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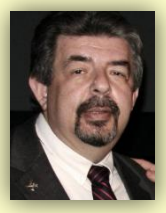

Editorial

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

Editor-in-Chief
CBRNE-Terrorism Newsletter

Dear Colleagues,

We usually connect summer time with pleasant activities that refill our batteries and prepare us for a new winter kick-off. It seems that the world has a different approach and got absolutely crazy! It seems that quality of life is of no importance to many. It seems that life itself does not worth much in MANY parts of this planet. It seems like a deadly virus is slowly affecting more people down to their DNA level and even creates a new form of life missing imortant parts of humanity as we already know it.

These new species inhabit Iraq, Syria, Ukraine and Nigeria and come with a variety of names – ISIS, Boko Haram, Left Front, Jabhat al-Nusra etc. Their main caracteristic is the unbelievable brutality against humans with actions never addressed in the long history of human mankind. Perhaps western societies have not yet realized the severity of this pandeminc but the virus is also incubated among those living between us perhaps in search for the right environment to flourish. What we do about this? We deploy some extra policemen around critical targets and express our worries in public or in "members only" meetings. Great!

July 2014 was characterized by the loss of three airliners on three continents: (1) Air Algerie Flight AH 5017 with more than 110 people on board went missing over Mali (July 24) and finally crashed perhaps due to harsh weather but other options are still open; (2) TransAsia Airways domestic Flight GE222 crashed on Wednesday in torrential rain, killing 48 people, while 10 others survived. It was attempting to land for the second time after aborting an initial attempt during thunder and heavy rain as Typhoon Matmo pounded Taiwan; and (3) Malaysia Airways Flight MH17 was blown out of the sky on July 17, while flying over rebel-held east Ukraine on route to Kuala Lumpur from Amsterdam, killing all 298 people aboard. The passenger and crew list included people from 11 nations, almost two thirds of whom were Dutch, along with 44 Malaysians, 27 Australians and 12 Indonesians. The bodies, which lay in summer temperatures for four days while separatist gunmen prevented international rescue workers and investigators from working in the area, were eventually turned over to international officials along with the aircraft's black boxes. The aircraft was the second lost by the airline in four months, after the unexplained disappearance on March 8 of MH370 flying from Kuala Lumpur to Beijing. Who shot the MH17 down? A question yet to be answered with all the (usual) good people involved accusing each other in overt and covert ways. Most probably they will blame a single sparrow for illegal entrance to airplanes' turbines during flight…

Situation in Syria remains the same – steady, ugly and fragile with all parts winning and losing at the same time while chess masters review their manuals for missing tricks. Destruction of chemical weapons is progressing according to schedule – the only problem is that we – the people – do not know the schedule. Perhaps we are not capable to understand high science and alike.

The conflict between Israel and Hamas is progressing as well. As it is always the case when buffaloes are fighting, frogs pay the price… Women and children are the anticipated collateral casualties that make Westerners shed tears of sympathy and anger. Of course they forgot that during "peace" time they did nothing to solve the underlying long lasting problem. And of course they avoid answering the question what would they have done if "Country A" started firing rockets against their territories and citizens. These people have never heard about human shields or have never wondered why starting a war knowing that they will lose despite all efforts. It seems that we are more Christians than ever before and we apply to the point the "turn the other chick" directive – but only if this does not concern our own people and property. It seems to me that for a strange (?) reasoning all entities involved do not want to solve the problem. My mother used to say to me: "There is no "I cannot"; only "I do not want to".

Libya is in flames again! US Embassy was closed and moved to Tunisia bringing back memories from the closure of their Embassy in Saigon – a sign of losing the war. It seems that people there realized – in recent [June 25th] elections – that the Gaddafi era was much better that the three years of violence and bankruptcy that followed the Arab Spring. And [former US allies] Islamists want to maintain status with extreme violence and civil war.

You will read in more details about all the about in the current issue of the "CBRNE-Terrorism Newsletter". But you will also read – in the special supplement dedicated to "Robotics" – that there is another side of our misery world. The side that thinks innovates and produces amazing solutions aiming to make our life better and safer. Of course many of the major technological progress go through battlefields but also facilitate daily threats, diseases and deadly natural phenomena. Robots are already among us and we better get used to this idea and make the best out of it.

I will not report on how things in Greece are but you can see current status in the photo

included – it has been posted in a bus stop in London. As they say one picture is a thousand words…

July is also the month that Editor started its official collaboration with Center for Security Studies – a scientific think tank based in Athens, Greece under the Ministry of Public Order and Citizens' Protection. This is a challenging collaboration since many of the projects in progress address issues related to my experience and expertise. I and co-Editor Steve Photiou, MD participated in the first workshop of EU IMPRESS (Improving Preparedness and Response of Health Services in Major Crises) Project in Rome (23-24 July) where we discuss the first phases of this ambitious platform that will aim to improve the response time and enhance effectiveness when a major disaster evolves – both conventional and asymmetric. IMPRESS will improve the efficiency of decision making in emergency health operations, which will have a direct impact on the quality of services provided to citizens. It will provide a consolidated concept of operations, to effectively manage medical resources, prepare and coordinate response activities, supported by a Decision Support System, using data from multiple heterogeneous sources. The proposed solution will facilitate communication between Health Services (and Emergency Responders) at all levels of response and the crisis cycle with the necessary health care systems support, supervision and management of participating organizations. It will assist health services in becoming more proactive, better prepared and interoperable with other emergency response organizations. Thus, medical emergency teams will be turned, using IMPRESS, into one coherent force. IMPRESS will

catalyze a dramatic and durable impact in the way in which Health Services are provided in crisis situations, and will help improve the integration of health care actors and volunteers with other Crisis Management stakeholders, providing also an overall competitive advantage of CM-related SMEs and large businesses in Europe. It is always great when same minded experts meet and exchange ideas and proposals on how to incorporate cutting edge technologies to first responders' activities and SOPs.

Also in July the Editor-in-Chief was awarded the "Minas Ioannis Nomikos Award for Excellence in Security Research" by the Research Institute of European and American Studies (RIEAS). The event took place during a very interesting workshop held in Athens with the participation of many experts both from Greece and abroad (Prof Alexander; Potomac Institute for Policy Studies, International Center for Terrorism Studies, VA).

The Newsletter itself it progresses very well and now we get many invitations to become media partners for major CBRNE-related events word-wide. The contribution of our readers is outstanding and on daily basis we receive many articles on various topics of interest. It is highly advised to visit the "sources'" URLs since for technical reasons we omit the links included in many articles. On the other hand we include many photos, maps and tables that are not included in the original papers in order to make them more informative and interesting. By upgrading our electronics we will be able (soon) to present the Newsletter in a more attractive electronic form. Each new issue will be uploaded in the 25-27th day of each month.

Finally we wish you all a relaxing summer time and if you haven't decided yet your final destination then think of Greece – the ultimate destination at least once in your life time!

The Editor-in-Chief

Palestinian Leaders Don't Want an Independent State

By Efraim Karsh

Source: http://www.meforum.org/3831/palestinians-reject-statehood

The Palestinian leadership's serial rejection of the numerous opportunities for statehood since the Peel Commission report of 1937 casts a serious doubt on its interest in the creation of an independent state.

Instead of engaging in the daunting tasks of nation-building and state creation, all Palestinian leaders without any exception—from the Jerusalem mufti Hajj Amin Husseini, who led the Palestinian Arabs from the early 1920s to the late 1940s; to Yasser Arafat, who dominated Palestinian politics from the mid-1960s to his death in November 2004; to Mahmoud Abbas—have preferred to immerse their hapless constituents in disastrous conflicts that culminated in their collective undoing and continued statelessness. At the same time, of course, these leaders have lined their pockets from the proceeds of this ongoing tragedy.

It can be shown that the main sources of this self-destructive conduct are pan-Arab delusions, Islamist ideals, and the vast financial and political gains attending the perpetuation of Palestinian misery.

Pan-Arab Delusions

In discussions of the history of the Arab-Israeli conflict, it is rarely acknowledged that, as products of the Ottoman imperial system where religion constituted the linchpin of the sociopolitical order of things,

Palestinian Arab leaders during the British mandate era (1920-48) had no real grasp of the phenomenon of nationalism, hence, had no interest in the evolution of a distinct Palestinian nation. Instead they were wedded to the pan-Arab dream of a unified "Arab nation" (of which "Palestine" was but a tiny fragment) or the associated ideology of Greater Syria (*Suriya al-Kubra*), stressing the territorial and historical indivisibility of most of the Fertile Crescent.

As early as October 1919, Musa Kazim Husseini, a former Ottoman official, elected Jerusalem mayor under the British, told a Zionist acquaintance that "we demand no separation from Syria."[1] Six months later, in April 1920, his peers instigated the first anti-Jewish pogrom in Jerusalem—not in the name of Palestine's independence but under the demand for its incorporation into the (short-lived) Syrian kingdom headed by Faisal ibn Hussein of Mecca, the celebrated hero of the "Great Arab Revolt" against the Ottoman Empire and the effective leader of the nascent pan-Arab movement. Four years later, in a special report to the League of Nations, the Arab Executive Committee (AEC), the umbrella organization of the Palestinian Arabs, still

referred to Palestine as the unlawfully severed southern part of "the one country of Syria, with its one population of the same language, origin, customs, and religious beliefs, and its natural boundaries."[2] And in June 1926, the league's permanent mandates commission was informed of an Arab complaint that "it was not in conformity with Article 22 of the Mandate to print the initials and even the words 'Eretz Israel' after the name 'Palestine' while refusing the Arabs the title 'Surial Janonbiah' ['Southern Syria']."[3]

In July 1937, the Arab Higher Committee (AHC), the AEC's successor, justified its rejection of the Peel Commission's recommendation for the partition of Palestine on the grounds that "this country does not belong only to [the] Palestine Arabs but to the whole Arab and Muslim Worlds."[4] As late as August 1947, three months before the passing of the U.N. resolution partitioning Mandate Palestine into Arab and Jewish states, the AHC's mouthpiece *al-Wahda* advocated the incorporation of Palestine (and Transjordan) into "Greater Syria."[5]

Hajj Amin Husseini himself never acted as a local patriot seeking national self-determination but rather as an aspiring pan-Arab regional advocate. An early admirer of the "Greater Syrian" ideal, he co-edited the Jerusalem-based newspaper *Suria al-Janubiyya* and presided over the city'sArab Club, which advocated Palestine's annexation to Syria. He cast his sights much higher after fleeing the country in 1937 to avoid arrest by the British for the instigation of nationwide violence: Presenting himself to Hitler and Mussolini as a spokesman for the entire "Arab nation," Husseini argued that the Palestine problem necessitated an immediate solution not because of the national aspirations of the Palestinian Arabs but because it constituted "an obstacle to the unity and independence of the Arab countries by pitting them directly against the Jews of the entire world, dangerous enemies, whose secret arms are money, corruption, and intrigue." His proposed solution, therefore, was not Palestinian statehood but "the independence of [unified] Palestine, Syria, and Iraq" under his leadership. As he put it in one of his letters to Hitler, "[T]he Arab people, slandered, maltreated, and deceived by our common enemies, confidently expects that the result of your final victory will be their independence and complete liberation, as well as the creation of their unity, when they will be linked to your country by a treaty of friendship and cooperation."[6]

While the young generation of diaspora Palestinian activists who began organizing in the 1950s witha view to avenging the 1948 "catastrophe"of the creation of Israel did not share the mufti's grandiose ambitions, they were no less committed to the pan-Arab ideal as evidenced by the name of the first "resistance" group—the Arab Nationalist Movement (ANM). The pan-Arab ideal was also evident in the diverse composition of the movement comprising Palestinian (e.g., George Habash, Wadi Haddad) and Arab activists (notably Hani Hindi, scion of a respected Damascene family).[7]

Another prominent adherent to the pan-Arab ideal was Ahmad Shuqeiri, a Lebanon-born politician of mixed Egyptian, Hijazi, and Turkish descent, who served as the Arab League's deputy secretary-general and as the Syrian and Saudi delegate to the U.N. before becoming, on May 28, 1964, the founding chairman of the Palestine Liberation Organization (PLO), established that day by the Arab states at the initiative of Egyptian president Gamal Abdel Nasser.

"Palestine is part and parcel in the Arab home-land," Shuqeiri told the U.N. Security Council on May 31, 1956: "The Arab world is not prepared to surrender one single atom of their right to this sacred territory." Clarifying to which part of the "Arab homeland" this specific territory belonged, he added that Palestine "is nothing but southern Syria." In his account, "the Palestine area was linked to Syria from time immemorial" and "there was no question of separation" until the great powers brought this about by creating mandates under the League of Nations, with Britain controlling Palestine and France administering Syria.[8]

Against this backdrop, it is hardly surprising that the PLO's hallowed founding document, the Palestinian Charter, adopted upon its formation and revised four years later to reflect the organization's growing militancy, has little to say about the Palestinians themselves. Devoting about two-thirds of its thirty-three articles to the need to destroy Israel, it defines the Palestinians as "an integral part of the Arab nation" rather than a distinct nationality and vows allegiance to the ideal of pan-Arab unity—that is to Palestine's eventual assimilation into "the greater Arab homeland"—while seeking to harness this ideal to its short-term ends:

The destiny of the Arab Nation and, indeed, Arab existence itself depend upon the destiny of the Palestinian cause. From this inter-dependence springs the Arab nation's pursuit of, and striving for, the liberation of Palestine. … Arab unity and the liberation of Palestine are two complementary objectives, the attainment of either of which facilitates the attainment of the other. Thus, Arab unity leads to the liberation of Palestine, the liberation of Palestine leads to Arab unity; and work toward the realization of one objective proceeds side by side with work toward the realization of the other.[9]

Even the November 1988 "declaration of independence" by the Palestine National Council, the PLO's "parliament," while obviously endorsing the idea of Palestinian statehood (in language that massively plagiarized Israel's proclamation of independence),[10] vows allegiance to the pan-Arab ideal by describing the "State of Palestine" as "an integral part of the Arab nation, of its heritage and civilization and of its present endeavor for the achievement of the goals of liberation, development, democracy and unity."[11]

As late as 2002, eight years after the establishment of a PLO-dominated Palestinian Authority (PA) in the West Bank and the Gaza Strip to lay the groundwork for Palestinian statehood in these territories, the prominent Israeli Arab politician Azmi Bishara, founding leader of the nationalist Balad Party (with seats in the Israeli parliament since 1999), asserted that "my Palestinian identity never precedes my Arab identity.... I don't think there is a Palestinian nation, there is [only] an Arab nation.... Palestine until the end of the nineteenth century was the southern part of Greater Syria," and the idea of a distinct Palestinian nation is a "colonialist invention" that happens to coincide with the consistent Israeli attempt, by both left- and rightwing parties, to ignore the reality of pan-Arab nationalism.[12]

While such plain speaking is hardly commonplace in PLO/PA current rhetoric, these words help explain the group's continued subscription to the pan-Arab ideal as evidenced by its deliberate failure to revise the Palestinian Charter so as to acknowledge the distinctness of Palestinian nationalism; the frequent articulation of pan-Arab themes by its tightly controlled media; its constitutional definition of the prospective state of Palestine as "part of the Arab homeland" committed to the "goal of Arab unity";[13] and the steady reiteration of the claim that the Palestinians are not fighting for their own corner but are rather the Arab nation's "front line of defense."[14] No less important, the PLO continues to subordinate its policies, and by extension Palestinian self-interest, to pan-Arab approval—and veto—as illustrated most recently by Abbas's successful rallying of the Arab League behind his "absolute and decisive rejection to recognizing Israel as a Jewish state."[15]

Upholding this position—sixty-six years after the creation of a Jewish state by an internationally recognized act of self-determination—effectively amounts to the rejection of Palestinian statehood for the simple reason that Israel would not self-destruct while the Palestinians and the Arab states are in no position to bring this about.

Islamist Imperial Dreams

If subscription to the pan-Arab dream has made the Palestinian cause captive to inter-Arab machinations, stirring unrealistic hopes and expectations in Palestinian political circles and, at key junctures, inciting widespread and horrifically destructive violence that has made the likelihood of Palestinian statehood ever more remote, adherence to Islamist ideals has subordinated Palestinian identity to the far wider ambition of Islamic world domination.

Consider the Islamic Resistance Movement, better known by its Arabic acronym Hamas. Since making its debut in the 1987-92 *intifada*, Hamas has established itself as the foremost political and military Palestinian force, winning a landslide victory in the 2006 general elections and evicting the PLO from Gaza the following year. Far from being an ordinary liberation movement in search of national self-determination, Hamas has subordinated its aim of bringing about the destruction of Israel and the creation of a Palestinian state on its ruins to the wider goal of establishing Allah's universal empire. In doing so, it has followed in the footsteps of its Egyptian parent organization, the Muslim Brotherhood, which viewed its violent opposition to Zionism from the 1930s and 1940s as an integral part of the Manichean struggle for the creation of a worldwide caliphate rather than as a defense of the Palestinian Arabs' national rights. In the words of the senior Hamas leader Mahmud Zahar, "Islamic and traditional views reject the notion of establishing an independent Palestinian state … In the past, there was no independent Palestinian state.

… [Hence] our main goal is to establish a great Islamic state, be it pan-Arabic or pan-Islamic."[16] He further explained: "Our position stems from our religious convictions … This is a holy land. It is not the property of the Palestinians or the Arabs. This land is the property of all Muslims in all parts of the world."[17]

Echoing standard Muslim Brotherhood precepts, Hamas's covenant adopted in 1988 presents the organization as designed not merely to "liberate Palestine from Zionist occupation" but to pursue the far loftier goals of spreading Islam's holy message and defending the weak and oppressed throughout the world: "As the Islamic Resistance Movement paves its way, it will back the oppressed and support the wronged [throughout the world] in all its might. It will spare no effort to bring about justice and defeat injustice, in word and deed, in this place and everywhere it can reach and have influence therein."[18]

As the movement's slogan puts it: "Allah is [Hamas's] target, the Prophet is its model, the Koran its constitution: Jihad is its path, and death for the sake of Allah is the loftiest of its wishes."[19]

In other words, the "question of Palestine" is neither an ordinary territorial dispute between two national movements nor a struggle by an indigenous population against a foreign occupier. It is an integral part of Islam's millenarian jihad to expand its domain and prevent the fall of any of its parts to the infidels: "[T]he land of Palestine is an Islamic Waqf [Islamic religious endowment] consecrated for future Moslem generations until Judgment Day. … The day that enemies usurp part of Moslem land, Jihad becomes the individual duty of every Moslem."[20]

In this respect, there is no difference between Palestine and other parts of the world conquered by the forces of Islam throughout history. To this very day, for example, Arabs and many Muslims unabashedly pine for the restoration of Muslim Spain and look upon their expulsion from that country in 1492 as a grave historical injustice. Indeed, even countries that have never been under Islamic imperial rule have become legitimate targets of Islamist fervor. Since the late 1980s, various Islamist movements have looked upon the growing number of French Muslims as a sign that France, too, has become a potential part of the House of Islam. Their British counterparts have followed suit. "We will remodel this country in an Islamic image," the London-based preacher Sheikh Omar Bakri Muhammad told an attentive audience less than two months after 9/11. "We will replace the Bible with the Qur'an."[21]

Khaled Mash'al, head of Hamas's political bureau and the organization's effective leader, echoed this sentiment as a tidal wave of Muslim violence swept across the world in response to satirical depictions of the prophet Muhammad in a Danish newspaper in February 2006:

By Allah, you will be defeated ... Hurry up and apologize to our nation, because if you do not, you will regret it. This is because our nation is progressing and is victorious ... Tomorrow, our nation will sit on the throne of the world. This is not a figment of the imagination but a fact. Tomorrow we will lead the world, Allah willing. Apologize today, before remorse will do you no good.[22]

Nor is this supremacist worldview limited to Hamas. Since its rise in the early seventh century, Islam has constituted the linchpin of Middle Eastern politics, and its hold on Palestinian society is far stronger than is commonly recognized. Contrary to the received wisdom in the West, the PLO is hardly a secular organization. Arafat was a devout Muslim, associated in his early days with the Muslim Brotherhood, as were other founding fathers of Fatah, the PLO's foremost constituent organization. And while the new generation of Fatah leaders in the territories may be less religious, they, nevertheless, have a draft constitution for a prospective Palestinian state stipulating that "Islam is the official religion in Palestine" and Shari'a is "a main source for legislation."[23]

They have, moreover, utilized the immense inflammatory potential of Islam to discredit the two-state solution—and by implication, the prospect of Palestinian statehood—and to express their grandiose supremacist delusions. In the words of the official PA television, "Where did Great Britain disappear? By Allah's will, He will get rid of the US like he got rid of them. We [Muslims] have ruled the world; a day will come by Allah, and we shall rule the world [again]. The day will come, and we shall rule America; the day will come, and we shall rule Britain. We shall rule the entire world."[24]

Within these grand overlapping schemes of pan-Arab regional unity and Islamic world domination, the notion of Palestinian statehood is but a single transient element whose supposed centrality looms far greater in Western than in Islamic and Arab eyes.

Profits of Misery

But whatever their ideological and political convictions, Palestinian leaders have never had a real stake in statehood both because the hopes and wishes of their constituents did not figure in their calculations and because they have vastly profited from having their hapless constituents run around in circles for nearly a century while milking world sympathy for the plight they have brought about in the first place.

In Mandate Palestine, ordinary Arabs were persecuted and murdered by their alleged betters for the crime of "selling Palestine" to the Jews. Meanwhile, these same betters were enriching themselves with impunity. The staunch pan-Arabist Awni Abdel Hadi, who vowed to fight "until Palestine is either placed under a free Arab government or becomes a graveyard for all the Jews in the country,"[25] facilitated the transfer of 7,500 acres to the Zionist movement, and some of his relatives, all respected political and religious figures, went a step further by selling actual plots of land. Many prominent leaders including Muin Madi, Alfred Rock, and As'ad Shuqeiri (father of Ahmad, PLO founder) also sold land. Musa Alami, who bragged to David Ben-Gurion that "he would prefer the land to remain poor and desolate even for another hundred years" if the alternative was its rapid development in collaboration with the Zionists,[26] made a handsome profit by selling 225 acres to the Jews. So, too, did numerous members of the Husseini family, the foremost Palestinian Arab clan during the mandate period, including Musa Kazim (father of Abdel Qader Husseini, the famous guerrilla leader) and Muhammad Tahir, Hajj Amin's father.[27]

Hajj Amin himself had few qualms about profiting from the Jewish national revival, which he sought to eradicate whenever this suited his needs. Prior to his appointment as the Jerusalem mufti, he pleaded with Jewish leaders to lobby on his behalf with (the Jewish) Herbert Samuel, the first British high commissioner for Palestine, and in 1927, he asked Gad Frumkin, the only Jewish Supreme Court justice during the mandatory era, to influence Jerusalem's Jewish community to back the Husseini candidate in the mayoral elections. He likewise employed a Jewish architect to build a luxury hotel for the Supreme Muslim Council, which he headed, while ordering his constituents to boycott Jewish labor and products.[28] Needless to say, the mufti never sought to apply to his own father his religious authorization (*fatwa*) on the killing of those who sold land to Jews.

"Arab nationalist feelings were never allowed to harm the interests of the Husseini family," wrote the prominent Jerusalem lawyer and Zionist activist Bernard (Dov) Joseph, a future minister of justice in the Israeli government:

One of [the mufti's] kinsmen, Jamil Husseini, had once engaged my services in land litigation which went as high as the Privy Council in London … For years, one of the Mufti's close relations prospered mightily by forcing Arab small-holders to sell land, at niggardly prices, which he then resold to Jews at a handsome profit.[29]

This institutionalized racketeering skyrocketed to new heights under the PLO. Just as the Palestinian leadership during the mandate had no qualms about inciting its constituents against Zionism and Jews while lining its own pockets from the fruits of Jewish development and land purchases, so the cynical and self-seeking PLO "revolutionaries" used the billions of dollars donated by the Arab oil states and the international community to lead a luxurious lifestyle in sumptuous hotels and villas, globe-trotting in grand style, acquiring properties, and making financial investments worldwide—while millions of ordinary Palestinians scrambled for a livelihood.

This process reached its peak following the September 1993 signing of the Israel-PLO Declaration of Principles on Interim Self-government Arrangements (DOP, or Oslo I) and the establishment of the Palestinian Authority. For all his rhetoric about Palestinian independence, Arafat had never been as interested in the attainment of statehood as in the violence attending its pursuit. In the late 1970s, he told his close friend and collaborator, the Romanian dictator Nicolae Ceausescu, that the Palestinians lacked the tradition, unity, and discipline to become a formal state, and that a Palestinian state would be a failure from the first day.[30] Once given control of the Palestinian population in the West Bank and Gaza as part of the Oslo process, he made this bleak prognosis a self-fulfilling prophecy, establishing a repressive and corrupt regime in the worst tradition of Arab dictatorships where the rule of the gun prevailed over the rule of law and where large sums of money donated by the international community for the benefit of the civilian Palestinian population were diverted to funding racist incitement, buying weaponry, and filling secret bank accounts. Extensive protection and racketeering networks run by PA officials proliferated while the national

budget was plundered at will by PLO veterans and Arafat cronies (in May 1997, for example, the first-ever report by the PA's comptroller stated that $325 million, out of the 1996 budget of $800 million had been "wasted" by Palestinian ministers and agencies or embezzled by officials).[31]

Arafat himself held a secret Tel Aviv bank account accessible only to him and his personal advisor Muhammad Rashid, in which he insisted that Israel deposit the tax receipts collected on imports to the Palestinian territories (rather than transfer them directly to the PA). In 1994-2000, nearly eleven billion shekels (about US$2.5 billion) were reportedly paid into this account, of which only a small, unspecified part reached its designated audience.[32] Small wonder that, in 2004, the French authorities opened a money-laundering inquiry into suspect regular transfers into the Paris bank accounts held by Arafat's wife Suha, who resided there with their daughter. After Arafat's death, Suha was reportedly promised an annual pension of $22 million to cover her sumptuous lifestyle, paid from an alleged $4 billion "secret fortune" managed personally by the PA president and kept in a number of bank accounts in Tel Aviv, London, and Zurich.[33]

Though this breathtaking corruption played an important role in Hamas's landslide electoral victory of January 2006, the PLO/PA leadership seems to have learned nothing and to have forgotten nothing. Not only did Abbas, who succeeded Arafat as PLO chairman and PA president, blatantly ignore the results of the only (semi) democratic elections in Palestinian history—establishing an alternative government to the legally appointed Hamas government and refusing to hold new elections upon the expiry of his presidency in January 2009—but he seems to have followed in his predecessor's kleptocratic footsteps, reportedly siphoning at least $100 million to private accounts abroad and enriching his sons at the PA's expense.[34] In the words of Fahmi Shabaneh, former head of the Anti-Corruption Department in the PA's General Intelligence Service:

In his pre-election platform, President Abbas promised to end financial corruption and implement major reforms, but he hasn't done much since then. Unfortunately, Abbas has surrounded himself with many of the thieves and officials who were involved in theft of public funds and who became icons of financial corruption. … Some of the most senior Palestinian officials didn't have even $3,000 in their pocket when they arrived [after the signing of the Oslo accords]. Yet we discovered that some of them had tens, if not hundreds, of millions of dollars in their bank accounts. … Had it not been for the presence of the Israeli authorities in the West Bank, Hamas would have done [there] what they did in the Gaza Strip. It's hard to find people in the West Bank who support the Palestinian Authority. People are fed up with the financial corruption and mismanagement of the Palestinian Authority.[35]

Conclusion

For nearly a century, Palestinian leaders have missed no opportunity to impede the development of Palestinian civil society and the attainment of Palestinian statehood. Had Hajj Amin Husseini chosen to lead his constituents to peace and reconciliation with their Jewish neighbors, the Palestinians would have had their independent state over a substantial part of mandate Palestine by 1948, if not a decade earlier, and would have been spared the traumatic experience of dispersal and exile. Had Arafat set the PLO from the start on the path to peace and reconciliation instead of turning it into one of the most murderous and corrupt terrorist organizations in modern times, a Palestinian state could have been established in the late 1960s or the early 1970s; in 1979, as a corollary to the Egyptian-Israeli peace treaty; by May 1999, as part of the Oslo process; or at the very latest, with the Camp David summit of July 2000. Had Abbas abandoned his predecessors' rejectionist path, a Palestinian state could have been established after the Annapolis summit of November 2007, or during President Obama's first term after Benjamin Netanyahu broke with the longstanding Likud precept by publicly accepting in June 2009 the two-state solution and agreeing to the establishment of a Palestinian state.

But then, the attainment of statehood would have shattered Palestinian leaders' pan-Arab and Islamist delusions, not to mention the kleptocratic paradise established on the backs of their long suffering subjects. It would have transformed the Palestinians in one fell swoop from the world's ultimate victim into an ordinary (and most likely failing) nation-state thus terminating decades of unprecedented international indulgence. It would have also driven the final nail in the PLO's false pretense to be "the sole representative of the Palestinian people" (already dealt a devastating blow by Hamas's 2006 electoral rout) and would have forced

any governing authority to abide, for the first time in Palestinian history, by the principles of accountability and transparency. Small wonder, therefore, that whenever confronted with an international or Israeli offer of statehood, Palestinian leaders would never take "yes" for an answer.

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

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Zoo preserves dead cub for school groups

Source: http://www.thelocal.ch/20140625/zoo-preserves-dead-cub-for-school-groups

June 25 – The cub, known as '4', was put down by the zoo after its father, Misha, killed its sibling.
The two cubs were born to the zoo's Russian brown bears Misha and Masha in January, and the first cub was killed 11 weeks later on 2 April.
The second cub was subsequently badly bullied by its father and neglected by mother Masha, leading the zoo to make the decision to euthanize it, just five days after the death of its sibling.
At the time, the zoo said in a statement: "Putting cub 4 to sleep was a difficult decision, but unfortunately necessary. As a zoo and therefore as animal keepers we are obligated to take action when an animal must suffer unnecessarily. This was clearly the case with 4."
Separating the cub from its parents was not a viable option, according to the zoo.

On Tuesday taxidermist Sabrina Beutler began the process of preserving cub 4's fur in an operation overseen by Bern's National History Museum.
The fur will then be glued onto an artificial model of the cub's body in a process that should be completed by the beginning of the autumn.
The cub is to be used by the zoo's education department, which owns many other preserved skulls, skeletons and furs, in an effort to educate school groups and visitors about bears.
Speaking to The Local, zoo educator Doris Slezak said: "We want to teach children about bears and other animals and we will use the material for that. Of course with this bear people will ask questions and we will tell the story [of what happened] but it's not the main focus."
At the time of the cub's death the zoo attracted much criticism for its actions from the public and animal rights group, including a legal complaint filed by a private individual.
Although Slezak is expecting some people to be upset by the zoo's decision to preserve the dead cub, she told The Local that it's important not to shy away from the situation.
"It's part of the story, it's part of the life of this little bear and it should not be hidden. It should be retold, if it's possible."

Slezak added: "Nature can be very cruel and that's something we want to show kids. We think that it's right that this bear still has a function after his death, and it will help people to understand nature."
On 16 June the cub's father, Misha, was sterilized to prevent further breeding.

New Biometric Device Scans Body Electricity

Source: http://i-hls.com/2014/06/new-biometric-device-scans-body-electricity/

New tech might solve security issues associated with wearable gadgets and allow easier access to secure machines – a device that can identify users based on the **electric resistance of tissue within their wrists.**

Wearable electronics have been gaining in popularity recently, with security and privacy issues following close behind. New technologies might provide a solution to the security challenges associated with these gadgets – devices that can scan users and verify their identity.

A new device of this type was recently unveiled by researchers from Dartmouth College. According to MIT Technology Review the device includes four pairs of electrodes worn around the wrist like a bracelet. Researchers discovered that the resistance measured between the electrodes is biometric: Unique to every individual, based on their body composition, bone size and flesh thickness.

After the device measures the resistance a wireless ID signal is sent, confirming the wearer's identity for other electronic devices. The developer of the new technology, Corey Cornelius, explained: "If I'm wearing the bracelet, my phone would be unlocked without a PIN code, or I could log into my PC or provide a means of access control." Cornelius added that the device is very precise, but over the long run calibrations will be needed to compensate for aging, disease, losing or gaining weight, etc.

Land used for opium cultivation at historic high – UN

Source: http://www.terrorismwatch.org/2014/06/land-used-for-opium-cultivation-at.html

The amount of land used for cultivating opium poppies around the world is at an all-time high, says a UN report. Afghanistan is largely behind the increase, with its crop growing by 36 percent over a year, producing 80 percent of the world's opium.

A World Drug Report released by the UN's Vienna-based Office on Drugs and Crime (UNODC) has charted the global use of drugs. Although it says that global drug use is *"stable,"* it notes that the cultivation of opium has grown drastically.

Afghanistan heads the field documenting a massive increase in 2012, with at least 209,000 hectares devoted to the cultivation of opium. Myanmar comes in second place, with a total of 57,800 hectares used to grow the primary ingredient of heroin.

"The main area of cultivation in Afghanistan was in nine provinces in the southern and western part of the country, while the major

increase was observed in Helmand and Kandahar. In Myanmar, the increase in the area of cultivation was not as pronounced as in Afghanistan," says the report.

According to the document, the production of opium has not increased as radically as its cultivation. The **UN estimates that in 2013 6,883 tons were produced, *«which is a return to the levels observed in 2011 and 2008."*According to the report, the production of heroin, on the other hand, has risen, totaling 560 tons in 2013, compared to 2008's figure of 600 tons.**

The UNODC classifies drug use around the world as stable, estimating that 5 percent of the world's population aged between 15 and 64 years used an illegal drug in 2012. It says that around 27 million people are considered *"problem drug users,"* about 6 percent of the world's population.

The UN body found that marijuana remains the world's most consumed drug, with almost 180 million people consuming the drug in 2012. The report also notes that North America has witnessed an increase in the use of the recreational drugs, which it attributes to a widespread perception of *"lower health risks."*

The UN has been critical of the decision to legalize the drug in the states of Washington and Colorado this year. It maintains that the repeated use of pot can lead to serious health disorders, including memory impairment and lung disorders.

"Medical research tells us clearly that the use of cannabis, particularly at early ages, can be very harmful for the health," UN Office on Drugs and Crime chief researcher Angela Me told a news conference on Thursday, Reuters reported.

The South American nation of Uruguay became the first country in history to fully legalize cannabis last year. The country's President Jose Mujica dismissed criticism from the UN and has championed the initiative as a way of bringing Uruguay's illegal drugs market under state control.

▶ **Read the UN report at:**
http://www.unodc.org/documents/wdr2014/World_Drug_Report_2014_web.pdf

Personal Hovering System

Source: http://i-hls.com/2014/06/new-israeli-personal-hovering-system/

Israeli ground forces are getting more help from above. First it was UAS and now the idea is to equip almost every fighter with a personal hovering system.

Rafael has unveiled a small tactical intelligence gathering hovering system . The plan is to equip many of the soldiers in an infantry unit with the micro hovering system that will serve as "eyes over the hill". The "Kestrel" is carried in a small canister stowed in the personal gear of an infantry soldier. After mission completion it can be returned to the canister for further use.

Rafael sources say that a soldier can carry a number of these hovering systems in his personal gear , together with a small control unit. The company says that the operation is very easy and according to the Israeli company the "Kestrel" can hover for 15 minutes and can be operated after battery replacement for 50 hours without maintenance.

The micro system can hover to a distance of 1 km from its operator in an urban area and 5

km in an open one. Hovering altitude is 100 meters in an open area and 50 in an urban one. Rafael plans to equip the micro system with a day CCCD camera and with a special night vision sensor.
The Israeli company says that the system has very impressive capabilities for this type of hovering system – a detection of a person from a range of 180 meters, recognizing him at a 60 meters range and incriminating him at a range of 30 meters, vehicles can be detected at a range of 400 meters and recognized at a range of 60 meters.

Light Aircraft: Gaping Security Breach

Source: http://i-hls.com/2014/06/light-aircraft-gaping-security-breach/

A buckeye pilot landing in northern Israel on Saturday was attacked by two hijackers. They threatened the pilot at knifepoint and demanded he take off and give them a cruise. "I had no choice but to take off again," he told Ynet. "I was afraid of being stabbed during the entire flight. I felt like a captive soldier, it was a nightmare."

According to the report at first the pilot flew on his own, landed and then got attacked. He reported that before he took off he managed to call the police 100 hotline. Operators could overhear the loud argument and began tracing the call. "The flight took 17 minutes, but seemed like an eternity," said the pilot. The man, an investigator for the Ministry of Transportation, managed to give a real time report of his progress to senior ministry officials, including Transportation Ministry Israel Katz and ministry General Manager Uzi Yitzhaki. "At some point the hijacker saw the phone in my hand and knocked it to the ground," he said.

During the flight with the hijackers a ultra-light aircraft suddenly appeared in front of the buckeye, and the pilot signaled he was in distress. "The buckeye pilot signaled me to land because there's a problem," said Lior, the ultra-light pilot. "I took some photos. At first I thought there was a technical problem, but when I got to the landing pad a man was waiting there, shouting and clearly drunk."

Following the landing the hijacker stepped down from the buckeye and ran to the getaway waiting near the landing pad. "At first I didn't understand what happened," told the ultra-light pilot. "The buckeye pilot shouted that he has been hijacked and that I should write down the car's license plate numbers, and so I did. He was very calm and resourceful, landing at knifepoint is by no means an easy feat."

Local police has already started to investigate the case, saying that the identity of one of the hijackers is known. That's it for the factual report. It highlights the problem of monitoring light, private aircraft, whether ultra-light or powered parachutes. In the past there have been attempts by terrorists to infiltrate Israel using these aircraft, but their frequency dropped. Hijackings of this sort present an especially severe threat.

This time it was merely an act of hooliganism, but experts told iHLS that it might have ended in a major terrorist attack.

Black Ghost military training system uses big data to improve soldiers' performance

Source: http://www.wired.co.uk/news/archive/2013-01/21/equivital-black-ghost

A Cambridge company called Equivital has developed a military training system called **Black Ghost which tracks a soldier's location, performance and welfare to enhance the effectiveness of a squadron.**

The system comprises of a durable body worn sensor device that monitors heart rate, respiration, activity, acceleration, GPS data and body core temperature. It relays real-time information which can be viewed and analyzed

instantly or retrospectively. It allows a commander to see where every soldier is at any one point and know if someone has breached a border. It will also warn the commander if a soldier is showing signs of heat stress and provide a live alert feed highlighting incidents as they occur in the field.

Users can log session and event information linked to a specific soldier, for example, commands given. This means that if a soldier's performance deteriorates over a certain period, it can be used to see what orders he or she had been given before, during and after. There are also customized dashboards developed for each user, allowing for soldiers to be continually assessed.

Equivital was borne out of Hidalgo, a wireless innovations company based in Cambridge. Anmol Sood, Hidalgo's CEO, explains: "In addition to being able to monitor individuals in real-time throughout a training session, Black Ghost makes it possible to measure trainee performance over multiple sessions, compare individuals to group performance and customize depending on the location and group."

Black Ghost combines Equivital's flagship product, the EQ02 LifeMonitor, with supporting data management software and visualization tools. The LifeMonitor is a body sensor system designed for military contexts. It has been used by the US Marine Corps to provide information on the impact of heat, equipment load and terrain on marines during operational duties in Iraq. LifeMonitor is a 35g sensing device that features a soft sensor belt/harness worn across the chest. Data collected is transmitted wirelessly to a PC or mobile device for analysis. Instructions and other feedback can be relayed using either a mobile phone app or a wristwatch device.

The system has been used for the training of elite forces around the world. Ekta Sood, Equivital's Clinical Director, told Wired.co.uk that clients approach the company for a variety of reasons related to the use of real world human data and then they work together to build customized solutions. In one case, a military group who use one of the largest outdoor training facilities in the US, was encountering regular heat-related injuries during training, which in the worst case had resulted in soldiers being admitted to hospital. They also found that soldiers were often getting lost during navigational field studies. They have deployed a Black Ghost solution to reduce heat-related injuries and the time wasted finding lost trainees. In addition one of the big drivers for adoption of the Black Ghost military training system is the ability to gather and centralize performance data from multiple soldiers over time. This will allow better understanding of soldier and squad performance over time and how to improve it through optimized training methods.

In another case, an elite military group approached Equivital with interest in Black Ghost. It needed a system that could monitor both the precise location of soldiers within a confined space and

physiological data related to sympathetic drive (fight or flight) and stress during training exercises. The group will get customized dashboards and reporting as part of its Black Ghost system, providing trainers with relevant real-time information and post-action review reports. This will help with training soldiers to quickly identify areas in the field that could leave them vulnerable to attack, and to spend the minimum time in such areas. In addition the system will be used to provide feedback on the individual's stress response during critical activities, and thereby help train soldiers to perform at their peak.

Beyond military applications, the system can also be used to monitor sports teams interested in marginal gains, pharmaceutical trials and other extreme activities. **Last year, Equivital's system was used to monitor Felix Baumgartner's welfare in the Red Bull Stratos jump from a height of 36,000 metres.**

Ekta Sood believes the system could be particularly useful in monitoring mental health conditions in terms of dosage strategies and adherence to clinical trial protocols. It could combine objective sensors such as the LifeMonitor with subjective sensors, which allow patients to log daily health updates.

She concludes: "There is a lot of talk about big data and cheap data, but from a systems point of view it is important to know how to create actionable and valuable data."

Military implications of advances in brain research

Source: http://www.homelandsecuritynewswire.com/dr20140703-military-implications-of-advances-in-brain-research

A team of Stanford University scientists funded by the Pentagon's Defense Advanced Research Projects Agency (DARPA) has developed a new way to visualize the complete brain in three-dimensional imaging. The breakthrough could advance the field of rapid brain imaging, allowing scientists to see in greater detail how parts of the brain interact on a cellular level and better understand those interactions throughout the brain.

"I absolutely believe this is going to transform the way that we study the brain and how we perform neuroscience research," said Justin Sanchez, program manager for the **Neuro Function, Activity, Structure, and Technology (Neuro-FAST)** program at DARPA. "What we're saying here today is that we can develop new technology that changes how we observe and interact with the circuits of the brain."

Today, scientists explore the brain by studying electrical activity in a technique called EEG, or by observing hemoglobin flow under functional magnetic resonance called fMRI. Instead of relying on the brain's electromagnetic activity to visualize the brain, the new technique outlined in the journal *Nature Protocols*, uses light to reveal causal relationships in the brain's circuits. "It's all about optical interfaces for the brain, optical techniques to image the brain, optical techniques to record activity from the brain and optical techniques to record neurons and their firing effects from other neurons," said Sanchez.

According to*Defense One,* Sanchez and DARPA officials have noted that the Neuro-FAST program is meant to advance brain research in the larger context. Based on its history, however, the Pentagon may explore the research for military applications.

Amy Kraus, a former DARPA program manager, recently told a group at the Potomac Institute for Policy Studies about her work in finding the mental secret that

preceded good marksmanship. "It turns out the expert marksman has a brain state," she said, "a state that they enter before they take the perfect shot. Can I teach a novice to create this brain state? The answer was yes." By recognizing that brain state, researchers were able to improve the marksmanship of regular people by 100 percent. "These are recordable, measurable, algorithmical," she said.

Sanchez warns that scientists still have much to understand about improved performance through changes of brain state. "The neuroprocesses associated with those advanced functions — we don't know what they are yet. We don't know how all of those advanced circuits can produce those brain functions. That's why we're at the more basic level," he said.

Explaining Success at the World Cup: Money or Governance?

By Daniel Kaufmann

Source: http://www.brookings.edu/blogs/up-front/posts/2014/07/07-world-cup-governance-kaufmann?utm_campaign=Brookings+Brief&utm_source=hs_email&utm_medium=email&utm_content=13402113&_hsenc=p2ANqtz-9DwJU4gsekue6DVWXPtHWcsgjoUtb1T1Sg266kicFazz2UxuvX1Squdnp2luLcqAHq_u4xxFCt1R6O59qTz6Dj-7SZhQ&_hsmi=13402113

It is no secret that FIFA has been mired in governance and corruption scandals for many years. The challenges keep piling up as the man at the helm, Sepp Blatter, clings to power indefinitely, illustrating the extent to which some international sports organizations lag behind many countries in terms of democratic governance standards. As I argued in 2010 during the World Cup held in South Africa, FIFA is a multibillion dollar organization that profits handsomely at the expense of development of host countries.

Fortunately, the absence of governance in FIFA itself has not fatally damaged the fun and beauty of the game. Most of the World Cup games in Brazil have been exciting and raised enormous interest and passions around the world, even in unexpected places like the United States, where its first round game against Germany drew more online viewers than the NBA finals.

Yet skeptics remind us that, ultimately, it is all about money. And, yes, plenty— including FIFA's lack of governance and its head's perpetuation of his own power—may be about money. But is money the main driver of soccer *success* for a national team in the World Cup?

Money Doesn't Always Talk

A number of analysts and organizations making predictions about the World Cup say that it is. In fact one prominent financial firm, ING, utilized the monetary market value of the national team (aggregating the market value of each player) to predict that the World Cup winner would be Spain, the highest valued national team at close to $1 billion!

Or perhaps money matters in other ways, such as how large the country's economy is, how well paid the team manager is, or whether the national team was able to recruit a foreign manager. We also hear that oil riches might have bought the right to host the World Cup, as has been said of Qatar, or can buy a top European football club. But do national teams from resource-rich countries perform better at the World Cup?

