thermal paper turns thermal paper black, obliterating any fingerprints in the process, which cannot be undone. The pen allows for paper to be quickly identified, which will be useful in criminal investigations when extracting fingerprints from a variety of paper documents is necessary.

Both technologies will be demonstrated at the KTN event, supported by the Home Office Center for Applied Science and Technology (CAST) and Innovate UK, which strives to take new ideas and concepts to market.

Dr. Julie Pratt from the University of Leicester's Enterprise and Business Development Office said: "Dr. Bond has the knack of identifying problems that have impeded the efficient identification and visualization of latent fingerprints and then develops simple, low cost, rapid and robust solutions, ideal for implementation by forensic technicians. These solutions are ready to go and Leicester is looking for a licensing partner to manufacture and sell the products."

Dr. Bond added: "It is very prestigious for the University of Leicester to be represented at events like this that showcase innovation and, in this instance, forensic innovation. "Enabling the police service to make use of advances in technology is very important in helping to solve and reduce crime and I'm proud that our work is recognized in this way by the Forensic Science Special Interest Group at Innovate UK."

The Applications of Forensic Science R&D Technology Showcase 2014 event is taking place today (8 October) in London and is organized by the Forensic Science Special Interest Group (FoSci SIG), of the KTN.

The FoSci SIG is a community of everyone involved in Forensic Science, including end users, suppliers of products and services, academics and other researchers, and policy makers.

Given the interdisciplinary nature and societal importance of forensic science, the SIG was set up with the primary purpose of enabling closer networking and better communication between all forensic science stakeholders for improved R&D.

Wearable translation technology

Source: http://i-hls.com/2014/10/wearable-translation-technology/

Responding to disasters around the world requires communicating in foreign languages, the US Army's Science, Technology and Experimentation division has teamed up with government and non-governmental organizations, as well as the corporate sector to unveil a new translator – SQU.ID.

The SQU.ID SQ 410, a ruggedized, hands-free, eyes-free translation device frees up the user to concentrate on the task at hand.

Made by Voxtec, the compact device is about five inches by three inches and weighs only 10 ounces. It has more than eight hours of battery life and a glove-friendly interface that's extremely handy for disaster responders.

Voxtec has a library of 70 languages – ranging from Indonesian and French to Mandarin and Urdu.

The device does not need to be connected to a network to operate, which is handy in a disaster zone where power and connectivity can be very limited. The device also doesn't need to be trained and taught to understand your voice. This means that a medic or other emergency personnel can simply speak into the microphone and within moments the device uses its speaker to convey the translation in the required language.

EDITOR'S COMMENT: Interesting innovation – especially for urban CBRN operations in multinational major events etc

The $1,200 machine that lets anyone make a metal gun at home

Source: http://i-hls.com/2014/10/1200-machine-lets-anyone-make-metal-gun-home/

When Cody Wilson revealed the world's first fully 3D printed gun last year, he showed that the "maker" movement has enabled anyone to create a working, lethal firearm with a click in the privacy of his or her garage. Now he's moved on to a new form of digital DIY gunsmithing. And this time the results aren't made of plastic.

Wilson's latest radically libertarian project is a PC-connected machine he calls the Ghost Gunner, that can carve digitally-modeled shapes into polymer, wood or

aluminum. Sold by Wilson's organization known as Defense Distributed for $1,200, it is designed to create one object in particular: the component of an AR-15 rifle known as its lower receiver.
That simple chunk of metal has become the epicenter of a gun control firestorm, reports *wired.com*. A lower receiver is the body of the gun that connects its stock, barrel, magazine and other parts. As such, it's also the rifle's most regulated element. Mill your own lower receiver at home, however, and you can order the rest of the parts from online gun shops, creating a semi-automatic weapon with no serial number, obtained with no background check, no waiting period or other regulatory hurdles. Some gun control advocates call it a "ghost gun." Selling that untraceable gun body is illegal, but no law prevents you from making one.

Exploiting the legal loophole around lower receivers isn't a new idea for gun enthusiasts—some hobbyist gunsmiths have been making their own AR-15 bodies for years. But Wilson, for whom the Ghost Gunner is only the latest in a series of anti-regulatory provocations, is determined to make the process easier and more accessible than ever before. "Typically this has been the realm of gunsmiths, not the casual user. This is where digital manufacturing, the maker movement, changes things," he says. "We developed something that's very cheap, that makes traditional gunsmithing affordable. You can do it at home."

Defense Distributed's controversial creations have included 3D printable plastic magazines and lower receivers for AR-15s as well as an entire 3D-printed pistol he called the Liberator. Wilson he says his switch from 3D printing to milling metal makes the ubiquitous creation of usable, lethal weapons one step more practical.

New to the army: Hovermast

Source: http://i-hls.com/2014/10/new-army-hovermast/

Hovermast is a new means for providing stabilized real-time aerial surveillance, to forces maneuvering along the battlefield. It is currently being tested and assessed by the IDF.
Made by an Israeli company, Sky Sapience, Hovermast operates high above the forces on the ground, secured by cable which serves as a power supplier and data link. Hovermast carries a camera and sensors which provide its operators a clear and stable image and alert of the surrounding threats. Hovermast can trace a tank from a distance of 3km and a person from a distance of 1km.
Lt. Colonel Amichai Magal, Head of the IDF Ground Corp UAV department under the Technologies Brigade, explains: Hovermast enables the forces to see the battle live. It is all done automatically. It comes out of its box, unfolds its propellers, activates its engines and flies within 15-20 seconds after the ignition button is pushed. Hovermast reaches an altitude of 50m, and its endurance lasts as long as the generator provides power, moving along with

the force at its car proceeds. This tool is vital for providing ground forces with situational awareness right there in the middle of the battle field.

Sky Sapience, the developer, features Hovermast on its website, hailing it as tailored for numerous civil missions, such as port security and defending critical infrastructure, border security, assisting law enforcement agencies as well as, of course, urban warfare.
Hovermast is secured by cable, which serves as both power supply and data link. The image received from its payload is transmitted over this cable directly to its computer. The Technology Brigade says that Hovermast provides the advantage of having in-house real-time aerial surveillance – thereby solving ground forces' dependence on tactical reconnaissance or UAVs. Hovermast delivers the data directly to the computer on the ground, complete with an attractive product in both operational and visual terms.

Multiple intelligence agencies: a blessing or a recipe for failure?

By Dov Lachman
Source: http://i-hls.com/2014/10/multiple-intelligence-agencies-blessing-recipe-failure-part-1/

The US, the most powerful country on earth, has an intelligence community comprising 17 major intelligence agencies: CIA (Central Intelligence Agency), FBI (Federal Bureau of Investigations), NSA (National Security Agency), NGA (National Geospatial Intelligence Agency), DEA (Drug Enforcement Administration), DIA (Defense Intelligence Agency), NRO (National Reconnaissance Office), ODNI (Office of the Director of National Intelligence), I&A (Intelligence & Analysis), AFISRA (Air Force Intelligence Surveillance and Reconnaissance Agency), OICI (Office of Intelligence and Counter Intelligence), CGI (Coast Guard Intelligence), INR (State Department's Bureau of Intelligence and Research), TFI (Treasury Department's Terrorism and Financial Intelligence), NGIC (US Army's National Ground Intelligence Center), MCIA (Marine Corps Intelligence Activity) and ONI (Office of Naval Intelligence).

The federal budget of US intelligence array consists of two major parts. The first is national intelligence (NIP – National Intelligence Program Funding), which is an appropriation for all domestic and foreign intelligence gathering services. The second is military intelligence (MIP – Military Intelligence Program Funding), which caters to all military agencies: the Navy, US Air Force and US Army. At the end of fiscal year 2013 the budget reached $72 billion.

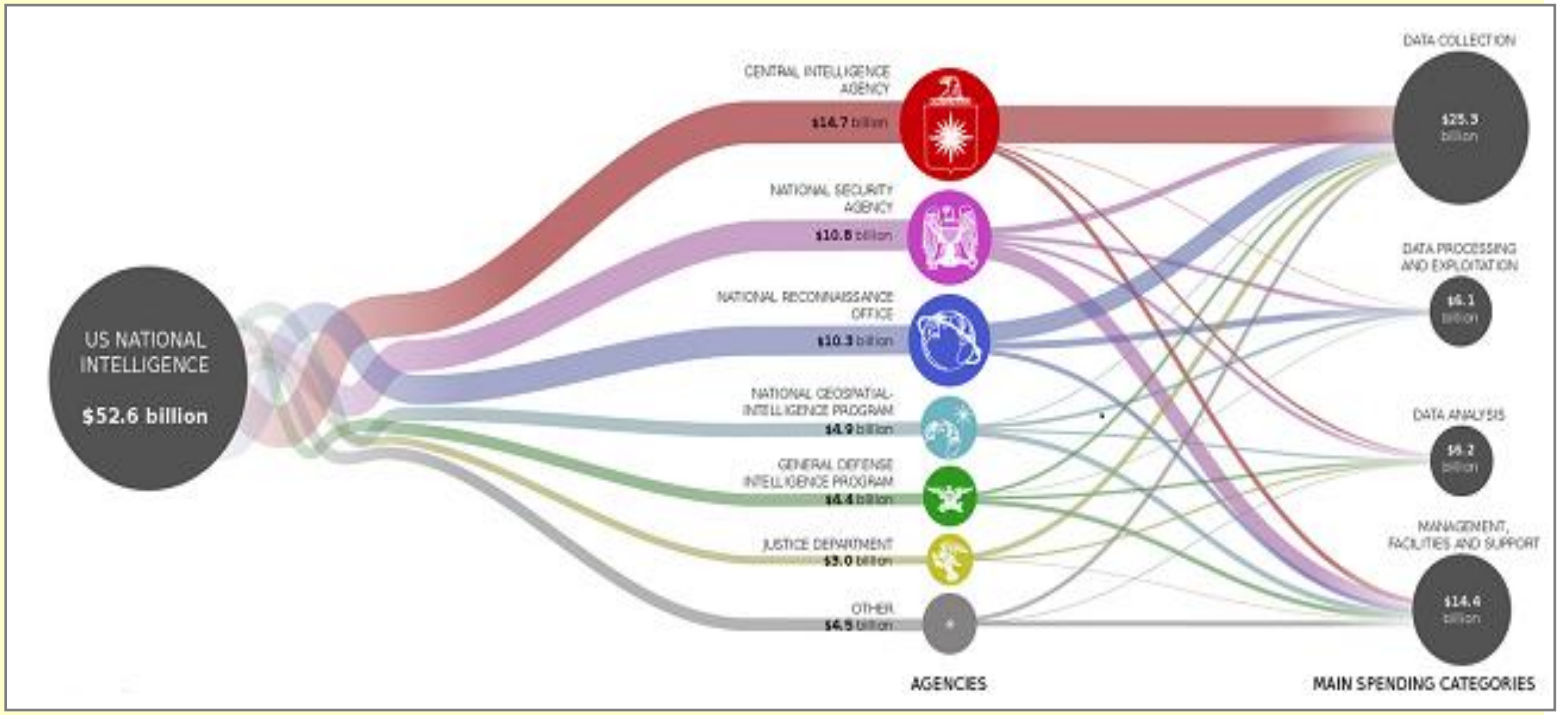
There is no doubt that history (ancient and modern alike) on the one hand and human nature on the other have taught enlightened democracies, as well as autocrats who held their own reign and hide in high regard, to divide institutions and people who know too much, and rule wisely.
The exploits of East Germany's Stasi, Romania's Securitate and even major US intelligence

agencies (Watergate) and the ways in which all these services have operated, not to mentioned their original goals and in particular how they ended up, have caused most democracies in the free world to adopt a model in which no intelligence organization could possess too much power, lest 'the dummy would rise up against its own maker'.

FISCAL YEAR	NIP BUDGET	MIP BUDGET	TOTAL
2013	52.7 billion (reduced by sequester to 49.0 billion)	19.2 billion (reduced by sequester to 18.6 billion	71.9 billion (reduced by sequester to 67.6 billion)
2012	53.9 billion	21.5 billion	75.4 billion
2011	54.6 billion	24 billion	78.6 billion
2010	53.1 billion	27 billion	80.1 billion
2009	49.8 billion	26.4 billion	76.2 billion
2008	47.5 billion	22.9 billion	70.4 billion
2007	43.5 billion	20 billion	63.5 billion

The way one intelligence service, however powerful, could evolve into dominating an entire country is a far cry from decentralizing, separating and demarcating intelligence missions and goals over 17 different bodies and agencies. This long, historic development is very interesting to analyze and interpret in the framework of American history. Nevertheless, it is clear (at least ostensibly) that something has gone fundamentally wrong in the concept of intelligence – if it takes 17 autonomous bodies to provide it.

What is the concern of authorities and autocrats alike from their own intelligence services? Their anxiety probably stems from the total exposure as leaders. After all, any intelligence gathering body is capable of wiretapping the entire leadership's phone calls, along with whom they call, including family members, acquaintances and so on, thereby mapping the leaders' social



contacts in their entirety, become familiar with their income and property, obligations and innermost secrets – and thus endanger the leader's own rule.

Though the definitions of intelligence in ancient days compared with our own time may differ and vary considerably, the role of intelligence has not changed fundamentally since Moses sent 12 men to tour the Land of Kannan after he has delivered his own people from the desert. See Number 13:18-20 (KJV):

And see the land, what it is, and the people that dwelleth therein, whether they be strong or weak, few or many;

And what the land is that they dwell in, whether it be good or bad; and what cities they be that they dwell in, whether in tents, or in strong holds;

And what the land is, whether it be fat or lean, whether there be wood therein, or not. And be ye of good courage, and bring of the fruit of the land.

It took Moses five guidelines to summarize anything that leaders, whether in the US or any other country, require to this very day, and have come to expect of their intelligence services: Observation, Mapping and Assessment. These are the three fundamental elements of Intelligence. To ensure the intelligence product is balanced rather than biased, Moses sent one representative from each of the twelve tribes.

Upon closer inspection of each of the 17 members of the US intelligence community, it is clear that each of them has a specialized, highly focused role, clear goals and an independent field of operations. Clearly, their respective missions, along with their required set of skills, are highly divergent. For instance, TFI, the Treasury Department's independent intelligence body focusing on financial issues, including investigations of funding terror, applies completely different tools and skills than CGI – Coast Guard Intelligence. Similarly, there are professional and other distinctions and separations between intelligence bodies with very little common interface. Almost none, in fact.

But what about intelligence bodies whose theaters of operation are nearly parallel, so much so, that they follow almost matching processes and protocols?

If we take one of the major menaces plaguing American society no less than ISIS or al-Qaeda – the drug problem – and examine it through the intelligence and organizational perspective, we will see a multitude of bodies and sub-organizations all focusing on the exact same problem. The fact that oversight and accountability are spread over so many entities is the reason US cities are overflowing with drugs.

The chain of handling drugs is relevant to each intelligence body in the US, and each of them can touch on it. The CIA can demarcate the cultivation and production areas as well as those engaged in growing and producing; the NGI will map and produce aerial imaging; the NRO can do the same from space; the TFI will map the financial ties which finance drugs and then launder the proceeds; the FBI can provide local intelligence within the US concerning supply and collection networks – and there is of course the DEA, America's Drug Enforcement agency.

It is safe to assume that the level of cooperation between these intelligence bodies will not be high, particularly since each of these organizations, except for the DEA, has a rather low level of interest in the drug epidemic sweeping across the US.

In addition to the problem of different interests (Essential Elements of Information), there is also the issue of numerous organizational and technological entities doing the same thing. Had there been just one rather than a few, the cost to the tax payer would have been reduced, and no less important: the intelligence product itself could have been improved and streamlined. The reason for this is that each of America's 17 intelligence organizations is busy with the same actions and tasks: encrypting and fielding agents, engaging communications and computing, recruitment, training and certification, applying technological means, camouflage, transport, protection, security and much more.

Some of the American intelligence agencies have been around since the dawn of the 20th century. Political, and in particular military processes that were relevant over a century ago have all changed forever on 9/11, and in fact have been changing during the preceding decade.

Most armed conflicts in the current decade are been waged between regular armies and guerrilla groups, mostly faith-inspired combatants. This trend is expected to intensify over the coming years. Intelligence bodies established with one frame of mind now a century old cannot provide any actionable, efficient solutions to current, contemporary, problems. Seventeen different intelligence organizations are tantamount to an uncontrollable hydra you simply cannot rule over and direct properly. This monstrosity cannot be set any goals, nor can it produce any viable intelligence that could assist Western democracies in retaining the liberties they stand for.

Poor assessments, such as overestimating or underestimating the most important political, geopolitical, social and religious processes in the past decade, or not even predicting certain events, are a direct cause of this inability to control 'the dummy that has indeed risen up against its own maker'.

Compartmentalization: it is only proper at this point, to cite the advantages of having multiple intelligence agencies, apart from the old Roman wisdom of "divide and rule". In this context, Edward Snowden, the person who most likely caused the greatest headache ever for US intelligence bodies, is probably the best example. There is no doubt the risk exemplified in over-exposure of information to one person is far greater at the organizational level. Thus, compartmentalization between entities, though they are in charge of close fields, is very much advised.

When you list independent US intelligence agencies and count 17 of them, you in fact do not take into account many others which apply near-autonomous intelligence arrays, such as the NYPD, the LAPD or the FBP, the Federal Bureau of Prisons.

Like many other intelligence bodies, these ones, though they are not part and parcel of US intelligence community as such, have many and varied intelligence requirements for their ongoing operations on the one hand, and on the other, they are potential providers of a great deal of high quality intelligence information, garnered through their ongoing investigations and gathered by their case officers. The intelligence gathered, for instance across US prisons, housing some 7 million inmates (in total, each year), is no doubt considerable, important, vital, comprehensive and potentially highly beneficial to most independent intelligence agencies. One can only assume what part of this flurry of data reaches other organizations, and at what frequency and quality.

Each intelligence organization, much like business or production arrays, practices a three-stage procedure of input, processing and output: obtaining raw, varied intelligence data (input), conducting analysis and assessment (processing) and finally, presentation (output).

At least the two outer layers (input and output), and some would add the middle layer (processing) too, are much the same in all intelligence organizations, so the intuitive question this raises is why is there no cooperation or intersection across the board between these intelligence bodies at any of the processes in the chain of intelligence – given that the "means of production" are 17 fold?

It is important to note, or even examine, whether the supreme goal of US intelligence organizations has ever been defined. Given that "providing early and general information to defend the US" is the proper, albeit very general, definition, you can really revolutionize global intelligence conceptualization.

Upon mapping global threats in general, and those the (for example) administration would like to tackle in particular, the current and future targets may be defined. Out of those targets, you can define the intelligence targets and the products expected of them, reduce the number of intelligence bodies by two thirds and suffice with five which would have a thematic and geographic orientation.

The five bodies would "supply", each in its respective field of expertise in intelligence production, the layers of input and output, and will also handle the processing layer, which is the most complex, as it comprises intelligence assessment in the framework of which the human element is crucial.

Carrying out the tasks of processing intelligence ought to be done orthogonally: dealing with multiple intelligence issues from many and varied perspectives, and no longer in a one-dimensional or two-dimensional way.

__Dov Lachman__ is an Intelligence / Espionage, Homeland Security and Telecommunication, Freelancer investigative journalist and pundit, writing about technological aspects and perspectives of current news and events and its impact on conflicts worldwide, especially in the Middle East. Dov has worked for several Israeli governments' security, intelligence and law enforcement agencies as an expert engineer, Specialize in managing the implementation and operation of complex technological intelligence arrays and systems in Israel and worldwide (2003 – 2011). As a he served several High-Tech firms in top management positions he gained a deep understanding of the technological as well as the business environment of today's telecom and intelligence industry (1985 – 2012). Experienced, reliable, well-connected, widely-travelled journalist, Based in Tel Aviv, Israel Dov Lachman has written articles for multiple internationally recognized magazine web sites and have covered a wide range of contemporary defense issues with a strong specialization in SIGINT, OSINT, Cyber warfare, Eavesdropping and Tracking systems, Big-Data intelligence systems & visualization; Voice, face and other biometrics recognition systems, HUMINT & more. Dov Lachman regularly contributes to Telecomnews, DEBKAfile and i-HLS.com, writes long-form investigative articles about the technological aspects of Intelligence / Espionage events and homeland security issues.

Does the intelligence community really get Hadoop?

Source: http://i-hls.com/2014/10/intelligence-community-really-get-hadoop/

The intelligence community is collecting more data than ever. But does that mean the intelligence gleaned from these massive new stores of data is also getting better?

Intelligence officials are naturally a little tight-lipped about the types of capabilities at their disposal. But current and former officials agree the intelligence community's foray into big data – using new tools to collect, process and sift through data on a massive scale – remains a work in progress.

For one thing, the intelligence community needs more data scientists and applications, according to John Custer, the retired army major general and former director of intelligence for US Central Command, who's now the director of EMC's federal division.

The kind of applications and tools necessary to sift through petabytes of data will also require a different breed of intelligence analysts, he said. "We're talking about applications that have to be equal to your 'star trek' universal translator," he said. "They have to speak multiple languages, and they have to query a host of different kinds of databases. This is graduate-level work."

One of those applications is Hadoop, open-source software designed to help process massive datasets built across clusters of commodity servers, which is used by tech giants such as Facebook and Twitter.

I guarantee you can talk to 99% of analysts and they have no idea what Hadoop can do for them; they don't even know what Hadoop is." Continued Custer.

The National Security Agency has reportedly been an early adopter and robust user of Hadoop. But Custer said the intelligence community as a whole has only scratched the surface of its capability – and traditional intelligence analysts are still largely left in the dark.

Ellen McCarthy, chief operating officer of the national geospatial-intelligence agency, acknowledged the intelligence community "may not be keeping pace with the private sector" when it comes to big data, but suggested the percentage of analysts familiar with Hadoop and other big-data analysis tools was much higher than 1 percent.

THE SPECTATOR

HOME COFFEE HOUSE BLOGGERS MAGAZINE COLUMNISTS CULTURE HOUSE PODCAST HEALTH

Tell you what Mrs Clooney. If Greece repays its $240 billion EU loan, we'll return the Marbles

The Spectator 16 October 2014 12:04 611 comments

Tell you what Spectator. If UK pays back the billions earned by exhibiting – for decades – stolen property at the British Museum, we will pay the $240 billion EU loan. Marbles belong to Greece not to idiots* and thieves!

* Idiot is a word derived from the Greek ἰδιώτης, *idiōtēs* ("person lacking professional skill", "a private citizen", "individual"), from ἴδιος, *idios* ("private", "one's own"). In Latin the word *idiota* ("ordinary person, layman") preceded the Late Latin meaning "uneducated or ignorant person". Its modern meaning and form dates back to Middle English around the year 1300, from the Old French *idiote* ("uneducated or ignorant person").

Big or Fast? Only in Dubai!

Lotus Ambulance! Two Ford Mustangs and one Chevrolet Corvette coming soon!

32

Lion – Commando

Source: http://www.lionprotects.com/commandostretch

Be prepared for worst-case scenarios with the Commando Stretch Garment.
This undergarment's stretch fabric and unique five-piece design offers exceptional mobility and comfort in demanding situations.
Its versatile design easily integrates with many types of outer garments for use in applications ranging from explosive ordnance disposal to dignitary protection.
The Commando Stretch Garment is certified to meet NFPA 1994, Class 3 current edition standards for "warm zone" operations.

Features:

- Garment designed with GORE® CHEMPAK® Selectively Permeable Fabric
- GORE® G9492 gloves with GORE® CHEMPAK® Ultra Barrier Fabric
- Sleek, lightweight, breathable design can be comfortably worn under many different types of outer garments
- NFPA 1994, Class 3 current edition protection against chem-bio and domestic terrorism agents
- 48-hour wear life if not damaged, exposed or contaminated
- Self life: Up to 5 years for top and bottom. Up to 10 years for gloves, hood and socks.

BARRIER CHEMICAL PERMEATION PERFORMANCE

GORE® CHEMPAK® Selectively Permeable Fabrics used in Commando Stretch Garment

Challenge Chemical	Challenge Level	Endpoint µg/cm²	1-hour cumulative results
Acrolein	40 ppm	6	Pass
Acrylonitrile	40 ppm	6	Pass
Ammonia	40 ppm	6	Pass
Chlorine	40 ppm	6	Pass
Dimethyl Sulfate	10 g/m²	6	Pass
Mustard (HD)	10 g/m²	4	Pass
Soman (GD)	10 g/m²	1.25	Pass

EDITOR'S COMMENT: This might be – among others – a good solution for naval Boarding Teams performing inspections for dangerous goods in high seas. Because the unexpected always happens!

LaserWarn™: Large Area Threat Detection System

Source: http://blockeng.com/products/laserwarn.html

Block Engineering's LaserWarn™ system — a breakthrough capability for large-area security detection and protection — enables standoff identification of both toxic gases and chemical agents. Based on our exclusive and patented quantum cascade laser technology, LaserWarn offers high detection sensitivity in the protection of critical infrastructure/key resources, as well as vital assets found in both indoor and outdoor environments. Its fixed or portable configurations make it well suited for security applications needed by government agencies, first responders and private firms.

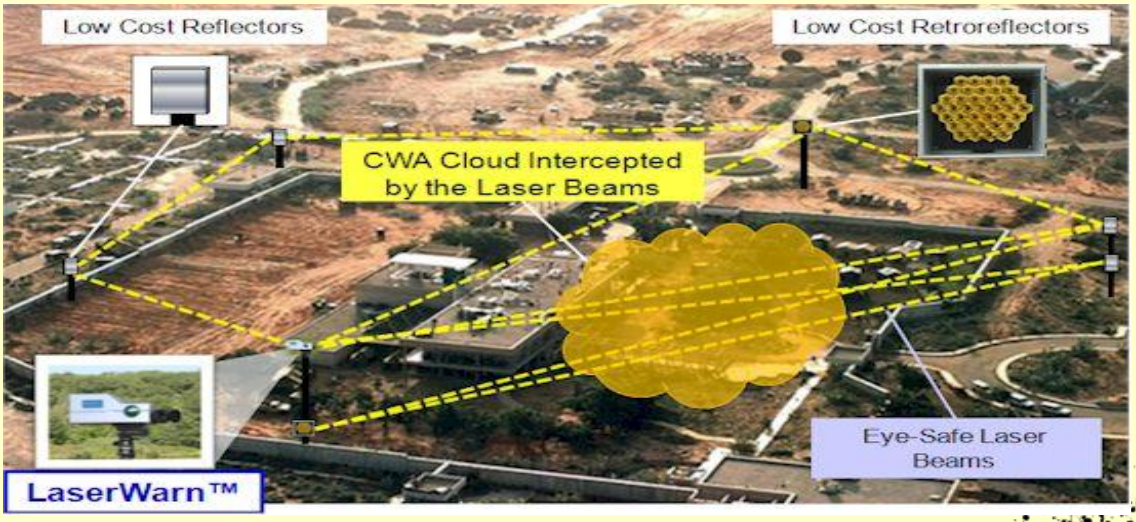
Eye-safe laser beams and low-cost retroreflectors provide real-time, 24/7 early warning of Toxic Industrial Chemicals (TICs), Chemical Warfare Agents (CWAs), and other chemical threats. Any toxic gas crossing the lasers, even at low concentrations (parts per million), will be detected with a sub-second response. The system requires no consumables, and is low maintenance compared to conventional networks of point sensors.

Both fixed-site and portable configurations are available. In fixed-site installations, the LaserWarn is positioned with mounted mirrors and retroreflectors to cover large areas (transportation hubs, stadiums, and other high-traffic locations.) Portable configurations allow the LaserWarn to be brought to the boundary of a "hot zone" while reflectors are safely introduced to scan for chemical contamination.

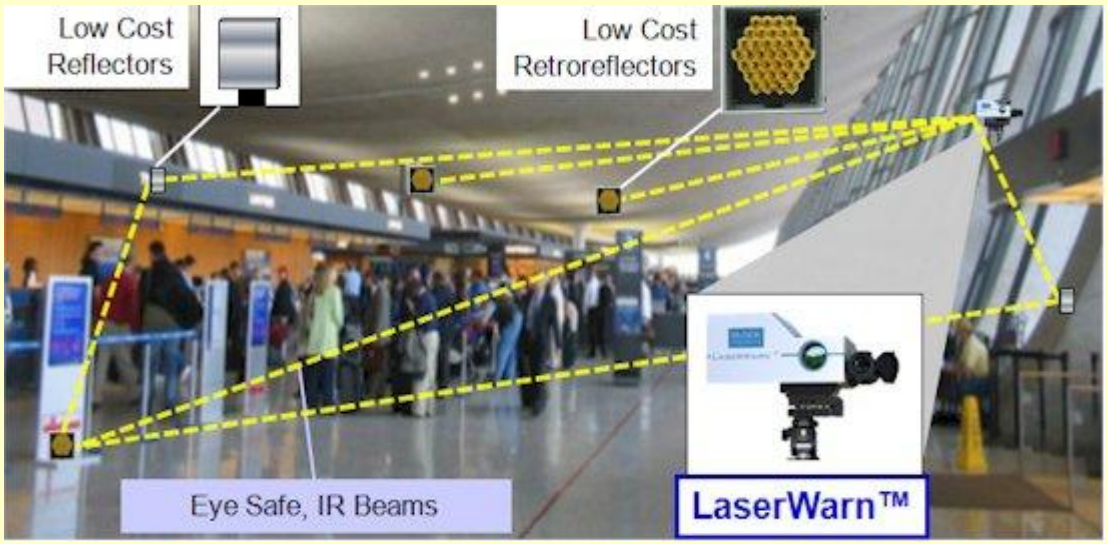
Key Benefits & Advantages

- Operation in selected ranges in the mid-infrared spectrum (5-13 µm) where all CWAs and toxic gases have strong and unique spectral signatures
- Greatly increased sensitivity, aiming accuracy, and distance compared to conventional infrared systems
- 24/7 indoors or outdoors operation with sub-second detection times
- Expandable library of chemical threats to match specific operational requirements
- No consumables required, allowing for minimal maintenance
- Eye-safe laser beams allow for operation in areas with people
- Fast readings allow for rapid detection and immediate warning alerts

The LaserWarn can be used in a variety of security applications, including the following:

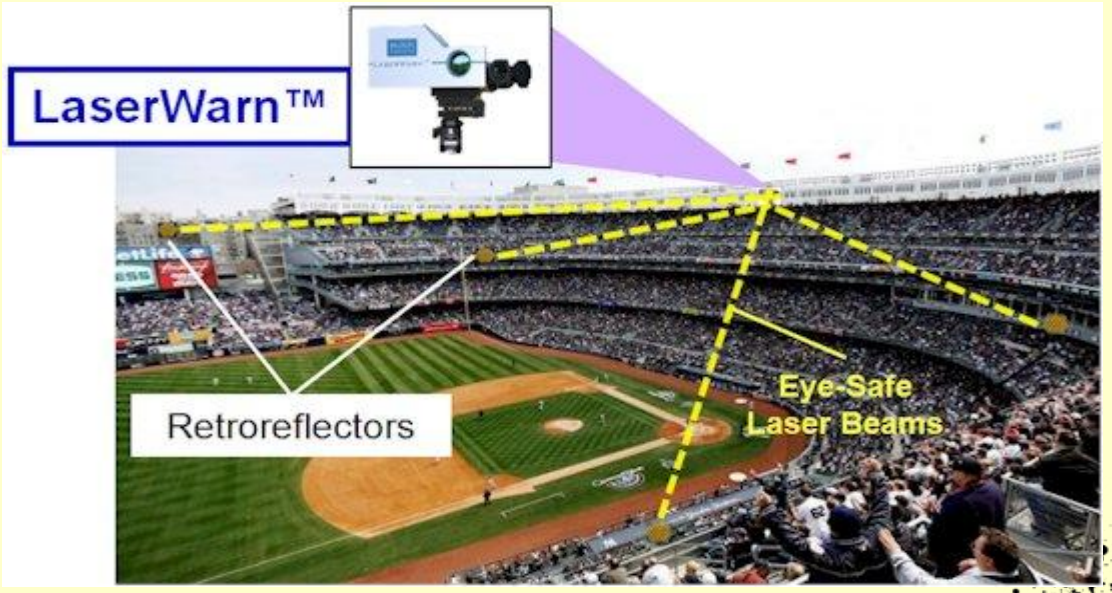


Protection of Embassies and other Government Buildings



Detection of Threats within Transportation Hubs

Portable Use for First-Responders



Permanent Installation at Stadiums and other High-Capacity Crowd Locations

Assad retains secret caches of chemical weapons: Israeli intelligence

Source: http://www.homelandsecuritynewswire.com/dr20141001-assad-retains-secret-caches-of-chemical-weapons-israeli-intelligence

October 01 – Despite committing to dismantle and give up its chemical weapons – Syria was in possession of the world's largest chemical weapons stock — **President Bashar al-Assad's regime still maintains a "residual" chemical weapons capacity, consisting of a few tons of the proscribed materials.**

Israel's intelligence community has concluded that the Assad regime has decided to keep this reduced, but still formidable, chemical weapons capability, and has successfully concealed it from the inspectors of the UN chemical weapons watchdog who, a few weeks ago, have declared the chemical disarmament of Syria to be officially complete.

The process of destroying and removing Syria's chemical weapons began almost a year ago, following international pressure on the Assad regime in the wake of the August 2013 sarin gas attack by Assad forces on a Damascus suburb, an attack which left more than 1,400 dead.

The August 2013 attack was the latest in a series of smaller chemical weapons attacks by Assad's army on civilians in rebel-held areas, attacks which began in December 2012. *Haaretz* notes that these early incidents were more or less ignored, and certainly not taken seriously, by the United States and other Western countries. The Israeli intelligence community provided the United States with evidence for a few of these early instances of chemical weapons use – and the head of Israel's military intelligence referred to these attack in one or two public presentations – but the Obama administration dismissed those claims. President Obama had publicly drawn a "red line" with regard to the use of chemical weapons by Assad, and the administration saw the earlier use of chemical weapons by Assad as too small and localized to trigger a U.S. military retaliation which the president's red line references promised.

The administration's attitude changed after the large-scale August 2013 attack, which was too large, and too close to the Syrian capital and the international media representatives there, to ignore.

The United States geared up for a limited retaliatory attack on Assad's military installations, but the attack was called off at the last minute after a U.S.-Russian agreement to disarm Syria of its chemical weapons, which Assad was forced to accept.

In the following months, about 1,000 tons of different types of chemical weapons and weapons-related chemical materials and precursors were removed from Syria, and a dozen or so chemical weapons production facilities destroyed, under the supervision of the Organization for the Prohibition of Chemical Weapons (OPCW). In July, OPCW announced the process has been successfully completed.

Still, Israel has concluded that Assad has kept secret caches of chemical weapons, kept in Alawaite-dominated areas in northwest Syria. *Haaretz* reports that these secret caches are estimated to hold between several hundred kilograms and a few tons, or about 1 percent of what was Syria's chemical weapons arsenal.

A senior Israeli defense official told *Haaretz* that the OPCW-supervised effort to remove Syria's chemical weapons and destroy the country's chemical weapons production capability were "a non-negligible achievement carried out without the use of force." Still, he added, **Israel has good reasons**

to believe that Syria still has small quantity of chemical weapons, and the American intelligence community does not dispute this assessment.

Israeli defense officials believe that these sarin gas weapons would likely be deployed if the Assad regime faced an imminent threat to its survival.

The newspaper notes that the Syrian regime is continuing to use chemical weapons which were not covered by the U.S.-Russian chemical weapons disarmament agreement, especially **chlorine gas**. The United States last month twice accused Assad of attacking Syrian rebels with chlorine gas, an a UN investigation earlier this month published its conclusions that the Syrian regime had used chlorine in attacks on rebel-held villages in April (see "UN report indicates Syrian army used chlorine in April attacks on rebel-held villages," HSNW, 12 September 2014). *Haaretz* quotes Israeli military officials who said that employing chemical weapons is advantageous for the Assad regime, because these weapons allow the Syrian army to attack the rebels in tunnels and underground complexes without getting embroiled in close-range combat.

EDITOR'S COMMENT: No surprise. Expected. Easy to hide them. Without them the regime is totally naked.It is the last ace of Assad and most probably he will use it. The question is: Against whom?

New material steals oxygen from the air: One spoonful absorbs all the oxygen in a room

Source: http://www.sciencedaily.com/releases/2014/09/140930113254.htm

Researchers from the University of Southern Denmark have synthesized crystalline materials that can bind and store oxygen in high concentrations. **Just one spoon of the substance is enough to absorb all the oxygen in a room.** The stored oxygen can be released again when and where it is needed.

We do fine with the 21 per cent oxygen in the air around us. But sometimes we need oxygen in higher concentrations; for example lung patients must carry heavy oxygen tanks, cars using fuel cells need a regulated oxygen supply. Perhaps one day in the future even sunlight-driven "reversible" fuel cells will be made. With these we will have to separate oxygen from hydrogen in order to recombine them in order to get energy.

"In the lab, we saw how this material took up oxygen from the air around us," says Christine McKenzie.

The new material is crystalline, and using x-ray diffraction the researchers have studied the arrangement of atoms inside the material when it was filled with oxygen, and when it was emptied of oxygen.

Oxygen comes and goes in many places

The fact that a substance can react with oxygen is not surprising. Lots of substances do this -- and the result is not always desirable: Food can go rancid when exposed to oxygen. On the other hand a wine's taste and aroma is changed subtly when we aerate it -- but not with too much oxygen! Our bodies cannot function if we do not breathe.

"An important aspect of this new material is that it does not react irreversibly with oxygen -- even though it absorbs oxygen in a so-called selective chemisorptive process. The material is both a sensor, and a container for oxygen -- we can use it to bind, store and transport oxygen -- like a solid artificial hemoglobin," says Christine McKenzie.

The material is so effective at binding oxygen, that only a spoon of it is enough to suck up all the oxygen in a room. The researchers' work indicates that the substance can absorb and bind oxygen in a concentration 160 times larger than the concentration in the air around us.

"It is also interesting that the material can absorb and release oxygen many times without losing the ability. It is like dipping a sponge in water, squeezing the water out of it and repeating the process over and over again," Christine McKenzie explains.

Once the oxygen has been absorbed you can keep it stored in the material until you want to release it. The oxygen can be released by gently heating the material or subjecting it to low oxygen pressures.

Heat and pressure releases the stored oxygen

"We see release of oxygen when we heat up the material, and we have also seen it when we apply vacuum. We are now wondering if light can also be used as a trigger for the material to release oxygen -- this has prospects in the growing field of artificial photosynthesis," says Christine McKenzie.

The key component of the new material is the element cobalt, which is bound in a specially designed organic molecule.

"Cobalt gives the new material precisely the molecular and electronic structure that enables it to absorb oxygen from its surroundings. This mechanism is well known from all breathing creatures on earth: Humans and many other species use iron, while other animals, like crabs and spiders, use copper. Small amounts of metals are essential for the absorption of oxygen, so actually it is not entirely surprising to see this effect in our new material," explains Christine McKenzie.

Depending on the atmospheric oxygen content, temperature, pressure, etc. it takes seconds, minutes, hours or days for the substance to absorb oxygen from its surroundings. Different versions of the substance can bind oxygen at different speeds. With this complexity it becomes possible to produce devices that release and/or absorb oxygen under different circumstances -- for example a mask containing layers of these materials in the correct sequence might actively supply a person with oxygen directly from the air without the help of pumps or high pressure equipment.

"When the substance is saturated with oxygen, it can be compared to an oxygen tank containing pure oxygen under pressure -- the difference is that this material can hold three times as much oxygen," says Christine McKenzie.

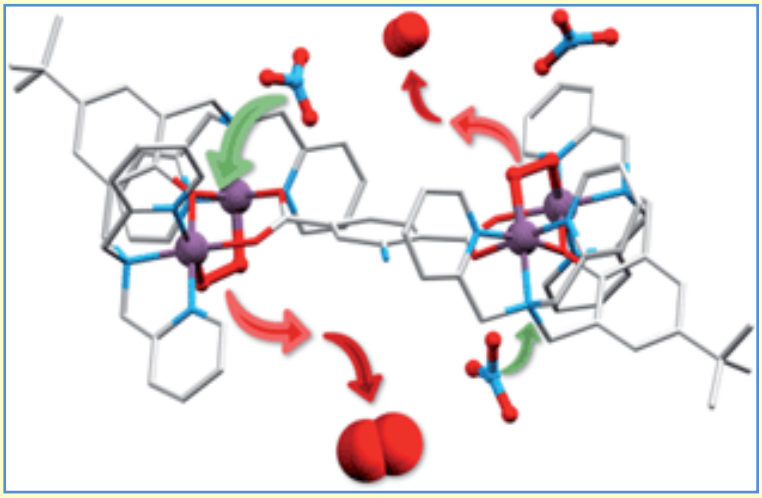
"This could be valuable for lung patients who today must carry heavy oxygen tanks with them. But also divers may one day be able to leave the oxygen tanks at home and instead get oxygen from this material as it "filters" and concentrates oxygen from surrounding air or water. A few grains contain enough oxygen for one breath, and as the material can absorb oxygen from the water around the diver and supply the diver with it, the diver will not need to bring more than these few grains."

The substance has been designed and synthesized at University of Southern Denmark. Some of the gas uptake measurements have been made with special equipment by colleagues at the University of Sydney, Australia.

Abstract

Source: http://pubs.rsc.org/en/Content/ArticleLanding/2014/SC/C4SC01636J#!divAbstract

Crystalline salts of a series of cationic multimetallic cobalt complexes reversibly, selectively and stoichiometrically chemisorb dioxygen in a process involving the two electron oxidation of dimetallic sites with concurrent reduction of two equivalents of sorbed O_2 to form μ-η^1,η^2-peroxide ligands. The coordinating ability of counteranions, ClO_4^-, PF_6^-, BF_4^-, $CF_3SO_3^-$ and NO_3^- determine the O_2 affinity of the deoxygenated forms, and the nitrate and triflate salts sorb dioxygen at a significantly slower rate compared to the PF_6^- and BF_4^- salts (hours *versus* sub-seconds at ambient temperature and pressure). Single crystal X-ray structural determination for a



nitrate salt of the 2-aminoterephthalato-linked deoxy system, $[\{(bpbp)Co_2^{II}(NO_3)\}_2(NH_2bdc)](NO_3)_2\cdot 2H_2O$ ($bpbp^-$ = 2,6-bis(*N*,*N*-bis(2-pyridylmethyl)aminomethyl)-4-*tert*-butylphenolato, NH_2bdc^{2-} = 2-amino-1,4-benzenedicarboxylato) shows that nitrate ions are coordinated as bridging ligands. These crystals undergo reversible single-crystal-to-single-crystal (SC-to-SC) transformations on the stoichiometric uptake of O_2. During this process O_2 replaces the two nitrate ligands. Thus the Co ions are six coordinated in both the oxy and deoxy states. This SC-to-SC process involves the concerted fast migration of neutral dioxygen through the crystal lattice and the translational movement by 4–6 Å of at least two of nitrate anions. Rapid hydration/dehydration processes involving several molecules of co-crystallized water per unit cell accompany the reaction. Besides large atom movements involving O_2, NO_3^- and H_2O, these impressive examples of consecutive SC-to-SC-to-SC transformations involve *the cleavage of four bonds*, and the *creation of four new bonds*, in one single molecule. The solid state structural rearrangements observed provide an explanation for the slower rates of dioxygen uptake for the complexes isolated as nitrate salts, and by inference, the triflate salts, compared to the salts of more weakly coordinating counteranions, ClO_4^-, PF_6^- and BF_4^-.

EDITOR'S COMMENT: Huge terrorist potential in that staff! With just a spoonful of crystallized dust! Creepy!

A third of American schoolchildren face risk of chemical catastrophe

Source: http://www.homelandsecuritynewswire.com/dr20141002-a-third-of-american-schoolchildren-face-risk-of-chemical-catastrophe

October 02 – A new interactive map and study from the Center for Effective Government find that one in three American schoolchildren attends school within the danger zone of a hazardous chemical facility.

They found 19.6 million children in public and private schools in forty-eight states are within the vulnerability zone of at least one chemical facility, according to data the facilities must provide to the Risk Management Program of the U.S. Environmental Protection Agency (EPA).

Chemical factories, refineries, bleach manufacturing, water and waste water treatment, and other facilities that produce, use, or store significant quantities of certain chemicals identified as hazardous to human health or the environment must report to the program. The Center notes in a release that vulnerability zones are self-reported by each facility and represent the area around facilities that could be impacted by a chemical disaster. They vary in size from half a mile to more than twenty-five miles.

"We were shocked that a little more than 3,400 facilities around the country could put a third of all schoolkids in harm's way," said Katherine McFate, president and CEO of the Center for Effective Government. "If an explosion or chemical leak occurred at one of these facilities, the result could be catastrophic. This is an unacceptable situation, given that there are well-known and straightforward remedies that some companies have voluntarily implemented."

Using data from the EPA and the Department of Education, Kids in Danger Zones: One in Three U.S. Schoolchildren at Risk from Chemical Catastrophes reports other troubling facts:

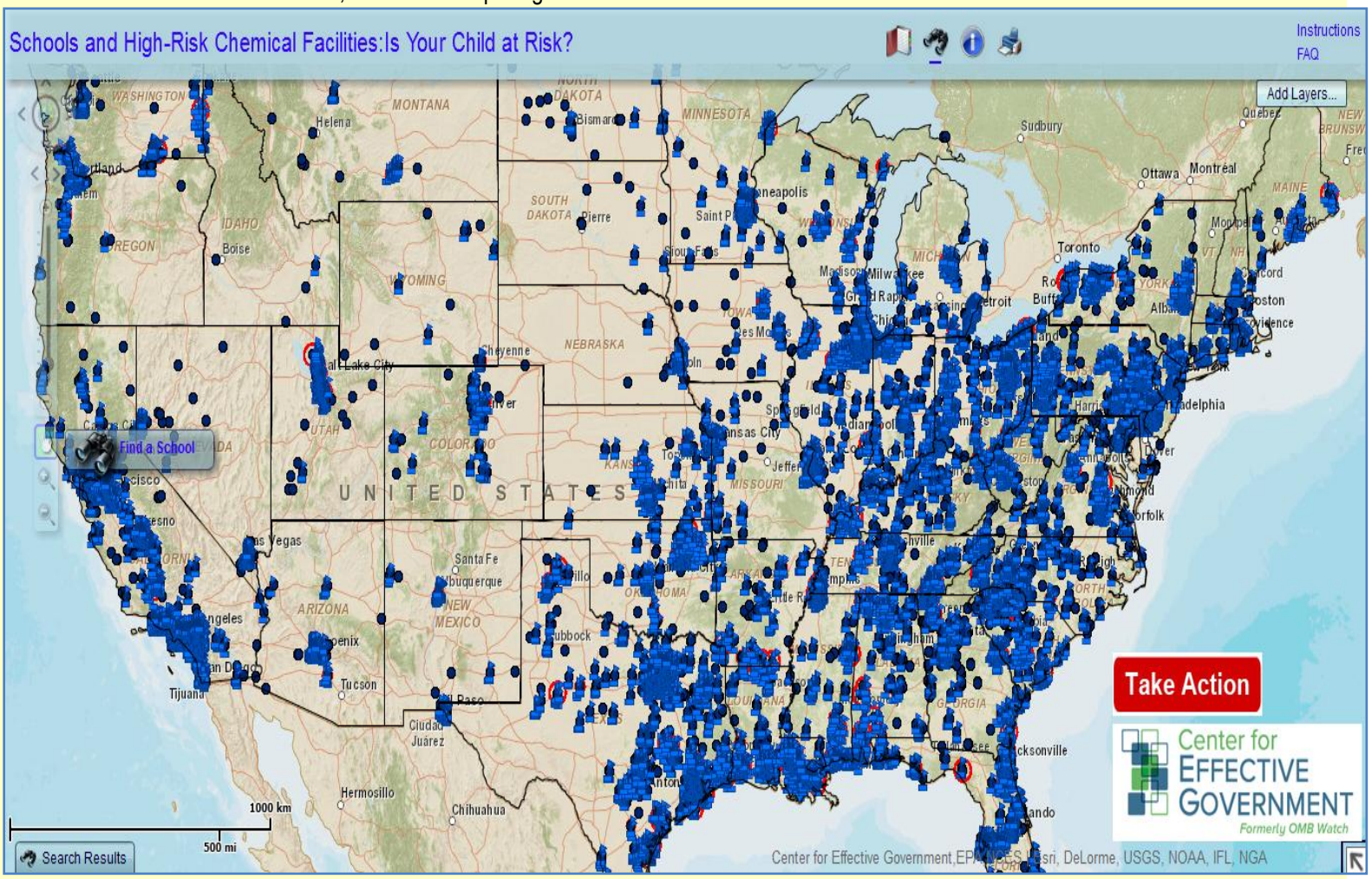
- Half of the children who attend school near chemical facilities (10.3 million) are in more than one vulnerability zone, meaning that their school is near more than one high-risk facility.
- In 102 counties in 22 states, every single child attends a school in a chemical catastrophe danger zone.
- Ten chemical facilities each reported vulnerability zones that contain over 500,000 children; another 32 facilities reported zones containing between 250,000 and 500,000 children.

California, Texas, Florida, Illinois, and New York, the states with the highest populations, had the largest numbers of children at risk from dangerous chemicals. In

Utah, Rhode Island, Texas, Louisiana, and Nevada, more than 60 percent of children attend a school within a vulnerability zone.

Sean Moulton, director of open government policy at the Center for Effective Government, said, "A year and a half ago, the West, Texas fertilizer facility explosion destroyed three schools. Since then, we've seen a number of other chemical disasters that have caused deaths, injuries, and major property damage. It's time to get serious about keeping our kids safe – before a chemical catastrophe causes another tragedy."

The Center says that the most important step that EPA could take would be to require all facilities to shift to using safer chemicals and technologies. Many facilities have done so voluntarily and their parent companies are still profitable. Facilities can also shrink their vulnerability zones by simply reducing the quantity of chemicals produced or stored. State and local governments can be part of the solution as well: they can ensure that new facilities with hazardous chemicals aren't sited near major population centers and are located far away from any schools and residential areas.

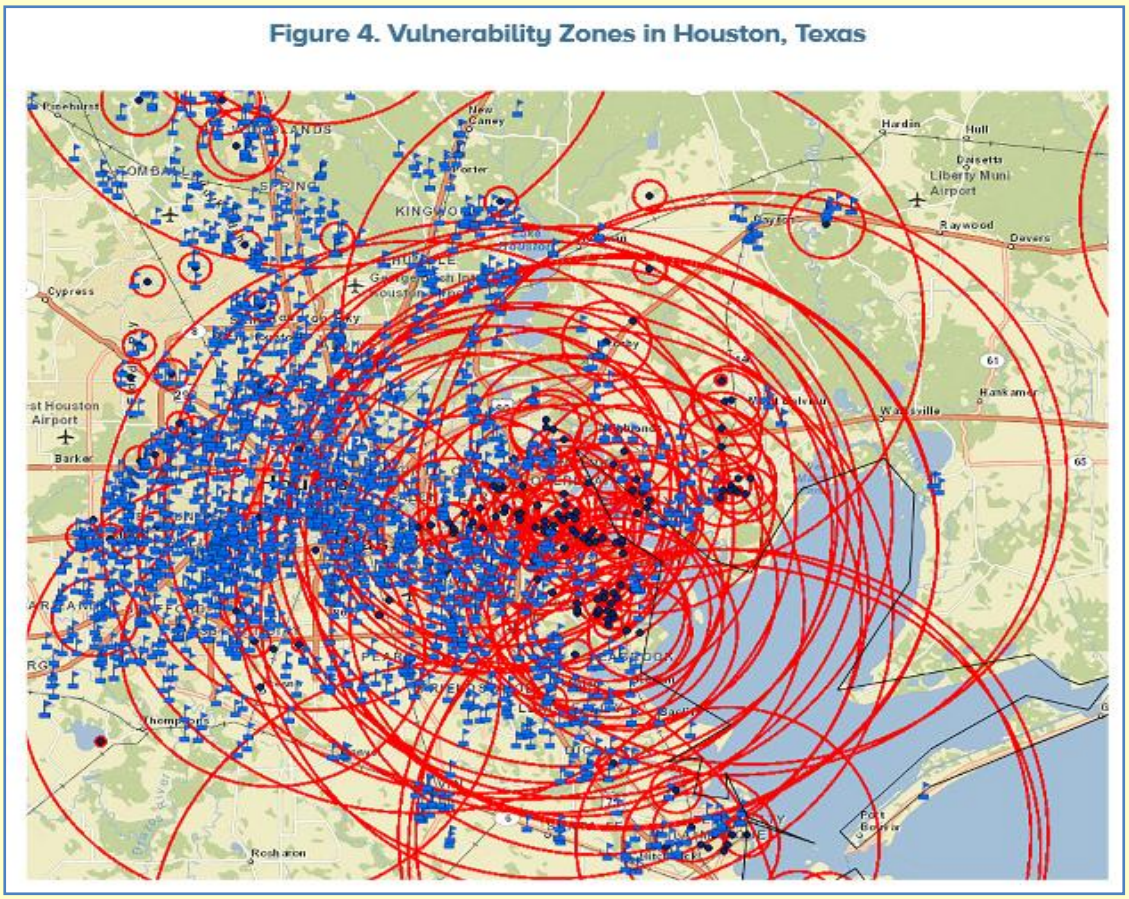


"Solutions are readily at hand. Safer chemicals, smaller quantities of hazardous materials, and smart planning can reduce the chance that a chemical incident becomes a major disaster," Moulton noted.

The new interactive map allows users to zoom in to a particular local area to see if a child's school is within the vulnerability zone of a local chemical plant or storage facility. Users can also search the map by school name or facility name and learn how to take action to reduce their children's risks.

▶ **Interactive map available at:** http://tesla.foreffectivegov.org/KidsAndToxins/bin-release/

▶ **Read the report at:** http://www.foreffectivegov.org/files/kids-in-danger-zones-report.pdf



— Read more in Kids in Danger Zones: One in Three Schoolchildren Face Risk of Chemical Catastrophe (Center for Effective Government, 30 September 2014)

Time to Take Chemical Weapons More Seriously

By Dan Kaszeta

Source: http://ciceromagazine.com/features/time-to-take-chemical-weapons-more-seriously/

Since the birth of the Chemical Corps back in World War I (then called the Chemical Warfare Service), chemical, biological, radiological, and nuclear (CBRN) officers and noncommissioned officers (NCOs) have lamented the general lack of preparedness in the U.S. military against a chemical weapon attack. In my 20 years of experience, despite the clear threat that CBRN weapons present to America and its forces, the U.S. military has rarely taken training for the possibility of operating on a CBRN battlefield seriously. This can and should change.

Mopping Up

Even in the best of times, a chemical officer is exiled to be the night assistant operations officer in the field and is locked in a room full of paperwork in garrison. There is not a chemical officer who has not been levied at least 12 additional duties. CBRN NCOs struggle to track equipment, to train teams to operate it, to perform calibration tests on detection equipment according to schedule, and raise CBRN training tasks from the bottom of the unit's priority list. SOF units are trained to bury their CBRN protective suits, or "MOPP gear", along with their parachutes and helmets after jumping into combat. Chemical platoons and companies are tasked with running checkpoints in a new post-9/11 "chemfantry" role.

The acronym "NBC" used to stand for "No Body Cares" and today's "CBRN" is "Can't Bother Right Now." My own experience and that of many others is that anything CBRN-related beyond the most basic individual skills, like putting on a mask in the requisite 9 seconds, is a bit of a struggle outside of the ranks of CBRN specialists. Collective training is even worse. For six years I ran a CBRN training course and routinely had field grade officers and senior NCOs from every branch of service who had not touched a protective mask in years.

The situation is generally even worse outside the U.S. military. My extensive interaction with European militaries in the recent 6 years since becoming a CBRN consultant in Europe has proven to me that the CBRN readiness of most Western states has atrophied to a dangerous and unacceptable degree. For example, the UK's Army eliminated its Joint CBRN Regiment. I was told by a senior officer in one NATO military service that it only has medium-sized masks, as that's good enough for everyone and streamlines the supply chain. Take this struggle in active military components and you can multiply it in reserve components.

In reality, chemical weapons, even the most lethal and most persistent agents, are not conceptually any different than sand in the sprockets, hypothermia, malaria, or the risk of trucks driving into each other in the dark of night.

Occasionally there is a panic which for a few months makes CBRN a priority. Saddam Hussein invades Kuwait. A few religious lunatics spread sarin on the Japanese subway. The U.S. claims Iraq has CBRN capabilities. Bashar al-Assad uses sarin in a suburb of Damascus. The pendulum swings. Vast quantities of CBRN materiel are disgorged out of war reserve stockpiles. Training is serious and hard. The unit commander turns up for a game of volleyball in a "MOPP 4" protective suit and faints (Seen it). Finally, the unloved chemical officer and CBRN NCOs get their time to shine. They work 18-hour days for weeks on end trying to rectify the un-rectifiable and, ending up with a medal for it, lapse back into obscurity and more paperwork after the crisis. The crisis passes without serious incident, apart from heat casualties from wearing MOPP 4 and the occasional wreck because nobody can drive wearing a gas mask. The pendulum swings back to "nobody cares."

The point I make is that the U.S. Army, in my experience, has only rarely and then only in fits and starts, taken the possibility of operating on a CBRN battlefield seriously. The latency of biological warfare agents, combined with generally poor detection until symptoms begin to manifest means that a modern army will not know it has been attacked until hours or days later. It is primarily a medical problem, not a battlefield issue. Let us all hope the world never has to face another nuclear attack. In reality, there is little that can be done at the battlefield level to mitigate the effects of a nuclear weapon.

However, chemical weapons are practically the only weapon on the modern battlefield that a well-trained and well-equipped army can completely negate. Soldiers still die from bullets and fragmentation and bombs. But, following the right procedures, sticking to CBRN training, and use the right equipment, the threat of fatalities within the ranks from chemical warfare agents almost completely disappears.

Protective masks, suits, boots, and gloves are all better than they were even a few years ago. They work. I owe my life and health to them–and that was using technology 20 years older than the items in use now. Chemical detection capabilities are great and getting better by the day. Decontamination is more easily accomplished now than in the earlier days of my career. Modern armies have a great deal of technology that was simply unavailable in previous decades, but are still largely saddled by doctrine from a bygone era.

The second element is to re-train and re-label chemical warfare as an operating environment, not as some special, extra-deadly threat or "weapon of mass destruction." It is not and should never have been treated as one. We should treat chemical attacks like rainfall, cold temperatures, dust, smoke, or darkness: They present a challenging environmental condition, not an unstoppable weapon. Operating in a toxic, contaminated environment is not really different than the operational and logistical demands of a jungle, mountain, desert, or arctic environment. If an army fields good protective equipment to soldiers, the real threat that

chemical warfare poses to sophisticated modern military is one of attrition, performance degradation, logistical burden, and the general "friction" that Clausewitz describes. In reality, chemical weapons, even the most lethal and most persistent agents, are not conceptually any different than sand in the sprockets, hypothermia, malaria, or the risk of trucks driving into each other in the dark of night.
Historically, armies lost legions to malaria, food-borne illness, and hypothermia, but modern ones (mostly) don't lose troops to these anymore because they have invested time and funds into equipment and training. Hypothermia is a far more deadly condition than exposure to sulfur mustard, but can anyone say, "We can't go there because it's too cold" and be taken seriously in a defense context?
Being that we can virtually negate the hazards and understanding that chemical warfare is just an operating environment, armies should evolve the functional concept of chemical battalions and brigades. By this, I do not mean a battalion or brigade of Chemical Corps troops. I mean a battalion or brigade of *maneuver* troops – infantry, armor, and artillery — that is trained and equipped specifically for fighting in a chemical environment.
The U.S. Army has had, either now or at various points, combat arms units specialized in jungle operations, mountaineering, arctic operations, desert operations, riverine operations, air assault operations, and airborne operations. None of these specialty environments is particularly any more cumbersome, doctrinally or logistically, than protracted operations in a chemical environment. Each NATO country would need to go about this task in a different way and on a different scale, but I can illustrate how the U.S. Army might do it.

Chemical Brigades
Base a maneuver brigade and its whole slice of support troops at Fort Leonard Wood, Missouri—home of the U.S. Army Chemical Corps. Package it as an elite assignment, possibly even giving incentives to troops who volunteer. Set up an induction course for every incoming soldier, including time functioning in a live nerve agent environment at the Army's toxic agent training facility. Everyone in an airborne unit has made parachute jumps and every artilleryman has pulled the lanyard, so everyone in the "chemical brigade" needs to have confronted their fears and seen that sarin and VX are not that scary in real life.

Occasionally there is a panic which for a few months makes CBRN a priority. Saddam invades Kuwait. A few religious lunatics spread sarin on the Japanese subway. The U.S. claims Iraq has CBRN capabilities. Assad uses sarin in a Damascus suburb. The pendulum swings.

Individual and collective training will be conducted in full protective equipment as a default condition. Soldiers will talk on the radio, shoot their weapons, and drive their vehicles in varying degrees of protective posture. Every crew will be able to decontaminate its own vehicle or weapon system, with the possible exception of helicopters. Embed all the necessary specialty equipment in the supported units permanently. Make decontamination as routine a task as re-fuelling and re-arming.
Any experienced CBRN officer or NCO will tell you performance of individual and collective tasks performed in protective clothing start out seriously degraded, but get much better with days or weeks of practice. You learn to hold your weapon differently, you learn to throw a grenade differently, you learn where blind spots are when you drive. There is a learning curve–but why not have a gentle learning curve over months in Missouri rather than a very steep and dangerous one in a few days in a combat theater or only every once in a while when a threat develops?
Such a brigade will get CBRN operations out of its ghetto and normalize general and specialty tasks in a chemical environment. Ironically, such a brigade probably requires less specialty CBRN soldiers and a smaller dedicated CBRN component, at least after the initial training period. Why do you need a company CBRN NCO when every NCO is, in effect, a CBRN NCO? Does a battalion assistant S3 need to be a chemical officer? Maybe at first, but probably not later as the concept beds down. The Brigade would not require a separate chemical company because that capability would be integrated organically. Every maintenance platoon and

section will do heavy decontamination and every scout platoon will be a CBRN reconnaissance platoon, eliminating the need for separate ones.
There are numerous benefits to having such a unit in the order of battle. **First**, it creates a battlefield capability able to face any chemical weapons threat—such as that which was allegedly posed by Saddam Hussein or threatened by Bashar al-Assad. The U.S. Army will be possess a maneuver brigade able to operate and conduct military operations without fear of undue casualties or heavy performance degradation.
Second, the mere existence of a hardened maneuver force of combat firepower that is, in effect, immunized against chemical attack would be a tremendous deterrent against use of chemical warfare on the battlefield. The ability to say, "Chemical weapons–so what?" greatly degrades the alleged deterrent effect a chemical arsenal is said to give its owner. This in turn reduces incentive to acquire or use them.
Third, the overall CBRN readiness of an army would improve as soldiers from the "chemical brigade" rotate to other assignments in their career. Hopefully, such soldiers can pollinate a higher level of readiness by spreading the word that, "You know, guys, working in the chemical environment is not that bad." Finally, this would also be a brigade-sized element that could provide large amounts of general CBRN support to civil authorities at the federal, state, and local level in a domestic emergency involving CBRN attacks, terrorism, or an accidental release of hazardous materials, improving the nation's CBRN readiness as a whole.
By taking CBRN training seriously, treating chemical warfare as an operating environment and not a WMD bogeyman, and creating a dedicated CBRN maneuver element, a modern army can further relegate the threat of chemical warfare to the dust bin of history.

Dan Kaszeta *has over 20 years of diverse experience in the defense and security sectors and field of chemical, biological, radiological, and nuclear (CBRN) issues. He was a member of the U.S. Secret Service as a Senior Physical Security Specialist in the Technical Security Division and in the Chemical/Biological Countermeasures Branch. He is an independent consultant at Strongpoint Security.*

Does Islamic State have chemical weapons?

By Frank Gardner (BBC security correspondent)
Source: http://www.bbc.com/news/world-middle-east-29479620

Let's get something clear right from the outset. There is no credible evidence to suggest that Islamic State - also known as IS, Isis and Isil - possesses any weapons of mass destruction (WMD). Nor is it likely to in the near future.
Does IS possess chemical weapons? The answer to that depends on your definition of chemical weapons.

Do they have nerve gas, like the stocks of deadly Sarin used with such devastating effect on Syrian civilians last year and subsequently surrendered by the Syrian government for destruction? No, they do not.
Do they have VX gas or the cruder mustard gas? Almost certainly not. Even if they could get their hands on such materials handling them and deploying them effectively, without succumbing to their effects, would pose a major challenge to an unconventional army like Islamic State.

Choking agent
But what about chlorine gas? Chlorine is not a proscribed substance, being readily available commercially for benign uses like water decontamination.
Yet there have been persistent, if unconfirmed, reports that IS has been deploying chlorine gas in Iraq in recent weeks.

One refers to an attack on Iraqi troops on 16 September in Saladin province, north of Baghdad, in which 12 soldiers were affected.
Another refers to an incident in late September where 15 IS fighters were reportedly killed while filling rockets with chemicals.
At the end of September officials from the UK, French and German governments reached the joint conclusion that it was "plausible" that IS both possessed chlorine gas and had used it against Iraqi troops although they had no hard evidence.
Chlorine is classed as "a choking agent". It burns the lungs when inhaled in sufficient quantities.
It is nowhere near as lethal as nerve agents - the lungs usually have to be at least 50% degraded for a victim to die - but it can generate fear, panic and a large number of casualties needing treatment.
According to the Stockholm International Peace Research Institute (SIPRI): "The use of chlorine as a method of warfare is a CWC-defined use of chemical weapons."
CWC is the Chemical Weapons Convention, banning chemical weapons and signed by most of the world.

Barrel bombs

"There is a growing threat from improvised chemical weapons that IS possesses because they have seen how effective it is when used by the regime in Syria," says Hamish de Bretton-Gordon, a leading chemical weapons expert.
He has recently returned from Syria, where he was training doctors in how to treat victims of chemical weapons.
"One of the effects has been to break morale," he adds.
Whatever use the fighters of Islamic State may have made of chlorine it would pale before the wide-scale quantities of chemicals widely believed to have been used by the Syrian regime of President Bashar al-Assad.
International investigators say barrel bombs loaded with 50-100 litres of chlorine have been dropped on rebel areas with the most recent such attack taking place on 28 August.
A massive gas attack on rebel-held areas near Damascus last year killed hundreds of men, women and children and was blamed by most of the world on the Syrian regime, which instead blamed the rebels.
It led to the US and its allies being on the brink of carrying out air strikes on Syrian government positions but these were averted after Russia brokered a deal that saw Syria surrender its chemical arsenal to UN-appointed experts.
There has been some media speculation that IS fighters now have access to remnant Iraqi government chemical weapons stocks at the al-Muthanna complex in Iraq.
Prior to the 1991 Gulf War these did contain shells ready for use and filled with liquid nerve gas.
But experts believe these will have now been so degraded over time that they would be of little practical use to anyone.

S. Sudan has no chemical arms, FM tells AA

Source: http://www.aa.com.tr/en/rss/399466--s-sudan-has-no-chemical-arms-fm-tells-aa

South Sudanese Foreign Minister Barnaba Marial Benjamin has dismissed claims by a rebel commander that the government used chemical weapons against rebel forces during recent clashes in the northern Upper Nile State.

"We don't have any chemical weapons. We are a small country; these are all lies," Benjamin told Anadolu Agency in an exclusive interview the full text of which will be published later.
"It's impossible for anyone to use chemical weapons against his compatriots. Rebel leader Riek Machar was once the president's deputy; he knows we don't possess such arms," he said.
Benjamin's remarks came after Gabriel Tangiye, a rebel commander in Upper Nile State, claimed that government troops had used advanced arms against rebel forces, hinting at the use of chemical weapons.
In recent weeks, government troops and rebel forces have locked horns in strategic Upper Nile State – which is the source of about 80 percent of South Sudan's oil output.
According to the army, at least 195 people were killed in the clashes.

South Sudan has been shaken by violence since last December, when President Salva Kiir accused Machar, his sacked deputy, of plotting to overthrow his regime.
Hundreds of thousands of South Sudanese have since been displaced in fighting between the two rivals, leading to an increasingly dire humanitarian situation.
In recent months, the warring camps have held on-again, off-again peace talks in Addis Ababa under the auspices of the Inter-Governmental Authority on Development (IGAD), a Djibouti-based regional bloc.

BUT…

Source: http://fas.org/nuke/guide/sudan/cw/

According to some accounts, in March/April 1991, Iraqi Deputy Prime Minister Tariq Aziz requested and was granted permission from Sudan's President Umar al-Bashir to move Iraqi chemical weapons to Sudan in order to circumvent their destruction by the UN. Thus, in the Summer of 1991, as UN inspections became inevitable, Iraq was said to have transferred chemical weapons for "safekeeping" in Yemen and Sudan.
In 1993, Iraq was said to have sent additional chemical weapons to Sudan, this time through Iran.
It is claimed that secret contacts between Iraq and Sudan resulted in the emergence of an "Iraqi-Iranian-Sudanese Axis" by the the Spring-Summer of 1995. Providing Sudan with rudimentary chemical warfare capabilities was a major request from Sudanese President Bashir that Saddam Hussein authorized.
The first joint Iraqi-Sudanese WMD project was facilities initially readied for the handling and service of CW munitions and ultimately the production of basic CW agents. At first, the Iraqis sought to exhaust stockpiles of mustard gas they had stored in Sudan since the Gulf War. With a plausible Sudanese source for these munitions -- the Wau facility -- it is claimd that the Iraqis began using chemical munitions in the Fall of 1995, some months before the Wau facility became operational. At first, planes piloted by Iraqis dropped crude chemical munitions around Kadugli and in the Namang mountains in southern Sudan. According to Sudanese opposition sources, witnesses reported that "deaths and injuries occurred among residents" and that "there was a big change in the color of the corpses and of animals and trees." Comparable sightings were reported in Afghanistan and South-East Asia. It was impossible to retrieve samples and more precise details because of the region's remoteness. Intelligence reports identified the agents used as low-quality Mustard taken from an early consignment shipped from Iraq to Sudan immediately after the Gulf War.
Toward the end of 1995, the Iraqi technicians were said to have developed a simple but reliable delivery system for the Mustard Gas produced at Wau. Hence, the Iraqis could stop using their old bombs which were now implicating Baghdad. Instead, the Sudanese introduced crude canisters which they rolled off the back of An-24/An-26 transport aircraft. Most of these canisters missed their targets because of poor coordination between Sudanese ground forces and the aircraft.
Soon after production started in Wau, the Sudanese Armed Forces were reported to have used Mustard Gas canisters against the Sudan People's Liberation Army (SPLA) on at least two occasions in late 1995: The first was at Nimule and the second was at Kuya -- both sites are near Juba, Sudan's southern capital then was defended by tens of thousand of government troops against a tightening siege by the SPLA forces. Since late 1995, there have been several reports alleging the use of chemical weapons in southern Sudan, and with varying degrees of independent corroboration and specificity of technical details. In 1997, several reports of use of Mustard Gas canisters during bombing raids in eastern Sudan, mainly in the Tulushi/Tulus mountains area, were corroborated independently.
In April 1997 the Sudanese National Democratic Group claimed that Iran had airlifted weapons to Khartoum, including heavy and light armaments and quantities of chemical materials for use in the current clashes with the Sudanese opposition. The Group also claimed that a number of Iranian military advisers had also arrived

in Sudan to supervise the use of these weapons, which a consignment of lethal chemical weapons.
Khartoum's confidence in its growing chemical warfare capabilities came to light in mid November 1997, when Sudan was reported to have formally threatened Uganda with strikes with chemical weapons if it continued to support the Southern rebels. This warning came despite Kampala's previous denials of cooperation with the Sudanese rebels and Khartoum's adamant denials of CW capabilities or use.

▶ Read also about **Al-Shifa** (Arabic for "healing") pharmaceutical factory in Khartoum North, Sudan,

destroyed in 1998 by a missile attack launched by the US government @:
http://en.wikipedia.org/wiki/Al-Shifa_pharmaceutical_factory

Did ISIS Use Chemical Weapons Against the Kurds in Kobani?

Source: http://www.gloria-center.org/2014/10/meria-special-report-did-isis-use-chemical-weapons-against-the-kurds-in-kobani-warning-graphic-content/

October 12 – The fate of Kobani city now hangs in the balance, as around 9000 fighters of the Islamic State organization close in on the Kurdish held area. The current IS assault on the Kobani enclave was not the first attempt by the jihadis to destroy the Kurdish-controlled area.
The Kobani enclave, most of which is now in the hands of the IS, at one time extended to Tel Abyad in the east, and Jarabulus in the west. It constituted a major hindrance to the desire of the jihadis to maintain free passage for their fighters from Raqqa city up to the Turkish border and westwards towards the front lines in Aleppo province. IS has therefore long sought to destroy it.
Prior to the current campaign, the most serious (but unsuccessful) attempt to conquer Kobani came in July 2014, shortly following the dramatic IS advance into Iraq.

It was during this assault on Kobani that evidence emerged which appeared to point to

the use by the Islamic State on at least one occasion of some kind of chemical agent against the Kurdish fighters of the YPG (Peoples' Protection Units).

The July offensive commenced on July

2nd. According to Kurdish activists, the use of the chemical agent took place on July 12th, in the village of Avdiko, in the eastern part of the Kobani enclave (now in IS hands.) [i]

Nisan Ahmed, health minister of the Kurdish authority in Kobani, established a medical team to examine the incident. According to Ahmed, the bodies of three Kurdish fighters showed no signs of damage from bullets. Rather "burns and white spots on the bodies of the dead indicated the use of chemicals, which led to death without any visible wounds or external bleeding." [ii]

Middle East Review of International Affairs (MERIA Journal) has acquired exclusive access to photographs of the bodies of these fighters, which appear below for the first time.

According to expert Israeli sources who have seen the pictures, they appear to indicate the use of some form of chemical agent, probably mustard (blister agent), but it is not possible to conclusively confirm this without further investigation.

Where might IS have acquired these agents? According to a report in the Arabic language Al-Modon website on July 16th, eyewitnesses in Raqqa city assert the existence of a facility close to the city containing chemical agents. [iii] The reliability of the eyewitness quoted has been indicated to MERIA by third parties.

It is possible that these were transferred to Raqqa from Iraq, following the capture of the Muthanna compound 35 miles north-west of Iraq, by IS in June.

Iraq's ambassador Mohammed Ali Al-Hakim, speaking after the capture of Muthanna by IS, singled out two bunkers at the facility, 13 and 41, as being of particular concern.

According to a UN report compiled after the departure of UN inspectors and quoted by Associated Press, bunker 41 contained "2,000 empty 155mm artillery shells contaminated with the chemical warfare agent mustard, 605 one-tonne mustard containers with residues, and heavily contaminated construction material."

At the time, the US State Department's Jen Psaki played down the importance of the capture of Muthanna. Psaki suggested that the facility contained "degraded chemical remnants" but that it would be "difficult, if not impossible, to safely use this for military purposes or, frankly, to move it." [iv]

A CIA report from 2007, however, offers evidence that might challenge Psaki's apparent absence of concern.

The report notes that "The precursor and agent production area at Al Muthanna was not completely destroyed during Desert Storm. Portions of the mustard (blister agent) production and storage area survived. The VX and Tabun production (nerve agent) facilities were incapacitated." [v]

The report further observes that "ISG is unable to unambiguously determine the complete fate of old munitions, materials, and chemicals produced and stored there. The matter is further complicated by the looting and razing done by the Iraqis." [vi]

With regard to the state of al-Muthanna at the time that the report was composed (2007), it observes that

Stockpiles of chemical munitions are still stored there. The most dangerous ones have been declared to the UN and are sealed in bunkers. Although declared, the bunkers contents have yet to be confirmed.

Numerous bunkers, including eleven cruciform shaped bunkers were exploited. Some of the bunkers were empty. Some of the bunkers contained large quantities of unfilled chemical munitions. [vii]

So the CIA report confirms that al-Muthanna was used for the production of chemical weaponry including mustard agent. The report also confirms that investigations have been unable to 'unambiguously determine' the fate of munitions at the site, and that while stockpiles clearly are stored at the site, the precise nature of these stockpiles remains

unconfirmed. There are no indications that this situation has changed in the period since the report.

The evidence appears to support the contention that on at least one occasion, Islamic State forces did employ some form of chemical agent, acquired from somewhere, against the YPG in Kobani.

No further instances have been reported. The evidence also indicates that it is likely that as a result of the capture of the al-Muthanna compound, stockpiles of chemical munitions have come into the group's possession.

The incident at Avdiko village on July 12th suggests that IS may well have succeeded in making some of this material available for use in combat.

The probable possession by the Islamic State of a CW capability is for obvious reasons a matter of the gravest concern, and should be the urgent subject of further attention and investigation.

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

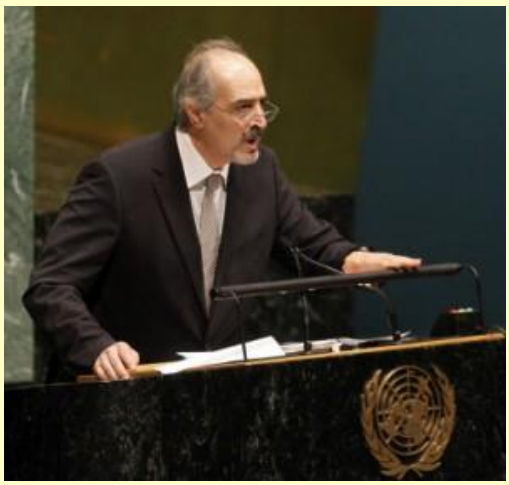
EDITOR'S COMMENT: One might easily connect lesions in photos with mustard. But they look more thermal injuries and there are reports that victims died fast – this is not quite consistent with mustard exposure.

EDITOR'S DARK THOUGHTS: What if normal bullets are embedded/plated with CWAs' solutions? Can they cause similar but targeted effects same as after widespread release of CWAs?

Al-Jaafari: Turkey, Saudi Arabia involved in providing terrorists with chemical materials

Source: http://www.syriaonline.sy/?f=Details&catid=12&pageid=12484

Syria's Permanent Representative to the United Nations Dr. Bashar al-Jaafari reaffirmed



Syria's support to the international orientation towards building an international community free of the use or threats of force, reiterating Syria's readiness to participate in any sincere effort that seeks the achievement of these goals.

Al-Jaafari was addressing the First Committee on Disarmament and International Security in New York.

He said that Syria supports a world underpinned by the UN Charter's goals and principles that are based on justice, equality and peace among nations.

Al-Jaafari blamed the terrorist acts in Syria on "well-known" Arab, regional, and world states which are providing support to terrorist organizations.

"Syria condemns in the strongest terms the use of chemical weapons and weapons of mass destruction, and considers it an abhorrent crime and an impermissible, reprehensible and unethical act," he added.

He underlined Syria's commitment to the Chemical Weapons Convention (CWC), indicating that its cooperation with the Organization for the Prohibition of Chemical Weapons (OPCW) has "made its work succeed spectacularly" despite all the difficult and extreme circumstances.

Al-Jaafari called for not politicizing the OPCW report on allegations concerning the use of chlorine in Hama province "for the organization's credibility to remain unharmed."

He said Syria's cooperation with the UN and the OPCW was the reason behind the unprecedented achievement in the history of the OPCW, adding that a number of UN officials, including the Special Coordinator for the OPCW-UN Joint Mission Sigrid Kaag, have expressed their relief and gratitude over Syria's constructive cooperation with the mission.

"Our world is facing many challenges, on top of which is the proliferation of weapons of mass destruction, and especially nuclear weapons," al-Jaafari said, pointing out that after more than four decades since the signature of the Treaty on the Non-Proliferation of Nuclear Weapons (NPT), the nuclear countries should abide by the 6th article concerning the disarmament of nuclear weapons, and the issue of excluding Israel from the nuclear disarmament should be addressed.

He went on to say that Syria stresses the right of all NPT member-states to develop nuclear technology for peaceful purposes in accordance with the 4th article of the NPT, and that at the same time, Syria opposes any attempt to interpret the treaty in a way that could undermine this right or restrain its usage.

Al-Jaafari underlined that the disarmament conference is the only multi-lateral negotiating gathering to discuss the issue of disarmament, highlighting the importance of respecting the regulations of the conference and its measures, which constitute the basis to make any effort a success.

Al-Jaafari said that the current reality in our world regarding the illicit trafficking of small and light arms reveals that some countries, including some that manufacture weapons and some that don't, are involved in delivering such weapons to terrorist organizations and sides that do not represent states with the aim of intensifying crises and undermining the stability of specific countries.

He said that the terrorist acts committed by extremist terrorist organizations wouldn't have happened without the support which includes arming, funding, training, and harboring which they receive from Arab, regional, and world countries that have become notorious for their involvement in terrorism in Syria.

"One of our main concerns regarding the Arms Trade Treaty was objection to not including any clear text in the treaty that utterly prohibits supplying weapons to non-state elements and armed terrorist organizations. Facts which we are witnessing today in Syria and in a number of countries in the region and outside it prove the veracity of our concerns regarding the aforementioned treaty," al-Jaafari said, noting that the delivery of weapons to terrorist organizations which some like to describe as "active non-state elements" has undermined regional stability and security, with one example being what happened recently in the non-engagement zone in the occupied Syrian Golan.

Syria's Representative said that the second report issued by the OPCW fact-finding mission sent to investigate the allegations regarding the usage of chlorine in Syria – the usage which the Syrian government has strongly condemned – is still being discussed by the OPCW's executive council, adding that this report has a number of structural issues and is in itself technical, which is why only the OPCW should address it.

"Despite that, a small number of governments used this report to slander Syria, which is out of place and doesn't serve the credibility of the OPCW. We hope that it will not be politicized which would influence the OPCW's credibility, similar to what happened before when the NPT's credibility was affected," he added.

Al-Jaafari said that some countries continue to protect the barbaric and inhumane practices of ISIS, Jabhat al-Nusra, and other terrorist organizations, and they continue to arm these organizations with assorted weapons including chemical weapons which these organizations have used against the Syrian people and the Syrian Arab Army more than once.

"We still witness an insistence by the countries that support terrorist in Syria to level null and baseless accusations to the Syrian government while overlooking the numerous reports that indicate their own involvement, specifically the regimes of Turkey and Saudi Arabia which are directly involved in providing these terrorist organizations with chemical weapons," he said.

Al-Jaafari said that the Syrian government demands that all countries who arm terrorist organizations in Syria be held accountable as per the relevant international resolutions, pointing out that **the Turkish government is responsible for forming 106 of the terrorist organizations that are active in Syria, in addition to forming the so-called "Syrian Free Army" on Turkish territories where it was armed and trained then set loose inside Syria.**

"The Turkish government, as per the rules of good neighborly relations between countries and the historic relations between the Turkish and Syrian people, should have lent a helping hand to Syria to overcome the crisis, but instead this Turkish government, which draws inspiration from the same extremist religious ideology as armed terrorist groups, became one of the main support bases for these terrorist organizations. What is currently happening in the border area of Ein Arab proves the involvement of the Turkish government in the massacres committed by ISIS against Syrian citizens in that area."

Al-Jaafari reiterated Syria's calls for working to clear the Middle East of all weapons of mass destruction, recalling that Syria was the one who proposed this issue in 2003 when it was a member of the Security Council.

He asserted that clearing the region of WMDs isn't possible unless Israel – which is the only nuclear power in the region –

joins all the treaties prohibiting these weapons and subjects its nuclear facility to the supervision of the International Atomic Energy Agency (IAEA).

Syria's Representative said that the fact that some countries, including Security Council members, have been providing advanced nuclear technology to Israel for decades and exempting it from any accountability in this regard contradicts these countries' obligations as per the NPT, because these actions allowed Israel to manufacture nuclear weapons and deployment methods, which puts the Middle East and areas beyond it in danger.

Al-Jaafari said that most of the world were hoping to hold a conference on making the Middle East clear of nuclear weapons and all sorts of WMDs in Helsinki in 2012 and for it to be a success, but the conference was thwarted when Israel announced in September of 2012 that it won't take part in it, derailing all international efforts for revising the NPT, adding that some sides gave the impression that the aforementioned conference should have been tailored to Israel's interests rather than coercing it to join the conference and make the Middle East free of WMDs.

He concluded by calling on member countries to assume responsibility and stop the smuggling of weapons of all classifications – be they lethal or non-lethal – and halting the smuggling of gunmen and terrorist from neighboring countries to Syria, warning that the threat of terrorism will eventually backfire on those countries sooner or later, referring to the terrorism currently affecting Turkey.

The THREATS project

Source: http://www.threatsproject.eu/index.html

The THREATS project aims to increase the resilience of EU hospitals as critical infrastructure by improving their protection capability and security awareness against terrorist attacks. It's aims are:

- To develop a reliable method for assessing the risks and vulnerabilities of major EU health infrastructures to terrorist attacks;
- To prepare specific security and threat assessment models and tools applicable to the Health sector using other EU projects;
- To challenge these tools through application to the San Raffaele Hospital in Milan;
- To disseminate guidelines designed to optimize the preparedness of hospitals' healthcare infrastructures against terrorist attacks.

The THREATS project will carry out the following:

- 1. Build on the work carried out by previous and running EU projects under the European Programme for Critical Infrastructure Protection to prepare specific security and threat assessment models and tools applicable to the Health sector
- 2. Develop a reliable method for assessing the vulnerability of major EU health infrastructures

- 3. Challenge the developed models and risk-assessment tools through a case study applied to a major EU hospital infrastructure
- 4. Empower the EU Member States with broad reach and efficient capacity assessment tools to measure critical healthcare infrastructures' vulnerability to terrorist attacks
- 5. Disseminate to security authorities and operators at EU level, guidelines designed to harmonise and optimize the preparedness of hospitals' healthcare infrastructures against terrorist attacks

THREATS will thus support the implementation of the Directive 2008/114/EC by identifying risks, threats and vulnerabilities of Healthcare, developing common methodologies for the identification and classification of risks, threats and vulnerabilities of healthcare infrastructure assets and giving access, at MS level, to best practices, guidelines and methodologies concerning healthcare infrastructure protection while taking into account interdependencies with other CIs.

Overall, THREATS, by increasing preparedness against terrorist attacks targeting hospitals and healthcare infrastructures, will empower the EU MS with the most efficient and reliable decision-making tools to measure and minimise critical healthcare infrastructures' vulnerability to terrorist attacks.

Partners

Hanover Associates (UK) Limited

Project Coordinator: Carl Dakin
Deputy Program Manager: Chris Arculeo

CRIMEDIM
Centro di Ricerca Interdipartimentale in Medicina di Emergenza e dei Disastri e di Informatica applicata alla didattica e alla practica Medica
Principal Investigators: Dr Pier Luigi Ingrassia and Dr Ahmadreza Djalali

INSA
Institut national des sciences appliquees de Lyon
Principal Investigator: Dr Alain Guinet

OSR
Ospedale San Raffaele
Principal Investigator: Roberto Faccincani

Saddam-Era Chemical Weapons Now Under ISIS Control

Source: http://www.ibtimes.com/saddam-era-chemical-weapons-now-under-isis-control-reports-1705144

According to a recent report published in the journal Middle East Review of International Affairs, or MERIA, militants of the Islamic State group used chemical weapons, including mustard gas, against Kurdish fighters in the Syrian border town of Kobani during their first attempt to capture the town in July.

The report, which is based on testimonies from eyewitnesses on the ground, said that the chemical weapons had been transferred to the Syrian province of Raqqa from a Saddam Hussein-era chemical weapons facility located near the Iraqi capital of Baghdad. The report has prompted fears that ISIS could have access to vast stockpiles of chemical weapons, including sarin, mustard gas, and VX, a nerve agent.

In June, reports emerged that the Islamic State group had captured a chemical weapons facility in the city of Muthanna, located 45 miles northwest of Baghdad. At the time, the United States government said it did not believe that the complex, which was considered to be one of Saddam Hussein's most important chemical weapons facility, built during Iraq's war with Iran in the early 1980s, contained "Chemical Weapons materials of military value."

However, according to a report published by The New York Times on Tuesday, **the U.S. military not only recovered massive stockpiles of chemical weapons in Iraq, including in the complex in Muthanna now controlled by ISIS, it actively attempted to keep the discovery of the munitions a secret**. The report, which is based on interviews with several former U.S. army personnel, alleged that between 2004 and 2010, soldiers found thousands of rusty and corroded chemical munitions.

Side view of a bunker at the Muthanna chemical weapons facility CIA

The Times report noted that all of the chemical munitions discovered in Iraq were made before the 1991 Gulf war, and had been "designed in the United States, manufactured in Europe and filled in chemical agent production lines built in Iraq by Western companies."

Mangled and rusted chemical munition shells found near the Muthanna chemical weapons complex. CIA

The U.S. campaign in Iraq in 2003 was launched on the assumption that Saddam Hussein was hiding and actively enriching a massive stockpile of chemical weapons. However, the Times report alleged, because no such "active weapons of mass destruction program" were reportedly discovered in Iraq, the U.S. government suppressed knowledge of the discovery to avoid further embarrassment.

According to the Times report, though U.N. inspectors reported finding no evidence of weapons of mass destruction as claimed by the U.S. administration at the time, American troops during their occupation of Iraq found stockpiles of chemical weapons, which were identified as having been manufactured before 1991. **The aged and rusty shells and rockets, though unfit to be used as originally intended, reportedly still contained deadly chemical agents.**

The rise of the Islamic State group in Iraq has rekindled concerns that the **militants could now be in control of a huge chunk of the nearly 5,000 chemical warheads discovered in Iraq,** and that they could use these weapons, banned under the Chemical Weapons Convention of 1997, in their onslaught in Syria and Iraq.

"The probable possession by the Islamic State of a chemical weapons capability is for obvious reasons a matter of the gravest concern, and should be the urgent subject of further attention and investigation," the MERIA report said, adding that evidence strongly suggested that at least a part of Saddam Hussein's chemical weapons arsenal is now being used in combat by the Islamic State group.

Dutch CBRN Training city is about to open

Source: http://www.defensie.nl/actueel/nieuws/2014/10/01/metrotoestellen-aangekomen-op-cbrn-trainingscentrum

The **CBRN School in Vught** (Brederode Barracks), the Netherlands is close to its **opening end of November 2014**. Here training is possible in CBRN conditions on trains, subway, shopping streets, improvised drug labs (XTC) and airplanes. Dutch government makes it possible for police, defense, emergency crews (ambulance) and fire departments to test and train their people and equipment together. U.S. and Swedish military also "booked" this facility as being unique in the world. Exercise is scripting templates for hostage situations with CBRN agents, fire, decontamination, evacuation, entering with full NCB outfit and containment.

Recreation of Amsterdam's subway

Read this article at least twice – especially if you have not hands-on HAZMAT training or your are a CBRN planner or hospital official/responder!

I'm a Hazmat-Trained Hospital Worker: Here's What No One Is Telling You About Ebola

By Abby Norman

Source: http://www.huffingtonpost.com/abby-norman/im-a-hazmat-trained-hospi_b_5998486.html

October 17 – Ebola is brilliant.

It is a superior virus that has evolved and fine-tuned its mechanism of transmission to be near-perfect. That's why we're all so terrified. We know we can't destroy it. All we can do is try to divert it, outrun it.

I've worked in health care for a few years now. One of the first things I took advantage of was training to become FEMA-certified for hazmat ops in a hospital setting. My rationale for this was that, in my home state of Maine, natural disasters are almost a given. We're also, though you may not know it, a state that has many major ports that receive hazardous liquids from ships and transport them inland. In the back of my mind, of course, I was aware that any hospital in the world could potentially find itself at the epicenter of a scene from The Hot Zone. That was several years ago. Today I'm thinking, by God, I might actually have to use this training. Mostly, though, I'm aware of just that -- that I did receive training. Lots of it. Because you can't just expect any nurse or any doctor or any health care worker or layperson to understand the deconning procedures by way of some kind of pamphlet or 10-minute training video. Not only is it mentally rigorous, but it's physically exhausting.

PPE, or, personal protective equipment, is sort of a catch-all phrase for the suits, booties, gloves, hoods and in many cases respirators worn by individuals who are entering a hot

zone. These suits are incredibly difficult to move in. You are wearing several layers of gloves, which limits your dexterity to basically nil, the hoods limit the scope of your vision -- especially your peripheral vision, which all but disappears. The suits are hot--almost unbearably so. The respirator gives you clean air, but not cool air. These suits are for protection, not comfort. Before you even suit up, your vitals need to be taken. You can't perform in the suit for more than about a half hour at a time -- if you make it that long. Heat stroke is almost a given at that point. You have to be fully hydrated and calm before you even step into the suit. By the time you come out of it, and your vitals are taken again, you're likely to be feeling the impact -- you may not have taken more than a few steps in the suit, but you'll feel like you've run a marathon on a 90-degree day.

Getting the suit on is easy enough, but it requires team work. Your gloves, all layers of them, are taped to your suit. This provides an extra layer of protection and also limits your movement. There is a very specific way to **tape** all the way around so that there are no gaps or "tenting" of the tape. If you don't do this properly, there ends up being more than enough open pockets for contamination to seep in.

If you're wearing a respirator, it needs to be tested prior to donning to make sure it is in good condition and that the filter has been changed recently, so that it will do its job. Ebola is not airborne. It is not like influenza, which spreads on particles that you sneeze or cough. However, Ebola lives in vomit, diarrhea and saliva -- and these avenues for infection can travel. Projectile vomiting is called so for a reason. Particles that are in vomit may aerosolize at the moment the patient vomits. This is why if the nurses in Dallas were in the room when the first patient, Thomas Duncan, was actively vomiting, it would be fairly easy for them to become infected. Especially if they were not utilizing their PPE correctly.

The other consideration is this: The "doffing" procedure, that is, the removal of PPE, is the most crucial part. It is also the point at which the majority of mistakes are made, and my guess is that this is what happened in Dallas.

The PPE, if worn correctly, does an excellent job of protecting you while you are wearing it. But eventually you'll need to take it off. Before you begin, you need to decon the outside of the PPE. That's the first thing. This is often done in the field with hoses or mobile showers/tents. Once this crucial step has occurred, the removal of PPE needs to be done in pairs. You cannot safely remove it by yourself. One reason you are wearing several sets of gloves is so that you have sterile gloves beneath your exterior gloves that will help you to get out of your suit. The procedure for this is taught in FEMA courses, and you run drills with a buddy over and over again until you get it right. You remove the tape and discard it. You throw it away from you. You step out of your boots --careful not to let your body touch the sides. Your partner helps you to slither out of the suit, again, not touching the outside of it. This is difficult, and it cannot be rushed. The respirators need to be deconned, batteries changed, filters changed. The hoods, once deconnned, need to be stored properly. If the suits are disposable, they need to be disposed of properly. If not, they need to be thoroughly deconned and stored safely. And they always need to be checked for rips, tears, holes, punctures or any other even tiny, practically invisible openings that could make the suit vulnerable.

Can anyone tell me if this happened in Dallas?

We run at least an annual drill at my hospital each year. We are a small hospital and thus are a small emergency response team. But because we make a point to review our protocols, train our staff (actually practice donning/doffing gear), I realized this week that this puts us ahead at some much larger and more notable hospitals in the United States. Every hospital should be running these types of emergency response drills yearly, at least. To hear that the nurses in Dallas reported that there were no protocols at their hospital broke my heart. Their health care system failed them. In the United States we always talk about how the health care system is failing patients, but the truth is, it has failed its employees too. Not just doctors and nurses, but allied health professionals as well. The presence of Ebola on American soil has drawn out the true vulnerabilities in the health care system, and they are not fiscally based. We spend trillions of dollars on health care in this country -- yet the allocation of those funds is grossly disproportionate to how other countries spend their health care expenditures. We aren't focused on population health. Now, with Ebola threatening our population, the truth is out.

The truth is, in terms of virology, Ebola should *not* be a threat to American citizens. We have clean water. We have information. We have the means to educate ourselves, practice proper hand-washing procedures, protect ourselves with hazmat suits. The CDC Disease Detectives were dispatched to Dallas almost immediately to work on the front lines to identify those who might be at risk, who could have been exposed. We have the technology, and we certainly have the money to keep Ebola at bay. What we don't have is communication. What we don't have is a health care system that values preventative care. What we don't have is an equal playing field between nurses and physicians and allied health professionals *and* patients. What we don't have is a culture of health where we work symbiotically with one another and with the technology that was created specifically to bridge communication gaps, but has in so many ways failed. What we don't have is the social culture of transparency, what we don't have is a stopgap against mounting hysteria and hypochondria; what we don't have is nation of health literate individuals. We don't even have health-literate professionals. Most doctors are specialists and are well versed only in their field. Ask your orthopedist a general question about your health -- see if they can comfortably answer it.

Health care operates in silos -- we can't properly isolate our patients, but we sure as hell can isolate ourselves as health care workers.

As we slide now into flu season, into a time of year when we are normally braced for winter diseases, colds, flus, sick days and cancelled plans, the American people has also now been truly exposed to another disease entirely: the excruciating truth about our health care system's dysfunction -- and the prognosis doesn't look good.

Note: In response to some comments, I would like to clarify that I am FEMA-trained in Level-3 HAZMAT in a hospital setting. I am a student, health guide and writer, but I am not a nurse.

Abby Norman *is a writer and healthcare scientist from the east coast United States. She writes about healthcare, medicine and patient advocacy, as well as confessional prose. Her work has been featured in The National Medical Records Briefing, Mamamia, The Almost Doctor's Channel, Urban Times, Thought Catalog, xoJane and Medium. She is a regular correspondent for The Urban Times (urbantimes.co) and is a content development consultant and blogger for a US based healthcare consulting firm, BHM Healthcare Solutions (www.bhmpc.com). Her first book of essays from Thought Catalog is now available as an eBook on Amazon, iTunes and Nook.*

EDITOR'S COMMENT: I placed this article in the "Chem News" chapter although it is Ebola-related for many reasons. Experienced CBRN First Responders do know exacty what Abby is talking about. The problem is that many others do not. Take planners for example. How many times you watched videos or photos from drills where FRs in Level-A (or Level-3) carrying stretchers with "casualties" or "performing mass decontamination" to victims. How many times you watched them carrying heavy materials or going up and down to stairs and escalators assisting or guiding victims etc. MANY times. And this a slid proof that these planners have never been in Level-A PPE – not even close to one of them! Many times I study pictures form CBRN drills. You cannot imagine how many mistakes one can see in a single picture! "But it is only an exercise!" is the usual reply usually accompanied with an angry eye! But if you cannot do it right in drill, you will not do it right in front of the enemy – human or Ebola! Simple as that! This is an article full of truths and all of us – experienced or not – must read it twice!

Homemade mustard gas at teacher's home

Source: http://www.nltimes.nl/2014/02/21/homemade-mustard-gas-teachers-home/

In October last year, mustard gas was found in the cellar of a deceased physics teacher in Ede. It is now suspected that he made the chemical himself.

After an investigation done by the Public Prosecution Service (OM), the teacher made the mustard gas without any help in 2001.
In the cellar, 56 different kinds of chemical substances were found. Next to the mustard gas, three other poison gases were found, such as tear gas.

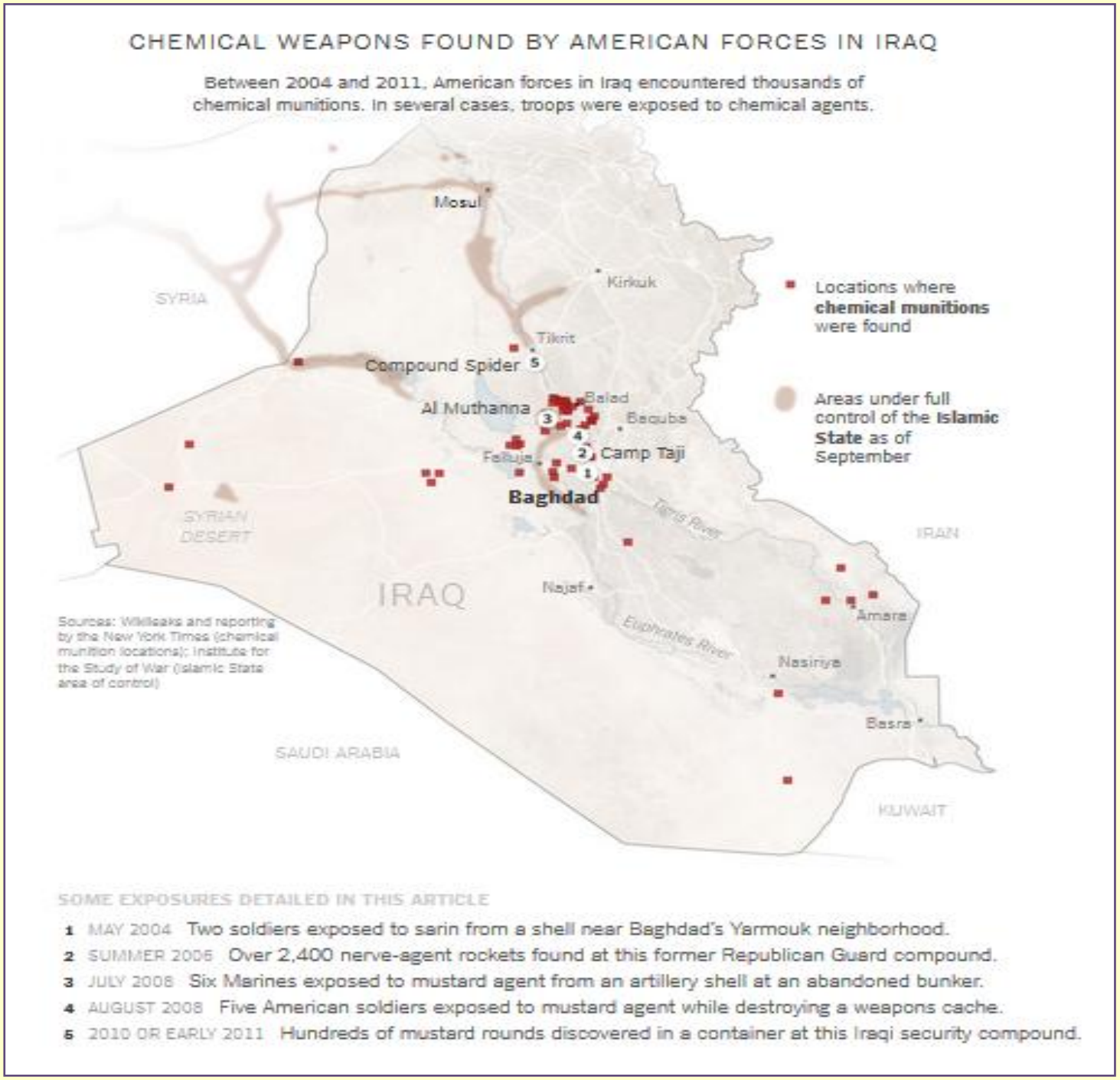
Mustard gas was used in WWI and WWII for chemical warfare. This is a 'gas identification Poster, ca 1941-1945. Source: National Museum of Health and Medicine/ US Army
The OM believes that the physics teacher was able to get his hands on all the substances himself, and concocted the poison gases alone. As far as is known, the teacher bought all substances legally at chemical companies.
In October of last year, the police received a tip and subsequently found chemical substances in a cellar under an apartment building. It was quickly determined to be mustard gas as well as other chemicals. The building, with 50 other homes, was evacuated as the police did not want to take risks in clearing the cellar.
The cellar belonged to a 65-year old physics teacher who died not long before. He had left a letter behind upon his death for his brother, in which he warned about the chemicals in his cellar. He also explained in the letter how to handle the substances. The brother warned the police.
The chemical substances seemed to have been locked in a safe for years. Readings were done in the cellar, which revealed that no dangerous substances were released. The situation did make the neighbors uncomfortable, however.
It is not illegal to be in possession of a small quantity of chemical substances such as tear gas. Trading the substances, however, is. Possession of mustard gas is illegal, even in small quantities.
The OM is calling it a "hobby that went extremely out of hand". All substances have been destroyed.

The Secret Casualties of Iraq's Abandoned Chemical Weapons

By C. J. Chivers
Source: http://www.nytimes.com/interactive/2014/10/14/world/middleeast/us-casualties-of-iraq-chemical-weapons.html?_r=0

A series of articles on abandoned CWAs in Iraq and their consequences to US military personnel. Lots of photos, maps, videos of people actually exposed to them.

C. J. Chivers *contributes to the Foreign and Investigative desks of The Times, and frequently posts for the At War blog, writing on conflict, politics, crime and human rights from Afghanistan, Iraq, Russia, Georgia, Chechnya and elsewhere on a wide range of assignments.*



In addition to writing, he shoots video and, occasionally, photographs. He served as Moscow correspondent from June 2004 through mid-2008. He has also covered war zones or conflict in the Palestinian territories, Israel and Central Asia. From 1999 until 2001 he was a Metro reporter covering crime and law enforcement in New York City, working in a three-reporter bureau inside the police headquarters in Lower Manhattan. While in this bureau, he covered the attacks on the World Trade Center on Sept. 11, 2001.

Before joining The Times, Mr. Chivers was a staff writer at The Providence Journal in Rhode Island from 1995 until 1999, covering crime and politics, and was a contributor to several magazines, writing on wildlife, natural history and conservation. He remains a contributor to Esquire and Field & Stream.
From 1988 until 1994, Mr. Chivers was an infantry officer in the United States Marine Corps, serving in the Persian Gulf War and performing peacekeeping duties as an infantry company commander during the Los Angeles riots. He was honorably discharged as a captain in 1994.

In March 2007, Specialist Richard T. Beasley picked up a broken shell, not knowing it contained mustard agent. The next day, while on another call, he noticed his pant leg was wet. Chemical blisters erupted on his leg.

In 1996, Mr. Chivers received the Livingston Award for International Journalism for a series on the collapse of commercial fishing in the North Atlantic. Two of his stories in The Times from Afghanistan were cited in the award of the Pulitzer Prize for Public Service in 2002. In 2007, his reconstruction for Esquire of the terrorist siege of a public school in Beslan, Russia, won the Michael Kelly Award and National Magazine Award for Reporting. He was also part of The Times's team that was awarded the Pulitzer Prize for International Reporting in 2009, for coverage of Afghanistan and Pakistan.
His book of history and conflict, "The Gun: The AK-47 and the Evolution of War" will be published by Simon & Schuster in the fall.
Mr. Chivers graduated with a B.A. cum laude in English from Cornell University in January 1988. He was the 1995 valedictorian of Columbia University Graduate School of Journalism. He also graduated from several military schools, including the United States Army's Ranger Course.

Iraq – One mysterious (CWAs) bunker called 'dragon's egg'

Source: http://www.dailymail.co.uk/news/article-2799223/marines-guarded-saddam-s-chemical-weapons-site-reveals-one-mysterious-bunker-called-dragon-s-egg.html

Marines who guarded Saddam Hussein's chemical weapons compound in Iraq were particularly fearful of one bunker they dubbed the 'dragon's egg'.
American soldiers posted to the Muthanna State Establishment were never allowed to look inside the vast three-square-mile site, where up to 4,000 tonnes of deadly Sarin was produced each year.
But former guard Joshua Hartley revealed to Fox News's Paul Alster there was an ominous feeling surrounding one X-shaped bunker - which is now in the hands of Islamic State fighters.
'We were made aware of a particular bunker on the north side [of Al Muthanna] which we were informed was sealed and remotely monitored,' Hartley, who served in the weapons company of the 1st Battalion, 2nd Marine Regiment, told FoxNews.com.
'We were not to approach, and definitely not to attempt to enter.'
Despite conflicting claims about the nature of weaponry held at the 'dragon's egg', Hartley insists he has no doubt it produced liquid nerve agents after his platoon was ordered to clean the area surrounding it.

He told Paul Alster: 'When we began searching, we discovered a huge stockpile of 105-millimeter artillery shells that were filled with mustard gas.
'I have always wondered why it never became big news, as well as other incidents. I never doubted the existence of chemical and biological weapons in Iraq.'
One Marine, he said, 'picked [a shell] up and could literally hear the liquid sloshing around inside of it.'
The enter site was bombed by the US during the 1991 Gulf War, but the munitions there were only partially destroyed, according to the UN - then left to Iraq to take care of.
However, Iraqi officials wrote to the United Nations this summer claiming that abandoned weapons containing Sarin are still in the ruins of the Muthanna State Establishment, which made chemical weapons in the 1980s and early 1990s.
This is now in the hands of the violent jihadists.
They warned that they had watched equipment there being looted on CCTV.

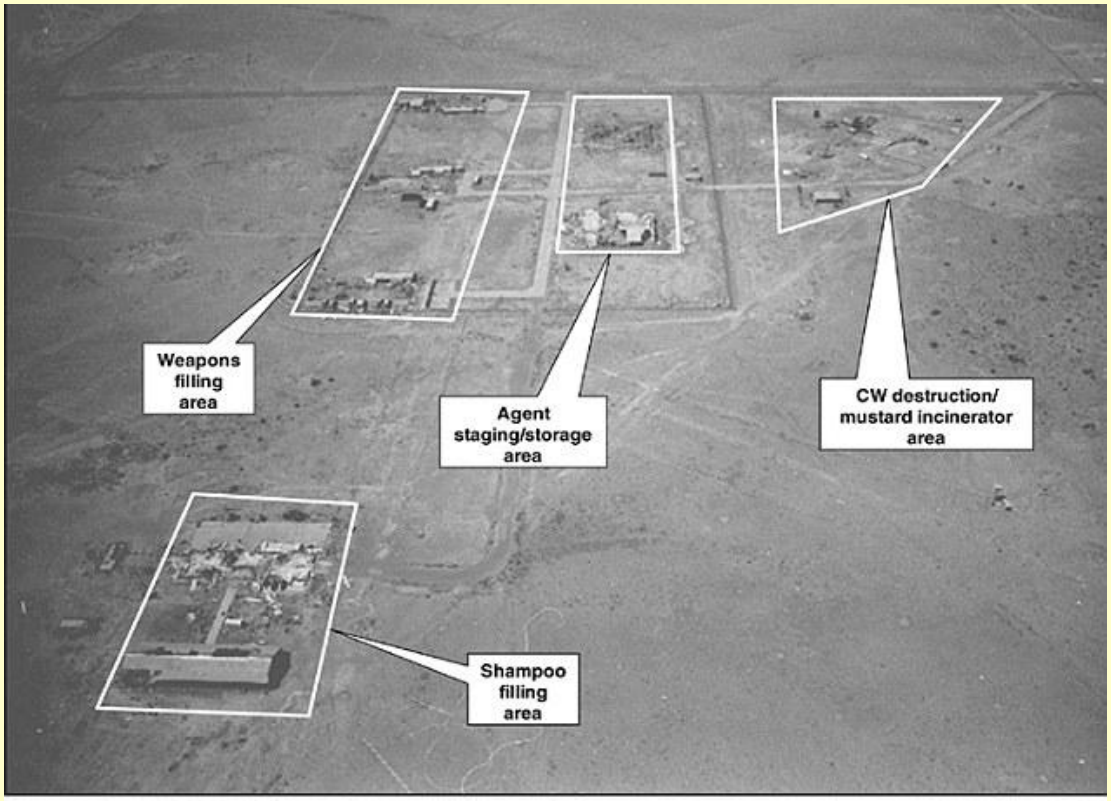


Figure 6. *Destroyed CW agent filling area.*

A CIA picture of the Muthanna State Establishment, which produced chemical weapons on an industrial scale

Militants then shut the surveillance cameras at the depot down, the New York Times reported.
Iraq's UN Ambassador Mohamed Ali Alhakim wrote to the UN saying that 'armed terrorist groups' took over the Muthanna complex, which lies 60 miles north of Baghdad, on June 11.
In a letter to U.N. Secretary-General Ban Ki-moon, Ambassador Mohamed Ali Alhakim said remnants of a former chemical weapons programme are kept in two bunkers there.
'The project management spotted at dawn on Thursday, 12 June 2014, through the camera surveillance system, the looting of some of the project equipment and appliances, before the terrorists disabled the surveillance system,' Alhakim wrote in the letter dated June 30.
'The Government of Iraq requests the States Members of the United Nations to understand the current inability of Iraq, owing to the deterioration of the security situation, to fulfill its obligations to destroy chemical weapons,' he said.
The Muthanna complex measures three by three miles and was thought to be capable of producing around 4,000 tonnes of nerve agent a year.

Alhakim singled out the capture of bunkers 13 and 41 in the sprawling complex 35 miles (56 kilometers) northwest of Baghdad in the notorious 'Sunni Triangle.'
The last major report by U.N. inspectors on the status of Iraq's weapons of mass destruction program was released about a year after the experts left in March 2003. It states that Bunker 13 contained 2,500 sarin-filled 122-mm chemical rockets produced and filled before 1991, and about 180 tons of sodium cyanide, 'a very toxic chemical and a precursor for the warfare agent tabun.'
However, U.S. Defence Department spokesman Rear Admiral John Kirby said earlier that the United States' best understanding was that 'whatever material was kept there is pretty old and not likely to be able to be accessed or used against anyone right now'.
'We aren't viewing this particular site and their holding it as a major issue at this point,' Kirby said. 'Should they even be able to access the materials, frankly, it would likely be more of a threat to them than anyone else.'
It was revealed this week that about 5,000 chemical weapons were recovered or destroyed in Iraq following the 2003 invasion but the Pentagon chose to keep the findings top secret.
An investigation by The New York Times has revealed that U.S. forces happened across the hidden caches of warheads, shells and aviation bombs between 2004 and 2011.
But the information wasn't made public for several embarrassing reasons including the fact some of the weapons were U.S.-made, plus they had been sitting dormant since the early 1980s and therefore didn't support President George W. Bush's rationale for going to war.
The weapons - most of them mustard agents in 155-millimeter artillery shells or 122-millimeter rockets - were developed by Saddam Hussein during the Iran-Iraq war which raged between 1980 and 1988.
But on September 12, 2002, President Bush had contended that Hussein was developing new chemical weapons capable of 'mass destruction'.
'Right now, Iraq is expanding and improving facilities that were used for the production of biological weapons,' he said. But all the weapons found had been developed before 1991.

BUSH AND BLAIR'S IRAQ WAR AND THE 'INTELLIGENCE FAILURE' OVER WEAPONS OF MASS DESTRUCTION

In March 2003, President Bush received a mandate from the U.S. Congress to lead an invasion of Iraq, asserting that Iraq was in violation of UN Security Council Resolution 1441.
With strong support from British P.M. Tony Blair, the Bush administration claimed that Sadam and his forces were in possession of weapons of mass destruction that posed a threat to U.S. security and that of allies including the U.K. and Australia.
After investigation following the invasion, the U.S. led Iraq Survey Group concluded that Iraq had ended its nuclear, chemical and biological programs in 1991 and had no active programs at the time of the invasion, but that they intended to resume production if the Iraq sanctions were lifted.
Although no active chemical weapons program was found, at least 17 U.S. troops and 7 Iraqi police officers were burned or wounded when chemical devices exploded.
President Bush later said that the biggest regret of his presidency was 'the intelligence failure' in Iraq, while the Senate Intelligence Committee found in 2008 that his administration 'misrepresented the intelligence and the threat from Iraq'.
The U.S. completed its withdrawal of military personnel in December 2011, during the ninth year of the war.
The rise of ISIS means that the U.S. will send an army headquarters to Iraq for the first time in three years to assist local security forces struggling to resist advances by the fundamentalist group.

Another reason for the cover-up, according to The Times, was that five of the six chemical weapons encounters involved weapons designed by the U.S.
'"Nothing of significance" is what I was ordered to say,' said Jarrod Lampier, a now-retired Army major who was present when forces found 2,400 nerve agent rockets in 2006 - the largest chemical weapons discovery of the war.
Soldiers were also loathe to report finding the caches as documenting chemical weapons added hours of extra work to their load.