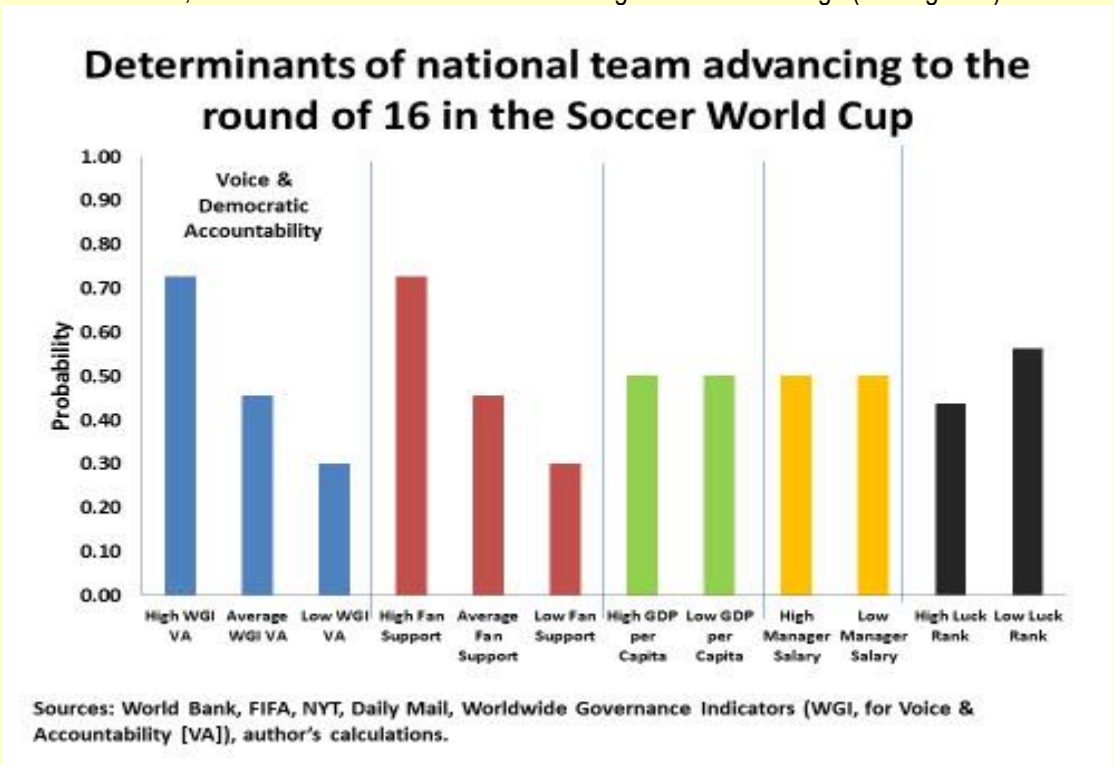
Beyond money matters, we read about population size as a critical determinant (much larger potential pool of soccer players), and also about the "luck of the draw." When the lottery took place to assign the 32 World Cup teams to the eight groups for the first stage, many bemoaned that their national teams had been assigned to a "group of death," while others were placed with weaker contenders and, thus, seemingly easy groups.

Analyzing the statistical evidence provides some surprising insights. It turns out that in looking at what differentiates success from failure in advancing to the second stage (round of 16) of this year's World Cup, money does not seem to make a difference. Neither the monetary value of a team, nor the salary of the team's manager (nor whether the manager

is a national or foreigner) matter statistically. Controlling for other factors, the size of a country's population or economy does not make much of a difference either. In addition, whether the country is resource-rich or not has no impact on the performance of the national team whatsoever.
Some of these statistical results would not shock those who watched the modestly valued Costa Rica advance by sending wealthy Italy home, or those who witnessed highly paid powerhouses such as England, Spain and Portugal also exit the World Cup early.
Interestingly, the "luck of the draw" regarding the caliber of the rivals each country faced in their first stage groupings of the World Cup, does not matter statistically at all either.

Governance Matters

If none of these commonly mentioned factors make a difference in explaining World Cup success, then what does matter? Our statistical analysis points to two relevant determinants.
First, the quality of democratic governance of the country is significant. Whether the country exhibits high levels of voice and democratic accountability—namely protecting civil society space, media freedoms, and civil and political liberties—matters significantly, controlling for other factors. If, among its World Cup peers, a country rated in the top third in the voice and accountability indicator of the Worldwide Governance Indicators (WGI), it had a 70 percent chance of advancing to the round of 16, while if it ranked in the bottom third it only had a 30 percent probability of advancing.
Second, we find that home field advantage and the extent of the fan base at the World Cup (number of fans traveling to the Cup to cheer for their national team) also matters, explaining part of the success of teams from North, Central and South America in advancing to the second stage (see Figure 1).



Sources: World Bank, FIFA, NYT, Daily Mail, Worldwide Governance Indicators (WGI, for Voice & Accountability [VA]), author's calculations.

Both determinants of soccer success may be related, reflecting the flip sides of the coin. To an extent, fan support for their national team may be the (bottom-up) counterpart to the (top-down) enabling accountability environment provided by each government. Citizen empowerment and participation does matter in soccer as well, as the free media and fan base passionately encourages their national team, while also holding them accountable.
This ought not shock us, since these determinants extend well beyond soccer; it is what we find matters enormously for development success in general, and in particular in countries seeking to harness their own natural resources for socio-economic progress.

Voice and accountability, as well as citizen feedback, is also found to matter for the success of public institutions and NGOs.

It may not be a coincidence, therefore, that countries like Russia, Cameroon, Honduras and Iran went out during the first round, while Costa Rica, Chile, Uruguay, Switzerland and the United States advanced.

Following the games in the second round, the number of teams left shrunk to eight last week, and, with countries like Algeria and Nigeria exiting at that stage, no team with even relatively low standards of democratic governance (i.e., rating in the bottom half of voice and accountability indicator in the WGI) made it to the quarterfinals. Following this weekend's quarterfinal games, there are four teams left standing in the semifinal games: Brazil vs. Germany and Argentina vs. the Netherlands, each team harboring high hopes to lift the cup next Sunday.

While neither Argentina nor Brazil match the quality of democratic governance of their respective European contenders, both have made significant strides since the military regime days of a generation ago, and now rate in the top half of the voice and democratic accountability governance indicator. And, importantly, both South American teams have a significant "home field" and fan base advantage over Germany and the Netherlands: Brazil is the host, and Argentina, its neighbor, has about 100,000 fans crossing the border to support its team (the second largest contingent of visitors after the United States). Hence, in terms of a likely winner, our statistical results would suggest that both quarterfinals could go either way, since the teams with higher governance standards have the lower fan base.

Obviously, even if governance matters, winning games is not all about democratic governance at the national level, and about passionate "civil society" support in the stadium for a team. Governance also matters at an organizational level, namely the cohesiveness and effectiveness of a team beyond the individual quality of each player, can make a big difference. In fact, in previous writings we have offered one definition of good governance as the ability of a team to be more than the sum of its parts. During this Cup, Costa Rica, Chile, France and the United States illustrated such good governance at the team level, in contrast to Cameroon, Ghana, Italy or Spain, each producing so little in spite of their individual stars. In the South Africa World Cup four years ago, Ghana exemplified good governance as a team, in contrast with France's team then, which was the polar opposite, and so was the Argentina team, at the time poorly managed by Diego Maradona.

Heads I Win, Tails You Lose

Beyond national governance and civic space, there are luck factors that make a difference. An injury like the Brazilian star Neymar's (now out of the World Cup) may end up mattering for Brazil's fate, and, conversely, for Argentina, so might one more of those inspired plays by Leo Messi. Another misstep by a referee can also make the difference.

Luck may determine who wins the Cup in other ways, unrelated to the "luck of the draw" in the first rounds' group assignments (which we found doesn't make a difference). Instead, what may still matter is the "luck of the coin toss" in penalty shootouts forced by tied games. A paper by Apesteguia and Palacios-Huerta in the *American Economic Review* that draws on almost 3,000 penalty kicks over roughly 40 years of major international soccer and points to psychological factors, finds that the team that kicks the first penalty has a 60 percent probability of winning the penalty shootout! No wonder their paper also finds that the team that wins the coin toss always opts to kick first.

And no wonder that, so far during the current World Cup, the chance of the team kicking first during a penalty shootout winning is 66.6 percent. Costa Rica and Brazil—kicking first—won their respective shootouts against Greece and Chile in the round of eight, while the Netherlands won their shootout against Costa Rica in this weekend's quarterfinals in spite of shooting second (but countered that by opting to substitute their starting goalkeeper with a penalty specialist, who blocked two shots!).

Soccer pundits tend to decry the penalty shootout, claiming that it is tantamount to a lottery. In fact, the above suggests that it is akin to loaded dice instead, where the lottery is actually in the coin toss, which then loads the deck in favor of the team that wins the coin toss.

But there is a fix, also drawn from the paper authors: If the penalty shootout is kept, at least FIFA authorities could organize it like the ordering of the respective serves in tennis tiebreakers. The fair penalty shootout option would be run like this instead: The first

penalty is taken by the toss coin winner, then the next two penalties by the other team, then the next two by the coin toss winner, and so on, until 10 penalty kicks are completed. If they are tied at that point, they keep taking two penalties per team, alternating which team kicks first.

Brief Organizational and Policy Implications

These evidence-based insights point to two very different types of recommendations for FIFA. One refers to the rules in settling a game, namely changing how the game tiebreaker is conducted in order to at least ensure that the 'dice is not loaded', as per suggestion described above. That should not be unthinkable; after all, following the last World Cup outcry over the goal denied to England against Germany when the ball had clearly crossed the line, FIFA slowly relented and adopted goal line technology—akin to tennis again.

In addition, this work supports the implied message from successful soccer nations to FIFA: Democratic governance matters and so does the fan base of a country. But the odds of FIFA listening to this message are rather slim, because it would mean that the perennial top leadership in this autocratically run organization would have to exit, for starters, allowing for a semblance of democratic transition.

More broadly, we are reminded that just as we have learned that sending billions of dollars in foreign aid, or being rich in natural resources, doesn't guarantee socio-economic development for a country and benefits to the people, neither oil riches nor money alone can "buy" national soccer success either. What makes the difference is good governance.

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Why peace may not be an option for the Middle East

By Barry Cooper

Source: http://www.ipolitics.ca/2014/07/02/why-peace-may-not-be-an-option-for-the-middle-east/

A Palestinian holds a Molotov cocktail during clashes with Israeli border police in Jerusalem on Wednesday, July 2, 2014. The suspected abduction of an Arab teen followed by the discovery of a body in Jerusalem on Wednesday ignited clashes between Israeli police and stone-throwing Palestinians, who saw it as a revenge attack for the killing of three Israeli teens in the West Bank. (AP Photo/Mahmoud Illean)

For several generations, the Middle East has witnessed political confrontation and religious antagonism. Conflicts within the Muslim community have not diminished, nor have differences between Muslims and historic minorities. The most deadly confrontation remains the one between Israel and the Palestinians — a political problem with no foreseeable solution.

Let's start with Israel. It is a small country devoid of strategic depth. Desert buffers and the advantage of fighting on internal lines help, but their great disadvantage is demographic. Its overriding strategic objectives are to avoid attrition, ensure Egypt and Syria never mount a coordinated attack, and never fight a war while dealing with a Palestinian uprising. These are permanent problems.

Israeli success depends upon an external patron — since 1967, it's been the United States. But there is no guarantee that Israeli and American interests will remain compatible. America's Arab interests have constrained Israel's relations with the Palestinians, but geopolitical realities ensure Israel cannot abandon the occupied territories. Its chief problem, therefore, is how to manage a long-term confrontation punctuated by occasional

conflict. Victory is impossible because, ethical considerations aside, repression of the Palestinians would risk uniting its Arab neighbours and add stress to Israel's relationship with the Americans. Either could lead to a genuine existential threat.

Geopolitical constraints on the Palestinians add to regional difficulties. Granting that the Palestinians are a nation (something which is contested both by Israel and by Muslim states), they're a nation without a state — rather like the pre-Israel Jewish people — and they lack the appurtenances of statehood, such as a military. The territory they inhabit is not what they recognize as their own. The organization that speaks in their name, the Palestinian National Authority, does not speak for all Palestinians.

Worse, the claims of the Palestinians are opposed by *all* of Israel's Arab neighbours. Those who dream of a greater Syria include in it both Lebanon and Palestine/Israel; some include Jordan. The 1976 Syrian invasion of Lebanon aimed to extinguish the Palestine Liberation Organization. Nor would the Jordanians welcome a Palestinian state. In 1970 they attacked the PLO and exiled them to Lebanon and the tender mercies of the Syrians. Egypt has never been pro-Palestinian. In 1948 they herded the Palestinians fleeing the war in Israel into the "Gaza Strip," which they considered Egyptian.

Nasser's dream of a United Arab Republic would have incorporated the Palestinians and also aimed at the Saudis and Jordanians. Yasser Arafat was part of Nasser's plan but, as the father of Palestinian nationalism, he was distrusted both by the Israelis and everybody else in the neighbourhood. This made perfect sense: Only the Palestinians think a Palestinian state is in their interest. The much-ballyhooed "two-state solution" is DOA, at least in the Arab world.

Constrained by indifference and hostility, Palestinian interests are also limited by the separation of Gaza and the West Bank, and the differences between an entirely dependent Gaza and a more self-sufficient West Bank. If the two entities were united, Gaza would be by far the largest Palestinian city — another reason the two parts have grown apart. Moreover, the inhabitants of both places are dependent on external aid and on the Israeli economy for their livelihood. Any peace treaty would increase the dependency of the Palestinians on the Israeli economy.

The Palestinians seek the destruction of Israel but lack the capability. Nothing in the history of the Arabs' actions towards Israel could reasonably give them hope of assistance. And if Israel should suddenly evaporate overnight, there would be no reason to expect a Palestinian state to emerge afterwards.

In short, the Middle East — the confrontation between Israel and the Palestinians in particular — is a difficult place because fragmented religious identification is reinforced by incompatible geopolitical interests. There are no apparent solutions to the political problems of the region — which means managing its difficulties is the *only* option.

***Barry Cooper** is a Fellow of the Canadian Defence & Foreign Affairs Institute and professor of Political Science with the University of Calgary*

Students developing an injectable foam to treat battlefield wounds

By Ben Coxworth

Source: http://www.gizmag.com/hardening-polyurethane-foam-wound-treatment/32927/

When a soldier is wounded on an extremity such as an arm or leg, applying a bandage and/or tourniquet to stop the bleeding is typically a fairly straight-ahead process. However, in cases where an injury is received right at the junction between an extremity and the torso – places such as the neck, shoulder or groin – things get a lot trickier. Gauze pads treated with clotting agents are often packed into the wound, although they're not always sufficient for staunching the flow. A group of students from Johns Hopkins University are working on a better alternative, in the form of a hardening foam that's injected into the wound.

The treatment system is based around a syringe-style device that contains two liquids, namely polyol and a diisocyanatein, that are kept in separate compartments – it's not unlike one of those two-part epoxy applicators.

The idea is that when a medic is treating an injured soldier on the battlefield, they use a single plunger on the device to simultaneously inject the two liquids into the wound. As the liquids mix, a chemical reaction occurs. This causes them to transform into a polyurethane foam that expands to fill the wound cavity, and then hardens.

That hardened foam basically acts as a "plug," plus it applies pressure from within to help stop the bleeding. Additionally, while still in its liquid state, the foam is able to run deep and thoroughly into the cavity. This is important, as it's often difficult to find the sources of blood loss in such injuries, and then apply clotting agents to them.

Once the soldier reaches a hospital, it should be fairly easy to remove the foam. "Since the wound will have to be debrided extensively anyway [have its damaged tissue removed], we are not anticipating any issue in that regard," student team leader Sydney Rooney told us. "We are still testing it so we don't know the final answer, but our physicians aren't anticipating for it to be a problem. Ideally, most of the block will be removed in one chunk."

DARPA is in fact also working on a wound-filling foam, although it's intended more for use on abdominal injuries. "Their foam expands to a way larger size and more aggressively than many a junctional bleed permits," said Rooney. "Since the stomach expands, their foam expands by 30 times and it doesn't

matter, whereas if you put it in, say, a junctional neck wound, it could apply too much pressure."

Meanwhile, Oregon-based RevMedX has developed yet another variation on the same basic idea. Its XStat system uses an oversized syringe to inject tiny sponges into the wound, which expand as they absorb blood. It is currently awaiting FDA approval.

The Johns Hopkins device has so far been tested on flesh-simulating gel containing artificial blood vessels, with animal trials planned to take place next.

▶ **Read more on RevMedX at:** http://www.gizmag.com/xstat-combat-injury-treatment-injectable-sponges/30710/

*An experienced freelance writer, videographer and television producer, **Ben**'s interest in all forms of innovation is particularly fanatical when it comes to human-powered transportation, film-making gear, environmentally-friendly technologies and anything that's designed to go underwater. He lives in Edmonton, Alberta, where he spends a lot of time going over the handlebars of his mountain bike, hanging out in off-leash parks, and wishing the Pacific Ocean wasn't so far away.*

People in leadership positions more willing to sacrifice privacy for security

Source: http://www.homelandsecuritynewswire.com/dr20140717-people-in-leadership-positions-more-willing-to-sacrifice-privacy-for-security

People with higher job status may be more willing to compromise privacy for security reasons and also be more determined to carry out those decisions, according to researchers.

This preoccupation with security may shape policy and decision-making in areas ranging from terrorism to investing, and perhaps cloud other options, said Jens Grossklags, assistant professor of information sciences and technology, Penn State.

"What may get lost in the decision-making process is that one can enhance security without the negative impact on privacy," said Grossklags. "It's more of a balance, not a tradeoff, to establish good practices and sensible rules on security without negatively impacting privacy."

A Penn State release reports that in **two separate experiments**, the researchers examined how people with high-status job assignments evaluated security and privacy and how impulsive or patient they were in making decisions. The researchers found that participants who were randomly placed in charge of a project tended to become more concerned with security issues. In a follow-up experiment, people appointed as supervisors also showed a more patient, long-term approach to decision-making, added Grossklags, who worked with Nigel J. Barradale, assistant professor of finance, Copenhagen Business School.

The findings may explain why people who are in leadership roles tend to be more decisive about guarding security, often at the expense of privacy, according to the researchers. In the real world, high-status decision-makers would include politicians and leaders of companies and groups.

"Social status shapes how privacy and security issues are settled in the real world," said Grossklags. "Hopefully, by calling attention to these tendencies, decision makers can rebalance their priorities on security and privacy."

The researchers, who presented their findings yesterday (16 July) at the Privacy Enhancing Technologies Symposium in Amsterdam, Netherlands, used two groups of volunteers in the studies. In the first experiment, they randomly assigned 146 participants roles as either a supervisor or a worker to determine how those assignments changed the way leaders approached security or privacy during a task.

People who were appointed supervisors showed a significant increase in their concern for security. The researchers also found that participants who were assigned a worker-level status expressed higher concern for privacy, but not significantly higher.

Another experiment, made up of 120 participants, examined whether patience was correlated with high-status assignments. The researchers asked the participants how long they would delay accepting a prize from a bank if the size of that prize would increase over time.

For example, the participants were asked how much money they would need to receive immediately to make them indifferent to receiving $80 in two months. As in the previous experiment, the researchers divided the group into high-status supervisors and low-status workers.

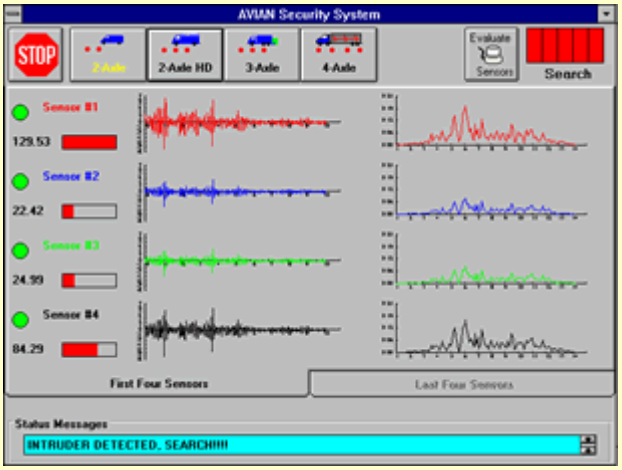
The low-status workers were more impulsive — they were willing to sacrifice 35 percent more to receive the prize money now rather than later. The supervisors, on the other hand, were more willing to wait, a sign that they would be more patient in making decisions with long-term consequences such as privacy and security.

The Experimental Social Science Laboratory at the University of California at Berkeley supported this work.

AVIAN Heartbeat Detector™

Source: http://www.geovox.com/

The Advanced Vehicle Interrogation And Notification System detects the presence of persons hidden in vehicles. Using data from special sensors, AVIAN finds the shock wave generated by the beating heart, which couples to any surface or object with which the body is in contact. AVIAN collects the data and analyzes them using advanced signal processing algorithms to detect a hidden person in less than 1 minute.



The AVIAN System consists of an industrial personal computer loaded with specially developed software, a touch-screen monitor and special sensors. The operator uses the touch-screen to select vehicle type prior to beginning the vehicle scan. The processed data provide the operator with a pass or search indication. The completed search can take as little as **14 seconds** after the sensors are placed on the vehicle. **The system has proven to be 100% effective and reliable in detecting human presence under ideal conditions** (protection from moderate to high winds is required to eliminate false positive indications).

AVIAN is a cost effective method to accurately and quickly search large or small vehicles, regardless of contents, for hidden persons. The one screen operation with icons makes training a simple matter that can be accomplished in less than one hour. The computer system requires no maintenance.

The cost of AVIAN is less than the cost of a single corrections officer or portal security guard. It is accurate and reliable and provides the officer with the capability to rapidly search fully loaded vehicles without moving or disturbing the vehicle contents.

EDITOR'S COMMENT: This innovative detection system was recently purchased by Greek Port Authority. Same systems are already deployed at:_US Border Patrol Demonstration - Laredo, TX Checkpoint (US Border Patrol); Port of Calais, France; Israel Border Authority - Carne Terminal/Gaza Strip (Israel Border Authority and Zeebrugge, Belgium, Hermes Dock (Belgian Immigration Police).

Iron Dome: the public relations weapon

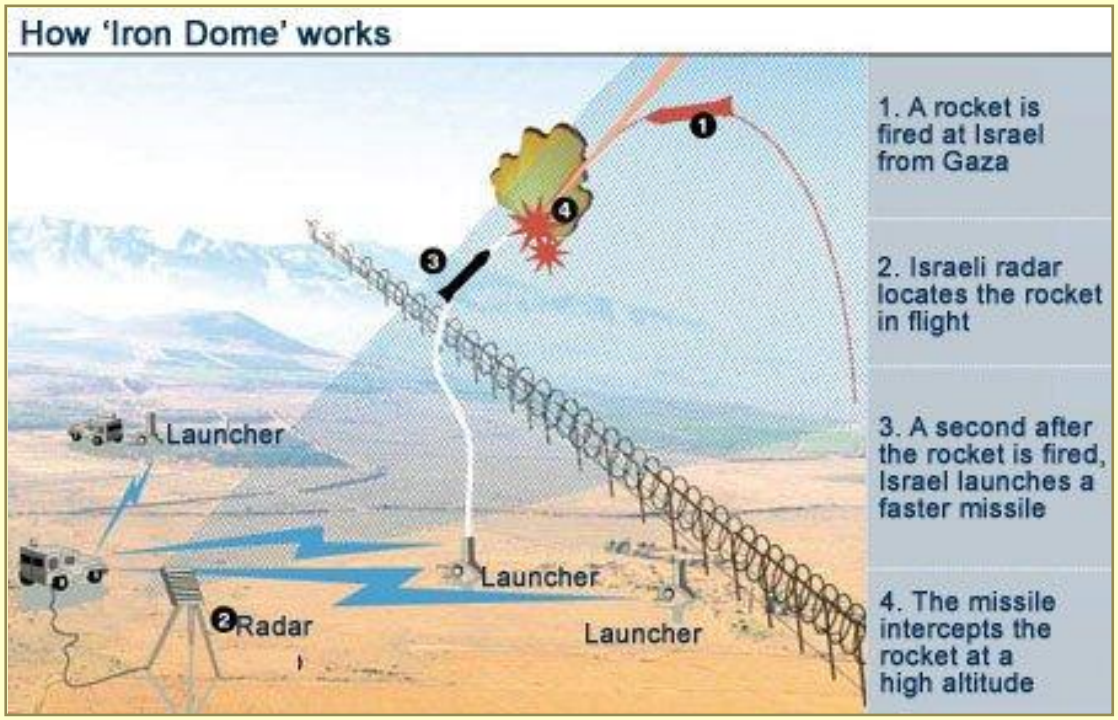
By John Mecklin

Source: http://thebulletin.org/iron-dome-public-relations-weapon7308

With the latest rounds of rocket fire from Hamas fighters in the Gaza strip, Israel's missile defense system, known as Iron Dome, is getting a lot of press again, much of it positive. As with much reporting on missile defense, however, the Iron Dome coverage has lacked context and misconstrued reality.

A CNN article, for example, carried the headline "How Iron

Dome blocks rockets from Gaza, protects Israelis" and described a system that had knocked down 56 rockets fired out of Gaza at a string of Israeli cities. The article suggests that the system is accurate and used "only against rockets headed toward populated areas." It does not suggest that there is any question about the system's effectiveness.



The *New York Times*, noted for its authoritative reporting, wrote that the Israeli Army contended Iron Dome "intercepted about 27 percent of all the rockets fired between Monday night and midday Wednesday." But the *Times* did not indicate how many missiles had been targeted, leaving the efficiency of the Iron Dome system in this conflict unclear**,** even as the newspaper reported that **"**Israel has said that the system has a success rate of nearly 90 percent in intercepting the missiles it is meant to thwart." The *Times* also put a headline over its online story—"A Growing Arsenal of Homegrown Rockets Encounters Israel's Iron Dome"—that could be read as suggesting Israel's missile defense was, overall, as effective as its name implies.

And less rigorous news outlets were, of course, less rigorous in their analysis. The *New York Post,* for instance, reported that "Israel foiled Hamas terrorist attacks from the air and sea."

Ted Postol, an MIT-based missile defense expert and frequent *Bulletin* contributor, provided a dose of context to the Iron Dome coverage in a National Public Radio interview Wednesday. "We can tell, for sure, from video images and even photographs that the Iron Dome system is not working very well at all," Postol said. "It—my guess is maybe [it hits a targeted missile] 5 percent of the time—could be even lower. ... And when you look—what you can do in the daytime—you can see the smoky contrail of each Iron Dome interceptor, and you can see the Iron Domes trying to intercept the artillery rockets side on and from behind. In those geometries, the Iron Dome has no chance, for all practical purposes, of destroying the artillery rocket."

Regular readers of the *Bulletin* are well aware of the long history of inflated claims of missile defense efficiency.

Late in 2012, MIT researcher Subrata Ghoshroy brought some reality to hyperbolic claims about Iron Dome's performance in an earlier Israel-Hamas clash: "Israel seems to have shared little information to date, and so there is no way for observers outside the Israeli defense forces to know how successful Iron Dome actually was."

More important, perhaps, Ghoshroy noted that appraisals of Iron Dome should not be misinterpreted as vindication of defense systems that aim to protect against sophisticated, long-range missiles of the type designed to carry nuclear weapons. His analysis is worth quoting at length: "First, let's debunk the myth that Iron Dome—even if as successful as advertised in the Gaza conflict—constitutes proof that missile defense, writ large, works. Terminology is important here. Iron Dome is primarily a rocket defense system, and rockets are fundamentally different from missiles. Rockets do not have a guidance system; missiles do. Rockets follow a trajectory that is determined by the position and angle of the launcher and the propellant. ... While destroying a rocket in this way is a great technical feat, it is not the `hit to kill' system on which the US missile defense effort has been premised, and the Iron Dome system is not intended to work against larger ballistic missiles."

(Many, many *Bulletin* articles--including a remarkable knockdown, written by Postol and Cornell University researcher George N. Lewis, of a 2012 National Academies missile defense assessment—have chronicled the long, abysmal record and extraordinary cost of the United States' efforts to create a system that could shoot down intercontinental ballistic missiles in mid-flight. Among other things, those articles have noted over time an enduring reality: Simple, cheap decoys and other countermeasures will likely be able to fool the tracking systems for the mid-flight missile defense platforms the United States has largely focused on developing.)

So if Iron Dome says little about the state of true missile defense, and if its effectiveness against short-range rockets is at best unclear and likely overstated, why does the system seem to take center stage whenever Hamas and Israel clash? The answer to that question seems to lie in the public relations arena.

As Postol noted in his public radio interview, Hamas rocket attacks are part of an "intended game." Hamas fires its relatively small, generally inaccurate, and largely ineffective rockets into Israel from Gaza, knowing from past experience that Israel's response will likely involve air strikes that will, despite the accuracy of Israel's high-tech weaponry, kill innocent civilians and, Hamas hopes, make Israel seem a callous oppressor in the eyes of the world.

Meanwhile, the Israeli government presents Iron Dome's performance as part of a sophisticated public relations effort that aims to persuade the broader public that Hamas is a heartless and calculating terrorist organization and Israel's defense forces are decent, determined, and effective. It's an effort that includes, for example, *idfnadesk*, the YouTube page for the Israel Defense Forces, which offers a video titled "Iron Dome Intercepts Rockets Over Ashdod," among many videos highlighting purported Hamas cruelty and Israeli "pinpoint" and "precision" weapons. To the extent it fills news cycles with reports on Hamas rocket attacks and Iron Dome's supposed technologically advanced method of intercepting them, this PR effort also deflects attention from the human consequences of Israeli bombing strikes in Gaza.

Iron Dome is high-tech. So is the public relations campaign around it, a reality that more of the world news ecosystem could beneficially take note of.

Before the Bulletin, ***John Mecklin*** *was editor-in-chief of Miller-McCune (since renamed Pacific Standard), an award-winning national magazine that focused on research based solutions to major policy problems. Over the preceding 15 years, he was also: the editor of High Country News, a nationally acclaimed magazine that reports on the American West; the consulting executive editor for the launch of Key West, a regional magazine start-up directed by renowned magazine guru Roger Black; and the top editor for award-winning newsweeklies in San Francisco and Phoenix. In an earlier incarnation, he was an investigative reporter at the Houston Post and covered the Persian Gulf War from Saudi Arabia and Iraq. Writers working at his direction have won many major journalism contests, including the George Polk Award, the Investigative Reporters and Editors certificate, and the Sidney Hillman Award for reporting on*

social justice issues. Mecklin holds a master in public administration degree from Harvard's Kennedy School of Government.

Cyprus 40 years on. Do you really want a solution? Abandon 'realism'

By Vassilis K. Fouskas

Source: http://www.opendemocracy.net/can-europe-make-it/vassilis-k-fouskas/cyprus-40-years-on-do-you-really-want-solution-abandon-realism

Every July I cannot stop thinking of that morning of July 20, 1974. A boy, born and raised on the Greek island of Lesbos, in very close proximity to Turkey, listening as his mother tells him that Turkish planes are flying over the village, and that we may be invaded.

Forty years have passed since summer 1974 and the Cyprus issue remains unresolved. What a shame for a country in which the number of international actors involved is disproportionate not just to the size of the island and its resources, but also to the hypocrisy employed by all those boasting that the plight of the island is due to the historic enmity between Turks and Greeks.

Every July I cannot stop thinking of that morning of 20th July 1974. A young boy of eleven years old, born and raised on the Greek island of Lesbos, north-east Aegean and in very close proximity to Turkey, listening to his mother telling him that Turkish planes are flying over the village and that we may be invaded.

My father was called up and left the house. He later explained to my mother (though I was listening hiding behind the door) how chaotic and disorganised this call up was and that Turkey, if it wanted, could have taken over not just Lesbos, but all of the Eastern Aegean islands (years later, in a seminar given in Chatham House in London by Bulent Ecevit, Turkey's PM at the time of invasion, it was confirmed that Turkey had plans to take over Chios, a Greek island just south of Lesbos, in the event of Greece assisting in Cyprus' defence).

With my father absent, I was left alone for several days with my mother and 2-year old sister. I felt like it was now my job to take up the role of the protector of the family. Secretly, I took my mother's long knife from the kitchen and slept with it under my pillow, so I could defend my mother and my little sister from the possible barbaric invader. It was an extraordinary feeling. It made me feel so proud at that young age. Education in school boosted this feeling in the years that followed.

Paradoxically, it was only thanks to my father, who pushed me into alternative political educations, that I began questioning the image of "barbaric Turks" and "angelic Greeks"; and also thanks to my grandmother, herself a refugee from Moschonissia, today's Cunda in Turkey, by the town of Ayvalik opposite Lesbos, that I realised how wrong was the nationalistic narrative about Greek-Turkish relations I was bred with.

"Politicians", my grandmother used to say, "divide people". Read this amazing statement in light of the realist theory and practice of international politics, which postulate that the international system is anarchic and that every state unit in it aims at achieving conditions at the expense of the other using politics and strategies of "divide and rule". My grandmother knew better and well before realism became an established school of thought in the discipline of international relations after WWII: she and her family, together with Muslim families, lived peacefully in Moschonissia for centuries, but a combination of imperial and nationalistic policies, led by Lloyd George and Eleftherios Venizelos respectively, divided them.

The Cyprus story is not far-off the mark. As we have shown elsewhere, Cypriot nationalism - whether Turkish or Greek - is the derivative of imperial and nationalistic (read: realist) politics rooted in the history of regional and European politics from the 18th century onwards and, undoubtedly, the policy of Britain in the 1950s, which pitted the Turks against the Greeks in an effort to hold sway on the island.[1]

Makarios was perhaps the only visionary leader of the "independent" Cyprus, the result of 1959-60 Zurich-London agreements. "Independent", because, unlike other statehood arrangements, Cyprus sovereignty was to be "guaranteed" by Britain, Turkey and Greece, and this was something that contravened the very charter of the UN. But in a realist world everything is possible and even legitimate. And when Makarios, the only sensible leader Cyprus possessed at the time, tried in 1963 to explain to his patrons that the Constitution was unworkable because of the equal veto rights given to his Turkish vice-President, Turkey threatened to use its guarantor rights to invade the island to protect the rights of its minority (18%).

Makarios was alone. Pro-NATO mainland Greek politicians castigated him because they did not want a war with Turkey. Turkey was concerned with Makarios' victories at the UN, when the 186 UN Security

Council resolution of 1964 ordered Makarios to impose order on the island since he was the only sovereign force. Cypriot nationalists, both Greek and Turks, hated him because the former believed that Makarios betrayed the cause of "enosis" (union with Greece) whereas the latter saw their dream of "taksim" (partition) withering away. Henry Kissinger abhorred him: for Kissinger, if Cyprus did not belong to a friendly NATO power, the security and defence of Israel could not be guaranteed (Makarios was one of the founders of the non-aligned movement and refused to provide assistance to the USA and Kissinger during the Yom Kippur war of October 1973).

Makarios wanted a truly independent Cyprus, that is, to throw his small island-state into the world of the anarchic international politics of the time, ie, the Cold War, but independence he did not get. Refusing to accept Dean Acheson's plan for the division of Cyprus between Greece and Turkey, everybody had a reason to conspire to overthrow and eliminate Makarios as a factor in the politics of the Eastern Mediterranean. Eventually, he saw his state invaded by Turkey twice, on 20 July and 14-16 August of 1974.

Turkey effected partition and forced ethnic populations to concentrate in the northern (Turkish Cypriots) and the southern (Greek Cypriots) part of the island, pretty much along the lines of the Greek-Turkish population exchange of 1923, the difference being that no international Treaty had sanctioned this population movement. Since then, things have become worse. Turkey and the Turkish Cypriot administration began fighting for international recognition. At the same time, Turkey encouraged thousands of Turks and Kurds from mainland Turkey to populate the abandoned houses of Greek Cypriots in the north (today the number of settlers in northern Cyprus outnumber the Turkish Cypriots). Greek-Cypriot governments, claiming that they are the sole legitimate governments representing the entire island, pushed for EU accession, which it achieved in 2004.

But the interesting thing to note is that all attempts at a solution to the Cyprus issue - an issue that pre-dates the Turkish invasions of summer 1974 - involve high/elite politics and operate in the realm of *realpolitik*. The official narrative of the so-called "international

community" (NATO, the EU, the UN), which many elites in Greece, Turkey and Cyprus have effectively espoused, goes as follows: Cyprus has been *de facto* divided since 1974 and too many settlers are now in northern Cyprus and many of them have children and even grandchildren born in Cyprus; history shows that Greeks and Turks cannot live together but since it is unfair to give too much territory to Turkish Cypriots given that before the invasion they amounted to just 18% of the population, any settlement should force the Turkish side to concede some territory, more or less along the lines of the Annan plan of 2002-04, which the Turkish Cypriots voted in favour but the Greek Cypriots against. But the principle of ethnic partition into two separate statelets connected through a loose co-federal Constitution with many governance layers, such as in Bosnia, should remain intact. This is the same old wine in a different bottle.

The future of Cyprus, and of peace in Cyprus, should not rest in the hands of political elites, whether of endogenous or exogenous origins, or both. History has indeed proved the exact opposite of the official, realist narrative. It has indeed proved that Cyprus is the victim of the incompetence of all those past elites to provide a just and viable solution to the Cyprus issue along the lines of realist interests, i.e. national and imperial interests. We need to go back to the wisdom of my grandmother, that "realist politics is a divisive force" and try to move beyond realism.

Do you want a solution to the Cyprus issue, and indeed of every similar issue across Europe? The only way forward is to move beyond the realm of *realpolitik* and to engage with civil society in a manner that raises the issue of solidarity and fraternity on the basis of the ontology that unites society itself, and these are the values of labour, family and anti-nationalist and anti-imperial education; re-discover and re-define diversity (ethnic, state, religious, gender) as being fundamentally resourced, and thus historically determined, by labour and re-production of life.

All people, in this respect, are the same and can live peacefully side by side, provided that politics is a function of collectivity and social solidarity and not an elite function serving state/bureaucratic realist interests. It seems that my grandmother had sensed and rationalised something that contemporary social theorists have difficulties in understanding. These are the bases upon which new understandings and new forms of social democratic politics can be built and flourish.

Children of 11 years of age should not be raised in conditions I was raised and should not feel the way I felt at the time. Victims of *realpolitik* themselves, these children may not be as lucky as I was having the family I had and the grandmother I had. These children may then become leaders of the extreme nationalist, racist and even anti-Semitic politics that endanger the very democratic premises of European politics today and of Greece in particular.

Note

[1] Vassilis K. Fouskas and Alex O. Tackie (2009), *Cyprus. The Post-imperial Constitution* (London: Pluto press)

Vassilis K. Fouskas *is the Director of the Centre for the Study of States, Markets & People (STAMP) at the Royal Docks Business School, University of East London, the founding Editor of the* Journal of Balkan and Near Eastern Studies *(Routledge, quarterly since 1998) and the author (with Constantine Dimoulas) of* Greece, Financialisation and the EU. The Political Economy of Debt and Destruction *(Palgrave, 2013).*

Last of Syria's chemical weapons handed over for destruction, international body says

Source: http://www.washingtonpost.com/world/middle_east/agency-last-of-syrias-chemical-weapons-handed-over-for-destruction/2014/06/23/4eb9a138-fad9-11e3-8176-f2c941cf35f1_story.html

International weapons inspectors announced Monday (June 23) that Syria has handed over the last of its declared chemical weapons stockpile for removal and destruction, even as U.S. officials voiced concern about the Damascus government's alleged use of other toxic

substances.

The Organization for the Prohibition of Chemical Weapons (OPCW), which was charged last year with overseeing the destruction of Syria's chemical weapons under an agreement between the United States and Russia, took control of the "last consignment" of the deadly chemicals, which were loaded onto a ship at the Syrian port of Latakia, the agency's director general, Ahmet Uzumcu, said in a statement.

"A major landmark in this mission has been reached today," Uzumcu said Monday. "The last of the remaining chemicals identified for removal from Syria were loaded this afternoon aboard the Danish ship Ark Futura."

He said **the next step involves delivering the chemicals "for destruction at the assigned facility on board the U.S. vessel Cape Ray and at commercial facilities" in the United States, Britain, Finland and Germany.**

Secretary of State John F. Kerry hailed the OPCW's announcement, but he also pointed to what he called alarming evidence that the Syrian government has begun using chlorine gas in rudimentary bombs dropped from aircraft on opposition residential areas.

"It's very important, however, even as we mark this moment of removing 100 percent of the declared weapons, that we understand that our work is not finished," Kerry told reporters during a diplomatic visit to Iraq.

"There are still some serious issues that remain to be addressed, and we are not going to stop until those have been addressed," Kerry said.

The Syrian government has delayed and obstructed the OPCW in its work, and **there are still questions about whether Syria's initial declaration of its stockpiles was complete, he said.**

In a news conference in The Hague, Uzumcu said **the last shipment amounted to 8 percent of Syria's 1,300-ton stockpile.**

The Syrian government agreed to surrender its chemical arsenal last fall when President Obama threatened to launch missile strikes in retaliation for deadly chemical attacks on rebel-held suburbs of the Syrian capital, Damascus. U.S. officials said the attacks in August killed more than 1,400 civilians, including at least 426 children. A U.S. government assessment concluded that the attacks were the work of the Syrian government of President Bashar al-Assad.

Uzumcu described the chemical disarmament program that resulted from the U.S.-Russian agreement as unprecedented.

"Never before has an entire arsenal of a category of weapons of mass destruction been removed from a country experiencing a state of internal armed conflict," he said. "And this has been accomplished within very demanding and tight time frames."

Uzumcu added that although a major chapter in OPCW's efforts is closing, the organization's work in Syria will continue. "We hope to conclude soon the clarification of certain aspects of the Syrian declaration and commence the destruction of certain structures that were used as chemical weapons production facilities," he said.

The disarmament program ground to a halt in April because Syria insisted on holding on to 27 tons of sarin precursor chemicals as

leverage in a dispute with the international community over the future of facilities used to store the deadly agents, U.S. officials said. The Assad government missed an April 27 deadline to turn over the remaining 8 percent of its chemical arsenal, which was stored in 16 containers in Damascus, the officials said.

In a written statement expanding on his remarks Monday at a news conference in Baghdad, Kerry said, "In the coming weeks, the United States stands ready to begin destruction of a large amount of Syria's chemical weapons precursors." But he stressed that "very serious issues remain and must be resolved."

In addition to the reported use of chlorine gas, he said, "the Syrian regime has dragged their feet on destroying production facilities," and the world continues to be "appalled at the death toll from the regime's continued attacks on its own people, as well the grave humanitarian crisis."

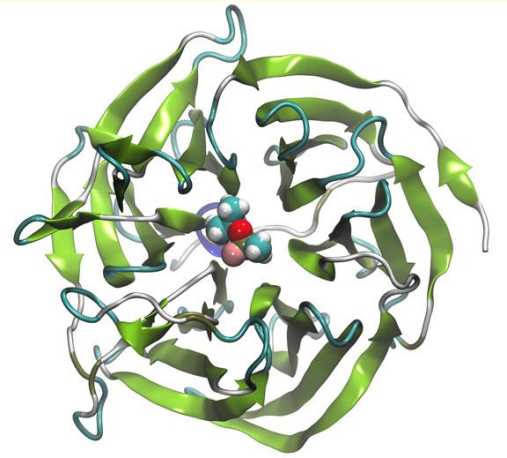
"The worst of the weapons are gone, but the despicable regime and the crisis it has created remain and require our collective focus," Kerry said.

EDITOR'S COMMENT: OK! Now we have all Syria's CWAs at hand! Hope soon to hear the first announcements on destruction process on board and on shore! But was the stockpile accurate? Did Assad deliver everything? And even if he did, what about the human factor? The scientists that kept the program going for such a long time? We did not destroy all chemical infrastructures in Syria, didn't we? Who can answer these questions besides history and future? Then why hydrolysis and not **PACWADS** (PyroGenesis Tactical Plasma Arc CWA Destruction System)?

Engineered enzymes to neutralize deadly effects of chemical weapons

Source: http://www.homelandsecuritynewswire.com/dr20140624-engineered-enzymes-to-neutralize-deadly-effects-of-chemical-weapons

Researchers at the University of Tennessee are a step closer to creating a prophylactic drug that would neutralize the deadly effects of the chemical weapons used in Syria and elsewhere.



Jeremy Smith, UT-ORNL Governor's Chair and an expert in computational biology, is part of the team that is trying to engineer enzymes — called bioscavengers — so they work more efficiently against chemical weapons. The work is a joint effort between scientists at UT, Oak Ridge National Laboratory, and a French national laboratory in Grenoble. Their study was published recently in the *Journal of Physical Chemistry*.

A UT release reports that nerve agents, such as sarin, are among the most highly toxic chemical weapons. The study focuses on engineering enzymes that catalyze the hydrolysis of nerve agents as a prophylactic approach to diminishing their toxic effects.

Nerve agent sarin bound to bioscavenger enzyme.

"Enzymes exist that can potentially chew up nerve agents and render them useless before they've had time to act, but they need to be improved to work faster," Smith said.

The researchers are using neutron scattering and computational sciences to study these **nerve agent bioscavengers**. Neutron scattering allows the scientists to get a detailed three-dimensional view of the enzymes. Computer simulation then uses this view to understand how the enzymes break down the nerve agents.

"The simulations produced an unexpected result," Smith said. "The enzymes break down sarin in an unusual way. Now we can use that result to engineer them rationally."

The team is seeking funding for research into how the enzyme — **a protein that doesn't exist in the human body but is made in nature by squid** — can be modified so it is more efficient in degrading specific nerve agents. There is much work to be done, including introducing key changes, or mutations, that would improve the activity of the enzyme.

"Using an enzyme from a squid as a bioscavenger in humans is problematic because the human body will recognize it as a foreign substance and chop it up," said research team member Jerry Parks, a research staff scientist in ORNL's Biosciences Division. "Other groups have already shown possible ways to get around that problem. Also, there happens to be **a similar enzyme in humans that is currently being developed by other groups.** Information from our study may benefit them too."

The release notes that ultimately, the researchers will have to figure out the best way to administer the enzyme to humans. It probably would be an injection, but it could be an aerosol spray or a patch. Still, the work holds promise to help make the world a safer place.

"We hope that prophylactically administering efficient bioscavengers will make the use of nerve agents much less attractive to belligerents," Smith said.