Chemical warfare specialists had to be called in, and waiting for them to arrive put coalition forces in dangerous positions.
'I could wait all day for tech escort to show up and make a chem round disappear, or I could just make it disappear myself,' one ex-soldier told The Times.
The mustard shells could be put in with other explosives that needed to be destructed and then detonated.
However, handling chemical weapons lead to many injuries, which were not taken seriously by military doctors at the time.
Many explosive ordnance disposal personnel were not aware that the shells they were handling contained chemicals, believing them to be regular old artillery.
At least 17 American military personnel and seven Iraqi police were sickened by poisons - usually sarin and mustard gases.
Many of the shells would leak liquid during transportation, exposing the soldiers to the potentially-lethal fumes.
Symptoms ranged from disorientation and nausea to blindness and huge, seething blisters.
Jarrod Taylor, a former Army sergeant on hand for the destruction of mustard shells that burned two soldiers in his infantry company, joked of 'wounds that never happened' from 'that stuff that didn't exist'.
'I love it when I hear, "Oh there weren't any chemical weapons in Iraq",' he said. 'There were plenty.'

The very small Islamic State WMD threat

By Dina Esfandiary and Matthew Cottee
Source: http://thebulletin.org/very-small-islamic-state-wmd-threat7729

Late last month British Home Secretary Theresa May, who is responsible for immigration and policing under Prime Minister David Cameron, alarmed many citizens when she warned that the Islamic State in Iraq and Syria (ISIS) could "acquire chemical, biological, or even nuclear weapons to attack us." Joseph Cirincione, president of the global-security-focused Ploughshares Fund, warned that "the risk of a terrorist attack using nuclear or chemical weapons has just gone up." And a little later Britain's Sunday Times reported on what it called a "jihadist plot to grab Iran's nuclear secrets," saying that based on a captured policy manifesto, ISIS aimed to acquire Iranian nuclear know-how with Russia's help.
With ISIS running amok over such a large swathe of territory, it's no surprise that these kinds of fears are growing. But it is important to be realistic about the threat. It remains unlikely that the group will be able to acquire and effectively use chemical, biological, or nuclear weapons.
For a start, concerns that terrorists could buy or steal a nuclear device from a country that possesses them are exaggerated and have been comprehensively discredited. Very few countries sponsor terrorism or wish to be seen as doing so, and nuclear forensics would make it relatively straightforward to find the source of any given device. The consequences for any state conducting such business would be severe.
Some of the hysteria surrounding ISIS and WMD is based on the theft in July of around 40 kilograms of uranium compounds from Mosul University. But if this was a targeted attempt to acquire nuclear material—rather than part of a broader raid on the university—it suggests that the thieves' knowledge of nuclear bomb-making lacks sophistication. The stolen material cannot be turned into a viable nuclear device: The uranium was low-grade and would have to be further enriched and then weaponized, requiring obscure raw materials and technologies, a delivery means, and facilities that would take years and a significant sum of money to develop. It took the United States, with its vast resources and advanced knowhow, six years to develop a nuclear device. It took China roughly 10 years and Pakistan more than two decades. Needless to say, even for an established country, developing a nuclear weapon is not simple.
The most likely threat is a radiological device of some kind. It is relatively simple to develop a so-called "dirty bomb," in which explosives are combined

with a radioactive source like those commonly used in hospitals or extractive industries. But the radioactivity released by a dirty bomb would have only limited health effects, **causing more disruption than destruction.** If ISIS used its stolen uranium in a dirty bomb, the weapon's blast would be more deadly than the radiation it released.

What about chemical and biological weapons? In June, ISIS seized the Al Muthanna chemical complex in northern Iraq, leading to concerns that the group would acquire the ability to deploy chemical weapons. According to a letter circulated by the Iraqi government at the United Nations, the facility held 2,500 chemical rockets filled with the nerve agent sarin, as well as other chemical remnants and some empty delivery mechanisms. But the chemicals were old and either partially destroyed or degraded. As chemical weapons go, **sarin is particularly susceptible to degradation if it is impure. Its shelf life is estimated to be one to two years.** While sarin's degraded remnants are still toxic, they cannot be used as chemical weapons.

The Al Muthanna facility also housed mustard gas, which is more stable. In recent days, reports have emerged that ISIS allegedly used mustard gas in an attack against Kurdish officers in Kobane. But the United Nations Special Commission (UNSCOM) and the United Nations Monitoring, Verification, and Inspection Commission (UNMOVIC) inspectors reported two decades ago that these chemicals had been degraded. More important, the two bunkers ISIS seized had been chosen by UNSCOM for destruction operations because of their solid structures. Both were sealed, which means penetration by ISIS would not only be difficult but would expose them to the chemicals. **In short, there is virtually nothing available for ISIS to use at the Al Muthanna complex.** Moreover, even if the group were to get access to agents like sarin or mustard gas, deploying them without its own members being contaminated would present a considerable challenge, as they are not trained in chemical weapons use.

The use of chlorine, however, is a possibility. Chlorine is a readily available industrial chemical with many peaceful uses. It can be pressurized and cooled to a liquid state so that it can be shipped and stored relatively easily, which means it can be used in improvised devices. When dispersed it spreads quickly and hinders breathing. But it's significantly less lethal than other chemical agents. While chlorine isn't useful in battle, it's an effective weapon of fear.

ISIS appears to have some interest in developing biological weapons, as files contained on a laptop seized in Syria last summer suggest. But the group would need sophisticated labs and technical expertise to develop, manufacture, and deploy such weapons. And as with chemical weapons, the use of biological weapons by untrained troops puts them at risk of contamination, too. While it is possible for ISIS to get its hands on biological toxins and pathogens, it would be very difficult for its soldiers to safely handle and disperse large quantities of the agents to cause mass casualties.

In short, ISIS does seem interested in acquiring chemical, biological, and nuclear weapons, but ambitions do not necessarily equate with reality. The complexities of such weapons, combined with the difficulties involved in obtaining and handling the necessary material, make the likelihood of its use remote. Let's not exaggerate the threat.

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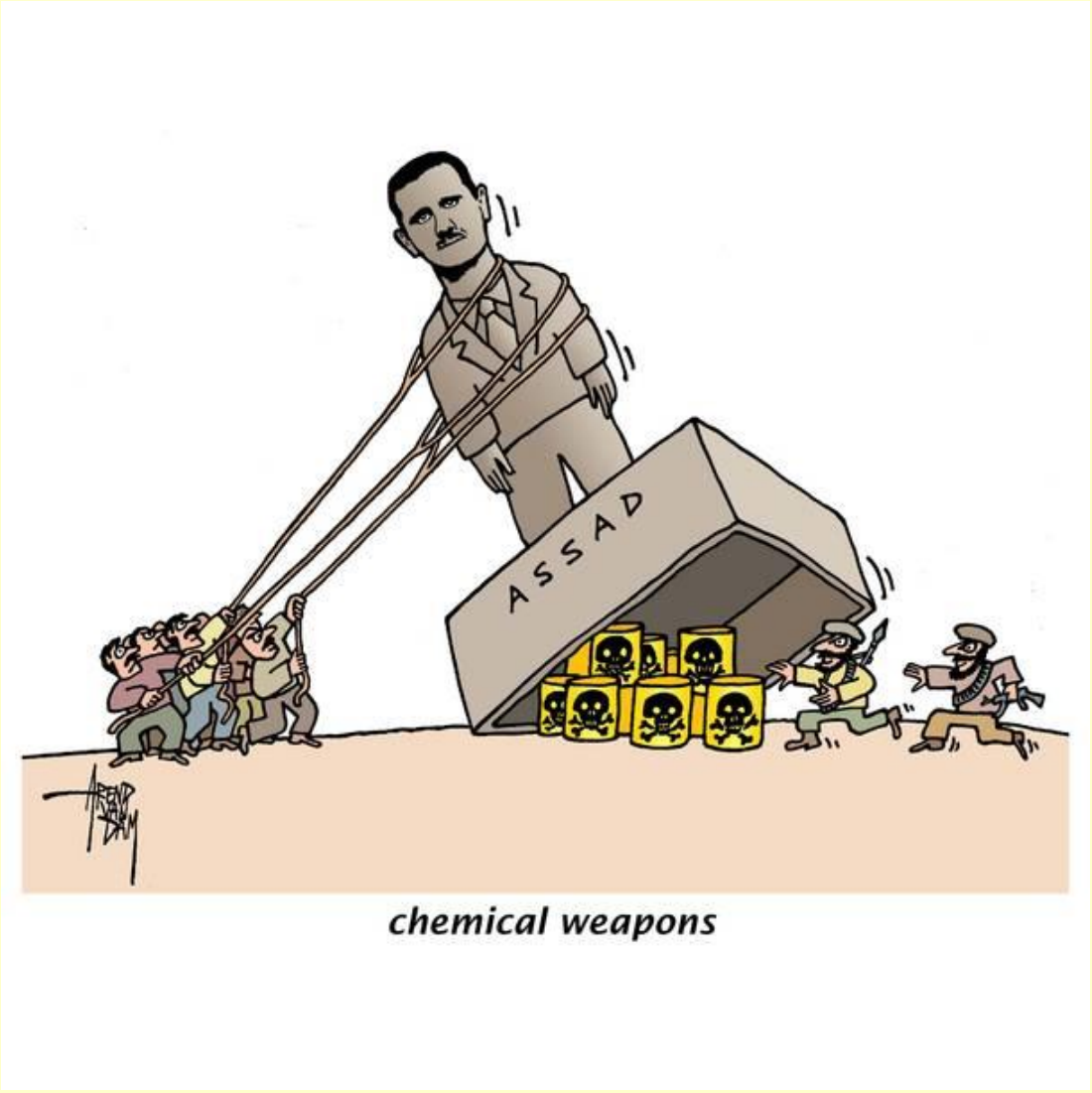
Matthew Cottee *is a research analyst with the Non-Proliferation and Disarmament Programme at the International Institute for Strategic Studies.*

EDITOR'S COMMENT: After reading this article logically most of us should stop worrying about IS's possession of WMD. But this is not the case. Young recerchers miss an important point: we are not talking about chemical or radiological or biological warfare. We are talking about CBR terrorism. And they should have known that a single attack with one of the above components involved should evoke disruption equal to destruction. It would spread fear; would cost millions for countermeasures and all expected side effects of a successful asymmetric attack. So I choose to continue worry about the

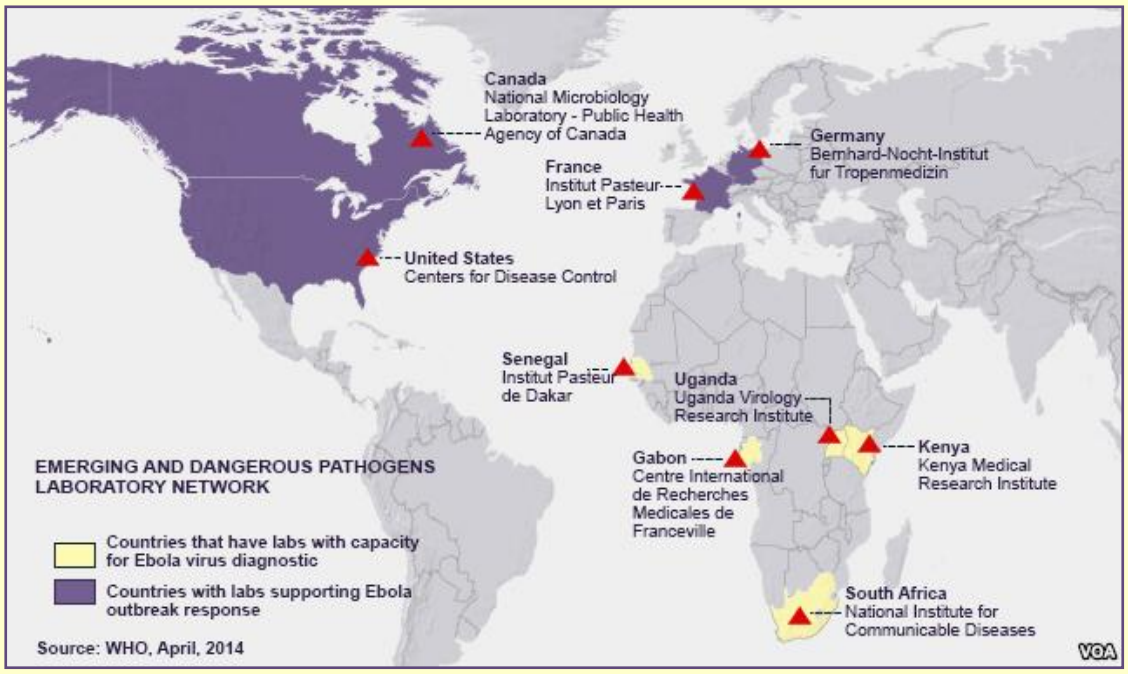
possession of WMDs (active and inactive; old and new; crude and sophisticated) by the secies called IS and this because in that way my surprise would be more able to handle when the unexpected will happen.



Learning from Ebola: Implications for Asia and the Globe

By Elin A. Gursky

Source: http://www.anser.org/babrief_ebola-in-asia



The foremost lesson to be learned from the Ebola outbreak now ravaging West Africa is the interconnectedness of the planet. A disease once isolated within remote villages, burning out for want of new human hosts, now continues its relatively unfettered transmission across three countries: Guinea, Liberia, and Sierra Leone. This trend is now emblematic of the potential for wider spread as much of the developing world becomes increasingly urbanized, its populations more mobile, and its animal vectors further dispersed.

Since Ebola was first noted in 1976, there have been over two dozen confirmed Ebola outbreaks, appearing in Africa in 1976-1979 and then reappearing in 1994-1996. Ebola's cyclical character has complicated studies of surveillance, seroprevalence, and its natural reservoir. Initial cases of illness in Africa have been associated with exposure to infected non-human primates and fruit bats. Human-to-human transmission occurs through close contact, including exposure to infected blood and body fluids through mucous membranes, open wounds and breaks in the skin, conjunctiva, or other vulnerable portals of entry. The consumption of contaminated "bush meat" such as forest antelope, wild pigs, and bats is another source of disease exposure.

Infectivity is unlikely during an incubation period, which can run from 2 to 21 days. Ebola virus disease may be characterized by sudden fever, myalgia, headache, and sore throat, often followed by diarrhea, abdominal pain, and vomiting. Symptomatology, including the presence of bleeding or characteristic hemorrhaging, and pathogenicity occur with differing frequency across the three main species of significance to humans (Ebola-Zaire, Sudan, and Bundibugyo). Case fatality rates also differ across the virus species. Ebola-Zaire, the strain currently affecting West Africa, historically has had the highest case fatality rate, reported to be from 55% up to 88%. To date, the outbreak has a fatality rate of nearly 54% (See Table 1.)

Country	Illness	Deaths
Guinea	862	555
Sierra Leone	1361	509
Liberia	2046	1224
Total	4269	2288

Table 1: Confirmed, probable, and suspected cases of illness and death by country from Ebola virus through September 8.[1]

Although in the absence of a vaccine and approved treatments Ebola is a relatively lethal disease, supportive care, including blood transfusions, ventilation, and intravenous hydration, can promote survival – but this requires adequately resourced hospitals with consistent running water and electricity. These are relatively absent in the poor West African countries where the outbreak began, in December 2013 in the village of Meliandou in Guinea, near its borders with Liberia and Sierra Leone. (Another Ebola outbreak is concurrently affecting Nigeria.) Also in short supply are isolation units to restrict in-hospital or nosocomial transmission and personal protective equipment—even gloves—to protect the hospital workforce (whose close contact renders them exceptionally vulnerable to infection). A sufficient supply of clinically trained staff is critical. Physician coverage, woefully inadequate under the best of circumstances, is reported at 2.2 doctors for every 100,000 people in Sierra Leone, 10 for Guinea, and 1.4 for Liberia.

The secondary and tertiary effects of the outbreak are equally serious. Fearing hospitalization (a potential disease amplifier), isolation, or quarantine, persons with Ebola symptoms often remain in their homes and communities as a source of continuing disease transmission. Individuals with acute and chronic illness unrelated to Ebola shun hospitals and clinics, exacerbating their pre-existing and often life-threatening health conditions. The president of the humanitarian group Doctors without Borders described a collapsing health system causing both patients and workers to flee the Ebola outbreak and "allowing disease like malaria, pneumonia and diarrhea to kill children who would otherwise have been saved," while "pregnant women … lost babies because they could not find an open maternity ward."[2]

Besides health care workers, those at greatest risk of infection have been persons attending sick family members and mourners handling the bodies of the deceased during traditional burial ceremonies. For those who remain to serve the ill, the dangers do not discriminate; the health risks are high, the remuneration scarce, and the subsequent stigmatization cruel. *New York Times* reporters Adam Nossiter and Ben C. Solomonaug described "doctors and nurses who give their lives to treat patients who will probably die; janitors who clean up lethal pools of vomit and waste so that beleaguered health centers can stay open; drivers who venture into villages overcome by illness to retrieve patients; body handlers charged with the dangerous task of keeping highly infectious corpses from sickening others."[3]

Ebola—A lesson in risk for Asia and the world

To reduce disease transmission, some Ebola-affected and proximate countries (among them Sierra Leone, Guinea, Liberia, Kenya, and Senegal) have closed their borders, and some airlines have suspended flights into the region (contrary to UN and WHO guidance). In early August, China took steps to enhance quarantine and surveillance measures, and South Korea issued a special travel advisory regarding travel to Ebola-affected areas.

Given the virulence of the disease and an incubation period of up to three weeks, persons who have been exposed to Ebola but are asymptomatic and physically and financially able to travel outside the region pose a theoretical threat of spreading this virulent virus to any of the other six continents. There is the crux of why health security must be a *global* enterprise. Many countries have fragile health infrastructures, unable to detect and contain disease within their borders, so it remains the responsibility of other nations to apply their agility and capability to mitigate human loss in the face of an Ebola outbreak (or another threat such as an influenza pandemic).

Ultimately, however, there is no substitute for a country having its own, robust health infrastructure, yielding a return on investment that includes improved health and workforce retention, political stability, and stronger economic productivity. The International Monetary Fund has predicted that Ebola will severely disturb economic growth rates in affected countries, specifically targeting the rubber and timber industries and reducing revenue from tourism and trade. Border closures have significantly reduced agriculture and farming, which, in Sierra Leone, employ about 70% of the workforce and

represent 57% of the country's gross domestic product.

The disease also increases concern among outside investors (particularly in Asia), who increasingly over the past two decades have underpinned a large component of Africa's economic growth. Over the past ten years, Chinese investment alone in Africa has increased tenfold, and an estimated 800 Chinese companies have helped finance projects in infrastructure, banking, agriculture, fisheries, mining, and manufacturing. China is Africa's largest trade partner and has invested over US$100 billion in the last two years. South Korea, along with India and Brazil, also has considerable investment in Africa. Multinational companies that have a workforce in the Ebola-stricken countries have suffered as well.

Ebola—A lesson in the urgency of global health security

This accelerating Ebola outbreak underlines a glaring lack of public health infrastructure—the establishment needed to detect, contain, and manage a disease threat at its earliest stages. After a recent trip to Africa, Dr. Tom Frieden, director of the U.S. Centers for Disease Control and Prevention, noted the absence of patient beds and the lack of countrywide surveillance data, rapid-response teams, and efficient management and transportation systems.

The World Health Organization declared the Ebola outbreak an International Health Emergency on August 8. WHO Director General Margaret Chan noted at that day's news conference, "This is the largest, most severe, most complex outbreak in the nearly four-decade history of the disease." Less than three weeks later the case count was over 3,000 with more than 1,500 deaths—figures that may be misleading, given the probability of underreporting resulting from limited disease detection and surveillance systems. A WHO "Ebola Response Roadmap" was released August 28 laying out a six-month, $490 million plan described as a "massively scaled and coordinated international response … to support affected and at-risk countries." The World Bank has pledged up to US$200 million. USAID has pledged to build 10 Ebola treatment centers of 100 beds each.

The ramifications of limited public health infrastructures, clinical resources, and even the most basic disease surveillance and control are a call to action for nations whose health systems are similarly fragile. Uganda is one country taking the necessary steps to protect its population and prevent the horrors of a devastating disease. Having experienced a severe Ebola outbreak in 2000, Uganda has since created a health system with active veterinary surveillance, well-resourced hospitals, and astute physicians who have advanced training.[4] Many countries in the Association of Southeast Asian Nations, too, are undertaking activities to improve their health infrastructure and achieve compliance with the International Health Regulations, a binding instrument of international law agreed upon by 194 countries that requires states to strengthen surveillance and response capabilities.

Other lessons can be gleaned from the current Ebola outbreak. Given a void in strong epidemiology, disease surveillance systems, risk communication, sufficiency of trained clinical and public health professionals, and resourced hospitals, governments have deployed their military and police, who have been tasked to maintain quarantine, enforce travel restrictions, conduct house-to-house searches, and guard places of confinement. Lawrence Gostin et al. noted this as the "militarization of a disease."[5] The use of military assets to support stability operations and humanitarian efforts is an essential component of a country's overall health security plan. It is, however, a mission best harnessed through exercises and collaborative learning with health responders in a pre-disaster setting that fosters mutual understanding of how the military's unique capabilities in supply chain maintenance, logistics, shelter-building, and other skills can enhance the civilian sector's finite resources during a catastrophic health event.

A second lesson from the current Ebola outbreak is the importance of communication: reliable information conveyed to people consistently, comprehensibly, and with cultural sensitivity. Limited health literacy impedes efforts to secure the cooperation of people to promote their own health and safety. As observed in western Africa, fear and a lack of understanding continue to drive

the outbreak and defeat efforts to halt behaviors (for example, traditional burial practices) that place people at risk of disease exposure. Communication of even bad news builds trust, which is vital for stemming the tide of disease spread and community disorder.

A third lesson is the critical importance of disease surveillance. Even the use of low technology (pencil, paper, and telephones) will illuminate where disease control activities must be targeted and whether the strategies are successful. Through continuous information flows, baseline disease levels can be determined and hyperendemic rates swiftly responded to. Health information facilitates risk communication and informs the judicious decisions of government leaders. Regional information flows within countries are an essential component of global health security and can serve as the best initial investment.

Finally, a nation's limited disease containment capabilities can swiftly become the world's problem across multiple dimensions—populations, economies and trade, and regional stability. The current Ebola outbreak reminds us that when health security systems are not resident in affected countries, the international community must bear responsibility and come together in a coordinated response. Achieving global health security requires the cooperation and collaboration of all nations—and not just during disease outbreaks!

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

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Weaponized Ebola: Is It Really a Bioterror Threat?

By Dina Fine Maron (Scientific American contributor)
Source: http://www.scientificamerican.com/article/weaponized-ebola-is-it-really-a-bioterror-threat/

Ebola's exponential spread has rekindled fears that terrorists may seek to turn the virus into a powerful weapon of mass destruction. Such talk has occurred on Capitol Hill and in national security circles. But the financial and logistical challenges of transforming Ebola into a tool of bioterror makes the concern seem overblown—at least as far as widespread devastation is concerned.

National security and infectious disease experts agree the obstacles to a large-scale assault with Ebola are formidable. For starters, a bioterrorist would have to obtain the virus and be able to grow a massive supply in large vats, an extremely costly endeavor. While the virus is easily spread through personal contact with the bodily fluids of an infected person, it would be difficult to manipulate and control. Put simply, a large amount of Ebola in the hands of a rogue group would more likely end up killing the plotters than making it to the endgame of a bioterrorism mission. To be successful, "it would take a state-type [agent]" with more extensive resources, Anthony Fauci, the director of the National Institute of Allergy and Infectious Diseases, told a Congressional committee last week.

Already there is historical precedent for states trying—and failing—to tap the virus for bioterror. During the Cold War, the Soviet Union was "growing up large amounts of microbes for potential use in bioterrorism. That was known through intelligence," Fauci told *Scientific American*. The Soviets attempted to cultivate smallpox, anthrax, tularemia, botulism and hemorrhagic fevers including Ebola, he says. Yet exactly how the country would have deployed the microbes remains an area of speculation. The Soviets eventually dropped the project, but they were not the only ones interested in the microbe's potential.

The Japanese cult Aum Shinrikyo—infamous for setting off sarin gas in a Tokyo subway in 1995—also looked into Ebola as a potential biological weapon. In 1992, they sent a medical group of 40 people ostensibly to help provide aid during an Ebola

outbreak in the Democratic Republic of the Congo. Their real purpose, however, was to collect some Ebola virus, as Amy Smithson, a senior fellow at the James Martin Center for Nonproliferation Studies, noted in her 2000 report *Ataxia.* The effort was a "flagrant failure," she says. "They did not get their hands on a culture."

Even if Aum Shinrikyo had managed to gather samples of the Ebola virus, it would have been extremely difficult to kill large numbers of people in countries with a strong health infrastructure such as Japan. Once the virus had been identified and patients isolated, the pathogen would have been unlikely to spread widely. Still, any terrorist attempting to stoke fears rather than accrue a high body count could have some modicum of success with Ebola. "When talking about bioterror, it's more about the terror than it is the bio," Fauci says.

Interviews with Fauci and other infection and security experts suggest that the virus could potentially be used for **small-scale Ebola attacks in about three different ways**—although each approach would run up against substantial logistical, financial and biological barriers.

First, Ebola could be weaponized by taking large quantities of it and inserting them into a small "bomblet" that, once detonated, would spray the virus perhaps 30 feet—potentially infecting people as it landed on their faces, on cuts or on hands that they might then touch their eyes with. "That would be like a hundred people simultaneously touching an Ebola-infected person," says Fauci. Ebola would not need to be altered in any way to make such a plot work. The virus is already so capable of spreading from person to person via contact with bodily fluids that in its natural state it could do some serious damage. "Ebola is a very lethal pathogenic virus," says virologist Robert Garry of Tulane University. "It's basically weaponizing itself."

The **second**, and perhaps easiest, small-scale bioterrorism option would be to recruit individuals for Ebola suicide missions. Such a plan would hinge on injecting Ebola virus into a limited number of people, who would then need to leave west Africa (or wherever the outbreak may be) before becoming symptomatic. Then those individuals would have to get into a public space and projectile vomit or bleed onto others to infect them. Obviously the plot would need to overcome substantial technical challenges including the extreme weakness that arises from Ebola. If it did succeed, this mode of transmission would not kill thousands of people, but it would set off significant fears.

The **third** bioterrorism method appears to be the most unlikely: genetically modifying the virus to enable it to spread more readily, perhaps through the air. As *Scientific American* reported on September 16, transforming the Ebola virus from a pathogen that primarily affects the circulatory system to one well suited for the respiratory system would be a major research undertaking. While theoretically the microbe could be manipulated to act in that way, it would be a demanding choice for nefarious actors looking to stockpile harmful materials.

With an Ebola outbreak that has already killed more than 2,800 in west Africa and laid siege to the health care systems of Guinea, Liberia and Sierra Leone, it is clear that already Ebola is terrorizing thousands. Nevertheless, the possibility of rogue organizations sowing this terror on a similar scale seems largely out of reach.

One of the comments on the article above:

SarahC1 September 25, 2014, 9:11 AM

You've made out Scenario 2 to be too hard, it's EASY.
Just put a bit of thought into it:
One terrorist goes to Africa, licks an infected persons blood or two. Returns to America the same day, which is around 5 days before symptoms show.
He lays low in a hotel room somewhere - and becomes very ill.
He has a few friends he contacts by mobile phone, he's terribly ill now - a virus incubation machine - he contains 8 pints of highly infective blood.
They too are sworn to giving their lives for the cause - they draw his blood - the hardest part of this mission by far! If no syringes are available, a brave swipe at a wrist should do the trick.

The blood is bright red, and highly noticeable - so they use a publicly purchasable Bretta Filter to remove the red blood cells - and are left with highly infectious almost clear/yellow blood plasma.
This they decant into a couple of dozen small (150ml?) spray bottles, such as "Ickle Bockles" from Amazon.
They put a few bottles into their pockets, and keep one in their hand - discreetly, perhaps they have long coat sleeves to hide the bottle even better.
The terrorists head off to different cities - and plan to spray as many public surfaces as they can in the 5 days before they get ill.
Using Wiki to find the biggest cities by population:
One heads to New York, one goes to Los Angeles, one to Chicago, one to Huston... and so on.
They head for the public places.
They spray their bottles on Taxi door handles,
Elevator buttons in a huge skyscraper.
Door handles of public buildings (libraries, cinema, restaurants, shops)
Handles on subway cars.
Those little straps you hold on to while in the subway cars.
Fast food door handles.
Public phone headsets and keypads.
Newspaper/Cigarette/Drink vending machine buttons.
Cross-walk buttons.
Escalator handrails.
The locks in toilets of fast food restaurants, and on the flusher.
On shoes displayed in a shoe shop.
On money.
He'll infect himself, but he's got a good 7 days to really well cover a city, and he too is at peace with death, so it doesn't worry him.
Even if he's caught by someone... perhaps spraying the elevator buttons "What are you DOING!?", he'd say:
"I'm disinfecting these surfaces! I'm very phobic of germs!", he could even put it in a hand-sanitizer spray bottle for added beliveability... hold it up to them, smile embarrassedly.
How many surfaces could he infect in 1 week of health?
How many people would he infected, hundreds at least? Thousands?
That ISN'T a small scale terrorist attack - it would be huge - and simple.

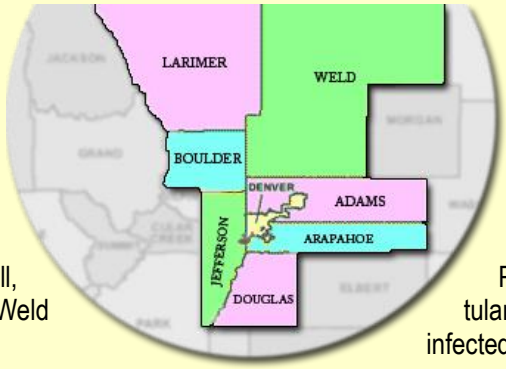
Tularemia spreads to 4th Colorado county

Source: http://www.thedenverchannel.com/news/local-news/tularemia-spreads-to-4th-colorado-country-now-in-weld-boulder-broomfield-and-larimer-counties

Tularemia, also known as **rabbit fever**, has spread to a fourth Colorado county.

A person living in Erie, in Weld County, was diagnosed with tularemia last week.
Weld County health officials said the resident was hospitalized with a high fever, loss of appetite, and acute diarrhea and is now recovering at home.
Officials said a field mouse in northwest Johnstown and a rabbit southeast of Berthoud have also tested positive for tularemia.

"We are seeing more than three times the usual number of human tularemia cases along the Front Range this year, so the public really needs to be cautious about not getting exposed to this disease," said Cheryl Darnell, Lab Manager for the Weld County Health Department.



Previous cases

In July, two residents in Broomfield and Larimer counties tested positive for the disease. The Larimer County resident became sick while mowing a property near Windsor. Broomfield officials said it was likely the resident there was infected after coming in contact with dead rabbits that had been found in the person's yard.

In August, a boy, from Longmont, was diagnosed with tularemia. He was the first first Boulder County resident to test positive for the disease since 2007, according to Boulder County officials.

Transmission and symptoms

People become infected with tularemia through the bite of infected insects, most commonly ticks and deer flies, or through skin contact with an infected animal.

Symptoms of tularemia include skin ulcers, swollen and painful lymph glands, inflamed eyes, sore throat, mouth sores, diarrhea, or pneumonia. Symptoms can also include abrupt onset of fever, chills, headache, muscle aches, joint pain, dry cough, difficulty breathing, bloody sputum and respiratory failure.

Tularemia is treatable when detected in early stages.

Several Forms, Low Infectious Dose

There are several forms of tularemia. The most common form is the ulceroglandular form, in which an ulcer and associated lymphadenopathy develop after exposure. More severe forms of tularemia include the pneumonic and typhoidal forms.

The interest in tularemia as a biological weapon stems from the fact that a very low inhalational dose of organisms (~10) is all that is required to cause infection. This low infectious dose also means that laboratory workers should be alerted to the possibility of tularemia when diagnostic specimens are submitted.

Diagnosis and Treatment

Tularemia, outside of its ulcerative forms, can be difficult to distinguish from other illnesses, and therefore diagnosis may be delayed. Routine cultures (with enriched media), biopsy specimens, and serologic testing may aid diagnosis, but clinical suspicion will likely guide diagnosis, especially in endemic areas such as Missouri and Martha's Vineyard (MA).

The mainstay of treatment for tularemia is antibiotic therapy with gentamicin or streptomycin. Doxycycline or ciprofloxacin can be used for postexposure prophylaxis. No vaccine or rapid diagnostic test is available.

Astute Clinicians

The cluster of tularemia cases in Colorado should serve to remind physicians that, though relatively rare, tularemia does occur naturally in this country. As prompt diagnosis--in the absence of a rapid diagnostic test--and treatment of this potentially serious illness are required to forestall complications, the astuteness of clinicians in detecting its presence will be the key.

Sources: www.upmc-cbn.org | www.UPMCHealthSecurity.org

Models of Ebola spread cannot model people's behavior

Source: http://www.homelandsecuritynewswire.com/dr20140926-models-of-ebola-spread-cannot-model-people-s-behavior

The most effective way to limit the spread of the Ebola virus is by tightly quarantining infected individuals in hospitals, Ebola treatment units (ETUs), or in their homes. The developer of a sophisticated model to predict the pace and scope of the spread of Ebola admits that the most important variable — predicting the most effective way to convince infected individuals to report their cases to health authorities and be admitted to a quarantined facility, or even just stay at home – is beyond the model's reach. "The trouble is to get people to believe that going to the hospitals is in their best interest," said CDC's Dr. Martin Meltzer. "We've got to get people to understand that. You can go around to villages and cities and slums all you want and say, 'If you're ill, go to the hospital.' Why should anybody believe? We can't model that."

In the early stages of what the Centers for Disease Control and Prevention (CDC) has called the world's first Ebola epidemic, the World Health Organization (WHO), Doctors Without Borders, and other health-aid organizations worked to limit the spread of the disease by convincing patients to report their symptoms to doctors or let aid workers quarantine their homes and villages. The strategies deployed have had little positive effect on the two most affected countries, Sierra Leone and Liberia. The WHO recently reported that the number of cases has nearly doubled in the last three weeks. As of 25 September, the (CDC) recorded 6,263 cases of Ebola, resulting in 2,917 deaths.

Dr. Martin Meltzer, a senior health economist at the CDC and head of the Health Economics and Modeling Unit, **began building the CDC's Ebola model, called EbolaResponse**, on 4 August. The model will help understand how to reduce the rate of transmission to an average of less than one infected person per infectious person. According to *Government Executive*, similar models have been used for stifling previous epidemics.

Meltzer's model relies on the number of confirmed cases and the current rate of transmission to determine how many new cases will emerge if current conditions persist.

According to a paper published in the CDC's *Morbidity and Mortality Weekly Report*, Meltzer's model predicts 8,000 reported cases in Sierra Leone and Liberia by 30 September if health interventions fail to make a significant impact. Sierra Leone and Liberia could then experience 550,000 reported cases by January 2015, or 1.4 million if corrected for underreporting. A growing number of infected persons are not reporting their symptoms for fear of quarantine.

Once predictions have been made, Meltzer uses the model to understand the best way to reduce the spread of Ebola by testing different hypothetical situations. One experiment suggests that if 70 percent of patients were in an effective quarantine setting such as a hospital, treatment unit, or home by 22 December, the epidemic in Liberia and Sierra Leone "would almost be ended by January 20, 2015." Currently, only 10 percent of patients are in such settings. The model does not account for organization and infrastructure conditions on the ground. "Appreciate that not all hospitals/Ebola treatment units and certainly not all households with a patient 'at home with effective quarantine/ isolation' will be entirely secure," Meltzer wrote to *GovExec*. "We can expect some transmission to occur at such locales, but hopefully on average, less than 1 person infected per infectious person." The rate of transmission in an effective hospital quarantine is .12, and .18 in an effective at-home quarantine, but ineffective isolation results in a 1.8 transmission rate.

Meltzer's model cannot predict the most effective way to convince patients to report their cases to health authorities, but reporting is vital to effective quarantine and reducing transmission rates.

"The trouble is to get people to believe that going to the hospitals is in their best interest," said Meltzer. "We've got to get people to understand that. You can go around to villages and cities and slums all you want and say, 'If you're ill, go to the hospital.' Why should anybody believe? **We can't model that!"**

▶ **Read the full paper at:**
http://www.cdc.gov/mmwr/preview/mmwrhtml/su6303a1.htm?s_cid=su6303a1_w

Live poliovirus released into Belgian river

Source: http://www.healio.com/infectious-disease/vaccine-preventable-diseases/news/online/%7B4c63df72-c8e5-4cfd-aed3-de483ed4daeb%7D/live-poliovirus-released-into-belgian-river

The European Centre for Disease Prevention and Control announced that on Sept. 2, **about 45 liters of concentrated live poliovirus was "released into the environment" as a result of human error at a GlaxoSmithKline facility in Rixensart (red pin in map), Belgium.**

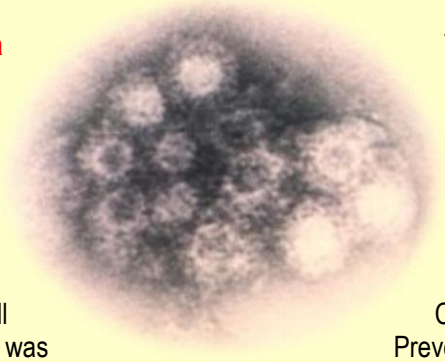
The ECDC reported that the liquid had been treated at the Rosieres water treatment plant (photo) before being released into the Lasne River, which joins the Scheldt River (known as the Escault River in France). Belgium's Scientific Institute of Public Health confirmed that the liquid

was not returned to the drinking water supply chain.
A risk assessment by Belgium's High Council of Public Health concluded that the **risk for infection is low due to high dilution and the high rate of vaccination in Belgium (95%).** However, the ECDC reported that susceptible populations living downstream near the Scheldt River in the Netherlands may be at risk if exposed to contaminated water or mud.
In June, wild poliovirus type 1 was identified in airport sewage effluent in Brazil, and believed to have been imported from a traveler. No paralytic cases of polio were reported.

EDITOR'S COMMENT: Indeed dilution is high but the accompanying comment about the vaccination percentage in Belgium is rather suspicious. One might assume that despite the high dilution contaminated river water might be dangerous for the populace having access to it. Or NOT???

Enterovirus Cases Confirmed in Southern California Are State's First Diagnoses

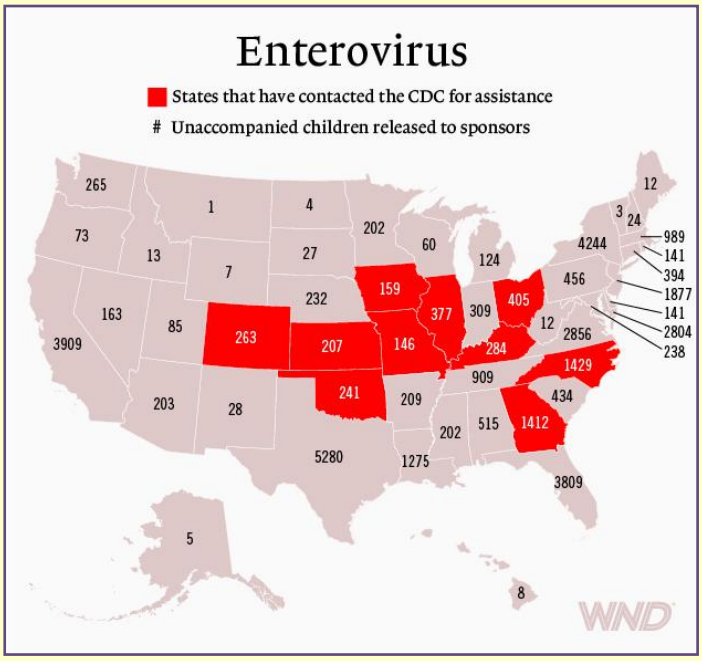
Source: http://ktla.com/2014/09/18/enterovirus-cases-confirmed-in-southern-california-are-states-first-diagnoses/



California's first cases of a virus that has been spreading across the country were confirmed Thursday (Sept 18) by the state's chief health official.

Four cases of **enterovirus D68** have been confirmed, all in Southern California. One was in Ventura County; three others were in San Diego County.

Respiratory illnesses caused by an enterovirus are sending children to hospitals as the disease spreads across the country, health officials say. (Credit: CDC)



The patients ages ranged from 2 to 13 years old.

More instances of the disease were expected as results from lab tests come back, the California Department of Public Health said in announcing the cases.

The virus can cause severe respiratory illness in young children and has sent dozens to the hospital across the country.

The spread of the disease to California was expected, state health officer Dr. Ron Chapman said. As of Wednesday, 18 other states had confirmed 153 cases total cases of the virus, according to data from the Centers for Disease Control and Prevention.

"There will definitely be more. It's just a matter of time. This will spread across the entire country," Dr. Pia Pannaraj, an infectious diseases specialist at Children's Hospital Los Angeles, told KTLA.

California joins Montana and Colorado as being the only states in the Western U.S. to have confirmed cases.

This particular strain of non-polio enterovirus was first identified in California in 1962, but has been uncommon in the U.S., according to the CDC.

The virus causes respiratory illness, with possible symptoms including fever, runny nose, sneezing, cough and body and muscle aches. Children who contract the virus may have more serious effects, including breathing difficulty and wheezing, particularly children with a history of asthma.

"These children start with what seems like a normal cold on the first day — runny nose, a little bit of cough – but by the second day, they can't breathe at all. They come in and they need a tube to help them breathe," Pannaraj said.

Parents whose children begin to have difficulty breathing should seek medical attention for them immediately, the state health department advised. Signs that should prompt a quick response include wheezing, difficulty speaking or eating, the child's belly pulling in

with breaths, and blueness around the lips.
The virus is believed to spread when an infected person coughs, sneezes, or touches contaminated surfaces. There is no vaccine to prevent spread of the disease, nor is there a specific treatment that can be prescribed.
"It's probably evolved in a way that's allowed it to spread more easily from person to person, and that's why we've seen so many more cases this year," Pannaraj said.
Infants, children and teenagers are most likely to get infected with enteroviruses because they do not yet have immunity, according to the CDC.

The CDC advised the following steps to help parents try to prevent their children from becoming ill:

- Avoid close contact with sick people;
- wash your hands often;
- cover your coughs and sneezes;
- avoid touching your face with unwashed hands;
- clean and disinfect surfaces
- stay home when you're sick

Children's Hospital Los Angeles provided the following Q&A with Dr. Pia Pannaraj. She explains how parents can treat their children's symptoms and how to distinguish between at bad cold and Enterovirus 68.

What is Enterovirus 68?
Pannaraj: It is a virus that causes cold-like symptoms that is currently being seen in the Midwest. It has been around since the 1960's and first discovered in California with just a few cluster of cases. Now, it is showing itself again and is slowly creeping across the country.

How frightened should parents be about their kids getting Enterovirus 68? Especially if they live outside of the Midwest?
Pannaraj: Currently, it is in the Midwest, but it has just made its way to California. In many kids, it will cause a bad cold, but in children with asthma, it can exacerbate their asthma to the point where they may need medical attention.

Are children with underlying conditions more susceptible to Enterovirus 68?
Pannaraj: So far, 70 percent of patients admitted to hospitals with Enterovirus 68 have underlying respiratory illness, like asthma; 30 percent were previously healthy

How can parents differentiate between a bad cold and this virus?
Pannaraj: It will be difficult to distinguish the two since enterovirus will cause a cold. Children will usually present with a cough as their main symptom. Other symptoms may include runny nose, sneezing, and body and muscle aches. However, a fever is not very common with Enterovirus 68. The children who become very ill with Enterovirus 68 develop wheezing and difficulty breathing.

What are some prevention tips?
Pannaraj: Good hand washing, avoid touching your eyes, nose and mouth, cough and sneeze into your arm, and avoid other children who appear sick. It can spread easily and anywhere, especially at schools, where infection risks are at higher because you have more kids in close quarters. It is airborne and contagious.

How should parents treat their kids' symptoms?
Pannaraj: Rest and hydration. Treat it the same way you would a bad cold. Keep the kids out of school.

Is there a vaccine for Enterovirus 68?
Pannaraj: A vaccine is not available at this time.

When should they seek medical attention for their kids?
Pannaraj: If a child is wheezing, having trouble breathing, coughing so much that they cannot talk, or having difficulty drinking, they should seek medical attention. Children with asthma should be prepared with medical inhalers as needed.

U.S. Professor Tells Africans Ebola Is Bioterrorism Experiment

Source: http://www.inquisitr.com/1502061/u-s-professor-tells-africans-ebola-is-bioterrorism-experiment/#UyAlwEHyw34zw3qc.99

September 26 – **A U.S. professor of plant pathology is suggesting to West Africans that the Ebola virus is a bioterrorism weapon developed by the U.S. being used on Africans.**

The essay, published by Dr. Cyril Broderick in the influential Liberian newspaper the *Daily Observer*, comes on the heels of an announcement by the U.S. that it will be sending 3,000 troops to help contain the spread of Ebola.

The virus has already killed over 2,000 people of the 4,507 cases that have been reported during the past six months of the current outbreak. The 2014 West Africa Ebola outbreak, which is primarily impacting the three countries of Guinea, Liberia, and Sierra Leone, is the worst in history. The survival rate of the virus, which takes about 21 days to incubate, is about 50 percent.

Dangerous rumors among the public that Ebola is a government ruse and the virus is not real have led to violent retaliation. In some cases, mobs of people have broken down the doors of medical centers where Ebola patients were being treated, telling the patients to leave because they weren't sick.

There have also been deaths from attacks made by villagers in remote areas where Ebola workers were visiting. Last week, a group of Ebola workers and journalists were murdered by villagers in Guinea when they went to check on the village. More recently, a group of Red Cross workers were brutally attacked while doing Ebola prevention work.

Broderick, whose essay has generated concern that he is feeding into dangerous public sentiment over Ebola, is originally from Liberia. He is a former professor of Plant Pathology at the University of Liberia who now works at the University of Delaware. In his essay, Broderick states that the Ebola virus could be part of the "American-Military-Medical" industry and manufactured as a form of control over West Africans.

"Because of the widespread loss of life, fear, physiological trauma, and despair among Liberians and other West African citizens, it is incumbent that I make a contribution to the resolution of this devastating situation, which may continue to recur, if it is not properly and adequately confronted," writes Broderick.

He also alleges that various sites in West Africa have been set up over the years to test emerging diseases, including Ebola, with part of the purpose to test vaccinations. There are currently a number of experimental treatments for Ebola victims being tested in the U.S. on a handful of medical and aid workers who have returned from Africa with the virus for treatment. The most recent patient, Rick Sacra, was an Ebola patient released from a Nebraska hospital on Thursday.

The U.S. could possibly spend upwards of $1 billion in personnel and equipment to help contain the Ebola virus in coming months.

EDITOR'S COMMENT: It might be just a conspiracy theory or Prof's 15 min of publicity. On the other hand the strong multinational military (medical?) presence in the area raises questions. It could be as simple as the fact the military medical personnel does not have the luxury to deny transfer in hot zones.

Doctor treating Ebola with HIV drug

Source: http://edition.cnn.com/2014/09/27/health/ebola-hiv-drug/index.html

September 27 – **A doctor in rural Liberia inundated with Ebola patients says he's had good results with a treatment he tried out of sheer desperation: an HIV drug.**

Dr. Gobee Logan has given the drug, **lamivudine**, to 15 Ebola patients, and all but two survived. That's a 7% mortality rate. Across West Africa, the virus has killed 70% of its victims.

Outside Logan's Ebola center in Tubmanburg, four of his recovering patients walk the grounds, always staying inside the fence that separates the Ebola patients from everyone else.
"My stomach was hurting; I was feeling weak; I was vomiting," Elizabeth Kundu, 23, says of her bout with the virus. "They gave me medicine, and I'm feeling fine. We take it, and we can eat -- we're feeling fine in our bodies."
Kundu and the other 12 patients who took the lamivudine and survived, received the drug in the first five days or so of their illness. The two patients who died received it between days five and eight.
"I'm sure that when [patients] present early, this medicine can help," Logan said. "I've proven it right in my center."

Logan is mindful that lamivudine can cause liver and other problems, but he says it's worth the risk since Ebola is so deadly.
He also knows American researchers will say only a real study can prove effectiveness. That would involve taking a much larger patient population and giving half of them lamivudine and the other half a placebo.
"Our people are dying and you're taking about studies?" he said. "It's a matter of doing all that I can do as a doctor to save some people's lives."
Logan said he got the idea to try lamivudine when he read in scientific journals that HIV and Ebola replicate inside the body in much the same way.
"Ebola is a brainchild of HIV," he said. "It's a destructive strain of HIV."
At first he tried an HIV drug called acyclovir, but it didn't seem to be effective. Then he tried lamivudine on a healthcare worker who'd become ill, and within a day or two he showed signs of improvement and survived.
Dr. Anthony Fauci, director of the National Institute of Allergy and Infectious Diseases says that theoretically, Logan's approach has some merit. **Lamivudine is a nucleocide analog, and other drugs in this class are being studied to treat Ebola.** Fauci asked CNN to give Logan his email address, saying perhaps his lab could do some follow up work. Logan says he plans to email Fauci this weekend.

CDC unveils 6-phase pandemic response blueprint

Source: http://www.cidrap.umn.edu/news-perspective/2014/09/cdc-unveils-6-phase-pandemic-response-blueprint

The Centers for Disease Control and Prevention (CDC) today released a new influenza pandemic response plan that features six phases of activity, with the aim of providing clearer guidance on the timing of key actions, such as school closings and vaccinations.
The "Updated Preparedness and Response Framework for Influenza Pandemics" represents a revision of a framework issued in 2008, which itself was a modification of a 2006 plan. The latest iteration reflects lessons from the 2009 H1N1 pandemic and recent responses to outbreaks of novel flu viruses, such as the swine-origin variant H3N2 (H3N2v).
The six phases outlined in the revised plan are:

- Investigation of cases of novel flu in humans or animals
- Recognition of increased potential for ongoing transmission
- Initiation of a pandemic wave, meaning efficient and sustained transmission
- Acceleration of a pandemic wave, meaning a consistently

increasing number of cases in the United States
- Deceleration of a pandemic wave, defined as consistently declining cases in the United States
- Preparation for future pandemic waves, meaning low pandemic flu activity

The framework has been aligned with the pandemic phases of the World Health Organization (WHO) as restructured last year, the document says. It says the WHO phases provide a general view by aggregating epidemic curves from around the world, and the CDC intervals "serve as additional points of reference to provide a common orientation and clearer epidemiologic picture of what is taking place and when to intervene.

"The intervals are flexible enough to accommodate the likely asynchrony of pandemic progression in different areas to allow for local, state, and federal actions appropriate to jurisdiction-specific conditions."

Two new tools

The plan incorporates information from two new tools for pandemic planning and response, the Influenza Risk Assessment Tool (IRAT) and the Pandemic Severity Assessment Framework (PSAF). Both are designed to be used in the early phases of an event when information is limited and to be updated as more data become available.

The IRAT's purpose is to assess the risk that a novel virus will develop sustained human-to-human transmission and will substantially affect public health, the report says. It is based on 10 risk elements that relate to the virus's biological properties, ecology, and epidemiology and to attributes of the population. Experts assign a score to each element.

"This process has been used to assess recently emerging viruses such as H3N2v and H7N9 for vaccine development, manufacturing, and stockpile decisions," the report states.

Once a virus has achieved sustained transmission, the PSAF can be used to assess its potential impact in comparison with previous flu events, the CDC says. It replaces the Pandemic Severity Index, introduced in 2007, which had five categories, similar to the hurricane severity scale.

Early in the 2009 pandemic, the Pandemic Severity Index, which based severity solely on mortality, tended to overestimate severity because more severe cases are more likely to be reported in the early phases of an outbreak, the report says. In the light of that experience, the PSAF was designed to characterize the potential impact of a virus relative to previous flu epidemics and pandemics.

"The results of PSAF assessments help national, state, and local decision-makers determine whether to implement additional community mitigation measures, including those that can be very disruptive and might have a more serious economic and societal impact on individual persons and communities (e.g., school dismissals or quarantine of contacts)," the framework states.

Eight response 'domains'

The plan also lists eight pandemic response "domains," or areas of activity, with the aim of ensuring that "subject-matter expertise is properly applied to all aspects of the event."

The domains are incident management, surveillance and epidemiology, laboratory, community mitigation, medical care and countermeasures, vaccine, risk communications, and state/local coordination.

The framework provides a table for each of the six pandemic phases with suggested steps to take within the various domains at that stage.

The document notes that, given the wide variety of local conditions around the nation, "defining detailed indicators that address every potential situation is impossible." But it adds, "The use of common concepts is critical for tracking the course of the pandemic, for communication, and for implementing timely, coordinated response efforts."

The CDC says the plan was reviewed for accuracy and clarity by several stakeholders, including the Association of State and Territorial Health Officials, the National Association of County and City Health Officials, the Association of Public Health Laboratories, the Council of State and Territorial Epidemiologists, and the National Public Health Information Coalition.

Ancient plague offers insights on how to improve treatments for infections

Source: http://www.homelandsecuritynewswire.com/dr20140929-ancient-plague-offers-insights-on-how-to-improve-treatments-for-infections

Dangerous new pathogens such as the Ebola virus invoke scary scenarios of deadly epidemics, but even ancient scourges such as the bubonic plague are still providing researchers with new insights on how the body responds to infections.

A Duke Medicine release reports that in a study published 18 September 2014 in the journal *Immunity*, researchers at Duke Medicine and Duke-NUS Graduate Medical School Singapore **detail how the *Yersinia pestis* bacteria that cause bubonic plague hitchhike on immune cells in the lymph nodes and eventually ride into the lungs and the blood stream, where the infection is easily transmitted to others.**

The insight provides a new avenue to develop therapies that block this host immune function rather than target the pathogens themselves — a tactic that often leads to antibiotic resistance.

"The recent Ebola outbreak has shown how highly virulent pathogens can spread substantially and unexpectedly under the right conditions," said lead author Ashley L. St. John, Ph.D., assistant professor, Program in Emerging Infectious Diseases at Duke-NUS Singapore. "This emphasizes that we need to understand the mechanisms that pathogens use to spread so that we can be prepared with new strategies to treat infection."

While bubonic plague would seem a blight of the past, there have been recent outbreaks in India, Madagascar and the Congo. And it's mode of infection now appears similar to that used by other well-adapted human pathogens, such as the HIV virus.

In their study, the Duke and Duke-NUS researchers set out to determine whether the large swellings that are the signature feature of bubonic plague – the swollen lymph nodes, or buboes at the neck, underarms and groins of infected patients – result from the pathogen or as an immune response.

It turns out to be both.

"The bacteria actually turn the immune cells against the body," said senior author Soman Abraham, Ph.D. a professor of pathology at Duke and professor of emerging infectious diseases at Duke-NUS. "The bacteria enter the draining lymph node and actually hide undetected in immune cells, notably the dendritic cells and monocytes, where they multiply.

Meanwhile, the immune cells send signals to bring in even more recruits, causing the lymph nodes to grow massively and providing a safe haven for microbial multiplication."

The bacteria are then able to travel from lymph node to lymph node within the dendritic cells and monocytes, eventually infiltrating the blood and lungs. From there, the infection can spread through body fluids directly to other people, or via biting insects such as fleas.

Abraham, St. John, and colleagues note that there are several potential drug candidates that target the trafficking pathways that the bubonic plague bacteria use. In animal models, the researchers

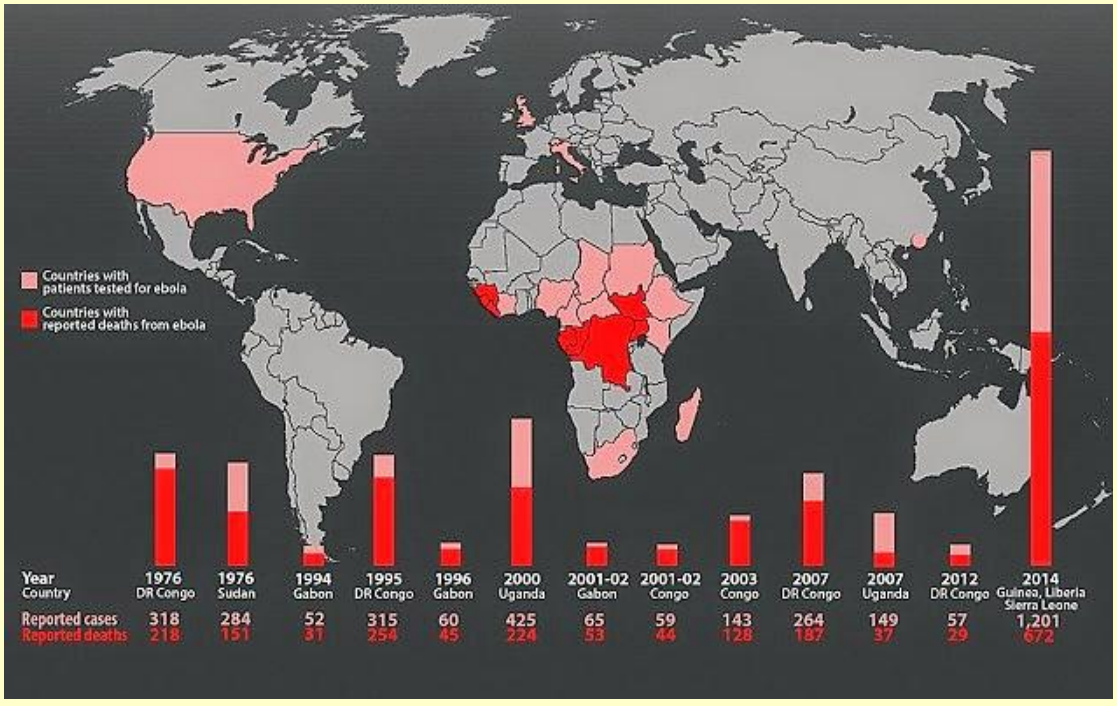
successfully used some of these therapies to prevent the bacteria from reaching systemic infection, markedly improving survival and recovery.
"This work demonstrates that it may be possible to target the trafficking of host immune cells and not the pathogens themselves to effectively treat infection and reduce mortality," St. John said. "In view of the growing emergency of multi-resistant bacteria, this strategy could become very attractive."

— Read more in Ashley L. St. John et al., "S1P-Dependent Trafficking of Intracellular Yersinia pestis through Lymph Nodes Establishes Buboes and Systemic Infection," Immunity *41, no. 3, (18 September 2014): 440-50*

How Ebola started, spread and spiraled out of control

By Ian Mackay, Heather Lander, and Katherine Arden
Source: http://www.homelandsecuritynewswire.com/dr20140929-how-ebola-started-spread-and-spiraled-out-of-control

September 29 – **Too slow. Too little, too late. Unprecedented. Out of control. These are just some of the descriptors for the biggest recorded epidemic of human infection by an ebolavirus.**
The question by some is how this happened? As of this writing, 5,347 people are suspected or known to be infected (an undoubted underestimate) in Guinea, Sierra Leone, Liberia, Nigeria and Senegal. And 2,630 have died.
The previously stated death rate of 49 percent is also a serious underestimate. The World Health Organization has calculated the fatality rate among confirmed cases with known outcomes to be above 70 percent overall and 64 percent for those who were hospitalized.
Latest worst-case modelling predicts up to 1.4 million people might become infected in this outbreak; 70 percent of which is 980,000 souls.



How did it happen?
The outbreak was identified six months ago, three months after **it is believed to have begun from a single animal-to-human transfer.**
The world was soon after assured by those in senior roles that Ebola virus disease outbreaks were not hard to control and ebolaviruses were not easy to catch. This was

meant to apply even to members of the *Zaire ebolavirus* species (an Ebola virus), one of which now ravages West Africa.
(Note, Ebola virus is the name of the Zaire species, while ebolavirus refers to all species).
Were assurances just hubris or simply a failure to recognize this outbreak for what it was?
Every infectious disease outbreak has a "personality"; this one includes the introduction of a terrifying disease into a completely susceptible population, in a part of the world with no chance of stopping it alone.
West Africa has very few health-care workers, poor roads and sizable distances between villages, towns and cities. These factors in combination with traditions, especially those for preparing loved ones for burial, have conspired to produce a perfect storm of opportunity for Ebola virus transmission and spread.
We often hear that ebolaviruses were not known to exist in Western Africa prior to this outbreak. But that is not strictly correct. Two scientific studies published in 1986, using samples collected in 1973 and 1981-82, had already reported finding haemorrhagic fever viruses, including Ebola virus, in the forests of Liberia.
Another study, co-authored by Dr. Sheik Umar Khan who subsequently succumbed to an Ebola virus infection in Sierra Leone, was published after the outbreak began. It found signs of Ebola virus in samples collected from 2006 to 2008.
With 20:20 hindsight, one can speculate that this information could have been used by local governments to educate their citizens and better train and prepare their front-line health-care workers; a higher proportion of whom have, throughout history, been infected during Ebola virus outbreaks.
Experts repeatedly tell us this virus can be easily contained with early intervention. **Had this population been prepared, perhaps more personal protective equipment and bleach would have been ready to go, and the rapid transmission of the West African Ebola virus outbreak might have been contained.**

No airborne transmission

Transmission of ebolaviruses between humans is by direct contact in which the broken skin or exposed mucous membrane (mouth, eyelids, genital tract) of susceptible humans is exposed to an infectious dose of Ebola virus-laden fluid (blood, vomit, feces, sweat, saliva and semen) from a patient showing signs of the disease.
Semen can remain infectious weeks into the convalescence period. Propelling wet droplets onto a mucous membrane is also a form of direct contact.
But regardless of what one might read in *The Hot Zone* (or the *New York Times*), **there is no direct evidence that any ebolavirus species, strain or variant is transmitted via an airborne route.**
The scientific evidence suggests that while aerosols can be used in the lab, it is the wet droplets in these rather than the dried down airborne fraction that are most likely involved in ferrying virus. Even the researchers involved in the events of the dramatized book version caution us to keep in mind that **"aerosol and droplet transmission" is not the same as "airborne transmission."**
This does not sit well with some who see ebolavirus lab workers in lab containment "space-suits" and erroneously compare that to the personal protective equipment worn by diagnostic scientists, Médecins Sans Frontières workers, doctors, nurses and gravediggers, and draw the conclusion that more is always better.
What is missing from their concern that only an airborne Ebola virus can explain current health-care worker infections, is that simply including a more advanced mask (respirator) or a battery-powered air pump and hood does not cover all the potential sources of infection in or out of an Ebola virus disease treatment center.

Mounting a global response

West African health-care workers are in short supply. They are overworked, exhausted, under-equipped, insufficiently trained or can be fallible.
In the early days of the outbreak, personal protective equipment use was rare and risk of infection was high. In some instances, protective equipment is still not used to the extent that it should be.
But an Ebola treatment center is not the only source of Ebola virus infection when in the midst of a raging epidemic in crowded cities. Health-care workers have been

infected in maternity wards. And when away from treating patients they have the same risk as the rest of the population of contracting an infection from others, such as in their hotels.

Another population taking a heavy toll are families. When an infected and sick member cannot get into an already full Ebola virus disease treatment center, they return home, unrecorded, for care and another single case becomes many.

We are all part of a shrinking global village, and right now some of its homes are ablaze. We can and should expect each of our governments to do more than pay someone else to buy, fill and carry a few buckets to throw on the inferno, as the Australian government has done.

Instead we should follow and build upon the example set by the United States. Every neighbor in this village has a duty to mount an equally robust response. And from the ashes we must build a stronger, more communicative and sustainable alliance to watch for and respond to global health emergencies.

Ian Mackay *is Associate Professor of Virology at The University of Queensland.*
Heather Lander *is a science writer.*
Katherine Arden *is Postdoctoral researcher in Virology at The University of Queensland.*

Ebola: Not an Effective Biological Weapon for Terrorists

By Stephen Hummel

Source: https://www.ctc.usma.edu/posts/ebola-not-an-effective-biological-weapon-for-terrorists

Images of humans infected with Ebola Virus Disease, a strain of viral hemorrhagic fever (VHF), instill public fear and panic. Ebola is a naturally occurring virus with no known natural reservoir.[1] In addition to the innate fear that the deadly virus inspires, a further fear stems from questions about Ebola's potential use as a bioweapon. Ebola is not a new disease. The virus first emerged in 1976 with two simultaneous outbreaks in Sudan and Zaire (now the Democratic Republic of the Congo).[2] The disease is named after the Ebola River in Congo on which the Yambuku village, one of the original outbreak villages, is located.[3] After 38 years of scientific study and effective management, Ebola remains a public concern today. There is some apprehension about the potential for its conversion into a bioweapon by a terrorist group.[4]

The U.S. Centers for Disease Control and Prevention (CDC) categorizes VHFs as a Category A bioterrorism disease.[5] This designation is based on the ease of their dissemination,[6] their high mortality rates, their potential to cause public panic, and the special preparedness they demand for public health protection. As of September 19, 2014, the CDC has confirmed 3,341 cases of Ebola in the most recent outbreak and 2,811 deaths across five West African states.[7] The World Health Organization estimates the mortality rate at about 70%.[8] Transmission of the virus to humans occurs through direct contact of bodily fluids such as blood, secretions, and other contaminated fluids. The transmission of the fluid occurs through broken skin, mucous membranes, or eating infected tissues such as bush meat. Upon infection of its victims, the acute viral illness is characterized by "sudden onset of fever, intense weakness, muscle pain, headache, sore throat; followed by vomiting, diarrhea, rash, impaired liver and kidney function and in some cases both internal and external bleeding."[9]

The prevalence and pathogenicity of Ebola as well as the proximity of the outbreak to terrorist organizations such as Boko Haram in Nigeria pose the question: could Ebola be used as a bioweapon? Dr. Vladimir Nikiforov, head of the Department of Infectious Diseases at Russia's Federal Medical-Biological Agency, has claimed publicly that Ebola could be turned into a biological weapon.[10] Ken Alibek, the former deputy head of the Soviet Union's biological weapons program, explained in his book Biohazard that the Soviet Union weaponized Ebola during the Cold War.[11]

Despite previous work conducted by the Soviet Union and current assertions by some in the media, Ebola is not an ideal bioweapon.[12] This article examines the extreme difficulty a terrorist organization would face in weaponizing Ebola as well as

challenges several non-conventional employment options of Ebola. This article finds that, despite the outbreak's location in West Africa, terrorist groups such as Boko Haram lack the knowledge and specialized equipment necessary to employ Ebola as a bioweapon.

Ebola as a Bioweapon?

Biological weapons, unlike conventional munitions, have extensive reach capabilities. "Biological agents can produce lethal or incapacitating effects over an extensive area and can reproduce," according to the Department of Defense.[13] Bioweapons are not limited by the blast radius of a shell; rather, they can replicate in an infected host and spread from one person to another. For Ebola to be used as a bioweapon in its naturally occurring state requires several highly technical steps. Ideal bioweapons, for example, are aerosolizable in order to infect mass numbers of people quickly.

In an interview with CBS News, Hamish de Bretton-Gordon, the chief operating officer of SecureBio, stated that for a terrorist group to use Ebola as a bioweapon, the group must first "obtain a live host infected with the virus,"[14] then transport the host to a laboratory to extract the virus. Extracting the virus is not a simple process. The flu virus, for example, is approximately 100 nanometers in size, so the laboratory must have the necessary extraction equipment and personnel trained to complete the skilled techniques, all within the required biosafety level so that the technicians would not become infected themselves. Furthermore, the skills required to extract Ebola from blood are only gained through practice. The training and time required to extract a virus from blood correctly is significant, making the trained personnel capable of extracting Ebola a highly coveted commodity for a terrorist organization seeking to use the virus. Such personnel must operate in the necessary protective equipment to shield them from inadvertent transmission. Failure to work in what is deemed a biosafety level 4 lab, of which there are only about two dozen worldwide, would likely not result in successful extraction but almost assuredly death of the handlers.[15]

A study conducted by the U.S. Army Medical Research Institute of Infectious Diseases (USAMRIID) demonstrated that Ebola could be transmitted in an aerosolized form, but their research is not based on realistic scenarios.[16] The rhesus monkeys used in their 1995 study were forced to inhale large quantities of droplets via a breathing apparatus[17] containing the Ebola virus.[18] Instead of the typical fluid-to-fluid transmission of Ebola, the monkeys contracted the virus via highly concentrated exposure to their respiratory mucous membranes. Moreover, these experiments were done in an extremely controlled biosafety level 4 environment, and the monkeys themselves were anesthetized during the infection process. The labs at USAMRIID have tremendous resources and technical expertise to conduct aerogenic infection experiments of Ebola, which terrorists groups like Boko Haram currently lack.

Ebola is also not a robust virus; it does not survive well outside of the host. Samples, consequently, cannot be extracted from an infected host and frozen for later use. As de Bretton-Gordon explained, "the reason anthrax has been the biological weapon of choice is not for its mortality rate—when properly weaponized it is similar to Ebola—but for the fact that it is exceptionally hardy. Anthrax can and will survive for centuries in the ground, enduring frosts, extreme temperatures, wind, drought, and rain before reemerging."[19]

In the 1970s, the World Health Organization studied the effects of aerosolized Rift Valley Fever, another VHF strain. The WHO projected that the effects of 50 kilograms of aerosolized RVF on a municipality of 500,000 would have an estimated downwind distance of one kilometer and cause 35,000 casualties with a mortality rate of 0.5%.[20] Ebola has a higher morbidity and mortality rate than Rift Valley Fever. Fifty kilograms of Ebola is an astronomical amount for a terrorist group to culture and purify.[21] In his book Biohazard, Ken Alibek, the former deputy head of the Soviet Union's biological weapons program, detailed how the Soviet Union spent billions of dollars and decades working to weaponize Ebola, to little avail.[22] Technology, expertise, and vast amounts of money are the three necessary components to weaponizing Ebola that a terrorist organization simply does not possess.

A Limited Bioweapon?

The Ebola virus is clearly not an ideal conventional bioweapon. The virus is extremely debilitating and requires specialized equipment and expertise for handling. Additionally, large quantities of the virus must be cultured to create the virus-containing droplets to aerogenically spread the virus. Otherwise, transmission is limited to direct contact.

Ebola as an unconventional bioweapon, however, is a concern. Nevertheless, the risks and concerns are considerably different. The recent stabbing of a federal air marshal at Lagos airport in Nigeria with a syringe highlights a potential means for terrorist organizations to spread the virus.[23] With this method, however, the victim would know that they had been potentially exposed to a pathogen. Attack with a syringe or any other obvious delivery system would prompt the victim to seek immediate medical attention. The victim would be tested for a wide array of chemicals and agents as well as likely undergo precautionary quarantine—which is what occurred to the federal air marshal in Nigeria—to ensure they were not exposed to Ebola. The syringe in this case was also sent to the biodefense laboratory at Fort Detrick, Maryland, for further inspection.[24]

Another plausible means for a terrorist group to spread Ebola would be to infect themselves and then attempt to spread the virus to others by spending time in confined public spaces, such as in an airplane or bus.

In such a scenario, the time period between when the terrorist has a high enough titter count of virus in his blood to infect others and when the terrorist himself is debilitated by the disease is extremely short. The virus that the terrorist would hope to spread to others would be concurrently killing its host. Consequently, it would be a race between contagion of others and the death of the terrorist. As the virus replicates, the body becomes more and more incapacitated. The white blood cell count drops and bodily functions diminish. The terrorist would appear sick, alerting those in his vicinity to avoid him. The virus is not airborne, so the terrorist's ability to move around as a kind of human viral bomb is negligible since he must come into direct physical contact with others to spread fluids either through broken skin or mucous membrane.

Assuming a terrorist group succeeds in finding an ideal transmission window in which they could spread the virus unnoticed to others, the infection would be no different than a typical pandemic. The rate of infection and presentation of symptoms is not the same as a typical weapon of mass destruction. It would not pose a mass casualty threat. The biomedical surveillance capabilities of hospitals and health organizations in conjunction with the response of municipalities and governments around the world would enable a counter-response. Some individuals would invariably get sick, but they would be quarantined and receive medical care. City limits and borders could be closed to prevent the spread of the disease.

The risk of Ebola as an effective unconventional biological weapon is low. The aspects of the virus that support its classification as a potential bioweapon by the CDC are also the same factors that limit its capabilities as a functional bioweapon. Terrorist groups lack the technology, the safety equipment, and the expertise to make the virus into hearty, contagious bioweapons like Anthrax or Small Pox.

Conclusion

Ebola is a deadly disease. Like any biological agent, if given sufficient amount of time, money, and expertise under specific conditions, it could be turned into a biological weapon. The resources of groups such as Boko Haram and the Islamic State in Iraq and the Levant (ISIL) are not the same as the former Soviet Union, which spent billions of dollars and decades in secret laboratories working to weaponize Ebola. Despite reporting that ISIL has an estimated $2 billion in amassed wealth,[25] setting up a mobile laboratory capable of extracting Ebola from infected patients and transforming the cultured virus into a bioweapon is not likely a priority given the intensified fighting in Iraq and the proposed airstrikes in Syria. In the hands of terrorists, Ebola is perhaps more deadly for its own members who have minimal training with and knowledge of the virus.

As a non-conventional bioweapon, Ebola is also far from ideal. Ebola is not an aerosolized virus. Consequently, a terrorist

organization would have to use very direct delivery methods for infection. Being accosted with a needle is noticeable to a victim, prompting them to seek medical attention and commencing containment procedures, if necessary.

If a terrorist organization sought to infect its own members, becoming in effect Ebola-infected suicide bombers, the short timeframe between when the virus count in the host would be high enough to infect others and when the host himself is debilitated by symptoms would prove highly limiting. The reach of such novel suicide bombers could be drastically reduced through biomedical surveillance networks in cities and hospitals around the world, aided by health screens at airports.

Ebola evokes images of a painful death, but to date its effect on humans has been relatively limited. Last year, malaria killed more than 627,000 people[26] worldwide, and influenza kills between 3,000 and 49,000 people annually in the United States.[27] Yet these two diseases are not considered potential bioweapons because, despite their high rates of infection, their mortality rates are low and do not cause general panic.

Fear of Ebola should not stem from its potential use as a biological weapon. Ebola is currently limited to a few West African states, and the real probability of Ebola spreading naturally to neighboring countries should itself be a cause for great public health concern. Claims that Ebola could be easily transformed into a biological weapon by a terrorist organization are unfounded and sensationalized.

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

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The Biohacker: A Threat to National Security

By John Wikswo, Stephen Hummel and Vito Quaranta

Source: https://www.ctc.usma.edu/posts/the-biohacker-a-threat-to-national-security

Biological warfare has existed for centuries, with one of the earliest known examples occurring in 1155 when Emperor Frederick Barbarossa poisoned water wells with human bodies in the siege of Tortona, Italy.[1] In 1972, the Convention on the Prohibition of the Development, Production, and Stockpiling of Bacteriological (Biological) and Toxin Weapons and their Destruction was signed and adopted by the United Nations Office for Disarmament Affairs for enforcement.[2] The treaty aims to prevent the development of offensive[3] biological weapon (BW) agents and eliminate existing stockpiles; however, it only applies to the 170 nation-states that signed the convention and does not affect the actions of the 23 non-signatory states, such as Chad, Israel and Kazakhstan,[4] or independent groups and individuals that seek to employ such weapons.

The 2001 anthrax letters in the United States demonstrated that the 1972 BW convention limits only one aspect of the problem. Weapons of mass destruction (WMD), once previously under the sole control of nation-states, now could be maintained and deployed by an individual.[5] In 2010, it was concluded that these letters, which were mailed to political leaders and media outlets across the United States, constituted a terrorist attack[6] and were sent by Dr. Bruce Ivins, a trained microbiologist employed by the U.S. Department of Defense.[7]

Another set of biological attacks occurred in April and May 2013. Two separate ricin letter attacks were allegedly carried out by individuals who, with little to no scientific experience and support, were able to create a biological agent, albeit one that may not have had the potency of an effective weapon.[8] Compared to the 2001 anthrax letters, the 2013 ricin letters illustrated a transition in BW production from the trained

individual to the layman, as it has been alleged that the first set of letters was sent by a karate instructor from Tupelo, Mississippi,[9] and the second set from a part-time actress and housewife from Dallas, Texas, who pleaded guilty to sending the letters in December 2013.[10] These recent incidents demonstrated that a relatively low level of sophistication and technological knowledge were no bar to deployment of a WMD.[11]

The ability of non-scientists to create and deploy a biological weapon highlights the emergence of a new threat, the "biohacker." "Biohacking" is not necessarily malicious and could be as innocent as a beer enthusiast altering yeast to create a better brew. Yet the same technology used by a benign biohacker could easily be transformed into a tool for the disgruntled and disenfranchised[12] to modify existing or emerging biological warfare agents and employ them as bioterrorism. A 2005 Washington Post article by Steve Coll and Susan Glasser presciently stated that "one can find on the web how to inject animals, like rats, with pneumonic plague and how to extract microbes from infected blood…and how to dry them so that they can be used with an aerosol delivery system, and thus how to make a biological weapon. If this information is readily available to all, is it possible to keep a determined terrorist from getting his hands on it?"[13]

This article argues that the biohacker is a real and existing threat by examining evasive biohacking strategies and limitations of current detection methods. The article finds that more active measures are required to stem the growing, long-term threat of modified BW agents employed by individuals. The biohacker is not only a credible threat, but also one that can be checked through improved detection and by disrupting BW agent delivery methods.

The Danger of Biological Warfare Agents

Biological agent weapons, unlike conventional weapons or other WMD, have the potential to create a runaway uncontrollable event. The damage of a bomb or artillery shell is constrained by the blast radius. The effects of chemical and nuclear WMD dissipate over time, albeit with a broad range of half-lives, environmental diffusivities, and ease of decontamination. In contrast, BW are microorganisms that upon dissemination could proliferate exponentially within a single host, linger, and spread from one host to another. BW, therefore, have the potential to be unbounded in both space and time. The hosts themselves serve as potent amplifiers for the agent. Common to all BW agents is the existence of a lag time between time of infection and onset of symptoms. This lag time or incubation period allows infected individuals to feel healthy and to continue with their lives asymptomatically,[14] which increases the potential for spreading.

The Defense Advanced Research Projects Agency (DARPA) commissioned a JASON study in 2003 to examine the best means to detect, identify, and mitigate the effects of a biological agent release within the United States.[15] The study emphasized that current technologies and those expected to be developed within the next five years could not achieve a nationwide blanket of biosensors.[16] Instead, sensors that are currently available should be used at critical locations according to a pre-established "playbook."[17] Outside the range of these critical nodes, biosurveillance against a bioterrorism event would be accomplished through medical surveillance. The essential component of such surveillance would be the "American people as a network of 288 million[18] mobile sensors with the capacity to self-report exposures of medical consequence to a broad range of pathogens."[19] As a result of the H1N1 flu pandemic, the 2012 National Strategy for Biosurveillance further reiterated the findings of the JASON report and called for medical biosurveillance to move beyond chemical, biological, radiological and nuclear (CBRN) threats. This expansion increases medical surveillance to examine a "broader range of human, animal, and plant health challenges,"[20] in an effort to improve early detection of emerging diseases, pandemics, and other exposures.

Medical biosurveillance, however, has an intrinsic limitation: it is entirely dependent on the self-reporting of symptoms and illnesses, which only occurs after an incubation period. This time lag is the window of opportunity for malicious activity by the biohacker aimed at increasing the damage

and spread of BW effects. For example, delayed onset of symptoms and ease of international travel enable an individual from the United States to be anywhere in the world within a few hours of BW exposure, potentially infecting hundreds if not thousands along the way. From the biohacker's point of view, a highly virulent pathogen with a short incubation interval and rapid mortality may not be as desirable as a less virulent one, which would allow the infected individuals to travel greater distances before exhibiting symptoms or dying. A biohacker possesses several strategies to maximize the BW incubation period to evade or alter the medical biosurveillance network.

Strategies of the Biohacker

Many biological warfare agents are naturally occurring around the world or easily derived from plants and could be transformed by biohacking.[21] The advent of modern technologies enables the biohacker to employ one or a multitude of strategies to increase the tactical or strategic effectiveness of a biological agent. The authors distinguish five of these strategies as "Wolf in Sheep's Clothing," "Trojan Horse," "Spoof," "Fake Left," and "Roid Rage."[22]

A "Wolf in Sheep's Clothing" occurs when a biological organism or toxin is modified through genetic engineering so that it can be expressed in an active form but does not present the normal epitopes.[23] In a "Trojan Horse," a biohacker maintains the epitope of a non-threatening agent but re-engineers the active component of the toxin to increase the biological threat without increasing the detectability. The "Spoof" occurs when a benign agent is modified to express epitopes distinctive of a known toxin in order to trigger an unnecessary protective response by the target parties (the local, state, or federal government), while the delivering party (the biohacker) can afford to remain unencumbered. The "Fake Left" is a means to modify through selection or genetic engineering the method of transmission of an organism (for example, one that is typically passed by fluid to an airborne method). Such modification makes it easier to disperse an agent among a target population. The "Roid Rage" strategy aims to potentiate the effects of a common virus by expressing components of a deadly virus, such as expressing Ebola virus RNA sequences into the common flu virus. An infected person would demonstrate symptoms of the flu, hampering early detection and treatment of Ebola and favoring its deadly outcomes.

Any of these strategies could be used separately or in conjunction with one another. These strategies also do not require large or sophisticated laboratories to accomplish.[24] Moreover, at the biohacker's disposal is a plethora of scientific data. For example, an article from a major medical journal published last year on the avian flu virus highlighted the five specific genetic modifications required to transmit the virus from ferret to ferret, a model used since ferrets are susceptible to the same flu viruses as humans. Such information provides a framework for biohackers to implement their strategy.

Defending Against the Biohacker

Improving Detection Methods

Advances in biotechnology and genetic engineering facilitate the modification of more BW agents with increased toxicity, transmissibility, and lethality. Many bioengineering companies around the world now openly sell "all-in-one" kits for researchers to perform recombinant DNA experiments.[25] Such kits are available to the public and provide the ability to modify known bioagents. Technological advances and lowering costs make the biohacker a viable threat, but they also enable counter-bioterrorism through cheaper and more reliable detection and identification systems.[26]

One accessible means to thwart the biohacker is the development of physical, chemical, and biological sensors that reliably detect and identify a biological agent by its mechanism of action. For example, the International Genetically Engineered Machine (iGEM) Foundation supports a yearly competition in which competitors are given a "kit of biological parts" and through their own design are expected to build synthetic "biological systems and operate them in living cells."[27] The innovative goals of the iGEM competition in its 242 laboratories worldwide are to promote biosafety and biosecurity by

focusing on therapeutics or toxin detection/identification.

Detecting Host Response

Of the various strategies to detect a toxin, the most straightforward focuses on the specific molecular epitope of the active agent, either through molecular recognition (for example, a distinctive surface protein on the organism), or the detection of genetic material specific to a particular pathogen. Unfortunately, these signals can be very weak early into the infection of an individual, and the organisms themselves may be sequestered from ready observation, as was the case with the AIDS virus.[28] The solution to these problems is to continue to increase the sensitivity and specificity of the detection methods, but this in turn may increase vulnerability to hacking. Since these methods depend heavily on the ability to detect specific epitopes, several of the biohacking strategies listed above could be utilized. An alternative approach is to focus not on the agent itself, but on the host response to the agent. In this case, the host serves as an amplifier that produces a multitude of cellular signaling molecules that can potentially be measured to provide an identifying signature, ideally before the onset of clinical symptoms.[29] The host response does not need to be measured in a person since live cell bioreactors with orthogonal quantitative measurements could provide the identifiable signature.[30] While there is no guarantee that the detailed dynamic host response will be pathogen-specific, early detection of an infection is still beneficial by triggering the administration of a drug, a cytokine, or a combination thereof to block progression of the infection.[31]

Disrupting Delivery

One intrinsic limitation of biohacking is the delivery system. Microorganisms require either a host or stable laboratory cell culture conditions to survive, but some can be effectively placed in a passive spore state that simplifies transmission.[32] Delivery of biological agents is not trivial. Many biological agents, such as anthrax and ricin, are not transmittable from person to person, hence the delivery of millions of spores over a large area is required. Yet, conventional dispersion through munitions would destroy the spores or toxin. The "weaponization" of pathogens may require a certain level of sophistication, but even a non-weaponized agent can have a significant psychological effect. Agents such as Ebola, which are transmittable from person to person, are relatively unstable outside the host, further complicating delivery. Smallpox is an example of a potential agent that is transmittable from person to person and is stable outside the host, but the potential for infection is limited by the smallpox vaccine.[33] Programs to develop specific vaccines, particularly those for animal-borne disease, could provide additional protection.[34] Through knowledge management of scientific data, it might be possible to impede the development of a stable delivery system for malicious purposes.[35]

Curbing Production

In addition, certain equipment and materials, such as fermenters, incubators, enzymes, and retroviruses, are required to modify agents. Limiting the sale or, at the least, monitoring the sale of such materials would also make it difficult for a biohacker to create a modified biological agent undetected. Some of the technologies are simple enough, however, that they could be adapted from readily available consumer items, and even the more complex biological reagents, such as lenti-viruses and specific cell lines, are readily obtainable through research supply companies. Given these challenges, it is important to maintain a strong national effort in detection and prophylaxis bioagent production equipment and supplies.

Conclusion

Unlike conventional weapons or other WMD forms, biological weapons are difficult to contain. The time period that naturally occurs between release and identification provides an opportunity for the pathogen to spread silently. This time period could increase if the biohacker becomes more skilled at hiding agents or modifying incubation times, causing increased transmission. Current detection methods, such as medical biosurveillance and

the Joint Biological Point Detection System, abide by the detect-to-treat mentality: they are passive and geared to react to signs of an outbreak or bioagent deployment. In contrast, modern technology makes it possible to move to a detect-to-prevent strategy. The key to such a strategic leap is to reduce drastically the lag time required to correctly identify the biothreat and respond accordingly.
The paradox of new scientific methods and technology, however, is that they lead not only to new discoveries in terms of medicine, but also provide information that enables the biohacker. In a world accustomed to well-defined toxin epitopes and detector receiver-operator characteristics, the hacking of a toxin can be manifested in many ways; for example, in the presentation of an unexpected epitope that could render an existing detection platform ineffective. The modification of BW agents not only makes their identification difficult, but also may render the known therapeutic methods ineffective.
The 2013 ricin letters, in conjunction with the multitude of low-cost tools and strategies available, highlight that the biohacker is a real and contemporary threat. Combating the capabilities of the biohacker will be neither easy nor inexpensive.[36] Although the biohacker still has significant obstacles of production and dispersion to overcome to effectively devastate a large population, the availability of technology and scientific information makes this an impending danger. Continued research is required to develop identification tools that are in front of the medical biosurveillance lag time. The fiscal costs of biodefense are high for continued research and development, but the risk of not stemming the means of the biohacker is even greater.

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

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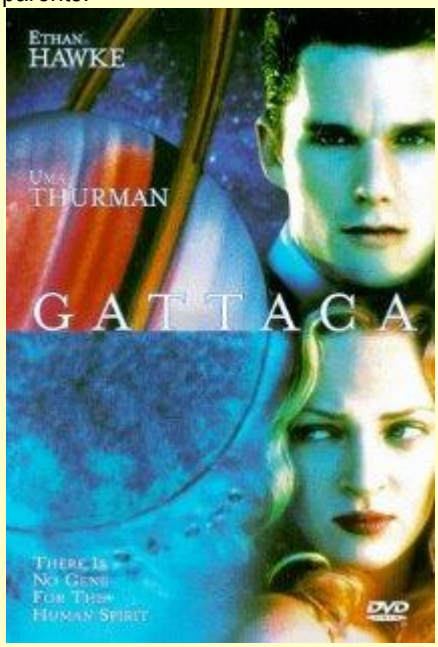
The World's First Genetically Modified Babies Will Graduate High School This Year

Source: http://techcrunch.com/2014/09/28/the-worlds-first-genetically-modified-babies-will-graduate-high-school-this-year/?ncid=rss

Remember the sci-fi thriller GATTACA? For those who never saw the film and/or eschewed all pop culture in the late 90's for some reason, it was a popular movie that came out in 1997 about genetically modified human beings. Now some literally genetically modified human babies born that same year are entering their senior year of high school.
The first successful transfer of genetic material for this purpose was published in a U.S. medical journal in 1997 and then later cited in a Human Reproduction publication in 2001. **Scientists injected 30 embryos in all with a third person's genetic material.** The children who have been produced by this method actually have extra snippets

of mitochondrial DNA, or mtDNA, from two mothers – meaning these babies technically have three parents.



It's still unclear whether all 30 babies turned out healthy. The Institute for Reproductive Medicine and Science (IRMS) at St Barnabas, participants of the experiment, finally began following up with at least 17 of the now teenagers earlier this year, according to the UK's Independent. We've reached out to IRMS to get those follow up results but have not heard back yet.

While we don't know the identity of these genetically modified teens, or even how they are doing health wise at this point, the ethics of creating designer humans is still very much a hot button issue. Modifying humans genetically to create some superior race of people or simply to choose one preferred visual trait over another has been debated among scientists, politicians and others ad nauseam. **The U.S. Food and Drug Administration no longer even allows such genetic modification to embryos, citing them as a "biological product" and thus under its jurisdiction.** They put the kibosh on this practice back in 2002. However, these original embryonic modifications were for parents who would potentially pass on severe genetic diseases to their children if it weren't for scientific intervention.

These teens could potentially pass on their genetically modified material to the next generation. So even if no other humans are legally able to be created this way in the future, we've already introduced biologically modified genetic material into the population with the potential to affect large swaths of future generations to come via reproduction. We'll be sure to update you, should IRMS release any information on the health of these teens.

First Imported Case of Ebola Diagnosed in the United States

Source: http://www.cdc.gov/vhf/ebola/outbreaks/2014-west-africa/united-states-imported-case.html

CDC confirmed on September 30, 2014, through laboratory tests, the first case of Ebola to be diagnosed in the United States in a person who had traveled to Dallas, Texas from West Africa. The patient did not have symptoms when leaving West Africa, but developed symptoms approximately five days after arriving in the United States.

The person sought medical care at Texas Health Presbyterian Hospital of Dallas after developing symptoms consistent with Ebola. Based on the person's travel history and symptoms, CDC recommended testing for Ebola. The medical facility isolated the patient and sent specimens for testing at CDC and at a Texas lab participating in CDC's Laboratory Response Network. CDC and the Texas Health Department reported the laboratory test results to the medical center to inform the patient. Local public health officials have begun identifying close contacts of the person for further daily monitoring for 21 days after exposure.

The ill person did not exhibit symptoms of Ebola during the flights from West Africa and CDC does not recommend that people on the same commercial airline flights undergo monitoring, as Ebola is only

contagious if the person is experiencing active symptoms. The person reported developing symptoms several days after the return flight.
CDC recognizes that even a single case of Ebola diagnosed in the United States raises concerns. Knowing the possibility exists, medical and public health professionals across the country have been preparing to respond. CDC and public health officials in Texas are taking precautions to identify people who have had close personal contact with the ill person and health care professionals have been reminded to use meticulous infection control at all times.
We know how to stop Ebola's further spread: thorough case finding, isolation of ill people, contacting people exposed to the ill person, and further isolation of contacts if they develop symptoms. The U.S. public health and medical systems have had prior experience with sporadic cases of diseases such as Ebola. In the past decade, the United States had 5 imported cases of Viral Hemorrhagic Fever (VHF) diseases similar to Ebola (1 Marburg, 4 Lassa). None resulted in any transmission in the United States.

EDITOR'S COMMENT: Well news is not exactly as CDC's statement above!
Around September 24, he started to feel ill, and around September 26, first sought care at Texas Presbyterian. His travel history was not taken and the man was sent home with an antibiotic. Ebola was not suspected. By September 28, the man had fallen gravely ill. He was sent to Texas Presbyterian in an ambulance and placed in an isolation ward. This time, hospital staff suspected Ebola. On September 30, the CDC confirmed that he has Ebola.
This is just another case of sick mindset and "it will not happen to us!" attitude… And a bit of bad medical practice (history). But NO, it will never happen in a big Texas hospital or one in Alaska or Paris or Sidney! Unfortunately the unexpected always happens!
UPDATE: 80 contacts have been identified so far…

After first Ebola case, red flags emerge that U.S. unprepared for pandemic

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By Kelly Riddell
Source: http://www.washingtontimes.com/news/2014/sep/30/after-first-ebola-case-fears-turn-us-pandemic-prep/

September 30 – The confirmation Tuesday of the first Ebola case on U.S. soil emerges against a backdrop of increasing concern in America's medical community

that preparedness for a pandemic has stagnated or slipped in recent years because of tough economic times and increasing malaise since the 2001 anthrax threat.

The Centers for Disease Control and Prevention, America's premier disease fighter, offered an air of confidence Tuesday in declaring that the first Ebola patient in Dallas was carefully contained.
But earlier this year, it sounded less optimistic about the U.S. health care system's ability to fight a pandemic should a major disease outbreak occur.
"CDC continues to work with reduced financial resources, which similarly affects state, local, and insular public health departments. ... These losses make it difficult for state and local health departments to continue to expand their preparedness capabilities, instead forcing them to focus on maintaining their current capabilities," the CDC warned in a report this year.
CDC flagged several key trend lines, including congressional funding for public health

emergency preparedness had shrunk by $1 billion from its highs shortly after the 2001 terrorist and anthrax attacks.

It also noted that state and local public health departments on the front lines of any health emergency have shed 45,700 jobs since the 2008 financial crisis.

The concerns, however, extend far beyond financial resources. The Department of Homeland Security inspector general issued a scathing report in September warning the department was woefully prepared for a pandemic, with expired medicines and inadequate resources to effectively equip its top responders in the field.

"DHS may not be able to provide sufficient pandemic preparedness supplies to its employees to continue operations during a pandemic," the agency's watchdog declared in a report made public Sept. 1.

"Without sufficiently determining its needs, the department has no assurance it will have an adequate amount of antiviral [drugs] to maintain critical operations during a pandemic," the report said, warning of the effects for offices such as the Secret Service, U.S. Customs and Border Protection and the Transportation Security Administration.

Despite having the task of protecting the U.S. from dangerous threats, the Homeland Security Department "did not keep accurate records of what it purchased and it received," the department's inspector general found.

Homeland Security officials disagreed with much of the report, saying it was a misrepresentation of the agency's preparedness for an outbreak.

Other preparedness concerns flagged in recent months include the ability of overburdened Border Patrol agents to screen immigrants for disease and inadequate tools to detect or combat a bioterrorist attack.

For instance, numerous government investigations have questioned the adequacy of the federal government's premier biosurveillance system, code named BioWatch. The respected National Academies of Science questioned whether the current-generation system can detect hazards, and the next generation of the project is in danger of being canceled after the Government Accountability Office questioned its dealing with contractors.

"Over the past several years, our work has identified significant shortcomings in the department's ability to manage an expanding portfolio of major acquisitions," said the GAO report, dated June 10. "We recommended that before continuing the Gen-3 acquisition, DHS should carry out key acquisition steps, including reevaluating the mission need and systematically analyzing alternatives based on cost-benefit and risk information."

The message from the panoply of reports is clear: Although the U.S. clearly made strides after 2001 on pandemic preparation, those gains have stagnated and in some cases begun to reverse even as the risks for an outbreak grow with global travel and determined terrorists.

People say that Ebola looks "so far away, it's so remote," said Dr. J. Scott Ries, vice president of Christian Medical & Dental Associations, who worked with Ebola survivor Dr. Kent Brantly, who contracted the disease while treating Ebola patients in Liberia. "Well now, anyone who has thought that will change their opinion. It's here, like we predicted, and it's time to massively ramp up our efforts to address this."

To be sure, the CDC says it will contain the incident in Texas, and the Ebola virus will not spread in the U.S. like it has in West African countries because of U.S. isolation methods, first-world medical care, and the fact that friends and relatives don't intimately prepare bodies for burial as is customary in West Africa.

"There is no doubt in my mind, we will stop it here," CDC Director Dr. Tom Frieden said in a press conference Tuesday. Although Ebola is a "scary disease," he said, "we are stopping it in its tracks in this country."

Worrisome, however, is that the infected patient in Texas waited four days after he began experiencing symptoms to seek admission to the Dallas hospital. During that time, he was symptomatic and contagious. Ebola doesn't spread via airborne methods like the flu does, but only through contact with bodily fluids such as blood, feces, urine and vomit.

The CDC said it was monitoring the people with whom the infected patient came into contact. Ebola starts with a high fever and leads

to internal bleeding. In Africa, it has a mortality rate as high as 90 percent.

The West African countries of Liberia, Sierra Leone and Guinea have experienced the worst outbreak of the disease in history, killing more than 3,000 people there and infecting others. A total of 6,574 cases have been reported, according to the World Health Organization. There is a separate outbreak in Congo.

Dr. Ries said news of a U.S. Ebola case is "no surprise," but there is also "no need to panic."

"We know how to deal with Ebola. While Ebola is highly infectious, it's not highly contagious," he said, adding that the Dallas patient has been isolated and is being treated aggressively.

"That's the advantage we have here with our health system versus what they have in Sierra Leone, Liberia and Guinea," he said.

Nevertheless, U.S. policymakers renewed alarm that the African outbreak had reached American shores.

"Communicable diseases do not stop at borders," said Rep. Edward R. Royce, California Republican and chairman of the House Committee on Foreign Affairs. "While the likelihood of a major outbreak in the United States is still very unlikely, with this case, it is more clear than ever that the rapid spread of Ebola in Guinea, Liberia and Sierra Leone presents a clear and present danger not only to West Africa, but the broader international community."

Sen. Rob Portman, Ohio Republican, renewed his call for the CDC to direct U.S. Customs and Border Protection to enact active screening of travelers demonstrating Ebola symptoms at U.S. ports of entry.

"While I hope that this is an isolated case, today's announcement serves as a reminder of the need for increased U.S. prevention efforts," Mr. Portman said in a statement. "According to reports, the patient had recently travelled to West Africa and would have been a clear candidate for active screening. With this announcement, I hope the CDC will consider enacting elevated screening levels."

Three American medical missionaries other than Dr. Brantly became infected and fell ill in Africa while treating Ebola patients. All were flown back to the U.S. in isolation and have recovered.

"The lessons learned" from treating those workers at Emory University Hospital in Atlanta and elsewhere showed that "this is a disease that we can manage with tech," said Michael G. Schmidt, vice chairman of the microbiology and immunology department at the Medical University of South Carolina.

Credit also goes, he said, to "the convalescent serum and ZMAPP" administered to Ebola patients, and the "unsung heroes" within local health departments, public health agencies and the U.S. Army Medical Research Institute for Infectious Diseases "who have been planning for this event since" the Ebola outbreak flared up in March.

A White House statement said President Obama had spoken via phone Tuesday with Dr. Frieden and discussed Ebola isolation protocols and efforts to figure out where the patient may have contracted the virus.

The CDC said the Dallas patient was asymptomatic during his flight from Liberia to Dallas. Although he likely contracted the disease abroad, he was not contagious during air travel or noticeably sick on arrival.

CBP works in conjunction with the CDC to monitor travelers and attempt to contain any diseases that may be spread by travelers from abroad.

However, given CBP's current resources and other strains at the border given the recent influx of unaccompanied minors, it may not be well-equipped to handle another crisis, the Congressional Research Service warned in a report.

"In the current context of the Ebola outbreak in West Africa, CDC has emphasized exit-based airport screening from areas with Ebola, and not screening at [point of entry] in the United States," wrote Ruth Ellen Wasem, an immigration specialist in a Congressional Research Service report dated Aug. 13.

Ms. Wasem warned that "from an immigration standpoint, an outbreak of an infectious disease places substantial procedural and resource pressures on CBP."

__Kelly Riddell__ covers national security for The Washington Times. Before joining The Times, Kelly was a Washington-based reporter for Bloomberg News for six years, covering the intersection between business and politics through a variety

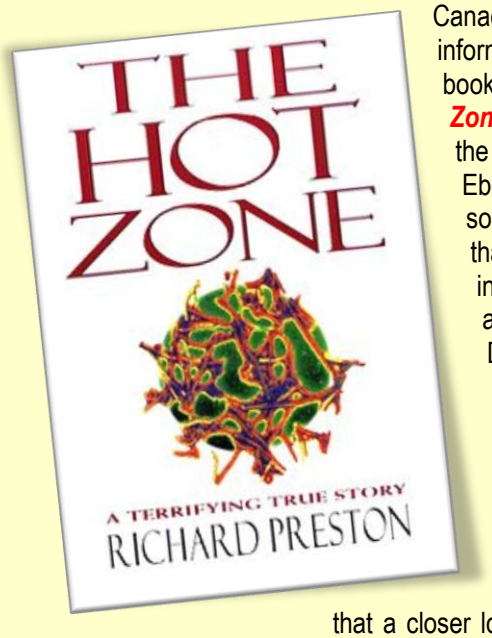
of industry-based beats. She most recently covered technology, where her reports ranged from cybersecurity to congressional policymakers. Before joining Bloomberg, she was a management consultant and worked with Fortune 500 companies on government policy and commerce. She has a master's degree from Northwestern University's Medill School of Journalism and a bachelor's degree in government and Chinese from Hamilton College in upstate New York.

Contrary to scientific evidence, the media continue to fan fears of airborne Ebola infection

Source: http://www.homelandsecuritynewswire.com/dr20141001-contrary-to-scientific-evidence-the-media-continue-to-fan-fears-of-airborne-ebola-infection

October 01 – **Despite solid evidence presented by scientists to quell rumors that the deadly Ebola virus could be passed through the air, many American media outlets continue to raise alarm and fuel debates with flimsy sources.**

As *Global Bio Defense* reports, **media outlets including the *New York Times* and the Center for Infectious Disease Research and Policy (CIDRAP) have released articles which revive an earlier scientific debate over whether the Ebola virus can be transmitted through the air.**



Both sources cite the non-human 2012 Canadian Pig Study and information from a 1994 book called ***The Hot Zone***, which documented the Reston, Virginia Ebola epizootic. Both sources claim evidence that the virus could indeed spread in such a fashion.

Despite the argument by some that this is clearly the case – ultimately raising unnecessary concern in the media and public – scientists respond that a closer look into the materials will show that the results are inconclusive.

In *The Hot Zone*, a non-fiction account of the Ebola outbreak amongst quarantined monkeys, the tale is ultimately not a peer-reviewed study, but rather a dramatization. In addition to that book, there are more scientific studies that ultimately conclude that "aerosols or droplets" were more than likely responsible for the transmission. It may be a delicate distinction, perhaps, but as Heather Langer at *Global Bio*

Defense argues, it would not be defined as airborne.

In addition to this work, the 2012 Pig Study is a more peer-reviewed piece of information, but never directly states the Ebola strain observed in the animals was contacted via airborne routes. Further, the very nature of the strain observed in the study, and the one currently affecting humans throughout parts of Africa and beyond are different, even down to the symptoms.

"This phenomenon can be linked to different clinical pictures in the two animal species: Respiratory distress in pigs versus systemic disease with no respiratory signs in [others]," the study said.

During a 2012 interview discussing the paper, Gary Kobinger, the PI on the study

reported that, “What we suspect is happening is large droplets – they can stay in the air, but not long, they don’t go far”
More importantly, Kobinger and others repeated the study in July of this year and found that “No transmission of [the] virus…was observed suggesting limited containment protocols. The results support the concept that Ebola virus infection is self-contained…”
While the media continue to hype the scare-value for ratings purposes, perhaps, the science they use shows the opposite of what they say is the case.

101st Airborne Troops Headed to Liberia in Ebola Fight

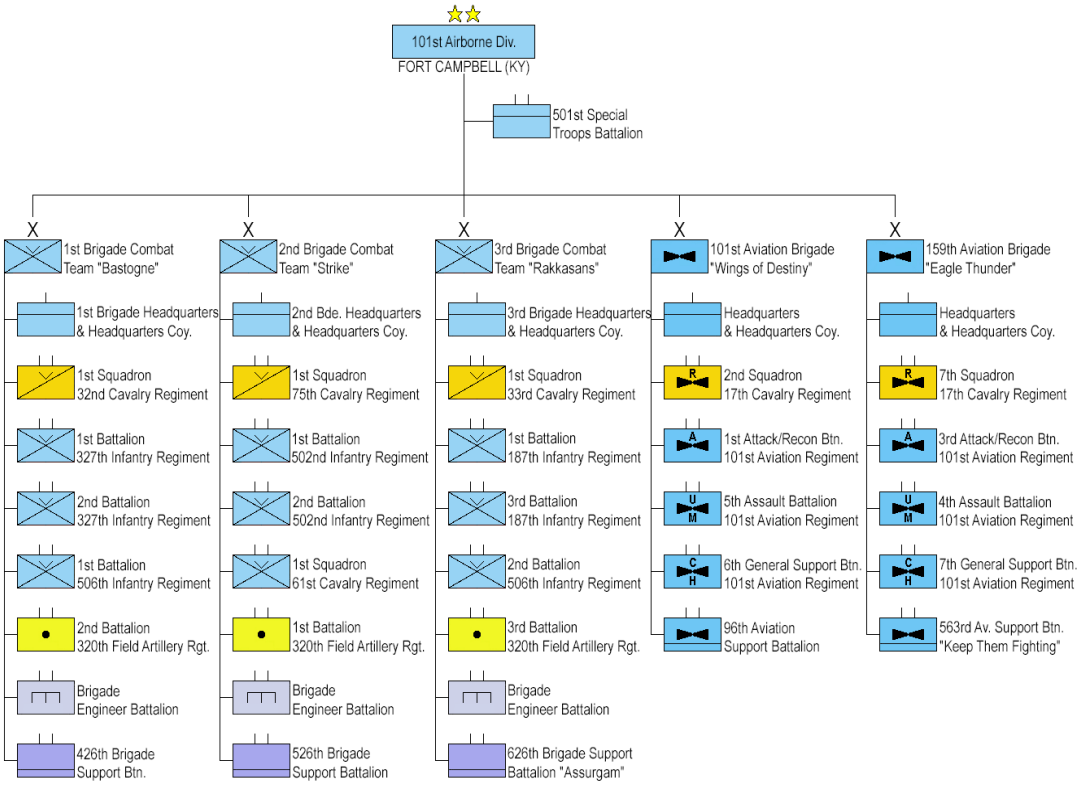
Source: http://www.military.com/daily-news/2014/09/30/101st-airborne-troops-headed-to-liberia-in-ebola -fight.html

The commanding general of the 101st Airborne Division and 700 of his troops will head to Liberia in late October as the military steps up its response to the Ebola crisis in West Africa, the Pentagon announced Tuesday.
The "Screaming Eagle" troops from Fort Campbell, Kentucky, will set up **a**

headquarters in Monrovia, the Liberian capital, and will be joined by 700 combat engineers from several commands, the Pentagon said.
Once the troops have arrived, Army Maj. Gen. Gary Volesky, commander of the 101st, will replace Maj. Gen. Darryl Williams, as commander of the U.S. military response to the Ebola epidemic that has hit hardest in Liberia, Guinea and Sierra Leone. Williams will return to his post as commander of U.S. Army Africa, the Pentagon said.
Aid groups and officials in West Africa have complained about what they called the slow pace of the U.S. and the international community's response to the epidemic. Rear Adm. John Kirby, the Pentagon spokesman, took particular issue with published reports calling the military's efforts thus far "slow-footed."
"I just flatly disagree," Kirby said at a Pentagon briefing. "It takes some time, it takes some logistics expertise" to organize the response outlined by President Obama two weeks ago when he announced that 3,000 U.S. troops would be deployed to West Africa.
Obama's announcement on Sept. 16 came six months after the outbreak in West Africa of history's worse Ebola epidemic.
Kirby stressed that "everybody in the military shares the sense of urgency" as the epidemic worsens. The World Health Organization has reported that cases of Ebola and deaths have escalated in recent weeks.
Army Gen. Martin Dempsey, chairman of the Joint Chiefs of Staff, also issued a statement defending the military's response.
He said the military's efforts would "support U.S. government and international relief efforts by leveraging our unique U.S. military capabilities."
"Specifically, we're establishing command and control nodes, logistics hubs, training for health care workers, and providing engineering support," Dempsey said. "The protection of our men and women is my priority as we seek to help those in Africa and work together to stem the tide of this crisis."
Kirby also said the military efforts were part of a "whole of government" approach that involved the U.S. Agency for International Development and the Centers for Disease Control.
Currently, about 195 U.S. military personnel are in Liberia, Kirby said. They are involved in locating and preparing sites for facilities to treat health care workers who may have contracted the virus.

A 25 bed facility was expected to be operational by mid-October in Liberia and 17 other 100-bed facilities were planned.
Obama also pledged that the military would set up an Intermediate Staging Base in Senegal to serve as an "air bridge" for channeling medical personnel and supplies to the region. Currently, there are no U.S. military personnel in Senegal, the Pentagon said.
Kirby said that all military personnel deployed to West Africa would be trained in the use of protective gear "and on the disease itself" although "U.S. military personnel are not and will not" be in direct contact with Ebola victims, Kirby said.
Kirby said that the deployments to West Africa were expected to last six months but could go longer, depending on whether the virus was contained. Kirby also said that the military response could also be expanded to involve more than 3,000 troops.
The World Health Organization reported Tuesday that the number of Ebola patients in Guinea, Liberia and Sierra Leone had passed 6500, with more than 3,000 deaths recorded.

EDITOR'S COMMENT: Screaming Eagles, of the 101st Airborne is US Army's **only** Air Assault Division. Hmmm!



Read also article in p.74

Colorado State researchers study bioterrorism threat

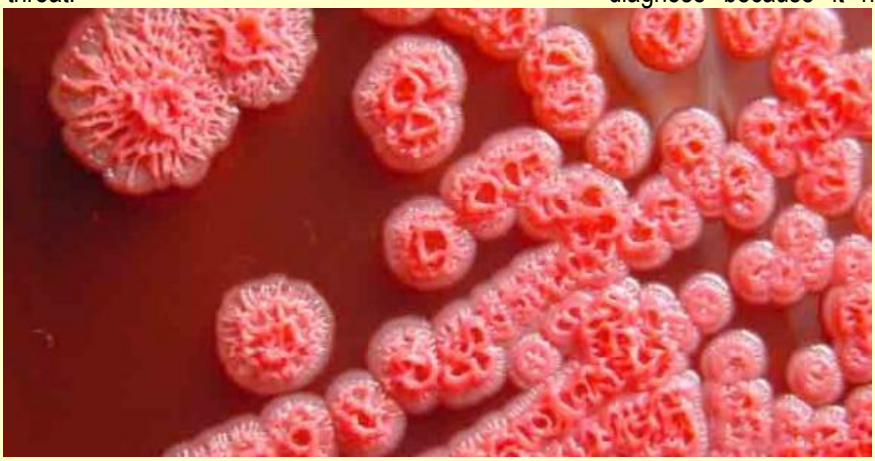
Source: http://www.collegian.com/2014/10/colorado-state-researchers-study-bioterrorism-threat/92120/

Colorado State University researchers are leading studies to find the cure to a potential biothreat bacteria which can cause dangerous infections in patients. **In May, signs of growth were detected in bacteria samples that were supposed to be inactive.**

The bacteria, *Burkholderia pseudomallei*, is being researched in a biosafety level three laboratory. **Two of the 20 samples sent out to a lower lab last May showed signs of growth.**

Similar instances have happened this year at research labs at St. Jude Children's Research Hospital and Rocky Mountain Laboratories.

Lab researchers at CSU have been working on *B. Pseudomallei* research recently in response to it being a CDC listed bioterrorism threat.



"Pretty much anything can be a biothreat, it just depends on how you define it," said Herbert Schweizer, a researcher involved in the study of the bacteria. "Spring of 2013, the United Kingdom government declared antimicrobial resistance as severe as a threat as bioterrorism agents. If we are losing the battle with antibiotic problem bacteria that becomes a threat to patients and to society."

The incident report that documented the event with the samples had many details redacted. According to Robert Ellis, the CSU biosafety director who wrote the report, the blacked-out items on the report were details that CSU and CSU's attorneys did not think should be accessible through Colorado public records.

The report stated that the research associate preparing the samples had three years of experience working in the BSL-3 laboratory and used the same process for preparing the samples that had been used for over 6 years.

"Based on past experience that all samples prepared and tested this way over the last 6-plus years had been sterile, DNA samples were presumed to be sterile," the incident report stated.

There is still uncertainty as to how the incident happened.

"We have kicked around all kinds of things. It just doesn't make sense that it wasn't absolutely sterile," Ellis said.

***B. pseudomallei* is a bacterium commonly found in tropical and subtropical regions of the world, usually in water and soil. The bacteria can cause severe infections in certain exposed patients.**

"This is a bacterium that is very difficult to diagnose because it has so many diverse systems," Schweizer said. "It causes a multifaceted disease that ranges from respiratory distress, pneumonia, bone infections, nervous system infections and all kinds of infections. We don't really know what directs one infection over another in diverse patients."

According to Schweizer, this bacteria had upwards of a 50 percent mortality rate in some areas where no treatment was available. It has a high resistance to antibiotics that makes few treatments possible.

"The anxiety is that if the bacterium were to develop resistance to those few antibiotics that we have that we have available, then we would be kind of screwed," Schweizer said. "What are you going to do?"

Workers who deal with the bacteria have to be cleared by the federal government. According to Schweizer, the high containment laboratory CSU uses for this research protects both the researchers and the environment.

"This is biosafety level three bacteria," Schweizer said. "There are different levels of biosafety and for bacteria. That is the highest level [at CSU]."

There are strict restrictions involving the equipment and procedures that are called standard operating procedures that researchers in the BSL-3 lab use.

"Whenever you are working with bacteria, with infectious agents, obviously there are strict procedures that we have to adhere to," Schweizer said. "Sometimes we have incidents."

Schweizer's main interest of study is using the ability bacteria has to resist current antibiotics to assist

in the development of more effective antibiotics.
"It is intrinsically resistant to many antibiotics, so it is very different to treat," Schweizer said.
Intrinsically resistant bacteria can acquire a genetic element from another bacteria that controls resistance from within the bacteria.
CSU researchers take this incident as a way to improve their department.

"You can be assured that we have an outstanding biosafety program here at CSU," Ellis said. "The researchers are following the programs, following the protocols correctly. It doesn't matter how good a program is, you are going to have a mishap every once in a while … We are constantly trying to improve the problem when something like this happens."

Quarantine works against Ebola but over-use risks disaster

By Grant Hill-Cawthorne

Source: http://www.homelandsecuritynewswire.com/dr20141003-quarantine-works-against-ebola-but-overuse-risks-disaster

A man in the United States has become the first known international traveler to be infected in the West Africa Ebola epidemic and carry the virus abroad. He is thought to have been infected in Liberia and developed symptoms six or seven days after arriving in the United States to visit family. He's being treated in isolation in Dallas, Texas.
Quarantine, in the form of isolation, is an important component of the response to Ebola infection. As people are infectious only once they develop symptoms, isolating them and having health-care workers use personal protective equipment significantly reduces the risk of onward transmission.

The director of the U.S. Centers for Disease Control and Prevention (CDC) says the man will continue to be treated in isolation. In a process known as contact tracing, everyone he has come in contact with since he became symptomatic on 24 September will be located and monitored for twenty-one days (the maximum incubation period of the virus). Anyone who shows symptoms will also be isolated and treated.
The Ebola virus is unlikely to spread further in the United States because these measures are known to be effective. Indeed, their absence has contributed significantly to the spread of the virus in resource-poor nations of West Africa.