— Read more in Troy Wymore et al., "Hydrolysis of DFP and the Nerve Agent (S)-Sarin by DFPase Proceeds along Two Different Reaction Pathways: Implications for Engineering Bioscavengers," Journal of Physical Chemistry B *118, no. 17 (10 April 2014): 4479-89*

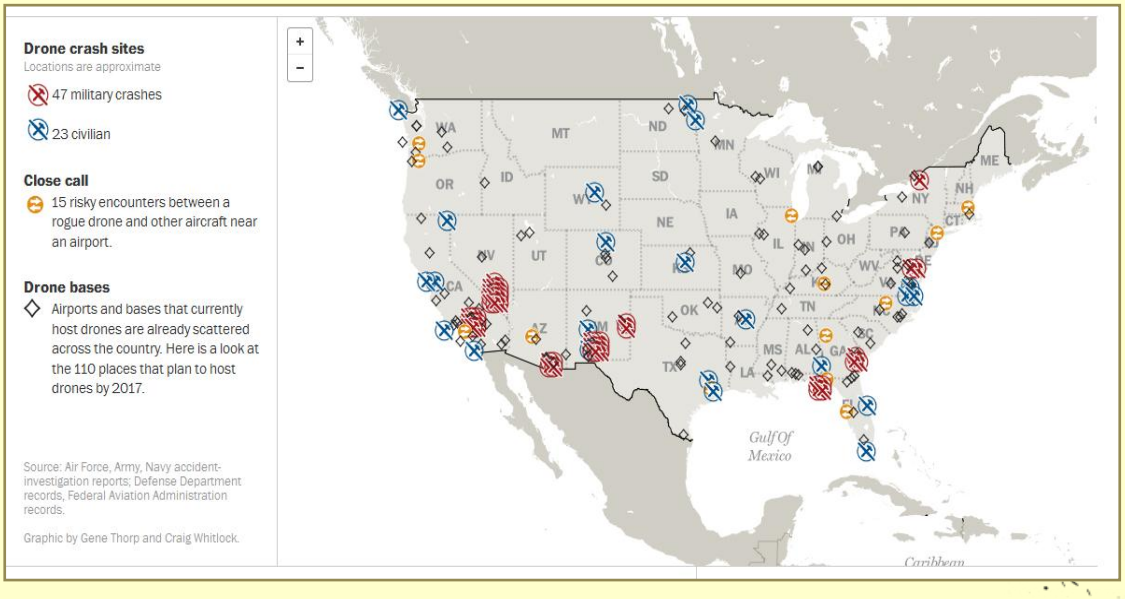
Close encounters on rise as small drones gain in popularity

Source: http://www.washingtonpost.com/sf/investigative/2014/06/23/close-encounters-with-small-drones-on-rise/

Copy from this article:

Drone failures on the home front

Accident investigation documents show that 47 military drones crashed in the United States between 2001 and 2013 in what the military categorized as Class A accidents — the most severe category. The



Pentagon is planning to expand drone operations to at least 110 bases in 39 states by 2017 (the map below is interactive).

Civilian drone incidents are also rising. Public agencies have reported 23 accidents involving authorized drones since 2009. And the FAA says pilots have reported 15 close calls with small rogue drones near airports in the past two years.
The problem is worsening just as the federal government is preparing to lift barriers that could flood the country's already congested skies with thousands of remotely controlled aircraft. Under a law passed two years ago, Congress ordered the FAA to issue rules legalizing drones for commercial purposes by September 2015 — the first step in a new era of aviation that will eventually allow drones of all sizes to fly freely in the national airspace, sharing the same airports as regular planes.

Then in the same article was this photo:

EDITOR'S COMMENT: Why using PPE/masks when approaching the fallen UAV? **R-source on board (DU)?** Or just aviation gas?

The CBRNe Cluster at Eurosatory 2014

By David Oliver
Source: http://www.cbrneportal.com/the-cbrne-cluster-at-eurosatory-2014/

This year, 1,500 exhibitors, including 89 CBRN companies, and approximately 58,000 professional visitors were expected at Eurosatory 2014, up respectively by 5% and 10% from the previous event two years ago.
IB Consultancy led a number of CBRN-related briefings as part of its NCT Briefings series during the exhibition. The topics included "European Union CBRN countermeasures stockpiling: what are the benefits?", "Bioterrorism and Anthrax in the European Union: threat of hoax?" and "Robotics in the field of CBRNe: benefits and future applications?".

CBRN-configured vehicles and innovation were to the fore at Eurosatory 2014. Iveco Defence Vehicles unveiled a new variant of its Light Multirole Vehicle (LMV) at Eurosatory 2014 in Paris in a specialist chemical, biological, radiological, and nuclear (CBRN) reconnaissance configuration for the Czech LOV-CBRN programme.

A development contract for a lightweight armored vehicle equipped for CBRN reconnaissance, known as LOV-CBRN, was signed in 2010 and the company has now delivered the first prototype vehicle to the Army of the Czech Republic (ACR).

The **LOV-CBRN** is built on the long-wheelbase version of the LMV and fitted with a CBRN analysis cell. The vehicle is to conduct mobile CBRN reconnaissance and chemical, biological, and radiation observance when static. For this the vehicle is fitted with a CBRN mission kit, including CBRN sensor and an Orpheus AC2 unmanned ground vehicle (UGV), an onboard information system, and additional systems for a remote observation post carried on a Clearmont Automotive CL ARM 35 KV towed trailer.

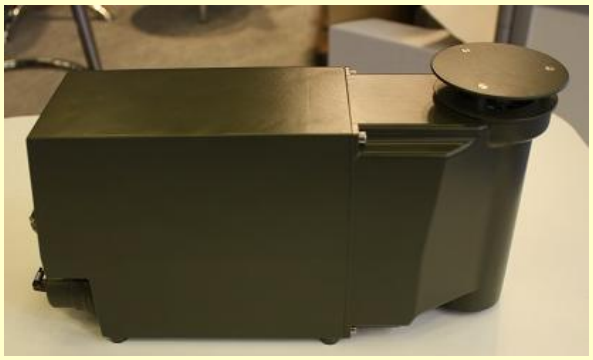
Part of Saab's networked CBRN systems included a CBRN-configured concept vehicle also based on the Iveco LMV that was equipped with the Saab Automatic Warning System (AWS) and a variety of sensors for the detection, sampling and carriage of CBRN and/or toxic industrial materials (TIM).

The equipment can be customized for any light to mid-size vehicle and Saab's Martin Nyberg told CBNW that the company has an undisclosed Middle East export customer for the system.

Germany's Rheinmetell MAN Military Vehicles (RMMV) and the Austrian company Achleitner have built a prototype mid-size armored vehicle which was presented at Eurosatory configured for a CBRN-reconnaissance role. The **4×4 Survivor R** shown was equipped with a comprehensive suite of CBRN detection equipment including an OWR sampling system, a Bruker MMR mass spectrometer and a Roda NBC Inspector.

The UK company Gallay Ltd exhibited a new modular CBRN airflow filtration system designed to filter biological warfare agents, as well as industrial toxic chemicals. Lighter

and smaller than competing products due to its removable HEPA lining filter and brushless DC motors, the modular system gives customers a wide choice of options and customization.



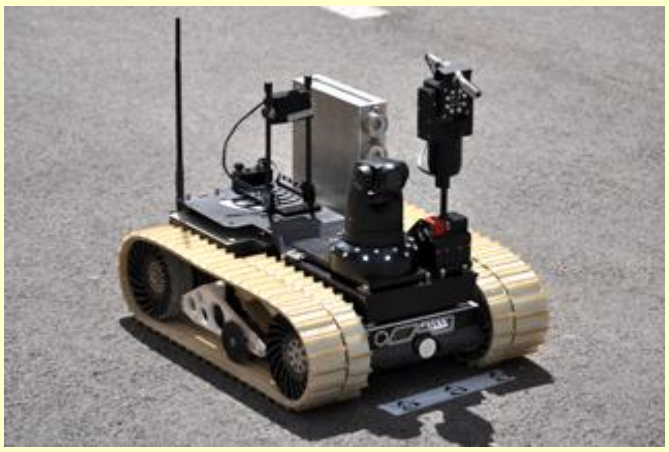
Proengin launched its new combined biological and chemical detector for mobile platforms, the **AP4C-VB.** This single sensor continuously detects toxic gases and living particles and gives alarm in real time. Unidentified agents, or Non Traditional Agents (NTA), can be detected by the AP4C-VB flame spectrometers as well as an unlimited number of toxic industrial gases.

When mounted on the exterior of a vehicle, the AP4C-VB is designed to be opened without any type of filter to be changed or any piping driving contaminated air into the crew cabin.

Israel's Beth-El System showed its EPCS 180 VM-3, a compact modular ventilation/NBC filtration system combined with an air conditioning unit to provide humidity and temperature controlled clean air to a vehicle crew compartment. In addition, carbon monoxide filtration is integrated with the system that cleans the air from harmful gases caused by weapons' firing stations.

Beth-El EPCS 180 VM-3 is designed to protect the vehicle and crew with constant protection in both traditional conflict scenarios as well as combining asymmetric threat scenarios by enabling permanent operation due to longevity of filters reliable design.

Another Israeli company, Supergum Industries Ltd., a leading manufacturer of CBRN protective solutions for military, civilian, and Homeland Security applications, presented a range of high quality CBRN protective solutions at Eurosatory 2014. The Company has been a supplier to the Israeli Defence Force for 30 years, meeting the most stringent military specifications, with its products in use worldwide. The company specializes in respiratory and skin protection systems including disposable suits, over pressure hoods and protective footwear.



ECA Robotics CAMELEON CBRNe is a small tracked Unmanned Ground Vehicle (UGV) equipped for CBRN detection, sampling and investigation designed for the protection of first responders. In addition to a 360 degree video camera and integrated mast pan and tilt video cameras, CAMELEON is equipped with multiple chemical, radiological and explosive sensors including a pyrometer, gas and liquid sample collector, universal radiological sensor support (Gamma, Neutron, radiometer) and

universal chemical sensor support (explosimeter, PID, TIC, CWA, multigas) In CBRNe configuration, it has pre-defined manipulator arm movements as a piloting aid. The UGV's major task is to keep operators safe during measuring of explosion risk and dose rate sampling.

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

Details of oil shipments by rail are not security sensitive and should be released

Source: http://www.homelandsecuritynewswire.com/dr20140625-details-of-oil-shipments-by-rail-are-not-security-sensitive-and-should-be-released-dot

Transportation Secretary Anthony Foxx issued an order in May for railroads to provide states with details on routing and oil-train volumes. **The order applies to trains carrying a million gallons or more of oil from the Bakken region of North Dakota, Montana, and parts of Canada.** Following the announcement, railroads sought to keep details of shipments classified for business and security reasons, but with the backdrop of a series of oil train accidents, including a July 2013 train derailment and explosion in Quebec which killed forty-seven people, state legislators moved to inform counties and emergency responders about incoming oil train shipments.

Last week, U.S. Department of Transportation officials affirmed that details about volatile oil train shipments are not sensitive security information,

thereby allowing states to release such information to the public to allay safety concerns.
The Federal Railroad Administration notes that even though releasing shipment information is not a danger to public safety, it may interfere with business; therefore railroads may work directly with states to restrict specific information on oil shipments.
The *Muscatine Journal* reports that BNSF Railway, CSX, and Union Pacific have convinced California, New Jersey, Virginia, Minnesota, and Colorado to restrict releasing shipment details to the public, but Montana will release information on behalf of the state's open records law. "Part of the whole reason the federal government ordered that this information be given to states is to protect the communities through which these trains roll," Andrew Huff, chief legal counsel for Governor Steve Bullock said*s*. "If there's not some federal pre-emption or specific regulation or statute that prevents release of this information, then under our records laws we have to release it." Washington State will release oil train details but has given railroads time to seek a court injunction challenging the release of information.
The boom in oil shipments by rail is largely due to the growing production of shale oil from the Bakken fields in North Dakota and Montana, but also due to the slow construction of new oil pipelines. **According to the *Congressional Research Service,* U.S. freight railroads are estimated to have carried 434,000 carloads of crude oil in 2013 compared to 9,500 carloads in 2008. In 2014, 650,000 carloads of crude oil are expected to be carried. So far U.S. crude oil shipments by rail have reached a record 110,000 carloads in the first quarter of 2014.**

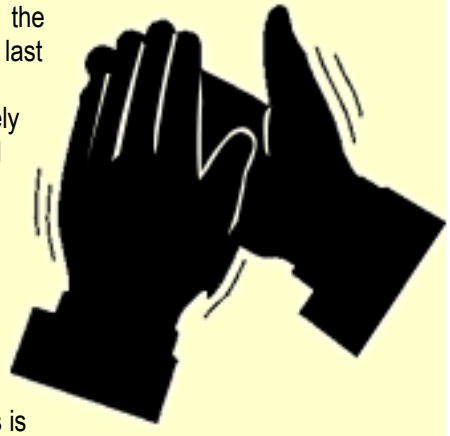
Terror May Become a Bigger Focus at Med School

Source: http://www.nti.org/gsn/article/terror-may-become-bigger-focus-med-school/?mgs1=07cfgmQAOH

A team of professors near New York City wants to make terrorism a larger focus for medical-school students across the United States.

A plan now taking shape would insert discussions of terror threats -- such as a biochemistry-course lecture on nerve agents -- throughout the four-year curriculum at **Rutgers New Jersey Medical School**, said **Leonard Cole, director of the school's Terror Medicine and Security Program.**

If a crowd of people suddenly begins "shaking and quivering and frothing at the mouth ... it would not be a smart thing for you to run and try to help," he said, referencing the symptoms shown by hundreds of people in last year's sarin-gas strikes in Syria.



Cole said that kind of awareness is still largely absent in U.S. medical schools, despite a call issued more than a decade ago by an organization that helps to accredit them. **Writing for the Association of American Medical Colleges in 2003, an expert panel declared that dealing with chemical, biological, radiological and nuclear attacks should be "an integral component" of what medical schools teach.**

The recommendation is "still not yet broadly implemented," Cole told *Global Security Newswire* in a June telephone interview. "We want to inculcate in the culture of our medical school and our medical curriculum the notion that this is just part of what you have to learn to be prepared for. The kids, as they graduate, [now] really don't have that sense."

The proposal under consideration at Rutgers would insert talk about unconventional weapons and other terrorism threats into numerous medical-school classes, as well as its first-year orientation. Students also would have an option to take a final-year course focusing on such dangers exclusively, Cole said.

"If we are successful, there's no reason we couldn't expect others to be successful," he said. Cole and other school faculty plan to explore teaching recommendations in a series of medical-journal articles now under preparation.

The Elimination of Syria's Chemical Weapons: Beginning of the End or End of the Beginning?

By Gregory Koblentz

Source: http://pandorareport.org/2014/06/23/the-elimination-of-syrias-chemical-weapons-beginning-of-the-end-or-end-of-the-beginning/

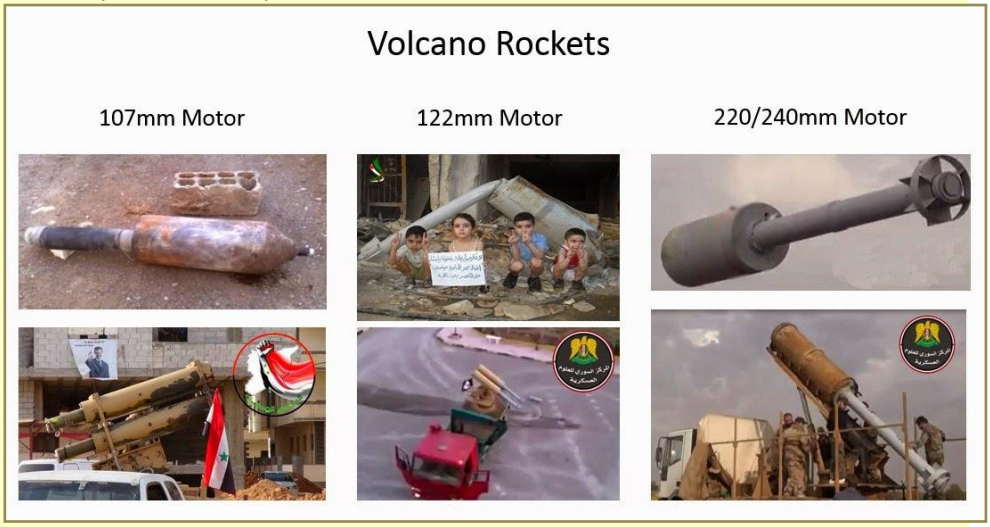
Ahmet Üzümcü, Director-General of the OPCW, has announced that the last shipment of chemical warfare agent precursors has been loaded onto the Danish ship *Ark Futura* at the Syrian port of Latakia. Syria is now officially free of chemical weapons.

The OPCW deserves a lot of credit (and yes, the Nobel Peace Prize) for its Herculean efforts to disarm Syria of its chemical weapons in the middle of a civil war. While this final shipment closes a chapter on the elimination of Syria's chemical weapons program, it does not mean the story is over. Here are five things to keep in mind before we break out the "Mission Accomplished" banner.

First, Syria should have completed this final shipment over four months ago. The OPCW's original deadline for removing all chemicals from Syria was February 5, The delay was due to the civil war, Syria's use of the stockpiles as a bargaining chip, and domestic politics (Syria stopped making shipments during the Syrian presidential election).

Second, the process of actually destroying these chemicals, which is supposed to be completed by June 30, has only just begun. The most dangerous chemicals, including mustard agent and sarin precursors, will be destroyed on board the MV Cape Ray. It is estimated it will take the Cape Ray between 60 and 90 days to complete its mission but since this is an unprecedented at-sea chemical destruction process, the process could take even longer depending on the weather and unforeseen technical issues.

Third, the OPCW has only eliminated Syria's declared stocks of chemical agents. During April and May 2014, rebels reported over a dozen attacks by government forces with air-dropped barrel bombs filled with chlorine. Although chlorine is not one of the chemicals that Syria was required to declare, the use of any chemical as a weapon is outlawed by the Chemical Weapons Convention. Just last week an OPCW fact-finding mission found that "toxic chemicals, most likely pulmonary irritating agents such as chlorine, have been used in a systematic manner in a number of attacks."



Fourth, Syria has still not destroyed 12 chemical weapon production facilities located in aircraft hangars and in underground tunnels. Syria was supposed to have destroyed these facilities over three months ago but has been dragging its feet while insisting on the right to disable, instead of demolish, the facilities.

Fifth, serious questions are starting to emerge about "gaps and inconsistencies" in Syria's declaration of its chemical weapon program to the OPCW. Syria's repeated delays in removing its chemical stockpile, refusal to destroy chemical weapon production facilities, and continued use of chemical weapons does not inspire

confidence that it is in compliance with other aspects of the CWC. Now that the last of the declared chemicals are out of Syria, the OPCW will have more time and energy to devote to verifying the accuracy and completeness of Syria's declared chemical weapon research, development, testing, production, and storage. Priority should be given to the 200 tons of mustard agent that Syria reportedly destroyed unilaterally before joining the CWC, Syria's possession of the Volcano rocket which has been implicated in the August 2013 sarin attack (Ghouta's suburbs of the Markaz Rif Dimashq district around Damascus), and Syria's use of chlorine-filled barrel bombs.

To paraphrase Winston Churchill, this is not the beginning of the end of efforts to eliminate Syria's chemical weapons, but the end of the beginning.

Gregory Koblentz *is an Associate Professor in the Department of Public and International Affairs and Deputy Director of the Biodefense Graduate Program at George Mason University. Dr. Koblentz is also an Associate Faculty at the Center for Global Studies at George Mason University. Dr. Koblentz is a Research Affiliate with the Security Studies Program at the Massachusetts Institute of Technology and a member of the Scientist Working Group on Chemical and Biological Weapons at the Center for Arms Control and Non-Proliferation in Washington, DC. He received his PhD in political science from the Massachusetts Institute of Technology, his Master in Public Policy from the John F. Kennedy School of Government at Harvard University, and his Bachelor of Arts from Brown University. His research and teaching focus on international security and weapons of mass destruction.*

Aerosol Simulants (Chemical and Biological)

Source: http://www.resrchintl.com/Aerosol-Simulants.html

This product administers a small aerosol challenge to chemical and biological collection, detection and identification equipment. Many situations arise where it would be useful to have a method for qualitatively determining that equipment is working. With gas detectors, a small pulse of gas is commonly administered to the equipment before it is taken out into the field to see if an upscale reading is obtained. This safety measure is called a 'bump test' and shows that the equipment is operational.

For performing both chemical and biological "bump tests," we provide a medical inhaler that has been charged with a nontoxic pressurized propellant and in the case of biological bump tests, a small amount of simulant powder. When the inhaler canister base is depressed, a fixed volume of propellant and any suspended aerosol material present is discharged as a turbulent jet. Some applications include:

- Testing air sampling and extraction equipment;
- Testing ultraviolet biological aerosol detectors such as Research International's TacBio™ aerosol detector;
- Testing bioidentification devices such as tickets(lateral flow immunoassays);
- Testing gas detectors that have the propellant used in this product in their gas library
- Studying aerosol dispersion in various settings; and
- Equipment demonstrations for customers

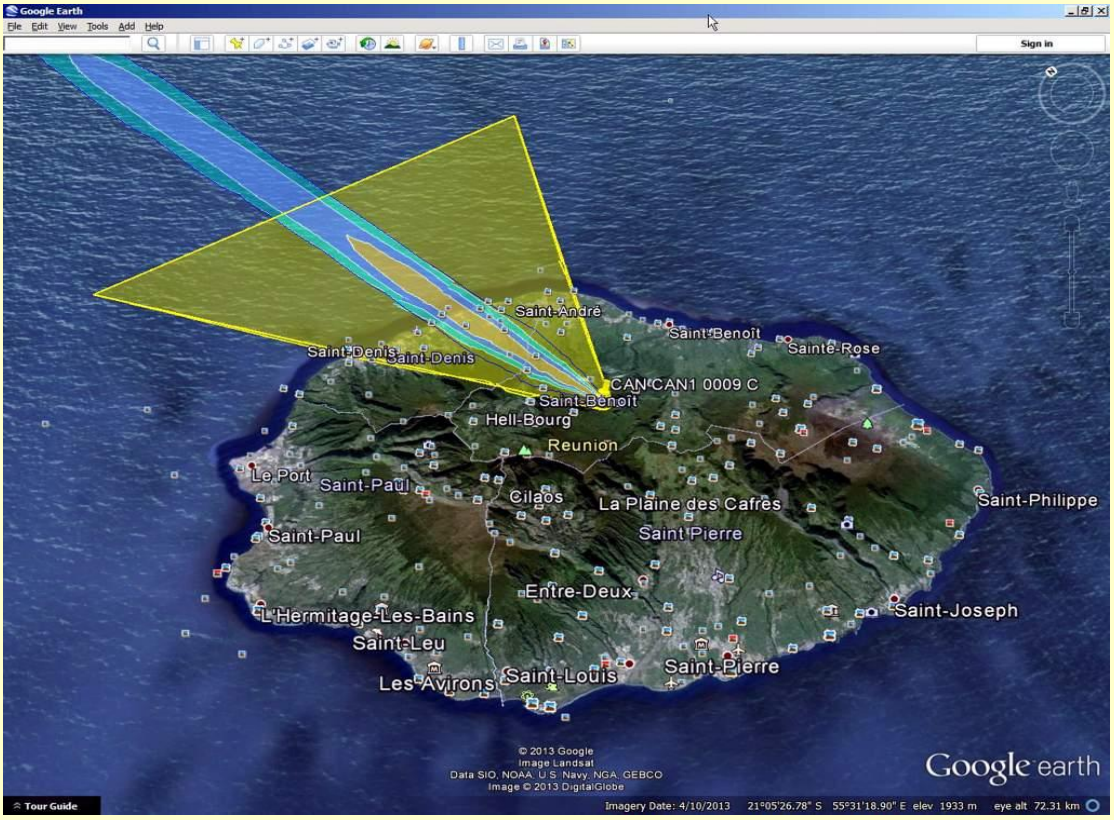
The propellant used in RI's Aerosol Simulants is the same propellant used in most medical inhalers and is of a high purity, with minimal oil and other contaminants. A special high

accuracy metered-volume valve is used which provides an output dose that is consistent to within 5% from shot to shot.
Since the simulant materials are physically suspended in the propellant, it is essential that the unit be well shaken before each use. The check source size and shape minimizes issues with airline personnel who otherwise prefer to confiscate all pressurized products found in carry-on luggage.

Canada develops system to defend against warfare agents

Source: http://www.forces.gc.ca/en/news/article.page?doc=canada-develops-system-to-defend-against-warfare-agents/hnfpmcfv

October 31, 2013 – When Major Nicko Petchiny and his team proposed to a NATO planning committee in Denmark earlier this year that the Canadian Armed Forces (CAF) could demonstrate an integrated warning and reporting system for defence against chemical and biological warfare agents during Exercise BRAVE BEDUIN 2013, the response was lukewarm at best.



"Traditionally, this exercise is done manually with telephones used to communicate threat information to commanders and their command-and-control systems," said Maj Petchiny, director of the CAF's Chemical, Biological, Radiological and Nuclear (CBRN) Sensor Integration and Decision Support (SI & DS) Project.

Providing link

Maj Petchiny and his team were proposing to provide an automated link from software tools that model the predicted path, or threat zone, of airborne chemical, biological and radiological warfare agents on the battlefield to the Canadian Army's command-and-control system, as well as to systems used by the Royal Canadian Navy and Canadian Special Operations Forces.

"But largely due to the outstanding efforts of our project management team in preparing for BRAVE BEDUIN, NATO countries were very impressed with the capabilities of the system and by the end of the exercise, they were

asking for more information about our program," he said.

CBRN defence warning

The CAF began working on its advanced, automated system for CBRN defence warning and reporting more than a decade ago, as part of an overall program to modernize our CBRN defence capabilities. Canada's system was similar to most other military CBRN procedures still in use today: information from chemical and biological detectors in the battlefield was manually input into specialized software, usually hosted on a laptop computer, where it was analyzed and interpreted. The software generated a hazard plot, or predicted plume, taking into account such factors as the sources of the threat agent, air temperature, and wind direction and speed. These predictive models were then relayed manually, by telephone, by radio, or by boots on the ground to in-theatre commanders. The process was often slow and cumbersome.

Building Project

The SI & DS Project set out to build an integrated system that automatically accepts CBRN sensor data, transfers it to the military's classified networks to be interpreted by specialized CBRN analysis tools, and then delivers it to commanders through their command-and-control systems.

To accomplish this, the Project first had to work with industry to develop a standardized interface, or a common language, between proprietary CBRN sensors and a controller. System developers also had to ensure that sensor data was rendered in digital form so that the transfer from sensor to decision support tools to command-and-control systems could be automated.

"We chose an open architecture based on existing NATO standards as well as proven intelligence, surveillance and reconnaissance standards already used jointly in the Canadian Forces," said Maj Petchiny. "Using this standardized, common-language approach, Canada has been able to progress faster than any other country in integrating its CBRN sensors."

Unique system

The system also includes two unique bridges that transfer data. In the first instance, a data diode transfers CBRN sensor data across from the unclassified to the classified domains where it will be analyzed. Next, output of the CBRN hazard prediction tools is bridged over to command-and-control systems. Both of these bridges are unique to the Canadian SI & DS system.

Ex PRECISE RESPONSE

This summer, the SI&DS Project team followed up their successful demonstration at Ex BRAVE BEDUIN with another demonstration, Ex PRECISE RESPONSE in Suffield, Alberta, at the Defence Research and Development Canada facility. For this live-agent training exercise, the team linked a series of fixed-site chemical agent sensors and vital point biological agent sensors to their common controller, and integrated the sensor data to CBRN analysis tools and then on to the command-and-control system. This enhanced considerably the earlier exercise demonstration since here, at PRECISE RESPONSE, live CBRN sensors were now part of the integrated system. This was no longer a table-top exercise.

"At commanders' briefings during the exercise, situational awareness was brought to a new level as commanders saw CBRN threat assessments in near real time," said Maj Petchiny. "I think they were quite impressed."

Despite clearing inspection process, Syria still has WMD

Source: http://www.worldtribune.com/2014/06/30/report-unlikely-syria-gave-chemical-weapons-stockpile/

June 30 – Syria, despite a clean bill of health from the international community, still possesses weapons of mass destruction, a report said.

The Begin-Sadat Center for Strategic Studies asserted that the regime of President Bashar Assad still retained chemical and biological weapons facilities.

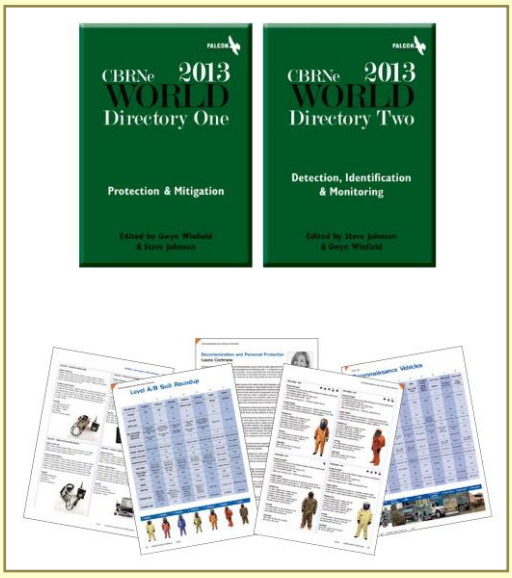
In a report, author Dany Shoham said the regime has avoided international inspections of CW

facilities amid the Sunni revolt in Syria.
"Although Assad may have relinquished the majority of his chemical weapons stockpile, the regime most probably possesses additional 'undeclared' chemical and biological weapon facilities, creating a complex situation with consequences that cannot be ignored," the report, titled "Has Syria's Chemical Weapons Arsenal Truly Been Dismantled?" said.
Shoham, a reserve intelligence officer and leading Israeli analyst on WMD, said Syria has not cooperated with international inspectors in the disposal of CW. He expressed doubt over how much of Syria's WMD capacity was transferred or destroyed by the June 30 deadline. In September 2013, Assad declared 23 CW sites as well as 1,300 tons of chemical precursors and agents.
"It is not clear whether since September 2013 production of CW was entirely stopped throughout Syria," the report said. **"Additionally, reports by the Syrian opposition claiming hidden CW — mainly VX agent-loaded — in the area of Hama cannot be ignored. The opposition's claim that at least 20 percent of the Syrian CW arsenal was not declared might be true."**
The report said Assad did not declare BW agents. Shoham, who called for an international takeover of WMD facilities, said such agents were "probably present in the Syrian arsenal."
"Besides, it is highly likely that Syria also continues to maintain certain pathogens as deployable biological warfare agents," the report said.
The report said Assad's allies, particularly Iran and Russia, would not stop Syria from concealing CW assets. He said the international community as halted inspections to verify Assad's claims of the destruction of the sites.
"Assad is reluctant to give up the remaining declared CW production facilities, and probably additional undeclared chemical armament," the report said. "For now, the job done by the inspectors is notable, but is far from complete."

CBRNe World Directory – The level of understanding that you expect

Source: http://www.cbrneworld.com/directory#axzz36f3VoucZ

The CBRNe World Directory: the only directory providing comparative information on all aspects of detection, identification and monitoring (DIM), protection, decontamination, reconnaissance and medical countermeasures. Edited by Gwyn Winfield and Stephen Johnson, it has been designed by a stable of experts in their field.



The CBRNe World Directory is available in two forms: an online version and a two-volume print version. The print version has over thirty roundups on all aspects of EOD, CBRN and narcotics detection,e.g., portal radiation monitors, bulk explosive detection, respirators, disruptors, mobile laboratories, UGVs, medical countermeasures and handheld assays. These are collected in eleven chapters, each with an introductory essay from one of our experts on the needs of that field, developments in the technology and the things to watch. Following these you will find product quads providing more information on the items in the roundup.
Both volumes are available for £350 ($575) for both volumes and we are taking orders now. For both volumes and a single annual licence to the online version (larger and continuously updated) the price is £992 excluding p&p contact the directory editor

enquiries@cbrneworld to purchase.

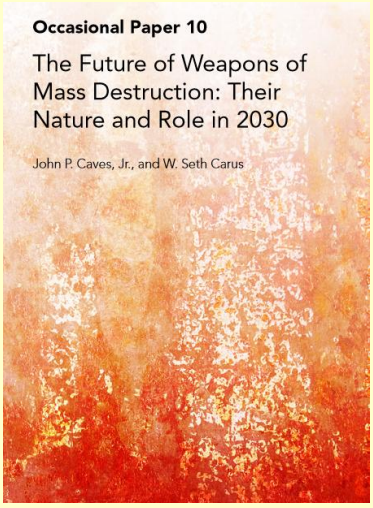
▶ **Read more at:** http://www.cbrneworld.com/_uploads/general_downloads/DMK.pdf

The Future of Weapons of Mass Destruction: Their Nature and Role in 2030

By John P. Caves, Jr. and W. Seth Carus

Occasional Paper 10, June 2014

Source: http://ndupress.ndu.edu/Portals/68/Documents/occasional/cswmd/CSWMD_OccationalPaper-10.pdf



This publication explores the impact of technological change and the evolving geopolitical environment on the future weapons of mass destruction threat. Technological advances will enable new forms of chemical and biological weapons, and may increase proliferation risks for nuclear weapons. An increasingly multipolar international system could make weapons of mass destruction more attractive, while declining Western influence could undermine regimes intended to control their proliferation and use. The authors conclude by posing answers to the question: "How should the United States prepare for such a future?"

John P. Caves, Jr., *is the Deputy Director of the Center for the Study of Weapons of Mass Destruction and a Distinguished Research Fellow at the National Defense University (NDU). He joined the Center in 2003, where nuclear and chemical weapons matters have been the principal focus of his work. Prior to joining the Center, Mr. Caves served as the Deputy Director for Counterproliferation Policy in the Office of the Secretary of Defense (OSD). From 1997 to 1999, he was the Country Director for Turkey, Spain, and Cyprus in the Office of European Policy, OSD. From 1986 to 1997, he served in a variety of positions within the Defense Security Assistance Agency, lastly as Deputy Director for Plans. In 1985, he addressed nuclear weapons policy issues in the Office of the Defense Adviser, U.S. Mission to the North Atlantic Treaty Organization. Mr. Caves received his Master of Public Affairs degree in International Relations from Princeton University's Woodrow Wilson School of Public and International Affairs. He also holds a Master of Science degree in National Security Strategy from the National War College (Distinguished Graduate) and Bachelor of Arts degree from Boston College (summa cum laude, Phi Beta Kappa), where he majored in Political Science.*

Dr. W. Seth Carus *is a Distinguished Research Fellow at the National Defense University. His research focuses on issues related to biological warfare, including threat assessment, biodefense, and the role of the Department of Defense in responding to biological agent use. He also studies allegations of biological agent use and has written a working paper titled "Bioterrorism and Biocrimes: The Illicit Use of Biological Agents in the 20th Century" and several articles on that subject. He has been at NDU since 1997. From 2003 to 2013 he also served as the Center's Deputy Director. From 2001 to 2003, Dr. Carus was detailed to the Office of the Vice President, where he was the Senior Advisor to the Vice President for Biodefense. Before assuming that position, he was on the staff of the National Preparedness Review commissioned to recommend changes in homeland security organization and supported the Office of Homeland Security while it was being established. Prior to joining NDU, Dr. Carus was a research analyst in the Center for Naval Analyses. From 1991 to 1994, he was a member of the Policy Planning Staff in OSD Policy. Before joining the government, he was a research fellow at the*

Washington Institute for Near East Policy. Dr. Carus has a Ph.D. from The Johns Hopkins University in Baltimore, Maryland.

The Pentagon's Strategy For Stopping The Spread Of Weapons Of Mass Destruction

Source: http://www.businessinsider.com.au/pentagons-strategy-for-stopping-wmds-2014-7

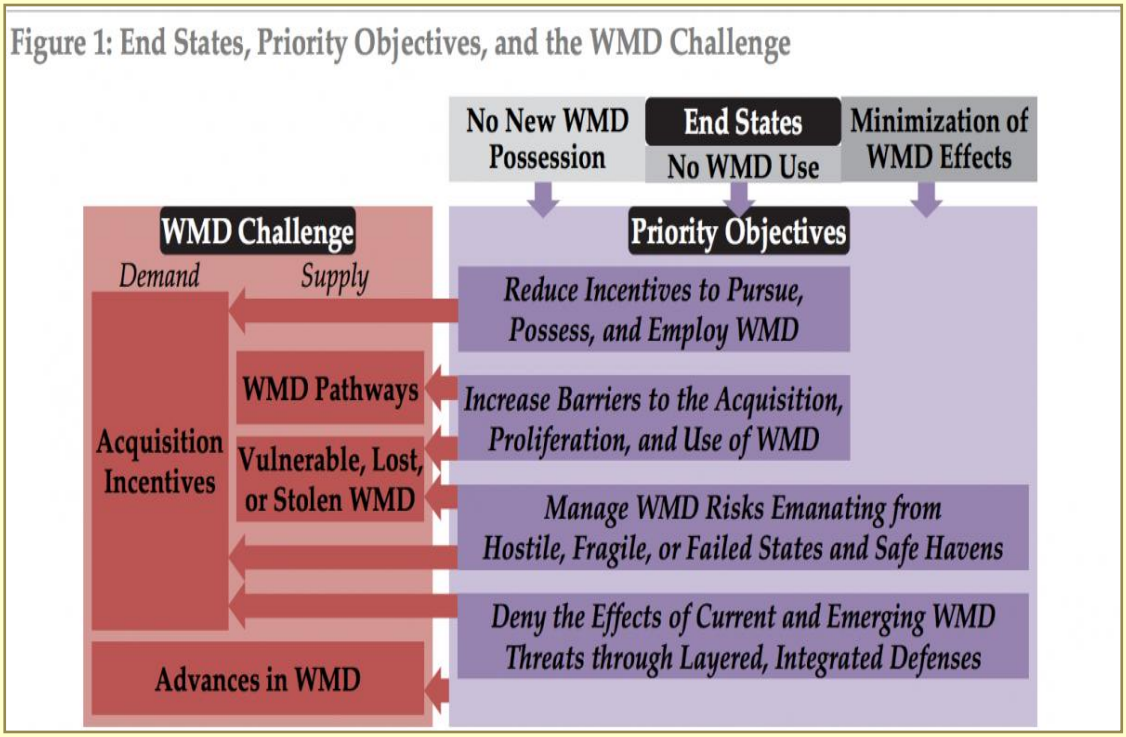
On June 30, the Pentagon released a report detailing the U.S.'s strategy for countering weapons of mass destruction. "The pursuit of weapons of mass destruction (WMD)," Secretary of Defence Chuck Hagel writes in a foreword to the report, "and potential use by actors of concern pose a threat to U.S. national security and peace and stability around the world."

The report, written as part of the Department of Defence Strategy for Countering Weapons of Mass Destruction, details the U.S.'s three desired end states in its policy towards the world's most dangerous weaponry: "no new WMD possession, no WMD use, and minimization of WMD effects." To clarify these goals, the report included two charts that convey the U.S.'s approach to one of the world's most pressing security issues.

The first chart highlights the Pentagon's overall WMD goals, or end states, and the step by step objectives within each goal.

Each of these objectives is linked to the unique supply and demand challenges inherent in any attempt

Figure 1: End States, Priority Objectives, and the WMD Challenge

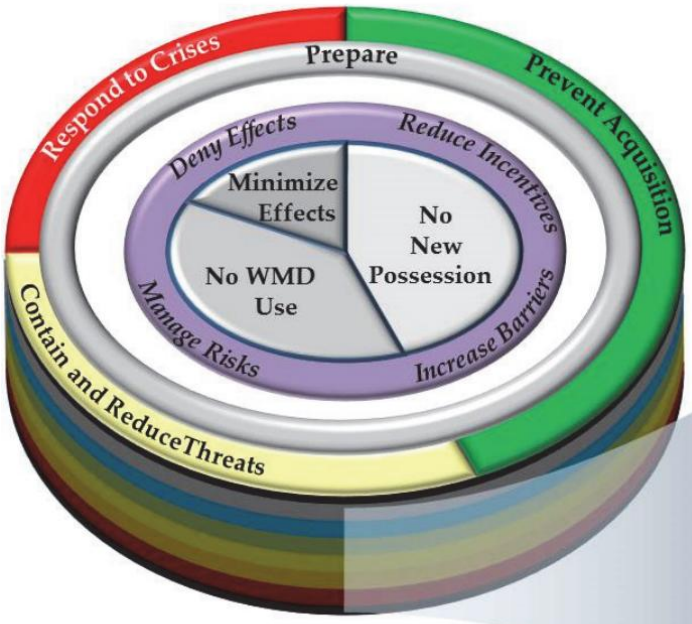


at limiting WMDs and their reach. For example, the objective of managing WMD risks coming from failed states connects to the challenge of preventing WMDs from being stolen and transported to unstable parts of the world. And U.S. policymakers have to face the huge incentive that a failed state may have for stealing or otherwise acquiring WMD and insuring the government's survival by blackmail.

The second chart demonstrates the interconnectedness of the WMD strategy. Effectively managing the risk of countries acquiring WMDs makes it less likely they will acquire or use them. So if the U.S. can meet the three objectives in the outer ring, it won't have to deal with the cascade of problems that WMD possession poses to global security.

Figure 2: CWMD Ends, Ways, and Means

CWMD efforts are pursued in a continuous cycle. They are carried out simultaneously against a diverse group of actors of concern at all stages of proliferation. DoD will seek to achieve the **End States**, targeting the **Priority Objectives** via the **Strategic Approach (Ways)**, all of which are supported by **Countering WMD Activities and Tasks (Means, see Figure 3)**. The **Means** and the **Priority Objectives** frequently span the **Ways**; for example, the primary impact of ***Deny effects*** is within **Respond to Crises**, but denying the effects of WMD threats also deters use within **Contain and Reduce Threats** and dissuades possession within **Prevent Acquisition**.



▶ **Read the full report at:**
file:///Users/jbender/Downloads/232032319-DoD-Strategy-for-Countering-Weapons-of-Mass-Destruction-Dated-June-2014.pdf

Homeland Security and the Changing Roles of Medicine

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Source: http://www.homelandsecurity.org/node/1340

July 07 – Whether the situation is a hurricane bearing down on a coastal community or a bomb blast set by a terrorist, medical personnel need to react appropriately to the threat. And that may mean learning new approaches to medicine or adapting to new roles. Rutgers New Jersey Medical School is teaching physicians to think in terms of terrorism in a course on "terror medicine" and an article in *Homeland Security Affairs* proposes that we expand the roles of emergency medical services in prevention, mitigation, and recovery.

Teaching "terror medicine" to medical students

How does terrorism change the way physicians and emergency medical services personnel practice medicine? To raise awareness of terrorism's effect on medicine among future physicians Leonard Cole, director of the program on terror medicine and security at Rutgers New Jersey Medical School, designed a new two-week elective course, "Terror Medicine." It includes sessions taught by experts in emergency medicine, surgery, psychiatry and bioterror, and presents examples of how dangerous times have forced health professionals' basic instincts to change.

Cole sited several examples of terrorism's effects on emergency medicine:

-- Symptoms that might have been diagnosed in the past as simple food poisoning could come from a bioweapon that causes botulism, or a gardener who seems to have inhaled too much pesticide might have been exposed to the nerve gas sarin.

-- If a bomb goes off and a doctor is nearby, should that physician race to the victims? Maybe not, because a "secondary bomber" might be waiting to set off explosives after responders arrive.

-- Emergency room physicians may need to treat patients with multiple penetration injuries after a bombing, forcing them to make

quick, hard choices to determine what needs immediate attention and what can wait.

New Roles of EMS?

Mac Kemp makes the argument that emergency medical services (EMS) can make significant, unique, critically important contributions to the prevention, mitigation, and recovery phases of the homeland security cycle in his article, "EMS and Homeland Security" in the latest issue of *Homeland Security Affairs.*

EMS plays a vital role in responding to medical emergencies and transporting patients. While the contribution of EMS in the response phase is understood, EMS can also have a role in prevention, mitigation, and recovery:

-- Intelligence sensors: With focused training, EMS personnel could become aware of the tactics and tools of terrorists and learn when it would be appropriate to report suspicious activities to the proper authorities.

--Analysis of medical data and linkage to the clinical community: EMS personnel could identify the clinical and operational significance of certain information in fusion centers and serve as a link to the clinical community.

--Multi-casualty incident/event planning: EMS can also lead development of multi-disciplinary mass casualty and emergency medical response plans and exercises.

-- EMS-based response teams: The combination of medical expertise and security could quickly respond to and meet the needs of victims while keeping all responders safe and law enforcement healthy.

-- Data management and analysis: EMS data could provide invaluable insight into a developing terrorist attack or pandemic event.

-- New EMS roles in disaster recovery: EMS agencies should look for new ways to integrate into recovery efforts and improve the overall quality of life in their communities. One possible area of involvement would be damage assessment.

10 environmental sensors that go along with you

Source: http://www.treehugger.com/clean-technology/environmental-sensors.html

Over the past few years, the world of clean technology has seen a major influx of environmental sensor technologies. From ones that you can make yourself to those that are inspired by nature, the field has included many interesting takes on a technology that is proving to be more and more important, but the most significant trend in environmental sensors has been in personal, portable devices that measure air and water quality from our pockets or wrists.

By making these sensors small and usually Bluetooth or Wi-Fi enabled, merely carrying out our normal daily routines could make citizen scientists of us all, significantly increasing the amount and precision of environmental data through crowd sourcing.

From Smartphone embedded sensors to those you wear or plug in wherever you are, this new wave of personal environmental sensors has the potential to really change the way that data is gathered, analyzed and consumed. Someday soon, everyone may be walking around with one or more sensors with them, giving scientists and everyone else the ability to see highly localized, real-time data on things like temperature, NO2 and particulate levels in the air and even detect toxic chemical leaks.