The benefits of quarantine

Countries have been practicing this measure against infectious diseases well before we understood what caused and transmitted infections. The earliest mention of isolating people in this way is in the books of the Old Testament, for leprosy and other skin diseases.
The word "quarantine" comes from the Italian "quaranta giorni" which simply means "forty days". It refers to the 40-day isolation period imposed by the Great Council of the City of Ragusa (modern day Dubrovnik, Croatia) in 1377 on any visitors from areas where the Black Death was endemic. In its most basic form, quarantine is the isolation of people with a disease from unaffected people.
The measure has clear benefits; it was effective during the 2003 pandemic of SARS-coronavirus when the isolation of cases and their contacts for ten days was arguably one of the most significant interventions for containing the outbreak in only five months.
And it has frequently been used to control Ebola outbreaks. Since the virus' first and most severe outbreak in 2000, Uganda has used quarantine measures to

good effect, isolating contacts of cases for up to the twenty-one days of the viral incubation period.
Surveillance, a more Ebola-educated populace and targeted quarantine measures have meant Uganda had only 149 cases with thirty-seven deaths, one case and death, and thirty-one cases with twenty-one deaths in subsequent outbreaks in 2007, 2011 and 2012.
Nigeria has also demonstrated the efficacy of a contact tracing and isolation approach. Despite being one of the most populous countries in Africa and having cases introduced into Lagos, a city of 21 million people, its last case was seen on September 5.
Removing infected and potentially infectious people from the community clearly helps reduce the spread of disease, but it still requires a place for people to be isolated and treated. That's what's missing in countries still in the midst of the epidemic, and also what continues to drive it.

Too much of a good thing

While quarantine is an important weapon in our arsenal against Ebola, indiscriminate isolation is counterproductive.
The World Health Organization has warned that closing country borders and banning the movement of people is detrimental to the affected countries, pushing them closer to an impending humanitarian catastrophe. Stopping international flights to the affected countries, for instance, has led to a shortage of essential medical supplies.
Still, this didn't stop Sierra Leone from imposing a stay-at-home curfew for all of its 6.2 million citizens for three days from 19 to 21 September 2014. Results from this unprecedented lockdown are unverified, with reports of between 130 and 350 new suspect cases being identified and 265 corpses found. But in a country where the majority of people live from hand to mouth with no reserves of food, the true hardship of the measure is difficult to quantify.
In addition to the three-day lockdown, two eastern districts have been in indefinite quarantine since the beginning of August. On 26 September, Sierra Leone's president, Ernest Bai Koroma, announced that the two northern districts of Port Loko and Bombali, together with the southern district of Moyamba, will also be sealed off. This means more than a third of the country's population will be unable to move at will.
Sierra Leone's excessive quarantine measures are having a significant impact on the movement of food and other resources around the country, as well as on mining operations in Port Loko that are critical for the economy.
The country had one of Africa's fastest-growing economies before the outbreak, with the IMF predicting growth of 14 percent. The World Bank estimates the outbreak will cost 3.3 percent of its GDP this year, with an additional loss of 1.2 percent to 8.9 percent next year.
Rice and maize harvests are due to take place between October and December. There's a significant risk that the ongoing quarantines will have a significant impact on food production.
Quarantine is an excellent measure for containing infectious disease outbreaks, but its indiscriminate and widespread use will compound this epidemic with another humanitarian disaster.

Grant Hill-Cawthorne *is Lecturer in Communicable Disease Epidemiology at University of Sydney.*

The Dallas Ebola Case: An Immigration-Related Process Conspiracy?

By Prof Jason Kissner
Source: http://www.globalresearch.ca/the-dallas-ebola-case-an-immigration-related-process-conspiracy/5406073

To begin, consider that people like Dr. Sanjay Gupta keep saying that the Dallas Ebola patient Thomas Eric Duncan had "told the nurse" who attended to him upon

his first arrival at the Texas Presbyterian Hospital Emergency Room that he had "traveled "to" Africa."

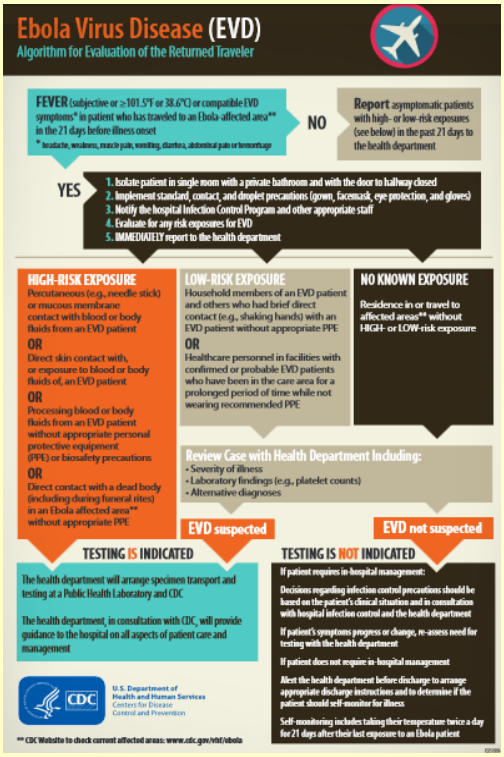
That's certainly a very odd thing for a Liberian national, having just arrived *from* Monrovia, Liberia *to* the United States *for the very first time in his life*, to have supposedly said, is it not? Of course, it fits the CDC Checklist used prior to, and including, Duncan's case, so that must have been exactly what Duncan said, right Sanjay?

Duncan's status as a Monrovian Liberian national has not exactly been blasted across the MSM news; in fact, the MSM news for the most part has been adhering studiously to the asinine "traveled to Africa" view even though it is grossly misleading.

So why adhere to the view? The chief contention of this article is that we might be observing the unfolding of a "process conspiracy" pertaining to Ebola and the highly contentious immigration issue. **The phrase "process conspiracy" is operationalized here as a conspiracy rooted in a policy or policies consciously designed to shape practice in ways such that the output exacerbates the very problems the policy/policies was (were), on the surface, designed to contend with.**

The specific object of the Globalist Ebola process conspiracy is here theorized to involve diminishing the linkage, in public consciousness, of Ebola with nationality status. Globalists have huge immigration plans for the U.S., and they do not want Ebola (or any other infectious disease, for that matter) getting in the way of those plans. That is why their Ebola policy protocols—as absurd as they are (discussed shortly)— read the way they do, that is why we have been exposed to a cloud of lies emanating from Dallas and dispersed through the MSM, and that is why Duncan was discharged with antibiotics soon after his first visit to the Emergency Room of Texas Presbyterian.

Because the theory is a process conspiracy theory and therefore rooted in subverted policy, it has application not just to Duncan, but to future Duncans as well. **The argument proceeds as follows.** **First**, a brief observation concerning risk is offered which, even though obvious, is necessary because without it the argument will make little sense. **Second**, the CDC's Ebola Screening and Isolation polices are examined, and, on the basis of the risk observation, shown to be not only wholly inadequate to the task they were allegedly crafted to meet, but quite likely to make the Ebola contagion problem even worse. **Third**, evidence is provided in support of the idea that the Ebola process conspiracy theory offers a simple, and very plausible explanation, of certain important *assertions* of fact, and inconsistencies, emanating from Dallas that are otherwise rather difficult to explain. Throughout, the connection to the issue of nationality status will be obvious.



On the risk issue, people who are Liberian nationals and residents of the hot zone Monrovia clearly present much greater risk than randomly drawn "travelers to" Liberia, simply because the exposure time is likely to be much greater for the former set of people.

Now we turn to consideration of the CDC's policy guidance on screening and isolation of Ebola patients—and keep in mind that, astonishingly, these are purportedly *new* policy statements issued *in the wake* of the Duncan Dallas case, and yet they *still* do not meet the *very problem* Duncan-type cases present.

▶ **Algorith can be seen at:** http://www.cdc.gov/vhf/ebola/pdf/ebola-algorithm.pdf

The screening/isolation problem presented by Duncan type cases is this: under CDC policy guidelines, **what are hospitals supposed to do when they encounter potential Ebola cases that are asymptomatic, but which involve persons who have not merely "traveled to" certain countries in Africa, but in fact are also *nationals* of one of**

those countries who have *lived*, perhaps *even in outbreak areas*, at a minimum since the outbreak began?

Amazingly, as the above-linked policy recommendations show, national origin and indeed even residence in hot zones is in no way independently factored into risk assessments for purposes of screening and isolation! But let's pay especial attention to the second document just linked, which is the "Ebola Virus Disease" "algorithm" document, which is actually nothing more than a truly insidious flowchart of gruesome death. **First**, look at the subheading, which states "Algorithm for Evaluation of the Returned Traveler." Can you believe it? **Where is the "Algorithm" for evaluation of *newly arrived hot zone nationals*?** **Second**, don't be misled by the language in the "No Known Exposure" box. That language does state "Residence in or travel to affected areas** without HIGH- or LOW-risk exposure", but the critical fact is that Duncan-type cases are asymptomatic, and, as the "Algorithm" chart shows, with those types of cases there are *no arrows leading anywhere else*. And, in any event, the degree of exposure row only applies with respect to those people who have *already* been isolated. Indeed, the most that can happen with Duncan-type cases under the Algorithm document is, incredibly, a mere referral to "the Health Department."

The first CDC document linked above functions similarly; but at least specifies a few more symptoms. In the final analysis, though, it too talks only about travelers "to" hot zone countries, and so says nothing at all about how to contend with asymptomatic Duncan-type hot zone nationals.

So what is going on? Let's have a look at some Ebola charades at Texas Presbyterian Hospital, Dallas. Check out these weird accounts *via* CNN:

"Hospital officials have acknowledged that the patient's travel history wasn't "fully communicated" to doctors, but also said in a statement Wednesday that based on his symptoms, there was no reason to admit him when he first came to the emergency room last Thursday night.

"At that time, the patient presented with low-grade fever and abdominal pain. His condition did not warrant admission. He also was not exhibiting symptoms specific to Ebola," Texas Health Presbyterian Hospital Dallas said.

The patient, identified by his half-brother as Thomas Eric Duncan, told hospital staff that he was from Liberia, a friend who knows him well said.

A nurse asked the patient about his recent travels while he was in the emergency room, and the patient said he had been in Africa, said Dr. Mark Lester, executive vice president of Texas Health Resources. But that information was not "fully communicated" to the medical team, Lester said.

What on earth can it mean to say that the patient's travel history was not "fully communicated" to doctors? How hard is it to communicate "the patient is from Liberia"? Here is where we need to notice that, according to a friend, Duncan told hospital staff that he (Duncan) was *from* Liberia—not merely that he had "traveled" there. And how hard is it, really, to communicate these things to others? Add to this that, in all likelihood, Duncan's friend probably *did* tell CDC that Duncan was *from* Liberia (because the friend wanted to get Duncan help early).

But given that the hospital officials now say that "[h]is condition did not warrant admission at the time", *what difference* would it have made if Duncan's "travel history" *had* been fully communicated to doctors? It's not like CDC guidelines would have had the hospital behave in any way other than the way it did—and the hospital itself asserts that in any event Duncan was asymptomatic on his first visit.

To see what is at stake here, reflect on what would have happened if the hospital had flouted CDC policy guidelines and, of its own initiative, isolated Duncan on the basis of Liberian and Monrovian origin. People would certainly have asked why Duncan was being isolated, and what could the hospital have said? Under CDC standards, the hospital would have had to have said that Duncan *was* symptomatic (and can you imagine the chaos and panic that would have caused)—but he wasn't, according to the hospital. The alternative would have been to say that even though he was *not* symptomatic, he was being isolated anyway because his *status as a Liberian and Monrovian citizen amounted to a grave risk factor*.

So the hospital was in a bind, you see, because the U.S. Government doesn't want people to even think about Liberian and Monrovian citizenship as an Ebola risk factor because that could conceivably *completely destroy the One Party State's immigration reform goals*—especially given psychological associations with mystery viruses and other illnesses believed to have arrived from south of the border. These things are probably why we got a bunch of weasel-wording from the hospital, and that is probably why Duncan was sent home with antibiotics after his first visit. The hospital chose to follow the CDC, and so Duncan, now characterized, per the CDC, as a mere "traveler to" an affected country, was loosed on Dallas and therefore the entire world.

That, ladies and gentleman, is ObamaCare, and that is what "comprehensive immigration reform" means to the Global Elite.

Dr. Jason Kissner *is Associate Professor of Criminology at California State University. Dr. Kissner's research on gangs and self-control has appeared in academic journals. His current empirical research interests include active shootings.*

The Ebola Crisis and Medical Intelligence

Source: http://20committee.com/2014/10/03/the-ebola-crisis-and-medical-intelligence/

There's now no denying that West Africa's Ebola outbreak has become a global crisis. After months of downplaying the threat, Western governments are facing the painful fact that the situation is deteriorating fast. It's now plain to see that the world is at the precipice of something genuinely awful, with official predictions of more than a million new infections by the new year. Given that the death rate among those infected with Ebola is roughly fifty percent — and a good deal higher in underdeveloped regions like West Africa — serious concern is warranted.

Now that a Liberian visitor has brought Ebola to American shores, the assurances of officials that the situation is "under control" are being viewed skeptically by many. Our self-reporting system for preventing diseases entering the United States has failed, and investigators are reaching out to a hundred or more travelers who might have been exposed to Ebola as Thomas Duncan made his way from Liberia to Texas.

The White House is facing awkward questions about the crisis, with even the reliably liberal Chris Matthews repeatedly lambasting President Obama for low-balling the Ebola threat to the public, in an "effort to try to downplay concerns at the expense of being a truth-teller." **Now that Ebola as become a domestic, not just foreign issue, Americans are paying attention more, and many don't like what they see.**

Then there's the reality that the White House's much-ballyhooed efforts to fight Ebola in Africa aren't faring so well. While this has much to do with the chaos that is shaking West Africa due to the outbreak, to say nothing of that region's weak medical infrastructure, nobody in the West Wing will welcome headlines in *The New York Times* asserting that America's anti-Ebola campaign is "barely off the ground". Like George W. Bush in Iraq, Barack Obama has sent the U.S. military into a deteriorating situation, in a misplaced belief that the powerful Pentagon can work magic.

Fortunately for the Department of Defense (DoD), it possesses the only full-fledged medical intelligence outfit on earth. **That's the decidedly unique National Center for Medical Intelligence (NCMI), a component of the Defense Intelligence Agency (DIA) that's located at Fort Detrick, Maryland.** It's been around, in one guise or another, since the Second World War, doing intelligence analysis of medical threats to the American military. DIA was given the medical intelligence mission in 1963, and since 1979 it's resided at Fort Detrick (which, if you believe one of the better-known KGB disinformation operations, is where DoD invented AIDS). It was known as the Armed Forces Medical Intelligence Center (AFMIC) for years, being rebranded as NCMI in 2008, getting a $7.8 million facility upgrade two years later, since the agency had outgrown its spaces; in a typical Intelligence Community story, NCMI lacked sufficient office space and, critically, parking for its 150 staffers.

NCMI is made up of personnel from all the armed services plus DoD civilians. Many are doctors of various sorts, both M.D.s and Ph.D.s, specializing in the full range of relevant disciplines, above all epidemiology. **Its mission is producing medical intelligence (known, of course, as MEDINT for short), which is defined by the Pentagon as:**

That category of intelligence resulting from collection, evaluation, analysis, and interpretation of foreign medical, bio-scientific, and environmental information that is of interest to strategic planning and to military medical planning and operations for the conservation of the fighting strength of friendly forces and the formation of assessments of foreign medical capabilities in both military and civilian sectors.

In English, this means that NCMI tracks medical threats to the U.S. military and, more broadly, the United States. The Pentagon every day sends men and women into regions teeming with weird and often deadly diseases that are seldom encountered in the developed world, and it's NCMI's job to provide senior military and civilian decision-makers the specialized intelligence they need to understand and mitigate these threats.

This isn't a bunch of 007s in lab coats. NCMI is made up of analysts, not collectors,

and most of them are medical professionals who learn the intelligence trade, not the other way around. As NCMI's director explained in 2012, "We take these very smart people and turn them into intelligence officers." This center, while tiny by the standards of America's vast seventeen-agency Intelligence Community, punches well above its weight, partnering closely with many IC agencies — there are liaison officers from the whole range of IC alphabet-soup agencies at NCMI, while they send experts out to work at those agencies in return — as well as a wide range of U.S. Government entities, including the Department of Agriculture and especially the Centers for Disease Control, who have fully cleared people embedded at Fort Detrick to facilitate collaboration and information-sharing.

As an all-source intelligence analysis organization, NCMI is dependent on raw intelligence provided by other agencies — signals intelligence and satellite imagery, especially — as well as open-source reporting from many places. Surprising as it may sound to many Americans, the National Security Agency, the Central Intelligence Agency, and the National Geospatial-intelligence Agency, among others, have

longstanding intelligence requirements for things such as disease and epidemics, and it's the job of NCMI to make sense of what's coming in, since there aren't many epidemiologists working at Langley or Fort Meade.

While NCMI puts out some very detailed and specialized reporting, it also provides DoD and the IC with assessments that, **I can attest, are written in refreshingly normal English,** since the average consumer of medical intelligence isn't a medical professional, but a layperson who needs to understand the complex issues. NCMI has worried about Ebola for a long time, and here its Infectious Disease Division, which assesses potential epidemics in literally every country on earth, walks point.

We can be assured that NCMI is providing Washington, DC, with detailed medical intelligence about the nature of the Ebola threat, both in West Africa and to the American homeland. This is vitally important, given the remote yet extant possibility that Ebola might mutate and be transmitted in any airborne fashion, which represents every epidemiologist's nightmare scenario. No doubt NCMI has some classified assessments on that too.

So far, America has been spared serious worry about Ebola, and let's hope that remains so. But hope is not a strategy, as every wise strategist knows, and we must soon begin contemplating unpleasant things like quarantines and travel bans to stave off catastrophe. Here NCMI and its medical intelligence will be critical to decision-makers in Washington, DC. Given recent revelations indicating a cavalier attitude towards intelligence in the Obama White House, let's hope that NCMI reports are making their way to the highest levels of our government, and are being read closely.

Obama's "War on Ebola" or War for Oil? Sending 3000 Troops to African "Ebola" Areas that Happen to Export Oil to China

By F. William Engdahl

Source: http://www.globalresearch.ca/obamas-war-on-ebola-or-war-for-oil-sending-3000-troops-to-african-ebola-areas-that-happen-to-export-oil-to-china/5406142

For a Nobel Peace Prize President, Barack Obama seems destined to go down in history books as the President who presided over one of the most aggressive series of wars ever waged by a bellicose Washington Administration. Not even George Bush and Dick Cheney came close.

First, before the ink was even dry on his Nobel Prize certificate, Obama announced the Afghanistan "surge", pouring another 30,000 US military into that destroyed part of the world. Then came Obama's war against Libya's Qaddafi, followed rapidly by his war to try to topple Syria's Bashar al Assad. Soon after came Obama's "war for democracy in Ukraine," otherwise better called Obama's attempt to provoke Russia into a new war confrontation with NATO by backing a gaggle of Ukrainian oligarchs, criminals and outright neo-nazis in Kiev. In July of this year, Obama's Administration was pushing the President to launch a second try at bombing Syria back to the Stone Age, allegedly to destroy ISIS, a looney Jihadist Sunni sect that was said to be a joint venture of the CIA and Israeli intelligence.

Now Obama's advisers, no doubt led by the blood-thirsty National Security Adviser, Susan Rice, have come up with a new war. **This is the War Against Ebola.** On September 16, President Obama solemnly declared the war. He announced, to the surprise of most sane citizens, that he had ordered 3,000 American troops, the so-called "boots on the ground" that the Pentagon refuses to agree to in Syria, to wage a war against….a virus?

In a carefully stage-managed appearance at the US Centers for Disease Control (CDC), Obama read a bone-chilling speech. He

called the alleged Ebola outbreaks in west Africa, "a global threat, and it demands a truly global response. This is an epidemic that is not just a threat to regional security. It's a potential threat to global security, if these countries break down, if their economies break down, if people panic," Obama continued, conjuring images that would have made Andromeda Strain novelist Michael Chrichton drool with envy. Obama added, "That has profound effects on all of us, even if we are not directly contracting the disease. This outbreak is already spiraling out of control."

With that hair-raising introduction, the President of the world's greatest Superpower announced his response. In his role as Commander-in-Chief of the United States of America announced he has ordered 3,000 US troops to west Africa in what he called, "the largest international response in the history of the CDC." He didn't make clear if their job would be to shoot the virus wherever it reared its ugly head, or to shoot any poor hapless African suspected of having Ebola. Little does it matter that the US military doesn't have anywhere near 3,000 troops with the slightest training in public health.

Before we all panic and line up to receive the millions of doses of untested and reportedly highly dangerous "Ebola vaccines" the major drug-makers are preparing to dump on the market, some peculiarities of this Ebola outbreak in Africa are worth noting.

Certified Ebola Deaths?

The World Health Organization, under the Director, Dr Margaret Chan, in a press conference on September 13, sounded the alarm, warning that Ebola in West Africa was surging out of control. "In the three hardest hit countries, Guinea, Liberia and Sierra Leone, the number of new patients is moving far faster than the capacity to manage them," Chan claimed. WHO claims that almost half of 301 health-care workers dealing with alleged Ebola patients have themselves died, and that 2,400 people out of 4,784 cases in Africa have died of Ebola. On August 8, Chan declared the African Ebola situation a "Public Health Emergency of International Concern," whatever that is supposed to mean.

A major problem for Chan and her backers, however, is that her Ebola statistics are very, very dubious. For those whose memory is short, this is the same **Dr Margaret Chan at WHO in Geneva who was guilty in 2009 of trying to panic the world into taking unproven vaccines for "Swine Flu" influenza, by declaring a Global Pandemic with statistics calling every case of symptoms that of the common cold to be "Swine Flu," whether it was runny nose, coughing, sneezing, sore throat.** That changed WHO definition of Swine Flu allowed the statistics of the disease to be declared Pandemic. It was an utter fraud, a criminal fraud Chan carried out, wittingly or unwittingly (she could be simply stupid but evidence suggests otherwise), on behalf of the major US and EU pharmaceutical cartel.

In a recent *Washington Post* article it was admitted that sixty-nine percent of all the Ebola cases in Liberia registered by WHO have not been laboratory confirmed through blood tests. Liberia is the epicenter of the Ebola alarm in West Africa. More than half of the alleged Ebola deaths, 1,224, and nearly half of all cases, 2,046, have been in Liberia says WHO. And the US FDA diagnostic test used for the lab confirmation of Ebola is so flawed that the FDA has prohibited anyone from claiming they are safe or effective. That means, a significant proportion of the remaining 31 % of the Ebola cases lab confirmed through blood tests could be false cases.

In short, no one knows what 1,224 Liberians in recent weeks have died from. But WHO claims it to be Ebola. Note that the countries affected by the Ebola alarm are among the poorest and most war-torn regions in the world. Wars over blood diamonds and colonial genocidal tribal wars have left a devastated, mal-nourished population in its wake.

WHO's official fact sheet on Ebola, which now they renamed EVD for Ebola Virus Disease, claims, "The first EVD outbreaks occurred in remote villages in Central Africa, near tropical rainforests, but the most recent outbreak in West Africa has involved major urban as well as rural areas…" WHO further notes that, "It is thought that fruit bats of the Pteropodidae family are natural Ebola virus hosts. Ebola is introduced into the human population through close contact with the blood, secretions, organs or other bodily fluids of

infected animals such as chimpanzees, gorillas, fruit bats, monkeys, forest antelope and porcupines found ill or dead or in the rainforest."

Then the official WHO Ebola Fact Sheet dated September, 2014, states, "It can be difficult to distinguish EVD from other infectious diseases such as malaria, typhoid fever and meningitis."

Excuse me, Dr Margaret Chan, can you say that slowly? It can be difficult to distinguish EVD from other infectious diseases such as malaria, typhoid fever and meningitis? And you admit that 69% of the declared cases have never been adequately tested? And you state that the Ebola symptoms include "sudden onset of fever fatigue, muscle pain, headache and sore throat. This is followed by vomiting, diarrhea, rash, symptoms of impaired kidney and liver function, and in some cases, both internal and external bleeding"?

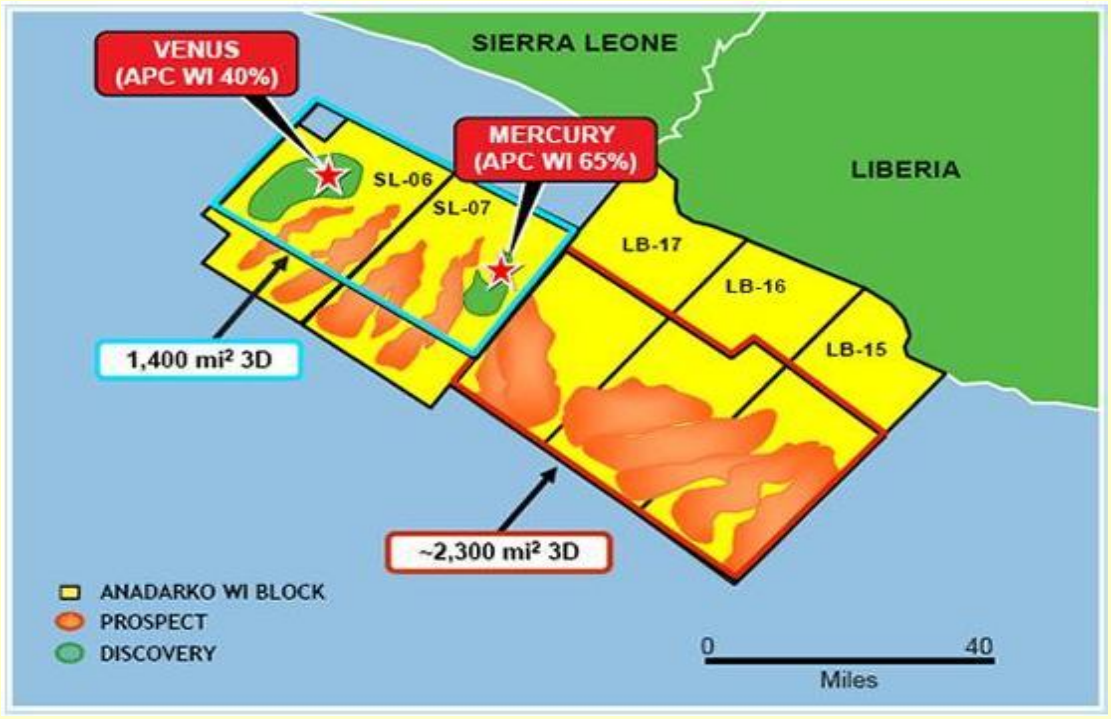
In short it is all the most vague and unsubstantiated basis that lies behind President Obama's new War on Ebola.

War on Ebola or War for Oil?

One striking aspect of this new concern of the US President for the situation in Liberia and other West African states where alleged surges of Ebola are being claimed is the presence of oil, huge volumes of untapped oil.

The offshore coast of Liberia and east African 'Ebola zones' conveniently map with the presence of vast untapped oil and gas resources.

The issue of oil in west Africa, notably in the waters of the Gulf of Guinea have become increasingly strategic both to China who is roaming the world in search of future secure oil import sources, and the United States, whose oil geo-politics was summed up in a quip by then Secretary of State Henry Kissinger in the 1970's: 'If you control the oil, you control entire nations.'



The Obama Administration and Pentagon policy has continued that of George W. Bush who in 2008 created the US military Africa Command or AFRICOM, to battle the rapidly-growing Chinese economic presence in Africa's potential oil-rich countries. West Africa is a rapidly-emerging oil treasure, barely tapped to date. A US Department of Energy study projected that African oil production would rise 91 percent between 2002 and 2025, much from the region of the present Ebola alarm.

Chinese oil companies are all over Africa and increasingly active in West Africa, especially Angola, Sudan and Guinea, the later in the epicenter of Obama's new War on Ebola troop deployment.

If the US President were genuine about his concern to contain a public health emergency, he could look at the example of that US-declared pariah Caribbean nation, Cuba. Reuters reports that the Cuban government, a small financially distressed, economically sanctioned island nation of 11 million people, with a national budget of $50 billion, Gross Domestic Product of 121 billion and per capita GDP of just over $10,000, is dispatching 165 medical personnel to Africa to regions where there are Ebola outbreaks. **Washington sends 3,000 combat troops. Something smells very rotten around the entire Ebola scare.**

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Out of control – How the world's health organizations failed to stop the Ebola disaster

Source: http://www.washingtonpost.com/sf/national/2014/10/04/how-ebola-sped-out-of-control/

Tom Frieden remembers the young woman with the beautiful hair, dyed a rusty gold and braided meticulously, elaborately, perhaps by someone who loved her very much. She was lying facedown, half off the mattress. She had been dead for hours, and flies had found the bare flesh of her legs.

Two other bodies lay nearby. Bedridden patients who had not yet succumbed said of the dead, "Please, get them out of here."

Frieden, the director of the U.S. Centers for Disease Control and Prevention (CDC), knew it was no simple matter to properly carry away a body loaded with Ebola virus. It takes four people wearing protective suits, one at each corner of the body bag. On that grim day near the end of August, in a makeshift Ebola ward in Monrovia, Liberia, burial teams already had lugged 60 victims to a truck for the trip to the crematorium.

Frieden had seen plenty of death over the years, but this was far worse than he expected, a plague on a medieval scale. "A scene out of Dante," he called it.

Shaken, he flew back to the United States on Aug. 31 and immediately briefed President Obama by phone. The window to act was closing, he told the president in the 15-minute call.

That conversation, nearly six months after the World Health Organization (WHO) learned of an Ebola outbreak in West Africa, was part of a mounting realization among world leaders that the battle against the virus was being lost. As of early September, with more than 1,800 confirmed Ebola deaths in Guinea, Liberia and Sierra Leone, there was still no coordinated global response. Alarmed U.S. officials realized they would need to call in the military.

Obama eventually ordered 3,000 military personnel to West Africa; about 200 had arrived by the beginning of this month. They will be joined by health workers from countries such as Britain, China and Cuba. Canada and Japan are sending protective gear and mobile laboratories. Nonprofit organizations such as the Gates Foundation also are contributing. But it's not at all clear that this belated muscular response will be enough to quell the epidemic before it takes tens of thousands of lives.

This is an open-ended crisis involving a microscopic threat on the move. This week came the unsettling news that the Ebola epidemic has now reached across the Atlantic Ocean to a hospital in Texas, where a Liberian man has tested positive for the virus.

So how did the situation get so horribly out of control?

The virus easily outran the plodding response. The WHO, an arm of the United Nations, is responsible for coordinating international action in a crisis like this, but it has suffered budget cuts, has lost many of its brightest minds and was slow to sound a global alarm on Ebola. Not until Aug. 8, 4 1/2 months into the epidemic, did the organization declare a global emergency. Its Africa office, which oversees the region, initially did not welcome a robust role by the CDC in the response to the outbreak.

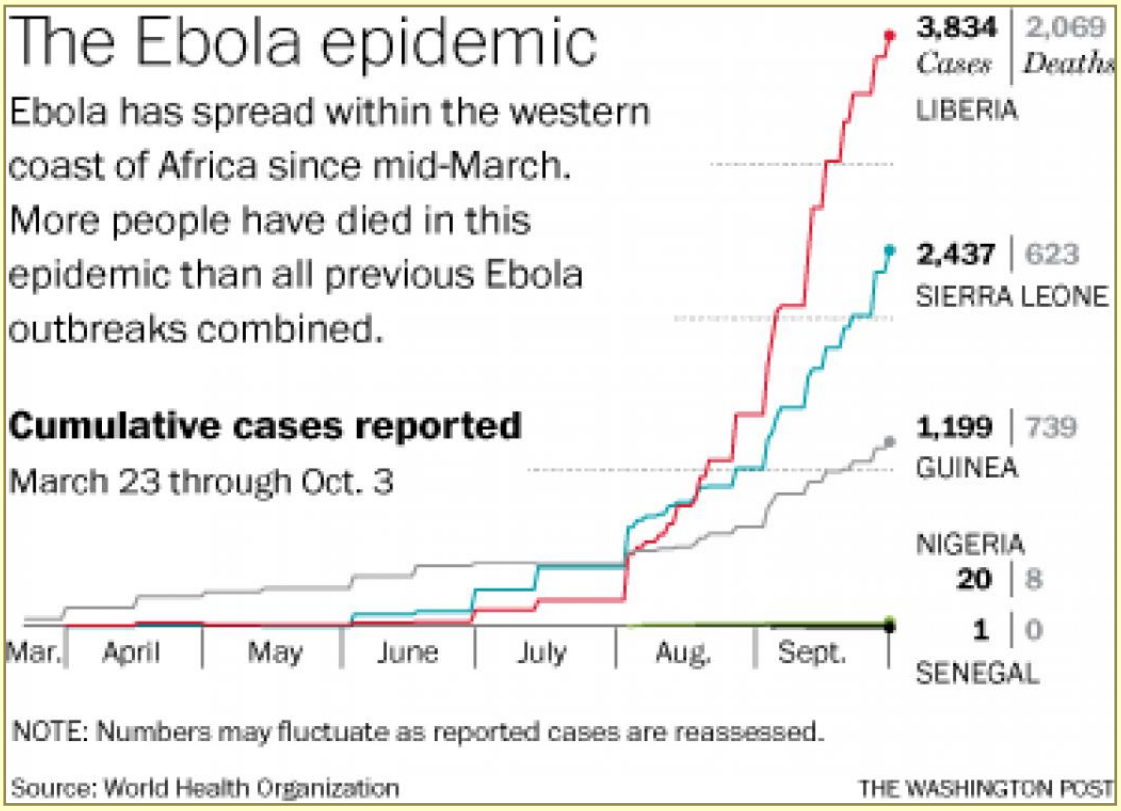
Previous Ebola outbreaks had been quickly throttled, but that experience proved misleading and officials did not grasp the potential scale of the disaster. Their imaginations were unequal to the virulence of the pathogen.

"In retrospect, we could have responded faster. Some of the criticism is appropriate," acknowledged Richard Brennan, director of the WHO's Department of Emergency Risk Management and Humanitarian Response. But he added, "While some of the criticism we accept, I think we also have to get things in perspective that this outbreak has a dynamic that's unlike everything we've ever seen before and, I think, has caught everyone unawares."

The epidemic has exposed a disconnect between the aspirations of global health officials and the reality of infectious disease control. Officials hold faraway strategy sessions about fighting emerging diseases and bioterrorism even as front-line doctors and nurses don't have enough latex gloves, protective gowns, rehydrating fluid or workers to carry bodies to the morgue.

"We cannot wait for those high-level meetings to convene and discuss over cocktails and petits fours what they're going to do," exclaimed Joanne Liu, international head of Doctors Without Borders, when she heard about another U.N. initiative. Her group was among the first to respond to the viral conflagration, and it kept its staff in West Africa throughout the crisis.

West Africa was ill-equipped for an Ebola disaster because civil war and chronic poverty had



undermined local health systems and there were few doctors and nurses. Health workers in the region had never experienced an Ebola outbreak and didn't know what they were seeing in those first critical months. In the spring the outbreak seemed to fade, making officials overconfident. And then the virus made the leap from rural villages to crowded cities.

Local customs in handling the dead led to further infections. Some West Africans believe that the day you die is one of the most important days of your life. The final farewell can be a hands-on, affectionate ritual in which the body is washed and dressed, and in some villages carried through the community, where friends and relatives will share a favorite beverage by putting the cup to the lips of the deceased before taking a drink.

And finally, the virus itself played a critical role in accelerating the crisis. Ebola, although not nearly as contagious as some viruses, is unusually lethal and commensurately

terrifying. Many foreign health workers and volunteers fled the region, and few people rushed in to take their place.
This is both a biological plague and a psychological one, and fear can spread even faster than the virus.

'This is relatively small still'
A virus is not really alive, in the formal sense of the word, as it cannot do anything outside of a host. Ebola is a filovirus, and looks like a piece of spaghetti. The protein envelope surrounds a strand of RNA, the simpler cousin of DNA. You could say it is pure information with instructions for replication.
Ebola is one of a number of viruses that cause "viral hemorrhagic fever." What makes it so deadly is that it can take over the machinery of many kinds of cells, replicating quickly. It shuts down or misdirects parts of the immune system and sends the rest into hyperdrive, causing the victim to suffer fever, headaches, vomiting, diarrhea and dehydration. Death can come within days from multiple organ failure.
Ebola isn't nearly as contagious as, say, measles or influenza. It is transmitted only through bodily fluids after the fever and other symptoms have occurred. But the incubation period, after infection and before the person becomes symptomatic, typically lasts about a week, or as long as three weeks. People who are infected can travel a great distance before they begin to shed the virus. Initial symptoms are similar to those caused by malaria and influenza, confounding a proper diagnosis.
The first Ebola cases surfaced in late 2013 in Guinea, in the rain forest in the district of Guéckédou, close to borders with Liberia and Sierra Leone. No one knows exactly when the virus jumped into the human population, or from which animal species - a fruit bat is one possibility - but the first victim is believed to have been a 2-year-old girl or someone close to her.
Doctors at first assumed they were looking at Lassa fever, a viral hemorrhagic fever similar to Ebola, as dozens of people began falling sick and more than half of them were dying. But then on March 23, the WHO posted a notice on its Web site:
"The Ministry of Health (MoH) of Guinea has notified WHO of a rapidly evolving outbreak of Ebola virus disease (EVD) in forested areas of south-eastern Guinea. As of 22 March 2014, a total of 49 cases including 29 deaths (case fatality ratio: 59%) had been reported."
The virus spread from Guinea to Liberia, where two people died in late March. On April 1, Sierra Leone reported that two of its citizens had died in Guinea, probably from Ebola, and that their bodies had been returned to their native country.
That same day, the WHO urged calm.
"This is relatively small still. The biggest outbreaks have been over 400 cases," WHO spokesman Gregory Hartl said at a news conference in Geneva, referring to previous outbreaks in Congo and Uganda.
Internally, WHO decided to rank the Ebola outbreak as a two on a scale of one to three, with three being the most serious health emergency.

'We thought we were in the clear'
Kent Brantly, 33, is a devout Christian who in the spring of this year was working for the North Carolina-based relief organization Samaritan's Purse at a missionary hospital in Monrovia. The hospital is known as ELWA, for Eternal Love Winning Africa. He had moved with his wife, Amber, and their two young children to Monrovia the previous fall for the two-year assignment. They lived in a comfortable two-bedroom house, played on the nearby beach and snorkeled along the reef.
"Before Ebola," he said, "life was good in Liberia."
When he and his colleagues learned about the outbreak in late March, they decided to set up an isolation unit on the chance that Ebola patients would arrive. They downloaded a 1998 guide on how to control viral hemorrhagic fevers and trained hospital employees on staying safe.
Many staff members were uneasy about the decision to open an Ebola ward, and they complained to Jerry Brown, the Liberian director of the hospital. Brown, 44, is a man who exudes calm amid chaos, a virtue that would prove critical in the months to come.
"We are just preparing for the future, just in case," he told his workers.
The only available space was a yellow cinderblock tin-roofed chapel in the hospital's courtyard, where the staff gathered each morning for devotions. Now they rolled in six

beds and separated them with plastic tarps. They cleaned the floors and walls. They placed a sign out front that read, "Isolation unit. Authorized personnel only."
And then they waited.
No Ebola patients arrived. The pace of infections in Guinea slowed significantly, and in Liberia and Sierra Leone, the number of new cases dropped to zero for most of April and May.
Some hospitals dismantled their isolation units. ELWA kept its as a precaution. "We thought we were in the clear," Brantly said.

'Work in that unit? I won't do it.'
The New Kru Town slum in Monrovia has no public water supply, no toilets, no sanitation system, no electricity. People live in hovels slapped together from wood and metal. Most people have no running water, other than what's in the streets when downpours soak the neighborhood.
Sometime in late May or early June, at least six people in New Kru Town came down with Ebola. There were wild rumors that someone had poisoned their food.
Brown received a call on the evening of June 11 from someone at the Liberian ministry of health who asked: Do you still have an Ebola unit? Yes, Brown said.
Workers rushed to mix chlorine solution and cleaned the chapel, and Brown tried to find staff members willing to work in the unit alongside Brantly.
"Doc, if you want to ask me to do anything, I will do it for you. But work in that unit? I won't do it," one nurse said.
Another said she had a headache and wasn't feeling well. A third said she was the sole supporter of two children and wouldn't do it. Brown finally found a scrub nurse in the operating room who was willing to go in.
Before midnight, an ambulance pulled up to the gate of the missionary hospital. Inside were two Ebola patients, a young woman and her uncle, but only the woman entered the hospital. Her uncle had died in the ambulance.
Ebola patients trickled into the hospital one at a time initially, but soon the flow picked up. One of the new patients was a doctor, Melvin Korkor, who had contracted the virus along with five nurses and four other workers at his hospital many hours away by car in the rural county of Bong. He had been told that he had a 10 percent chance of surviving.
Korkor thinks he caught the virus from one of his nurses when he touched her with his bare hand to check for fever. Before he left for treatment in Monrovia, he told his wife, "The only thing I want you to bring for me is a Bible."
At ELWA, Korkor read his Bible - particularly Psalm 91 ("Surely he shall deliver thee from the snare of the fowler, and from the noisome pestilence") - and drank 12 liters of rehydration fluid every day. He held his nose when he ate so that he wouldn't throw up.
Four days later he felt a little better, and realized he would live.
All nine of his colleagues died.

'Please come help us'
In a crisis like this, the United States relies on the Centers for Disease Control and Prevention, which has disease detectives who are trained to race anywhere in the world on a moment's notice to track an epidemic. But Americans can't simply charge into a country and begin barking orders. The CDC must be invited. Even then it plays a supporting role to local officials and the World Health Organization.
Early in this outbreak, the CDC ran into bureaucratic resistance from the WHO's regional office in Africa. The American officials wanted a greater leadership role in managing the outbreak response, including data collection and resource deployment. The CDC's Frieden asked Keiji Fukuda, a former CDC official who is now the WHO's assistant director-general for health security, to intervene. Fukuda flew to the WHO's regional office in Congo and persuaded his colleagues to allow the CDC to play a larger role.
In early July, Frieden, 53, had to keep track of multiple crises. Vials of smallpox virus from the 1950s had been found in a storage room at the National Institutes of Health. That fiasco followed news that the CDC had unknowingly sent samples of anthrax from one lab

to another. While dealing with these embarrassments, Frieden saw the Ebola numbers exploding in Liberia.

"It's back," he told himself. "It's in multiple countries, and we don't have a robust enough response. Second wave."

At ELWA, Brown was dismayed that Liberian government officials seemed to be overwhelmed and paralyzed. Liberia, torn by two civil wars, is one of the world's poorest countries, and deep distrust of the government makes it hard for health workers to conduct public health campaigns.

"People were sitting in places and arguing instead of acting," Brown said. "And gradually Ebola was creeping into society."

The doctors and nurses at ELWA went about their labors in protective gowns, masks, goggles, boots and gloves, while workers with chlorine tanks on their backs sprayed surfaces in a constant battle against the invisible foe. One day Brantly, covered head to toe in protective gear, identifiable only by his blue eyes peering through goggles, spoke into the camera for a video being put together by Samaritan's Purse. He asked his audience to pray and to contribute money, but then he said that what he and his colleagues needed most were doctors, nurses, paramedics and other volunteers.

"Please come help us," he said.

He e-mailed friends in Texas: "I think we are only seeing the tip of the iceberg."

At 4 a.m. on July 20, a neighbor drove Brantly and his family to Roberts International Airport. Brantly said goodbye to his wife and children, who were heading to her brother's wedding in Texas. He was supposed to go the following week.

Later that morning, Brantly headed to work to begin overseeing a new 20-bed Ebola unit that Samaritan's Purse had helped build across the street from the main hospital. He and others began transferring the hospital's six Ebola patients from the makeshift ward in the chapel to the new unit, called ELWA2.

Nancy Writebol, another American missionary, helped as always. She was affectionately known as the Bleach Lady because she mixed the all-important chlorine solution each day and trained other hygienists on how to decontaminate the hospital.

On the morning of July 23, Brantly felt feverish. Maybe he had been working too long, too hard, he thought. Maybe he had malaria.

He was not so lucky.

Brantly will never know exactly how he caught the Ebola virus, although he suspects it happened during an all-night shift when he admitted two extremely sick patients into the Ebola isolation unit. Both died within hours.

The virus swiftly carried Brantly to the edge of death. His fever reached 105; he vomited blood and battled diarrhea and nausea. He could barely breathe.

Brantly soon became the first human to receive an experimental Ebola drug called ZMapp, which Samaritan's Purse had arranged to get to him in Liberia. From the moment he became ill, he didn't step out of his house until he was flown to Emory University Hospital in Atlanta on a specially equipped plane.

Writebol also became sick, received ZMapp and eventually was flown to Atlanta. Neither knew then about the frenzied news media coverage of their illness, or the attendant hysteria on social media as some Americans feared their evacuation would lead to an epidemic in the United States.

Suddenly the world had begun to pay attention.

On July 24, the WHO upgraded the crisis from a two to a three, the highest level, but it did not declare a global health emergency.

Even as health officials quickened their pace, the epidemic accelerated even faster. Scores of doctors and nurses were becoming sick, and many were dying, including a beloved doctor in Sierra Leone, Sheik Umar Khan.

Patrick Sawyer, a Liberian American whose sister had died of Ebola and who had been hospitalized with an undiagnosed illness, flew to Nigeria and came into contact with numerous Nigerians before being isolated in a hospital and dying on July 25. Epidemiologists refer to such a situation as an "export" of the virus. More people are in the Nigerian capital of Lagos than in Guinea, Liberia and Sierra Leone combined.

"That's when I stopped sleeping," Frieden said.

'I'm not being pessimistic'

In late July, with the epidemic roaring, Liu, the head of Doctors Without Borders (known internationally by its French name, Médecins Sans Frontières), requested a meeting with WHO Director-General Margaret Chan at the WHO's Geneva headquarters.

Chan, an expert on the SARS virus and avian influenza, has led the WHO since November 2006. Her organization has experienced budget cuts and shifting priorities in recent years. The WHO is responsible for coordinating global health emergencies, but the legislative body that oversees it has repeatedly voted to emphasize noncommunicable diseases such as heart disease and cancer rather than infectious diseases.

Liu, a French Canadian, is a pediatric emergency room doctor by training, and for much of the past two decades has worked for Doctors Without Borders in the most war-ravaged, disaster-stricken places on Earth.

On July 30, she implored Chan to declare an international health emergency. Chan responded that she was being very pessimistic, Liu said.

Liu replied: "Dr. Chan, I'm not being pessimistic. I'm being realistic."

Chan soon flew to West Africa to meet with the presidents of Guinea, Liberia and Sierra Leone, and announced a $100 million push to stop the outbreak.

On Aug. 8, the WHO declared a global health emergency.

Chan declined to comment for this article. The WHO's Fukuda said that if anyone asks whether his organization did a perfect job, the answer will be, "Hell no."

But after six trips to Africa during the epidemic, he has seen a more profound truth: Global organizations can provide epidemiologists and laboratory help, but what these resource-poor countries really need are front-line doctors and nurses, and basic resources. In Africa, patients told him, "We don't have enough food."

He visited a clinic where 25 health-care workers became sick with Ebola and 23 died. Doctors kept going to work even as they were ostracized back home by fearful neighbors. "This is really a profound level of heroism," Fukuda said.

In a sign of ebbing confidence in the WHO's ability to coordinate a response, U.N. Secretary General Ban Ki-moon on Aug. 12 appointed David Nabarro, 65, a longtime troubleshooter, as senior U.N. system coordinator for Ebola. Nabarro had worked on avian flu and the aftermath of the 2004 Indian Ocean tsunami. He was vacationing with his family at a beach in Kenya when he received the call asking him to jump into the crisis.

Over the next month, Nabarro would travel to 21 cities on three continents, trying to put together a coalition and showing everyone an ominous chart depicting four possible trajectories for the epidemic. The best-case scenario showed it ending in the middle of next year. The worst case showed the "epi curve" rising in the wrong direction, toward the vertical, toward an unimaginable catastrophe.

'They were quickly drowning'

Rather than avoiding the viral storm, some Westerners headed directly into it. There they found West African health-care workers still on the job in the most dangerous of conditions.

One day in August, Liu donned a yellow plastic jumpsuit, gloves and face mask to visit Ebola patients in a Doctors Without Borders facility in Kailahun, Sierra Leone.

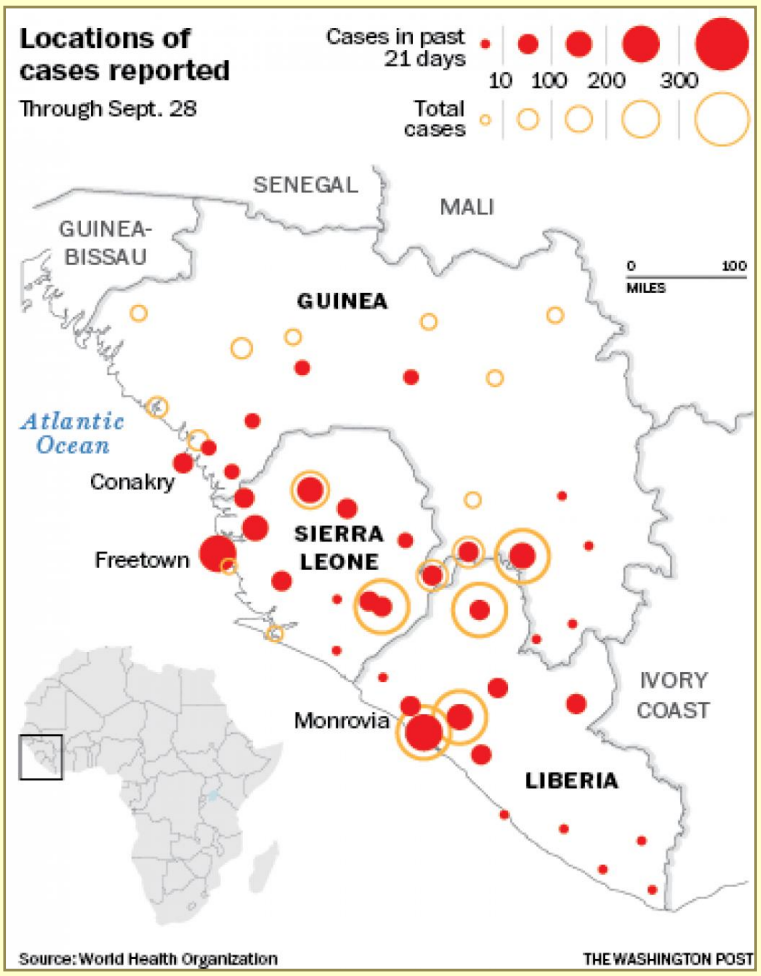
She brought a bucket to a dying man who was vomiting. She got him a tissue when his nose bled and held his hand. "I'm sorry," she said. What a tragedy, she thought, that Ebola had decreed that he must die alone, with no one to hold his hand but a stranger in a spacesuit.

The United States dispatched dozens of personnel from disaster response teams, including Defense Department planners, workers from the U.S. Agency for International Development and CDC disease detectives. One of them was the CDC's Leisha Nolen, 37, who flew to Sierra Leone in August for her second month-long stint working on the outbreak. On Aug. 12, she traveled on a fact-finding trip to the city of Port Loko. The official numbers showed only a few cases there.

Nolen asked two local health officials a series of questions. How did they hear about potential Ebola cases? From village chiefs? From family members? Did patients often show up at the hospital? Was an ambulance sent to retrieve them? Did they always draw blood for testing?
She quickly realized that the local officials couldn't possibly keep up with suspected cases. Sick people often didn't get to the hospital, and there weren't always beds for those who did come. The roads often were washed out and there was only one ambulance for an area the size of Delaware.
Nolen asked to see the tally of suspected Ebola cases. The officials pulled out a thick stack of papers. Each handwritten sheet represented a likely case, many of which had yet to be officially reported. She was shocked.
"They were quickly drowning," she said.

'We have been unable to control the spread'

Liberian President Ellen Johnson Sirleaf criticized the response of her citizens to the epidemic. "We have been unable to control the spread due to continued denials, cultural burying practices, disregard for the advice of health workers and disrespect for the warnings by the government," she said Aug. 19 in a national address.
The next day, Sirleaf ordered security forces to seal off the densely populated Monrovia slum of West Point, which sits on a peninsula that juts into the Atlantic Ocean. Even the waterfront was blocked off, with coast guard boats turning back residents in canoes trying to paddle out of the community. Protests erupted; young men threw rocks at police, who tried to dispel the crowds by firing guns in the air. A teenager was shot in both legs and died at Redemption Hospital.
A week later, the government ended the quarantine, and residents celebrated in the streets as the barricades and armed soldiers vanished.
But the virus was not about to disappear. By late August, the WHO was reporting 3,685 cases in Guinea, Liberia and Sierra Leone, and 1,841 deaths. That was just the official count, and experts believed the real toll was about 2 1/2 times higher.



'Future of the continent is on the line'

By early September, there was still no agreement among the major global health organizations and governments on how to respond to the epidemic. Unlike other disaster responses, such as the one after the earthquake in Haiti in 2010, no major U.N. operation was in place. And despite a 20-page "road map" that the WHO had introduced, it was unclear how anyone would put it into effect.
"Six months into the worst Ebola epidemic in history, the world is losing the battle to contain it," Liu, of Doctors Without Borders, told the United Nations on Sept. 2. For the first time, she implored countries to deploy their military assets - something her organization had previously opposed for health emergencies.
World Bank President Jim Yong Kim was beyond frustrated. Kim, a doctor and an expert on infectious diseases, called an emergency meeting for Sept. 3 that would include major decision-makers from the government and the private sector.

About 50 people crowded into the 12th-floor conference room at the World Bank's Washington headquarters. Gayle Smith from Obama's National Security Council was on the telephone. A senior WHO official participated by video link. The session lasted two hours.
Frieden showed up and had a dire warning: The response was like "using a pea shooter against a raging elephant."
Kim warned, "The future of the continent is on the line."
By the first week of September, senior officials across the U.S. government had come to a grim realization: The civilian response was never going to happen fast enough to catch up with the epidemic. The CDC had managed to put more than 100 staff members on the ground and the U.S. disaster relief team had dispatched 30 more, but they and other aid workers were facing too big of a challenge. Only the U.S. military had the capacity to move with enough speed and scale.
The White House was talking to the Pentagon about deploying a field hospital to treat any health-care workers who might get sick, an effort to reassure potential volunteers. U.S. military planners in West Africa were telling Washington that 500 treatment beds were needed for sick patients. A host of agencies across the government had to work out complicated logistics.
On Sept. 7, Obama said on NBC's "Meet the Press" that he intended to use the U.S. military to provide equipment, logistical support and other aid to West Africa.
But the region now had thousands of confirmed Ebola cases, and there was nowhere to treat the sick and the dying. On Sept. 9, Sirleaf sent Obama an urgent plea:

Two people lay dead on the floor Sept. 20 inside a ward at the Redemption Hospital, which has become a transfer and holding center for Ebola patients in the New Kru Town slum of Monrovia, Liberia

"I am being honest with you when I say that at this rate, we will never break the transmission chain and the virus will overwhelm us," she wrote.
The next day, high-level administration officials met at the White House to discuss military options. "People were asked to do more homework on the how," and then report back two days later, on Sept. 12, a senior official said.

'A fire straight from the pit of hell'

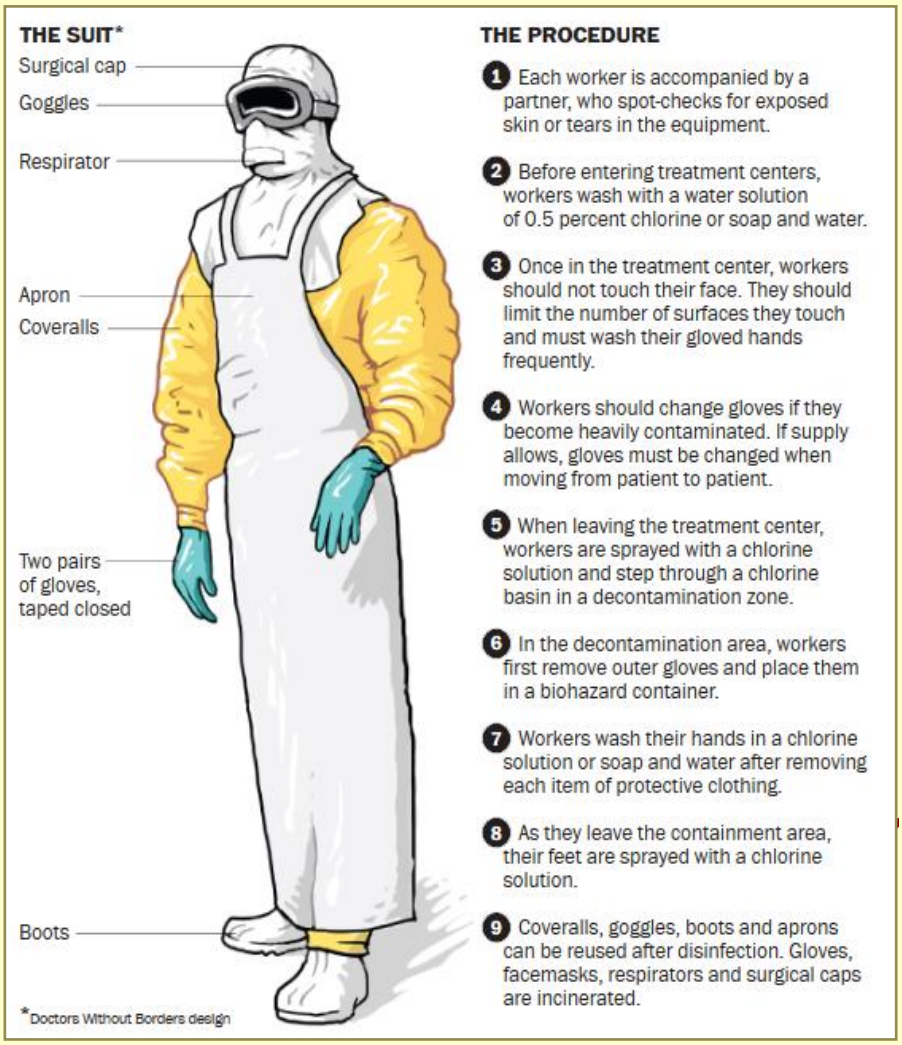
On Tuesday morning, Sept. 16, barely a month after he nearly died from Ebola, Kent Brantly met with Obama in the Oval Office. The president was about to fly to Atlanta to the CDC headquarters to announce that the United States would send 3,000 military service members and medical supplies to West Africa as part of a $750 million effort.

Obama told Brantly that he needed to put on a few pounds. The doctor smiled and nodded; he was down more than 40 pounds from his pre-Liberia weight.

Brantly urged the president not to delay in delivering help to West Africa. The commitments that Obama was about to announce were great, but only if they arrived immediately, he said.

" 'I'm pushing,' " Brantly recalled Obama saying. " 'I'm pushing as much as I can to make this happen.' "

Brantly told Capitol Hill lawmakers that day, "It is a fire straight from the pit of hell. . . . We cannot fool ourselves into thinking that the vast moat of the Atlantic Ocean will protect us from the flames of this fire."



The numbers grew even scarier. On Sept. 23, the CDC released a report estimating that, without a more robust response, as many as 1.4 million Ebola cases could potentially erupt in Liberia and Sierra Leone by Jan. 20. That didn't include Guinea, where health data remains sketchy. A vigorous response in Nigeria has cleared the virus there after only eight deaths; a separate, unrelated outbreak of Ebola has been reported in Congo.

On Sept. 26, Obama attended a White House event known as the Global Health Security Agenda Summit. Numerous public health officials from many countries were on hand. So was Melvin Korkor, the doctor who had been stricken with Ebola and treated at ELWA.

The agenda, a broad effort to stop biological threats of any kind, had been announced at the White House during a snowstorm in February. No one knew then that Ebola was already frothing in West Africa.

Frieden of the CDC said this Ebola epidemic had served as a test.

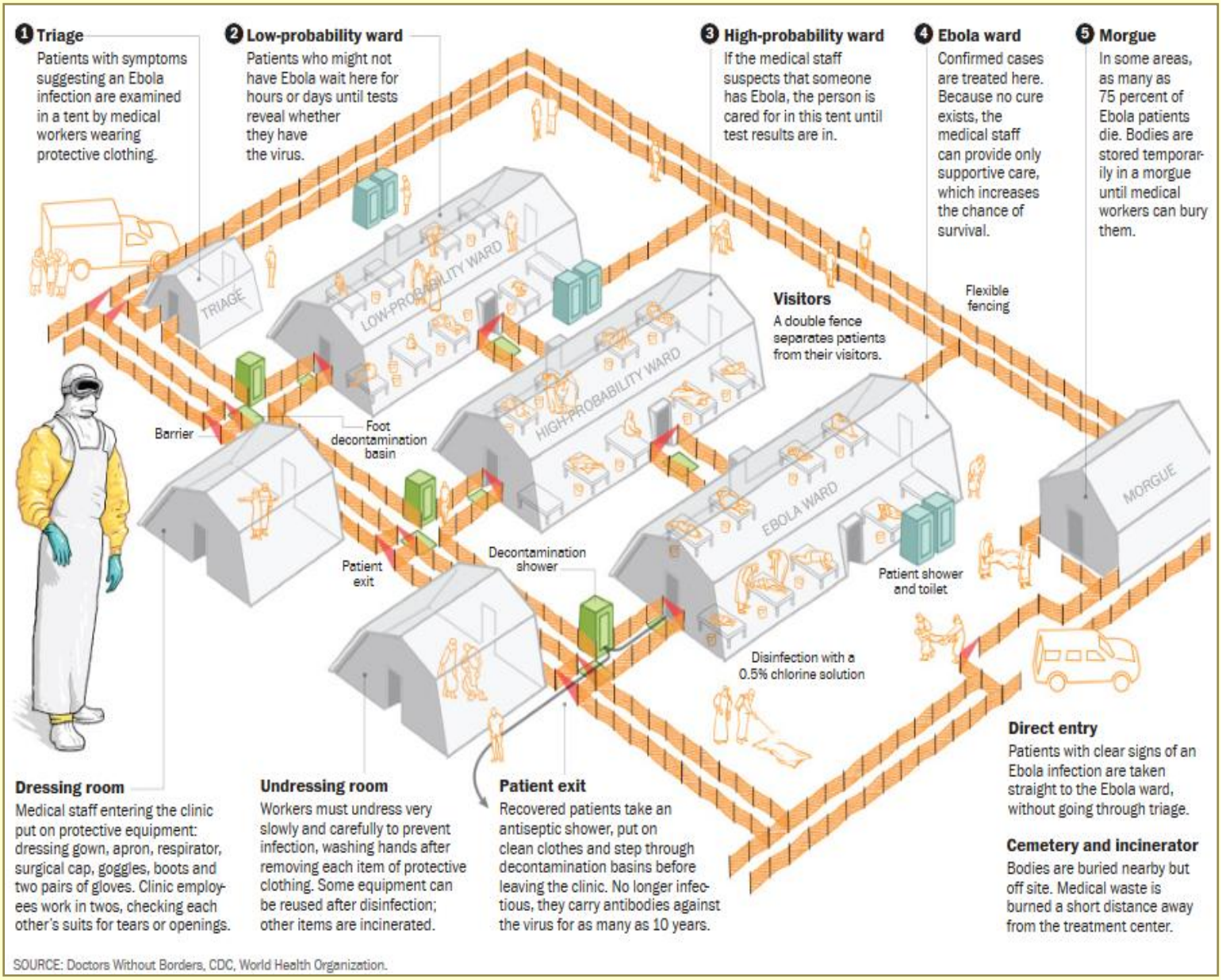
"We, the world, failed that test," he said.

Stemming the tide

During the rainy season in Monrovia, the skies are gray, the sunshine scarce and the downpours last hours. Ebola has closed the schools, municipal offices and many banks, but the streets somehow remain choked with traffic even as the economy has largely shut down. Children in shorts and bare feet race up to cars at intersections to sell candy, cream

biscuits, chewing gum, plastic bags and windshield wiper blades. The street markets are open and music blares from the stalls.

What happens next in the epidemic will be determined in part by mathematics. As of Friday, the WHO had reported 7,470 confirmed or likely cases, and 3,431 deaths in Guinea, Sierra Leone and Liberia. An



Ebola treatment center

Currently, each infected person is infecting about two more. To slow the spread of the disease and eventually stop it, officials must somehow reverse the math. Only when each Ebola patient infects, on average, fewer than one person will the outbreak begin to fade.

Frieden recently noted that, with the disease spreading exponentially, the math suggests a growing likelihood that Ebola will be exported to other countries - and then just days later came the news that it had made its way to Dallas.

The U.S. military is gradually arriving in West Africa. The basic plan is to get as many people as possible into treatment centers where they can be properly isolated. Troops will build 17 treatment centers, each with a 100-bed capacity. That will take many weeks.

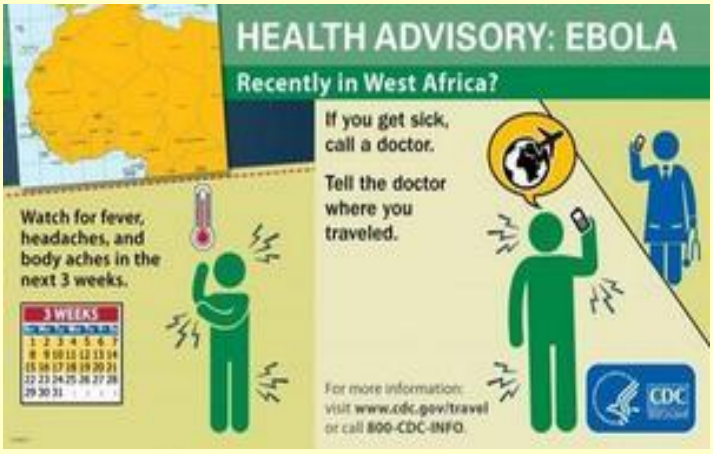
The people in charge of stopping the Ebola epidemic will have to do something that they have not been able to accomplish: They must be even more aggressive, more ruthless and more persistent than the virus - a mindless and implacable force carrying out its own genetic instructions.

▶ **A graph of stages of hemmorhagic fever can be seen at:**
http://www.washingtonpost.com/wp-srv/special/health/ebola-effect-on-body/pdf/EbolaBody.pdf

Dallas Ebola patient was sent home as a result of a flaw in software used by many hospitals

Source: http://www.homelandsecuritynewswire.com/dr20141006-dallas-ebola-patient-was-sent-home-as-a-result-of-a-flaw-in-software-used-by-many-hospitals

October 06 – Before Thomas Eric Duncan was placed in isolation for Ebola at Dallas' Texas Health Presbyterian Hospital on 28 September,



he sought care for fever and abdominal pain three days earlier, but was sent home. During his initial visit to the hospital, Duncan told a nurse that he had recently traveled to West Africa — a sign that should have led hospital staff to test Duncan for Ebola. Instead, Duncan's travel record was not shared with doctors who examined him later that day.

"Protocols were followed by both the physician and the nurses. **However, we have identified a flaw in the way the physician and nursing portions of our electronic health records (EHR) interacted in this specific case,"** the hospital wrote in a statement explaining how it managed to release Duncan following his initial visit.

According to *NextGov*, EHR software used by many hospitals contains separate workflows for doctors and nurses. Patients' travel history is visible to nurses, but such information "would not automatically appear in the physician's standard workflow." As a result, a doctor treating Duncan would have no reason to suspect Duncan's illness was related to Ebola.

Roughly 50 percent of U.S. physicians now use EHRs since the Department of Health and Human Services (HHS) began offering incentives for the adoption of digital records. In 2012, former HHS chief Kathleen Sebelius said EHRs "will lead to more coordination of patient care, reduced medical errors, elimination of duplicate screenings and tests and greater patient engagement in their own care." Many healthcare security professionals, however, have pointed out that some EHR systems contain loopholes and security gaps that prevent data sharing among healthcare workers.

The *New York Times* recently reported that several major EHR systems are built to make data sharing between competing EHR systems difficult. Additionally, **a 2013 RAND Corporation study for the American Medical Association found that doctors felt "current EHR technology interferes with face-to-face discussions with patients; requires physicians to spend too much time performing clerical work; and degrades the accuracy of medical records by encouraging template-generated doctors' notes."**

Today, Dallas's Texas Health Presbyterian Hospital has made patients' travel history available to both doctors and nurses. **It has also modified its EHR system to highlight Ebola-endemic regions in**

Africa. "We have made this change to increase the visibility and documentation of the travel question in order to alert all providers. We feel that this change will improve the early identification of patients who may be at risk for communicable diseases, including Ebola," the hospital noted.

EDITOR'S COMMENT: Sure!!! First it was the "nurse". Now it is the "software" to blame! What is next? Alien conspiracy???
Enjoy hospital's clarification statement by PR Director @:
http://www.texashealth.org/body.cfm?id=1629&action=detail&ref=1871

Spain has outbreak's 1st known case of contracting Ebola outside of Africa

Source: http://edition.cnn.com/2014/10/06/health/ebola-us/index.html

October 06 – **A nurse's assistant in Spain is the first person known to have contracted Ebola outside of Africa in the current outbreak.**
Spanish Health Minister Ana Mato announced Monday that a test confirmed the assistant has the virus.
The woman helped treat a Spanish missionary and a Spanish priest, both of whom had contracted Ebola in West Africa. Both died after returning to Spain.

Health officials said she developed symptoms on September 30. She was not hospitalized until this week. Her only symptom was a fever.
"We are working in coordination to give the best care to the patient and to guarantee the safety of all citizens," the health minister said.
An investigation is under way to find everyone the assistant may have had contact with while contagious. So far, there are no other known cases.
The assistant was one of about 30 health professionals in Spain who helped to treat the Ebola patients.

The news came amid growing fears in the United States that the disease could spread.
"As I've said from the start of this outbreak, I consider this a top national security priority. This is not just a matter of charity ... This is an issue about our safety," President Barack Obama told reporters Monday.
He called for protocols to help stop the spread of the disease, while downplaying the risk of an epidemic in the United States.
"We're also going to be working on protocols to do additional passenger screening, both at the source and here in the United States," he said. "Here in the United States, at least, the chances of an outbreak -- of an epidemic here -- are extraordinarily low."

UPDATE: Following court order the family dog will be put to sleep… Unfortunately there is no quarantine procedures' for pets. Afterall they are just animals…

Review of Ebola Virus Infections in Domestic Animals

Weingartl H.M. · Nfon C. · Kobinger G.
[1] National Centre for Foreign Animal Disease (NCFAD), Canadian Food Inspection Agency (CFIA), Canadian Science Centre for Human and Animal Health, Winnipeg, Canada;[2] National Microbiology Laboratory (NML), Public Health Agency of Canada (PHAC), Canadian Science Centre for Human and Animal Health, Winnipeg, Canada

Roth JA, Richt JA, Morozov IA (eds): Vaccines and Diagnostics for Transboundary Animal Diseases. Dev Biol (Basel). Basel, Karger, 2013, vol 135, pp 211-218.

Abstract
Ebola viruses (EBOV; genus *Ebolavirus*, family *Filoviridae*) cause often fatal, hemorrhagic fever in several species of simian primates including human. While fruit bats are considered a natural reservoir, the involvement of other species in the EBOV transmission cycle is unclear, especially for domesticated animals. Dogs and pigs are so far the only domestic animals identified as species that can be infected with EBOV. In 2009 Reston-EBOV was the first EBOV reported to infect swine with indicated transmission to humans; and a survey in Gabon found over 30% seroprevalence for EBOV in dogs during the Ebola outbreak in 2001-2002. While infections in dogs appear to be asymptomatic, pigs experimentally infected with EBOV can develop clinical disease, depending on the virus species and possibly the age of the infected animals. In the experimental settings, pigs can transmit Zaire-Ebola virus to naive pigs and macaques; however, their role during Ebola outbreaks in Africa needs to be clarified. Attempts at virus and antibody detection require as a prerequisite validation of viral RNA and antibody detection methods especially for pigs, as well as the development of a sampling strategy. Significant issues about disease development remain to be resolved for EBOV. Evaluation of current human vaccine candidates or development of veterinary vaccines de novo for EBOV might need to be considered, especially if pigs or dogs are implicated in the transmission of an African species of EBOV to humans.

Dogs EATING corpses of Ebola victims in Liberia... and now the deadly virus has reached Senegal

Source: http://www.dailymail.co.uk/news/article-2737684/Dogs-EATING-corpses-Ebola-victims-Liberia-health-teams-pile-bodies-shallow-grave-middle-night-locals-refused-permission-use-land.html

Dogs are digging up the corpses of Ebola victims buried in shallow graves in Liberia and eating them in the street, villagers have claimed.
Furious residents of Johnsonville Township, outside capital Monrovia, raised the alarm after packs of wild dogs were spotted digging up corpses from a specially-designated 'Ebola graveyard', dragging them into the open and feeding on their flesh.
It is the latest development in the epidemic, which was today confirmed to have reached Senegal.
The grisly scenes in Liberia came three weeks after government health officials - desperate to stem the country's rising infection rate - hurriedly buried the bodies despite a heated standoff with villagers who refused to give their permission to use the land.
But rather than resolve the dispute, Liberia's Ministry of Health burial team dug the graves at night to avoid further confrontation, making the infected bodies easy targets for scavengers, villagers say.
Now fears are mounting that the dogs - which cannot grow sick from the strain of Ebola running rampant through West Africa but can carry it - will be able to pass it on to humans through licking or biting.
Dogs' infections appear to be asymptomatic,' he said. 'This means that dogs won't get sick, but they still could carry a potential risk through licking or biting.'
The news comes as it was revealed the killer disease has reached Senegal, making it the fifth West African country to be affected by the outbreak.

The country's Ministry of Health said a man infected with Ebola traveled to Senegal, bringing the disease to that country for the first time in an outbreak that has hit four other West African nations and killed more than 1,500 people.

EDITOR'S COMMENT: To sum up: The Spanish nurse offered her services to the Ebola patient that finally died. Protective measures did not work out well – this is under Spanish and EU investigation. Her husband and a few more are already in quarantine. Spain is not Liveria or Senegal or S Leone. And the poor dog will be euthanatized pre-emptively… **If this is not State Panic what it is???**

Who are the American Ebola patients?

Source: http://edition.cnn.com/2014/10/06/health/american-ebola-patients/index.html?iref=obinsite

As another American patient with Ebola arrives in the United States, here is a look at the American patients who have been diagnosed with this deadly virus.
Ashoka Mukpo arrived at the Nebraska Medical Center on Monday, where he will be treated in the same biocontainment unit that helped Dr. Rick Sacra. Three other Americans, Dr. Kent Brantly, Nancy Writebol and an unnamed patient, have been treated at Emory University Hospital in Atlanta. The sixth known American patient was a man named Patrick Sawyer who died in Nigeria.

Name: Patrick Sawyer
Age: 40
Organization: Sawyer was a top official in the Liberian Ministry of Finance.
Where he was infected: Sawyer was caring for his Ebola-stricken sister in Liberia before he flew to Lagos, Nigeria. He collapsed getting off the plane July 20 and was isolated at a local hospital.
Current status: Five days after he arrived at the hospital, Sawyer became the first American -- and so far the only American -- to die in the current Ebola outbreak.

Name: Dr. Kent Brantly

Age: 33
Organization: Samaritan's Purse, a nondenominational evangelical Christian international relief organization based in North Carolina.
Where he was infected: Brantly went to Liberia with his wife and two children last year to serve a two-year fellowship. He was there initially to practice general medicine, but when the Ebola outbreak began, he took on the role of medical director for the Samaritan's Purse Ebola Consolidated Case Management Center in Monrovia, the capital city of Liberia.
The CDC believes he contracted the virus from another health care worker at the hospital.
Where he was treated: Brantly was flown to Dobbins Air Reserve Base in Georgia on August 2 and was taken by ambulance to Emory University Hospital in Atlanta.
Treatment given: Brantly received **one of the first doses of ZMapp**, an experimental drug that had never been tested in humans. ZMapp was developed by the biotech firm Mapp Biopharmaceutical Inc., which is based in San Diego.
Current status: Brantly was released from Emory on August 21, free of the virus.

Name: Nancy Writebol
Age: 59
Organization: Serving in Mission, also known as SIM, an international mission organization.

Where she was infected: Writebol and her husband, David, arrived in Monrovia in August 2013. Writebol guided missionaries and worked with nurses at ELWA hospital, where her husband was the technical services manager.
Where she was treated: Writebol was flown to Atlanta shortly after Brantly and was treated at Emory University Hospital.
Treatment given: Writebol also received the **experimental drug ZMapp** before leaving Liberia. She and Brantly also received what's called supportive therapy at Emory, which means supporting the patient's immune system as it tries to battle the infection. This usually involves intravenous fluids to prevent dehydration and shock, blood or platelet transfusions and oxygen therapy.
Current status: Writebol was released from Emory on August 19.

Name: Dr. Rick Sacra

Age: 52
Organization: Serving in Mission
Where he was infected: Sacra had been to Liberia with SIM before and volunteered to go again after he heard that fellow missionaries Writebol and Brantly had contracted the virus, SIM USA President Bruce Johnson said. Sacra was delivering babies at a general hospital in Monrovia when he contracted the virus.
Where he was treated: Sacra was flown to the Nebraska Medical Center in Omaha on September 5. The center houses one of just a few biocontainment units in the United States.
Treatment given: Sacra was treated with aggressive supportive care, including electrolytes and IV fluids. He was also given a blood transfusion with plasma donated by Brantly, which doctors believe had antibodies that Sacra needed to help his immune system fight the Ebola virus. Sacra also received an **experimental drug called TKM-Ebola**, which the FDA recently approved for wider use.
Current status: Sacra was released from the Nebraska Medical Center on September 25. Though he is free of the virus, his immune system was significantly weakened by the fight. He landed in a Massachusetts hospital with an upper respiratory infection over the weekend and was released Sunday.

Name: Unknown
Age: Unknown
Organization: The World Health Organization has said a doctor working for the agency tested positive for Ebola on September 8.
Where he was infected: Sierra Leone
Where he is being treated: The man arrived at Emory University Hospital in Atlanta on September 9.
Current status: "We are still treating the patient with Ebola virus disease at Emory University Hospital, but we do not have a condition update," Emory representatives told CNN Monday. The HIPAA Privacy Rule prevents them from sharing any patient information without his permission.

Name: Ashoka Mukpo
Age: 33
Organization: Freelance camera operator for NBC News
Where he was infected: Mukpo had been to Liberia before and had been in Monrovia for about two weeks before he started presenting with Ebola symptoms on October 1. In addition to working for NBC, he has worked for other international media, including Al Jazeera and Vice News.
Where he is being treated: Mukpo was flown to the United States on October 6 and isolated at the Nebraska Medical Center.
Current status: On Sunday, Mukpo's father, Dr. Mitchell Levy, told NBC News that Mukpo was feeling "not that ill." He was able to walk onto the plane with assistance.

More than 8 million Pakistani children receive polio vaccines

Source: http://www.thenational.ae/uae/health/more-than-8-million-pakistani-children-receive-polio-vaccines

More than 8 million Pakistani children have been vaccinated against polio as a result of the UAE's Pakistan Assistance Programme.

The vaccinations took place over June, July and August, the state news agency Wam reported.

The initiative, which carried out the vaccines under the directives of the President, Sheikh Khalifa, falls in line with plans by the Crown Prince of Abu Dhabi and Deputy Supreme Commander of the Armed Forces, Sheikh Mohammed bin Zayed, to eradicate polio worldwide.

Helping more than 3 million children in June, more than 2 million in July, and almost 3 million in August, the campaign exceeded its target, Wam reported.

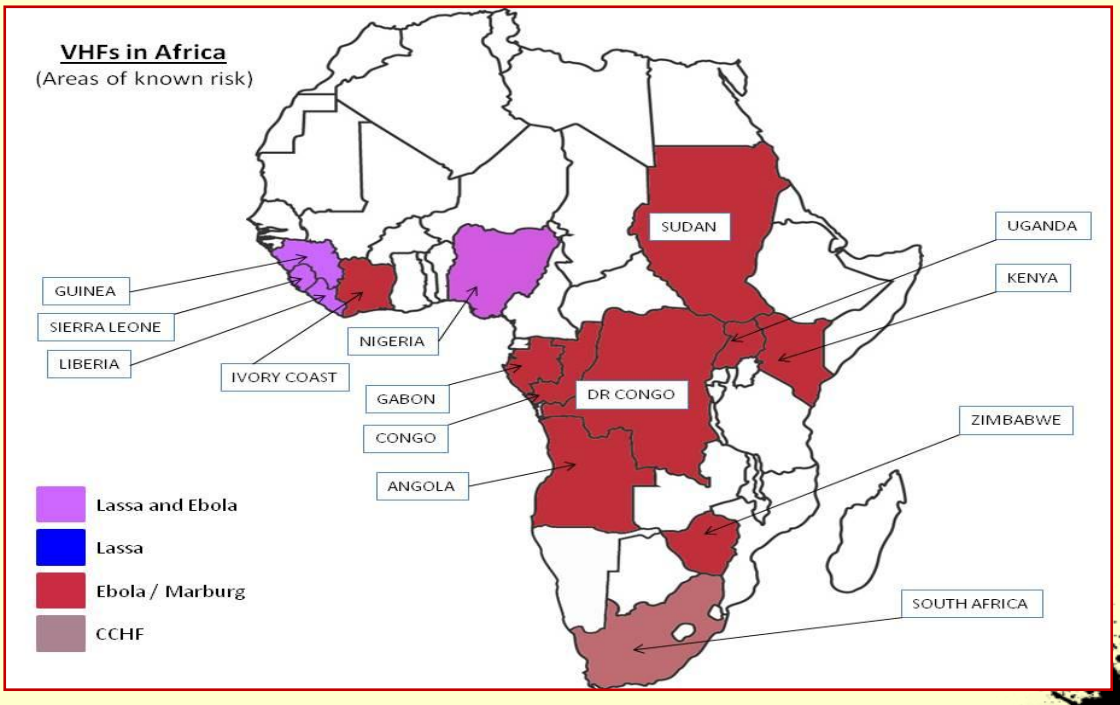
Among the more than 25 areas targeted were Khyber Pakhtunkhwa province and other tribal districts.

More than 200 cases have been reported in Pakistan this year.

Outbreak of Ebola-like Marburg fever kills man in Uganda

Source: http://www.foxnews.com/health/2014/10/06/outbreak-ebola-like-marburg-fever-kills-man-in-uganda/?intcmp=obnetwork

October 06 – **A man has died in Uganda's capital (Kampala) after an outbreak of Marburg, a highly infectious hemorrhagic fever similar to Ebola, authorities said on**



Sunday, adding that a total of 80 people who came into contact with him were quarantined.

Marburg starts with a severe headache

followed by hemorrhaging and **leads to death in 80 percent or more of cases in about nine days.** It is from the same family of viruses as Ebola, which has killed thousands in West Africa in recent months.

There is no vaccine or specific treatment for the Marburg virus, which is transmitted through bodily fluids such as saliva and blood or by handling infected wild animals such as monkeys.

The health ministry said in a statement that the **30-year old radiographer** died on Sept. 28 while working at a hospital in Kampala. He had started feeling unwell about 10 days earlier, and his condition kept deteriorating. He complained of headache, abdominal pain, vomiting blood and diarrhea.

Samples were taken and tested at the Uganda Virus Research Institute, and results confirmed the man had the Marburg virus (photo).

Doctors said his brother, one of the people he came into contact with, has developed similar symptoms and has been quarantined in a **group of 80 others, 60 of whom are health workers.**

Those quarantined came into contact with the victim either in Kampala or his burial place in Kasese, a district in western Uganda bordering the Democratic Republic of Congo.

Marburg has a shorter incubation period of 14 days, compared with Ebola's 21.

The current outbreak of Ebola, the deadliest on record so far, has killed more than 3,400 people in four West African countries.

Uganda has been hit by several outbreaks of Marburg and Ebola in the past, but it has contained the outbreaks quickly, limiting fatalities.

Its worst occurrence of hemorrhagic fever occurred in 2000, when 425 people contracted Ebola and more than half of them died.

ISIL Determined to Acquire Biological Weapons

Source: http://www.nationaldefensemagazine.org/blog/Lists/Posts/Post.aspx?ID=1632

The U.S. military has evidence that Islamic State militants in Iraq and Syria are seeking biological weapons, an Army official said Oct. 7.

"Intelligence has recently discovered that ISIS intends to pursue biological agents and also is trying to figure out how **to weaponize bubonic plague through the use of infected animals**," said Brig. Gen. Maria Gervais, head of the Army's Chemical, Biological, Radiological and Nuclear School.

That threat — and those posed by improvised explosive devices, bulk chemical agents, the deadly Ebola virus and continued development of weapons of mass destruction — point to the need for an effective CBRN defense, she said Oct. 7 at a roundtable discussion in Washington, D.C.

"The greatest threat to this country is at the intersection of technology and radicalism," she said. "The chemical …regiment is more important than ever."

But amid continued budget constraints and downsizing, the Army's chemical biological, radiation and nuclear defense force faces concerns about whether it can adequately handle threats faced abroad and in the homeland, Gervais said.

"We must ensure that we are prepared to bring our unique CBRN capabilities to the fight, and we must continue training the

Army and the joint force to not only survive, but also to win in the CBRN environment," she said.
The United States will continue to encounter improvised weaponry that exploits weaknesses in the structure of armed forces, she said.
"The enemy will employ a hybrid strategy in order to gain an asymmetrical advantage over U.S. forces," Gervais added.
CBRN must address the threats head-on instead of defensively, she said.
"We have been reliant on reactionary measures to protect the force for as long as I can remember, and we really need to change that," Gervais said.
"We lack capability in bio-detection and early warning in general," she said.
Not only are improvised biological and chemical weapons an issue, there is also the threat of natural disasters and weapons of mass destruction, she said.
"Ebola has dominated news over the past three or four months," Gervais said. Additionally, "there still exists the ever-present threat from state actors such as North Korea and Iran and the use of WMD," she said.
Further exasperating the force is the fact that CBRN defense has no ability to detect biological or chemical threats in real-time, making the process of assessing and addressing them unsuitable.
"We cannot afford to wait for technology to provide us a silver bullet solution to these complex problems," she said. "We have to develop agile and adaptable methods that can be technologically supported now and into the future."
CBRN has to readjust its focus from specialized technical forces into a more general-purpose force with broader abilities, she said.
Despite confidence that CBRN defense will be able to continue making necessary structural changes with its current budget, "all bets are off with sequestration," she said.
Should funding remain untouched, Gervais said CBRN defense will focus on rebuilding leadership, establishing strategic communications capabilities and joint combat development.
The hope is that by 2025, CBRN defense will be on track and have the military technology and internal structure it needs to adequately handle all chemical, biological, radiological and nuclear threats, she said.
"If you ask me, 'What is the future of the CBRN regiment?' I will tell you it has never been as bright as it is now," Gervais said.

Computing for Ebola Challenge

Source: http://www.homelandsecuritynewswire.com/dr20141008-computing-for-ebola-challenge

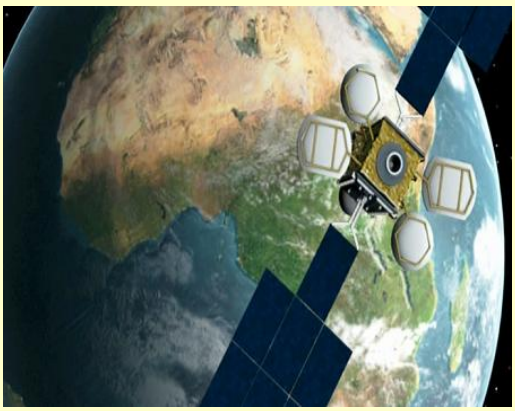
Researchers at the Network Dynamics and Simulation Science Laboratory (NDSSL) have been using a combination of modeling techniques to predict the spread of the Ebola outbreak. As part of those efforts, the team created an adaptable set of global synthetic populations, allowing for rapid response as the situation continues to unfold. The synthetic populations and other informatics resources are now openly available to aid other researchers and citizen scientists.
A Virginia Bioinformatics Institute (VBI) release reports that the NDSSL is hosting a Computing for Ebola Challenge from 3 October to 10 October 2014. The goal of the hackathon is to develop an application to combat the Ebola epidemic. All are welcome to join. People with a variety of skill sets are needed to build apps, enter data, design educational materials and more.
"We use team science and innovative approaches to answer challenging problems when a rapid response is needed," said Stephen Eubank, deputy director of NDSSL. "The Computing for Ebola Challenge drives team science to a whole other level by finding ways to engage and empower the public to take on this growing epidemic together."
NDSSL says that to aid participants and researchers worldwide, it is releasing several synthetic populations based on detailed microscopic simulation-based modeling and integration techniques. The detailed data includes population, locations, activities and contract graphs for Sierra Leone, Liberia, Guinea, and Nigeria.
It was evident early on that having quality data would be essential when combatting the challenging disease. A diverse group of

researchers — faculty, staff and students, have come together to lend their expertise in situational awareness and decision support.
These efforts have culminated in an informatics resources page for Ebola epidemic response. The site is available to the public as a means of sharing useful information about the work being done at NDSSL to combat Ebola. Visitors can find open data sets, social media monitoring, Ebola modeling updates and other relevant information.
"Successful applications to complex socially and biologically coupled systems have repeatedly demonstrated the effectiveness of the NDSSL synthetic information systems approach," said Christopher Barrett, the executive director of the Virginia Bioinformatics Institute. "Both the distribution of Ebola-related synthetic data and the Simfrastructure app challenge announced here speak once again to the novelty, usefulness and quality of the NDSSL R&D program."
NDSSL anticipates hosting more resources over time, including analytical tools and other broad based resources. Lab-led projects from the Computing for Ebola Challenge will be openly available and incorporated into the informatics resources page.
"The hackathon and the informatics resource hub will allow citizen scientists, academics and students to play an active role in developing innovative analytic tools and apps that can be used for responding to the current outbreak," said Madhav Marathe, director of NDSSL. "We expect that many of the data sets and tools will find a broader applicability over time by providing an information exchange resource."
Researchers at NDSSL are developing innovative synthetic datasets as a result of long and sustained research and development efforts. The informatics resources and subsequent Computing for Ebola Challenge are part of a larger program mission of the NDSSL to create informatics tools to solve societal problems.

High-resolution satellite images show Ebola spread

Source: http://i-hls.com/2014/10/high-resolution-satellite-images-show-ebola-spread/

Ebola is visible from space: you can see its effects. Satellite imagery that provide high-



resolution pictures from low Earth orbit give a picture of where more sick people are showing up. **A sudden Ebola outbreak, viewed from space, may look like an unusually crowded hospital parking lot and so on.**
Researchers worldwide have created numerous models to predict parking lot occupancy, as it relates to peak influenza cases. They found that they could predict influenza peaks with a mean square error rate of .0074, which is generally considered a very good result.
Of course, a hospital parking lot during flu season is very different from one in Liberia during an Ebola outbreak, but that doesn't mean the factors are invisible. They're just more difficult to trace.
DigitalGlobe sells high-resolution satellites images to the government and also provides analysis on satellite intel. Dr. Colleen McCue, DigitalGlobe's senior director of social science and quantitative research, does predictive analytic research based on indicators visible form space.
McCue says that unknowns can be accounted for, somewhat, by combining better human behavior models with satellite imagery models. Yes, she says, Ebola movement can be predicted with enough data. "We can incorporate hundreds of variables, as they are available to understand the environment." Some of these questions she would consider in analyzing how Ebola spreads, can include the ways terrain, political factors, infrastructure and even culture

could influence where people are going to seek help.

According to McCue, one "scary vector," or factor, in the current outbreak is how people use cabs and taxis to arrive at hospitals. "Someone's sick, they call a cab to take them to the hospital, they may be shedding the virus [via fluids] in the cab. They reach the hospital and there are no beds; then they go home and they've contaminated these cabs." It's the sort of subtle clue you can catch from space, with enough time, patience and, most importantly, attention.

Spain Ebola case: Screen and sticky tape to protect against virus

Source:http://www.telegraph.co.uk/news/worldnews/ebola/11148196/Spain-Ebola-case-Screen-and-sticky-tape-to-protect-against-virus.html

October 08 – This is the front line in the battle to stop the spread of Ebola across Europe: A screen pulled across a hospital bed, in the corner of an emergency room.

Two lines of flimsy tape with a warning sign are the only barrier to infection.

Medical staff at the Alcorcon hospital, in southwestern Madrid – where Teresa Romero Ramos who tested positive to the deadly Ebola virus on Monday was first treated – have complained of insufficient measures to prevent infection.

They said that for the first 24 hours that she was treated in the hospital, staff with no training in dealing with isolation cases were responsible for her care, while she was treated behind a curtain like any other patient.

Mrs Romero was transferred to her local hospital by ambulance during the early hours of Monday morning and remained in a curtained area of

the emergency department until being transferred to a specialist isolation unit at the Carlos III hospital in Madrid late on Monday night.
“It is clear that there has been a massive failure in the prevention and identification of the Ebola case and this needs to be urgently investigated,” the disgruntled worker who took the damning photos told the Telegraph.
Asking to remain anonymous, he said that hospital staff were very worried about the risk of infection.

“There has been a tremendous lack of information given to hospital staff," he said.

"There has been no general meeting called to tell us what we should do. We do not know if we run or ran the risk of contagion. Some workers have been put under observation but none have been quarantined."

Nurse reported Ebola symptoms many times before being quarantined

Source: http://www.theguardian.com/world/2014/oct/08/spanish-ebola-nurse-symptoms-quarantine

A Spanish nurse who was admitted to hospital in Madrid with the Ebola virus, after treating a repatriated patient who later died of the illness, had told health authorities at least three times that she had a fever before she was placed in quarantine.

Teresa Romero Ramos is the first person in the current outbreak to have caught the virus outside of west Africa.

Her first contact with health authorities was on 30 September when she complained of a slight fever and fatigue. Romero Ramos called a specialised service dedicated to occupational risk at the Carlos III hospital where she worked and had treated an Ebola patient, said Antonio Alemany from the regional government of Madrid. But as the nurse's fever had not reached 38.6C, she was advised to visit her local clinic where she was reportedly prescribed paracetamol.

Days later, according to El País newspaper, Romero Ramos called the hospital again to complain about her fever. No action was taken.

On Monday, she called the Carlos III hospital again, this time saying she felt terrible. Rather than transport her to the hospital that had treated the two missionaries who had been repatriated with Ebola, Romero Ramos was instructed to call emergency services and head to the hospital closest to her home. She was transported to the Alcorcón hospital by paramedics who were not wearing protective gear, El País reported.

On arrival at the hospital, Romero Ramos warned staff that she feared she had contracted Ebola. Despite the warning, she remained in a bed in the emergency room while she waited for her test results. She was separated from other patients only by curtains, hospital staff said on Tuesday.

Fernando Simón, coordinator of the centre of alerts and emergencies at Spain's health ministry, said it might have been better to have admitted Romero Ramos to hospital when she first made contact. Romero Ramos, 44, and her husband, Javier Limón Romero, remain in quarantine.

Germán Ramírez, the doctor attending to Romero Ramos, said the nurse may have contracted the virus when she was taking off her protective equipment.

He said he had spoken to her several times and she had suggested she may have touched her face with her gloves while taking off her protective suit. He added that health professionals were supervised whenever they were taking off or putting on their protective equipment.

Spanish authorities say they are monitoring another 50 people for symptoms of Ebola. The list includes other members of the team who attended to the missionaries as well as the healthcare professionals who assisted Romero Ramos at the Alcorcón hospital.

On Tuesday evening, five patients were being monitored for Ebola at the Carlos III hospital, after another nurse who assisted the missionaries was admitted. A man who travelled from Nigeria and another nurse from the same team, both of whom initially tested negative for the virus, remain in isolation.

In an interview with El Mundo from her hospital bed, Romero Ramos said she believed she had followed nursing protocols while caring for the infected patient. She said she "didn't have the slightest clue" as to how she had contracted the virus and rejected any insinuation of human error. She said she was feeling "a little better".

In the Alcorcón neighbourhood where Romero Ramos and her husband live, approximately 30 residents have called the city council's helpline for more information. Beset with worries over having shared lifts and other public spaces with the couple, neighbours complained to Spanish media that they had yet to receive any guidance from health authorities.

On Wednesday morning, the prime minister, Mariano Rajoy, called for calm as he promised "total transparency in giving all the information that could be given" on the outbreak.

He described the Spanish healthcare system as "one of the best in the world" and asked that "health professionals, who have a proven reputation, be left to do their work".
Along with explaining how the contagion occurred, Rajoy said the priority was "to attend to the patient and monitor all of those who have had contact … We will overcome this."

Ebola sum-up (10-13 Oct 2014)

- The British who died in a Skopje (FYROM) hotel was not infected with Ebola. But it was a good opportunity for certain British media to use the term "Macedonia" as they traditionally do…

- A possible case of Ebola in 26yo student from Togo in the occupied part of Cyprus.
- In Paris, France 60 people quarantined inside DASS Cergy-Pontoise (Val d'Oise) gov building due to Ebola scare.
- In Rome, Italy a physician from the NGO "Emergency" is hospitalized in Spalanzani Hospital. It is interesting that Italy has 21 Ebola stations ready.
- In Las Vegas, NV, USA a Delta Airlines' plane was put into quarantine for possible Ebola passengers (at Mc Carran Airport).
- In Brazil 47 yo priest Souleymane Bah (Guinea) was pre-emtively hospitalized. Four out of his 64 contacts have been under medical observation
- Brooklin, NY, USA: A 14yo is hospitalized with Ebola-like symptoms in Brookedale Hospital Medical Center after collapsing upon his return to US from Sudan. There are reports that he had already hospitalized in a North Africal hospital but he lied in authorities to be able to return back in the US.
- Ebola-infected Spanish nurse Teresa Romero's condition improved overnight after she was given a dose of experimental drug ZMapp.

Scientists in Russia developing three Ebola vaccines

Source: http://rt.com/news/195332-russia-vaccine-ebola-virus/

October 12 – **Russian scientists are working on three potential Ebola vaccines which they expect to introduce as soon as in the next six months. One of the vaccines is "already ready for clinical trials,"** Russia's health minister Veronika Skvortsova has announced.
"We have created three vaccines," Skvortsova announced in an interview with Rossiya-1 TV. *"One vaccine is based on a strain of Ebola, and the other two have been created by means of genetic engineering."*
Russian virologists have also created an anti-virus drug that, they believe, could be successfully used for treating Ebola as tests have showed that that it is effective in curing Ebola-related diseases.

So far, there is now no licensed treatment or vaccine for the highly contagious disease that has killed over 4,000 people in western Africa since the start of the year and has recently started spreading beyond the region.
Now several countries are trying to develop an effective treatment.
The first-ever human trials for an Ebola vaccine started in Mali earlier this week. On October 8, the first health worker received the drug. Over the course of the trial, which is being organized by the University of Maryland and Mali's Health Ministry, a total of 40 volunteers will be given the vaccine.
In Russia it's impossible to contract the Ebola virus, Skvortsova said, adding that the country has still implemented a protection plan against the virus, which it stepped up in July.
"We are now carrying out a sanitary inspection of 7,500 flights per month, which is almost half a million people," she said. *"Everybody coming from West Africa is under special control,* ***especially 450 students who study in Russian universities****.* ***Sixteen of them had viral illnesses and were hospitalized, but they were not relevant to the [virus]."***
Skvortsova said that 71 of Russia's airports have upgraded their security and now have thermal cameras to detect the first signs of the virus.
"Both portable and stationary thermal scanners are being used at many airports, and we are monitoring all direct and indirect flights that arrive," she said.

Morocco want Africa Cup postponed over Ebola

Source: http://zeenews.india.com/sports/football/morocco-want-africa-cup-postponed-over-ebola_1482940.html

Hosts Morocco called Friday for the 2015 Africa Cup of Nations finals to be postponed over the Ebola crisis.
The Moroccan health ministry want the January 17-February 8 African football showpiece delayed "to avoid events which would involve countries affected by the Ebola virus", the national MAP news agency reported.
MAP said a demand to postpone the Cup of Nations had been lodged with the organisers, the Cairo-based Confederation of African Football (CAF).

United States Army Medical Research Institute of Infectious Diseases: Ebola is Airborne – Same Transmission as the Flu Virus

Source: http://investmentwatchblog.com/united-states-army-medical-research-institute-of-infectious-diseases-ebola-is-airborne-same-transmission-as-the-flu-virus/

October 09 – Evidence now suggests the NBC cameraman contracted Ebola via airborne exposure as did the Spanish nurse. In this clip Dr. Rima Laibow CONFIRMS that Ebola is not only airborne but it is weaponized.
The United States Army Medical Research Institute of Infectious Diseases (USAMRIID; pronounced: you-SAM-rid) is the U.S Army's main institution and facility for defensive research into countermeasures against biological warfare. It is located on Fort Detrick, Maryland and is a subordinate lab of the U.S. Army Medical Research and Materiel Command (USAMRMC), headquartered on the same installation.
USAMRIID is the only U.S. Department of Defense (DoD) laboratory equipped to study highly hazardous viruses at Biosafety Level 4 within positive pressure personnel suits.
Dr. Brantly acquired Ebola while strictly following CDC guidelines

(simple mask, goggles, or face shield, gloves, gown, leg covering, shoe covers), so it is likely he became infected by inhaling contaminated droplet nuclei into his lungs or having them settle into his conjunctival (eye) sacs despite the use of CDC level protection against direct contact. Dr. Brantly apparently did not use a full-face respirator with P-100 filters, but rather a simple or N-95 face mask. An interviewer noted that

"Brantly says he isn't sure how he got infected. He's certain he didn't violate any [CDC] safety guidelines."

The United States Army Medical Research Institute of Infectious Diseases conducted a monkey to monkey Ebola study in December 1995, published in The Lancet, Vol. 346. (Here is a link to the abstract, but the entire article must be purchased.)

Several Rhesus monkeys were infected with Zaire Ebola by intramuscular injection while three control Rhesus monkeys were kept in cages separated 10 feet from the infected monkeys. All of the injected monkeys died of Ebola by day 13 and 2 out of 3 control monkeys died of Ebola by 8 days after that. The authors of this study concluded that:

"**The exact mode of transmission to the control monkeys cannot be absolutely determined, although the pattern of pulmonary antigen staining in one of the control monkeys was virtually identical to that reported in experimental Ebola virus aerosol infection in rhesus monkeys, suggesting airborne transmission of the disease via infectious droplets…** Fomite or contact droplet transmission of the virus between cages was considered unlikely. Standard procedures in our BL4 containment laboratories have always been successful in the prevention of transmission of Ebola or Marburg virus to uninflected animals. Thus, pulmonary, nasopharyngeal, oral, or conjunctival exposure to airborne droplets of the virus had to be considered as the most likely mode of infection… Our present findings emphasize the advisability of at-risk personnel employing precautions to safeguard against ocular, oral, and nasopharyngeal exposure to the virus."

The mathematics of the Ebola epidemic

Source: http://www.homelandsecuritynewswire.com/dr20141013-the-mathematics-of-the-ebola-epidemic

Researchers in the Department of Biosystems Science and Engineering at ETH Zurich have calculated new benchmark figures precisely to describe the Ebola epidemic in West Africa from a mathematical perspective. Their results may help health authorities to contain the epidemic.

The Ebola epidemic in West Africa appears to be spiraling out of control. More than ever, local and global health authorities want to know how the epidemic will develop and, above all, how to prevent it from spreading further. Certain parameters help them to determine this, such as the reproductive number, which is the average number of infections caused by a single infected individual. The incubation and infectious periods are also highly relevant; that is, the time from infection to the onset of symptoms and the time from onset of symptoms to the clearance of the pathogen.

In the current Ebola epidemic, several estimates based on official data of recorded cases of illness were used to derive these figures. An ETH Zurich release reports that a team led by Tanja Stadler, professor of computational evolution in the Department of Biosystems Science and Engineering at ETH Zurich in Basel, has now calculated these parameters based on the gene sequence of the virus in various patient samples, using a statistical computer program developed by the group.

Increase in unreported cases

The virus sequences were obtained by U.S., British, and Sierra Leonean researchers from blood samples taken from patients in Sierra Leone in the first few weeks after the epidemic migrated to the country from neighboring Guinea in May and June 2014. Newer sequences are currently not publicly available, says Stadler. From the data, the researchers calculated a viral reproductive number of 2.18. **This value is in the range of the previous estimated values based on the incidence and prevalence of the disease, which are between 1.2 and 8.2.**

"A major benefit of our method is that we can use it to calculate unreported cases and therefore the true scale of the epidemic," asserts Stadler. Official patient figures only take into account those cases reported to the health authorities. The actual number of infected persons is generally significantly higher. Using the data made available to them, the ETH researchers were able to calculate an unreported case rate of 30 percent (that is, patients of which blood samples were not taken). "However, this applies only to the situation analyzed in Sierra Leone in May and June. We do not have any blood samples since June at all," claims Stadler.

Virus family tree created

The researchers were also able to calculate the incubation period for Ebola (five days — this value is subject to significant uncertainty) and the infectious time. Patients can pass on the virus from 1.2 to 7 days after becoming infected.

To obtain these values, the researchers created a phylogenetic tree based on the gene sequences of the virus samples. "The Ebola virus changes in the body of the patient from day to day, meaning that the virus sequence varies slightly from patient to patient," explains Stadler. With the knowledge of the different sequences, the researchers were able to determine at what point in the past infection events happened between patients. From this, they were able to calculate the epidemiological parameters.

Already tested for HIV

These epidemiological values are important in developing strategies to contain the epidemic and evaluate the effectiveness of these measures. Imposing a curfew is one measure. "If the curfew lasts longer than the incubation period, then only those people who continue to show symptoms of Ebola are carriers of the disease," says Stadler. In turn, the reproductive number is one of the most important benchmarks used by health services. The most pressing aim of these authorities is to reduce the reproductive number to a value lower than 1, as this would imply that the epidemic has been contained.

The release notes that the ETH researchers developed the computer program used to calculate these figures during the past few years and applied it to data collected from HIV and hepatitis C patients. They now hope that new sequences of the currently circulating Ebola virus become available, despite the adverse conditions in the areas affected by the epidemic. As Stadler states, "our program is ready. If we are given access to current Ebola sequences, we will be able to gain a detailed insight into the spread of the epidemic literally overnight."

— Read more in Tanja Stadler et al., "Insights into the Early Epidemic Spread of Ebola in Sierra Leone Provided by Viral Sequence Data," PLOS One Current Outbreaks (6 October 2014)

Ebola vaccine trials begin in Mali

Source: http://www.homelandsecuritynewswire.com/dr20141013-ebola-vaccine-trials-begin-in-mali

October 13 – **The Center for Vaccine Development (CVD) at the University of Maryland School of Medicine (UM SOM), in conjunction with the Center for Vaccine Development of Mali (CVD-Mali) and the Ministry of Health of Mali, have begun a clinical trial in health care workers (and other front-line workers) to evaluate a promising experimental Ebola vaccine.** The trial began on Wednesday, 8 October, with the vaccination of the first subject, followed by two additional participants on 9 October — all three being Malian health care workers. In the coming weeks, thirty-seven more health care workers will receive the vaccine.

Professor Myron M. Levine, director of the Center for Vaccine Development (CVD) at the University of Maryland School of Medicine (UM SOM) and UM SOM dean E. Albert Reece announced last week that the CVD, in conjunction with its sister institution, the Center for Vaccine Development of Mali (CVD-Mali) and the Ministry of Health of Mali,

have begun a clinical trial in health care workers (and other front-line workers) to evaluate a promising experimental Ebola vaccine.

The trial began on Wednesday, 8 October, with the vaccination of the first subject, followed by two additional participants on 9 October — all three being Malian health care workers. In the coming weeks, thirty-seven more health care workers will receive the vaccine.

"This research will give us crucial information about whether the vaccine is safe, well tolerated, and capable of stimulating adequate immune responses in the highest priority target population, health care workers in West Africa," said Prof. Levine. "If it works, in the foreseeable future it could help alter the dynamic of this epidemic by interrupting transmission to health care and other exposed front-line workers."

A UMD release reports that the vaccine consists of an adenovirus (cold virus) that does not cause illness in humans and has been modified so that it cannot even multiply in humans but produces a single attachment protein of Ebola virus. Immune responses directed against this single Ebola protein have been shown to be highly protective in animal model challenge studies (carried out under the highest level of physical containment). Researchers hope this response will be robust enough to protect humans, as well, from the disease.

The vaccine was developed by investigators at the Vaccine Research Center (VRC) of the National Institute of Allergy and Infectious Diseases (NIAID) in Bethesda, Maryland. The clinical trial in Mali brings to fruition two months of work by a consortium dedicated to move the candidate Ebola vaccine (which prior to September had been tested only in animals but not in humans) into clinical studies in West Africa. The consortium, assembled in mid-August at the behest of the World Health Organization (WHO), included, besides WHO, the VRC (which developed the vaccine), the Jenner Institute at the University of Oxford (which carried out clinical trials in U.K. adults paving the way for the African trial), the CVD-UM SOM and CVD-Mali (carrying out the first clinical trial of the vaccine in West Africa), GlaxoSmithKline (GSK) Biologicals (manufacturer of the vaccine), and the Wellcome Trust U.K.(funder of the clinical trials in U.K. and Mali), with additional funding provided by the Medical Research Council (MRC U.K.., and the U.K. Department for International Development (DFID). In addition, the MRC Unit-The Gambia is expected soon to initiate a second, parallel clinical trial in The Gambia, West Africa. Ordinarily it would take between six to eleven months to obtain all necessary ethical, regulatory agency, technical and administrative approvals needed to transition a vaccine from research in animal models to a clinical trial in a developing country where subjects are at risk of the natural disease. In this instance, with all consortium members working in unison, it took two months.

"This is just the critical first step in a series of additional clinical trials that will have to be carried out to fully evaluate the promising vaccine," said Professor Samba Sow, director general of CVD-Mali. "However, if it is eventually shown to work and if this information can be generated fast enough, it could become a public health tool to bring the current, and future, Ebola virus disease epidemics under control."

"Malian health care workers are showing keen interest in participating in the clinical trial to help evaluate this vaccine," said Dr. Milagritos Tapia, a key clinical investigator overseeing the trial in Mali.

"Ebola is among the most urgent international public health issues we are facing. This research will play a key role in helping to solve it," said Dean E. Albert Reece, who is vice president of medical affairs at the University of Maryland and the John Z. and Akiko Bowers Distinguished Professor. "Dr. Levine, Dr. Sow and Dr. Tapia have done an extraordinary job, and are working hard to contribute their expertise to the worldwide effort to fight this virus."

The release notes that pre-clinical research in primates by the VRC and Okairos, a biotechnology company acquired last year by GSK, indicate that the vaccine provides protection in non-human primates exposed to Ebola without significant side effects. **The recent increase in funding for Ebola vaccine research is also enabling GSK to begin manufacturing at least**

10,000 additional doses of the vaccine, even as the first clinical trials are occurring.

"This is impressive work by multiple groups to get this trial off the ground very quickly," said Dr. Levine. "It is a testament to everyone's commitment to fighting Ebola as aggressively as possible."

Decontamination of Vehicles & Equipment Used for Transportation of Potential Ebola Virus Disease (EVD) Patients or Related Equipment

Source: http://phc.amedd.army.mil/PHC%20Resource%20Library/EVDVehicleDecontaminationTIP_13-031-0914.pdf

Decontamination of Vehicles & Equipment Used for Transportation of Potential Ebola Virus Disease (EVD) Patients or Related Equipment

Technical Information Paper 13-031-0914

1. Purpose. This information paper provides guidance for decontaminating vehicles used to transport personnel or equipment in the Area of Operations (AO) impacted by Ebola virus disease (EVD). It is not intended to change any existing Department of Defense (DoD) directives, policies, or procedures provided by Combatant Commands, CONPLANS, or OPORDs in the AO or the AFRICOM AOR.

2. Applicability. This information is applicable to DOD-owned vehicles and equipment. This is preliminary information based upon limited available data. This document is not intended to be a step-by-step instruction and should be read and understood in its entirety prior to commencing any vehicle decontamination activity. Hence, there is an expectation that personnel involved with decontamination activities have familiarity with the proper use of personnel protective equipment, respirator protection program, working with hazardous materials, hazards associated with working with infected persons and remains, and waste management and disposal practices.

Can Dogs (And Other Animals) Get Ebola?

Source: http://time.com/3480961/ebola-animals-transmission/

The proposed euthanization of a dog belonging to a Spanish nurse infected with Ebola prompts questions about whether animals can transmit Ebola to humans

The Ebola virus can be found across the animal kingdom, from bats and birds to pigs and porcupines. But there is a difference between having a disease and transmitting it to another animal—or another species. That's at the heart of a controversial move by Spanish health authorities, who have obtained a court order to euthanize the dog belonging to a nurse who contracted the Ebola virus in Madrid, saying that

available scientific knowledge suggests dogs can transmit the virus to humans. But how much do we know about which animals can catch and transmit the deadly virus?
Dr. Tom Frieden, director of the U.S. Centers for Disease Control and Prevention (CDC), said in a news conference on Tuesday that "we know in rural areas of Africa, Ebola can infect mammals. In fact, that's how it spreads, from probably bats to animals living in the forest, people hunting the animals." Ebola has to date been found in many bush animals, including bush pigs, rodents, porcupines and forest-dwelling antelope. Any infected carcasses could spread the virus to hunters or to anyone who eats bush meat.

Dogs
To date, there is no documented case of Ebola spreading to people from dogs or dogs to people, and only one study, carried out by the

CDC, looks at whether dogs can get Ebola at all. This research into the prevalence of Ebola-virus antibodies in dogs from regions of Gabon affected by the 2001–2002 outbreak showed that "dogs can be infected by Ebola virus" but exhibit no symptoms and the infection eventually clears.
The researchers concluded that "dogs could be a potential source of human Ebola outbreaks and of virus spread during human outbreaks," but they did not test their hypothesis that human infection could occur through licking, biting or grooming. Instead, the study assumed dogs would transmit the infection in the same way as other animals observed in experiments; those animals excreted viral particles (in saliva, urine, feces) for a short period before the virus was cleared. David Moore, an expert in infectious diseases from the London School of Hygiene and Tropical Medicine, said that since no dogs showed symptoms of the Ebola virus "there is absolutely no evidence to support a role for dogs in transmission."
The study also suggests that differences in behavior and diet of pet dogs may alter risks in Ebola transmission. Whereas most dogs in Western Europe are fed dog food, many of the dogs studied in Gabon scavenged for their food, eating small dead animals that could have exposed them to the virus.

Bats
Both the World Health Organization and recent reports have suggested that the 2014 outbreak of Ebola can be traced to fruit bats in the West Africa region. Guinea, where bat soup is a local delicacy, has reportedly banned the sale and consumption of bat meat since the start of the outbreak.

Primates
Non-human primates, like monkeys, are also suspected carriers of the disease and, as in humans, the Ebola virus can kill them. Research has shown gorillas and chimpanzees suffer massive population declines during Ebola outbreaks, with the virus killing an estimated 5,000 gorillas in Gabon and the Republic of the Congo from 2002—2003.

Birds
There is limited data about the prevalence of Ebola in birds but a 2002 study from Purdue University found that the Ebola virus closely resembles the structure of several bird viruses. This means birds may be able to spread the virus to humans. Head researcher David Sanders said "while bird transmission of Ebola is by no means certain, the resemblance among all these viruses should encourage health officials to be on guard for it."

Pigs
Until 2009 no one knew that pigs could carry Ebola, because they show no symptoms of the disease. Three years after a case in the Philippines showed Ebola transmission between pigs and farmers, Canadian scientists found that apparently healthy pigs could pass on the most deadly strain of Ebola (the Zaire-Ebola virus) to

monkeys without direct contact. In pigs, the virus mainly affects the lungs and airways, which means they can spread the virus through the air via small droplets (this does not mean Ebola is suddenly an airborne virus like SARS). However, Gary Kobinger who led the study said "we still don't know if pigs are playing any role in the natural transmission or ecology of Ebola virus in Africa."