What makes that so important is that relying on the data coming from the government's environmental sensors at their monitoring stations, doesn't give the whole picture to someone who's living close to an interstate or parking garage or near an industrial facility.

Having specific, real-time information can not only let someone with asthma know areas to avoid on any given day, but gives scientists a better picture of where, when and why pollution is happening, which is necessary to take steps to make it better.

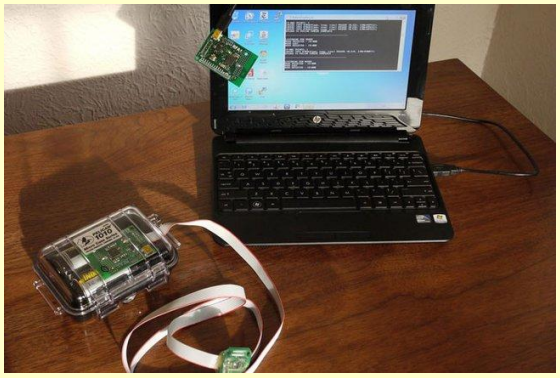
Below are 10 of the most interesting portable sensor technologies we've come across in the past few years.

1. AirBot

© CREATE Lab

The AirBot is a "particle counting robot" developed by Carnegie Mellon University that monitors airborne pollutants that can cause breathing problems like asthma. It's pocket-sized so that people could have it on them wherever they go, keeping tabs on particulates that could cause respiratory problems. Six prototypes have already been built and the lab plans to have it ready for the market next year at a price of $99.

2. WaterBot



© CREATE Lab

Also developed by Carnegie Mellon, the WaterBot tests for water quality. One end can be dipped into a water source like a lake or stream and then it will upload pollution data to the web via a ZigBee-installed module so that everyone who lives near that water source can stay informed. According to the WaterBot website, the data is "collected at a high frequency, allowing the detection of events that are invisible to other types of sensors."

3. Sensordrone

© Sensordrone

Launched from a successful Kickstarter campaign, the Sensordrone is a tool that can sense many things in your environment, including gasses, temperatures, humidity and more and pairs with your smart phone. You run specific apps to test for each thing, but with no extra dials or configurations. Just sync the device with your iPhone and choose what you information you want to receive.

4. Lapka Environmental Monitor

© Lapka

The Lapka is a set of environmental sensors that plug into your iPhone and can detect radiation, electromagnetic feedback, nitrates in raw foods, and temperature and humidity, so not only can they give you some simple environmental data, but they can also tell you if your food is organic.

5. Sensaris

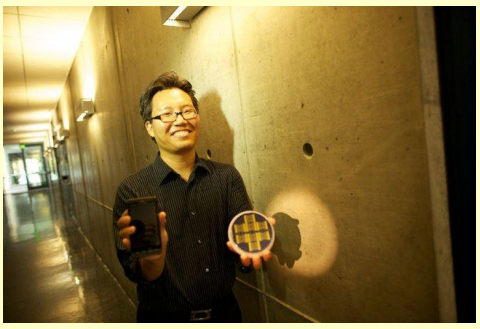
This sensor you wear on your wrist gives instant air quality measurements for wherever you are. The sensors can use Bluetooth to send data to mobile phones, making data transmission easy. Ensuring that enough people wear them to get a good amount of data could be tricky, but people have proven they're interested in devices like this, so who knows? This could be a new fashion statement.

6. Air Quality Egg

© Sensemakers

Another of these technologies that made a big splash on Kickstarter was the Air Quality Egg. While not wearable or able to fit in your pocket, the egg is an at-home environmental sensor kit that gathers very high resolution readings of NO2 and CO concentrations from wherever it's placed. The device consists of a sensing system that gets plugged into the wall outside your home and communicates wirelessly to the egg-shaped base station inside, which transmits the data to airqualityegg.com where it all gets mapped (if you register for it to do so) for anyone to get a quick look at air quality readings in their town, region or even the globe.

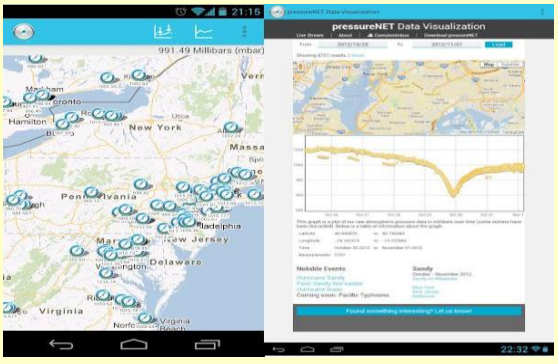
7. Electronic nose



© UC Riverside

This is a technology that's not available yet, but has huge potential applications for the environment, human health and national security. Developed by University of California Riverside, the "electronic nose" is a multi-sensor device able to detect small amounts of hazardous airborne chemicals like pesticides, combustion emissions, gas leaks, and chemical warfare agents. Future iterations will include Bluetooth and Wi-Fi capabilities so that it can automatically upload and sync the data it finds. The developers are also working on getting it down to the size of a fingernail. The designers see the device being used in three different platforms: a handheld device, a wearable device and in a smartphone.

8. PressureNet

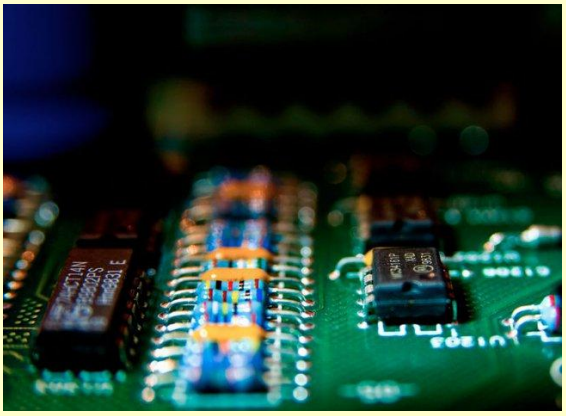


© PressureNet

PressureNet is an Android-powered app that measures atmospheric pressure, and provides those measurements to scientists who in turn use it to better understand what is going on with the weather. The app uses atmospheric sensors that are already in many Android phones. Users are alerted to what data is being collected when the app is open and how it will be used and then they can decide whether they want to participate. The data goes to a website where it could be used to make better weather

predictions or aid in studies looking at the effect of atmospheric pressure on other environmental systems.

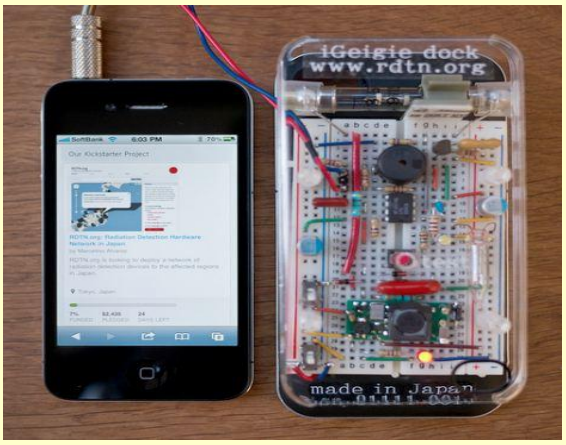
9. Broadcom Microchip



Mark, Vicki, Ellaura and Mason/CC BY 2.0

This ultra-accurate microchip for smartphones that would take advantage of the huge amount of sensors that smartphones now contain to gather precise information on a user's surroundings. This chip is getting strong interest from companies who want access to more information about consumers, but it also potentially has great applications for environmental science. The chip can receive signals from global navigation satellites, cell-phone towers, and Wi-Fi hot spots, and also input from gyroscopes, accelerometers, step counters, altimeters and atmospheric pressure sensors, all of which could provide scientists with precious data to monitor and mediate pollutants and other environmental threats.

10. iGeigie



Developed after the Fukushima disaster in Japan, the iGeigie is a a portable Geiger counter that docks with an iPhone. By calling the phone, users can listen to clicks that indicate how much radiation is in the area. The major goal of the developers is to create a sensor network for nuclear radiation where data could be mapped and government groups, NGOs and widespread citizen scientists alike could all be sources making sure no potentially affected areas are left out.

EDEN Project

The European project EDEN on CBRNe resilience is delivering its first results

Source: http://www.eden-security-fp7.eu/

The EDEN project, launched on 1st September 2013 and funded by the European Commission under the FP7 actions on Secure Societies, has entered its fully operational phase. **EDEN primarily aims at validating, through large-scale demonstration actions, innovative solutions for improved CBRNe (Chemical, Biological, Radiological, Nuclear and explosive) resilience to meet End-User needs.** To achieve this task a major effort has been devoted to date to understand End-User requirements and to develop the scenarios for carrying out the exercises scheduled in the final phase of the project. A key action toward the completion of this deliverable has been a detailed analysis of the End-Users needs, in line with the drivers that inspired the EDEN project from the beginning.

A vibrant networking activity has been coordinated by EDEN, with important meetings in Brussels, Bucharest and Vienna, where End-Users and EDEN's partners have gathered.

The discussions were focused on how to bridge the existing gaps between the End-Users needs and the available technologies on offer. The feedbacks and recommendations delivered by the workshops have paved the way for finalizing the scenarios, which will be presented in Brussels on the 22nd of July 2014. During this meeting the proposed events will be validated by the EDEN Advisory Board, a panel of key End-Users created to ensure guidance and oversight for the project are effective.
The workshops have also been occasions for unveiling to the End-User communities the concepts of the EDEN ToT (Toolbox of Toolboxes) and the EDEN STORE, which are at the heart of the project's concept.
The R&D activity planned in EDEN and carried out in cooperation with large industries, Small and Medium Enterprises (SME), universities, Research and Technological Organizations (RTO) is progressing well and is on schedule. The level of collaboration among the partners is growing with common actions planned and agreed through frequent conference calls and occasional face-to-face meetings.
A first endorsement of the validity of the ideas behind the EDEN project is coming from the increasing numbers of organizations are joining the SME and Supplier Platforms which are open to businesses outside the EDEN partnership which can actively take part in the project with advice, feedback and even to validate their own products or procedures in the demonstrations.
The Supplier and SME Platforms held a first workshop on 2nd to 4th of June in Aix en Provence and will be holding a workshop on 16th of July 2014 in Stuttgart to meet the EDEN Work Package Leaders to understand the chemical, biological and radiological themed demonstration scenarios to provide an overview of their organization and to better frame their level of involvement in EDEN. The SME and Supplier Platforms are still open to newcomers.

Israeli strikes kill WMD-related Hamas operatives in Sudanese port

Source: http://www.homelandsecuritynewswire.com/israeli-strikes-kill-wmd-related-hamas-operatives-sudanese-port

When it comes to fighting terrorists, Israel has long arms. Here is the latest episode.

July 07 – Sudan's Foreign Minister Ali Karti on Wednesday accused Israel of carrying out a strike on a car near Port Sudan that killed two people.
Sudanese police have said a missile struck the car near the port city on Tuesday. A state government official said the strike was carried out by a foreign aircraft that flew in from the Red Sea. Israel's Foreign Ministry spokesman Yigal Palmor declined to comment on the accusation.
Haaretz reports that two people were killed in an attack on a car near Port Sudan on Tuesday. Witnesses at the scene near the airport at Sudan's main port city said the small car was destroyed and the two charred bodies of its passengers could be seen.

Debka reports that the attack targeted the Hamas representative in Sudan in charge of the vast Iranian weapons smuggling enterprise for the Gaza Strip via Egypt and the Suez Canal. His latest task was to organize the transfer to Port Sudan of a shipment of mustard and nerve gas purchased by Hamas and Hezbollah representatives with Tehran's help from Libyan rebels in Benghazi.

"This is absolutely an Israeli attack," Karti told reporters. He said Israel undertook the attack in order to scupper Sudan's chances of being removed from a U.S. list of state sponsors of terrorism.

One of the two people killed in the strike was a Sudanese citizen who had no ties to Islamists or the government, he said.

Sudan is on a U.S. list of state sponsors of terrorism, but Washington this year initiated the process to remove it from that list after a peaceful January referendum in which the country's south voted to secede.

"A missile from an unknown source probably bombed the car," police spokesman Ahmed Al-Tahmi told Reuters on Tuesday. He earlier told local radio the missile had likely been fired from the Red Sea.

The Sudanese Media Centre, a news agency linked to Sudan's state security apparatus, and the speaker of the Red Sea state parliament, Ahmed Tahir, said an unidentified aircraft had flown into Sudanese air space to bomb the car.

The plane came in from the Red Sea and flew back after the bombing, Tahir said. The Sudanese Media Centre said the army responded with missiles that the foreign plane managed to evade.

"We heard three loud explosions," a source at Port Sudan airport told Reuters. "We went outside to see what was happening and eye witnesses told us they saw two helicopters which looked liked Apaches flying past."

This is not the first time mystery has surrounded a strike in Sudan's eastern Red Sea state.

In January 2009, a convoy of arms smugglers was hit by unidentified aircraft in Sudan's eastern Red Sea state according to Sudanese authorities, a strike that some reports said may have been carried out by Israel to stop weapons that most probably came from Iran and were bound for Gaza.

A total of 119 people were killed in that strike near Sudan's border with Egypt, according to state media.

Haaretz notes that following the 2009 attack, there were reports that Israeli aircraft were operating against smuggling ships intending on transferring weapons to Hamas in Gaza.

The area of Sudan serves as a smuggling area for weapons provided by Iran, as well as weapons purchased in the black markets of Yemen, Somalia, and Eritrea.

U.S. and Israeli officials typically refuse to comment on the covert campaign — any covert campaign — against Iran and its regional agents, Hezbollah and Hamas. We note, however, a speech the then-Israeli prime minister Ehud Olmert gave on 26 March 2009 in an academic gathering in Herzlyia, outside Tel Aviv. We do not know whether he was referring — obliquely — to the attacks on Iran's nuclear weapons infrastructure or to the efforts to contain Iran's influence in the Middle East by preventing it from arming Hamas and Hezbollah. Perhaps he was referring to both efforts.

He warned Israel's adversaries that Israeli forces, in defending the country, were operating "near and far."

We are operating in every area in which terrorist infrastructures can be struck. We are operating in locations near and far and attack in a way that strengthens and increases deterrence. It is true in the north and in the south ... there is no point in elaborating. Everyone can use their imagination. Whoever needs to know, knows.

WMD and the Islamist Threat

By Cory Davenport

Source: http://acdemocracy.org/wmd-and-the-islamist-threat-an-acd-exclusive/?utm_source=WMD+and+the+Islamist+Threat+-+An+ACD+Exclusive&utm_campaign=WMD+%2B+Islamists&utm_medium=email

It might be easy to look at Libya, which in 2003 agreed to the ending and dismantling of its WMD programs, or at Syria, which in 2013 agreed to the destruction of its chemical weapon stockpiles, and think that there has been significant progress made on the non-proliferation front in the Middle East.

While the destruction of hundreds of tons of chemical agents is certainly a sign that some progress is being made, we must remain cognizant of the fact that the danger is far from eliminated.

First, large amounts of chemical agents and nuclear materials exist throughout the Middle East. Second, additional agents and materials have likely not been declared by the nations in possession of them or are simply unknown to those and other nations (e.g., forgotten-about chemical agent bunkers in Albania rediscovered in 2002). Syria, for example, has been accused of not having declared all of its chemical weapons sites and stockpiles to the UN. This possibility certainly seems credible in light of Syria's illicit use of chemical weapons against civilians in its current Civil War and the IAEA vote of Syrian non-compliance regarding an undeclared nuclear reactor in 2011. Finally, the smuggling of illicit goods, including WMD agents and materials, is a relatively common occurrence in the Middle East.

The problem of smuggling in the Middle East is well known. Whether the activity is human trafficking, or smuggling of drugs, money, arms, counterfeit consumer goods, or WMD materials, the problems are the same–porous borders, government inattention and corruption, and large numbers of people looking to move illicit goods. Very often, the routes used to smuggle WMD materials are the same as those used for other illicit goods, and terrorists frequently partner with professional smugglers when they have goods that need to be smuggled. Regardless of what is being smuggled, smugglers prefer when there is conflict and instability within a nation as this tends to reduce government focus on border security and to increase opportunities to take advantage of corrupt officials.

Along with the ubiquity of illicit smuggling in the Middle East, a second problem is the desire of terrorist groups to acquire WMDs. A number of terrorist groups have actively pursued WMD acquisition. To name just a few, al-Qaeda (AQ), AQ affiliates Egyptian Islamic Jihad, Jemaah Islamiya, Lashkar al-Tayyiba, and, most recently, the Islamic State (IS/ISIS/ISIL) have all successfully acquired WMD materials/agents. While the acquisition of WMDs by terrorist groups is only occasionally an easy process for them, two factors have recently conspired to make WMD acquisition by terrorist groups much, much easier: 1) There is a tremendous amount of instability in the Middle East, and 2) Terrorist groups are in greater competition with one another than ever before.

Instability

Instability in the Middle East has increased dramatically since the end of 2010. Subsequent to the onset of the Arab Spring, four nations have forcibly removed their leaders from power: Yemen, Egypt (twice), Tunisia, and Libya. Most other nations in the Middle East have experienced a sharp rise in civil protest, often involving violence. These actions have resulted in governments shifting their priorities to focus more on domestic stability and less on security measures that are only

tangentially related, like on externally-focused espionage and border security. The traditionally porous borders of many of these nations are, as a result, as open as ever. In fact, there is already evidence that at least some forms of smuggling, most notably of drugs and arms, have increased well beyond pre-Arab Spring levels.
In addition, conflict and instability can make military sites desired targets for attack, including sites that contain WMDs or their precursors. An example of this can be seen in the recent capturing of the Muthanna chemical weapons complex in Iraq by IS.

Competition
The second factor increasing the likelihood terrorists in the Middle East will acquire a WMD is the extent to which intra- and inter-group competition is taking place within and between these groups. An example of intra-group competition can be seen in some of the past activities of the East African terrorist group, al-Shabaab. Specifically, it has been posited that al-Shabaab's attack on the Westgate shopping mall in Nairobi, Kenya was largely motivated by one faction's attempt to demonstrate superiority over another. As an example of inter-group competition, when Lashkar al-Tayyiba began losing members to AQ, they decided that a large scale attack would be a good way to attract new members. In 2008, they launched a series of attacks throughout Mumbai, India, killing over 160.
One need only look at the competition currently taking place between AQ and IS for the position of top terrorist group to know that inter-group competition between terrorist groups is as fierce as ever. In a seemingly short period of time, IS has established itself as one of the most influential terrorist groups in the world. In actuality, IS is comprised of a number of different terrorist groups, many of whom have existed for a number of years. What is different now is that these groups have coalesced around a single leader, Abu Bakr al-Baghdadi, and a single goal, the establishment of an Islamic State comprised of actual geographic territory. This unification would likely not have been possible were it not for the amount of instability in and around Iraq and Syria, as well as level of dissatisfaction with the progress being made by AQ.
We have recently witnessed a series of attempts by IS to establish dominance over other Islamist terrorist groups, including AQ. Most notably, they have taken over large amounts of geographic territory that was previously considered relatively well defended. They have captured military sites and equipment that, even though some of it is of questionable utility (e.g., an inoperable scud missile), showcases their effectiveness to a legion of potential recruits. They have amassed a small fortune (possibly as much as $2 billion) through donations and illicit activities, including smuggling. And, they have declared a caliphate and are demanding the loyalty and allegiance of every Muslim on Earth. With such bold actions and lofty ambitions, when coupled with the large amount of current regional instability, the likelihood that IS or a competitor will pursue, and possibly one day use, WMDs is very rapidly growing.

Cory Davenport, Ph.D. *is a Senior Researcher at the National Consortium for the Study of Terrorism and Responses to Terrorism (START), a Department of Homeland Security Center of Excellence based at the University of Maryland. All opinions expressed are his alone and do not necessarily reflect the views of START, DHS, or UMD.*

Chemical weapons now in ISIL's hands: Iraqi ambassador

Source: http://www.washingtontimes.com/news/2014/jul/8/iraqi-wmd-letter-un-made-public-amb-says-chemcial-/

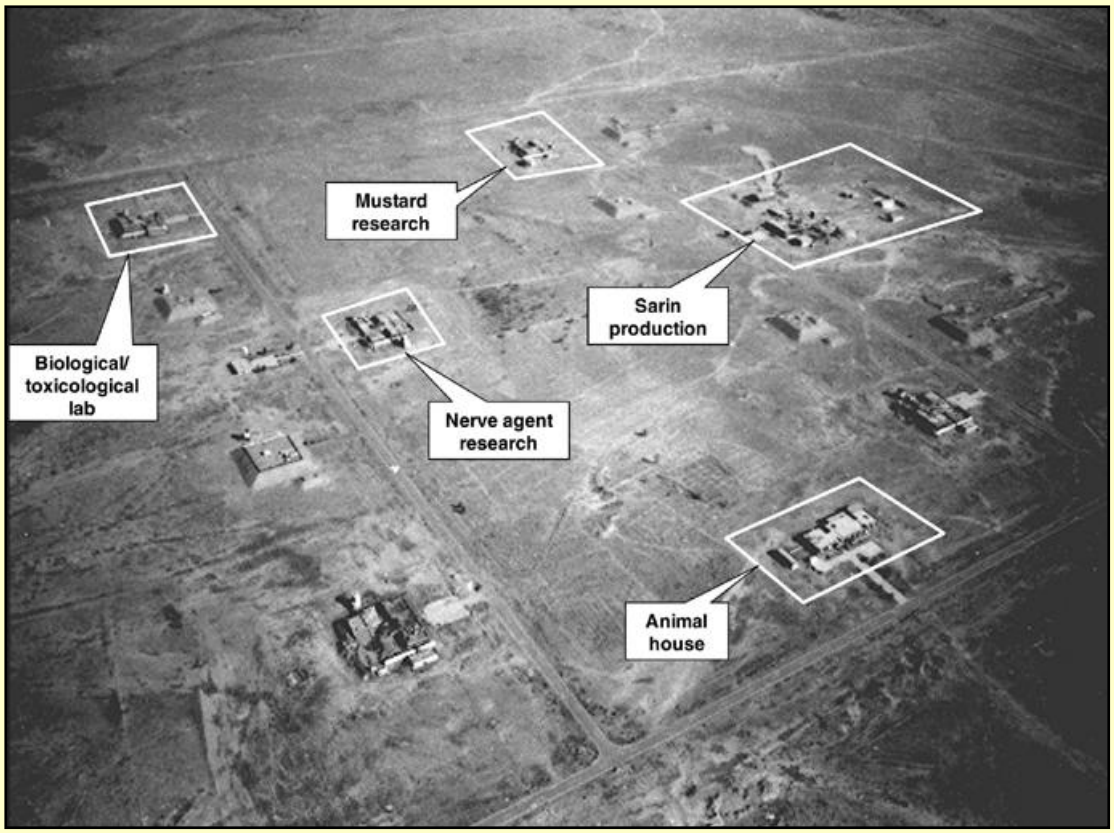
A letter sent to the United Nations by Iraqi Ambassador Mohamed Ali Alhakim pertaining to the takeover of a chemical weapons facility has been made public.
On June 12, the Islamic State in Iraq and the Levant

(ISIL) took over the depot, but weapons of mass destruction held in two bunkers still had not yet been destroyed.

"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," Ambassador Mohamed Ali Alhakim wrote in the letter dated June 30 to U.N. Secretary-General Ban Ki-moon, Reuters reported Tuesday.

The ambassador implores U.N. members to "understand" the nation's predicament.

"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," Mr. Ali Alhakim wrote, Reuters reported.



When initial reports about the Muthanna facility north of Baghdad surfaced in June, U.S. Defense Department spokesman Rear Adm. John Kirby said that the materials found there were "not likely" to be used against anyone.

Chicago Sensor Project Will Measure Environmental Data

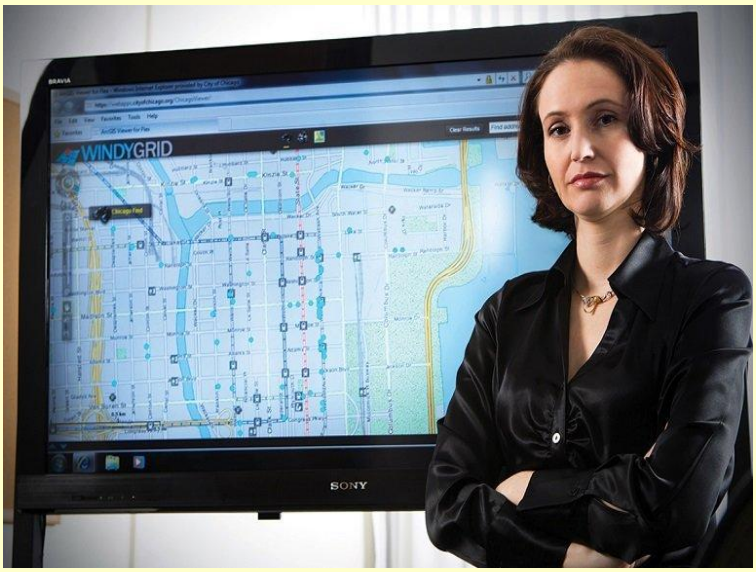
By Tod Newcombe

Source: http://www.emergencymgmt.com/safety/Chicago-Sensor-Project-Measure-Environmental-Data.html

Poet Carl Sandburg once called Chicago the "city of the big shoulders." Lately, it has also gained a reputation as being the city of big data. Now, the data moniker is about to get bigger. Later this summer, as many as 30 sensors will be attached to light poles in the downtown area to collect environmental data that will be able to provide precise weather and air quality information, block-by-block. The information, minute-by-minute measurements of temperature, humidity, light, sound, barometric pressure and air quality, will be shared with researchers and the general public in real time. The pilot project, funded by a $200,000 grant from the Argonne National Laboratory, is led by the Urban Center for Computation and Data

(UCCD) in collaboration with the city of Chicago.

The use of sensors to capture data that can help a city operate more effectively has become widespread and is gaining traction in the United States. Both pilots and production systems have been deployed to help some cities better manage traffic, energy use and water consumption. But Chicago is installing sensors as part of a broad research effort, starting with environmental data.



"We have done previous projects that are more specific in nature, and this time we wanted to branch out to collect more general environmental data, with the belief that it will help researchers gain a better analytical understanding about the city," said Brenna Berman, commissioner and chief information officer for the city's Department of Innovation and Technology.

The sensors will also estimate pedestrian traffic on the sidewalks by counting the number of smartphones in the area. The sensors' nodes will not collect or save the unique addresses of the phone, nor will the sensors include cameras or recording devices. "I think we have addressed the privacy issue properly," Berman said, "otherwise we wouldn't be moving forward with the project."

The data collected by the sensors will not only provide extremely precise weather forecasts, but more importantly, can be used to measure how the city's environment is affecting the way people live and how it's impacting the infrastructure they depend on. The smartphone data could also give pedestrians knowledge about which streets have the most foot traffic late at night. "The data we will be collecting we've not had at a micro level before," said Berman. "Right now, we don't know what opportunities it's going to open in terms of programs and services, but it's an exciting opportunity."

Researchers at UCCD have called the project the "Array of Things" and say it will boost the city's reputation as a hotbed of urban innovation, as well as provide the kind of research on how modern cities function. UCCD is one of several research organizations that have emerged in recent years to tackle the problems of urban living that new digital technologies can impact and hopefully improve. The Massachusetts Institute of Technology has its SENSEable City Lab, and in New York there's New York University's Center for Urban Science and Progress.

All data collected by the sensors in downtown Chicago will be released in real time via the Chicago Data Portal, as well as through application programming interfaces and other platforms.

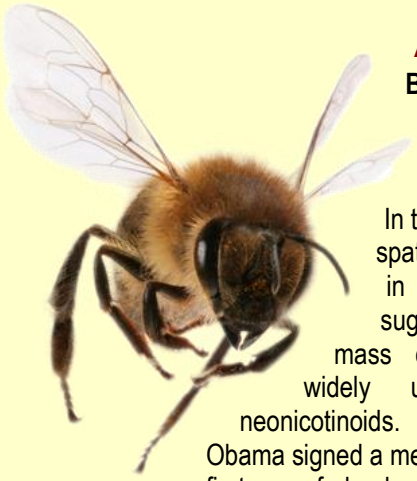
The city has been a leader in the open data space. And while this project is the first of its kind, the Department of Innovation and Technology has been conscientious about planning how it will work. "The skills we're using are well tested, well developed, it's just that the particular formulation is new," said Berman.

Part of the planning includes working with the specific city agency, in this case, the Department of Transportation, which manages the traffic poles that will hold the sensors. Berman said it's her department's responsibility to see that technology policies match up with the open data and security policies, and to ensure that there's a "value proposition" inherent in the pilot that will benefit city residents. "We also make sure the pilot is evaluated in a fair way, whether the pilot is successful or not."

While it will be a few more months before the first streams of data start appearing on the data portal, the city is already working at engaging citizens about what the sensors will do and not do, and how the research can be beneficial down the road.

The emphasis on transparency is "par for the course" on how the city manages open data projects, according to Berman, who pointed out that her department has been meeting with open government and civic engagement community groups from the beginning. "There's a lot of give and take with that community," she said. "We expect to hear from them and get requests from them, and push back, and it will help us adjust the program and make it better."

With more than 20 years of experience covering state and local government, ***Tod Newcombe*** *previously was the editor of* Public CIO*, e.Republic's award-winning publication for information technology executives in the public sector. He is now a senior editor for* Government Technology *and a columnist at* Governing *magazine.*



A reason millions of bees are dying

By Terence McCoy

Source: http://www.washingtonpost.com/news/morning-mix/wp/2014/07/10/the-surprisingly-simple-reason-millions-of-bees-are-dying/

In the past several weeks, a spate of studies have appeared in scientific journals suggesting the culprit behind mass deaths of honeybees is widely used pesticides called neonicotinoids. On June 23, President Obama signed a memorandum establishing the first-ever federal pollinator strategy and the Agriculture Department announced $8 million in incentives to farmers and ranchers in five states who establish new habitats for honeybees.

June 23, 2014 Italian honeybees hover around the suit of beekeeper Robert Harvey as he transfers bee colonies from a blueberry field near Columbia Falls, Maine. Last year, 23.2 percent of the country's managed honeybee colonies died, which is higher than the "acceptable" rate of about 19 percent, according to a report from a group supported by the U.S. Department of Agriculture. Bees pollinate plants that provide much of the food that we consume, including apples, watermelons and coffee beans. Adrees Latif/Reuters

It was one of those mysteries no one cracked for years but gripped many: What's killing all the bees?

In Brevard County, Fla., nearly 12 million bees expired in 2011 in a great dying of almost biblical proportions. Then came news last year that 37 million bees — *37 million* — had died that month at a Canadian beekeeping operation. That same month, Oregonians arrived at a Target to find 25,000 bumblebee corpses in the parking lot.

In the past several weeks, a spate of studies have appeared in scientific journals suggesting the **culprit behind such deaths are widely-used pesticides called neonicotinoids.**

And it's not just bees that have been impacted, researchers say. A study published in Nature on Wednesday found bird populations in the Netherlands dropped more sharply in areas where neonicotinoid use was highest. "Our results suggest that the impact of neonicotinoids on the natural environment is even more substantial than has recently been reported and is reminiscent of the effects of persistent insecticides in the past," the study said.

Around 95 percent of the insecticide — first introduced in the 1990s and produced by firms such as Bayer and Syngenta – winds up in the wider environment, the Guardian reported. The scientists say it kills insects birds need to survive and makes it difficult to provide for chicks.

"All the other studies [on harm caused by neonicotinoids] build up from toxicology studies," Hans de Kroon, an ecologist at the Netherlands' Radboud University who led the study, told the Guardian. "But we approached this completely from the other end. We started with the bird

population data and tried to explain the declines. Our study really makes the evidence complete that something is going on here. We can't go on like this any more. It has to stop."

Others discern fewer clear-cut answers in bee collapse and think the science is far from settled. Some think disease-carrying parasites such as the Varroa mite may be the leading factor behind the deaths.

"Even though all the evidence points to various parasites and diseases being the true cause of poor bee health, we are keen to do everything in our power to give consumers confidence in our products," Ruediger Scheitza, head of strategy at Bayer CropScience, told Reuters last year.

Dave Goulson of the University of Sussex, who has studied neonicotinoids for three years, said this defense is similar to what the tobacco industry deployed 50 years ago. "The reality is if you care about the environment, you should care about this," he told The Washington Post in a phone interview. "We're wiping insects off of many surfaces of the globe and it's hard to think what won't be affected by this wholesale loss of biodiversity."

Goulson was one of dozens of scientists who published another report last month hailed as the most detailed assessment of the insecticides to date. The four-year study released last month concluded that neonicotinoids — on which farmers spend $2.6 billion annually and apply routinely — are threatening the world's food supplies. The crux of the findings focused on creatures vital to global food production — such as bees, worms and birds — likely suffering the most harm.

"The evidence is very clear," Jean-Marc Bonmatin, of France's National Center for Scientific Research, told the Guardian. "We are witnessing a threat to the productivity of our natural and farmed environment equivalent to that posed by organophosphates or DDT. From from protecting food production, the use of neonicotinoid insecticides is threatening the very infrastructure which enables it."

It's not surprising, Goulson told The Post. "If you apply very large amounts of highly toxic insecticides and they accumulate in the soil, you shouldn't be surprised if you've knocked out insects and other food," he said.

In bees, the damage has been perhaps the most staggering. A Harvard study published in May significantly strengthened the link between neonicotiniods and colony collapse. Researchers led by Harvard scientist Chensheng Lu took 18 bee hives and treated 12 of them with neonicotinoid.

"Bees from six of the twelve neonicotinoid-treated colonies had abandoned their hives," the study stated, "and were eventually dead with symptoms resembling Colony Collapse Disorder. However, we

observed a complete opposite phenomenon in the control colonies in which instead of abandonment, they were re-populated quickly with new emerging bees."

Terrence McCoy is a foreign affairs writer at the Washington Post. He served in the U.S. Peace Corps in Cambodia and studied international politics at Columbia University.

New S.T.A.R.T. Triage Training Tool From DMS Simplifies Learning

Source: http://www.prweb.com/releases/Triage/EMS/prweb11813497.htm

Today, Disaster Management Systems, Inc. (DMS) announced the availability of a revolutionary new tool for EMS educators to teach First Responders S.T.A.R.T. Triage. The tool is comprised of a handheld 5.5" wheel that can be rotated by the user to quickly determine the triage category for any patient.

Additionally, a QR code on the wheel allows users to access a series of 'digital victims' to practice and improve their triage skills using Smartphones.

"Knowing and retaining how to perform S.T.A.R.T. triage is vital to our First Responders but current decision-tree charts make it difficult to understand," said Jeff Lengyel, Product Manager for DMS. "By placing S.T.A.R.T. triage into a 'turn-to-learn' rotating wheel design, students quickly understand that S.T.A.R.T. is simply a process of elimination."

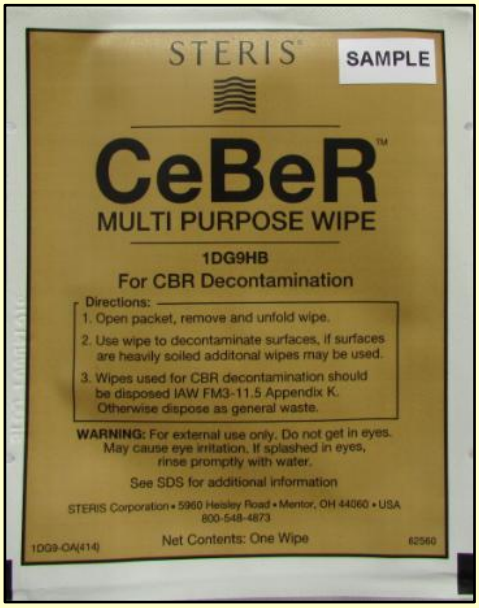
As the wheel rotates it prompts users to answer questions about a patient's symptoms and displays the patient's triage category when a correct answer is given.

"Like most EMS educators, I struggle with providing my students a simple way to grasp S.T.A.R.T triage," said Henrie Watkins of Specialized Safety Services. "With the DMS training wheel and integrated Smartphone App my students can not only comprehend S.T.A.R.T. faster but have a simple tool they can use for anytime learning."

The DMS training wheel is available directly from DMS for $6.97 individually, $39.97 in packs of 10. Special discounts apply to EMS educators, CERT members and fire departments.

Multi purpose wipe – CeBeR

Source: http://www.steris.com/products/viewDef.cfm?id=5087



STERIS's MPW is a self-contained wipe system designed to be carried daily by deployed and non-deployed forces. The product is as effective as washing with soap and water when addressing day to day infectious organisms and removal of chemical and biological agents from skin and surfaces. The product offers a range of performance features:

- **Efficacy –** Extensive live agent, simulant and surrogate testing has indicated that the MPW removes chemical and biological agents as well as, or better than, soap and water or bleach from both surfaces and skin, without damage or irritation. Live agents tested include *Bacillus anthracis*, HD and VX.
- **Safety –** MPW chemistry has been designed specifically to be dermatological non-irritating. Daily use has shown to actually improve skin quality by providing moisturization of the skin equal to a skin lotion. Maintenance of good skin quality preserves its natural barrier properties and helps protect against infectious bacteria and viruses as well as biological agents. Healthy skin also provides a better barrier to chemical agent penetration than dry, chapped and cracked skin.
- **Logistical profile –** Because most war-fighters already carry wipes for personal hygiene, replacing these with MPWs that can also serve as a chemical and biological decontaminant increases functionality while imposing no additional burden in personal gear. If carried in a pack or staged for mass casualty incidents, the MPW is immediately available for decontamination of skin or war-fighter's equipment. The MPW provides efficacy comparable to that of soap and water without the logistical requirement of a ready supply of water and hazardous rinsate disposal.
- **Dual use potential –** The ability to use the MPW for daily hygiene use assures availability and cost competitiveness. The product is highly effective for daily hygiene when soap and water are not available and also for immediate chemical and biological decontamination when skin decontamination kits are not available. Additionally, for mass casualty decon, the MPW is a cost effective alternative to large volumes of soap and water.
- **Materials Compatibility –** The MPW formulation was evaluated for materials compatibility against 20 substrates considered to be high and medium priority materials of military significance. Results showed that the MPW has excellent compatibility under typical use.

THE DECONTAMINATION PROCESS

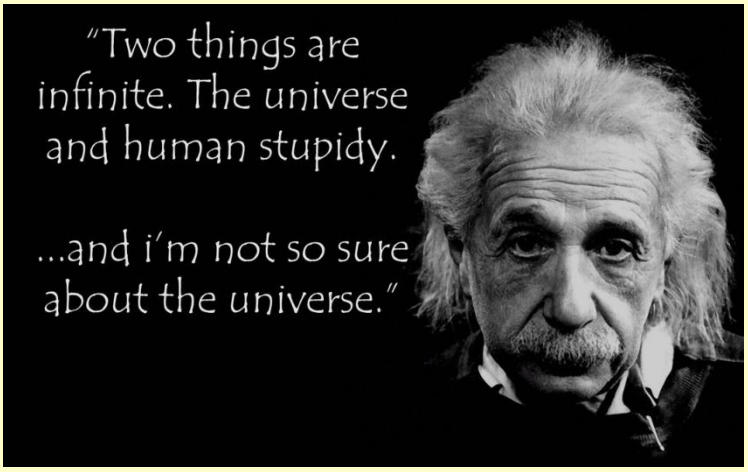
The STERIS MPW consists of a specialized fabric substrate and a specifically designed chemistry. When combined, these function as an effective tool for initial removal of gross soils and contaminants from both skin and surfaces. Testing has indicated that the product physically removes chemical and biological agents as well as, or better than, soap and water or bleach. Additionally, the chemistry inactivates infectious bacteria and viruses as effectively as well-known surgical scrubs when used as directed.

▶ **NOTE**: **The photo in the article is the new form of MPW that would be soon available in the market.**

Iraq: Insurgents Chemical and Nuclear Material - "Minimal Risk", US.

Source: http://english.pravda.ru/opinion/columnists/15-07-2014/128041-iraq_destroyed-0/

July 15 – America and Britain destroyed Iraq for them, lynched the country's President for them, created five million orphans, five million displaced, over a million widows and now upper figures of over one and a half million dead for them. They created mass graves on an industrial scale for them, with people's beloveds buried in car parks, gardens, patios and football pitches - but now they are in the hands of ISIS (the self proclaimed Islamic State of Iraq and Syria) they pose barely a "minimal risk" say US government spokespeople. We are talking of course, chemical weapons.



Instead of Editor's Comment

Felicity Arbuthnot

The currently sanguine view of the US government is in stark contrast to that of the New York based Soufan Group, a security and political risk consultancy with worldwide offices and operations, stretching from London, the Middle East, Asia, Africa, the Americas and Singapore. For them: "ISIS has become indisputably the most effective and ruthless terrorist organization in the world." (1)

On 11th and 12th June, ISIS gained control of the Al Muthanna former chemical weapons complex where, in the 1980s Iraq developed weapons believed to be on par with, then, the US and the former Soviet Union. Iraqi scientists reportedly travelled to the US and UK in order to gain the relevant expertise in chemical munitions (2.)

The vast Al Muthanna compound, covering many acres, was bombed and much destroyed by the "coalition" in the 1991 Gulf War, hardly the most intelligent target to hit, releasing untold life-threatening chemicals on the population, fauna, flora. But of course, then as now, as General Taguba was informed during his investigation in to the terrorist activities towards prisoners at Abu Ghraib prison by US personnel: "They were only Iraqis."

However, according to a CIA Report last updated in 2007 (3) there seems every reason to be exceedingly alarmed about the capture of Al Muthanna. Of the facilities which survived the attack were a number of bunkers for storage of the most dangerous materials. In 1994 in was found that: "Two sealed cruciform bunkers containing the largest declared stockpile of chemical munitions, old bulk chemical agent, and hazardous material associated with the CW program remained. The surrounding area at the facility became a refuse area or junkyard for relics of Iraq's past CW weapons program."

Moreover: "Two damaged cruciform bunkers were used to seal damaged chemical munitions, residual chemical agents, and hazardous material.

"The contents of the bunkers were declared to the UN but never fully. The munitions inside the bunkers were damaged from bombings; fires, leaking munitions and physical damage to munitions made the environment inside the bunker extremely dangerous."

The weapons inspectors': "exploitations indicate that the storage area still remains a threat despite testing. Chemical storage containers filled with unknown hazardous chemicals are showing signs of rusting-through and leaking.

"Key bunkers and facilities are currently scheduled to be sealed or resealed.

"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. These areas of the compound pose a hazard to civilians and potential black-marketers."
Further: "The contents of two of the cruciform bunkers bombed during Desert Storm showed severe damage. Due to the hazards associated with this location, the UN decided to seal the bunkers.
"UNSCOM (the weapons inspectors) viewed the contents of the two bunkers; however an accurate inventory was not possible due to the hazards associated with that environment." Thus, there is neither a full inventory of the potentially most lethal of materials and they were simply sealed in and left.
The final paragraph concludes that Al Muthanna, was the bastion of Iraq's 1980s chemical weapons facilities, however: "Two wars, sanctions and UNSCOM oversight reduced Iraqi's premier production facility to a stockpile of old damaged and contaminated chemical munitions (sealed in bunkers) ..."
Bunkers, of course, can be unsealed.
The Guardian (4) records that:
"The last major Report by UN inspectors on the status of Iraq's weapons of mass destruction programme was released about a year after the experts left in March 2003. It states that bunker 13 contained 2,500 sarin-filled 122mm chemical rockets produced and filled before 1991, and about 180 tonnes of sodium cyanide, a very toxic chemical and a precursor for the warfare agent tabun."
Whilst the tabun-filled containers were all treated with decontamination solution and "unlikely" to contain any agent (no certainties) "the residue of this decontamination would contain cyanides, which would still be a hazard". Understatement or what?
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 ... the shells could contain mustard residues that cannot be used for chemical warfare but remain highly toxic."
US State Department spokeswoman, Jen Psaki, whilst concerned about seizure of the complex, sunnily dismissed what to most would be a pretty alarming inventory as "degraded chemical remnants ... (which) "don't include intact chemical weapons and would be difficult, if not impossible to safely use ... or ... move." The US Defence Department sang from exactly the same hymn sheet.
So lethal chemicals are used "safely" and "difficulty" (not inability) with moving are air brushed. They could surely be incorporated in to crude chemical devices. Ms Psaki's blithe assessment is more than strange, especially given that insurgents in Syria have near certainly used, with devastating effect, home made chemical weapons.
The "no immediate danger" message seems obliquely contradicted by Iraq's Ambassador to the UN Mohammed Ali Al Hakim who, in a letter to the UN said Iraq was unable to fulfill its obligations to destroy the weapons in the light of the takeover of Al Muthanna, but would resume its obligations when the facility was retaken and security restored.
Question one: If they are so "degraded" why the need to destroy them?
Question two: Why is Iraq being treated differently from Syria, which was forced to remove chemical weapons in highly dangerous circumstances, yet the UN (and that devious "international community") allows Iraq off the hook?
Should all that be a bit confusing, try this. On 8th July Ambassador Al Hakim informed the UN Atomic Energy Agency (UNAEA) that "terrorist groups" had seized nearly forty kilos (eighty eight pounds) of uranium from a laboratory at Mosul University (5.)
The Ambassador appealed for help: "to stave off the threat of their use by terrorists in Iraq or abroad" stating that the material: "can be used in manufacturing weapons of mass destruction." This as government spokesperson in the US and UK issue siren warnings of knowledge of those plotting dire attacks on both countries.
Geniality rules. No problem says the UNAEA: " ... we believe the material involved is low grade and would not present a significant safety, security or nuclear proliferation risk." Uranium is radioactive and uranium 233 through to 238 (there are six known isotopes)

have a half-life ranging between sixty nine and 4.5 Billion years.