Other domestic animals

Various studies carried out in the 1990s found that some animals (including guinea pigs, goats and horses) showed no or mild symptoms when infected with Ebola during experiments. The virus has never been observed in these species in the wild, but like pigs and dogs, these animals do not appear to get ill or die from Ebola.

Relatively little research has been carried out into the existence of Ebola in many other animals. It is thought that domestic cats are probably immune to it since the virus has not yet been found in any wild felines in Africa.

Should we worry?

Scientists have yet to confirm Ebola's natural host—the animal that naturally holds the infection and is a primary source for the spread of the disease—but transmitting the virus is a different issue. Since "lethal disease has only thus far been seen in humans and primates and a few species of wild animals, it would appear that the main route of transmission is human to human contact," says John Blackwell, President of the British Veterinary Association, an organization that often issues advice when animal-related diseases could affect the general public.

He adds that the course of disease in dogs and their role in transmission is not yet known, but "it would be a sensible precaution" to observe strict quarantine measures for animals in contact with a confirmed or suspected case of Ebola. As the Madrid nurse and her husband continue to campaign to save their dog from being put down, it remains to be seen what precautions the Spanish government will take in order to contain the spread of the Ebola virus.

▶ **Source's URL contains some very useful links related to the content of the article.**

Some Ebola experts worry virus may spread more easily than assumed

By David Willman

Source: http://www.latimes.com/nation/la-na-ebola-questions-20141007-story.html#page=2

Ebola researcher says he would not rule out possibility that the virus spreads through air in tight quarters

'There are too many unknowns here,' a virologist says of how Ebola may spread

Ebola researcher says he thinks there is a chance asymptomatic people could spread the virus

U.S. officials leading the fight against history's worst outbreak of Ebola have said they know the ways the virus is spread and how to stop it. They say that unless an air traveler from disease-ravaged West Africa has a fever of at least 101.5 degrees or other symptoms, co-passengers are not at risk.

"At this point there is zero risk of transmission on the flight," Dr. Thomas Frieden, director of the federal Centers for Disease Control and Prevention, said after a Liberian man who flew through airports in Brussels and Washington was diagnosed with the disease last week in Dallas.

Other public health officials have voiced similar assurances, saying Ebola is spread only through physical contact with a symptomatic individual or their bodily fluids. "Ebola is not transmitted by the air. It is not an airborne infection," said Dr. Edward Goodman of Texas Health Presbyterian Hospital in Dallas, where the Liberian patient remains in critical condition.

Yet some scientists who have long studied Ebola say such assurances are premature — and they are concerned about what is not known about the strain now on the loose. It is an Ebola outbreak like none seen before, jumping from the bush to urban areas, giving the virus more opportunities to evolve as it passes through multiple human hosts.

Dr. C.J. Peters, who battled a 1989 outbreak of the virus among research monkeys housed in Virginia and who later led the CDC's most far-reaching study of Ebola's transmissibility in humans, said he would not rule out the possibility that it spreads through the air in tight quarters.

"We just don't have the data to exclude it," said Peters, who continues to research viral diseases at the University of Texas in Galveston.

Dr. Philip K. Russell, a virologist who oversaw Ebola research while heading the U.S. Army's Medical Research and Development Command, and who later led the government's massive stockpiling of smallpox vaccine after the Sept. 11 terrorist attacks, also said much was still to be learned. "Being dogmatic is, I think, ill-advised, because there are too many unknowns here."

If Ebola were to mutate on its path from human to human, said Russell and other scientists, its virulence might wane — or it might spread in ways not observed during past outbreaks, which were stopped after transmission among just two to three people, before the virus had a greater chance to evolve. The present outbreak in West Africa has killed approximately 3,400 people, and there is no medical cure for Ebola.

"I see the reasons to dampen down public fears," Russell said. "But scientifically, we're in the middle of the first experiment of multiple, serial passages of Ebola virus in man.... God knows what this virus is going to look like. I don't."

Tom Skinner, a spokesman for the CDC in Atlanta, said health officials were basing their response to Ebola on what has been learned from battling the virus since its discovery in central Africa in 1976. The CDC remains confident, he said, that Ebola is transmitted principally by direct physical contact with an ill person or their bodily fluids.

Skinner also said the CDC is conducting ongoing lab analyses to assess whether the present strain of Ebola is mutating in ways that would require the government to change its policies on responding to it. The results so far have not provided cause for concern, he said.

The researchers reached in recent days for this article cited grounds to question U.S. officials' assumptions in three categories.

One issue is whether airport screenings of prospective travelers to the U.S. from West Africa can reliably detect those who might have Ebola. Frieden has said the CDC protocols used at West African airports can be relied on to prevent more infected passengers from coming to the U.S.

The deteriorating conditions in Africa make it more likely additional cases of Ebola will appear in the United States and officials are pushing for increased screenings at airports.

"One hundred percent of the individuals getting on planes are screened for fever before they get on the plane," Frieden said Sept. 30. "And if they have a fever, they are pulled out of the line, assessed for Ebola, and don't fly unless Ebola is ruled out."

Individuals who have flown recently from one or more of the affected countries suggested that travelers could easily subvert the screening procedures — and might have incentive to do so: Compared with the depleted medical resources in the West African countries of Liberia, Sierra Leone and Guinea, the prospect of hospital care in the U.S. may offer an Ebola-exposed person the only chance to survive.

A person could pass body temperature checks performed at the airports by taking ibuprofen or any common analgesic. And prospective passengers have much to fear from identifying themselves as sick, said Kim Beer, a resident of Freetown, the capital of Sierra Leone, who is working to get medical supplies into the country to cope with Ebola.

"It is highly unlikely that someone would acknowledge having a fever, or simply feeling unwell," Beer said via email. "Not only will they probably not get on the flight — they may even be taken to/required to go to a 'holding facility' where they would have to stay for days until it is confirmed that it is not caused by Ebola. That is just about the last place one would want to go."

Liberian officials said last week that the patient hospitalized in Dallas, Thomas Eric Duncan, did not report to airport screeners that he had had previous contact with an Ebola-stricken woman. It is not known whether Duncan knew she suffered from Ebola; her family told neighbors it was malaria.

The potential disincentive for passengers to reveal their own symptoms was echoed by Sheka Forna, a dual citizen of Sierra Leone and Britain who manages a communications firm in Freetown. Forna said he considered it "very possible" that people with fever would medicate themselves to appear asymptomatic.

It would be perilous to admit even nonspecific symptoms at the airport, Forna said in a telephone interview. "You'd be confined to wards with people with full-blown disease."

On Monday, the White House announced that a review was underway of existing airport

procedures. Frieden and President Obama's assistant for homeland security and counter-terrorism, Lisa Monaco, said Friday that closing the U.S. to passengers from the Ebola-affected countries would risk obstructing relief efforts.

CDC officials also say that asymptomatic patients cannot spread Ebola. This assumption is crucial for assessing how many people are at risk of getting the disease. Yet diagnosing a symptom can depend on subjective understandings of what constitutes a symptom, and some may not be easily recognizable. Is a person mildly fatigued because of short sleep the night before a flight — or because of the early onset of disease?

Moreover, said some public health specialists, there is no proof that a person infected — but who lacks symptoms — could not spread the virus to others.

"It's really unclear," said Michael Osterholm, a public health scientist at the University of Minnesota who recently served on the U.S. government's National Science Advisory Board for Biosecurity. "None of us know."

Russell, who oversaw the Army's research on Ebola, said he found the epidemiological data unconvincing.

"The definition of 'symptomatic' is a little difficult to deal with," he said. "It may be generally true that patients aren't excreting very much virus until they become ill, but to say that we know the course of [the virus' entry into the bloodstream] and the course of when a virus appears in the various secretions, I think, is premature."

The CDC's Skinner said that while officials remained confident that Ebola can be spread only by the overtly sick, the ongoing studies would assess whether mutations that might occur could increase the potential for asymptomatic patients to spread it.

Finally, some also question the official assertion that Ebola cannot be transmitted through the air. In late 1989, virus researcher Charles L. Bailey supervised the government's response to an outbreak of Ebola among several dozen rhesus monkeys housed for research in Reston, Va., a suburb of Washington.

What Bailey learned from the episode informs his suspicion that the current strain of Ebola afflicting humans might be spread through tiny liquid droplets propelled into the air by coughing or sneezing.

"We know for a fact that the virus occurs in sputum and no one has ever done a study [disproving that] coughing or sneezing is a viable means of transmitting," he said. Unqualified assurances that Ebola is not spread through the air, Bailey said, are "misleading."

Peters, whose CDC team studied cases from 27 households that emerged during a 1995 Ebola outbreak in Democratic Republic of Congo, said that while most could be attributed to contact with infected late-stage patients or their bodily fluids, "some" infections may have occurred via "aerosol transmission."

Skinner of the CDC, who cited the Peters-led study as the most extensive of Ebola's transmissibility, said that while the evidence "is really overwhelming" that people are most at risk when they touch either those who are sick or such a person's vomit, blood or diarrhea, "we can never say never" about spread through close-range coughing or sneezing.

"I'm not going to sit here and say that if a person who is highly viremic … were to sneeze or cough right in the face of somebody who wasn't protected, that we wouldn't have a transmission," Skinner said.

Peters, Russell and Bailey, who in 1989 was deputy commander for research of the Army's Medical Research Institute of Infectious Diseases, in Frederick, Md., said the primates in Reston had appeared to spread Ebola to other monkeys through their breath.

The Ebola strain found in the monkeys did not infect their human handlers. Bailey, who now directs a biocontainment lab at George Mason University in Virginia, said he was seeking to research the genetic differences between the Ebola found in the Reston monkeys and the strain currently circulating in West Africa.

Though he acknowledged that the means of disease transmission among the animals would not guarantee the same result among humans, Bailey said the outcome may hold lessons for the present Ebola epidemic.

"Those monkeys were dying in a pattern that was certainly suggestive of coughing and sneezing — some sort of aerosol movement," Bailey said. "They were dying and spreading it so quickly from cage

to cage. We finally came to the conclusion that the best action was to euthanize them all."

__David Willman__ is a reporter for the Los Angeles Times based in Washington, D.C. He won the Pulitzer Prize for investigative reporting in 2001 for work that prompted the market withdrawal of Rezulin, a widely sold diabetes drug. His subsequent reports on pharmaceutical industry payments to federal researchers triggered a ban of such compensation at the National Institutes of Health. His other national honors include Sigma Delta Chi's top award in 2009 for Washington-based reporting.

Ebola virus disease: Potential use of melatonin as a treatment

By Tan DX[1], Reiter RJ and Manchester LC
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Abstract

The purpose of this report is to emphasize the potential utility for the use of melatonin in the treatment of individuals who are infected with the Ebola virus. The pathological changes associated with an Ebola infection include, most notably, endothelial disruption, disseminated intravascular coagulation and multiple organ hemorrhage. **Melatonin has been shown to target these alterations.** Numerous similarities between Ebola virus infection and septic shock have recognized for more than a decade. Moreover, melatonin has been successfully employed for the treatment of sepsis in many experimental and clinical studies. Based on these factors, since the number of treatments currently available is limited and the useable products are not abundant, the use of melatonin for the treatment of Ebola virus infection is encouraged. Additionally, melatonin has a **high safety profile**, **is readily-available** and can be **orally-self administered**; thus, the use of melatonin is compatible with the large scale of this serious outbreak.

Ebola Is Not a Weapon

Conspiracy theories are highly contagious. Here's why they're wrong

By Nicholas G. Evans
Source:http://www.slate.com/articles/health_and_science/science/2014/10/ebola_and_bioterrorism_the_virus_is_not_a_bioweapon_despite_media_myths.html

Stop it. Just stop it. Ebola isn't a potential weapon for terrorists.

It isn't, as reported by *Forbes* and the *Daily Mail,* a low-tech weapon of bioterror for ISIS. It isn't the final refuge of a lone wolf on a suicide mission, in the words of Fox News. It isn't a U.S.-built race-targeting bioweapon, as the leader of the Nation of Islam declared.

Ebola is very real, and very scary. But this outbreak isn't a recipe for a bioweapon. Not unless you want to be the most incompetent bioterrorist in history.

First, the virus isn't a viable bioweapon candidate. **It doesn't spread quickly—its R_0, a measure of how infectious a virus is, is about 2.** That means that, in a population where everyone is at risk, each infected person will, on average, infect two more people. But because someone with Ebola is infectious only when she shows symptoms, we've got plenty of chances to clamp down on an outbreak in a country with a developed public health system.

And unlike some bioweapons, such as anthrax, Ebola's transmission mechanism makes it really hard to weaponize. Anthrax spores can be dried and milled so they form little particles that can float on the air and be inhaled. Ebola requires the transmission of bodily fluids, and those don't make efficient or stealthy weapons.

There was suspicion in 1918 that the pandemic "Spanish flu" strain

was a germ weapon wielded by German forces.

(And no—even though you may have heard this—Ebola is not "airborne." The one study everyone talks about showed that pigs could transmit Ebola to macaques through an unknown mechanism that may have involved respiratory droplets. The researchers noted, however, that they couldn't get macaques to transmit it to each other. The take-home from the study is really that pigs can spread Ebola.)

This alone pretty much rules it out as a bioweapon. A terrorist organization would have to go door to door with bags of blood and vomit to infect even a handful of people—and you'd probably notice it.

What about "suicide sneezers," you may ask? Someone who deliberately infects herself with Ebola and then proceeds to pass it on to others?

That's a losing game for the terrorist. Someone with Ebola isn't infectious until she has symptoms, and even then, there is often only a small window for action before the disease takes hold. Many people who contract Ebola do so while caring for someone who is crippled by the affliction. A terrorist who wants to infect others isn't likely to be functional enough to run around spreading the disease for very long—and even then, will find it hard to transmit the virus.

As for conspiracies about engineered Ebola, we know the virus appeared in 1976. The 1970s was also a time when genetic engineering was in its infancy—no one could've engineered a virus, even if he'd wanted to. Short of a time-traveling bioterrorist, that particular theory isn't tenable.

What about now, though? Could a bioterrorist group—or, more likely, a secret national bioweapons program, like the one run by the Soviet Union during the Cold War—take Ebola and modify it to be airborne or more contagious? It isn't likely. Why? One, because it is really difficult—we just don't know enough about viruses to spontaneously engineer new traits. There is also a whole host of other nasty bugs that are already better designed to be weapons. Bugs like smallpox. If terrorists are going to go to all the trouble of engineering a bioweapon, they are likely to pick a much, much better starting point than Ebola.

Finally, even if one of these unlikely scenarios came to pass, what enemy is going to be able to *claim* to have weaponized Ebola and have anyone believe them? ISIS and other militant groups rely on carefully managed reputations to achieve their goals. **Executions and explosions work for terrorists because there is something to be gained in doing so: fear, and credit for causing fear.** There's nothing to be gained in using a disease like Ebola during an outbreak because it is difficult prove it was deliberate, and thus you can't brag about it.

The fear that an emerging infectious disease could in fact be a weapon is not new. In 1918, Lt. Col. Philip S. Doane voiced a suspicion that the pandemic "Spanish flu" strain was in fact a germ weapon wielded by German forces. More recently, an Australian professor of epidemiology argued that Middle Eastern respiratory syndrome could be a bioterror agent. People love to craft theories that provide malevolent agency to disease outbreaks. Yet while bioterrorism is possible—advances in technology are making that easier—for now, nature is almost always the culprit.

Ebola isn't a weapon; it's the collision between humans and their environment.

It's about the failure of public health in Guinea, Liberia, and Sierra Leone. And it's a failure, on our parts, to act and assist the people of these countries. That's a failure of trust.

In developed countries, the biggest threat is not the terrorist, but fear. That fear is causing lawmakers to campaign for stepping up screening, even though it is unlikely to work—it is too hard to track people in air travel, and it isn't effective at detecting cases.

That fear is causing politicians to claim that we should seal the border to Mexico, or ban all flights out of West Africa.

That fear is a powerful weapon that can be used against us. Terror leading us to make bad decisions is much more effective against rich, developed nations than Ebola could be. If we want to beat the latter, we have to beat the former.

To beat Ebola, we have to worry less about terrorists, and more about helping others.

***Nicholas G. Evans** is a bioethicist at the University of Pennsylvania who specializes in biosecurity, bioterrorism, and the ethics of pandemic disease.*

Inside the Mini-Hospitals the Air Force Is Using To Fight Ebola in Africa

By Bob Brewin

Source: http://www.defenseone.com/threats/2014/10/inside-mini-hospitals-air-force-using-fight-ebola-africa/96098/

The Air Force's Air Combat Command has started installation of what its command surgeon, Brig. Gen. Sean Lee Murphy, described as "a mini-community hospital" in Liberia as part of the Defense Department's response to the Ebola outbreak in West Africa.

Murphy told *Nextgov* the 25-bed Expeditionary Medical Support System – or EMEDS – hospital dispatched to Liberia last month will be used to care for health care personnel in Liberia and will be turned over to the U.S. Public Health Service once it's operational.

The World Health Organization said in late August more than 240 health care workers had developed the disease in Guinea, Liberia, Nigeria and Sierra Leone, and more than 120 had died.

EMEDS, constructed from a series of modular tents, was first developed in the 1990s to support combat operations, said Col. Wayne Pritt, commander of the 633 Medical Group, which is based alongside the Air Combat Command at Langley Air Force Base in Virginia.

The system was later revamped to support humanitarian operations in the early 2000s. The Ebola mission marks another change of focus and the first time there will be an interagency handoff of the hospital, Pritt said.

"We are potentially setting a precedent, because the EMEDS unit is typically set up for things like trauma care … [Instead], we will be using it for an infectious pathogen and treatment of international health care workers," said Navy Rear Adm. Scott Giberson, public health service acting deputy surgeon general.

Mini-Hospital Slightly Smaller than Soccer Field

The EMEDS installation is supported by 34 airmen, including medical technicians and doctors who will leave Liberia once the

EMEDS installation is completed, Murphy said.
EMEDS occupies an area about three-quarters the size of a soccer field and is located adjacent to the Monrovia airport, Pritt said.
EMEDS comes equipped with one computer server and 29 laptops, which can, among other things, run the Armed Forces Health Longitudinal Technology Application — AHLTA — electronic health record system, Murphy said. EMEDS also is equipped with Iridium satellite phones.
The mini-hospital also has its own laboratory, which can conduct blood tests and run X-rays with miniaturized digital systems, along with a pharmacy, Pritt said. He added EMEDS can be configured onsite to meet the needs of the public health service.
WHO put the total number of probable, confirmed and suspected Ebola cases in Liberia, Sierra Leone and Guinea at 7,470 cases. As of Oct. 1, there have been 3,431 deaths.

Largest U.S. Response to International Public Health Crisis

In a fact sheet released yesterday (read below), the White House said more than 130 civilian medical, health care and disaster-response experts from multiple U.S. government departments and agencies have deployed to West Africa as part of the U.S. Agency for International Development response team.
The team includes about 350 U.S. military personnel. The Pentagon expects to eventually deploy slightly more than 4,000 personnel to West Africa.
This is the largest U.S. response to an international public health challenge, the White House said.
"We're having to stand up, essentially, a public health infrastructure in many of these areas that haven't had one before, and that requires an enormous amount of effort," Obama told reporters at a press conference yesterday.
The White House said the U.S. has committed more than $350 million to fighting the Ebola outbreak in West Africa, including more than $111 million by civilian agencies. The Defense Department plans to spend more than $1 billion on its operations there.
Obama said more international support is needed for the Ebola fight.
"We've got some small countries that are punching above their weight on this, but we've got some large countries that aren't doing enough," he said. "We want to make sure they understand that this is not a disease that's going to discriminate, and this is something that all of us have to be involved in."

***Bob Brewin** joined Government Executive in April 2007, bringing with him more than 20 years of experience as a journalist focusing on defense issues and technology. Bob covers the world of defense and information technology for Nextgov, and is the author of the "What's Brewin" blog.*

FACT SHEET: The U.S. Response to the Ebola Epidemic in West Africa

Source: http://www.whitehouse.gov/the-press-office/2014/10/06/fact-sheet-us-response-ebola-epidemic-west-africa

Since the first cases of Ebola were reported in West Africa in March 2014, the United States has mounted a whole-of-government response to contain and eliminate the epidemic at its source, while also taking prudent measures at home. The President last month outlined a stepped-up U.S. response, leveraging more thoroughly the unique capabilities of the U.S. military to support the civilian-led response in West Africa. Domestically, we have prepared for the diagnosis of an Ebola case on U.S. soil and have measures in place to stop this and any potential future cases in their tracks.
Specifically, our strategy is predicated on four key goals:

- Controlling the epidemic at its source in West Africa;
- Mitigating second-order impacts, including blunting the economic, social, and political tolls in the region;
- Engaging and coordinating with a broader global audience; and,
- Fortifying global health security infrastructure in the region and beyond, including within the United States.

International Response

In support of national government efforts in Liberia, Sierra Leone, and Guinea—and alongside the international community—the U.S. response builds upon the measures we have had in place since

the first cases of Ebola were reported. The United States already has committed more than $350 million toward fighting the outbreak in West Africa, including more than $111 million in humanitarian aid, and the Department of Defense (DoD) is prepared to devote more than $1 billion to the whole-of-government Ebola response effort. As a further indication of our prioritization of this response, the United States convened a special UN Security Council session on the epidemic, and President Obama called the world to action during a subsequent UN session called by Secretary-General Ban Ki-moon. These U.S. actions have galvanized millions of dollars in international funding and in-kind support.

Among the specific response efforts, the United States has:

- Deployed to West Africa more than 130 civilian medical, healthcare, and disaster response experts from multiple U.S. government departments and agencies as part of the U.S. Agency for International Development's (USAID) Disaster Assistance Response Team as well as approximately 350 U.S. military personnel, constituting the largest U.S. response to an international public health challenge;
- Increased the number of Ebola treatment units (ETU) in the region, including supporting ETUs in Sierra Leone and Liberia, and one of our new ETUs in Liberia discharged its first four Ebola survivors last week;
- Increased to 50 the number of safe burial teams, which are now working across every county in Liberia to safely and respectfully dispose of bodies;
- Deployed and commenced operation of five mobile Ebola testing labs in the region, two of which opened this week in Liberia and have doubled lab capacity in the country—reducing from several days to just a few hours the time needed to determine if a patient has Ebola;
- Provided more than 10,000 Ebola test kits to the Liberian Institute of Biological Research and Sierra Leone's Kenema Government Hospital;
- Received and passed to interested humanitarian organizations information from nearly 2,200 volunteers willing to provide healthcare in the affected countries;
- Delivered approximately 2,200 rolls of USAID heavy-duty plastic sheeting for use in constructing Ebola treatment units across the region;
- Procured 140,000 sets of personal protective equipment, 10,000 of which have already been delivered, along with hundreds of thousands of medical gloves and thousands of protective coveralls, goggles, face shields, and other personal protective supplies;
- Delivered an initial 9,000 of 50,000 community care kits to Liberia;
- Supported aggressive public education campaigns reaching every Liberian county with life-saving information on how to identify, treat and prevent Ebola;
- Administered nutritional support to patients receiving care at Ebola treatment units and in Ebola-affected communities across the region; and
- Provided technical support to the Government of Liberia's national-level emergency operation center.

In the days and weeks to come, U.S. efforts will include:

- Scaling-up the DoD presence in West Africa. Following the completion of AFRICOM's assessment, DoD announced the planned deployment of 3,200 troops, including 700 from the 101st Airborne Division headquarters element to Liberia. These forces will deploy in late October and become the headquarters staff for the Joint Forces Command, led by Major General Gary Volesky. The total U.S. troop commitment will depend on the requirements on the ground;
- Overseeing the construction of and facilitating staffing for at least 17 100-bed Ebola treatment units across Liberia;
- Deploying additional U.S. military personnel from various engineering units to help supervise the construction of ETUs and provide engineering expertise for the international response in Liberia;
- Establishing a training site in Liberia to train up to 500 health care providers per week, enabling them to provide safe and direct supportive medical care to Ebola patients;
- Setting up and facilitating staffing for a hospital in Liberia that will treat all healthcare workers who are working in West Africa on the Ebola crisis should they fall ill;
- Operating a training course in the United States for licensed nurses, physicians, and other healthcare providers intending to work in an ETU in West Africa;
- Leveraging a regional staging base in Senegal to help expedite the surge of equipment, supplies, and personnel to West Africa;
- Continuing outreach by all levels of the U.S. government to push for increased and speedier response contributions from partners around the globe; and,
- Sustaining engagement with the UN system to coordinate response and improve effectiveness.

Domestic Response

We have been prepared for an Ebola case in the United States and have the healthcare system infrastructure in place to respond safely and effectively. Upon confirming the Ebola diagnosis, the Department of Health and Human Services (HHS), including the Centers for Disease Control and Prevention (CDC), and our interagency team activated plans that had been developed.

Our public health officials have led the charge to prepare and fortify our national health infrastructure to respond quickly and effectively to Ebola cases domestically. Their efforts include:

- Enhancing surveillance and laboratory testing capacity in states to detect cases; in the last three months, 12 Laboratory Response Network labs have been validated to perform Ebola diagnostic testing throughout the United States;
- Authorizing the use of a diagnostic test developed by DoD to help detect the Ebola virus.
- Providing guidance and tools for hospitals and health care providers to prepare for and manage potential patients, protect healthcare workers, and respond in a coordinated fashion;
- Developing guidance and tools for health departments to conduct public health investigations;
- Providing recommendations for healthcare infection control and other measures to prevent disease spread;
- Disseminating guidance for flight crews, Emergency Medical Services units at airports, and Customs and Border Protection officers about reporting ill travelers to CDC;
- Providing up-to-date information to the general public, international travelers, healthcare providers, state and local officials, and public health partners;
- Advancing the development and clinical trials of Ebola vaccines and antivirals to determine their safety and efficacy in humans;
- Monitoring by the Food and Drug Administration for fraudulent products and false product claims related to the Ebola virus and implementing enforcement actions, as warranted, to protect the public health; and,
- Issuing by the U.S. Department of Transportation, in coordination with CDC, an emergency special permit for a company to transport large quantities of Ebola-contaminated waste from Presbyterian Hospital in Dallas, Texas as well as from other locations in Texas for disposal.

Passenger Screening

On top of these domestic measures, we recognize that passenger screening efforts in West Africa and at domestic airports represent another line of defense. We have developed and supported a stringent screening regimen both at home and abroad, and we are constantly evaluating the effectiveness of these and other potential measures. We will make adjustments as deemed prudent by health professionals and the appropriate U.S. departments and agencies.

Exit screening measures are routinely implemented in the affected West African countries, and U.S. government personnel have worked closely with local authorities to implement these measures. Since the beginning of August, CDC has been working with airlines, airports, ministries of health, and other partners to provide technical assistance for the development of exit screening and travel restrictions in countries with Ebola. This includes:

- Assessing the capacity to conduct exit screening at international airports;
- Assisting countries with procuring supplies needed to conduct exit screening;
- Supporting with development of exit screening protocols;
- Developing tools such as posters, screening forms, and job-aids;
- Training staff on exit screening protocols and appropriate personal protective equipment (PPE) use; and,
- Preparing in-country staff to provide future trainings.

All outbound passengers are screened for Ebola symptoms in the affected countries. Such primary exit screening involves travelers responding to a travel health questionnaire, being visually assessed for potential illness, and having their body temperature measured.

- If a person has a fever above 101.5 or is suspected to be ill, the passenger will be taken aside for a more detailed health assessment – a secondary screening - to determine if he or she should be isolated.
- Airport employees must wear latex gloves, use alcohol-based hand sanitizer, and monitor their own body temperature daily, among other measures.

Once passengers arrive in the United States they are subject to additional measures.

The Department of Homeland Security's (DHS) Customs and Border Protection (CBP) and the CDC have closely coordinated to develop policies, procedures, and protocols to identify travelers who may have a communicable disease, responding in a manner that minimizes risk to the public. These procedures have been utilized collaboratively by both agencies on a number of occasions with positive results. Among these measures:

- CBP personnel review all travelers entering the United States for general overt signs of illnesses (visual observation, questioning, and notification of CDC as appropriate) at all U.S.

ports of entry, including all federal inspection services areas at U.S. airports that service international flights.

- When a traveler is identified with a possible communicable disease or identified from information that is received from the CDC, CBP personnel will take the appropriate safety measures by referring the traveler to a secondary, isolating the traveler from other travelers, and referring to CDC or public officials for a medical assessment. CBP personnel may don personal protective equipment (PPE), to include gloves and surgical masks, which are readily available for use in the course of their duties.
- CBP personnel receive training in illness recognition, but if they identify an individual believed to be infected, CBP will contact CDC along with local public health authorities to help with further medical evaluation.
- CBP is handing out fact sheets to travelers arriving in the U.S. from Ebola- affected countries, which detail information on Ebola, health signs to look for, and information for their doctor should they need to seek medical attention in the future.
- Secretary Johnson has also directed Transportation Security Administration to issue an Information Circular to air carriers reinforcing the CDC's message on Ebola and providing guidance on identifying potential passengers with Ebola. DHS is closely monitoring the situation and Secretary Johnson will consider additional actions as appropriate.

These Robots Are Fighting Ebola in Texas

Source: http://gizmodo.com/these-robots-are-fighting-ebola-in-texas-1643219899

As the more paranoid among us freak out and reach for the hazmat suits, America is fighting the Ebola threat the only way it knows how: hundreds of thousands of dollars of robots, natch.

A 'germ-zapping' robot developed in San Antonio is reportedly deployed in Dallas, where doctors are treating the first Ebola patient in the US. **'Little Moe'**, as the germ-eliminating machine of death is lovingly known, is a bit of hospital machinery that can be wheeled into a room, and then uses UV light to sanitize the room, killing pesky germs in the process.

Given the widespread use of robots at other hazardous cleanup sites (notably Fukushima), and the advent of robots that can perform millametric-precise surgery, I'm actually surprised that robots aren't

being exclusively used to treat Ebola patients. Presumably the bedside manner is still a little wanting.

3 US hospitals stopped Ebola from spreading. Why didn't Texas?

Source: http://www.vox.com/2014/10/12/6964581/ebola-texas-infected-hospital-worker-nurse-biocontamination-units

There's something unique about the three hospitals that have so far successfully treated Ebola patients — something that's different from Texas Presbyterian Hospital in Dallas, where a patient died and one worker treating him became infected.

Emory, the University of Nebraska, and the

National Institutes of Health have all received and successfully discharged Ebola patients.

These three hospitals are among just four in the nation with specialized biocontamination units. These are units that have existed for years, with the sole purpose of handling patients with deadly, infectious dieases like SARS or Ebola.

While biocontamination units look similar to a standard hospital room, they usually have specialized air circulation systems to remove disease particles from the facility. And, perhaps more importantly, they're staffed by doctors who have spent years training, preparing and thinking about how to stop dangerous infections from spreading.

One of Emory University's isolation units (Emory University)

"The care of ebola...is hard to do safely. Even an innocent slip up can result in contamination."

"Ever since [2007] we've had a training program," says George Risi, who runs the country's fourth biocontainment unit, at St. Patrick's Hospital in Montana. His is the only unit that hasn't yet treated an Ebola patient, but his staff has spent years preparing for that moment. Every six months, they "do a workshop and also have periodic drilling."

This isn't true of Texas Presbyterian. Like most American hospitals, it doesn't have a biocontamination unit. It hasn't spent years running through the drills of how to treat an Ebola patient. It began receiving additional training from the CDC, director Tom Frieden told reporters Sunday, only this week.

"The care of Ebola can be done safely but its hard to do it safely," Frieden said in his Sunday press conference. "Even an innocent slip up can result in contamination."

What's different about biocontamination units is their training

I got to talk to Risi earlier this month, and he told me about all the things that make their biocontamination rooms different from typical

hospital rooms. Some if it is technology.

"Each of those three rooms has negative pressure: the air is drawn in from the hallway and then goes out through a series of high efficiency particulate air [HEPA] filters," he says. "The HEPA filters connect to duct work that goes up to the top of the roof of the hospital and is discharged eight feet above the roof."

But more than the physical structure of the units, Risi really thinks it comes down to the extensive training. His staff has, for seven years now, run periodic drills about how they would treat these patients. The Nebraska hospital that successfully treated one Ebola patient — and is currently caring for the infected NBC cameraman — has been preparing for a patient like this since 2005.

These hospitals are in close contact with each other, sharing information about how to best handle tricky situations. Risi, for example, has talked to experts at Emory about the best way to dispose of waste from Ebola patients.

In Montana, Risi and his head nurse even went to Sierra Leone this summer to become more familiar with the disease — and shake off some of the scare factor around it. At his hospital, treating an Ebola patient is "something we've been talking about for years, how you handle this kind of patient. Its not new to us."

The CDC thinks that the problem in Texas comes down to the ability to follow protocol and better training. "There's a need to enhance the training to make sure the protocols are followed," he said. "We know the protocols work."

"The necessity of doing this right 100 percent of the time does require... a very intensive training process," Frieden continued.

CDC: All hospitals need to be prepared

Frieden fielded one question on Sunday morning: should all Ebola patients be cared for at these four, specialized biocontamination units?

He said that his agency will "absolutely be looking at" the "safest way to provide care" — and this could be one option.

But he also addressed one challenging point here: most Americans don't live near a biocontamination unit. An Ebola patient is more likely to turn up at the emergency department of a hospital without the specialized training. And, even if patients are ultimately transferred to a better-prepared facility, there is still some amount of time where patients will interact with their local providers.

"We can't let any hospital let its guard down," Frieden says. "A patient, who had exposure and maybe didn't have an awareness. We do want hospitals to have the ability to rapidly consider, isolate and diagnose someone who may have Ebola."

CDC chief: After Dallas nurse's Ebola infection, U.S. must 'rethink' protocols

Source: http://www.washingtonpost.com/national/health-science/cdc-chief-after-dallas-nurses-ebola-infection-us-must-rethink-protocols/2014/10/13/5317a9a8-530f-11e4-809b-8cc0a295c773_story.html

October 13 – As a 26-year-old Dallas nurse lay infected in the same hospital where she treated a dying Ebola patient last week, government officials on Monday said the first transmission of the disease in the United States had revealed systemic failures in preparation that must "substantially" change in coming days.

"We have to rethink the way we address Ebola infection control, because even a single infection is unacceptable," Thomas Frieden,

director of the Centers for Disease Control and Prevention, said in a news conference.

Frieden did not detail precisely how the extensive, government-issued safety protocols in place at many facilities might need to change or in what ways hospitals need to ramp up training for front-line doctors or nurses.

But his message was clear: With Ebola, there is no margin for error. The Dallas case made that certain.

Federal, state and local health officials on Monday raced to investigate how Nina Pham, a nurse at Texas Health Presbyterian Hospital in Dallas, became infected with Ebola. A 2010 graduate of Texas Christian University's nursing program, she was part of the team that treated Thomas Eric Duncan, a Liberian man who succumbed to the virus Wednesday after more than a week at the hospital.

Officials have said Pham wore protective gear, including a gown, gloves, a mask and a face shield, while caring for Duncan on multiple occasions. But Ebola can easily infect those who come into contact with the bodily fluids of Ebola patients, and the smallest slip in putting on or taking off protective gear can open the door to the virus.

Authorities on Monday also were working to determine how many other health-care workers at the hospital could have been exposed to the virus. About 70 staffers cared for Duncan, according to records obtained by the Associated Press.

"We need to consider the possibility that there could be additional cases, particularly among the health-care workers who cared for [Duncan] when he was so ill," Frieden said. "We would not be surprised if we did see additional cases."

Asked about how many people at the hospital might be at risk and in need of monitoring, Frieden said: "It's a relatively large number, we think. . . . We cast a wide net and then narrow that down."

Pham, whom family members and a church rector identified to a Dallas television station as the infected nurse, remained in stable condition at the hospital Monday, officials said. Investigators had tracked down only one person she might have had contact with since showing symptoms of the disease Friday. Pham, who had been at home taking her temperature twice a day, notified the hospital when she developed a fever, and she quickly was admitted to an isolated unit.

Kent Brantly, a U.S. doctor infected with Ebola this summer while treating patients at a missionary hospital in Liberia, went to the Dallas hospital on Sunday and donated his blood for Pham. The hope is that giving an Ebola victim an injection of blood plasma from a survivor could deliver antibodies that help fight off the virus.

Brantly, who was flown to Atlanta for treatment after his diagnosis and later released, was in Texas at the end of last week to deliver a speech at his alma mater, Abilene Christian University. A spokesman for Samaritan's Purse, the Christian aid group for which Brantly worked in Africa, said the Dallas hospital got in touch with him after

Pham's diagnosis to see if he would be willing to donate. Brantly made the 180-mile trip east to offer his blood.

It is the third time he has donated blood since recovering from Ebola. He gave blood for another infected American doctor as well as for an Ebola-stricken NBC cameraman, both of whom were treated in Nebraska. Brantly also offered to donate blood to Duncan before his death, but their blood types were not a match.

Meanwhile, **the 48 people known to have had possible contact with Duncan before his hospitalization, including 10 "high risk" family members who cared for him or stayed in the same apartment, continue to show no symptoms.**

"Everybody's okay," said Aaron Yah, who is in quarantine along with other relatives of Duncan. He said that no one, including Duncan's girlfriend, has shown any signs of infection.

As investigators work to figure out how Pham got infected, health officials already are considering exactly what protocols need strengthening at U.S. hospitals. The CDC said it will examine every aspect of dealing with suspected or confirmed Ebola cases, including how best to staff isolation units and how protective gear is put on and taken off.

"We have not identified a specific problem that led to this infection," Frieden said. "We have identified a series of things where we can make the care safer and easier for the health-care workers that are providing it."

Some new measures already are being put in place, Frieden said. Among other things, the CDC says a "buddy system" is essential for health-care workers to ensure the proper removal of protective gear. It is unclear whether that practice was in place in Dallas and how common it is elsewhere.

The chief executive of Texas Health Resources, which operates the Dallas facility, spoke Monday at a town-hall meeting there for hospital employees. "In our collective efforts to improve our knowledge, processes and outcomes, we must not lose sight of the compassion and selflessness a member of our family, and others, have demonstrated to care for others infected with this insidious disease," CEO Barclay Berdan said. Acknowledging the scrutiny the hospital is under, he added: "We recognize the professional, tireless and compassionate care you provide each and every day. We are staying focused on taking care of our patients and each other."

In recent days, National Nurses United, the largest union of registered nurses in the United States, has insisted that most hospitals are still not prepared to properly deal with Ebola. Nurses have complained of inadequate training or in some cases almost no training at all on the correct protocols. That lack of preparation is unacceptable, given the risk that front-line health workers face in treating potential Ebola patients, the nurses say. [UPDATE: NNU reorted that affected nurse had her neck exposed/not covered while working with Ebola patient]

That sentiment also prompted Frieden to **apologize** Monday for remarks he made immediately after Pham's infection was announced. **He said over the weekend that "a breach in protocol resulted in this infection," a remark that some people interpreted as faulting the nurse.**

"That was certainly not my intention. People on the front lines are really protecting all of us," Frieden said. "The enemy here is a virus, Ebola. It's not a person. It's not a country. It's not a place. It's not a hospital. It's a virus. It's a virus that's tough to fight."

Yellow police tape on Monday cordoned off the two-story brick apartment building where Pham and her boyfriend live. Sheriff's deputies and Dallas hazmat units lingered in front of the building for hours. A man in a Dodge truck from Louisiana with the name "OMI Environmental Solutions" on the side arrived about 9 a.m.

Meanwhile, the enhanced screening that began at John F. Kennedy International Airport in New York over the weekend has flagged 91 travelers who came from the three West African countries hardest hit by Ebola. Five people were stopped for additional screening, Frieden said. None had a fever or Ebola.

Similar screening will roll out at airports in Washington, Atlanta, Chicago and Newark later this week.

The White House said Monday that President Obama met with members of his public health and national security team to discuss the situation in Texas. Frieden and Health and Human Services Secretary Sylvia Mathews Burwell detailed the personnel and resources that have been sent to Dallas, as well as various efforts underway to heighten awareness and increase training for health-care workers throughout the country.

As Pham began her fight against the deadly virus in Dallas, the incinerated belongings of the Ebola patient she had treated were bound for a Louisiana hazardous-waste landfill — until the state's attorney

THE PROTOCOL

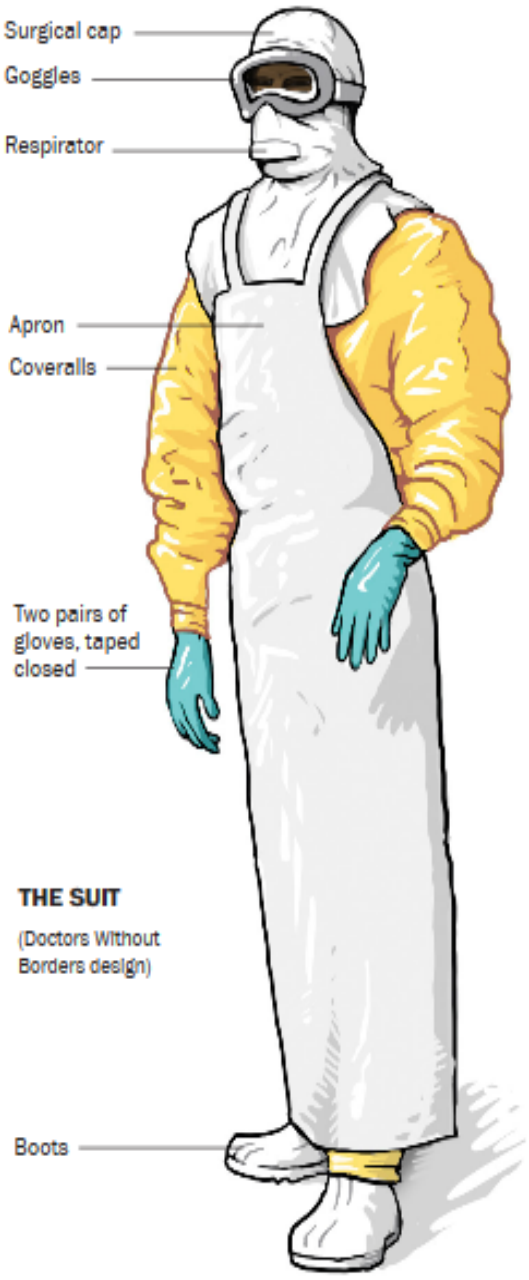
When putting on equipment, workers should adjust for comfort and should not adjust in the treatment center because of the risk of exposure and contamination.

Preparation

1. Wash hands.
2. Put on coverall or gown, tying at back of the neck and waist.
3. Secure facemask or respirator and make sure it fits snuggly around nose bridge, face and below chin.
4. Place face shield or goggles over face and/or eyes.
5. Surgical cap ties at the back of the head.
6. Boots or shoe covers are positioned and worn underneath the gown. Some workers wear two layers.
7. Apron ties at the back and loops to the front.
8. First pair of gloves is worn under the cuffs of the coverall or gown.
9. Second pair of gloves is worn over the top of the coverall or gown. In some cases, gloves are taped shut by a buddy.
10. Each person puts on their own gear, but each worker has a buddy. The buddy spot-checks for tears in equipment or open areas of skin that could become contaminated.

In the treatment area

11. When treating patients, workers should not touch their own faces, should limit the number of surfaces they touch, change their gloves if heavily contaminated and wash their gloved hands often.
12. Depending on the organization or the availability of gloves, workers must either change the outer layer of gloves when moving from patient to patient or wash gloved hands with soap and water.



THE SUIT

(Doctors Without Borders design)

Leaving and undressing

13. Leaving the treatment facility, workers must step into a chlorine basin, or spray or wash with a water solution containing 0.5% chlorine.
14. Carefully remove outer gloves, which are placed in a biohazard container to be treated and incinerated.
15. Wash hands with soap and water or a 0.5% chlorine solution.
16. Carefully remove apron.
17. Wash hands.
18. Unfasten gown ties and push gown away from body by touching the inside only. Turn gown inside out and roll down and over boots.
19. Wash hands.
20. Remove boots with a boot remover, or remove shoe covers.
21. Wash hands.
22. Remove surgical cap.
23. Wash hands.
24. Remove inner layer of gloves.
25. Wash hands.
26. Remove face shield or goggles.
27. Wash hands.
28. Remove face mask or respirator.
29. Wash hands.
30. When leaving the containment area, feet are sprayed with bleach solution.

The CDC cautions workers not to bypass any of these steps.

SOURCE: Centers for Disease Control and Prevention.

general, Buddy Caldwell, raised concerns that Duncan's ashes could pose a danger to the state's population.
Caldwell's office said in a statement Monday that a Louisiana judge had granted its request for a temporary restraining order blocking the transportation of Duncan's remains into the state. Despite the CDC guidelines saying that Ebola-related waste that has been incinerated is no longer infectious, Caldwell said that too many questions remain. "Even the CDC and our health-care workers seem uncertain as to the effectiveness of purported protocols in dealing with Ebola," Caldwell said. "It is absurd to transport potentially hazardous Ebola waste across state lines."
The order from Judge Bob Downing of Louisiana's 19th District Court bars the Texas company that destroyed Duncan's belongings from transporting the ashes into the state. It also prohibits the Louisiana facility slated to accept them from doing so. The order remains in place until Oct. 22, when Downing will hear arguments in the case.

New tool can be used as a universal Ebola drug target

Source: http://www.homelandsecuritynewswire.com/dr20141015-new-tool-can-be-used-as-a-universal-ebola-drug-target

University of Utah biochemists have reported a new drug discovery tool against the Ebola virus. According to a study published in this week's online edition of *Protein Science*, they have produced a **molecule, known as a peptide mimic, which displays a functionally critical region of the virus that is universally conserved in all known species of Ebola.** This new tool can be used as a drug target in the discovery of anti-Ebola agents that are effective against all known strains and likely future strains.
A University of Utah release reports that the U of U work, which was funded by the National Institutes of Health, was conducted by a large collaborative team led by Debra Eckert, Ph.D., research assistant professor of biochemistry, and Michael S. Kay, M.D., Ph.D., professor of biochemistry. Key contributions to this work were provided by Dr. John Dye's laboratory at the U.S. Army Medical Research Institute of Infectious Diseases (USAMRIID), the lab of Christopher P. Hill, D.Phil., professor and co-chair of the U of U Department of Biochemistry, and a group led by Brett Welch, Ph.D. at Navigen, Inc., a Salt Lake City pharmaceutical discovery and development company (Navigen has licensed exclusive rights to the technology from the U of U and is currently screening for drugs against the target).
The Utah scientists **designed peptide mimics of a highly conserved region in the Ebola protein that controls entry of the virus into the human host cell, initiating infection. Importantly, the researchers were able to demonstrate this peptide target is suitable for use in high-throughput drug screens. These kinds of screens allow rapid identification of potential new drugs from billions of possible candidates.**
Current experimental drugs generally target only one of Ebola's five species. "The current growing epidemic demonstrates the need for effective broad-range Ebola virus therapies," says Dr. Tracy R. Clinton, lead author on the study. "Importantly, viral sequence information from the epidemic reveals rapid changes in the viral genome, while our target sequence remains the same. Therefore, our target will enable the discovery of drugs with the potential to treat any future epidemic, even if new Ebola virus strains emerge."
Ebola is a lethal virus that causes severe hemorrhagic fever with a 50 percent to 90 percent mortality rate. There are five known species of the virus. Outbreaks have been occurring with increasing frequency in recent years, and an unprecedented and rapidly expanding Ebola outbreak is currently spreading through several countries in West Africa with devastating consequences. The development of an effective anti-Ebola agent to protect against natural outbreaks and potential bioterror exposures is an urgent global health need. There are no approved anti-Ebola agents, but a number of promising experimental drugs are being aggressively advanced to clinical trials to address the current crisis.

Dr. Eckert notes, "Although the current push of clinical trials will hopefully lead to an effective treatment for the Zaire species causing the present epidemic, the same treatments are unlikely to be effective against future outbreaks of a different or new Ebola species. Development of a broadly acting therapy is an important long-term goal that would allow cost-effective stockpiling of a universal Ebola treatment."

Of particular interest, this target was shown to be suitable for the discovery of mirror-image peptide inhibitors (D-peptides), which are promising drug candidates. Unlike natural peptides, they are not digested by enzymes in the blood. D-peptides are also much simpler and less expensive to produce compared to the current most promising approach, antibodies.

The release notes that the Utah group has previously developed highly potent and broadly acting D-peptide inhibitors of HIV entry, currently in preclinical studies, and is now adapting this approach to Ebola using the mimics developed in this study. In collaboration with Navigen, several promising lead D-peptide inhibitors have already been identified. U of U and Navigen are now seeking additional funding to optimize these inhibitors and advance them into clinical trials in humans.

— Read more in Tracy R. Clinton et al., "Design and characterization of ebolavirus GP prehairpin intermediate mimics as drug targets," Protein Science *(available online; forthcoming in print)*

Abstract
Source: http://onlinelibrary.wiley.com/doi/10.1002/pro.2578/abstract

Ebolaviruses are highly lethal filoviruses that cause hemorrhagic fever in humans and non-human primates. With no approved treatments or preventatives, the development of an anti-ebolavirus therapy to protect against natural infections and potential weaponization is an urgent global health need. Here, we describe the design, biophysical characterization, and validation of peptide mimics of the ebolavirus N-trimer, a highly conserved region of the GP2 fusion protein, to be used as targets to develop broad-spectrum inhibitors of ebolavirus entry. The N-trimer region of GP2 is 90% identical across all ebolavirus species and forms a critical part of the prehairpin intermediate that is exposed during viral entry. Specifically, we fused designed coiled coils to the N-trimer to present it as a soluble trimeric coiled coil as it appears during membrane fusion. Circular dichroism, sedimentation equilibrium and x-ray crystallography analyses reveal the helical, trimeric structure of the designed N-trimer mimic targets. Surface plasmon resonance studies validate that the N-trimer mimic binds its native ligand, the C-peptide region of GP2. The longest N-trimer mimic also inhibits virus entry, thereby confirming binding of the C-peptide region during viral entry and the presence of a vulnerable prehairpin intermediate. Using phage display as a model system, we validate the suitability of the N-trimer mimics as drug screening targets. Finally, we describe the foundational work to use the N-trimer mimics as targets in mirror-image phage display, which will be used to identify D-peptide inhibitors of ebolavirus entry.

Toxic mess: Agencies at odds over Ebola-waste disposal

Source: http://www.foxnews.com/health/2014/10/14/toxic-mess-agencies-at-odds-over-ebola-waste-disposal/

While the Obama administration and Centers for Disease Control (CDC) try to reassure the public that all U.S. hospitals are capable of treating Ebola patients, the question of what to do with Ebola-contaminated hospital waste appears to be caught up in bureaucratic and regulatory finger-pointing.

"We're asking our health care facilities to manage Ebola patients, but we have no solution on what to do with the huge amount of waste from the Ebola patients," Dr. Jeffrey Duchin, chairman of the public health committee for Infectious Diseases Society of

America (IDSA) told FoxNews.com.
The hazardous waste protocols in place for hospitals require staff to place any potentially infected substances -- whether it is medical equipment or protective gear -- into special hazardous waste containers. That waste then is supposed to be turned over to licensed hazardous waste companies, where it is incinerated or chemically sterilized, according to the CDC.
That's where the already dangerous — and potentially deadly — problem gets messier.

A hazmat worker moves a barrel while finishing up cleaning outside an apartment building of a hospital worker in Dallas. (AP)

Due to specific Ebola-related regulations issued by the U.S. Department of Transportation (DOT), which governs what medical waste companies can and cannot transport, the usual waste haulers or medical waste disposal companies are prohibited from accepting Ebola-contaminated waste until it has been properly packaged in accordance with DOT guidelines.
If a hospital is equipped with an incinerator or large sterilizer called autoclaves (right photo), the decontamination process can occur at the hospital, said Susan Lagana, associate administrator of DOT pipeline and hazardous materials safety administration.
However, few U.S. hospitals are equipped with incinerators or autoclaves needed to safely handle soiled linens, contaminated syringes and virus-spattered protective gear generated from the care of an Ebola patient.
"The medical waste companies are refusing to come and pick up the waste because of the DOT regulations, which the CDC does not agree with," Duchin said. The CDC considers Ebola waste to be appropriate for handling by the medical waste companies, Duchin said.

The Ebola virus is transmitted through contact with an infected patient's blood or body fluids, such as urine, saliva, sweat, feces, vomit or semen. Ebola also can be spread through contract with objects such as needles and syringes -- but not by air, according to the CDC.
"It's not going to jump out of the bag," Duchin said, adding that the amount of time being given to find a solution is diverting medical officials away from the focus -- which should be treating the patient.
The DOT classifies Ebola as a Category A infectious agent, meaning it is capable of killing people, rather than just regulated medical waste, which includes non-lethal pathogens.

But the CDC advises hospitals to treat items infected with the Ebola virus in leak-proof containers and

discard them as they would other regulated medical waste.

The conflicting classifications on Ebola waste forced the Dallas hospital that treated the first patient diagnosed with the virus in the U.S. to wait for the DOT to issue a special permit before it could move the material.

“The guidance on the packaging for transport had to be adapted, and that was the issue that was addressed in the special permits,” Lagana said.

Lagana pointed out the CDC and DOT regulations including categories are used for different purposes, which may lead to guidelines issued by the agencies to include additional pieces.

The permit was eventually issued, allowing Texas Health Presbyterian Hospital, which was caring for Liberian national, Thomas Eric Duncan, up until his death Wednesday, to transport and dispose of medical waste such as vomit and diarrhea generated during his stay.

"If we do have another case of Ebola in a hospital where the medical waste provider does not have a permit, hopefully they will be able to quickly get that permit. DOT has assured us that they would issue the permits quickly," said Abbigail Tumpey, CDC's associate director for communications science division of healthcare quality promotion.

Until the permit was issued, the hospital held the waste at the unit where Duncan was being held in isolation, said Dr. David Lakey, commissioner of the Texas Department of State Health Services.

Meanwhile, a Louisiana waste disposal facility, Chemical Waste Management Inc.-Lake Charles, says it will not accept the ashes generated when Duncan’s belongings were incinerated, at least not until state officials agree that it would pose no threat to the public.

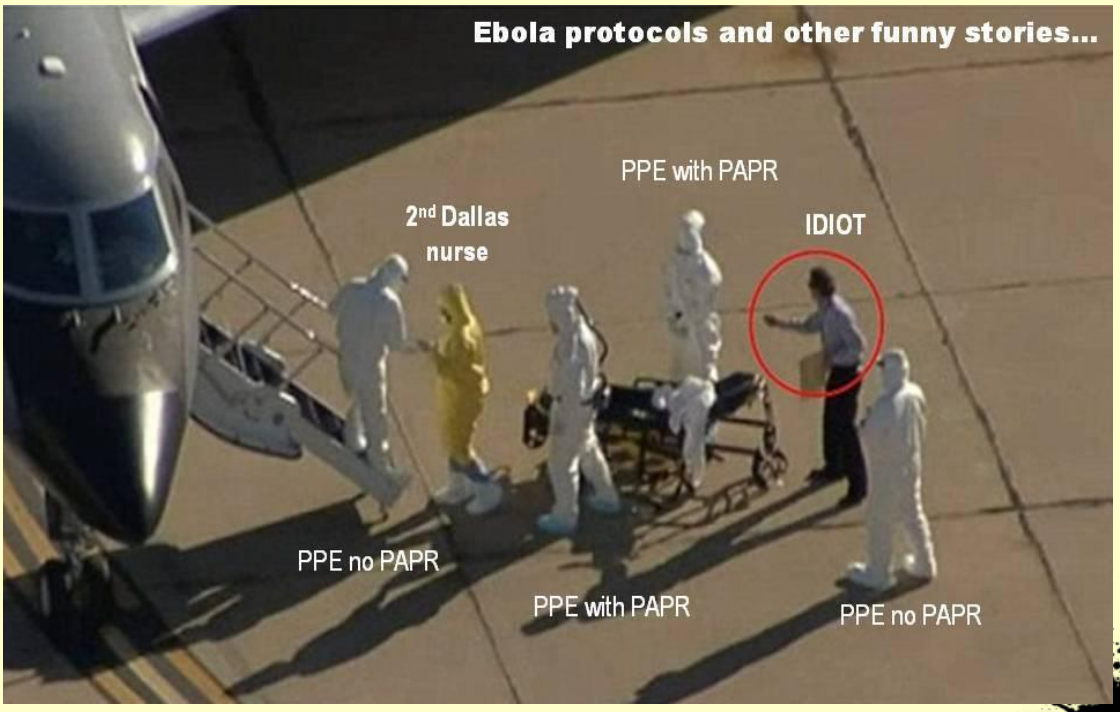
The company said in news release Monday that it is permitted to accept such material and that it poses no threat to the environment or human health.

But, the company says, "we do not want to make an already complicated situation, more complicated."

Louisiana Attorney General Buddy Caldwell said he plans to go to court to block the transport of the waste to the Calcasieu Parish facility.

Frieden said during a news conference Monday that the virus is not considered to be hardy in the environment and that incineration and chemical treatment of the infected waste is sufficient to remove any risk.

“We certainly know how to inactivate and destroy the Ebola virus,” Frieden said. “We feel very comfortable with incineration,” he said.



Ebola airplane decontamination

Source: http://www.cristanini.com

On 10th October, at Galeão Airport in Rio de Janeiro the 1st CBRN Battalion of Defense carried out the first decontamination of external and internal parts of a aircraft with which a patient with suspected infection of Ebola virus flew. All facilities have been manufactured by our Cristanini Company.
The following equipments have been used:

- ✓ RI/CBRN Trailer with BX24 for the external parts of the plane;
- ✓ LVD-X for the decontamination of interior;

- ✓ SX34 for cockpit, electronic and sensitive devices.