It is hard to know whether to laugh or cry, given the horrors rained on Iraq, at the now relaxed attitude to allegedly having potentially lethal chemicals and chemically toxic and radioactive materials in the hands of those who have committed unspeakable crimes and declared a fundamentalist "Caliphate" between Iraq and Syria.

Remember just one of the litany of lies to justify the Iraq invasion, the October 2002 ninety page National Intelligence Estimate document produced by Washington which stated that Iraq had begun "vigorously trying to procure" uranium from Niger and two other African countries?

In January 2003, then President George W. Bush even stated in his State of the Union speech: "The British government has learned that Saddam Hussein recently sought significant quantities of uranium from Africa." More baseless rubbish from now "Peace Envoy" Tony Blair and his cabal. But now, apparently, uranium in the hands of unknown terrorists is of no consequence.

At the same time, then US Defence Secretary Donald Rumsfeld was bitterly condemning Saddam Hussein as a "brutal and ruthless monster ... citing the use of the very weapons he (Rumsfeld) helped to supply."

"As an envoy from President Reagan (in 1983) he had a secret meeting with" Saddam Hussein "and arranged enormous military assistance for his war with Iran."

"Mr Rumsfeld, at the time a successful executive in the pharmaceutical industry, still made it possible for Saddam to buy supplies from American firms." (6)

Given the litany of lies attached to the tragedy of Iraq, can we believe the apparently tranquil view being taken of these latest developments? Or will it suddenly become an excuse to reinvade to rescue US puppet "Prime Minister" Nouri Al Maliki, or even an pretext for his to use even more heinous weapons on those who oppose him than he has already and blame the complex coalition - temporary "marriage of convenience" - of resistance and insurgents.

There are many unanswered questions in this alarming saga.

Syrian Chemical Destruction Data

As of 11 July 2014

Source: http://www.opcw.org/special-sections/syria/destruction-statistics/

	Total Amount	Amount Destroyed	Destroyed (%)
Total Category 1*	1,038.5 MT	257.4 MT	24.8%
Total Category 2**	254,167 MT	0	0.0%
Total Chemicals (Cat. 1 and 2)	1,292.7 MT	257.4 MT	19.9%

* "Category 1" chemicals = All Priority 1 chemicals removed from Syria for destruction outside the country, plus isoproponal already destroyed in situ

** "Category 2" chemicals = All Priority 2 chemicals removed from Syria for destruction outside the country

Researchers create safe, resistant material to store waste

Source: http://www.homelandsecuritynewswire.com/dr20140722-researchers-create-safe-resistant-material-to-store-waste

Storing industrial waste has never been a pretty job, and it is getting harder. New techniques for refining such metals as aluminum and vanadium, for example, also yield new byproducts that have to be sealed away from human and environmental contact. Also, the practice of "scrubbing" the exhaust of coal-fired power plants keeps chemicals like sulfur dioxide from entering the air, but produces a more concentrated residue.

Now, many of these wastes are proving too acidic, basic or concentrated for commonly used storage materials.

This is why University of Wisconsin-Madison researchers, partnering with companies through the National Science Foundation's Grant Opportunities for Academic Liaison with Industry program, set out to reinforce those materials by fusing them with polymers.

A UW-Madison release reports that their starting point is sodium bentonite clay, which has proven reliable in a variety of environmental applications, essentially swelling up and forming a seal when exposed to water or other liquids. The clay, however, sometimes fails to swell up adequately when subjected to harsh conditions, such as the extreme pH levels of "red mud," the alkaline residue produced by aluminum extraction.

"You have to be able to store the waste into perpetuity — hundreds of acres of this liquid," says Craig H. Benson, the Wisconsin Distinguished Professor of civil and environmental engineering and geological engineering at UW-Madison. "Effective containment is part of the social contract these companies have with their community."

Benson, colleagues Tuncer Edil and William Likos and former Ph.D. student Joe Scalia have spent the past five years experimenting with different ways to incorporate polymers into the bentonite clay. They eventually discovered that the best method was to let polymer molecules move around on the bentonite's surface, essentially finding a way into the flow path of the liquid as the clay swells up. The resulting material can withstand pH levels as low as 1 — highly acidic — and as high as 14 — highly basic — depending on the concentration of the substances involved.

To adapt their material to commercial uses, the researchers partnered with engineers at the large mineral technologies company CETCO. Chris Athanassopoulos, who works as a technical services manager in CETCO's suburban Chicago branch, says the involvement of UW-Madison engineers made it much easier to get people in industry interested in the new product.

"When you're talking with a design engineer or a regulator, unfortunately they have lots of experience talking to salespeople, or people who promise the world to them without backing it up with good technical information," Athanassopoulos says. "The fact that we were able to have data from Craig's lab over the long term, with some of these materials, was probably the biggest benefit in terms of getting acceptance."

Athanassopoulos and his CETCO co-worker Mike Donovan gradually came up with ways to manufacture and market the product, now sold as Resistex GCL, and are still experimenting with another iteration, dubbed Continuum GCL.

So far, the products have been accepted by one of the world's largest producers of aluminum, Alcoa, which recently used the material to line one of its storage facilities for aluminum tailings.

To build on this success, Benson plans to focus on understanding the chemistry of how the material works, and eventually build off the material's design to create a suite of different materials tailored to contain different kinds of extreme chemistries. Beyond industrial waste storage, Benson sees potential for this research in applications as diverse as plugging wells and building containment walls that seal off contaminated groundwater areas from the rest of the water supply. And as UW-Madison researchers learn more about the science of extremely resilient environmental materials, partners in industry are learning how to adapt their manufacturing processes to spread the benefit of these materials.

"Craig and his team are always asking questions and developing tests," Athanassopoulos says. "We've learned a lot from them."

CoBRA® Software Provides CBRN Common Operating Picture during 2014 World Cup –Brazil

Source: http://www.cobrafirstresponder.com/

Defense Group Inc. (DGI) CoBRA® Software division has just completed their latest international project, supporting the Brazilian Army and Navy during the 2014 FIFA World Cup in Brazil.

CoBRA® has been supporting United States first responders for nearly 15 years, and the CoBRA® CBRNe Decision Support software has been deployed to US Military installations CONUS and OCONUS.

CoBRA® has been known by civilian and military first responders within the United States for over a decade as a powerful, yet easy to use CBRNe / HAZMAT software. In 2012, CoBRA® began making the transition towards WEB-enabled applications as well and now offers a complete set of all-hazards tools for easy web-based emergency operations and response.

Now CoBRA® software has been deployed across Brazil with the support of CTEX – Army Technology Center (Centro Tecnologico do Exercito). CoBRA® 's client (laptop)-based software and WEB-based platform were used by soldiers and security personnel to exercise the following capabilities:

- Track real-time location of undercover security elements equipped with handheld sensors
- Gather real-time remote GPS-tagged photographs
- Generate and collate real-time operation logs for all participating security elements
- Gather and collate real-time GPS-tagged sensor readings (mobile and fixed site)
- Display all data in real time on a single map, accessible anywhere
- Archive all data and provide export to common file formats (Excel, Google Earth)
- Provide real-time alarms based on multiple chemical, radiological and weather sensor readings

- Provide all response plans, databases, checklists, responder data and after action report tools.

"During world cup, all stadiums were monitored using CoBRA® software by the Army in ten cities and Navy in two cities. The flexibility of CoBRA® provided us the capacity to monitor our CBRN sensor networks and deployed response teams at local Command and Control centers largest CBRN defense operation ever deployed by the Brazilian MoD." - ***Cel Paulo Malizia, Chefe da Divisão*** *as well as National C2 center in Brasília providing real time information about* ***de Defesa QBN, Centro Tecnológico do Exército.***

CoBRA® enhanced Brazil's ability to achieve a true Common Operating Picture, and allowed the Emergency Operations Center to view all sensors and resources on a single map and dashboard, across multiple venues simultaneously.

In 2014, CoBRA® released the web based Ability to Survive and Operate (ATSO) Toolset. Initially designed for Military Installations to respond and recover after an attack or natural disaster, this powerful web-based toolset also meets the needs of civilian first responders when dealing with incidents such as Active Shooter, HAZMAT Spill, Bomb Threat, Campus Security, and major storm Restoration of Operations.

ATSO allows users to create color coded "zones" within an area, from school campus, to sports stadium, to military installation. ATSO facilitates dispatching and tracking of response teams to survey and clear those zones. ATSO can be used for Operational Readiness Exercises and Inspections.

All existing and new CoBRA® customers who utilize the CoBRA® Collaboration platform will receive this upgraded set of tools as part of the standard client/web application solution at no additional charge.

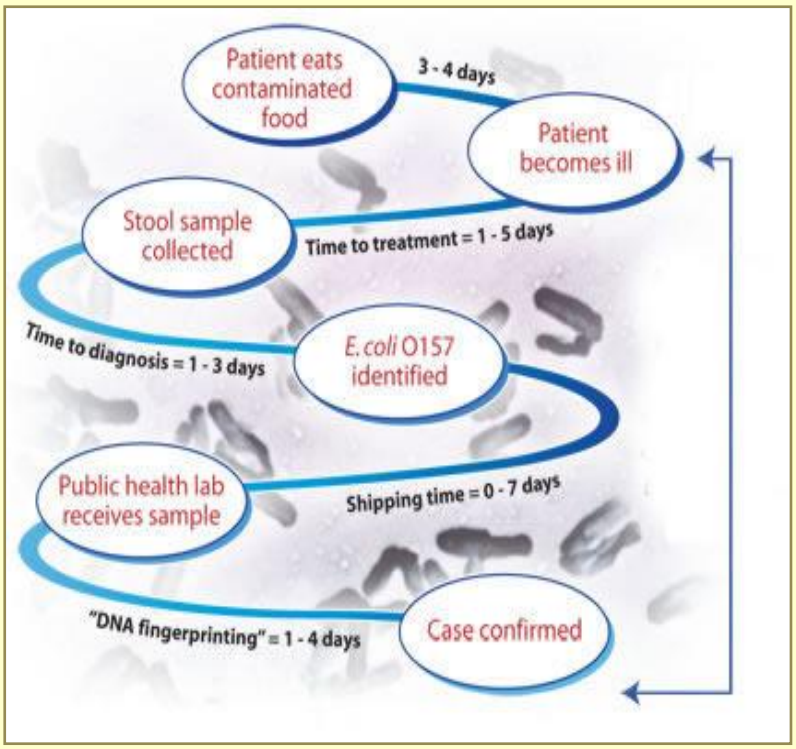
The CoBRA® Collaboration platform syncs all CoBRA® users together for real time information sharing and Common Operating Picture. Shared map view, shared incident data, and the ability to track users on a map are just some of the features.

Researchers develop better methods to detect E. coli

Source: http://www.homelandsecuritynewswire.com/dr20140624-researchers-develop-better-methods-to-detect-e-coli

Kansas State University diagnosticians are helping the cattle industry save millions of dollars each year by developing earlier and accurate detection of E. coli.

Lance Noll, master's student in veterinary biomedical science; T. G. Nagaraja, university distinguished professor of diagnostic medicine and pathobiology; and Jianfa Bai, assistant professor in the Kansas State Veterinary Diagnostic Laboratory, are leading a project to improve techniques for detecting pathogenic Shiga toxin-producing E. coli O157:H7.



A U.S. Department of Agriculture Coordinated Agriculture Project grant is funding the work.

A K-State release reports that the researchers are part of a College of Veterinary Medicine team studying pre-harvest food safety in beef cattle. Noll has developed and validated a molecular assay that can detect and quantify major genes specific for E. coli O157.

"Developing a method to detect E. coli before it can potentially contaminate the food supply benefits the beef industry by preventing costly recalls but also benefits the consumer by ensuring the safety of the beef supply," Noll said.

The newly developed test is a molecular assay, or polymerase chain reaction, that detects bacteria based on genetic sequences, which are the **bacteria's "fingerprints,"** Nagaraja said.

The test is rapid and less labor-intensive than existing detection methods. The method can be automated and test many samples in a short period of time. The test can be used in a diagnostic or research laboratory to accurately detect E. coli and can help with quality control cattle facilities.

"The novelty of this test is that it targets four genes," Nagaraja said. "We are constantly working on finding better and more sensitive ways to detect these pathogens of E. coli in cattle feces."

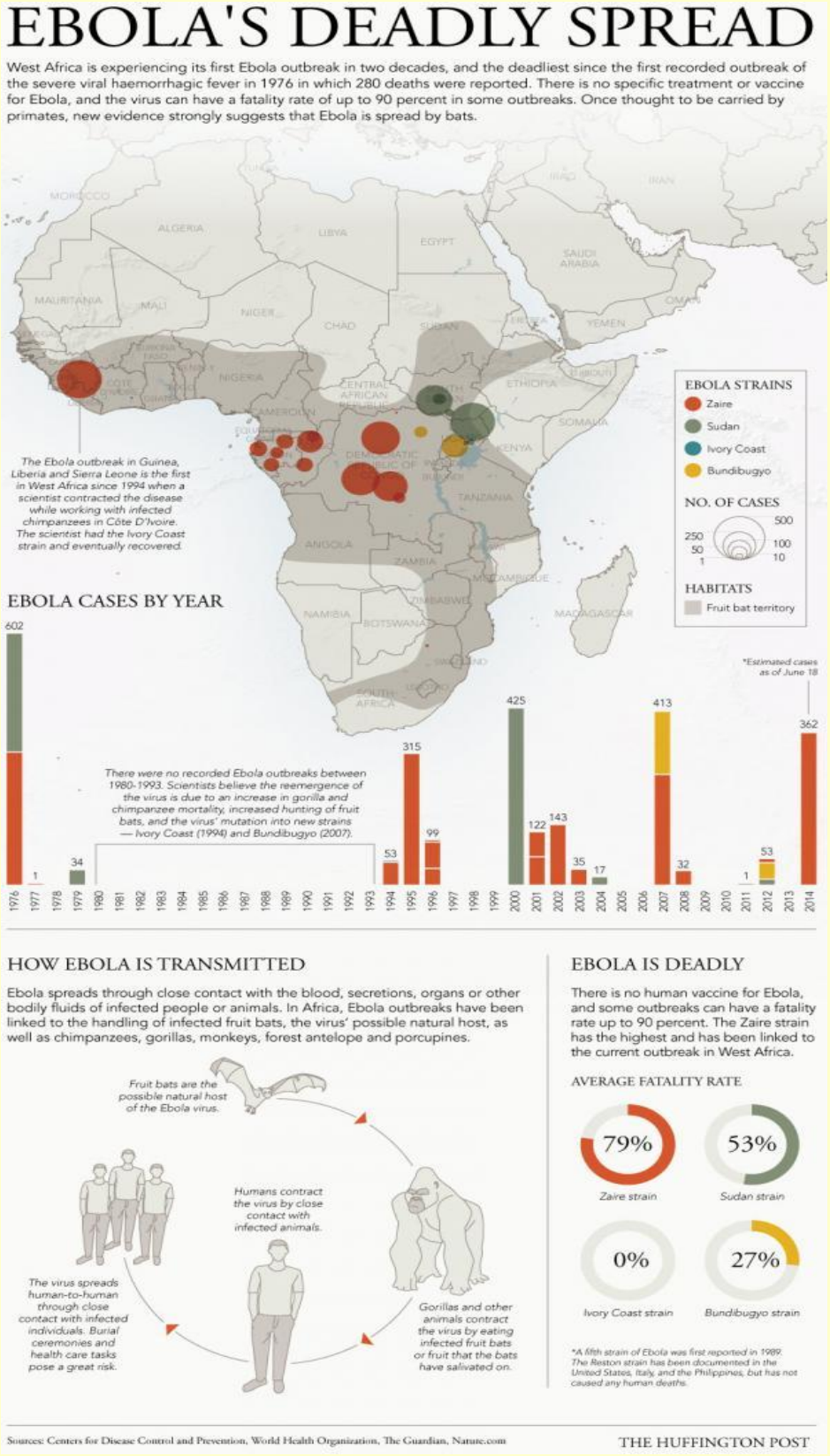
To develop the diagnostic test, Noll and Nagaraja worked with two Kansas State University molecular biologists: Xiaorong Shi, research assistant of diagnostic medicine and pathobiology, and Bai.

"Beef cattle production is a major industry in Kansas and Kansas State University has a rich tradition in the research of beef cattle production and beef safety," Noll said. "As a graduate student in veterinary biomedical sciences, I am proud to be a member of a multidisciplinary team in the College of Veterinary Medicine that aims to make beef a safe product for the consumers."

Noll was named a winner at the 11th annual Capitol Graduate Research Summit this spring for his research project and poster, "A four-plex real-time PCR assay for the detection and quantification of Escherichia coli O157 in cattle feces."

FDA-approved medications may stop deadly Ebola

Source: http://www.homelandsecuritynewswire.com/dr20130626-fdaapproved-medications-may-stop-deadly-ebola



26 June 2013 – A class of drugs that includes treatments for breast cancer and infertility appears able to inhibit the deadly, incurable Ebola virus, new research suggests.

A University of Virginia release reports that as part of a collaborative effort, researchers at the University of Virginia School of Medicine have shown that the drugs clomiphene, which is used to treat female infertility, and toremifene, used to treat breast cancer, can effectively block Ebola infections in mice. The drugs, and others with similar structures, appear to prevent the virus from delivering its RNA into the cytoplasm of cells.

Without the ability to deliver its genetic payload, the virus degrades quickly and is removed from the body.

"These are among the first FDA-approved compounds shown to be effective against Ebola in mouse models," U.Va. researcher Judith M. White said. "With a virus this lethal, you want something to combat it."

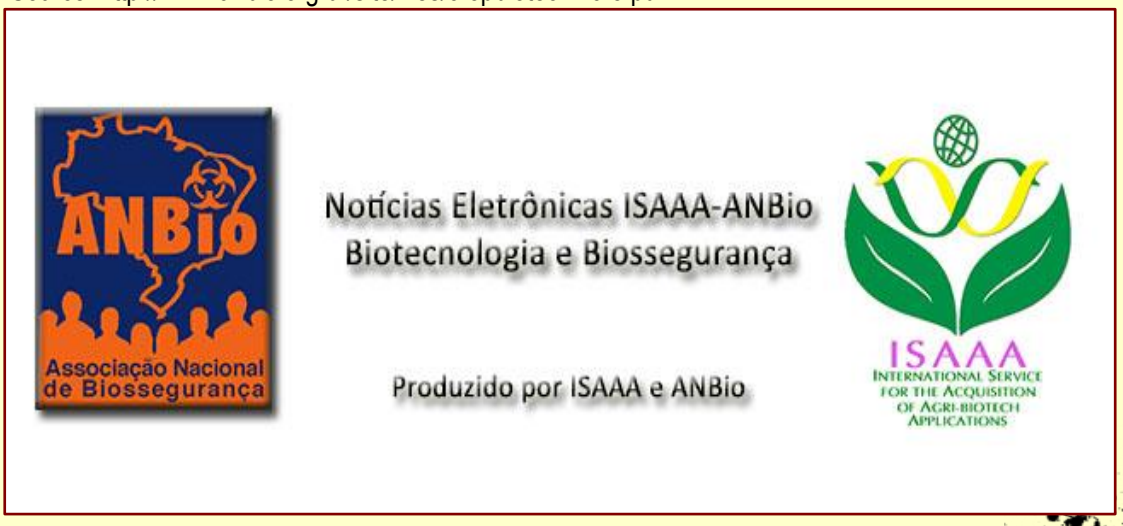
Ebola infections carry fatality rates of up to 90 percent. It strikes both humans and other primates, and there are fears it could be used as a biological weapon. There is no cure, so it is imperative that scientists find effective treatments. The new discovery eventually could lead to the repurposing of FDA-approved drugs, already available for

prescription, to combat the virus.
The release notes that the findings are the result of an innovative partnership of academia, government, and private industry.
The drugs' potential use against Ebola was first identified by investigators at biopharmaceutical company Zalicus and the U.S. Army Medical Research Institute of Infectious Diseases; they then turned to U.Va. for its expertise in figuring out how the drugs worked against the virus. U.Va. has developed an important assay that lets researchers analyze each step of the cellular infection process, allowing them to determine how the two drugs — and potentially other, similar drugs — undercut Ebola.
The U.Va. researchers concluded that the drugs were preventing the virus from fusing with membranes in targeted cells, essentially hemming in the viral RNA.
"Ebola virus is in a race against the clock when it gets into the cell," said Jason Shoemaker, a postdoctoral fellow who developed the assay as a graduate student in White's lab. "We want to lock the door on it."
The research could have important ramifications for understanding the Ebola infection process. "There is a lot about Ebola viruses that is very strange compared to other viruses," Shoemaker said. "Any work that helps uncover more information about the viral entry pathway is helpful."
The U.Va. research posed no health risk, as the researchers used what are known as "virus-like particles" that contain no genetic material.
In evaluating the drugs' potential for stopping Ebola, U.Va. worked closely with both Zalicus and the Army Medical Research Institute, which handled the work involving live viruses.
White noted the unconventional process that led to the discovery of the drugs' anti-Ebola properties. Instead of attempting to develop a drug starting at the molecular level, Zalicus began by looking for existing drugs that could inhibit Ebola.
"This whole approach is the reverse of how a molecular biologist might approach the problem," White said. "If we'd gone with the molecular approach, we would never have looked at this class of drugs."
The U.Va. researchers plan to continue their collaborative efforts and will look for drugs that may be even better at battling Ebola than clomiphene and toremifene.
"Our findings suggest we are not talking about one specific drug," Shoemaker said. "It's a whole family. One might be better."

— Read more in Lisa M. Johansen et al., "FDA-Approved Selective Estrogen Receptor Modulators Inhibit Ebola Virus Infection," Science Translational Medicine *5, no. 190 (19 June 2013)*

Brasil – ANBio Newsletter – May 2014

Source: http://www.anbio.org.br/site/files/cropbiotechmaio.pdf



CDC Director Reassigned After Anthrax Scare

Source: http://guardianlv.com/2014/06/cdc-director-reassigned-after-anthrax-scare/

In the wake of a recent anthrax scare, the Centers for Disease Control and Prevention (CDC) has begun to take disciplinary action. At the head of the problem lies the CDC's bioterror level three containment lab, and various sources have reported the director of the lab has been reassigned.

The employee is currently working "on a detail," which is essentially a nice way of saying that the individual has been assigned different tasks pending the results of an investigation. Michael Farrell, Ph.D., was identified by Reuters as the individual, but the CDC has not confirmed that Farrell is the alleged guilty party.

The incident occurred due to a "breakdown in safety procedures causing 84 CDC staffers in Atlanta to be exposed to live Anthrax." Benjamin Haynes, a CDC press officer, has reassured the public that most of the 84 staffers have already been treated with antibiotics by the CDC and the rest are being monitored. Some exposed staffers may have already been treated by their primary care provider.

Contrary to popular belief, anthrax illnesses are treatable with antibiotics and/or vaccine. In fact, anthrax is not viewed as a "transmissible disease," according to Gregory Poland, MD, of the Mayo Clinic, in Rochester, Minn. Anthrax is spread by the creation of toxins within the body but is not a contagious disease in itself. Illness can quickly develop and prove fatal for a person left untreated.

According to the CDC, the error occurred "between the week of June 6 and June 13. The bioterrorism lab began executing new safety procedures. While transporting the Anthrax samples to another lab with less security, critical protocol errors were made in handling of the specimens." CDC spokesman Tom Skinner stated that the main bioterrorism lab transferred the anthrax bacteria in tubes, but the subsequent lower security laboratories mishandled the samples when they "agitated" the specimens and were forced to open the tubes. This caused a fear that the bacteria became airborne, of which the most dangerous in this particular scenario would be airborne spores.

With the unconfirmed director reassigned, Dr. Paul Meechan, director of CDC Environmental Health, has stepped in to fill the vacant role. Meechan informed Reuters of the Anthrax exposure scare on Thursday, and a thorough investigation is still ongoing.

Thus far, a CDC review has confirmed that the "high-profile" bioterror lab was preparing the anthrax samples for a study involving the detection of new pathogens. Upon handling the bacteria, the lab did not do a sufficient job in deactivating the samples. When staff at other laboratories received the anthrax samples, they assumed the anthrax bacteria were inactive. Unbeknownst to those staffers, the anthrax spores became active. The major procedural breech identified was the fact that the lab was supposed to wait 48 hours to ensure the bacteria were inactive prior to transfer but instead waited just 24. Consequently, "live anthrax colonies were found on bacterial plates."

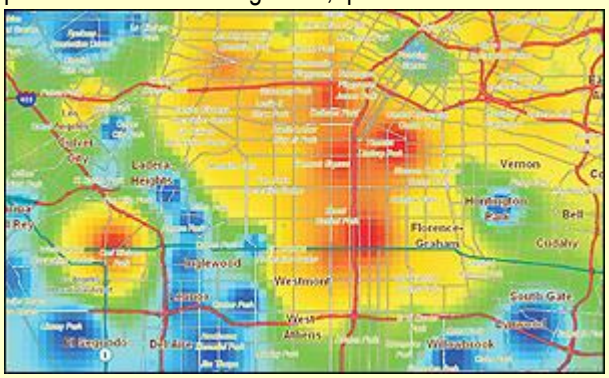
Directing an anthrax scare can be a daunting task for a regulatory government-based organization like the CDC. Anthrax rose to prominence post Sept 11, 2001, after letters with the deadly bacteria were sent to members of Congress. At the time, the public and government feared the incident was related to the terrorist attacks. Later, the alleged culprit, Bruce Ivins, was discovered. Ivins was discovered after an investigation determined he committed suicide shortly before he learned that the FBI was on to him. The U.S. has since viewed Anthrax as a potential bioterrorism hazard, making any lax regulation regarding its handling a serious issue, a fact to which the reassigned director of the CDC is well aware.

Forensic geographical profiling technique targets killer diseases

Source: http://www.homelandsecuritynewswire.com/dr20140625-forensic-geographical-profiling-technique-targets-killer-diseases

A mathematical tool used by the Metropolitan Police and FBI has been adapted by researchers at Queen Mary University of London to help control outbreaks of malaria, and has the potential to target other infectious diseases.

In cases of serial crime such as murder or rape, police typically have too many suspects to consider, for example, the Yorkshire Ripper investigation in the U.K. generated a total of 268,000 names. To help prioritize these investigations, police forces around the world use a technique called **geographic profiling**, which uses the spatial locations of the crimes to make inferences about the criminal's likely anchor point – usually a home or workplace.



Map generated by crime prediction adapted to disease-fighting

A Queen Mary, University of London release reports that writing in the journal *Methods in Ecology and Evolution*, the team has shown how the math that underpins geographic profiling can be adapted to target the control of infectious diseases, including malaria. Using data from an outbreak in Cairo, the scientists show how the new model could use the addresses of patients with malaria to locate the breeding sites of the mosquitoes that transmit the disease.

"The experts working in the field had to search almost 300 square km to find seven breeding sites, but our model found the same sites after searching just two thirds of this area," said Dr. Steve Le Comber, a senior lecturer at QMUL's School of Biological and Chemical Sciences.

"In fact our model found five of the seven sites after searching just 10.7 square km. This is potentially important since there is a lot of evidence suggesting that the best way to control outbreaks of malaria is to attack the mosquito breeding sites — but it is incredibly difficult to do in practice."

The mathematical approach takes just minutes on a computer, meaning that the method could be used in the early stages of epidemics, when control efforts are most likely to be effective — potentially stopping outbreaks before they spread.

Dr. Le Comber added: "The model has potential to identify the source of other infectious diseases as well, and we're now working with public health bodies to develop it further for use with TB, cholera and Legionnaires' disease."

— Read more in Robert Verity et al, "Spatial targeting of infectious disease control: identifying multiple, unknown sources," Methods in Ecology and Evolution *(12 May 2014)*

The "militarization of health care" threatening the health of local populations

Source: http://www.homelandsecuritynewswire.com/dr20140625-the-militarization-of-health-care-threatening-the-health-of-local-populations-experts

The surge in murders of polio vaccination workers in Pakistan has made headlines this year, but little attention has been devoted to the ethical issues surrounding the global health impact of current counterterrorism policy and practice. An essay in the *Hastings Center Report* reviews the range of harms to population health traceable to counterterrorism operations.

It also identifies concerns involving moral agency and responsibility — specifically of humanitarian health workers, military medical personnel, and national security officials and operatives – and it highlights policy issues.

A Hastings Center release reports that the authors describe a broad trend in the war on terror: "the militarization of health care," in which medicine is incorporated into warfare. As an example, they cite the covert operation involving a vaccination program that led to the killing of Osama bin Laden, which contributed to fear and distrust among populations in need of health services.

"Counterterrorism frameworks promulgated by the United States and adopted by other countries are also implicated in undermining population health," write the authors, Lisa Eckenwiler, associate professor of philosophy and health administration and policy at George Mason University, and Matthew Hunt, an assistant professor in the School of Physical and Occupational Therapy of McGill University. "Policies that prohibit a wide range of activities regarded as providing material support to terrorists have adversely affected health program and funding."

Counterterrorism-related harms also exacerbate global health inequities. "Populations in places like Afghanistan, Pakistan, Somalia, and Yemen — already vulnerable by global health standards — are more precariously positioned as a result of the war on terror," the authors write.

The authors identify profound moral distress and fear among humanitarian and health workers who are professionally committed to neutrality and independence and yet are treated as tools in the war on terror.

"As the global war on terror has evolved — or devolved — the military's effort to 'win hearts and minds' through such strategies as providing medical care to local populations has situated military medical personnel in the midst of ethical controversy," they write. "Deploying health services for the sake of advancing strategic aims seems to violate obligations at the core of health professionals' identity, including the obligations to respect patients as ends in themselves, to avoid treating them as instruments for other purposes, and to serve their particular health interests rather than state interests."

The authors conclude that the most pressing policy issue is how to integrate concern for health in efforts to prevent terrorism: **"Identifying threats to global health posed by counterterrorism strategies, analyzing them in relation to anticipated gains, and determining the proper assignment of responsibilities for harms done to health and health systems are morally pressing tasks that existing structures and processes lack the capacity to carry out."**

— Read more in Lisa Eckenwiler and Matthew Hunt, "Counterterrorism, Ethics, and Global Health," Hastings Center Report *44, no. 3 (12 May 2014): 12-13*

European Union CBRN Medical Countermeasure Preparedness

By Stephen Jackson

Source: http://www.cbrneportal.com/managing-residual-clearance-learning-from-europes-past/

Following the World Trade Centre and the Anthrax terrorist attacks in 2001, both the United States (US) and the European Union (EU) adopted Counter Terrorism Strategies and took actions aimed at increasing their respective levels of CBRN (chemical, biological, radiological, nuclear) preparedness and response capabilities. Protecting the population from CBRN terrorist threats is of high priority for both the US and the EU but this article will focus primarily on the EU's efforts to address CBRN terrorist threats through the framework of the CBRN Action Plan.

In order to respond efficiently to CBRN incidents or terrorist attacks, CBRN medical countermeasures play a crucial role since they enable patient recovery. Indeed, following a CBRN incident or attack, CBRN medical countermeasures constitute the only means of treating victims suffering from internal contamination; thus adequate levels of preparedness have to be ensured.

Using a wide definition, **medical countermeasures are understood as all drugs and biological products, medical devices and other medical equipment designed to treat victims against CBRN attacks or incidents and emerging infectious diseases, such as pandemic influenza.**
This article will provide a brief overview of the EU's CBRN security framework as well as review the CBRN action plan and its 2012 progress reports with regards to EU CBRN medical countermeasure preparedness.

European Union CBRN Security Framework
At EU level, the Health Security Committee (HSC) is the key mechanism for coordinating health security efforts. It is an informal cooperation and coordination body concentrating on health–related threats from terrorism or any deliberate release of biological or other agents, as well as raising levels of preparedness for cross-border threats, in particular for pandemic flu.
In December 2005, the EU adopted the EU Counter-Terrorism strategy to deal with the increasing threat of terrorism. Later in 2009, as part of this strategy, a special focus was put on CBRN matters through the CBRN Action Plan which is a list 124 actions that EU Member States have committed to implement.
The CBRN Action Plan focuses on reducing threat and damage from CBRN incidents or attacks to the citizens of the European Union through three main strands; namely prevention (by ensuring controlled and regulated access to CBRN materials), detection (detect CBRN materials in order to prevent or respond to CBRN incidents or attacks) and finally preparedness and response (efficiently responding to CBRN incidents or attacks and making sure casualties recover as soon as possible using medical countermeasures).

CBRN Action Plan and CBRN Medical Countermeasures Preparedness
The CBRN action plan aims at enhancing EU preparedness and response capabilities through an increase of medical countermeasure capacities under horizontal actions1 H.34 (listed as key action2), H.35 and H.363. These actions are designed to determine capability gaps by assessing EU Member States' vulnerabilities given a pre-identified CBRN threat scenario. In other words, do Member States have appropriate medical countermeasures given the nature of the CBRN threat and are these medical countermeasures available in sufficient quantities. Furthermore, H.36 provides for exchange of best practises amongst Member States in the field of CBRN medical response.

The 2012 CBRN Action Plan Progress Report, summaries the key achievements in the implementation of the H-Actions. According to the latter document, the main progress has been achieved in the following areas: establishment of the three EU lists high-risk substances; providing CBRN training and exchanging good practices; conducting CBRN exercises at local, regional, national, EU and international level; the establishment of the European network of specialised CBRN law enforcement units as well as the set-up of an Early Warning System (EWS) for law enforcement authorities for incidents related to high risk CBRN materials as well as explosives and firearms. Furthermore, the report highlights that much effort has been made in the field of CBRN-related security research within the FP7 framework.
Enhancing the EU's CBRN preparedness and response capabilities through increased medical countermeasures capacities is hence not listed by the Commission has a key achievement. The key action H.34 was initiated in 2010 and is still on-going; therefore, in 2012 it may have been too early to determine whether progress had been made. However, actions H.35 and H.36 were to be implemented in 2011. Consequently, the implementation process of these actions is either in its infancy stage, considered of low priority, delayed or even non-existent; making the EU ever more vulnerable to CBRN attacks and incidents.

Conclusion
Although, the EU adopted the CBRN Action Plan to deal with the threat of CBRN incidents and terrorist attacks, **the CBRN Action Plan is non-binding and thus cannot be legally enforced. As a result, the implementation process is lengthy or even non-existent meaning that relevant medical countermeasures are not developed and thus not stocked in sufficient quantities.**

Putting aside the stagnant implementation process of medical countermeasure-related actions, it could be argued that the sheer nature of these actions does not contribute to enhancing EU CBRN preparedness. Indeed, **actions H.34 H.35 and H.36 rely on threat and risks assessments as well as CBRN security research rather than on concrete measures to increase CBRN medical countermeasure capacities.** In other words, whilst these actions are essential to determine which medical countermeasures have to be developed and stocked given a certain CBRN threat; they do not contribute to the EU's overall security by developing concrete CBRN capabilities.
Finally, **it is crucial that the EU focuses on CBRN medical countermeasure capability development in order to increase its preparedness levels and respond efficiently to CBRN incidents or terrorist attacks.**

***Stephen Jackson** is a Security and Defence Consultant at IB Consultancy, specialising in the field of CBRNe and C-IED.*

EDITOR'S COMMENT: I totally agree with what is written in this article. Plus: "European Union" in the title is just a hyperbole the moment that all action plans are non-binding. EU is trying for years to establish a CBRN Plan without success – just spend millions on research. But if you put these research projects back in the puzzle you always identify gaps and overlaps – not a solid pan-European response plan applicable to all. Too much focus on technologies and innovations; too little attention to medical people that are the core of all responses. The only solution is a "EU CBRN Medical Training Academy" that will massively produce well trained front-line health professionals for the EDs of tomorrow. This is an expensive project mainly due to installations needed but it can be done and change the map on overall response. This is my dream and who knows perhaps one day it will become a reality. Hopefully in this life span!

Funding shortfall may kill bio-terrorism lab

Source: http://www.kxly.com/news/spokane-news/funding-shortfall-may-kill-bioterrorism-lab/26667818

A bio-terrorism lab that tests for everything from the flu to anthrax and ricin is in danger of closing due to lack of funding.
The lab is one of only two in the state, with the other one located in Shoreline, more than 300 miles away. Local health officials say in a critical situation that's just too far away.
Inside Eastern Washington's bio-terrorism lab Karie Brouillard has been hard at work testing specimens as they come in. She's been working in the lab since it opened 10 years ago.
"It is high stress when you are testing, knowing it is such a critical result that you have and people are waiting," she said.
She's worked on high profile cases in the past, like the suspicious backpack found along the MLK Day Unity Parade route in 2011 and more recently letters laced with ricin sent to the U.S. Post Office and a Spokane judge.

"I really feel we have had enough events in Spokane to really justify the location of a laboratory here and turn-around time, could be the difference between getting people treated as fast as possible," she said.
It's not just the high profile cases we hear about, but the tests that come back negative that justify keeping the lab. If samples aren't tested locally it could take hours, or up to a day, to send it to the state's only other bio-terrorism lab in Western Washington.
"What I worry about is during the winter, when the passes are closed, trying to get the samples to the west side," Brouillard said.
As of now that may be the only option.

"We've seen public health funding do down and down and down," Health Officer Joel McCullough with the Spokane Regional Health District said.
Funding from this lab has dwindled since 2011 and now it's gone.
"At this point there is no federal dollars to support testing here in Spokane," McCullough said.
The health district's board recently voted to temporarily fund the lab through 2014 but after that the lab will be unfunded.
The health district needs $150,000 each year to pay for staffing and equipment to keep the lab operational. If long-term funding can't be secured in the coming months the lab will close at the end of the year.

EDITOR'S COMMENT: No problem! Just close the damn lab! We all know that nothing is going to happen to us! EVER!

Canadian dirt containing Kryptonite for superbugs

Source: http://www.homelandsecuritynewswire.com/dr20140626-canadian-dirt-containing-kryptonite-for-superbugs

A fungus living in the soils of Nova Scotia could offer new hope in the pressing battle against drug-resistant germs that kill tens of thousands of people every year, including one considered a serious global threat.
A team of researchers led by McMaster has discovered a fungus-derived molecule, known as AMA, which is able to disarm one of the most dangerous antibiotic-resistance genes: **NDM-1 or New Delhi Metallo-beta-Lactamase-1,** identified by the World Health Organization as a global public health threat.
"This is public enemy number one," explains Gerry Wright, director of the Michael G. DeGroote Institute for Infectious Disease Research at McMaster University.
"It came out of nowhere, it has spread everywhere and has basically killed our last resource of antibiotics, the last pill on the shelf, used to treat serious infections," he says.
A McMaster University release reports that discovering the properties of the fungus-derived molecule is critical because it can provide a means to target and rapidly block the drug-resistant pathogens that render carbapenem antibiotics — a class of drugs similar to penicillin — ineffective.
"Simply put, the molecule knocks out NDM-1 so the antibiotics can do their job," says Wright.
Seeking an answer to the riddle of resistance in the natural environment is a far more promising approach than trying to discover new antibiotics, a challenge which has perplexed scientists for decades. No new classes of antibiotics have been discovered since the late 1980s, leaving physicians with very few tools to fight life-threatening infections.
"Not only do we have the emergence of an antibiotic resistance gene that is targeting the last drug resource we have left, but it is carried by organisms that cause all sorts of challenging diseases and are multi-drug-resistant already. It has been found not only in clinics but in the environment — in contaminated water in South Asia — which has contributed to its spread over the globe," explains Wright. "Our thinking was that if we could find a molecule that blocks NDM-1 then these antibiotics would be useful again."
Wright and his team from McMaster, University of British Columbia and Cardiff University in Wales created a sophisticated screening method to take the NDM-1 gene, combine it with harmless E. coli bacteria and then isolate a molecule capable of stopping NDM-1 in its tracks.
NMD-1 requires zinc to thrive but finding a way to remove zinc from it without causing a toxic effect in humans was a daunting task, until the discovery of the fungal molecule, which appears to perform the job naturally and harmlessly.
Scientists then tested the theory on mice infected with an NDM-1 expressing superbug. **The mice that received a combination of the AMA molecule and a carbapenem antibiotic survived, while those that received either an antibiotic or AMA alone to fight the infection did not survive.**

"This will solve one aspect of a daunting problem. AMA rescues the activity of carbapenem antibiotics, so instead of having no antibiotics, there will be some," says Wright. "This is a made-in-Canada solution for a global problem."

"Antibiotic resistance may be the most urgent and perplexing challenge facing health-care researchers today," says Dr. John Kelton, dean of the Michael G. DeGroote School of Medicine and vice-president of the Faculty of Health Sciences at McMaster. "This research provides new hope by showing us a completely new way to approach this problem, and none too soon, given the growing risk that superbugs pose to all of us. "

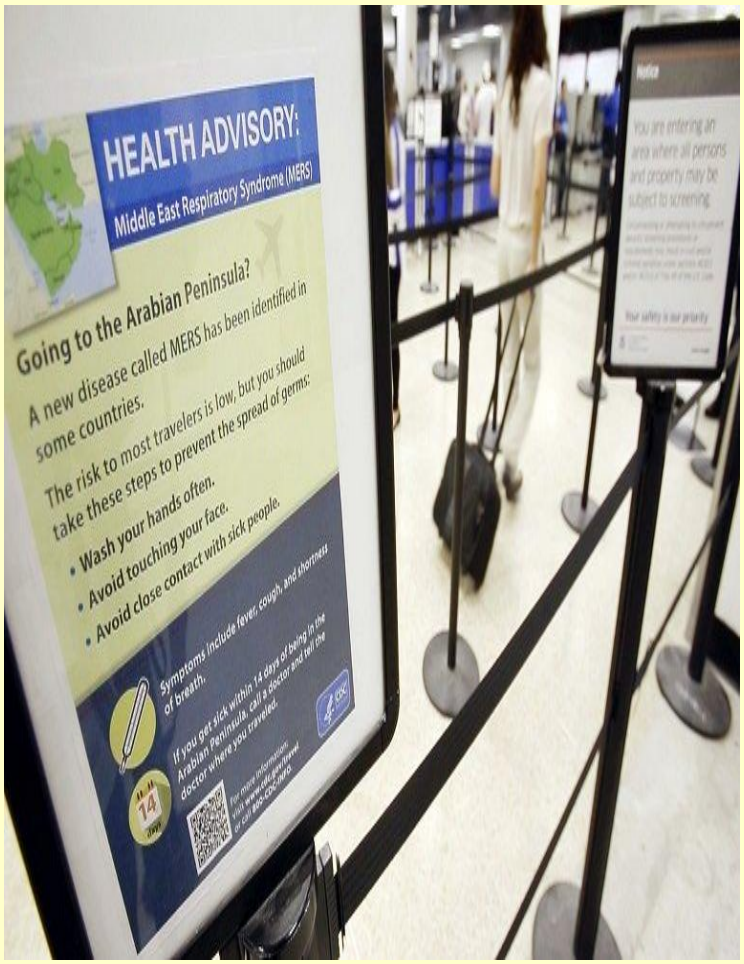
The findings are published online in the current edition of the journal *Nature*.

"Antibiotic resistance is one of the top public health concerns in Canada and internationally and it represents a research priority for the Canadian Institutes of Health Research (CIHR). It is exciting to see Canadian researchers finding innovative strategies to overcome antimicrobial resistance," says Dr. Marc Ouellette, scientific director of the CIHR Institute of Infection and Immunity.

— Read more in Andrew M. King et al, "Aspergillomarasmine A overcomes metallo-β-lactamase antibiotic resistance," Nature *510 (26 June 2014): 503–6*

MERS: How Should Public Health Departments Prepare?

Source: http://www.emergencymgmt.com/health/MERS-How-Can-We-Prepare.html



A Centers for Disease Control and Prevention health advisory warning travelers about the risks of MERS is shown at a TSA screening area on May 14, 2014, at Miami International Airport in Miami. (AP Photo)

Middle East Respiratory Syndrome (MERS) has been on the U.S. Centers for Disease Control and Prevention's radar since it first appeared in Saudi Arabia in 2012. The World Health Organization called the MERS virus a "threat to the world," because of the unknowns surrounding it, most notably how it spreads. But nothing made the threat more real than when the first case of MERS was confirmed in the U.S. on May 2, 2014.

MERS is a viral respiratory illness caused by a coronavirus called MERS-CoV. MERS has killed at least 175 people worldwide and sickened hundreds in the Middle East. It has spread from ill people to others through close contact, such as caring for or living with an infected person. People infected with MERS commonly experience fever, shortness of breath and coughing. About 30 percent of those infected with the virus die.

Given today's interconnected world, communicable diseases are truly just a plane ride away. Therefore the potential for MERS-CoV to spread further and cause more cases globally and in the U.S. is significant. Now that MERS has officially reached U.S. soil, what should public health departments and emergency managers be doing to prepare?

The First U.S. Case

On April 24, 2014, a health-care worker who lives and works in Saudi Arabia traveled by plane from Riyadh, Saudi Arabia, to London and from London to Chicago. He then took a bus from Chicago to Indiana. On April 27, he began to experience respiratory symptoms, including shortness of breath, coughing and fever. He went to an emergency room in an Indiana hospital on April 28 and was admitted that day. Because of the patient's symptoms and travel history, Indiana public health officials tested for MERS-CoV. The Indiana state public health laboratory and CDC confirmed MERS-CoV infection in the patient May 2, 2014, making him the first confirmed U.S. case of the virus. The patient was isolated in a hospital during the course of the illness and later discharged, having fully recovered.

Public health officials contacted health-care workers, family members and travelers who had close contact with the patient, and so far no further contamination has been confirmed.

On May 11, 2014, a second U.S. imported case of MERS was confirmed in another health-care worker who traveled from Saudi Arabia to Orlando via London, Boston and Atlanta. At press time, that patient was isolated in a hospital and doing well. The two U.S. cases are not linked.

While MERS truly burst into the spotlight once the U.S. cases were reported, the CDC has actually been working to prepare for the arrival of the virus since it was first discovered.

"We began working with state health departments and emergency managers to prepare in the summer of 2013, because we were pretty certain MERS would reach the U.S. one day, we just didn't know when," said Jason McDonald, spokesman for the CDC.

In July 2013, the CDC posted checklists and resource lists for health-care facilities and providers to assist in preparing to implement infection control precautions for MERS-CoV. McDonald said the CDC also developed guidance and tools for health departments to conduct public health investigations, and provided recommendations for health-care infection control and other measures to prevent disease spread. The CDC also developed a test to detect the virus, and in August 2013 that test was distributed to all U.S. state and local health departments. Finally, the agency provided guidance for flight crews, Emergency Medical Service units at airports, and U.S. Customs and Border Protection officers about reporting ill travelers to CDC.

"The discovery of the first case in Indiana was really a heads-up move by the hospital," McDonald said. "They called for the testing, and we were alerted that they had a positive for MERS that fit the case definition on May 1."

Samples were then sent overnight to the CDC, and the infection was confirmed on May 2.

"That started a chain of events," McDonald said. "We had a team of scientists on the way there immediately. When you are dealing with infectious diseases you need to understand what the patient had been doing and the places where people could have been exposed. It was quite an effort to contact bus riders and plane riders who may have been exposed — 53 in all — and tell them what to look for and what to do."

Case in Point

The Indiana State Department of Public Health has been praised for its swift action in the case.

"In some respects it was similar to the H1N1 pandemic we experienced a few years back, where you have a new agent and you are trying to learn about it at the same time you're trying to control it," said Amy Reel, public affairs director for the Indiana State Department of Public Health. "This was the first case identified in the U.S., so it was very visible. There was a lot of media attention and a lot of communication with federal agencies. Some of the recommendations were actually being developed during the outbreak."

For Indiana, good preparation enabled fast response.

"The preparedness infrastructure that we've built since about 2003 with federal funding support was instrumental in allowing us to

respond quickly to this outbreak," said Pam Pontones, Indiana state epidemiologist. "Without that type of support and infrastructure in place this would have been much more difficult."

Indiana State Health Commissioner William C. VanNess II said the response was really a plan that came together. "We were really pleased with the preparation that occurred and how everybody jumped in, did their job, and did it well. A lot of accolades go to the hospital, which was able to identify this fairly early, and to find the employees that had been in contact with the patient. "

VanNess said the state soon plans to review the sequence of events to see what can be learned from it and where to improve.

Pontones said much of the reaction was a result of relationships that had been built up and good communication. "Relationships with local health departments were key in helping to monitor the household contacts of the individual. The hospital staff was very responsive to monitoring the patient, locating others that may have been exposed and instituting the appropriate control measures."

VanNess said the Indiana Department of Public Health also involved the U.S. Department of Homeland Security, because the federal agency didn't not know which first responders might need to be involved should it face a full outbreak. Indiana also coordinated with the DHS on a message that went out to first responders advising them what to do if they received a call about the outbreak. The Department of Public Health also set up its own call center so residents with questions could call in 24 hours a day during the critical period after the case was confirmed.

Looking back on the experience, Reel recommends states faced with a similar situation build and rely on key partnerships.

"Build those relationships with your local health department, hospitals and emergency management teams both within and outside your agency," she said. "Build those now before you have a situation because once the situation happens, you need to be able to rely on those partnerships and relationships to get things done."

Reel also suggested that states not be afraid to reach out and ask for help. "We want to learn from other states and likewise, Florida consulted with us when they confirmed a case of MERS," she said. "These things don't stop at the state lines. Often federal agencies and other state agencies will be required to help, so having clear early communication and asking for help or resources when they are needed is key."

Vigilance Is Critical

In Florida, collaboration and partnerships were equally critical when the second U.S. case of MERS was confirmed there on May 11. The Florida Department of Health worked hand in hand with local and state partners, including Orange County and Orlando, emergency management officials, hospitals, the travel industry and others to provide an effective response. The department established its response to the situation based on the Incident Command System (ICS).

Ann Rowe, lead crisis and risk communications coordinator for the Florida Department of Health, said that by establishing a response based on the ICS, health professionals, responders and partners were able to benefit from the use of its changeable, scalable structure in order to successfully coordinate a wide range of efforts. She said this ensured that those responders trained under the umbrellas of planning, operations, logistics, finance/administration, safety, public information and other sections from necessary agencies and organizations were included.

Rowe said the Florida Department of Health and response partners train on the ICS throughout the year. As the MERS case in Florida was discovered, the state's Department of Health and partners were able to effectively respond by designating an incident commander who served as lead for the response. The commander collaborated with state and federal health professionals to safely transport samples and conduct lab testing; set up a call center to answer questions from the community; shared information among partners via the use of a Virtual Joint Information Center; and held press conferences to provide coordinated health-related messaging to the public.

Like in Indiana, Rowe said being prepared and knowing its partners were key to the state's success. "Get to know your public health

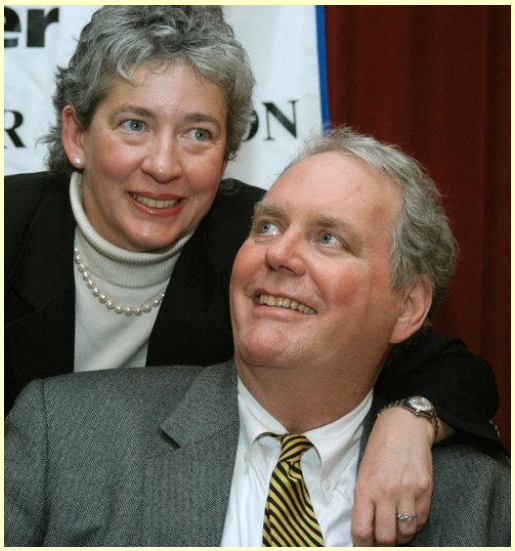
partners at the local and state level," Rowe said. She also suggested learning about the public health issues they handle on a daily and emergency basis and to become familiar with their response processes and procedures, and to share information and best practices. "Practice consistently with partner organizations and engage them during 'blue skies' in various trainings and exercise scenarios so the response will be as effective as possible."

At press time, no other cases of MERS had been reported in the U.S. (a second reported case in Indiana turned out to be a false positive). However, the CDC continues to closely monitor the MERS situation globally and work with partners to better understand the risks of the virus, including the source, how it spreads and how infections might be prevented. McDonald said that overall the MERS situation in the U.S. represents a very low risk to the general public. Yet the CDC recognizes the potential for MERS-CoV to spread further and cause more cases globally.

In the meantime, McDonald recommends that state emergency managers and health department remain vigilant, be prepared to help with investigations and respond quickly to any signs of MERS in their respective states.

John Tull, Lawyer Whose Illness Created a Bioterrorism Scare, Dies at 65

Source: http://www.nytimes.com/2014/06/27/nyregion/john-tull-lawyer-whose-illness-created-a-bioterrorism-scare-dies-at-65.html?_r=0



John Tull with his wife Lucinda Marker. Credit Jennifer Szymaszek/Associated Press

John Tull, a New Mexico lawyer who was found to have bubonic plague during a visit to New York in November 2002, prompting alarm that the infection might have been caused by bioterrorism, died on Wednesday at a hospital in Santa Fe, N.M. He was 65.

The cause was cancer of the gastrointestinal tract, his wife, Lucinda Marker, said. She said that the oncologist who treated her husband did not think the cancer was related to his case of the plague, which had almost killed him.

That episode was the first incidence of bubonic plague — the Black Death that killed millions in medieval times — in New York City in more than 100 years. With memories still fresh of the anthrax spores that were mailed less than a month after the Sept. 11 attacks the previous year, bioterrorism was an initial concern.

But the "Black Death" headlines ceased when the condition was linked to fleas in northern New Mexico, where Mr. Tull and Ms. Marker had a five-acre property outside Santa Fe. Yersinia pestis, the bacterium that causes plague, has been traced to fleas in the area.

About seven cases of plague are reported every year in the United States, and New Mexico has accounted for more than half of them. **The World Health Organization says 1,000 to 2,000 cases, treatable with antibiotics, are reported annually.**

Mr. Tull and Ms. Marker were in New York to celebrate a financial planning business they were starting. They woke up with flulike symptoms after a dinner at the Plaza Hotel, where they had "too many raw oysters, too much icy vodka," according to a website they created.

A doctor who had been referred to them by the hotel, and who was familiar with rare diseases, recognized the symptoms of plague, the most telling of which is swelling of lymph nodes in the groin. Ms. Marker responded to antibiotics and recovered within a few days.

But the bacteria spread into Mr. Tull's bloodstream. Doctors theorized that his diabetes may have accelerated the disease.

Mr. Tull's kidneys began to fail, and he was put into a medically induced coma. To stop the deadly infection, Ms. Marker authorized doctors to amputate Mr. Tull's legs below the knee. He spent 224 days in the hospital and was fitted with prosthetic legs.

A large, vigorous man who loved the outdoors, Mr. Tull continued to fly a plane occasionally and go trout fishing. He and his wife abandoned their financial business, and he went to work for the state government in New Mexico as general counsel. He also worked for the state in economic development.

John Hugh Tull Jr. was born in Amarillo, Tex., on May 20, 1949. He graduated from the University of Texas and the South Texas College of Law. He was elected prosecutor for Potter County, Tex. — Amarillo is the county seat — and headed a New Mexico state agency that investigates insurance fraud.

Mr. Tull's first two marriages ended in divorce. In addition to his wife, whom he married in 1998, he is survived by his mother, Mona Ball; a son, John III; his daughters, Liza Baker and Katy Jane Tull; a brother, Mac; a sister, Jane Watson; and seven grandchildren.

Will the U.S. Keep Buying Medicine for 'Black Swan' Attacks?

Source: http://www.nti.org/gsn/article/will-us-keep-paying/?mgs1=2fdegpowsX

Congress will weigh this year whether to continue spending billions of dollars on antidotes for attacks seen as relatively unlikely, but potentially devastating.

Lawmakers helped to establish Project Bioshield in 2004 to incentivize otherwise unprofitable work on treatments for exotic possible terrorism tools, such as anthrax and botulinum toxin. In coming months, though, the decade-old initiative could face unprecedented scrutiny of its funding, in part due to a dearth of chemical, biological, radiological and nuclear attacks in the United States since its launch, says a newly published Congressional Research Service report.

"Congressional policymakers could decide not to fund Project Bioshield," analyst Frank Gottron said in the assessment. "Given the continued absence of any [WMD] terrorist attacks in the United States since 2001, [they] could deem that the perceived risk of an attack no longer justifies [the] continued investment."

"Alternatively, policymakers could deem other, more conventional, countermeasure procurement methods sufficient or more efficient than Project Bioshield and redirect funding to those programs," Gottron wrote.

Congress guaranteed Project Bioshield a steady $560 million in annual funding for its first decade by setting aside billions in advance. The Health and Human Services Department set aside more than half of the program's 10-year, $5.6 billion "special reserve fund" to acquire treatments for symptoms of a wide variety of potential unconventional assaults. Of the $3.3 billion earmarked for WMD threats, about one-third went toward smallpox drugs, in case the long-eradicated virus is ever rebuilt or released from a rare laboratory stockpile.

Lawmakers last year authorized the program to continue receiving the same amount of money through fiscal 2018. Rather than maintaining its special reserve fund, though, they left funding levels to be determined through the annual appropriations process.

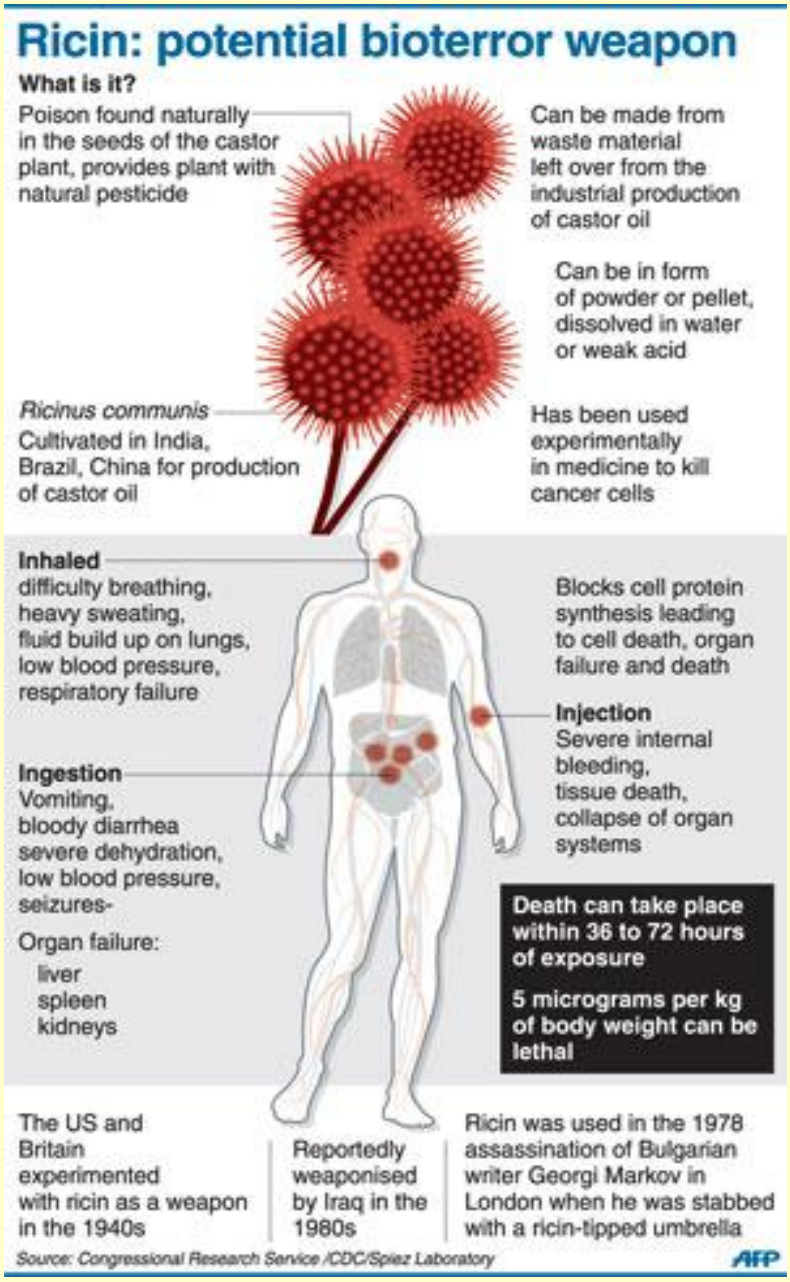
The program received $255 million in fiscal 2014 appropriations, and the Obama administration is seeking $415 million in the upcoming budget cycle.

"The switch to annual appropriations may complicate [the Health and Human Services Department's] long-term countermeasure development and acquisition planning," Gottron wrote. "Some developers contend that an advance appropriation helps company management more favorably consider a potential countermeasure when weighing internal investment opportunity costs."

Lawmakers may ultimately reinstate an approach similar to the 10-year reserve fund, the analyst added. "Developers might prefer advance appropriations for as long a period as possible," he wrote. "However, providing an advance appropriation during the current fiscal environment may prove more difficult than in 2003."

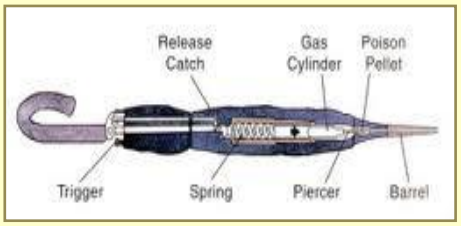
Incidents involving ricin

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

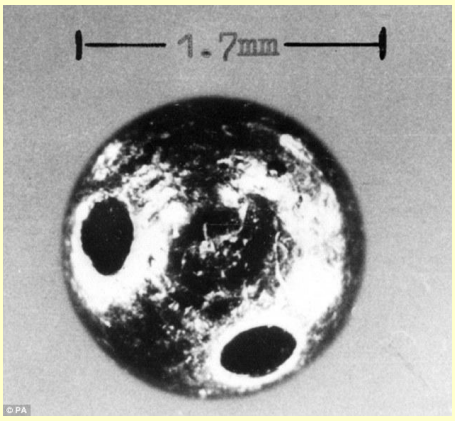


September 1978, London, UK, assassination of Georgi Markov

On September 7, 1978, the Bulgarian dissident Georgi Markov was jabbed in the leg in public on Waterloo Bridge in the middle of London by a man using a weapon built into an umbrella. The



weapon embedded a small pellet



containing ricin into Markov's leg. Markov died four days later.

August 1981, Vienna, Virginia, US, assassination attempt on Boris Korczak

On August 14, 1981, exposed CIA double agent Boris Korczak was shot with some sort of air gun which fired a minuscule pellet containing ricin into his kidney. This attempt on his life happened while he was shopping at Giant Food Store in Vienna, Virginia. Korczak and the CIA are convinced that this was the work of the KGB as he had penetrated deep into the secret organization and damaged them for millions of dollars. Korczak survived, and he attributes this to the fact that he was luckily shot in the kidney and that his body treated the projectile as though it were a kidney stone, thus limiting exposure of his body to the toxin.

December 1995, Onia, Arkansas, US

In April 1993, Thomas Lavy was caught while trying to smuggle 130 grams of ricin from Alaska into Canada. Lavy stated that he purchased the ricin to poison coyotes on his farm in Arkansas and keep them away from his chickens. Lavy was stopped at the Beaver Creek border crossing by Canadian custom agents who found, along with the 130 grams of ricin, $89,000, a knife, four guns, and 20,000 rounds of ammunition.

January 1997, Janesville, Wisconsin, US

Authorities discovered various toxic substances in the house of Thomas Leahy in Janesville, Wisconsin. They discovered the substances after they had been called to Leahy's home after he had shot his son in the face, following a night of drinking. Among the chemicals discovered were 0.67 grams of ricin and nicotine mixed with a solvent that allowed it to penetrate the skin and have lethal effects. Authorities also found books relating to the production of chemical and biological agents. Chemicals were also found in a storage shed that Leahy kept in Harvard, Illinois. He reportedly told his sister that he was going to use the poison to coat razor blades and mail them to his enemies in hopes that they would cut themselves and be exposed. Leahy pleaded guilty to possession of the ricin and was sentenced to eight years for the shooting and six-and-one-half years for possessing dangerous materials.

April 1997, James Dalton Bell

Internal Revenue Service (IRS) investigators searched the home of James Dalton Bell, a 39-year-old electronics engineer, and discovered a cache of chemicals, which included sodium cyanide (500 grams), diisopropyl fluorophosphate, and a range of corrosive acids. Subsequent analysis of computer files confiscated from the residence revealed that Bell engaged in e-mail communications with a friend, Robert East, a 46-year-old merchant marine radio operator, that expressed a desire to obtain castor beans to see if they could extract ricin. Bell had already acquired the home addresses of nearly 100 federal employees from the Federal Bureau of Investigation (FBI), IRS, and Bureau of Alcohol, Tobacco and Firearms, and computer files from voter registration. Bell was in the process of producing and acquiring chemical and biological agents.

March 1998, Michigan, US

Three members of a splinter group of the North American Militia in Michigan were arrested on weapons and conspiracy charges. The April 1998 indictment was the result of an investigation involving an Alcohol, Tobacco, and Firearms (ATF) agent who infiltrated the group in March 1997. When federal law enforcement raided the homes of these men, they discovered an arsenal of weapons and a videotape. Produced in a cooking-show format, the tape gave instructions on how to manufacture bombs and other assorted militia-type weaponry, including a feature segment on how to extract ricin from castor beans. During the court proceedings, prosecutors drew attention to the ricin segment, stating that the men were "collecting information on the manufacture and use of ricin." However, other than the videotape, no materials associated with ricin production were found in any of the raids.

November 1999, Tampa, Florida, US

Press reports indicated that FBI agents had apprehended a man in Tampa, Florida, for threatening to kill court officials and "wage biological warfare" in Jefferson County, Colorado. James Kenneth Gluck, 53, a former Colorado resident, sent a 10-page letter to Jefferson County judges threatening to kill them with a biological agent. He specifically identified one judge by name. FBI agents arrested Gluck on 5 November 1999 as he left a

public library near his home in Tampa. Police, fire, and hazardous materials (HazMat) crews responded to the scene along with the FBI and blocked off Gluck's street. Upon searching his residence the next day, agents discovered that Gluck had the necessary ingredients to make ricin, though no refined ricin was actually found. They also found test tubes and beakers, as well as the "anarchist's cookbook" and books on biological toxicology, in a makeshift laboratory in his home.

August 2001, Russia and Chechnya

The Russian Federal Security Service told the Itar-Tass news service it had intercepted a recorded conversation between two Chechen field commanders in which they discussed using homemade poisons against Russian troops. According to Itar-Tass, Chechen Brigadier General Rizvan Chitigov asked Chechen field commander Hizir Alhazurov, who is now living in the United Arab Emirates, for instructions on the "homemade production of poison" for use against Russian soldiers. Russian authorities reportedly raided Chitigov's home and seized materials, including instructions on how to use toxic agents to contaminate consumer goods, a small chemical laboratory, three homemade explosives, two land mines, and 30 grenades. The confiscated papers reportedly also contained instructions on how to produce ricin from castor beans.

June 2002, Spokane Valley, WA

Kenneth R. Olsen, 48, was arrested for possession of the biological agent ricin in his Spokane Valley, WA, office cubicle. Co-workers at Agilent, a high-tech company, tipped FBI officials about the software engineer after discovering documents on "how to kill", undetectable poisons, and bomb-making Olsen had printed out from his computer. Olsen insisted that his research was for a Boy Scout project, but did not say more. Further investigation of his office produced test tubes, castor beans, glass jars, and approximately 1 gram of ricin. In July 2003 Olsen was convicted of possessing a chemical weapon and possessing a biological weapon. He was sentenced to 165 months, almost 14 years in prison.

August 2002, Ansar al-Islam

Reports have emerged that Ansar al-Islam, a Sunni militant group, has been involved in testing poisons and chemicals including ricin. According to one report the group tested ricin powder as an aerosol on animals such as donkeys and chickens and perhaps even an unwitting human subject. No more specific details have been released.

January 2003 arrests in Britain

On 5 January 2003 the Metropolitan Police raided a flat in north London and arrested six Algerian men whom they claimed were manufacturing ricin as part of a plot for a poison attack on the London Underground. No ricin was recovered as a result of this raid. Only one person was convicted (of conspiracy to cause a public nuisance by the use of poisons and/or explosives to cause disruption, fear or injury) and jailed for 17 years. He had previously received a life sentence for stabbing and killing a policeman during the raid.

The U.S. Secretary of State Colin Powell used this incident in his 5th February 2003 speech to the UN as part of the case for the 2003 Invasion of Iraq, as the "UK poison cell" part of the alleged Abu Musab al-Zarqawi global terrorist network.

2003 letters in the US

In 2003, a package and letter sealed in a "ricin-contaminated" envelope was intercepted in Greenville, South Carolina, at a United States Postal Service processing center.

Ricin was detected in the mail at the White House in Washington, D.C. in November 2003. The letter containing it was intercepted at a mail handling facility off the grounds of the White House, and it never reached its intended destination. The letter contained a fine powdery substance that later tested positive for ricin. Investigators said it was low potency and was not considered a health risk. This information was not made public for nearly 3 months, when preliminary tests showed the presence of ricin in an office mailroom of U.S. Senate Majority Leader Bill Frist's office. There were no signs that anyone who was near the contaminated area

developed any medical problems. Several Senate office buildings were closed as a precaution.

January 2006, Richmond, Virginia, US

In January 2006, ricin was found in a home in suburban Richmond, Virginia in the form of mashed castor beans. The suspect, Chetanand Sewraz, was allegedly isolating the toxin to kill his estranged wife.

February 2008, Las Vegas, Nevada, US

In February 2008, a man who stayed in a Las Vegas motel room where ricin was found was taken to the hospital in critical condition. The man, Roger Von Bergendorff, was hospitalized on February 14; however, the ricin was not found until February 27 when a relative retrieved his luggage because the motel had not been paid for two weeks. Firearms and an "anarchist type textbook" were found in the same motel room where several vials of ricin were found, police reported. According to Las Vegas 8 Television news, police noted the ricin section of the textbook was highlighted. On March 3, FBI agents searched at Riverton, Utah house and several storage lockers in West Jordan, Utah linked to Bergendorff, but did not find any traces of ricin. Bergendorff awoke from a coma on March 14. He was questioned by police as to why he had such a large quantity of ricin. Subsequently, he was arrested on April 16 and charged with possession of a biological toxin and two weapons offenses.

January 2009, Seattle, Washington, US

The managers of eleven gay bars in the Capitol Hill region of Seattle received letters from an anonymous sender claiming to be in possession of 67 grams of ricin that would be used to dose exactly 5 patrons from each establishment with the intent of killing them.
Speculations that the terrorist was possibly a homosexual himself abound, particularly as the letter directly quotes a poem by gay author Mark Doty in a recently published anthology.

June 2009, County Durham, England

During the raid on the homes of a man and son in June 2009, a very small amount of ricin was allegedly found in a sealed jam jar kept in a kitchen cupboard. A father and son, Ian and Nicky Davison were arrested under the 2000 Terrorism Act. The arrests followed a long-running intelligence-led operation against extreme right-wing activity. Ian Davison was sentenced to ten years in May 2010, for preparing acts of terrorism, three counts of possessing material useful to commit acts of terrorism and possessing a prohibited weapon; his son was given two years youth detention for possessing material useful to commit acts of terrorism.

June 2009, Everett, Washington, US

On June 4, 2009 local ABC affiliate KOMO 4 News reported that authorities had isolated a suburban home in Everett, WA and part of the surrounding neighborhood after the suspected discovery of ricin in the home. The suspected discovery of ricin occurred after the residents, a husband and wife, returned from the hospital following a domestic disturbance report.

January 2011, Akron, Ohio, US

In January 2011, FBI agents discovered what was thought to be ricin in a Coventry Township, Ohio home, and later reported that tests confirmed its presence.

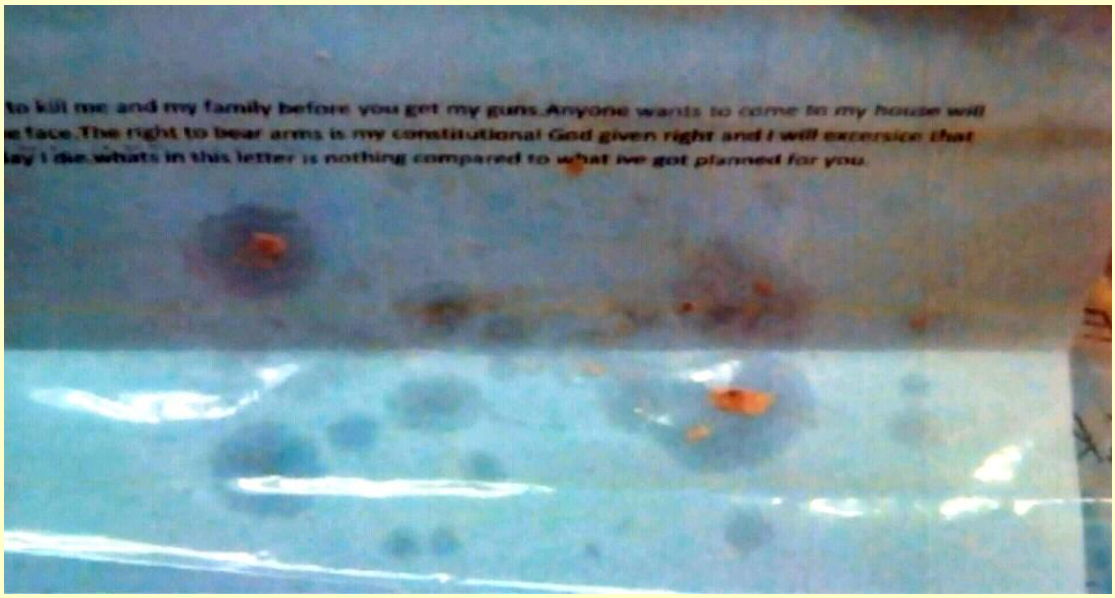
November 2011, Gainesville, Georgia, US

In 2011, the FBI arrested four men in the U.S. state of Georgia, who were allegedly plotting to deploy explosives and biological weapons to kill a number of American politicians, media figures, Internal Revenue Service employees, and innocent civilians. The four men were Frederick Thomas, 73, Dan Roberts, 67; Ray H Adams, 65; and Samuel J. Crump, 68. Thomas is from Cleveland, Georgia; the other three men are from Toccoa. They were members of a domestic militia group and believed they had to commit murder in order to "save this country". According to The Guardian, Crump had planned to make 10 pounds of ricin and

spread it in major cities and along Atlanta, Jacksonville, Newark, Washington D.C., and New Orleans highways and bomb federal buildings in Atlanta. They also discussed dispersing ricin from an airplane in the sky over Washington D.C. and possibly attack other targets with explosives. Adams is a former Agriculture Research Service employee, while Crump used to work at the Centers for Disease Control and Prevention.
According to court documents, Thomas was inspired by the online pro-militia novel "Absolved" by Mike Vanderboegh, which features small bands of U. S. citizens rising up against the federal government. Vanderboegh denied responsibility for inspiring the attack, saying in a blog post "I am as much to blame for the Georgia Geriatric Terrorist Gang as Tom Clancy is for Nine Eleven." Earlier, Vanderboegh had attracted controversy after urging health care reform opponents to throw bricks through the windows of Democratic Party offices; several such incidents occurred after Vanderboegh made his statement.
On August 22, 2012, Frederick Thomas and Dan Roberts have been sentenced to 5 years federal Prison.

April 2013, Washington, DC, US

On April 16, 2013, an envelope that tested positive for ricin was intercepted at the US Capitol's off-site mail facility in Washington, DC. According to reports, the envelope was addressed to the office of Senator Roger Wicker, R-Mississippi.
The next day, an envelope addressed to President Obama was tested positive for ricin. Another letter was sent to a Mississippi judge and is also being tested for ricin.
Both letters included the phrases "to see a wrong and not expose it, is to become a silent partner to its



continuance." and "I am KC and I approve this message."
Even if the preliminary tests confirm the powder was ricin and secondary tests confirm it as ricin, more testing will still be done, because investigators and prosecutors will want to be sure it is ricin. Experts will also assess just how much of a risk was present- it is well known that inhalable powders, tablets, or injections are usually more pure and more concentrated, and are more likely to be virulent; and so the powder involved, at least in its current form, may not even be as much of a threat even if it is proved to be ricin. Inhalable agents, on the other hand, such as anthrax spores, are well-known to usually be lethal.

May 2013, Shannon Richardson incident

In May 2013, while going through a divorce, US actress Shannon Richardson called the police and accused her husband of mailing ricin to several politicians.

Nathan Richardson has not been charged with any crime. He told investigators that his wife set him up. Investigators found that Shannon Richardson indeed mailed the ricin herself, in an effort to set up her estranged husband.
Shannon Richardson was arrested on June 7, 2013 for alleged connections with ricin laced letters sent to politicians including President Barack Obama and New York City mayor Michael Bloomberg. She was charged with "mailing a threatening letter to President Barack Obama". On June 6, she confessed that she had mailed the three letters, knowing they contained ricin, but claimed her husband made her do it. On December 10, she pled guilty to sending the letters. The plea limits her potential sentence to 18 years.

March 2014, Hatboro, Pennsylvania, US

On March 21st 2014, 19 year old Nicholas Todd Helman was arrested for allegedly sending a scratch-and-sniff birthday card laced with ricin to a man now dating his ex-girlfriend, authorities said. Nicholas Todd Helman, 19, was charged with attempted murder and risking catastrophe after lab tests allegedly showed that the card he placed in the man's family mailbox March 6 was discovered this week to have contained traces of the toxic substance, Bucks County District Attorney David Heckler said. Helman had bragged of the toxic card to a coworker at Target in Warrington on March 6, according to a probable cause affidavit. The coworker then notified police, the affidavit says, and police called the man's home and spoke to his mother, asking whether she had retrieved the mail that day. When Helman was first questioned about the incident, on March 7, he told police that he had only coated the card with sodium hydroxide, the affidavit says, which he chose because it resembled the toxin anthrax. Helman also admitted to sending threatening messages to the man via Facebook, according to the affidavit, and police seized from him what appeared to be sodium hydroxide and a notebook with a ricin recipe after questioning. Helman was charged March 7 with terroristic threats and harassment. In the meantime, Heckler said, authorities sent the card away for subsequent lab tests. The results, returned to the District Attorney's Office on Tuesday, confirmed that the card had traces of ricin, according to Heckler. The Warminster Police Department subsequently led numerous agencies in arresting Helman on Wednesday night at his Hatboro apartment, Heckler said. Other agencies included Hatboro police, A hazmat team, SWAT team, police officers and officials with the FBI returned to Helman's home on Wednesday. After a standoff that lasted several hours, Helman was led out of his apartment and to a police vehicle by officers clad in armor and hazmat gear.

Qaeda Trying to Harness Toxin for Bombs

Source:http://www.nytimes.com/2011/08/13/world/middleeast/13terror.html?pagewanted=all&_r=0

August 2011 – American counterterrorism officials are increasingly concerned that the most dangerous regional arm of Al Qaeda is trying to produce the lethal poison ricin, to be packed around small explosives for attacks against the United States.
For more than a year, according to classified intelligence reports, Al Qaeda's affiliate in Yemen has been making efforts to acquire large quantities of castor beans, which are required to produce ricin, a white, powdery toxin that is so deadly that just a speck can kill if it is inhaled or reaches the bloodstream.
Intelligence officials say they have collected evidence that Qaeda operatives are trying to move castor beans and processing agents to a hideaway in Shabwa Province, in one of Yemen's rugged tribal areas controlled by insurgents. The officials say the evidence points to efforts to secretly concoct batches of the poison, pack them around small explosives, and then try to explode them in contained spaces, like a shopping mall, an airport or a subway station.
President Obama and his top national security aides were first briefed on the threat last year and have received periodic updates since then, top aides said. Senior American officials say there is no indication that a ricin attack is imminent, and some experts say the Qaeda affiliate is still struggling with how to deploy ricin as an effective weapon.
These officials also note that ricin's utility as a weapon is limited because the substance loses its potency in dry, sunny

conditions, and unlike many nerve agents, it is not easily absorbed through the skin. Yemen is a hot, dry country, posing an additional challenge to militants trying to produce ricin there.

But senior American officials say they are tracking the possibility of a threat very closely, given the Yemeni affiliate's proven ability to devise plots, including some thwarted only at the last minute: a bomb sewn into the underwear of a Nigerian man aboard a commercial jetliner to Detroit in December 2009, and printer cartridges packed with powerful explosives in cargo bound for Chicago 10 months later.

"The potential threat of weapons of mass destruction, likely in a simpler form than what people might imagine but still a form that would have a significant psychological impact, from Al Qaeda in the Arabian Peninsula in Yemen, is very, very real," Michael E. Leiter, who retired recently as director of the National Counterterrorism Center, said at a security conference last month. "It's not hard to develop ricin."

A range of administration officials have stated that the threat of a major attack from Al Qaeda's main leadership in Pakistan has waned after Osama bin Laden's death in May, on top of the Central Intelligence Agency's increasing drone assaults on Qaeda targets in Pakistan's tribal areas over the past three years.

But the continuing concern over a ricin plot underscores the menace that regional Qaeda affiliates, especially Al Qaeda in the Arabian Peninsula, now pose to the United States and American interests overseas.

"That line of threat has never abated," said a senior American official, who referred to the terrorist group by its initials. "That's been taken seriously by this government. What we know about A.Q.A.P. is that they do what they say."

Al Qaeda's arm in Yemen has openly discussed deploying ricin and other deadly poisons against the United States. **"Brothers with less experience in the fields of microbiology or chemistry, as long as they possess basic scientific knowledge, would be able to develop other poisons such as ricin or cyanide,"** the organization posted to its online English-language journal, Inspire, last fall, in an article titled "Tips for Our Brothers in the United States of America."

Senior administration officials say ricin is among the threats focused on by a secret government task force created after the printer-cartridge plot. The task force is working closely with Saudi intelligence officials and the remnants of Yemen's intelligence agencies, and it is using information gleaned from the shipboard interrogation of a Somali terrorist leader with ties to the Yemeni branch of Al Qaeda, who was captured by Navy Seal commandos in April.

The intelligence reports indicating ricin plots by Al Qaeda's Yemeni affiliate were first uncovered during reporting for a book, "Counterstrike: The Untold Story of America's Secret Campaign Against Al Qaeda." It will be published next week by Times Books, an imprint of Henry Holt & Company.

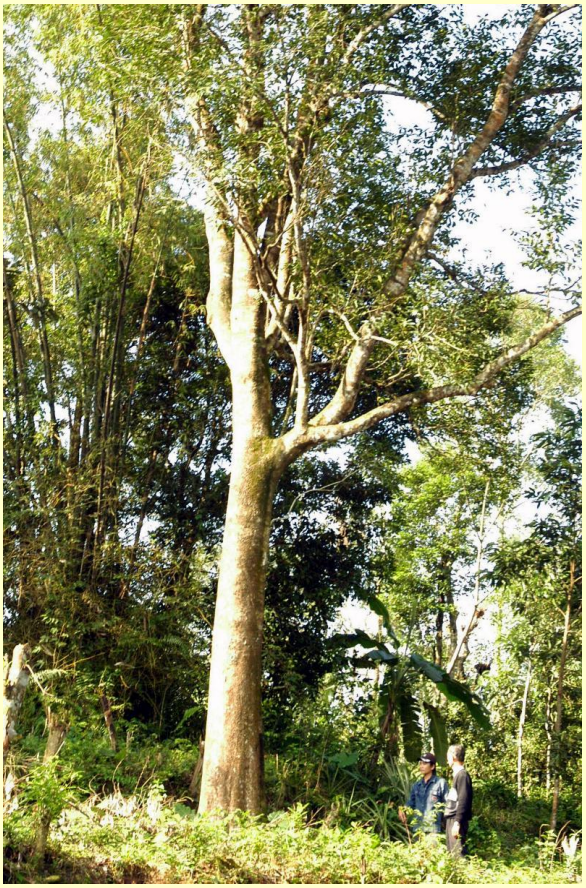
American officials now say that Al Qaeda's most direct threat to the United States comes from the Yemeni affiliate. These officials have also expressed growing alarm at the way the affiliate is capitalizing on the virtual collapse of Yemen's government to widen its area of control inside the country, and is strengthening its operational ties to the Shabab, the Islamic militancy in Somalia, to exploit the chaos in both countries.

"It continues to demonstrate its growing ambitions and strong desire to carry out attacks outside its region," Daniel Benjamin, the State Department's counterterrorism coordinator, said in a speech last month, referring to Al Qaeda's Yemeni branch.

The affiliate has also become a magnet for terrorists fleeing the increasing pressure from drone strikes in Pakistan, and is recruiting specialists in bomb-making and other skills. "These guys have got some notoriety," said a senior United States official who follows Al Qaeda and its affiliates closely. "They have a natural, charismatic attraction value for people who want to be jihadists and plot against the West."

"A.Q.A.P.'s senior leaders are a lot like an organization that's largely a brain that exists on its own and has to recruit its arms and legs to actually execute things," the official continued.

Largely because of the Americans in the Yemeni affiliate's top leadership, including Anwar al-Awlaki, a cleric born in New Mexico



who is in hiding in Yemen, American counterterrorism and intelligence officials fear the affiliate's innovative agility. "The fastest-learning enemy we have is A.Q.A.P.," said the senior United States official.

In recent months, as the Yemeni government has become nearly paralyzed, the Obama administration has stepped up pressure on the Qaeda affiliate there. It has escalated a campaign of airstrikes carried out by the Pentagon's Joint Special Operations Command with the C.I.A.'s help. The C.I.A. is building a base in the region to serve as a hub for future operations in Yemen.

The Pentagon's air campaign in Yemen was renewed in May after a nearly yearlong hiatus; since then the military has carried out at least four airstrikes in the country.

The ricin plots believed to be emanating from Yemen are the latest example of terrorists' desire to obtain and deploy unconventional weapons in attacks. In 1995, the Aum Shinrikyo cult released sarin nerve gas on underground trains in Tokyo, killing 12 people and injuring more than 5,000, and nearly paralyzing one of the world's leading economies for weeks.

In 2003, British and French operatives broke

up suspected Qaeda cells that possessed components and manuals for making ricin bombs and maps of the London subway system.

Agarwood is the heartwood of Aquilaria trees

A ricin-dispersing bomb detonated in a major subway system or in a mall or at a major airport would not result in mass destruction on the scale of the attacks on Sept. 11, 2001, counterterrorism specialists said. But it could inflict disproportionate psychological terror on big-city transportation systems. "Is it going to kill many people? No," said Mr. Leiter, the former counterterrorism official. "Is it going to be a big news story and is it going to scare some people? Yes."

Months after the initial ricin intelligence reports surfaced last year, Saudi intelligence officials revealed a twist to the ricin plot: Qaeda operatives were trying to place the toxin in bottles of perfume, especially a popular local fragrance made of the resin of agarwood, and send those bottles as gifts to assassinate government officials and law enforcement and military officers. There is no indication that Al Qaeda ever succeeded with this approach, intelligence officials said.

U.S. government scientists retrace events leading to anthrax breach

Source: http://www.firstpost.com/world/exclusive-u-s-government-scientists-retrace-events-leading-to-anthrax-breach-1593103.html?utm_source=FP_HP_LATESTNEWS

Scientists at the U.S Centers for Disease Control and Prevention are conducting tests to see whether the procedure they followed to kill anthrax, although flawed by their own standards, may nevertheless have killed the potentially deadly pathogen before it was sent to less-secure laboratories, where employees

work without adequate protective gear.

If they are right, it may mean dozens of scientists and staff, who were given a vaccine and powerful antibiotics to prevent anthrax infection, may never actually have been in danger of anthrax disease, a potentially deadly illness that was at the center of 2001 bioterror attacks.

Researchers in the CDC's bioterrorism response lab are retracing the events within the lab between June 6 and June 13 that led to the possible exposure of 84 employees at the agency's Atlanta campus, an agency official told Reuters.

New details about the agency's investigation suggest the anthrax that was being inactivated in a high security lab may have been sitting in a bath of acid for 24 hours before being transferred to two lower-security labs.

What researchers are trying to find out is whether that was long enough to kill the anthrax, Dr Paul Meechan, director of the CDC's environmental health and safety compliance office, told Reuters in a telephone interview.

"We don't know that, but we're doing experiments to prove it," said Meechan. The CDC first disclosed the incident to Reuters a week ago.

An independent laboratory is running the same set of experiments to see if they get the same answers, which would add to the validity of the findings.

Meechan said workers in the bioterror lab were testing a new protocol for inactivating anthrax before sending the bacteria for experiments in two lower-security CDC labs.

The protocol they were following had been used by researchers at the CDC to inactivate other bacteria, but not on anthrax. It called for placing anthrax into a bath of acid for 10 minutes, removing some, putting it on a nutrient-rich plate and placing it in an incubator.

After 24 hours, the researchers checked to see if any colonies of anthrax had grown. None had, so the team took the anthrax that had been soaking in acid for 24 hours, put it on slides and sent it for testing in two other CDC labs.

The material from the 10-minute sample eventually germinated, started to divide and form a colony, a process that normally takes around 48 hours.

Why the team did not wait the standard 48 hours to be sure the acid bath had killed the bacteria is still under investigation, Meechan said.

Investigators want to learn what was happening to the anthrax cells left in the acid bath while the material from the 10-minute sample was in the incubator.

"We want to know whether or not in the 24 hours when they were waiting for that plate to grow, they were actually killing more of the anthrax, and possibly all of it," Meechan said.

A CDC team is setting up an experiment using a similar setup, taking samples of anthrax soaking in acid at different time intervals up to 24 hours.

"The idea is to see how much time it takes to kill everything in that solution," Meechan said.

Results of the studies will be available as soon, said CDC spokesman Tom Skinner.

Planning for Pandemics and Biological Attacks

Dr. Xavier Stewart, Ph.D
Brigadier General (ret.), U.S. Army
Source: http://strategicri.com/newsAndPress/planning-pandemics-and-biological-attacks

*Pandemics are unpredictable and an attack with a **weaponized highly-infectious biological agent** (WHIBA) would be unannounced. The U.S. has developed a national strategy for responding to a biological event, but lacks the full response capability to a WHIBA.*

The field of medicine has grown tremendously in recent years. The first public health revolution has given Americans a wide range of benefits: improved diet, safe drinking water, better waste control and treatment, immunizations, pasteurized milk, and better housing. We are now a far healthier nation, better prepared to prevent and respond to a pandemic event or biological terrorist attack.

Nevertheless, we must now deal with extensive alterations in disease patterns, especially those involving the respiratory system. Today, we have a compounded problem with the health of our population. The U.S. has an older population, citizens with immunosuppressed or compromised immune systems (i.e. human immune virus and cancer), and special populations such as those in long-term care facilities, in prisons, and in densely populated cities.

The mounting risk of a worldwide pandemic event, whether naturally-caused or a biological attack with a weaponized highly-infectious biological agent (WHIBA), can pose an overwhelming public health management problem that could weaken our healthcare delivery system. A weaponized biological attack, such as genetically engineered smallpox, would be exponentially more lethal and enervating.

The Spanish Flu

The 1918 Spanish Flu influenza pandemic killed an estimated 50-100 million people worldwide. An estimated 40 and 36 percent, respectively, of U.S. Army soldiers and U.S. Navy sailors were stricken with this virulent flu. These uniformed professionals were rendered combat ineffective.

Even today, with a strong healthcare system and informed public on methods to reduce and prevent the spread of germs, approximately 36,000 Americans die from the flu each year and more than 200,000 are annually hospitalized each year for flu treatment. Influenza costs U.S. taxpayers about $10 billion annually.

The devastating consequences of a pandemic or WHIBA event would kill a large number of Americans and dramatically reduce the number of available workers in all sectors of our nation's workforce through 30 to 40 percent absenteeism. Government employees will be similarly affected placing our nation at risk in terms of national defense.