SX-34 kit

Complete with the following components:

1 N° 01 Deco Vacuum (weight 9,5 kg. – 20,9 lbs. - 220÷240V. - 50÷60HZ – 1200 W) – p/n 958090185 – Nato Stock Number 7910-15-203-0547;
2 N° 01 storage / transportation box, drop shock resistant – p/n 958090189 - Nato Stock Number 8460-15-201-0894.
3 N° 10 canisters (0,75l capacity each)of SX34 decontaminant – p/n 958090184 (n. 1 canister p/n 240230 – Nato Stock Number 6850-15-203-0546).
4 N° 01 HEPA and N°1 ULPA filter – p/n 958090186 - Nato Stock Number 4730-15-189-2005.
5 N° 05 bags for collection of contaminated materials – p/n 958090187 - Nato Stock Number 4230-15-189-2006.
6 N° 06 various accessories for access to those "hard to reach" places – p/n 958090188.
7 N° 2 brushes and maintenance tools – p/n 958090198 - Nato Stock Number 6640-15-189-2007.
8 N° 10 nozzles – p/n 958090199 - Nato Stock Number 4730-15-189-2008.
9 N° 1 decontamination/detoxification system PSDS1,5 MIL resistant to acids as foreseen in the STANAG 4360 – p/n 240425 - Nato Stock Number 6850-15-203-0548.
10 N° 2 containers for correct dosage of the detoxification / decontamination product BX24 – (Nato Stock Number 6810-15-149-4789) - p/n 958090037.
11 N° 1 N. 1 bottle (1 kg.) of detoxifying /decontaminating product BX 24 (Nato Stock Number 6810-15-149-4789)– p/n 075054036.
12 N° 1 Removable decontamination box (p/n 958090242) for Deco Vacuum hose.

Find out if your neighbour has Ebola

If you are concerned that there might be an Ebola patient near you, consult ebolanear.me.

This is a simple application that detects cases of infection nearest your location and tells you what preventive measures to take, because being informed is the first step to being protected.

160

Cell-Phone Data Might Help Predict Ebola's Spread

Source: http://www.technologyreview.com/news/530296/cell-phone-data-might-help-predict-ebolas-spread/

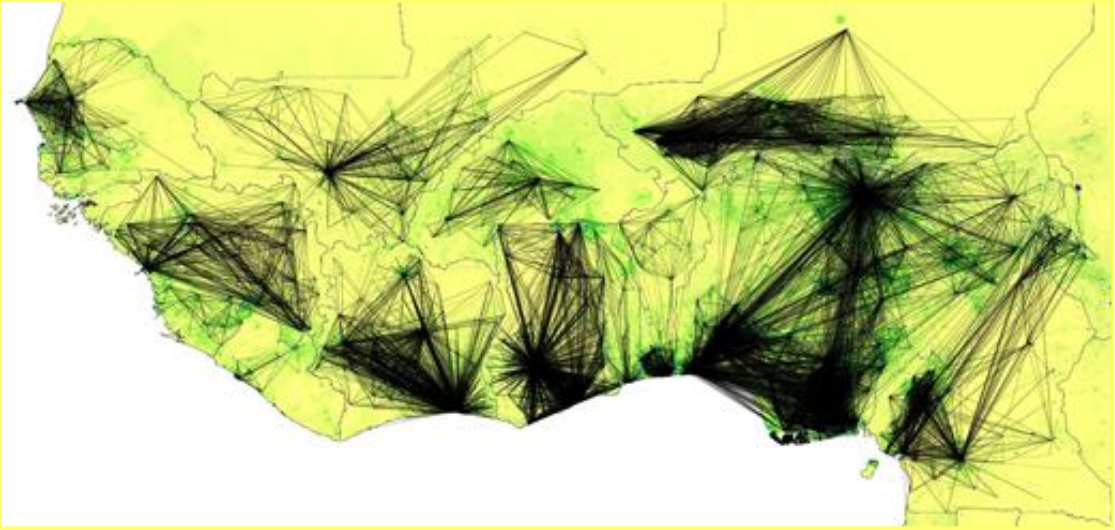
Africa is in the midst of its worst Ebola outbreak ever.

A West African mobile carrier has given researchers access to data gleaned from cell phones in Senegal, providing a window into regional population movements that could help predict the spread of Ebola. The current outbreak is so far known to have killed at least 1,350 people, mainly in Liberia, Guinea, and Sierra Leone.

The model created using the data is not meant to lead to travel restrictions, but rather to offer clues about where to focus preventive measures and health care. Indeed, efforts to restrict people's movements, such as Senegal's decision to close its border with Guinea this week, remain extremely controversial.

Orange Telecom made "an exceptional authorization in support of Ebola control efforts," according to Flowminder, the Swedish nonprofit that analyzed the data. "If there are outbreaks in other countries, this might tell what places connected to the outbreak location might be at increased risk of new outbreaks," says Linus Bengtsson, a medical doctor and cofounder of

Flowminder, which builds models of population movements using cell-phone data and other sources.
The data from Senegal was gathered in 2013 from 150,000 phones before being anonymized and aggregated. This information had already been given to a number of researchers as part of a data analysis challenge planned for 2015, and the carrier chose to authorize its release to Flowminder as well to help meet the Ebola crisis.



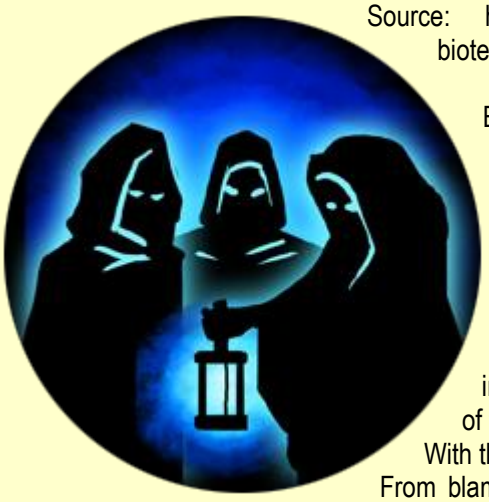
On the move: This model of West African regional transportation patterns was built using, among other sources, mobile-phone data for Senegal, released by the mobile carrier Orange.

The new model helped Flowminder build a picture of the overall travel patterns of people across West Africa. In addition to using data from Senegal, researchers used an earlier data set from Ivory Coast, which Orange had released two years ago as part of a similar conference (see "Released: A Trove of Data-Mining Research from Phones" and "African Bus Routes Redrawn Using Cell-Phone Data"). The model also includes data about population movements from more conventional sources, including surveys.
Separately, HealthMap, a team based at Boston Children's Hospital, has produced an animation of the epidemic's spread since March, based on records of when and where people died of the disease.
Bengtsson cautions that the model is essentially a first draft, and that it's based on historical movements, so it does not take into account how people may have changed their behavior in response to the recent crisis. Ideally, he adds, it would include real-time data. But "in countries that already have epidemics," he says, "this is the best estimate we can do of what mobility will look like. This can give the sense of the radius people tend to travel around."
Ebola is transmissible via bodily fluids during an incubation period of between two and 21 days, during which victims may not know they are infected. That makes it particularly important to know where people are going and where they've been.
Mobile phones—which are ubiquitous even in poor countries—can play a key role. All cell phones "ping" nearby towers with a unique ID number to announce their presence. In this way, mobile carriers amass huge databases containing fine-grained information on population movements and social patterns.
The application to public health is compelling. Caroline Buckee, a Harvard epidemiologist who also worked with Flowminder to develop the West African model, has demonstrated how such data can show where people have gone after leaving a hot spot, suggesting where a disease cluster will crop up next .
Last year Buckee demonstrated how cell-phone data could aid in fighting malaria by revealing where to focus mosquito eradication efforts. Previously, researchers trying to model mobility relied on techniques like counting heads at bus stations and asking sick people where they'd been traveling.

There's no indication thus far that health officials are using the Flowminder model, which was released Wednesday. While public health agencies are interested in the topic, Bengtsson says that agencies such as the World Health Organization didn't ask the researchers to develop the model or work with them to do so.
Emmanuel Letouzé, cofounder and director of Data-Pop Alliance, which is working on similar projects, says the approach holds promise. "If mobile carriers provide all the data at a very granular level, the value you can extract is huge," says Letouzé, a visiting scholar at MIT's Media Lab. Nevertheless, he says, "the privacy concerns are even more salient." That is because such data reveal detailed social and business connections and location information, which can often be linked back to individuals.

Ebola Conspiracy Theories

Source: http://www.ibtimes.co.in/ebola-conspiracy-theories-red-cross-hoax-us-dod-bioterrorism-plot-611566



Ebola fears among the general population the world over is on the rise, especially after a recent WHO report found that there could be as many as 10,000 cases of Ebola virus every week - by the end of this December - if some drastic measure to contain the situation is not taken.

The fear-mongering has led to several wild speculations, with many conspiracy theories spreading misinformation on Ebola.

Ebola virus has killed 4,447 people so far, and has also made its way into the United States. The disease, dubbed as "the new Aids", kills 70% of the people infected by the virus.

With the increasing fear, there are several conspiracy theories doing the rounds. From blaming the Red Cross to US President Barack Obama, wild theories are gripping people, especially in the West African countries where the disease seems to be spreading uncontrollably.

1) Ebola a Hoax Created by Red Cross

The most recent conspiracy theory, which has caught the attention of the general population in West Africa, is the claim that 'Ebola is a hoax created by Red Cross'.

The conspiracy theory, published in The Event Chronicle, states that the virus does not exist and the US is lying.

The report blames the Red Cross for conspiring along with the United States to steal oil and diamond wealth. It says only those who receive treatments and injections from the Red Cross are getting the disease.

It even goes on to claim it is because of this reason that Liberia and Nigeria kicked the Red Cross out of their countries.

2) Ebola a CDC Cover-up for MMR Vaccine Causing Autism

Another conspiracy theory, which is doing the rounds in the United States, is that the whole Ebola scare is a CDC cover-up over its MMR vaccine, which causes autism.

A report by Child Health Safety notes: "How is it we suddenly have an Ebola "outbreak" and it is coming to the USA too?"

The report suggests that the CDC knew that the MMR vaccine causes autism. And just when a senior CDC official was about to blow the whistle on the whole thing, the Ebola outbreak was announced in the US suddenly; and thereby the whole coverage to the MMR autism issue was suppressed.

The MMR vaccine is an immunisation vaccine against measles, mumps, and rubella (also called German measles).

3) 'Ebola-Chan' Conspiracy Meme

Criticised as a 'tasteless and horrifying' meme, the Ebola-Chan conspiracy meme has become an internet sensation of sorts, sparking widespread hoaxes on Ebola.

The internet meme, mocking the disease that has killed more than 4,000 people in West Africa, was first released on 4chan.

Ebola-Chan is billed as a virus-anime-goddess of sorts. Dressed in a white nurse's uniform, the pink-haired character's acts are said to be a cross between a fairy and the Grim Reaper who brings Ebola and the eventual death. As per the threats posted on the site, 4chan users are expected to respond to the Ebola-Chan

with glory and praise, like: "I love you, Ebola-Chan! Thank you!"

The distasteful fan art, which started in August, soon made its way into the African countries, where it has now grown into a full-fledged conspiracy theory.

The Ebola-Chan hoax, widely shared in Nigeria, states: "They hate Africans and worship an ebola demoness who they call 'Ebola-Chan'. They perform magical rituals in order to spread the disease and kill people. They target the area they want to infect next using blood sacrifices"

Apparently some doctors are also part of the cult and, instead of treating the disease, they are deliberately spreading it.

4) Ebola a Bio Terrorism Weapon

Spreading the seeds of mistrust, Daily Observer, a major Liberian newspaper, caried an article by a Liberia-born faculty member of a US university, **implying that the Ebola epidemic is the result of bioterrorism experiments, conducted by the United States Department of Defense.**

A Washington Post report, analysing the piece, noted that while some commenting on the article were critical, the number of people who praised it was telling. "They are using" Ebola, wrote one, "for culling the world population mainly Africa for the... purpose of gaining control of the Africans resources criminally."

5) Ebola? It's Population Control': R&B Singer Chris Brown

R&B singer Chris Brown recently raked up controversy, by claiming that the Ebola virus is **a "form of population control".**

Brown, in a tweet, wrote: "I don't know... But I think this Ebola epidemic is a form of population control. S*** is getting crazy bruh."

However, the singer was soon on the receiving end, with his 13.6 million followers ridiculing him for the comment. He later backtracked and said: "Let me shut my black a** up!" However, his first post received over 10,000 retweets and still appears on the singer's page.

How are nurses becoming infected with Ebola?

By C. Raina MacIntyre

Source: http://www.homelandsecuritynewswire.com/dr20141017-how-are-nurses-becoming-infected-with-ebola

American nurse Nina Pham is the second health worker to contract Ebola outside of West Africa while caring for patients with the virus, despite using personal protective equipment. Authorities were quick to attribute lapses in protocol for Pham's and Madrid nurse Teresa Romero Ramos' infection. But inadequate guidelines for personal protective equipment (PPE) may equally be to blame.

The World Health Organization (WHO), United States Centers for Disease Control (CDC), Australia and many countries recommend health workers treating Ebola wear surgical masks for protection, along with other personal protective equipment such gowns, gloves and goggles.

A glaring inconsistency of these guidelines is that lab scientists working with Ebola are recommended to use respirators, which offer more protection than surgical masks, while masks are deemed adequate for doctors and nurses at the front line. The hospital ward, however, is a far more contaminated and volatile environment than the sterile, highly controlled lab.

Nurses have the closest contact with patients, and deserve all available protection for their occupational health and safety. This means higher personal protective equipment, including respirators.

The CDC's most recent guideline update for putting on and removing protective wear suggest the second glove can be removed by hooking a bare finger under the glove (risking contact with the outside of the glove which could be contaminated), and does not mention protective boots at all.

Non-government organizations such as Medecins Sans Frontieres (MSF), however, have more comprehensive Ebola-specific protocols on glove removal, footwear and the use of respirators.

Ebola kills 50 percent to 90 percent of people who become infected, which is much higher than any other infection we are used to dealing with. The 2009 influenza pandemic killed less than 0.01 percent of those infected, and SARS killed 15 percent.

The price of getting it wrong with flu guidelines might be a week in bed, but for Ebola it is far more likely to be death. The risk analysis equation we need to use must consider not only the probability of Ebola turning up on our shores, but also the consequences.

Unprecedented epidemic

The current West African Ebola outbreak has caused more than 8,000 cases and more than 4,000 deaths, with the epicenter being Guinea, Sierra Leone and Liberia. Official figures are underestimated because many cases are not reaching health-care facilities or being reported.

As the epidemic increases exponentially in West Africa there is a risk of imported cases occurring around the world. The first of these was in Dallas, Texas, but countries everywhere are on the alert for suspected cases. Experts have estimated that the risk of a travel-related case being imported into Europe is up to 75 percent by the end of October.

This epidemic is unprecedented because:

1. It is the largest and longest in history;
2. It is the first time Ebola has occurred in more than one country simultaneously;
3. It is the first time Ebola has affected urban areas and capital cities; and
4. It is the first time Ebola has been transmitted from person to person outside of Africa.

Health authorities such as the U.S. CDC are conveying certainty that Ebola cannot be transmitted by any means other than direct contact. But it's a very poorly studied infection compared with other diseases and the sum of the evidence shows significant uncertainty around transmission.

The prevailing view is that infections can only be transmitted by one of three mutually exclusive routes — contact, droplet or airborne. But this is based on experiments from the 1940s and 1950s using blunt instruments. There is plenty of evidence that pathogen transmission is far more complex than this, and that most

pathogens can be transmitted by several modes. Take influenza, for example.
While the predominant mode of transmission of Ebola is contact, some scientists believe it could also be spread by aerosols. Studies in monkeys (here, here, here and here) and pigs have demonstrated non-contact transmission of Ebola, which could be airborne or aerosol.

There is little research in humans, but in a 1995 outbreak in the Democratic Republic of Congo, five people contracted Ebola without reporting any direct contact with the index patient.

Health worker infections

The estimated infectious potential of Ebola in West Africa is similar to influenza. Each person with Ebola infects, on average, two other people, which is similar to estimates for the last pandemic of flu. It is a mystery why an infection that is supposedly only transmitted by contact has such a high infection rate.
Around 400 health-care workers have contracted Ebola during this outbreak, many of whom are unsure how they were infected. Dr. Kent Brantley, for instance, is certain he did not get infected in the Ebola ward, as he used strict personal protective equipment. He guesses he might have been infected elsewhere, such as the emergency room.
Dr. Sheikh Hummar Khan was the leading viral haemorrhagic fever expert of Sierra Leone, who had already treated over 100 Ebola patients using full personal protective equipment when he died from Ebola.
Why then are so many health workers contracting Ebola when it is supposedly so "hard to catch"?

There are three possible explanations:

1. Lapses in infection control protocols, such as mistakes when putting protective equipment on or taking it off.
2. Inadequate guidelines that are failing to protect against other (non-contact) modes of transmission.
3. Health workers are becoming infected somewhere other than where they're in direct patient contact (where they do not expect to be at risk). This is possible in West Africa with such a large scale epidemic, but is unlikely in the United States and Spain.

There is no scientific evidence to explain why health workers using personal protective equipment are becoming infected, and nor has there been a reasoned approach to trying to explain it.

Instead, the blame has been placed on the health workers for lapsing in personal protective equipment protocols. It was reported Ramos might have touched her face with a glove as she removed her personal protective equipment.

In epidemiology, we are concerned about recall bias: the tendency of people with an illness to recall perceived risks more than well people, when prompted with a leading question. It is not hard to imagine that this nurse, perplexed about how she might have been infected, would have been susceptible to such a leading question.
Rather than guesses, we need a reasoned, scientific approach to establishing which of these explanations — and it may be a combination – are responsible.
Personal protective equipment guidelines should not be based on presumed mode of transmission alone, but also on uncertainty around transmission, on the severity of the disease, on health worker factors, and on other available treatments or preventions. If MSF has more comprehensive protocols on protective wear, it is hard to understand why Western countries are not heeding them.

Protecting health workers

Many dedicated health workers around the world are assisting with the response to Ebola. Some responders are non-clinicians, and that some clinician responders do not have extensive infectious diseases training. There is a clear occupational health and safety risk to health workers from this deadly disease, which is concerning.
To better protect health workers from Ebola, the ARM network, a group of Australian epidemiologists with skills in infectious diseases, is offering a free workshop on Ebola infection control to supplement routine training provided by deploying non-government agencies.
The workshop is for people intending to deploy to West Africa for the Ebola response. But due to expressions of interest, we

have opened the workshop to domestic first-line responders (GPs, nurses, paramedics, police, defense, emergency workers) in Australia who may be faced with a local case.
In most responses, lack of knowledge about infection control may not be critical, but in the case of Ebola it may cost lives. If even one person learns something at this workshop which enhances their occupational health and safety, then we would have provided something useful for Australians involved in the response.

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CDC assigns risk management teams to hospitals

Source: http://www.homelandsecuritynewswire.com/dr20141017-cdc-assigns-risk-management-teams-to-hospitals

October 17 – The U.S. Centers for Disease Control and Prevention (CDC) has announced that **it would send a team of experts to any hospital in the country with a confirmed Ebola case,** saying that if such a precaution had been taken at the recent botched infection case on 8 October in Dallas, Texas that facility staff would not have been at risk for infection.
As *Insurance Journal* reports, following the infection of nurse Nina Pham while she treated Thomas Duncan at the Texas Health Presbyterian Hospital, the CDC is now tightening its control and surveillance efforts of medical centers. The transmission was the first on U.S. soil, following Duncan's return from Liberia. Amber Vinson, a second nurse involved in Duncan's treatment, has also been infected.
"We'll put a team on the ground within hours, with some of the world's leading experts in how to take care of and protect health care workers," said Tom Frieden, the director of the CDC. "I wish we'd put a team like this on the ground the first day the patient was diagnosed. That might have prevented this infection."
These disease control specialists will be able to manage situations including infection control, lab science, personal protective equipment, and the overall management of Ebola units and wards. Further, the Dallas hospital will receive training from Emory University Hospital's elite infectious diseases unit.
"The CDC will double down on training, outreach, coordination, education and assistance to keep the disease under control," said Frieden, "Even a single infection is unacceptable."
The department is also now monitoring seventy-six different health care workers who interacted with Duncan and may have had contact with his bodily fluids, in addition to forty-eight other individuals outside of the hospital.
Frieden also confirmed that the CDC still does not know exactly how Pham was exposed to the virus.
The current outbreak of the Ebola virus has infected about 8,400 people, with roughly 4,400 deaths in Liberia, Sierra Leone, and Guinea. While there are experimental drugs in testing stages, there is no fully approved treatment outside of replacing bodily fluids and incorporating antibiotics to ward off the infection.

CDC's disease detectives help deal with Ebola crisis

Source: http://www.homelandsecuritynewswire.com/dr20141017-cdc-s-disease-detectives-help-deal-with-ebola-crisis

October 17 – The **Centers for Disease Control and Prevention's (CDC) Epidemic Intelligence Service (EIS) is the federal government's intelligence gathering arm for mysterious or unidentified diseases anywhere in the world.**

"Did you also know that there are **disease detectives**?" Senator Barbara Mikulski (D-Maryland) asked the Senate during the 2013 government

shutdown. "Many people don't know that there are disease detectives," Mikulski said, as she urged her colleagues to give funding back to the CDC. "Sometimes there is an outbreak and people get sick. People even die. They wonder what it is. They dial 911, and there is a group of people who are like a disease identification SWAT team. They work with the best and brightest at that state level, use the best technology in science from our country, and even around the world, to identify what that is."

According to the *Washington Post*, the program is staffed with postdoctoral fellows who often go on to hold significant positions in public health or medical academia. CDC director Tom Frieden was a member of the elite group of researchers, scientists, and investigators. Lawrence Altman, a medical doctor and member of the*New York Times* science news staff, used the occasion of the program's 50th anniversary to describe his former position as an EIS officer: "As epidemiologists, we acted as part scientists, historians, sleuths, statisticians and journalists, relying on people's willingness and memories to tell what happened to them, their relatives and friends," Altman wrote.

The United States Public Health Service (now the CDC) established the EIS in 1951 out of concerns about biological warfare against the U.S. homeland during the Korean War. Since then, the program has investigated cases of polio, West Nile virus, anthrax, and Ebola in Uganda and Zaire. Today, EIS agents are called upon to help manage the Ebola virus in America.

Five hours after the CDC confirmed the first Ebola case in the United States, Charnetta Smith, an EIS officer, along with nine other CDC staffers, arrived in Dallas to help contain the disease carried to Dallas by Thomas Eric Duncan, a Liberian, who contracted the virus in Monrovia. In West Africa and Dallas, EIS officers are relying on a process called contact tracing to gain insight on how Ebola is spread within communities, and how to reduce the infection rate.

Contact tracing was developed in part by EIS officer Ilana Schafer after returning from her assignment in Uganda and the Democratic Republic of the Congo as part of the 2012 Ebola and Marburg hemorrhagic fever outbreaks response efforts.

IAEA to provide nuclear detection technology to help diagnose Ebola in West Africa

Source: http://www.homelandsecuritynewswire.com/dr20141017-iaea-to-provide-nuclear-detection-technology-to-help-diagnose-ebola-in-west-africa

October 17 – **The International Atomic Energy Agency (IAEA) said it would provide specialized diagnostic equipment to help Sierra Leone in its efforts to combat the Ebola Virus Disease (EVD) outbreak**, IAEA director General Yukiya Amano announced Tuesday. Later, the support is planned to be extended to Liberia and Guinea.

The support is in line with a UN Security Council appeal and responds to a request from Sierra Leone. The IAEA assistance will supplement the country's ability to diagnose EVD quickly using a diagnostic technology known as Reverse Transcriptase Polymerase Chain Reaction (RT-PCR).

The agency notes that the assistance, expected to be delivered in the coming weeks, initiates broader IAEA support to African member states to strengthen their technological abilities to detect diseases transmitted from animals to humans-zoonotic diseases.

The IAEA and the Food and Agriculture Organization of the United Nations have been at the forefront of developing RT-PCR, a nuclear-derived technology which allows EVD to be detected within a few hours, while other methods require growing on a cell culture for several days before a diagnosis is determined.

Early diagnosis of EVD, if combined with appropriate medical care, increases the victims' chance of survival and

helps curtail the spread of the disease by making it possible to isolate and treat the patients earlier.

Health authorities in Sierra Leone and other affected countries are already applying RT-PCR, but their diagnostic capability is limited; there is a shortage of the diagnostic kits and other materials needed for the process and backup equipment is needed to avoid diagnostic downtime in case of equipment failure.

The IAEA says it will support the most affected countries' sustained ability to detect the disease in cooperation with the World Health Organization (WHO) and the United Nations Mission for Ebola Emergency Response.

The IAEA, as part of its ongoing work, has helped thirty-two African countries and several other member states develop skills and acquire equipment they need to use RT-PCR for diagnosis of animal diseases and zoonotic diseases. The method was instrumental in the global eradication of rinderpest, long a scourge of livestock.

"Transfer of nuclear-related technologies is a key part of the agency's work, and we have cooperated with member states for years to develop and strengthen their capacity to use this nuclear-derived technology," Amano said. "With this additional support, the Agency makes a small but effective contribution to global efforts to fight the ongoing Ebola outbreak."

RT-PCR initially used radioactive isotopes as markers in the process that determines whether the virus is present in a sample. Subsequent refining of the method by the IAEA and partners has led to the possibility to use fluorescent markers instead of radioactive markers for screening purposes.

The IAEA will provide Sierra Leone with an RT-PCR machine, cooling systems, biosecurity equipment, diagnostic kits and other materials. Similar support will eventually be provided to Liberia and Guinea.

The IAEA said it was also developing an African regional project that would strengthen member states' capacity to monitor wildlife and livestock to get early warning of possible zoonotic disease outbreaks in the medium- and longer-term.

Carnival cruise ship returning to dock in Texas after Ebola concern

Source: http://www.torontosun.com/2014/10/18/carnival-cruise-ship-returning-to-dock-in-texas-after-ebola-concern

The Carnival Magic cruise ship was en route back to the United States on Saturday with a passenger from Texas who might have handled specimens of the first Ebola patient diagnosed in the United States but is considered at low risk, a company spokeswoman said.

The Dallas health care worker, who is said to have no symptoms and according to standards from the U.S. Centers for Disease Control and Prevention is at the end of the 21-day maximum incubation window for Ebola, had voluntarily gone into isolation along with a companion aboard the ship.

The Carnival Magic cruise ship, owned by Carnival Cruise Lines, was expected to dock in Galveston, Texas, on Sunday, said Aly Bello-Cabreriza, a spokeswoman for the parent company Carnival Cruise Lines. Both Mexico and Belize refused to allow the ship to dock in their ports over Ebola concerns.

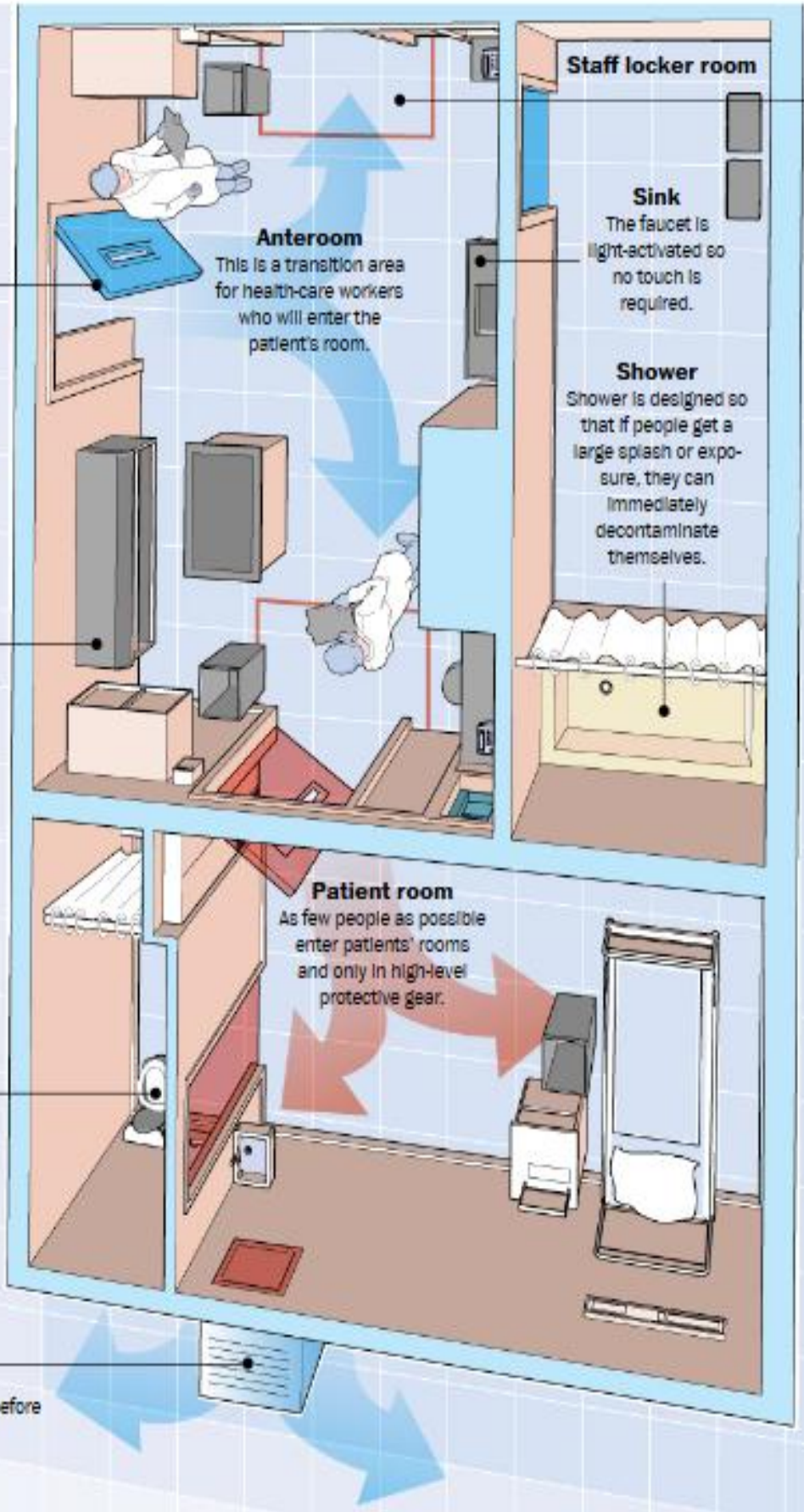
The Texas Health Presbyterian Hospital worker did not have direct contact with now deceased Liberian patient Thomas Eric Duncan at the Dallas hospital but could have processed his bodily fluids 21 days ago, U.S. officials said.
The patient boarded the ship in Galveston on Oct. 12 for a seven-night cruise.
The health care worker remained in self-quarantine and was not ill, Bello-Cabreriza said. "Regular debarkation will take place," she said. "The lab worker continues to show no symptoms."
The hospital worker left the country before being notified of the CDC's updated requirement for active monitoring, U.S. government officials said on Friday.
Concerns about Ebola in the United States have intensified after two nurses from the Dallas hospital who cared for Duncan contracted the virus, which has killed nearly 4,500 people, mostly in West Africa.
The White House is facing sharp criticism from U.S. lawmakers over its efforts to contain the disease.
On Thursday, Frontier Airlines said six crew members were placed on paid leave for 21 days "out of an abundance of caution," after learning that a nurse who had treated Duncan in Dallas may have been symptomatic when she flew on the airline earlier this week.

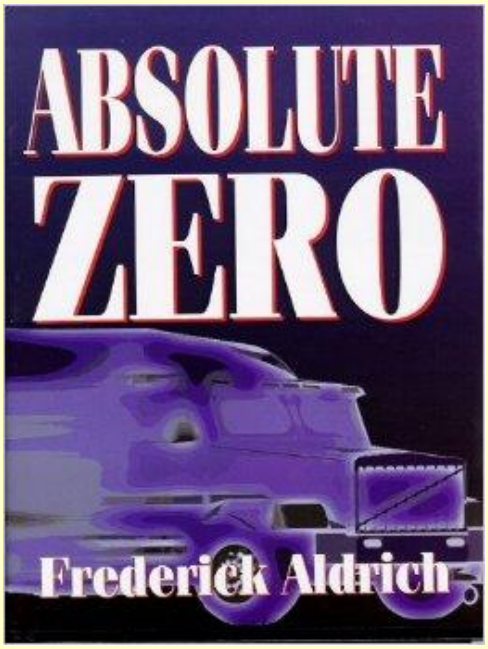
EDITOR'S COMMENT: This time the prize for irresponsibility will be awarded to the passenger! One might say that most probably the excuse would be that the passenger booked the cruise well in advance and since there was not clinical symptomatology, passenger decided not to loose the money paid. Simple as that! But imagine if the worst case scenario emerged in a ship with hundrends or thousands of passengers not to mention the airplane passengers, contacts etc. How do expect our health defense mechanisms to be effective when people within the system do not have common sense to self protect and protect others?

What does an Ebola isolation ward look like?

Source: http://apps.washingtonpost.com/g/page/national/what-does-an-ebola-isolation-ward-look-like/1389/

The seven-bed, 4,000-square-foot biocontainment unit at the National Institutes of Health Clinical Center in Bethesda, Md., is a state-of-the-art facility built to keep the world's scariest pathogens from escaping. The four U.S. facilities are all different — NIH's even has a gym — but they contain many of the same things. This layout is based on the unit at Emory University in Atlanta.


Staff locker room
PPE removal zone
Areas are marked where workers take off their personal protective equipment. At NIH, equipment is autoclaved to kill pathogens and taken to an incinerator.
Sink
The faucet is light-activated so no touch is required.
Anteroom
This is a transition area for health-care workers who will enter the patient's room.
Air flow:
All rooms in the unit are pressurized so that when a door is opened or closed, air flows in and not out. Pressure is monitored electronically and the status is displayed on panels.
Shower
Shower is designed so that if people get a large splash or exposure, they can immediately decontaminate themselves.
Staffing
Patient care at NIH is always done by two nurses: One performs the care while the other makes sure it is done properly.
Biosafety hood:
Collected specimens are handled here before they go to the lab. The hood filters air and doesn't let exhaust circulate back into the work area.
Patient room
As few people as possible enter patients' rooms and only in high-level protective gear.
Monitor
A monitor with a checklist (called a Watson) observes all procedures and can stop anyone at any time if protocol is violated.
Bathroom
Waste from the patient's bathroom is disinfected before it enters the sewer system.
Medical equipment
One of the four rooms at NIH is set up as an intensive-care unit (ICU), with connections for oxygen, suction and all other medical electronics. The other three rooms can be converted to ICU rooms if needed.
Air handling
Air is thoroughly filtered before venting to the outside.



Absolute Zero

By Frederick Aldrich (Goodreads Author)

Ebola! The very sound conjures up hideous images, images that cannot begin to convey the horrors of the disease itself.

An African traveler carrying the virus has arrived unhindered in Dallas. Experts assure the public there is no cause for fear. But is there really nothing to fear?

Written in 1997, Absolute Zero is the tale of an attack on the American heartland. It is the story of an unlikely hero, a man whose life is as ordinary as any among us and whose deeds will never be heralded.

It is a cautionary tale for those who believe that Ebola could never be used as a weapon.

Pray that it never happens!

A 'Dark Winter' of Ebola terrorism?

Source: http://www.washingtonpost.com/opinions/marc-thiessen-a-dark-winter-of-ebola-terrorism/2014/10/20/4ebfb1d8-5865-11e4-8264-deed989ae9a2_story.html

The world is experiencing virulent outbreaks of Ebola and Islamist radicalism.

What if the two threats converge into one?

In **June 2001** — a few months before the Sept. 11, 2001, terrorist attacks — a group of leading Democratic national security experts gathered at Andrews Air Force Base to carry out a national security exercise called **Dark Winter**. Hosted by the Johns Hopkins Center for Civilian Biodefense and the Center for Strategic and International Studies, Dark Winter simulated a biological attack on the United States in which terrorists release smallpox virus in three shopping malls in Oklahoma City, Philadelphia and Atlanta.

In the **first few days**, 1,000 people are infected and 300 die. According to the exercise, "Most hospitals report grossly inadequate supplies and insufficient isolation rooms" (sound familiar?). Soon "Increasingly anxious crowds mob vaccination clinics," and police and National Guard units are called in to suppress violence. The governor of Oklahoma closes all schools and cancels all public gatherings. Thanks to reluctance of drivers to make deliveries to affected areas, there are food shortages and panic buying. The attorney general prepares options for imposing martial law, including "prohibition of free assembly, a national travel ban, quarantine of certain areas, suspension of the writ of habeas corpus [i.e arrest without due process], and/or military trials in the event the court system becomes dysfunctional." The unfolding chaos is documented in mock news broadcasts.

After 13 days, 16,000 smallpox cases have been reported in 25 states and 1,000 people have died. Vaccine supplies have been depleted. Canada and Mexico have closed their borders to the United States. It has become logistically impossible to identify and isolate smallpox victims and their contacts to prevent the disease from spreading. Trading on the stock exchanged is suspended. International commerce grinds to

a halt. No country in the world will allow flights originating in or transiting through the United States to land. States have closed their borders with other states. There are riots and looting throughout the country.

After 25 days, the number of cases has risen to 30,000, with 10,000 expected to die, and the National Security Council is advised that, absent large scale and successful vaccination programs, the epidemic "could conceivably comprise as many as 3,000,000 cases of smallpox and lead to 1,000,000 deaths."

So what about Ebola?

Unlike smallpox, which is hard to come by, the Ebola infection is raging right now in parts of Africa where Islamist extremists could have easy access. As physician Scott Gottlieb of the American Enterprise Institute points out, with Ebola, "Mother Nature has created the perfect bioweapon in many respects, as long as the attacker has suicidal aspirations." Ebola has up to a 21-day incubation period — more than enough time for terrorists to infect themselves and then come here with the virus. In a nightmare scenario, suicide bombers infected with Ebola could blow themselves up in a crowded place — say, shopping malls in Oklahoma City, Philadelphia and Atlanta — spreading infected tissue and bodily fluids.

Or, the virus could also be released more subtly. Terrorists could collect samples of infected body fluids, and then place them on doorknobs, handrails or airplane tray tables, allowing Ebola to spread quietly before officials even realize that a biological attack has taken place.

Think it can't happen? If an Ebola-infected Liberian, Thomas Eric Duncan, was able to fly to Dallas, what is to stop an Ebola-infected terrorist from doing the same? **And if our health-care system was unable to handle a single Ebola patient, imagine what would happen if 50, 100 or more Ebola patients started showing up at U.S. hospitals.** Already we have seen schools closed in Dallas and Cleveland and a ship denied entry in Mexico and Belize. It would not require a attack on the level of Dark Winter to cause mass disruptions to our way of life and our economy.

Moreover, in the Dark Winter exercise, the United States had a stockpile of 12.5 million doses of smallpox vaccine available. Today, there is no stockpile of Ebola vaccine. Indeed, there is no proven Ebola vaccine at all. There are promising experimental treatments, and the government is racing to ramp up production. But even if these prove effective, it would be impossible to quickly produce enough to deal with a Dark Winter scenario.

Then there is the impact of all the false assurances from President Obama that Ebola was unlikely to reach our shores and that if it did that "our doctors, our nurses and our medical staff are trained, are ready, and are able to deal with a possible case safely." The American people's trust in our government has been severely undermined — and with it the ability of public health officials to manage a mass outbreak.

The nation is woefully unprepared for an Ebola outbreak, much less an Ebola attack. If terrorists were to turn Ebola into a crude terror weapon, we could be in for a Dark Winter indeed.

▶ **Read more about Dark Winter exercise at:**
http://www.upmchealthsecurity.org/our-work/events/2001_dark-winter/Dark%20Winter%20Script.pdf

Here's What Would Happen if Ebola Was Stolen From a Lab

Source: http://time.com/3532057/ebola-bioweapon-terrorism/?utm_source=feedburner&utm_medium=feed&utm_campaign=Feed:%20time/topstories%20%28TIME:%20Top%20Stories%29

Scientists routinely study deadly pathogens like Ebola in order to find ways to fight them and discover potential cures. **But what would happen if a sample of Ebola was taken from a lab illegally?**

Under federal regulations, Ebola is considered a "select agent and toxin" that has the "potential to pose a severe threat to public health and safety," and it's illegal to possess, use or transfer a deadly pathogen to another individual without a certificate from the U.S. Department of Health and Human Services, says John Kraemer, an

expert on infectious diseases and the law at Georgetown University's Department of Health Systems Administration. Obtaining that certificate requires meeting a set of biosafety and biosecurity requirements. And the penalties for failing to do so can be steep.

The government has levied fines of hundreds of thousands of dollars to laboratories that have violated the select agent regulations. In 2008, HHS docked Texas A&M University $1 million for safety violations at its biodefense lab. Individuals who steal a disease sample could face similarly steep fines and time behind bars. Under federal law, HHS can fine a person up to $250,000 for each violation and can recommend imprisonment of up to five years.

But there is an additional layer of sensitivity to handling Ebola. The CDC considers viral hemorrhagic fevers, which includes Ebola, a Category A bioterrorism agent. And since 2001, several bioterrorism laws have strengthened criminal penalties against those who attempt to commandeer them. The Patriot Act in 2001 created a provision banning the transfer of a select agent like Ebola, and the Bioterrorism Act of 2002 gave more authority to the HHS to regulate those agents and diseases.

In September, the Obama administration issued new regulations for federally funded labs that work with contagious diseases like Ebola. Some researchers have criticized the guidelines as not being strong enough over fears that the pathogens, which are often made stronger in a lab, could potentially be used as bioweapons.

Kraemer says two scenarios could likely play out if Ebola samples fell into the wrong hands. If a researcher acquired Ebola for misguided research, for example, then they would likely get fined by HHS and could be sentenced to five years in prison.

"If however someone broke into a hospital to steal Ebola for some other reason, it'd be at least 10 years," Kraemer says. "If someone acquires Ebola with an intent to weaponize it, then they can get life in prison. And, of course, if you actually use Ebola as a weapon, you can be prosecuted under federal anti-terrorism laws, with penalties up to the death penalty."

Given the security required at labs authorized to handle potential biological weapons, as well as the risk that someone stealing a pathogen may also become infected by it, those latter scenarios are highly unlikely.

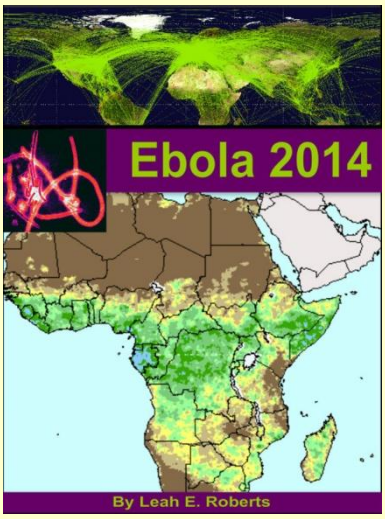
"Stealing an Ebola sample would be extremely dangerous because the thief would face a significant risk of exposure," says Robert Field, a professor of law at Drexel University. "Other pathogens would be safer to steal because protection is easier."

NEW BOOK – Ebola 2014

By Leah Roberts (Author)
Source: https://www.smashwords.com/books/view/485354

The 2013-2014 Ebola outbreak has created a need for a complete resource that can be understood by both medical personnel and those outside of the medical field. This is a comprehensive and current summary of information available about Ebola at this time.

The Ebola outbreak that began in December 2013 has garnered the concern of the global community.



There have been many questions about this disease as the numbers of cases and death tolls continue to rise. Many rumors have surfaced and there are those profiting on the sale of protective equipment by amplifying those aspects about the disease and its sequences of events that cause fear. There has long been a need for a short but thorough reference for Ebola and this was the motive behind this publication. Information contained in this reference is cited to additional resources that provide more in-depth knowledge for those interested. The topics covered are current, comprehensive, fact-based and do not attempt to convey blame or sell products. Knowing about this virus, the disease it causes, and the improvisation used in Africa should provide a strong basis for managing and containing the outbreak in Africa as well as other countries where travel introduces the disease. Knowledge is power and this short resource provides that to its readers with a complete list of all of the references and their links where appropriate.

Leah E. Roberts graduated with a Master's degree in Biosecurity and Disaster Preparedness (3.95 GPA) from Saint Louis University. Her undergraduate concentration is Public Health and she earned a Graduate Certificate in Infection Control from the University of South Florida. After graduation, Leah volunteered as a teaching assistant at SLU teaching classes including Medical Intelligence and Case Studies of Epidemics and Disasters. She has self published articles about chemical warfare and created a presentation for The International Healing House about chemical and biological warfare. Her interest and research of Ebola and filoviruses is ongoing and spans more than 10 years. She currently works for Jacobs ASG where her work involves writing geopolitical threat assessments and research studies of disasters among other works.

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EDITOR'S COMMENT: This is a "must read" e-book. Leah did a great job by following the EV evolvement from the very beginning. And since it is an e-book all new updates would be free of charge for those bying the book. Because Ebola would continue to be of high interest for the coming six months – perhaps more. The book is under translation into French. In parallel, a translation to Greek is underway (by the Editor of the Newsletter). This is a book that all doctors and nurses (and PH officials) should read in order to get answers to critical questions and control their insecurity resulting from lack of specialized knowledge. **Job well done Leah! Congrats!**

Don't fear Ebola, fear fear itself

By David Ropeik

Source: http://thebulletin.org/don%E2%80%99t-fear-ebola-fear-fear-itself7745

Public health officials in America are trying to manage two serious threats right now. **One is Ebola**, the virus that causes horrible deaths from vomiting, diarrhea, and hemorrhagic bleeding in more than half the people it infects, and against which there is no protective vaccine. **The other is fear**. **In the United States, between the two, fear is the far greater threat.**

It spreads much more readily than the virus. It is just as hard, or harder, to treat. The vaccine against it, information, is at best only partly effective. And while the number of people likely to get or die from Ebola in the United States will almost certainly be tiny, tens of millions of Americans are already victims in an epidemic of fear that is sure to contribute to sickness and death among many.

A small number may be hurt, or die, because they choose to drive rather than fly—the statistically safer means of travel—increasing

their risk out of fear of sitting near someone who may have Ebola, like the infected nurse who flew from Cleveland to Dallas. A few may be hurt, or die, because they go to hospitals or doctors' offices seeking medical attention for what they fear might be Ebola, and expose themselves to the range of truly communicable infectious diseases present in health facilities. But the vast majority of those who will be harmed in this epidemic will suffer directly from the serious health impacts of fear itself.

Worry about Ebola (or anything) manifests physically as what's known as a fight, flight, or freeze response. Biological systems ramp up or down to focus the body's resources on the threat at hand. Heart rate and blood pressure increase, immune function is suppressed (after an initial burst), brain chemistry changes, and the normal functioning of the digestive system is interrupted, among other effects. Like fear itself, these changes are protective in the short term. But when they persist, the changes prompted by chronic stress—defined as stress beyond the normal hassles of life, lasting at least one to two weeks—are associated with increased risk of cardiovascular disease (the leading cause of death in America); increased likelihood and severity of clinical depression (suicide is the 10th leading cause of death in America); depressed memory formation and recall; impaired fertility; reduced bone growth; and gastrointestinal disorders.

Perhaps most insidious of all, by suppressing our immune systems, chronic stress makes us more likely to catch infectious diseases, or suffer more—or die—from diseases that a healthy immune system would be better able to control. The fear of Ebola may well have an impact on the breadth and severity of how many people get sick, or die, from influenza this flu season. (The CDC reports that, either directly or indirectly, influenza kills between 3,000 and 49,000 people per year.)

In addition to these direct threats to our health there are the massive social and economic costs that arise from widespread public fear. They include losses in workplace productivity and consumer spending, increased health care costs, disruptions of education (already seen with school closures in Dallas and Cleveland), and cancellations of a wide range of professional and public events, such as a scheduled speech at Case Western Reserve University that was called off because the speaker had recently been in West Africa. Fear also changes how people interact with each other, and already appears to be causing some stigmatization of people from West Africa.

There is no question that America's physical, economic, and social health is far more at risk from the fear of Ebola than from the virus itself. Yet health care leaders from the US president down are pouring resources and attention into managing Ebola far beyond what is required to keep the disease from spreading beyond sporadic cases. Controlling Ebola in the United States requires thorough isolation of symptomatic victims and rigorous attention to personal protective equipment and protocols for health care workers. But it does not require the appointment of an "Ebola Czar," a promise to call up the National Guard if necessary, or the cancellation of a presidential fund-raising trip in order to convene a two-hour emergency meeting with every top federal official involved in public health and safety.

US health leaders are communicating reasonably well. Constant, honest, humble risk communication is a vital part of establishing trust, which is especially crucial for managing public concern during crises. When mistakes are made, they admit them. When new developments happen—like a Texas Presbyterian health care worker who had to be isolated but was already on a cruise ship—they report them. While perhaps sounding too confident as they claim they can keep Ebola from becoming a public epidemic, they are avoiding un-keepable promises of absolute safety, acknowledging that there may well be more sporadic cases.

But officials are up against the inherently emotional and instinctive nature of risk-perception psychology. Pioneering research on this subject by Paul Slovic, Baruch Fischhoff, and others, vast research on human cognition by Daniel Kahnemanand colleagues, and research on the brain's fear response by neuroscientists Joseph LeDoux, Elizabeth Phelps, and others, all make abundantly clear that the perception of risk is not simply a matter of the facts, but more a matter of how those facts feel. (Melissa Finucane, Slovic, and others have called this the "affect heuristic.")

Fear of Ebola in the United States has frequently been called irrational. It doesn't seem to make sense to worry about a disease that spreads only by direct physical contact between an opening in your skin and the blood, feces, or vomit of a highly infectious patient. But psychologically, this fear is normal. People worry more about risks that are new and unfamiliar. People worry more about risks that cause greater pain and suffering. People worry more about threats against which we feel powerless, like a disease for which there is no vaccine and which has a high fatality rate if you get it. And people worry more about threats the more available they are to their consciousness—that is, the more aware people are of them. A bogeyman that is constantly on one's cognitive radar screen feels like a bigger bogeyman.

And despite ample news reporting on how the fear of Ebola exceeds the actual risk, those sidebar stories come only *after* the barrage of breathless alarmism that makes up most of what the media are telling us about Ebola, which in tone as well as substance is "be afraid!" The bogeyman on the news and social media radar screen is the disease much more than the danger Americans face from fear.

Alarmism about the danger of Ebola is amplified by all the critics of the government—politicians, nurses, pundits, and the media that magnify the criticisms—who claim that the mistakes that have been made imply that our health care leaders just can't be trusted to keep us safe. None of those mistakes, however, important as they were, suggest that our health care system is so incompetent that the public spread of Ebola can't be controlled. The effect of over-dramatizing the mistakes is to amplify mistrust, which feeds fear, which causes more real public danger than the mistakes being complained about. Round-the-clock news and social media coverage is part of what scholars Nick Pidgeon, Roger Kasperson, and others have called the social amplification of risk.

Between these two threats—the disease and fear of the disease—health care workers have it easier in at least one way. They can protect themselves from Ebola itself with personal protective equipment and careful procedures. The public faces a tougher challenge. It has to struggle to apply a bit of careful, conscious, objective analysis against powerful subconscious risk perception instincts that often overwhelm reason and pose risks all by themselves. Only that effort can provide Americans with the personal protective equipment they need to keep them safe from the larger threat they face, not from a deadly virus, but from fear.

David Ropeik *is an instructor in the Environmental Management Program of the Harvard Extension School, a consultant in risk communication, and author of* How Risky Is It, Really? Why Our Fears Don't Always Match the Facts.

Connecticut issues new Ebola guidelines

Source: http://www.homelandsecuritynewswire.com/dr20141023-connecticut-issues-new-ebola-guidelines

Officials in Connecticut have issued new guidelines which require individuals returning from West Africa with no symptoms of Ebola to be quarantined for twenty-one days. Governor Dannel P. Malloy said last week that **travelers from West Africa who are ill "will be sent to a hospital" for isolation and treatment and for those who are not sick, "you will be required to stay at home for twenty-one days and take your temperature twice a day."** During the quarantine, state public

health personnel "will contact you twice a day by phone to see how you are doing," Malloy said.

Senator Richard Blumenthal (D-Connecticut) has called on the Centers for Disease Control and Prevention (CDC) to adopt Connecticut's standards for quarantine and isolation to protect the public from Ebola. "At airports and ports, there should be federal enforcement of quarantine requirements the state has put in place to ensure that men and women who may have been exposed to Ebola do not expose others to the virus," he said. "At this point, these guidelines are another step in setting minimum standards, but even tougher protocols may be necessary."

The *Hartford Courant* reports that Connecticut officials will rely on federal screenings at airports and notifications to the state about who is traveling to Connecticut from Ebola-affected countries, to enforce the quarantine and isolation measures. Although the guidelines require travelers with no symptoms of Ebola to be quarantined at home, state Health Commissioner Dr. Jewel Mullen recently said that her office would review each quarantine-eligible case before enforcing the measure. "We don't want people to have images of heavy-handed law enforcement here," Mullen said.

"DPH would review each case and determine, based upon the person's travel history and potential exposures, the necessary steps to protect the public's health," a state Department of Public Health statement read, adding that at a minimum, travelers from West Africa "will be required to report their temperatures twice daily and indicate whether they develop any symptoms of illness."

Local health officials have been instructed to monitor the health status of quarantined persons for twenty-one days. "DPH will ensure this is being done, using the best public health science to act with an abundance of caution," state health officials said.

Ebola kills, but it may be immunizing others at the same time

Source: http://www.homelandsecuritynewswire.com/dr20141023-ebola-kills-but-it-may-be-immunizing-others-at-the-same-time

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October 23 – **As Ebola continues to spread in West Africa, it may be silently immunizing large numbers of people who never fall ill or infect others, yet become protected from future infection. If such immunity is confirmed, it would have significant ramifications on projections of how widespread the disease will be and could help determine strategies that health workers use to contain the disease, according to a letter published last week in *The Lancet* medical journal.**

A University of Texas at Austin release reports that Dr. Steve Bellan, a postdoctoral researcher, and Dr. Lauren Ancel Meyers, a professor, both in the Department of Integrative Biology at the University of Texas at Austin, were two of the authors on the letter, which calls on public health authorities to determine how commonplace it is for people to be infected by Ebola without ever developing symptoms or spreading the disease, and whether these individuals are then protected from future infection.

"Ultimately, knowing whether a large segment of the population in the afflicted regions are immune to Ebola could save lives," Bellan noted. "If we can reliably identify who they are, they could become people who help with disease-control tasks, and that would prevent exposing others who aren't immune. We might not have to wait until we have a vaccine to use immune individuals to reduce the spread of disease."

The letter notes that researchers have found evidence of asymptomatic Ebola infections in the aftermath of prior Ebola outbreaks, but it is not yet known whether such infection provides immunity. They conclude that resolving this question and identifying naturally immunized individuals could prove critical in public health efforts to contain the disease, as well as in accurately estimating the likely spread of the disease.

"Understanding the prevalence and immunological effects of these silent Ebola infections is critical to making reliable

epidemic projections and improving control efforts," Professor Meyers said. "We believe that we can and should investigate this phenomenon as soon as possible."

— Read more in "Ebola control: effect of asymptomatic infection and acquired immunity," The Lancet *(14 October 2014)* ***available at:***
http://download.thelancet.com/flatcontentassets/pdfs/PIIS0140673614618390.pdf?id=aaadpDXSyNZVP5Qg76oKu

New York City cops leave Ebola doctor's apartment and dump their gloves and masks in a TRASH CAN

Source: http://www.dailymail.co.uk/news/article-2805930/Should-Officers-marking-Ebola-patient-s-NYC-apartment-toss-gloves-masks-caution-tape-PUBLIC-trash-city-sidewalk-leave.html

As a demonstration of how well-drilled New York City officials are in how to deal with Ebola, it left a lot to be desired.

Two New York City police officers who attended the Harlem apartment building of Dr Craig Spencer - the first confirmed Ebola case in the city - were observed afterward dumping their protective gear and caution tape in a garbage bin on the street.
While it was not immediately clear if the two officers had been inside Dr Spencer's apartment, the episode had many people asking if the equipment should not have been disposed of in a biohazard bag - even if only as a precaution.

Jitters spread through New York on Thursday after it was revealed Dr Spencer spent seven days in the city after returning from Africa with the Ebola virus in his bloodstream.

On Tuesday, Dr Spencer described suffering from fatigue and exhaustion. He took the subway from his home in Harlem to popular tourist spot the High Line, a park created on a disused railway line in Chelsea.
He stopped at Blue Bottle Coffee stand and then had lunch at The Meatball Shop in Greenwich Village.
On Wednesday morning, the doctor went running for three miles on Riverside Drive and the Westside Highway in Manhattan. That evening, he took the subway to The Gutter bowling alley in Williamsburg, Brooklyn.
He later took an Uber cab ride home to Harlem.
The doctor was not advised to quarantine himself for 21 days on his return to the U.S. but had been monitoring his temperature twice a day.

While officials say he had no symptoms at the time of these activities and was therefore almost surely not infectious, many New Yorkers are worried all the same.
Dr Spencer, whose case was confirmed Thursday evening, had been in Guinea this past September with Doctors With Borders, helping to treat patients infected with the virus.
New York City Mayor Bill de Blasio reminded the public in his press conference tonight that, 'Ebola is an extremely difficult disease to get,' then adding that, 'Every hospital in the city is prepared in the event other patients come forward.'
However, New York state Governor Andrew Cuomo, speaking at the same press conference, said four people were potentially exposed to Dr. Spencer 'during the relevant period.'
They are Dr Spencer's fiancee, two friends, and the driver of a taxi he rode in.
There was no word during the press conference as to how prepared police officers were to deal with the deadly virus.

Dr Craig Spencer rode the subway along with visiting a Brooklyn bowling alley, The Gutter, and the High Line park. It was revealed today that he had also eaten at The Meatball Shop in Greenwich Village and stopped at Blue Bottle Coffee on the High Line on Tuesday.