Preparedness and Prevention

In addition, a worldwide pandemic or WHIBA would degrade our military forces at home and abroad and disrupt the movement of people and essential goods. These dire consequences would threaten essential services across our nation and disrupt critical infrastructure (CI) and diminish key resources (KR). These consequences would adversely impact continuity of operations (COOP) and continuity of government (COG). To mitigate the effects of a pandemic or WHIBA, we must implement preventive measures for early detection and develop our capacity to respond to a pandemic event to mitigate the impact.

Pandemics are unpredictable and a WHIBA attack would be unannounced. These agents are not constrained by international borders and will most likely overwhelm the stricken nation's healthcare delivery system, triggering a widespread epidemic. This epidemic would spread over a wide geographic area to adjacent and neighboring nations, potentially escalating into a global incident.

For example, in 2007, 900 million people travelled the globe and visited such remote areas as Africa, Alaska, Australia, and

Southeast Asia. Cambodia alone hosted 856,000 tourists in 2007. As travel becomes more readily available and affordable, the transport of a WHIBA is just a matter of time.
Fortunately, the U.S. has developed a national strategy to respond to a biological event, but lacks the full response capability to a WHIBA. The key to responding to such events will be the ability of the U.S. to coordinate in a timely manner with plans that address preparedness and response capability working closely with the WHO, and with other nations.

Early Detection and International Cooperation

In addition, the Federal Emergency Management Agency (FEMA) and the White House will need to work quickly on the National Security and Homeland Security Presidential Directive (NSPD 51) and Homeland Security Presidential Directive (HSPD 20) to trigger essential national functions during a catastrophic emergency. These initiatives provide a good first step toward ensuring that the U.S. is addressing the threat of a pandemic or WHIBA event.
The U.S. has the economic capacity, infrastructure, elements of national power, pharmaceutical, technological, and transportation capability; and subject-matter experts to limit the spread of an outbreak while working with the WHO and other international organizations.
The U.S. forward deploys some 250 diplomatic missions in the form of embassies, consulates, and representatives in specialized organizations. It possesses a unified military command system that covers all regions of the world. By working through the WHO and other international organizations, U.S. agencies can leverage these assets for early identification of biological threats and for a quick, coordinated response to them.
Early detection will enable the U.S. and international partners to mobilize a healthcare delivery team to prevent or reduce the spread of a disease which could lead to a global pandemic. In addition, educating and training our international partners will help prevent the quick spread of the disease.
Sharing surveillance instrumentation for early detection and quickly distributing medicines to mitigate the disease will reduce the risk of a global pandemic. The strategic placement of medicines, supplies, and other essential resources in nations where we have an established presence will shorten the response time and hasten delivery of essential resources to a potential outbreak. Working with the WHO and other international partners will reduce our economic costs, both in financial and human resources.

SARS and Superbugs

The 2003 Severe Acute Respiratory Syndrome (SARS) outbreak should serve as a harbinger of pandemics. The growing concerns are the new emerging diseases which are showing a high resistance to antibiotics.
The rise of deadly super bacteria is nothing new. The overuse of antibiotics has caused an alarming increase in drug-resistant bacteria which now infects approximately 2 million Americans a year and kills about 23,000. The widespread practice of giving antibiotics to live stock to prevent sickness and promote rapid growth is one causative factor in developing resistant strains. Most worrisome to date are CRE bacteria.
Recently, Carbapenem-resistant Entero-bacteriaceae (CRE), have been given much attention because they have high levels of resistance to antibiotics. In healthcare settings, CRE infections most commonly occur among patients who are receiving treatment for other maladies. The use of mechanical ventilators, catheters and patients who are taking long courses of certain antibiotics are most at risk for CRE infections.
Some CRE bacteria have become resistant to most available antibiotics. CRE infections are reported in some literature with mortality rates as high as 50%.
In a 114 page report the CDC details for the first time the toll that nearly two dozen antibiotic-resistant microbes are taking on humans. It will be paramount for us to take preventive measures that will reduce this risk and ensure that we have mechanisms in place to respond to and mitigate a catastrophic incident of national significance whether through natural or man-made causes.

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Could Ebola spread to the United States?

Source: http://www.foxnews.com/health/2014/06/30/could-ebola-spread-to-united-states/

The current outbreak of Ebola in West Africa is now the largest in history, but how likely is it to spread to the United States or other countries around the world?

It's theoretically possible that people with Ebola could travel to other countries on planes, and infect others outside the region. However, it's extremely unlikely that the virus would then cause further outbreaks in communities in the United States or other developed countries with systems in place to contain such deadly infections, experts say.

So far, the Ebola outbreak, which first appeared in December 2013, has infected at least 600 people in Guinea, Sierra Leone and Liberia, including 338 who died, according to the World Health Organization.

The medical group Doctors Without Borders has said the epidemic is "out of control" in the region, and that they do not have the resources to care for the growing number of people who are sick.

Could Ebola come to the U.S.?

One reason why the Ebola virus's spread is possible in theory is that it can take up to 21 days for an infected person to show symptoms. That's ample time for someone with Ebola to travel a long distance by plane and arrive in the United States or Europe, said Derek Gatherer, a researcher at Lancaster University in the United Kingdom who studies virus genetics and evolution.

But if an infected person arrived in the United States and showed symptoms, doctors would be quick to suspect Ebola based on the patient's travel history, and isolate the patient, Gatherer said.

"Western medical services would probably cope quite well with catching Ebola as it arrived, because we'd be aware of people coming from Ebola-affected areas," Gatherer said.

Dr. William Schaffner, a professor of preventive medicine and infectious diseases at Vanderbilt University Medical Center in Nashville, Tennessee, agreed. Health officials do not think that there is a risk of sustained spread of Ebola in the United States, he said.

"Ebola is not going to come to the United States and become embedded in the United States," Schaffner said.

That's because Ebola's transmission requires close contact with bodily fluids, such as blood or secretions, Schaffner said. "It's really intimate, hands-on contact and involvement with the sick person's body fluids" that spreads the disease, Schaffner said. "Being in the same room with a person in and of itself is not hazardous."

It's possible that a small cluster of cases could occur in a hospital setting in the United States, because healthcare workers have this type of close contact with their patients, but control procedures would prevent further spread, Schaffner said.

The spread of Ebola outbreaks in African countries is sometimes fueled by long-held social

customs surrounding human burials, Schaffner said. Those customs include washing the bodies of the deceased. But this would not be a factor in countries, like the United States, that don't have such traditions, he said.

Another important factor limiting the spread of Ebola is that people are not contagious until they show symptoms, Gatherer said. "By the time people are shedding the virus, they're already feverish," making it possible, for example, **to screen people with fevers before they get on a plane,** Gatherer said. In addition, a person sick with a fever from Ebola is unlikely to feel well enough go out and interact with others, Gatherer said.

What's worrying health officials

Researchers say the virus causing the current outbreak does not appear to be more contagious than those behind previous Ebola outbreaks.

"It's the same species of Ebola that has caused some of the larger and more prominent outbreaks in central Africa," said Thomas Geisbert, a virologist at the University of Texas Medical Branch in Galveston. This species is called ***Zaire ebolavirus***. "It's a slightly different strain, but I haven't seen any data suggesting that it's more transmissible," Geisbert said. Still, only a small dose of the virus is required to cause infection, Geisbert said.

Gatherer noted that it has been six months since the first case of Ebola in the current outbreak was reported in Guinea. And yet the vast majority of cases have remained in an area near the borders of the three African countries.

"Two-thirds of all the cases are still within the narrow geographic region where the outbreak began," Gatherer said.

Health officials are mainly concerned for people living in the areas affected by the outbreak, and they are worried because they have not been able to reduce the number of new Ebola cases as they have in the past, Gatherer said.

WHO is organizing a meeting next week to discuss response to the outbreak and how it can be contained, the organization said.

Anthrax? That's Not the Real Worry

Source: http://www.nytimes.com/2014/06/30/opinion/anthrax-thats-not-the-real-worry.html?_r=1

Officials at the Centers for Disease Control and Prevention recently discovered that at least 75 workers there had been exposed to possible anthrax infection.

We should be glad that it was only anthrax. Anthrax is a dangerous but non-contagious bacterium; the risk to the exposed workers is real, but there is no danger of transmission to others. Much more troubling would be an accidental exposure to a dangerous, contagious pathogen.

And unfortunately, that's also quite possible.

Experiments with contagious, virulent flu strains have been taking place in labs around the world, financially supported largely by the American, European and Asian governments, and more are planned. These experiments use flu strains like H5N1, which kills up to 60 percent of humans who catch it from birds.

Scientists use ferrets to study these viruses. From the perspective of flu infection, ferrets are very similar to humans. Scientists pass the dangerous flu viruses from one ferret to another to "train" the viruses, in a genetic sense, to spread. The goal of these experiments is to see what gives a flu virus the potential to create a pandemic.

The problem is that such experiments themselves risk spreading virulent flu in the population, and even causing a pandemic. Earlier this month, researchers in Wisconsin published a study in which they produced several new viruses, some of which — in ferrets — were both contagious and comparably deadly to the 1918 flu that killed tens of millions of people worldwide. Unlike experiments with anthrax, creating such flu strains in the lab presents a danger that affects us all, because once it is out, such a strain would be extremely hard to control. The researchers involved note that their labs are very safe, and they are. But "very safe" does not mean the risk is zero.

The virologists conducting these experiments say that by learning

about how flu transmits in ferrets, we will be able to develop better vaccines and spot dangerous strains in birds before they become pandemic threats.

But developing good vaccines depends more on learning to induce effective immune responses than on finding out which genetic sequences make a virus transmissible. Dozens of effective vaccines protect us against microbes for which we have little understanding of the precise genetic requirements for transmission. The benefits for surveillance are speculative, too. Most flu strains circulating in birds are never sampled and most scientists must wait months or longer to gain access to the sequences of those that are.

More fundamentally, these experiments do not give us a reliable guide to predicting which of the many strains circulating in animals pose a danger to humans. The science is nowhere near the stage where a list of genetic "danger signs" can be crosschecked with flu viruses infecting birds to identify high-risk viruses. Indeed, time after time, flu viruses surprise us, having biological properties we don't expect from what we know of their genetic sequence.

Such limitations in our ability to apply the scientific insights from these studies might be acceptable if the experiments themselves were safe. But creating a new, contagious strain of flu that is highly deadly carries unique dangers.

The anthrax exposures were not the first time high-containment labs have been breached. A new H1N1 flu strain appeared unexpectedly in 1977 and spread globally for over three decades, infecting people until the 2009 pandemic strain replaced it. Genetic and other evidence leads most experts to believe it escaped from a lab in China or the Soviet Union.

The foot-and-mouth disease outbreak in British livestock in 2007 resulted from a virus escape from a high-containment agricultural lab, probably first in contaminated wastewater and then further spread by human and vehicle traffic. In Beijing in 2004 nine people were infected by a SARS virus from a high-containment lab before the outbreak was stopped. **Between 2003 and 2009, there were 395 "potential release events" and 66 "potential loss events" in American labs involving select agents, a category that includes many of the most lethal bacteria and viruses, including anthrax.**

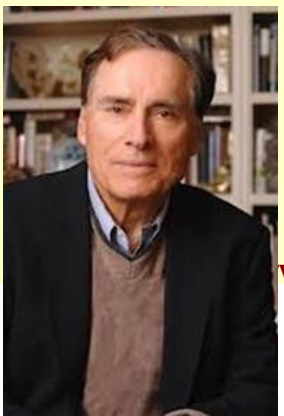
The circumstances of the recent anthrax incident suggest more reason for concern: The workers exposed were not those in the high-containment labs. Based on current reports, the problem arose when anthrax — incorrectly thought to be dead — was removed from the high-containment lab and exposed people who had no knowledge that they were in contact with live bacteria.

There are dozens of safe research strategies to understand, prevent and treat pandemic flu. Only one strategy — creating virulent, contagious strains — risks inciting such a pandemic. The anthrax incident reminds us of the dangers in even the best labs. We should stop creating new potential pandemic flu strains and shift the research dollars to safer, more productive flu studies.

Congress debates BioShield funding while medical schools debate bioterrorism training

Source: http://www.homelandsecuritynewswire.com/dr20140701-congress-debates-bioshield-funding-while-medical-schools-debate-bioterrorism-training

Just as researchers at Rutgers New Jersey Medical School urge medical schools across the United States to make bioterrorism preparedness part of their curricula, Congress is debating whether to continue spending on Project Bioshield, an initiative launched in 2004 to incentivize otherwise unprofitable research on



treatments for rare outbreaks or bioterror agents such as anthrax and botulinum toxin.

Leonard Cole, director of the Rutgers' Terror Medicine and Security Program, plans to insert subjects including a biochemistry-course lecture on nerve agents into the four-year curriculum. If crowds of people suddenly begin to shake and quiver, "frothing at the mouth … it would not be a smart thing for you to run and try to help," he said, referencing the symptoms shown by hundreds of people in last year's sarin-gas attacks in Syria.

While a bioterror attack is possible, the continued absence of such an attack in the United States since 2001 has convinced many lawmakers that the risk of a bioterror attack no longer justifies the investment. *Global Security Newswire* reports that Congress approved $5.6 billion for Project Bioshield for its first decade, allocating a steady $560 million in annual funding. Last year, Congress authorized the program to continue receiving the same amount of funding through fiscal 2018, though funding levels were left to be determined through the annual appropriations process instead of securing a "special reserved fund," as was done with the first allocation. Considering the current fiscal environment, Health and Human Services Department (HHS) officials are unsure whether Project BioShield will maintain the level of funding sought. The program received $255 million in fiscal 2014 appropriations, and the Obama administration is seeking $415 million for fiscal 2015.

"The switch to annual appropriations may complicate (the HHS) long-term countermeasure development and acquisition planning," analyst Frank Gottron said in a newly published Congressional Research Service report. "Some developers contend that an advance appropriation helps company management more favorably consider a potential countermeasure when weighing internal investment opportunity costs."

Despite Congress' perception of a diminishing bioterror risk, Cole insists that preparedness is paramount and training medical students is part of that preparedness. *Defense One* reports that over a decade ago, the Association of American Medical Colleges issued a call to U.S. medical schools urging them to incorporate into their curriculum subjects on chemical, biological, radiological, and nuclear attacks. The recommendation is "still not yet broadly implemented," Cole told *GSN* in a June telephone interview. "We want to inculcate in the culture of our medical school and our medical curriculum the notion that this is just part of what you have to learn to be prepared for. The kids, as they graduate, (now) really don't have that sense."

A First: Scientists Show That Bacteria Can Evolve a Biological Timer to Survive Antibiotic Treatments

Source: http://new.huji.ac.il/en/article/22060

The ability of microorganisms to overcome antibiotic treatments is one of the top concerns of modern medicine. The effectiveness of many antibiotics has been reduced by bacteria's ability to rapidly evolve and develop strategies to resist antibiotics. Bacteria achieve this by specific mechanisms that are tailored to the molecular structure or function of a particular antibiotic. For example, bacteria would typically develop drug resistance by evolving a mutation that breaks down the drug.

Researchers at the Hebrew University of Jerusalem set out to determine if they could predict a different evolutionary process and follow it in real time. Using the quantitative approach of physicists, the team developed experimental tools to measure precisely the bacterial response to antibiotics, and developed a mathematical model of the process. The model led them to hypothesize that a daily three-hour dose would enable the bacteria to predict delivery of the drug, and go dormant for that period in order to survive.

The research was led by **Prof. Nathalie Q. Balaban at the Racah Institute of Physics in the Hebrew University's Faculty of Science**, working with colleagues at the Racah Institute, the Hebrew University's Sudarsky Center for Computational Biology, and the Broad Institute of Harvard and MIT. The research paper, "Optimization of lag time underlies tolerance in bacterial populations evolved under intermittent antibiotic exposure," appears in the June 25 edition of the journal ***Nature*** (available at http://bit.ly/lagtime).

To test their hypothesis, the researchers delivered antibiotics to bacterial populations in the lab for precisely three hours each day. After only ten days they were able to observe the bacteria using a new survival tactic. When exposed to these repeated cycles of antibiotic treatments, the bacteria evolved an adaptation to the duration of the antibiotic stress by remaining dormant for the treatment period.

The results demonstrated that bacteria can evolve within days. Most significantly, it showed for the first time that bacteria can develop a biological timer to survive under antibiotic exposure.

To further test their hypothesis, the researchers delivered antibiotics for different periods, exposing three different bacteria populations to repeated daily antibiotic exposures lasting 3, 5, or 8 hours. Remarkably, each of the populations adapted by prolonging their dormant stage to match the exposure duration.

With this new understanding of how bacterial populations evolve survival strategies against antibiotics, scientists could develop new approaches for slowing the evolution of antibiotic resistance.

Now that they have identified the mutation responsible for the biological timer, the researchers want to gather clinical data to see if a similar timed response to antibiotics is active in people, allowing bacteria to render less effective the antibiotics people take on a fixed schedule. If this is discovered to be the case, it may explain the failure of antibiotic treatments observed in several diseases. In the future, it may help doctors to recommend different treatment schedules.

It could also lead to the development and greater use of drugs that can maintain constant levels in the body.

According to the researchers, the study demonstrates that quantitative approaches from Physics can be used to address fundamental as well as clinically relevant issues in Biology.

The CDC, Anthrax, Illegal Immigration, And The Public Trust (Part 1 of 2)

By DR. ROBIN MCFEE

Source: http://www.familysecuritymatters.org/publications/detail/the-cdc-anthrax-illegal-immigration-and-the-public-trust-part-1-of-2?f=must_reads

"The single greatest threat to man's continued existence on earth is the virus." Joshua Lederberg, Nobel Laureate

I always like to start off a talk or an article with a happy thought. And there are few happier notions than the concept that a virus - something a billionth our size - can kill us in the span of a few days.

But if the virus remains a persistent risk, one of the greatest threats to the health security of the United States, and our local communities, is the growing population of illegal immigrants who can carry into our cities and towns an array of viral and other infectious illnesses typically endemic to their home countries and relatively uncommon in our country. And if emerging diseases arrive in the US, how well prepared, or even how proactive are our preparedness agencies, including the CDC?

This article addresses three critical elements to our national health security - policies that increase the risk of disease, the most recent problems facing CDC, and bioweapons preparedness - areas which this administration continue to earn low marks for their collective performance.

Illegal Immigration

Among all the irresponsible acts and failed policies of President Obama to protect the citizenry, the craziest include those related to immigration and border security or lack thereof. Everyone including the village idiot and his slow brother can recognize why the Democrats and Obama want open borders, and tons of poor immigrants from South America to flow into the United States - the Latinization of US demographics has been predicted to nearly guarantee all but total DNC control of Federal and Blue State governments well into the 21st century. Within thirty years if population trends continue, the United States could become a one party nation - leaving the Democrat party in near total control of all government policies, edicts and actions.

Sadly the DNC remains blithely unconcerned about the tremendous burden local communities face in terms of crime, overcrowding of schools, increasing numbers of welfare recipients, and burdening the community infrastructure (schools, hospitals, law enforcement) that, prior to amnesty and other policies designed to attract large groups of mostly unskilled people, would expand in a more predictable, natural way proportionate to people moving in based upon work, income, and affinity. The DNC answer - more taxes to pay for these programs.

Let's be clear - this isn't being anti immigrant (my grandparents came through Ellis Island); this is about Obama abandoning rational strategies that allow for controlled immigration of skilled, healthy and employable people, instead fostering the current craziness of uncontrolled floods of folks who are largely unskilled, potentially criminal, possibly sick, and likely requiring public assistance.

Why would the Democrats risk your safety and health under the guise of being generous and caring? Simple! Most Latinos vote Democrat, with few exceptions. Most union members and welfare recipients vote Democrat - the two enterprises where many illegal aliens end up in. Is it any wonder Obama and his government are using the power of the Treasury and Immigration to bring in new voters, while packaging it under the guise of "it's for the children" or quoting the script associated with the Statue Of Liberty, citing our nation is one of immigrants (one pesky difference - most of our ancestors came in healthy, sponsored, and skilled, not to mention LEGALLY). The DNC accuses those who advocate for tightening immigration as racist, or anti-poor or the GOP is anti-opportunity for the disadvantaged. To all but the most intoxicated on liberal Kool Aide, these arguments are disingenuous. Alas, they are effective. And while we could argue against lax immigration on the basis of politics, economics, or security, for this article let's look at it from the perspective of health.

From a health preparedness perspective, we can barely care for the legal poor in our nation - public health departments are the stepchild of contemporary healthcare - underfunded and unable to attract the best and brightest in clinical practice with few exceptions. Public health hospitals are all a thing of the past, forcing private hospitals to take on an ever increasing burden of nonpaying patients and overcrowding. This is not about class but about resource management. But President Obama is all about shifting - cost shifting, blame shifting, risk shifting, attention shifting. Clearly he is happy making someone else

pay the price for his policies. And who might that be taking on the risk of Obama's failures? You and me!

Moreover, our poor do not typically present with rare diseases. Illegals on the other hand, not only bring in with them their culture, they bring in a microcosm of the many illnesses endemic in their home lands. And South America is a continent sized Petri dish of pathogens.

Now consider for a moment the risks of cohorting thousands of people from impoverished countries with poor sanitation, low vaccination rates, malnutrition, questionable hygiene practices, and high rates of communicable diseases including sexually transmitted diseases.

Obama et al by fiat are taking over military and other community resources in Arizona and Texas to warehouse illegals, especially the recent influx of unaccompanied minors, since our immigration enforcement agents are being burdened by hurdles in terms of sending these folks back. It is just a matter of time before the unaccompanied minors start an outbreak of influenza or other contagious illness. Already **swine flu** has been detected at a detention camp for minor illegal aliens (remember the outbreak in 2009?) otherwise known as H1N1 influenza, resulting in the need to implement a mass vaccination. And who is paying for this? And what about kids who have already been united with "relatives" (wink wink) likely illegal, across the country? Hope your flu vaccination is up to date!

Let's be clear - no one with a heart should feel anything but compassion for the impoverished who are trying to have a better life, especially the unaccompanied illegal minors, mere children who are sold, manipulated and most at risk. Having a porous border is not the answer. Solutions need to be sought after, starting with fixing their home countries.

We need to secure the borders - for public health reasons.

Now on to the CDC: mishandling anthrax and other challenges.

For many of you the anthrax threat of 2001 - otherwise known as the white powder events - remains a powerful memory and dark chapter in US history. The bioterrorist creed - kill some, scare millions, was alive and well.

Is it any wonder that biological weapons are more than the stuff of spy novels? Or that the notion of deadly pathogens causing global outbreaks continues to interest the public, which of course inspires the creation of films and television shows such as "Outbreak," "Contagion," or "The Last Ship." But the cold hard reality, beyond fiction, hype or politics - natural pathogens and biological weapons are capable of causing significant physical and psychological damage.

Consider the global outbreak of SARS, which in 2003 cost Canada over a billion dollars in lost business, as companies cancelled meetings in regions where the virus was causing illness, or avian flu outbreaks in the mid 2000's, where over 100,000,000 birds were killed, and numerous people in

the Pacific Rim were sickened and died. Or the thousands that died during WWII at the hands of Japan's bioweapons program. Or the animals sickened during WWI when a fledgling bioweapons program emerged in Europe. Or Oregon in the 1980's when a cult successfully used rudimentary food-borne pathogens to sicken a town.

Which is why, at least in theory if not statute, the pathogens considered to be the most dangerous to people, livestock, agriculture and the environment are relegated to the highest level of biosafety labs. I say theoretically because over the years several of the facilities here and abroad that have been tasked with securing lethal bacteria, toxins and viruses have had significant lapses in security. In the early aftermath of the fall of the former Soviet Union (FSU), their bioweapons research facilities' security had a few "gaps" to say the least, (think 'let's trade a vodka for a vial of smallpox?') resulting in some of the biological agents going unaccounted for. Lest we get tempted to feel superior to our Russian counterparts, US facilities continue to get less than exemplary marks for security or adhering to safety procedures.

Most recently the Centers for Disease Control (CDC) mishandled the deadly bacillus anthrax, resulting in over 80 people potentially at risk for infection. According to the CDC, two recurrent problems have occurred - failure to wear full protective gear because the workers believed the samples did not pose a risk, and failure to make the samples lack the capacity to cause disease. The technique used to neutralize the risk of anthrax didn't work completely. The CDC stated at one point the spores (bacillus anthracis) may have even been aerosolized and dispersed into the air. Nevertheless the CDC has offered antimicrobial meds to many of the lab workers. Anthrax carries a high case fatality rate untreated and, unfortunately even for those who are treated. Recall in 2001, shortly after 911, anthrax was spread through the mail, resulting in 5 deaths, over a dozen serious illnesses, and a nation afraid to go into their laundry room, fearing 'white powder' and scared to death to open the mail. Terrorism 101 - scare the heck out of people. It worked.

I was tempted to title the article "CDC and the Anthrax Follies" except that most of us who have been in the biopreparedness arena hold the CDC in high esteem, which makes their ongoing pattern of security, sample-handling, and environmental problems especially worrisome, and disappointing. The CDC is considered one of the "go to" and critical infrastructure organizations to protect the public in terms of emerging biological threats - terrorism weapons, natural epidemics or novel pathogens like HIV in the 1990's or swine flu in the 21st century. Their good works notwithstanding, the CDC is betraying the public trust by not remedying their ongoing lapses in security, the mishandling of materials, and the ongoing structural/environmental problems, that have been documented by various governmental and non-governmental investigations.

As someone who headed a bioterrorism preparedness center during the 2001 anthrax events, this naturally occurring pathogen that can be altered to create a biological weapon, is not something to become cavalier about. So while poisons like cyanide, toxins like ricin, viruses like ebola or bacteria such as anthrax are the stuff of spy novels and SciFy movies - spawning the Andromeda Strain and other cinematic interpretations of biologically based doomsday weapons, the fact is, these pathogens are in the here and now, and capable

of causing a major problem. There are indeed pathogens out there for which no cure exists, and quite frankly most of us wish were never invented, created or discovered. As listed in my books, there are dozens of pathogens suitable as bioweapons; the use of toxins, poisons, and diseases dating back to before Christ.

As of 2014, there are hundreds of labs in the US and internationally, that are doing legitimate biodefense research, and many players - state and non-state sponsored groups that are interested in creating, or stealing biological weapons, not the least of which are Russia, China and Syria. The threat is real, widespread, and growing. Syria not only has a robust chemical weapons program, but a biological weapons threat, more rudimentary but never the less real. Russia by far has the most advanced offensive bioweapons capabilities, but China and other less than savory nations have spent much effort developing asymmetric, and WMD capabilities.

In addition, Mother Nature can pack a whallop just with her non weapon emerging pathogens - ones that are newly discovered as we encroach upon previously undeveloped regions, or because of the inherent capability of microbes to interact with similar ones and become more lethal as something we've never seen before. Such is the case with the early avian flu strains of 1997 through 2014, or SARS coronavirus.

Whether research is for good or evil purposes, handling tiny microbes requires multiple layers of security and safety protocols, beginning with the buildings, labs, ventilation and containment systems, and site selection, to the training and personal protective equipment for the people inside those facilities, and procedures to protect people nearby.

Unfortunately from a preparedness perspective, the CDC has had a variety of safety breaches and security lapses between 2007 and 2014 - not inspiring confidence at a time when very little in the Obama Administration that deals with homeland security inspires confidence - from the shambles of border security, to the redacting in security policy documents anything suggesting Islamic radicals as terrorists, to, well you get the idea.

Almost ten years ago, vials of the 1957 influenza virus were mistakenly sent to various labs across the globe, most of which were in the US. The CDC response was to have the labs certify they destroyed the vials - they would accept a faxed document as sufficient ‘proof.' Hmm, call me crazy, but the CDC might have wanted to employ a bit more aggressive stance in ensuring the causative agent to a widespread outbreak might have been better contained, and more compelling evidence the vials were indeed handled appropriately.

Over the years malfunctioning airflow and ventilation systems have, if you will excuse the pun, plagued the CDC. It is a no brainer - the ventilation system, negative pressure rooms, air quality - these are the bedrock and foundation for safe handling of deadly pathogens from an infrastructure and facilities perspective. **ABC News** and others reported the CDC reportedly used duct tape to seal a lab that was housing Coxiella burnetii - the causative agent

for Q fever - a pathogen that is considered useful as a bioweapon. A top flight facility, using duct tape - seriously?

Bioterrorism Preparedness

What does national preparedness mean? It suggests the ability to respond to a wide array of threats and prevent unnecessary loss of life or injury. This requires translating national policy initiatives into local program implementation. It is a significant challenge to prepare for an unknown event, especially without a clear cut indicator of who and how many to protect, and from whom.

National activities to prevent or respond to a bioterrorism event have hinged largely on the development of biosurveillance programs and arms length detector technologies. As I've written for FSM back in 2008, when the **National Biosurveillance Center** was about to be officially opened, the GAO reported that they weren't sure what the NBC could actually accomplish given the interagency rivalries, growing bureaucracy, problems with interoperability, and the ubiquitous 'mission creep' that evolves in such important undertakings. If these were the problems afflicting the NBC under a president, and administration that actually cared about homeland security, imagine how the various government agencies designed to protect the US are faring under an administration that seems consumed with shifting national resources to entitlement programs, decreasing the stature of the US from one of international superpower to that of merely an ordinary country, just another member of the United Nations.

As an aside, and general terrorism preparedness comment, having NY City downgrade its capabilities in their intelligence division so as not to offend the very people who are likely to attack our country - again - seems ridiculous. Our adversaries must laugh themselves to sleep.

According to studies by the GAO and US Department of Agriculture IG reports at increased risk for incidents at laboratories doing research of deadly pathogens as part of bioweapons research, in no small measure due to the feds failure to develop national standards for lab design, construction and operation.

The growing weakness in bio preparedness in the USA from the top down is staggering. From the ADD-like foreign policy and domestic preparedness edicts of President Obama, to the growing disinterest in

bioterrorism among all but a handful of health care professionals and health care facilities are just some critical infrastructure issues that this current president is contributing to.

Emerging Pathogens & Public Health

We live in a global world where most people outside of North America are likely to die from an infectious disease - something the average US citizen doesn't worry about, and hasn't had to since the mid 20th century. TB, dengue, HIV, influenza, malaria, food-borne illnesses, and environmental (mosquitoes, worms, other insect vectors) threats pose daily risks to most people worldwide, especially the poor, which suggests immigrants from South America, parts of Africa, the Middle East, and Asia can import their illnesses as they immigrate or travel within our borders.

By May of 2014 the Middle East Respiratory Syndrome Coronavirus (MERS, or MERS CoV) arrived in the United States. For many of you, this is a new virus, and another threat emanating out of the Middle East, in case terrorism and energy insecurity weren't enough! The World Health Organization **(WHO)** alerted the international community about MERS after identifying the new pathogen from two men who became ill in Jordan in 2012. Early in the MERS lifespan, cases were sporadic. A few cases were in clusters around health care workers and close contacts. Lately the numbers are growing seemingly exponentially. By March 27, 2014 WHO reported 206 confirmed cases. By end of April 2014 the WHO case count increased by more than 50 additional cases. The total as of last month there has been reported at 536 laboratory confirmed cases, and 145 deaths. While the apparent case fatality rate has appeared to decline, from ~50% in the early days of MERS to approximately 25% depending upon the country, that is still a high percentage of deaths per cases infected. While there is still no readily available vaccine against MERS, and the use of current antiviral medications remains in question, an early index of suspicion by well informed health care professionals can reduce the risk of spread, and initiate aggressive intervention, which can also provide life saving support at the earliest possible critical junction in care.

While our vaunted laboratory network (LRN) that was strengthened during the Bush years may be able to detect MERS and other potentially deadly, emerging pathogens, it might have been nice if our own CDC had been more proactive than merely placing updates on MERS and other global infections on its website - most of the content being derived from the World Health Organization (WHO). Not to play "pile it on" given the CDC but there are some things in the preparedness arena that are under the heading of "low hanging fruit" and then there are some that are under the heading of "no brainer" - providing safe ventilation in areas housing or studying aggressive pathogens, and monitoring the successful treatment of biological weapons stockpiles definitely coming under the heading of "no brainer." Lack of warning to American doctors and the public about a new strain of avian flu or a new respiratory virus MERS CoV (Middle East Respiratory Syndrome Coronavirus), who might have not heard about it since first appearing in 2012 w/out articles in New England Journal of Medicine, **Disease a Month** (article by yours truly) and a scant few other journals well before the first US cases - but do we really want to hope our physicians stay current with medical journals in the face

of a new pathogen that has the capacity to kill a fairly high percentage of those diagnosed?

The CDC website is very nice. It is frequently parking World Health Organization information. With our powerful media and social media capacity, perhaps more proactive warnings can come to Americans, besides those few who know to check out the **travelers information** page (highly useful) or update section of the CDC website. A website is not a surrogate for public awareness and preparedness. Several years ago I reported on the World At Risk Report emphasized the importance of engaging the public. This is a bad time to lose ground.

It is just a matter of time before another outbreak risk occurs on our shores. **Swine flu** was not the last threat we faced as a country.

Discussion

The US faces an onslaught of threats and challenges, not the least are several which will impact the health of our nation.

First - natural pathogens. From MERS to the latest version of avian flu, to the changing geographic spread of dengue, malaria and TB. One approach requires greater surveillance, and greater research on antimicrobials, and vaccines. We need to continue vaccinations in spite of the anti-vaccine movement in the US. And our government agencies need to be more proactive in alerting the health care community of new threats such as MERS. Does anyone seriously think parking an article on the CDC website or some blurbs about this and other threats is sufficient?

Second -investment in critical infrastructure. From 2001 to 2005 - as homeland security dollars flowed into hospitals and health departments, not surprisingly there was both interest and educational programs addressing bioweapons, pandemic flu and emerging infections. As those dollars continues to shrink, so does the knowledge of our health care professionals, limiting the tools they need, and the preparedness we as a society rely upon.

Third - this issue remains the third rail of political discourse and something we'll discuss in a future article is the growing threat of illegal immigrants - mostly from poor countries where many diseases occur that are still somewhat uncommon in the US. How healthy will our communities remain when tens of thousands of people - including the unaccompanied minors flooding the border - are sent across the country instead of returned to their countries of origins? Also where does the government think the doctors, nurses, PA's, and equipment to treat the warehoused kids that are being sequestered in Arizona and Texas will come from and who will lose those services while they are transferred to care for illegal population? Moreover, many of these illegals bring with them serious, often contagious illnesses. At a time when our health care system is woefully overstretched, our hospital overcrowded, and the misuse of emergency departments growing from the swelling ranks of uninsured (Obama care not really making a difference), welfare recipients (legal and illegal), when many of these folks could be well treated by public health clinics, which are sadly closing or underfunded,

well we need to address this problem before our health care facilities become irrevocably similar to third world countries. This is a resource, not race issue.

Lastly - whether Al Qaeda, or other terrorist groups, or rogue nations, biological weapons are highly sought out and valuable. There are too many labs, too many players and too many pathogens to ever think we are safe from the threat. For many, 2001 was a blip, an anomaly. I wonder if the people of Manchuria during WWII - tens of thousands of whom were killed or made sick by Japan's Unit 731 - think bioweapons are an anomaly? Which is why USAMRIID and CDC are so vital to our security, and must be held to the highest standards. When they fail their mission, they fail our nation.

We as citizens need to be proactive about our health, vocal about the critical infrastructure investments vitally needed, and make it clear that border security is health security. Our elected need daily and frequent reminders. Our health care facilities need to receive heightened training about emerging threats, as does the public - the way it was in the Bush years, when preparedness was deemed a valuable investment. Further investment in antiviral medications and vaccines are essential - and the pharmaceutical industry provides shovel ready and high paying jobs.

Conclusion

June 2014 through another safety breach, the CDC allowed ~ 84 workers to be exposed to anthrax. Should we take some solace that the CDC is telling us the public is not at risk? Not a trick question. CDC has to earn the public trust before thinking we will sleep soundly with their comments that things are under control. That the CDC remained in charge of investigating their own mistakes, is a flawed strategy and certain to delay necessary improvements. The CDC is too vital to US interests to allow internal politics, egos, bureaucratic problems and plain old fashioned institutional pride to get in the way of sound safety practices, objective investigations, and revamped security protocols. To do any less would be a disservice to the country, and the public trust.

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Five people in Hungary monitored for suspected anthrax infection

Source: http://www.reuters.com/article/2014/07/04/us-hungary-anthrax-idUSKBN0F90J920140704

July 04 – An infection of deadly anthrax has been identified in beef in eastern Hungary and five people are being monitored in hospital for suspected symptoms of the disease, the health authority ANTSZ said on Friday.

It said the disease was identified in frozen beef after two cattle were illegally slaughtered in a farm in Tiszafured, a town about 160 km east of Budapest.

The ANTSZ said the five people hospitalized had probably contracted the disease during illegal slaughtering. Some of the beef had been transported to a company that operates canteens, and the operation of the firm had been suspended. The authority said anthrax, if identified in time, can be cured effectively with antibiotics. It is trying to find out if more people came into contact with the infected animals or meat.

The health authority said it had started the vaccination of animals that could be potentially exposed to anthrax bacteria.

"Authorities have taken the necessary measures, so there is no longer an immediate danger," the statement said.

But it said the food safety office would report the matter to police for purposes of a criminal investigation since the canteen firm had bought meat from illegal sources.

Gastrointestinal Anthrax

Causative organism is Bacillus anthracis, an encapsulated, aerobic, gram-positive spore-forming rod-shaped bacterium. Humans become infected by ingestion of spores from infected animals (e.g., sheep, goats or cattle), animal products, such as hides or hair, or intentional malicious acts of bioterrorism.

Incubation Period:
Usually about 7 days after exposure to spores, with a range of 1 to 12 days.

Signs/Symptoms:
1) Nausea, anorexia, vomiting and fever progressing to severe abdominal pain, bloody emesis and diarrhea (usually bloody)
2) Acute abdominal pain with peritoneal signs may develop
3) About 2 to 4 days after onset of symptoms, ascites may develop as abdominal pain decreases
4) Shock and death 2 to 5 days after onset of symptoms
5) The case-fatality rate for pediatrics is estimated to be between 25 percent and 60 percent.

Laboratory and Diagnostic Testing:
1) Blood: gram-positive bacilli on unspun blood smear

2) Blood culture: aerobic growth of gram-positive bacilli
3) Ascitic fluid: gram-positive bacilli on gram stain of unspun fluid
4) Pharyngeal swab: if symptoms/ulcers present (dacron or rayon swabs)
5) CT Scan: mesenteric adenopathy may be present
6) CXR: widened mediastinum may be present

Treatment:
Standard isolation from contact with skin lesions.

Category	Initial Therapy (Oral)	Duration
Adults (including pregnant women and pregnant adolescents)	Ciprofloxacin 400 mg IV every 12 hrs ***or*** Doxycycline 100 mg IV every 12 hrs ***and*** One or two additional antimicrobials*	IV treatment initially, switch to PO when clinically appropriate (see Table 1 for PO dosing). Treat for a total of 60 days** (IV & PO combined).
Children	Ciprofloxacin 10-15 mg/kg every 12 hrs (not to exceed 1 g/day) ***or*** Doxycycline: >8 yrs and >45 kg: 100 mg every 12 hrs ***and*** One or two additional antimicrobials* All other children: 2.2 mg/kg every 12 hrs ***and*** One or two additional antimicrobials*	IV treatment initially, switch to PO when clinically appropriate (see Table 1 for PO dosing). Treat for a total of 60 days** (IV & PO combined).
Immunocompromised individuals	Same for non-immunocompromised adults and children	Same for non-immunocompromised adults and children

*Additional antimicrobials include rifampin, vancomycin, penicillin, ampicillin, chloramphenicol, imipenem, clindamycin and clarithromycin.

**Previous treatment guidelines for gastrointestinal anthrax suggested 7 to 10 days of therapy; however with the potential for bioterrorism, 60 days is recommended because of possible inhalational exposure.

Do **NOT** use extended-spectrum cephalosporins or trimethoprim/sulfamethoxazole because anthrax may be resistant to these drugs.

CDC says anthrax infection "highly unlikely," but reassigns bioterror lab chief

Source: http://www.homelandsecuritynewswire.com/dr20140707-cdc-says-anthrax-infection-highly-unlikely-but-reassigns-bioterror-lab-chief

July 07 – The U.S. Centers for Disease Control and Prevention (CDC) has advised some of its employees to stop taking antibiotics meant to fight a possible anthrax infection after preliminary tests suggest that it is "highly unlikely"

those employees were exposed to live anthrax following an incident in June.

Fecima reports that between 6 June and 13 June, workers in the agency's Bioterror Rapid Response and Advanced Technology Laboratory were exploring a new method for killing anthrax before they sent samples of what they believed to be inactive bacteria for use in two lower-security CDC labs. Mishandling of the anthrax containers by the recipients led to a scare of airborne anthrax. After the incident, the CDC identified two groups of employees who were potentially exposed to aerosols in the affected lab space, and some who were not potentially exposed but worked in or near the affected lab space.

"Employees in these groups are having one-on-one appointments with medical staff in CDC's occupational health clinic who are reviewing all information with them and discussing the pros and cons of continuing post-exposure prophylaxis as part of shared decision making," CDC spokesman Tom Skinner said.

About twenty-nine of roughly eighty-four employees thought to have been exposed have been advised to continue taking antibiotics, while the rest have been advised to stop taking them.

Michael Farrell, head of the bioterror lab, has been reassigned while Dr. Harold Jaffe, the CDC's associate director for science, investigates how proper protocols were violated. CDC spokesman Benjamin Haynes reported later in June that protocol calls for inactive anthrax to be slided and observed after forty-eight hours to see whether spores develop, but the sample in the incident was checked and sent to lower-level labs after twenty-four hours.

In an e-mail to staff, CDC director Dr. Thomas Frieden acknowledged that the agency had failed to inform the wider CDC community about the anthrax incident. "We waited too long to inform the broader CDC workforce," he wrote.

The U.S. Department of Agriculture is conducting its own investigation.

Convergence of chemistry and biology raises concerns about designer toxins

Source: http://www.homelandsecuritynewswire.com/dr20140708-convergence-of-chemistry-and-biology-raises-concerns-about-designer-toxins

The convergence of chemistry and biology is providing major benefits to humankind, particularly in health care, alternative energy sources, and in environmental control – and when combined with other advances, particularly in nanotechnology, it is also being exploited in developing improved defensive countermeasures against chemical and biological warfare agents. This convergence, however, has also raised concerns that biotechnology could be applied to the production of new toxic chemicals, bioregulators, and toxins. A new report from OPCW says that the potential for scaling up biological processes for large

scale production of chemicals of concern is still limited, but biomediated processes might still be effective for producing weaponizable quantities of toxins which are lethal to humans in microgram or lower dosage.

Bulk and fine chemicals are being produced increasingly using biologically mediated processes, for example, by microbial fermentation or using enzymes as catalysts. It is estimated that approximately 10 percent of chemical production volume will use such processes by 2020. This trend is being driven by commercial and environmental factors, and particularly by competition for conventional feedstocks.
The Organization for the Prohibition of Chemical Weapons (OPCW) notes that key enabling technologies have resulted in a rapidly expanding capability to redesign or manipulate organisms for specific purposes, and the ability to design and engineer improved enzymes (such as through metabolic engineering, enzyme engineering, synthetic biology, or traditional recombinant DNA technology).
Although there are concerns that biotechnology could be applied to the production of new toxic chemicals, bioregulators, and toxins, the temporary working group (TWG), in its *Convergence of Chemistry and Biology: Report of the Scientific Advisory Board's Temporary Working Group*, assessed that potential applications to scheduled chemicals are currently limited. Scaling up a new biological process will continue to take a considerable investment of capital, resources, and time; these considerations could reduce the likelihood of using such methods for large scale production of chemicals of concern, however, biomediated processes might still be effective for producing weaponizable quantities of toxins which are lethal to adult humans in microgram or lower dosage. The report also noted that similar concerns were raised in the early days of recombinant DNA technology.
In parallel to biotechnological innovation, substantial advances have been made in the chemical synthesis of molecules of biological origin. Commercial DNA synthesis has advanced to the point where whole genomes (an organism's total genetic material) can be synthesized and compiled, and viruses, including influenza and coronavirus, have been reconstructed. Parallel research has enabled the rational engineering of viral capsids.
The report says that Advances in the semi-automated synthesis of peptides have enhanced the ability to synthesize bioregulatory chemicals that mediate functioning of the body and other peptides with high physiological activity. Increased sophistication in organic chemistry has enabled the chemical synthesis of increasingly more complex biological molecules, including toxins, although generally on a scale that poses no threat to the purposes of the Chemical Weapons Convention (CWC).

Enabling technologies have been, and will remain, critical factors affecting the pace of change and convergence in the life sciences. Key technologies contributing to, and benefitting from the convergence of chemistry and biology, include: DNA sequencing and synthesis, informatics, computing capacity, availability and sharing of technical data on the Internet, and automated robotics in research and development (R&D). Multidisciplinary research teams are becoming the norm, encompassing a range of technical expertise, including chemistry, biology, physics, computing, engineering, materials science, and nanotechnology.
The report says that increasing use of biologically mediated production processes has implications for the Chemical Weapons Convention verification regime. The temporary working group has reviewed the

meaning of the term "produced by synthesis" as it applies to Part IX of the Verification Annex of the Convention, in the context of declarations required for OCPFs (Other Chemical Production Facilities). The view of the TWG was that any process designed for the formation of a chemical substance should be covered by the term "produced by synthesis." Many facilities taking advantage of biologically mediated production processes, however, may not be relevant to Part IX of the Verification Annex and a detailed set of exemptions may be scientifically justified (such as facilities producing alcoholic beverages or biofuels).

New production processes, combined with developments in drug discovery and delivery, could be exploited in the development of new toxic chemicals that could be used as weapons. Such developments would still be covered by what is known as the "general purpose criterion," but this highlights the importance of monitoring developments in science and technology. Convergence is increasing the overlap between the remits of the Chemical Weapons Convention (CWC) and Biological Weapons Convention (BWC), historically restricted mainly to bioregulators and toxins. This will require increasing the interaction between CWC and BWC technical experts.

The TWG considered other areas of science and engineering impacting on developments in chemistry and biology. In particular, nanotechnology is playing an important role in improving drug delivery to the body, and in the development of biosensors.

The convergence of chemistry and biology is providing major benefits to humankind, particularly in health care, alternative energy sources, and in environmental control. Combined with other advances, particularly in nanotechnology, it is also being exploited in developing improved defensive countermeasures against chemical and biological warfare agents that will have implications for verification, and assistance and protection against weapons. There have been beneficial developments in protective clothing and equipment, decontamination, verification, detection/diagnostics, and medical countermeasures.

The TWG made nineteen recommendations. The key recommendations are, in summary:

- The SAB and the TS should continue to monitor advances and trends in production technologies relevant to convergence, and assess the relevance of these processes to verification under the CWC. Regular engagement with subject matter experts, for example, from the biotechnology industry, will be required.
- Advances in systems and synthetic biology, which have enormous potential for beneficial and commercial purposes, should be monitored by the SAB [Scientific advisory Board] and the TS [Technical Secretariat], particularly in terms of enhancing the capability and capacity to synthesize more complex chemicals (in particular toxic chemicals, toxins and bioregulators). Regular engagement with subject matter experts will be required.
- Advances in nanotechnology, particularly as they apply to improved defensive countermeasures against CW, should be monitored.
- As the convergence of chemistry, biology and other sciences is a technically complex area, consideration should be given to the development of outreach material to assist staff at States Parties

permanent missions to the OPCW in understanding possible implications for the CWC.

- A structured approach to maintaining contacts with the BWC community should be established. Existing relationships should be further developed to bring together technical expertise in areas of common interest.
- With the rapid pace of advances, consideration should be given to re-activating the TWG on Convergence periodically, for example, every five years prior to the SAB report to the Director-General on science and technology (S&T), in order to assess recent advances.

— Read more in *Convergence of Chemistry and Biology: Report of the Scientific Advisory Board's Temporary Working Group* (OPCW, Temporary Working Group, 27 June 2014)

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Anthrax reported in horse in Poland

Source: http://horsetalk.co.nz/2014/07/09/anthrax-reported-horse-poland/#axzz36xiO1beC

A case of anthrax has been confirmed in a horse in Poland, close to the border with Ukraine.

The case was reported to the World Organisation for Animal Health (OIE) by Dr Krzysztof Jazdzewski, who is the deputy chief veterinary officer with Poland's Ministry of Agriculture and Rural Development.

Anthrax was last recorded in Poland in 2001.

Jazdzewski reported that the horse had died of the infection and he listed seven horses as being potentially susceptible to the dangerous disease.

The case, in Pawlowka, in the Lubelskie region in eastern Poland, was detected on June 18 and confirmed as being anthrax on July 7.

Authorities have imposed quarantine measures and regional movement controls inside the country.

The premises have been disinfected and potentially exposed horses are being treated with antimicrobial drugs.

Anthrax is caused by the bacterium *Bacillus anthracis*.

Most forms of the disease, which can affect both humans and animals, are lethal.

Domesticated herbivores will usually contract the disease through ingesting endospores.

When the endospores are inhaled, ingested, or come into contact with a skin lesion on a host, they may become reactivated and multiply rapidly.

Veterinary authorities in Hungary are investigating two cases of anthrax in cattle. One person was showing symptoms and was receiving treatment.

Forgotten vials of smallpox found in storage room

Source: http://www.foxnews.com/health/2014/07/08/forgotten-vials-smallpox-found-in-storage-room/

July 08 – Government workers cleaning out an old storage room at a research center near Washington made a startling discovery last week - decades-old vials of smallpox packed away and forgotten in a cardboard box.

The six glass vials of freeze-dried virus were intact and sealed with melted glass, and the virus may well have been dead, because it wasn't kept cold over the years, officials at the Centers for Disease Control and Prevention said Tuesday.

Still, the find was disturbing because for decades after smallpox was declared eradicated in the 1980s, world health authorities believed the only samples left were safely stored in super-secure laboratories in Atlanta and in Russia.

Officials said this is the first time that unaccounted-for smallpox has been discovered.

It was the second recent incident in which a government health agency appeared to have mishandled a highly dangerous germ. Last month, a laboratory safety lapse at the CDC in Atlanta led the agency to give scores of employees antibiotics as a precaution against anthrax.

The smallpox virus samples were found in a building at the National

Institutes of Health in Bethesda, Maryland, that has been used by the Food and Drug Administration since 1972, according to the CDC.

Officials said the vials may have been stored there since the 1950s - no records were found that said exactly when they were placed there.

No one has been infected, and no smallpox contamination was found in the building.

Smallpox can be deadly even after it is freeze-dried, but the virus usually has to be kept cold to remain alive and dangerous.

These vials were stored for many years at room temperature, said Stephan Monroe, deputy director of the CDC center that handles highly dangerous infectious agents.

"We don't yet know if it's live and infectious. It's possible it could be inactivated because of long length of storage," he said.

The samples were rushed to the CDC in Atlanta and will undergo up to two weeks of testing to establish whether they are dead, Monroe said. Then they will be destroyed.

Smallpox was one of the most lethal diseases in history. For centuries, it killed about one-third of the people it infected, including Queen Mary II of England, and left most survivors with deep scars on their faces from the pus-filled lesions.

The last known case was in Britain in 1978, when a university photographer who worked above a lab handling smallpox died after being accidentally exposed to it from the ventilation system.

Global vaccination campaigns finally brought smallpox under control. After it was declared eradicated, all known remaining samples of live virus were stored at a CDC lab in Atlanta and at a Russian lab in Novosibirsk, Siberia.

The labs have the highest possible security measures. Scientists who work with the virus use fingerprint or retinal scans to get inside, wear full-body suits including gloves and goggles, and shower with strong disinfectant before leaving the labs.

The U.S. smallpox stockpile, which includes samples from Britain, Japan and the Netherlands, is stored in liquid nitrogen.

There has long been debate about whether to destroy the known samples.

Many scientists argue the deadly virus should be definitively wiped off the planet and believe any remaining samples pose a threat. Others argue the samples are needed for research on better treatments and vaccines.

At its recent annual meeting in May, the member countries of the World Health Organization decided once again to delay a decision.

Broadening the Public Health Security Agenda

By Patrick P. Rose

Source:http://www.domesticpreparedness.com/Commentary/Viewpoint/Broadening_the_Public_Health_Security_Agenda/

July 09 – Midway into 2014, public health emergencies around the world pepper local news headlines and raise concern for U.S. residents. Some biological incidents capture the broader attention of the public, for example: the novel emerging infectious disease Middle East respiratory syndrome coronavirus (MERS-CoV) in the Kingdom of Saudi Arabia; the Ebola hemorrhagic fever virus epidemic in western Africa; or the seemingly continuous threat from influenza virus out of Asia. Others remain a sidebar in the news, such as: the chikungunya virus epidemics in eastern Africa and the Caribbean; or the current dengue virus epidemic in the 2014 Soccer World Cup and 2016 Olympics host nation Brazil.

However, none of these threats is far beyond the reach of domestic borders. Few pharmaceutical interventions exist for many endemic infectious diseases that continue to spread beyond previously isolated/neglected geographic regions. Even fewer pharmaceutical interventions, if any, exist for emerging infectious diseases such as MERS-CoV. Often the painful consequence of unavailable pharmaceuticals, if other nonpharmaceutical interventions are not immediately applied, is significant morbidity and/or mortality. Given the nature of some of these diseases with either a high mortality rate – the estimated mortality rates for MERS-CoV and Ebola are 30-60 percent and 59-90 percent, respectively – or significant morbidity rate, the effect is felt well beyond public health institutions and hospitals.

What is intensifying the threat is that, for many diseases, the vulnerable population expands beyond the immunocompromised, the children, and the elderly. Some of these diseases have been aggressively reaching healthy members of society, including front-line healthcare workers, who are raising concerns that these disease outbreaks may severely stress the workforce and subsequently the critical infrastructure.

The Threat of Complacency & Disillusion

Public health agencies abroad, assisted through international collaboration, race against the clock to mitigate the destruction caused by these threats through voluntary quarantine/isolation, social distancing, and medical intervention. Despite best efforts, the sheer magnitude of these public health emergencies is overwhelming the response capacities and leading to further spread of disease. The first two cases of individuals infected with MERS-CoV arrived in the United States in May 2014 after traveling on transatlantic flights with hundreds of other passengers. Arguably, there has not been the mass influx of patients with MERS-CoV despite the millions

of people taking the pilgrimage to holy sites in the Kingdom of Saudi Arabia.

There also has not been the anticipated spread of secondary cases of persons throughout the United States after having traveled to the region – despite the fact that, in the Kingdom of Saudi Arabia, up to 75 percent of all new infections reportedly occur through secondary exposure. With only two U.S. cases confirmed to date, the threat may seem minimal; however, there is a risk of complacency. Unlike any other natural or manmade threats, biological agents have the capability to evolve and alter their disease transmission. Over time, these pathogens can rapidly and unexpectedly change transmission patterns. Similar to a wildfire blazing through newly discovered dry bush, a pathogen can race through a previously unexposed population after reaching other parts of the world.

The consequences of most disasters are tangible and often measured in the cost of infrastructure destruction. The effect of a public health emergency is not measured the same way because the destruction does not have the same level of visibility. Houses do not crumble and key infrastructure does not immediately fail. Instead, the consequence of a public health disaster is measured in lives permanently disabled by the disease or lives lost.

For most other types of catastrophes, there are measurable efforts to buy down risk – for example, improved tornado-resistant shelters, higher levies and/or dams for flooding or hurricane-driven flood surge, or better screening procedures for improvised explosive devices. Initiatives to increase resilience against public health threats – expanding hospital surge capacity or investing in specialized medical equipment and supplies – are far less visible and sometimes even more costly, but they also are necessary. Different parts of the United States regularly face a variety of natural disasters such as hurricanes, tornadoes, or wildfires. At the same time, every part of the United States faces the threat of a public health disaster as ports of entry invite travelers from around the globe.

Actual incidents of public health disasters that have directly affected the U.S. population have been rare. Thus, reconciling investments in increased public health security can be difficult for those not immediately involved in the efforts to stem the effects of the next disease outbreak. As a result, the nation's preparedness levels are below expected capabilities – with uneducated responses, understaffed healthcare system, and limited response plans – to appropriately respond to a public health disaster. Moreover, existing response efforts reflect little, if any, understanding of how complex and distinct disease outbreaks can be.

Unlike any other type of disaster, the range of scenarios in a public health disaster is rather large, and operational constraints change depending on the type of disease outbreak. It is, therefore, enormously important to have constant situational awareness and remain vigilant of ongoing disease outbreaks everywhere. Overwhelmed and underprepared response officials inevitably resort to ineffective measures – for example, closing national borders as Africa did in March 2014 following an Ebola outbreak – hoping to presumptuously curtail the threat to their jurisdictions.

Connecting the Dots to Save Lives

A new push has recently been initiated to raise the stakes that public health emergencies are in every way as serious of a threat as other natural or manmade disasters. The international community, though not necessarily as a whole, acknowledges that public health security is an increasingly serious vulnerability and that borders or oceans do not limit this vulnerability. Efforts such as the Global Health Security Agenda underscore the importance of a collaborative effort to increase public health preparedness, but this effort should not be limited to looking beyond domestic borders. State and local agencies often take the lead in detecting and responding to domestic biological incidents. Subsequently, these same agencies are the first to enact response measures to mitigate further spread where, in many cases, additional support in the form of manpower or supplies from other sources is limited or unavailable.

From a domestic preparedness perspective, it is important to develop appropriate plans for potential response needs following a public health emergency anywhere in the world. State and locals also need to take the lead in demonstrating that a whole of government approach with a standard operating procedure can best apply limited resources toward saving lives. Improving domestic public health preparedness requires coordinating with law enforcement, customs and border protection, emergency managers, along with public health officials.

Detection and prevention at this level increase the chance of significantly reducing the effect of a disease outbreak, regardless of available resources. With natural disasters seemingly on the rise as a whole, integrating public health security investments connects the dots to an overall higher all-hazards preparedness level. Satellite and radar technology can detect a hurricane several days or more in advance, but the next deadly wave of MERS-CoV may have already begun.

▶ **You can contribute to the survey at source's URL.**

Patrick P. Rose, a senior analyst at Gryphon Scientific, holds a Ph.D. in infectious diseases and is a subject matter expert on national security issues related to public health security. He works with federal and local stakeholders to address requirements and gaps that produce vulnerabilities in public health security. In addition, he supports efforts domestically and internationally in the field and at the policy level to reduce the proliferation of biological weapons and to increase public health security awareness. These efforts include promoting greater engagement in the Global Health Security Agenda. He is an alumnus of the Emerging Leaders in Biosecurity Initiative and serves as an adjunct assistant professor at the University of Maryland Department of Epidemiology and Public Health.

How deforestation shares the blame for the Ebola epidemic

By Terrence McCoy

Source: http://www.washingtonpost.com/news/morning-mix/wp/2014/07/08/how-deforestation-and-human-activity-could-be-to-blame-for-the-ebola-pandemic/

Like most matters involving an Ebola epidemic, chronicling its first horrifying infection is not an easy endeavor. But even in circumstances in which details are hard to come by, certain similarities have emerged. The first contact often occurs in remote, rural communities where a victim handles an infected animal carcass, and things quickly progress downward from there.

One outbreak in Ivory Coast was sparked when an ethologist touched an infected, dead chimpanzee. In Gabon and the Republic of Congo, scientists linked several outbreaks to extensive deaths of forest chimpanzees and gorillas. And in this most current outbreak of Ebola in West Africa — which has been called "out of control" and has claimed at least 481 lives in Guinea, Sierra Leone and Liberia — is also believed to have begun in a remote location in the town of Gueckedou.

The commonality between numerous outbreaks of Ebola, scientists say, is growing human activity and deforestation in previously untouched forests, bringing humans into closer contact with rare disease strains viral enough to precipitate an epidemic.

"The increase in Ebola outbreaks since 1994 is frequently associated with drastic changes in forest ecosystems in tropical Africa," wrote researchers in a 2012 study in the Onderstepoort Journal of Veterinary Research. "Extensive deforestation and human activities in the depth of the forests may have promoted direct or indirect contact between humans and a natural reservoir of the virus."

Such a conclusion is particularly troublesome for West Africa, which has never before experienced an Ebola outbreak like this one, and is reported to have one of the world's highest rates of regional deforestation. The Guinea Rainforest has been ravaged by deforestation and has shrunk to less than one-fifth of its original size. In Liberia, more than half of the forests have been sold off to logging companies, according to the Guardian. And Sierra Leone is "seriously threatened" by deforestation, according to Chatham House's Illegal Logging Portal.

"There are no longer any frontier forests in West Africa for future generations to exploit," researcher Jim Gockowski, who co-authored a study tracking Guinea's deforestation, said in a statement.

What does that mean for Ebola? Quite a lot. For one, it brings people and wildlife into closer contact than before. And it also means a lot more bats, thought to carry Ebola, which increasingly pervade some forested communities.

Driven out of their natural forested habitats, they're swooping into populated regions, and some locals are now even hunting them. "Once extensive forests in which bats lived, separately from humans, have undergone progressive deforestation under the influence of population growth, land use, and climate change," wrote Melissa Leach, the director of the Institute of Development Studies. "As bat habitats have fragmented and as people have moved into once-pristine forest areas, so human-bat contact has increased, making viral spillover more likely."

But deforestation is only the beginning. The researchers behind the article in the Onderstepoort Journal of Veterinary Research found deforested regions where locals hunted, dug for gold and farmed were most susceptible to an outbreak. The findings landed upon some dismal conclusions: The activities locals depend on the most are also what puts them at the most risk of contracting Ebola.

Mining, for one, "has become a big livelihood activity across the regions — Sierra Leone, Liberia, Guinea — as of the last couple of decades," Melissa Leach told Mother Jones. That not only means mining deeper in the forests, but also "immense movement: people going seasonally in and out of mines, coming in and out, young people coming from all over the country."

The burgeoning migratory behavior has also possibly played a role in the quick escalation of the current outbreak, which hopped from the forested villages of southeast Guinea to the western capital of Conakry. "There are lots of instances of human activities driving spillovers and outbreaks," Jonathan Epstein, a veterinary epidemiologist and Ebola expert with EcoHealth Alliance, told Mother Jones. "While some of these things may be cultural traditions that have persisted for a long time, some of them are activities that are relatively newer, but intensifying."

And as those activities intensify, so, it seems, do the outbreaks of Ebola.

Terrence McCoy is a foreign affairs writer at the Washington Post. He served in the U.S. Peace Corps in Cambodia and studied international politics at Columbia University.

Sanofi dengue vaccine promising but questions remain

Source: http://www.reuters.com/article/2014/07/11/us-sanofi-dengue-idUSKBN0FF2OO20140711

The first vaccine against dengue fever, from France's Sanofi, provided moderate protection in a large clinical study, but questions remain as to how well it can help fight the world's fastest-growing tropical disease.

The late-stage trial involved 10,275 healthy children aged 2-14 across five countries in Asia, a region that accounts for over two-thirds of the mosquito-borne disease's global burden.

Sanofi had already disclosed in April that its vaccine reduced the incidence of dengue fever by 56 percent in the Asian study, without giving details. The full findings were published online on Friday in The Lancet medical journal.

The study found the vaccine was safe and reduced the most serious cases of haemorrhagic fever by nearly 90 percent. But it offered poor protection to young children - who are most at risk from dengue - and proved notably inefficient in tackling one of the viral disease's four strains.

The results suggest the new vaccine acts best as an immune booster for patients with some previous exposure, and therefore may be most useful in tropical regions where dengue is common, rather than as a vaccination for travellers.

Since there is no vaccine now, that could still make it an important weapon in the fight against dengue.

"In view of the high disease burden in endemic countries... this vaccine candidate, despite moderate overall efficacy, could have a substantial effect on public health," the scientists behind the study wrote.

The study was led by Maria Rosario Capeding from the Research Institute for Tropical Medicine in the Philippines, and funded by Sanofi.

Nearly half the world's population is at risk of contracting dengue fever - also known as "breakbone fever" because of the severe pain it can cause. The disease infects some 100 million people each year, according to the World Health Organization, and some experts put the number at triple that level.

Most patients survive dengue but it kills an estimated 20,000 people each year, many of them children, and causes one hospitalization every minute around the globe.

Sanofi has invested over 1.3 billion euros ($1.77 billion) in the past 20 years in developing the vaccine, which is several years ahead of potential competitors, and has built a dedicated factory near Lyon in southern France with capacity to produce 100 million doses a year.

The company plans to establish a separate division within its vaccines business to manage the rollout of the new product.

Some analysts believe the three-dose vaccine could sell 1 billion euros a year, significantly boosting Sanofi's vaccines business, which generated sales of 3.7 billion euros in 2013.

But there are many uncertainties about commercial prospects - including whether three shots of what is likely to be a pricey vaccine are really needed, since one of the findings from the latest study was that efficacy after at least one dose was almost as high as after three doses.

Sanofi is still testing its vaccine in 20,000 children in Latin America and Guillaume Leroy, head of its dengue vaccine program, said it would await the results of that final study - due by the year-end - before seeking regulatory approval in endemic countries next year.

ENIGMA

Coming up with a vaccine that can protect against the disease has puzzled scientists for over 70 years, since the movement of troops during World War II helped dengue spread across the Pacific and become a worldwide pandemic.

In the Asian study, the vaccine provided only 35 percent protection against serotype 2.

A 2012 study in Thailand had already shown that the vaccine was unable to tame serotype 2, which happened to be most prevalent at the time of the study. This time, serotype 2 was less prevalent among patients, drawing the vaccine's overall efficacy rate higher.

Annelies Wilder-Smith of Singapore's Nanyang Technological University, who wrote a commentary accompanying the Lancet study, said its failure in serotype 2 was "an enigma".

Questions remain as to what the threshold of dengue incidence might be for countries to decide that it is worth launching costly vaccination programs, she noted.

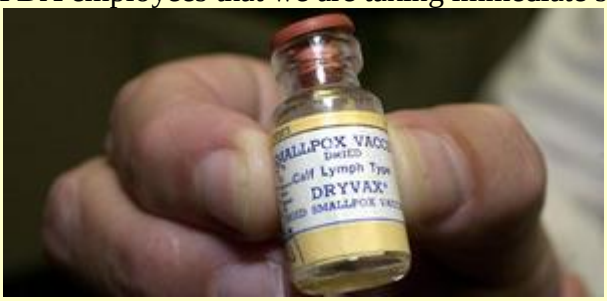
Difficulties in developing a dengue vaccine echo similar problems that GlaxoSmithKline has had in developing the first vaccine for malaria, which also did not perform as strongly in clinical trials as initially hoped.

($1 = 0.7331 Euros)

NIH employees not notified of smallpox virus vials found at NIH Md. campus

Source: http://www.homelandsecuritynewswire.com/dr20140711-nih-employees-not-notified-of-smallpox-virus-vials-found-at-nih-md-campus

When Food and Drug Administration (FDA) workers the other day discovered decades-old vials of smallpox virus in Building 29A on the Bethesda, Maryland campus of the National Institutes of Health (NIH), NIH officials reached out to Montgomery County officials, Maryland health officials, and senior NIH executives. FDA commissioner Margaret Hamburg sent an e-mail to all FDA employees. "This is quite an unexpected and unusual incident," she said in her e-mail. "I want to assure all FDA employees that we are taking immediate steps to further ensure the safety of our laboratories and our staff."



The *Washington Post* reportsthat no notification was sent to the roughly 18,000 NIH employees who work at the agency's main campus. One researcher said employees thought they should have been informed, despite there being no evidence of infectious-exposure risk to workers or the public. "I think the responsible thing to do would have been to inform us without us having to find out through the media," said the researcher, who works at the clinical center on the main campus.

In 2011, the antibiotic-resistant bacteria known as *Klebsiella pneumoniae* spread through the NIH clinical center, but the public was informed of the incident only a year later when researchers published a scientific paper detailing how the infection was traced. NIH pledged to inform local and state officials about high-profile diseases or outbreaks.

In the recent smallpox case, an NIH spokeswoman said the agency did not notify employees because the vials were secure and did not pose a public threat, though the directors of the NIH's twenty-seven institutes and centers were informed the morning of the discovery.

The FBI and the Centers for Disease Control and Prevention (CDC) are investigating how the smallpox samples were prepared and stored in the building. The CDC did notify all employees and contractors of the discovery, and noted that the samples will be tested in a CDC lab. Initial testing confirmed the presence of smallpox-virus DNA, but further testing,

which could take up to two weeks, will determine whether the material is live. The samples will be destroyed after testing is completed.

"We've learned that you simply can't overcommunicate when it comes to an event like this," said CDC spokesman Tom Skinner. Last month, live anthrax bacteria were released accidentally at CDC labs in Atlanta. About eight-four employees working in the affected labs were advised to receive vaccines and antibiotics as a precaution, but employees working at labs adjacent to the affected areas complained that they were not notified sooner.

Disagreement over use of experimental drugs in desperate effort to contain Ebola outbreak

Source: http://www.homelandsecuritynewswire.com/dr20140711-disagreement-over-use-of-experimental-drugs-in-desperate-effort-to-contain-ebola-outbreak

The efforts to contain the largest Ebola outbreak in history have so far failed. International response teams, desperate to limit the toll of the fast-spreading epidemic in three West African countries, have been calling for the use experimental drugs or vaccines to try to stop the deadly virus.

Many experts, however, including the scientist who led the work on a Canadian-made Ebola vaccine, say that using untested medications in the current West African outbreak could be disastrous.

The *Vancouver Sun* reports that using untested drugs, which may not work, would further erode local trust in the response teams, undermine these teams' efforts, and even endanger them. If patients were to have a bad reaction to one of the experimental therapies, years of expensive and painstaking work on developing tools with which to fight Ebola and its cousin, the Marburg virus, could be jeopardized.

"I get e-mails basically every second day from someone either asking 'Is there something that you're planning?' or 'Shouldn't you?' And I know I'm not the only one getting those emails," Dr. Heinz Feldmann, an Ebola expert who heads the laboratory of virology at the U.S. National Institute of Allergy and Infectious Diseases' Rocky Mountain Laboratories in Hamilton, Montana, told the *Sun*.

Most of the debate about the experimental drugs takes place within scientific circles, but the director of Britain's Wellcome Trust recently made the debate public. Dr. Jeremy Farrar, an infectious diseases expert, has questioned why the therapies which are furthest along in the developmental pipeline are not being deployed to West Africa to help fight the spread of Ebola there, saying that if the outbreak were to occur in the developed world, there would be no debate about using the experimental drugs.

"Imagine if you take a region of Canada, America, Europe and you had 450 people dying of a viral hemorrhagic fever. It would just be unacceptable — and it's unacceptable in West Africa," Farrar says.

He added that the Canadian-made Ebola vaccine — a project Feldmann led a decade ago when he worked at the National Microbiology Laboratory in Winnipeg — was released under emergency use provisions in 2009 when a German researcher pricked herself with a needle containing Ebola virus. She survived, but it was never clear if it was because of the vaccine or because she was not infected (see "Ebola lab accident tests experimental vaccine," HSNW, 8 April 2009).

"We moved heaven and earth to help a German lab technician. Why is it different because this is West Africa?" Farrar asks.

The Ebola and Marburg viruses are among the deadliest known to mankind. The viruses are transmitted through contact with bodily fluids, with people caring for the dying, or preparing their bodies for burial, are often infected.

Since there is no treatment, the most important task of response teams is to break the chains of transmission and infection by figuring out who is infected and isolating them. These identification and isolation efforts often clash with local traditions and are met with distrust and hostility. In West Africa, persistent rumours have emerged that the Western doctors are there to harvest organs for sale, leading infected people hide and flee, thus extending the range of the epidemic.

The World Health Organization reports that the current outbreak, which is the first in West Africa, has so far infected 844 people, causing the death of 518 of them. This is double the size of the next largest outbreak, in Uganda in 2000, and this outbreak has just begun.

C.D.C. Closes Anthrax and Flu Labs After Accidents

By Donald G. McNeil Jr.

Source:http://topics.nytimes.com/top/reference/timestopics/people/m/donald_g_jr_mcneil/index.html?action=click&contentCollection=Science&module=Byline&region=Header&pgtype=article

July 11 – After potentially serious back-to-back laboratory accidents, federal health officials announced Friday that they had temporarily closed the flu and anthrax laboratories at the Centers for Disease Control and Prevention in Atlanta and halted shipments of all infectious agents from the agency's highest-security labs.

The accidents, and the C.D.C.'s emphatic response to them, could have important consequences for the many laboratories that store high-risk agents and the few that, even more controversially, specialize in making them more dangerous for research purposes.

If the C.D.C. — which the agency's director, Dr. Thomas Frieden, called "the reference laboratory to the world" — had multiple accidents that

could, in theory, have killed both staff members and people outside, there will undoubtedly be calls for stricter controls on other university, military and private laboratories.

In one episode last month, at least 62 C.D.C. employees may have been exposed to live anthrax bacteria after potentially infectious samples were sent to laboratories unequipped to handle them. Employees not wearing protective gear worked with bacteria that were supposed to have been killed but may not have been. All were offered a vaccine and antibiotics, and the agency said it believed no one was in danger.

In a second accident, disclosed Friday, a C.D.C. lab accidentally contaminated a relatively benign flu sample with a dangerous H5N1 bird flu strain that has killed 386 people since 2003. Fortunately, a United States Agriculture Department laboratory realized that the strain was more dangerous than expected and alerted the C.D.C.

In addition to those mistakes, Dr. Frieden also announced Friday that two of six vials of smallpox recently found stored in a National Institutes of Health laboratory since 1954 contained live virus capable of infecting people.

All the samples will be destroyed as soon as the genomes of the virus in them can be sequenced. The N.I.H. will scour its freezers and storerooms for other dangerous material, he said.

"These events revealed totally unacceptable behavior," Dr. Frieden said. "They should never have happened. I'm upset, I'm angry, I've lost sleep over this, and I'm working on it until the issue is resolved."

The anthrax and flu labs will remain closed until new procedures are imposed, Dr. Frieden said. For the flu lab, that will be finished in time for vaccine preparation for next winter's flu season, he said.

Dr. William Schaffner, the head of preventive medicine at Vanderbilt University's medical school, said he thought all American labs should stop shipping all hazardous agents until they have reviewed their safety procedures. Although there is no obvious way to force them to do that, he said, the federal grants that most labs depend on "could be the stick."

Dr. Frieden himself suggested that the accidents had implications for labs beyond his agency, arguing that the world needs to reduce to absolute minimums the number of labs handling dangerous agents, the number of staff members involved and the number of agents circulating.

Scientists doing the most controversial work — efforts to make pathogens more lethal or more transmissible — say the research helps predict mutations that might arise in nature so that vaccines can be created. But other scientists feel that creating superstrains is unacceptably dangerous because lab

accidents are more common than is often acknowledged, as Dr. Frieden's announcement indicated.

The revelations at the C.D.C. renewed calls for a moratorium by opponents of such "gain of function" research.

"This has been a nonstop series of bombshells, and this news about contamination with H5N1 is just incredible," said Peter Hale, founder of the Foundation for Vaccine Research, which lobbies for more funding for vaccines but opposes "gain of function" research. "You can have all the safety procedures in the world, but you can't provide for human error."

At the C.D.C. itself, Dr. Frieden said, staff members who knowingly failed to follow procedures or who failed to report dangerous incidents will be disciplined. A committee of experts will be convened to revise procedures.

In the flu-related incident, a C.D.C. lab accidentally contaminated a sample of less-dangerous H9N2 bird flu, which it was preparing for shipment to an Agriculture Department laboratory, with the H5N1 bird flu strain.

Though the contamination was discovered on May 23, Dr. Frieden said that he was dismayed to discover that senior C.D.C. officials were not informed until July 7, and that he was told only 48 hours ago.

Nonetheless, he said, "we have a high degree of confidence that no one was exposed." The flu material was handled in high-biosafety-level labs in both agencies, and the workers wore breathing apparatuses.

In theory, the flu-related accident could have been much worse than the anthrax one.

Anthrax can kill those who inhale it, but is not normally transmitted between humans, so an infected laboratory worker presumably could not have gone home and passed it on. H5N1 bird flu has killed about 60 percent of those known to have caught it, almost always after contact with poultry. Although it does not easily jump from person to person, it is thought to have done so several times.

The anthrax episode took place on June 5 in the agency's bioterrorism rapid response lab as part of testing a new mass spectrometry method.

The new C.D.C. report found several errors: A scientist used a dangerous anthrax strain when a safer one would have sufficed, had not read relevant studies and used an unapproved chemical killing method.

The error was discovered by accident. The door to an autoclave that would have sterilized samples taken for safety tests was stuck, so they were left in an incubator for days longer than normal. Only then did a lab technician notice that bacteria believed to be dead were growing.

Later tests done at the C.D.C. and at a Michigan State Health Department lab as part of the investigation confirmed that the chemical method would have killed any live, growing anthrax in the samples that were sent out, but might not have killed all spores, which are surrounded by a hard shell and can also be lethal.

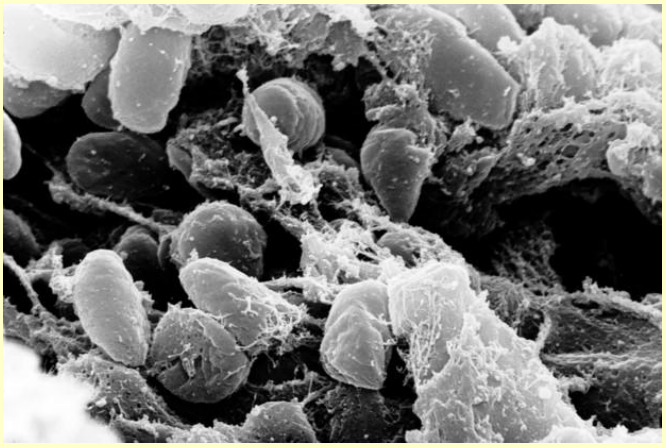
Although anthrax terrifies laymen, "when you work with it day in and day out, you can get a little careless," Dr. Frieden said. "The culture of safety needs to improve at some C.D.C. laboratories."

Donald G. McNeil Jr. is a science and health reporter specializing in plagues and pestilences. He covers diseases of the world's poor, AIDS, malaria, avian flu, SARS, mad cow disease and so on. He also writes features and first-person pieces for other sections. He joined the Times in 1976 as a copy boy and has been a night rewrite man, an environmental reporter, a theater columnist and an editor. From 1995 to 2002 he was a foreign correspondent based in South Africa and France and has reported from 52 countries. During a hiatus from the Times in the 1980's, he taught journalism at Columbia University and worked at People magazine, WCBS-TV, Adweek and New York Newsday and wrote plays. He has covered many topics, ranging from the Love Canal toxic waste scandal to bungee-jumping off Victoria Falls and Evita's premiere in Zimbabwe.

Deadliest, Rarest Form of Plague Contracted Near Denver

Source: http://www.bloomberg.com/news/2014-07-11/deadliest-rarest-form-of-plague-contracted-near-denver.html

July 12 – A Colorado man is infected with the rarest and most fatal form of plague, an airborne version that can be spread through coughing and sneezing.



It is the first case of pneumonic plague seen in the state since 2004, said Jennifer House, a spokeswoman for the Colorado Department of Public Health and Environment. The man, who hasn't been identified, may have been exposed in Adams County near Denver, health officials said in a statement. While House said the man has been

hospitalized and treated, she wouldn't release other details about his situation.

"He's on treatment long enough to not be transmissible," House said in a telephone interview. He may have contracted the illness from his dog, she said, which died suddenly and has also been found to carry the disease.

"We don't think it's out in our air," House said. "We think it's in our dead animal populations and dead rodent populations."

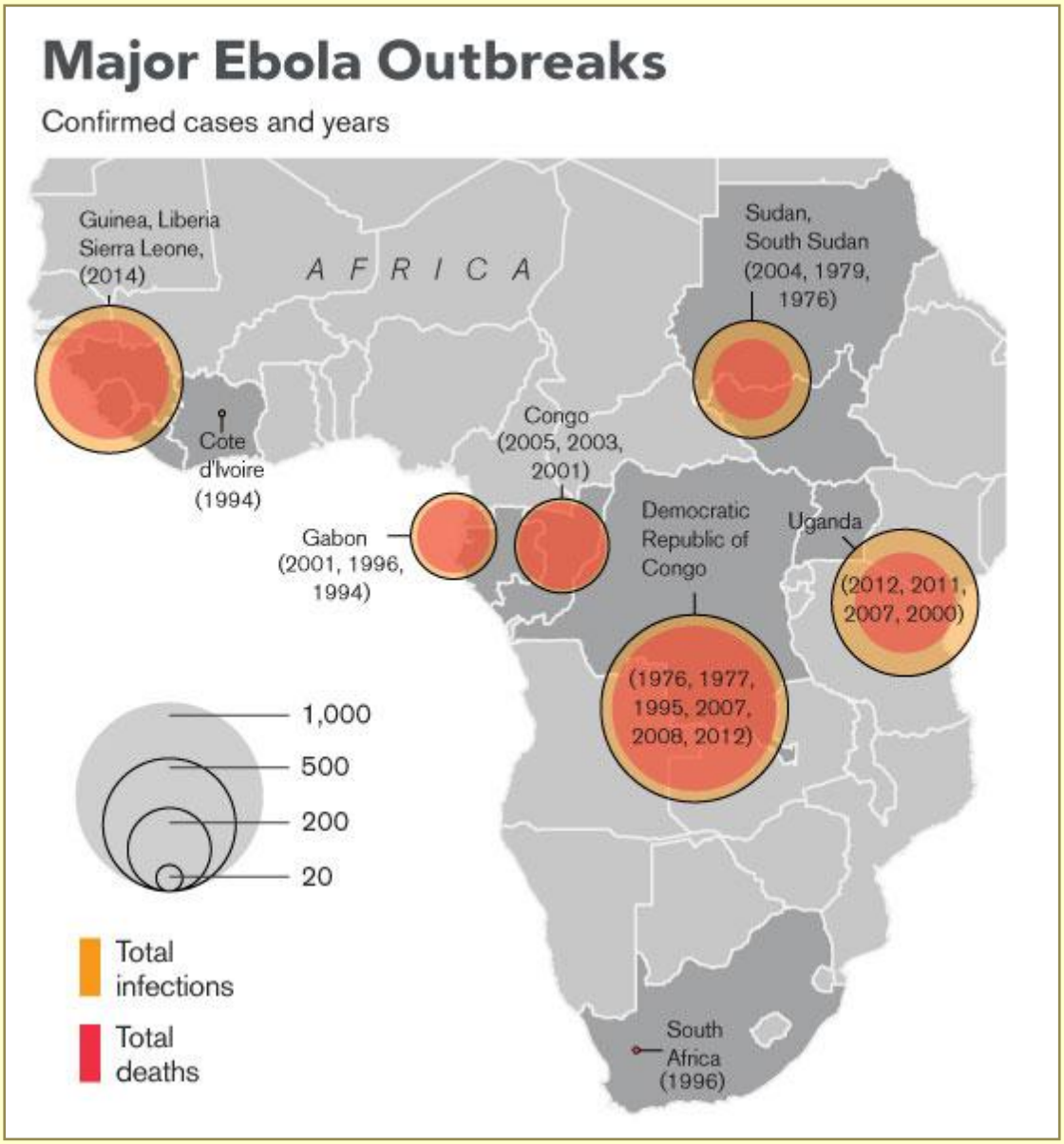
Plague in all of its forms infects only about seven people yearly in the U.S. The disease occurs when a bacterium named Yersinia pestis infects the body, according to the U.S. Centers for Disease Control and Prevention. The difference between the pneumonic and bubonic varieties is that the bacteria take hold in the lungs in the first case, rather than underneath the skin through insect bites. Both types are treated with antibiotics.

The state is working "to investigate the source of exposure and to identify those who may have been exposed through close contact with the individual," the Colorado Department of Public Health and Environment said in its statement. "Any individuals exposed will be recommended for antibiotic treatment."

60 Cases

Colorado has had 60 cases of all types of plague since 1957, and nine people have died, the state said.

"The reaction is leaning toward people who are tired of the protection of prairie dogs on some level," said Jim Siedlecki, director of public information of Adams County. "Most people look at them as cute little dogs on the side of the road, but in rural Adams County they are looked at as a rodent who damages crops and is potentially plague-ridden."



Adams County, home to 470,000 residents, with 425,000 living in the Denver metro area, is one of Colorado's fastest-growing counties and among the 20 fastest-growing counties in the nation.

Untreated plague is fatal, and antibiotics have to be given within 24 hours of the first symptoms to reduce the chance of death. Symptoms of the disease include fever, headache and chest pain, along with a pneumonia that develops rapidly causing shortness of breath, chest pain and bloody mucus, according to the CDC.

No Vaccine

There is no vaccine available for plague in the U.S. The bubonic form is the most common, best known for its outbreaks in the Middle Ages.

Colorado officials recommend that residents keep pets away from wildlife, especially dead rodents. The plague can spread from animals after a large die-off of prairie dogs, when fleas with the bacteria seek new hosts, according to the state.

"The message we're trying to get out is that the plague bacteria is present here in Colorado, and to take necessary precautions to avoid getting infected," House said.

Ebola Victims Face 90% Death Risk; Drugs Start to Emerge

Source: http://www.bloomberg.com/news/2014-03-25/ebola-victims-face-90-death-risk-drugs-start-to-emerge.html

Almost 40 years after Ebola emerged from the jungles of Africa as one of the world's most lethal diseases, scientists are beginning to close in on treatments that may be able to stop the virus.

People who are at risk of infection have little protection for now against a virus that kills as many as 90 percent of those it strikes. The latest outbreak, in Guinea, has infected 88 people, killing 63 of them, the nation's health ministry said today. A further five people died in neighboring Liberia and there's one suspected case in Sierra Leone,the World Health Organization said. Still, the agency said the risk to visitors is low and it isn't recommending any travel restrictions.

The relative rarity of Ebola outbreaks, and the fact that they are largely limited to rural areas of poor African nations, makes the disease an unattractive target for big drugmakers. Instead, much of the research has been funded by the U.S. government. Tekmira Pharmaceuticals Corp. (TKM), for example, began its first human trial of a drug in January with backing from the U.S. Defense Department.

"There are already candidate cocktails that can be used in an emergency," said Erica Ollmann Saphire, a professor at the Scripps Research Institute in La Jolla, California, who's leading a consortium of 15 public and private institutions to develop treatments to fight the virus. "It's a really exciting time to be working on Ebola."

Regulatory Steps

The WHO has not requested emergency use of any experimental treatments that have not been through the necessary clinical tests, said Tarik Jasarevic, a spokesman for the Geneva-based agency.

Trials showing the drugs are safe, plus ethical and regulatory clearance from the health ministries of affected countries, and regulatory clearance from the country where the drug is made, would be needed before any experimental treatments could be used in an emergency situation, said David Heymann, a professor of infectious disease epidemiology at the London School of

Hygiene and Tropical Medicine who has worked on Ebola since the first outbreak in 1976.

Ebola is one in a handful of diseases that are so deadly and so contagious that they pose a risk to national security, according to the U.S. Centers for Disease Control and Prevention. The agency lists the virus as a Category A bioterrorism agent, alongside anthrax and smallpox.

The virus responsible for the Guinea outbreak is the so-called Zaire strain, Jasarevic said, the most common and most deadly of the five known species.

Bioterrorism Funding

Tekmira's product, known as TKM-Ebola, is being developed under a $140 million contract with the Defense Department's Medical Countermeasure Systems BioDefense Therapeutics Joint Product Management Office. Tekmira, based in Burnaby, Canada, this month won fast-track designation from the U.S. Food and Drug Administration to develop the experimental treatment.

The U.S. National Institutes of Health last week gave a five-year grant of as much as $28 million to Saphire's group, which is collaborating on antibody cocktails to fight Ebola. Saphire said she didn't know if any of the experimental treatments were being used in the Guinea outbreak.

While HIV, the AIDS-causing virus that also jumped from animals to humans in Africa, has spawned dozens of approved drugs and a $14 billion market, the small number of Ebola cases is a deterrent for big drug companies, said Stephan Guenther, head of the Bernhard Nocht Institute for Tropical Medicine in Hamburg, Germany.

Antibody Cocktails

"If you count all the cases of Ebola since the discovery, it's below 10,000, so it's definitely not of commercial interest," he said by phone.

Guenther led a team of researchers that showed an experimental treatment called favipiravir, developed by Fujifilm Holdings Corp. (4901)'s Toyama Chemical unit as a treatment against the flu, cleared Ebola virus and prevented mice from dying in a study published in February.

Still, there is no clear path to commercialization given the challenge of testing the drug in humans, Yoshinobu Izumi, a spokesman for the unit, said by phone from Tokyo today.

Among the most promising drugs in development are antibody cocktails. One is being developed at Canada's National Microbiology Laboratory, though it needs more work before it can be tested in humans, Public Health Canada said in an e-mail.

Mapp Biopharmaceutical Inc., a closely held company in San Diego, is developing another, along with the Defense Advanced Research Projects Agency, the NIH and the Defense Threat Reduction Agency.

Cancer Drugs

That cocktail prevented 43 percent of monkeys with symptoms of Ebola from dying in a study published last year in Science Translational Medicine. Previous studies showed the treatment, called MB-003, saved all of the monkeys when given an hour after exposure to the virus, and two-thirds of the animals when administered 48 hours after exposure.

Two cancer drugs from Novartis AG (NOVN), Gleevec and Tasigna, also fought the Ebola virus in laboratory experiments, according to a study published in 2012. GlaxoSmithKline Plc (GSK) last year paid 250 million euros ($345 million) for Okairos AG, a Swiss vaccine developer with early-stage products against diseases including Ebola.

Sudden Fever

Inovio Pharmaceuticals Inc. (INO) of Blue Bell, Pennsylvania, said last year its experimental vaccine protected guinea pigs against the virus. Inovio is looking to partner with a government agency to move the program forward, Chief Operating Officer Niranjan Sardesai said by phone yesterday.

“Ebola is challenging because of a lack of good animal models,” he said.

The virus can cause sudden fever and intense weakness which is followed by vomiting, diarrhea and internal and external hemorrhaging. The disease has a fatality rate of as much as 90 percent, making it one of the most feared infectious diseases.

The virus, first identified in 1976 near the Ebola River in what is now the Democratic Republic of the Congo, is transmitted to people through the blood and other secretions of wild animals such as chimpanzees, gorillas, bats and porcupines, according to the WHO. Humans transmit the virus to each other through contact with blood and other body fluids.

Isolation Measures

People can also get infected during burial ceremonies involving close contact with the bodies of people who succumbed to the disease, the WHO’s Jasarevic said.

The deadliest recorded outbreak was in Congo in 1995, when 254 of the 315 people infected died, according to the WHO. All the outbreaks in the past decade have been in Congo, the neighboring country of the Republic of Congo, and Uganda, with the exception of one outbreak in Sudan in 2004.

The aid group Medecins Sans Frontieres has begun opening units to isolate patients in areas of Guinea where Ebola cases are concentrated to try to stop the disease from spreading, Julie Damond, a spokeswoman for the group, said in an interview yesterday from Conakry, Guinea's capital. Guinea banned the sale and consumption of bats and warned against eating rats and monkeys, Remy Lamah, the country's health minister, said.

The WHO isn't recommending any restrictions on travel to Guinea, Jasarevic said. Outbreaks usually start in remote villages where people have contact with infected animals, and rarely spread because the disease does its damage so quickly, he said.

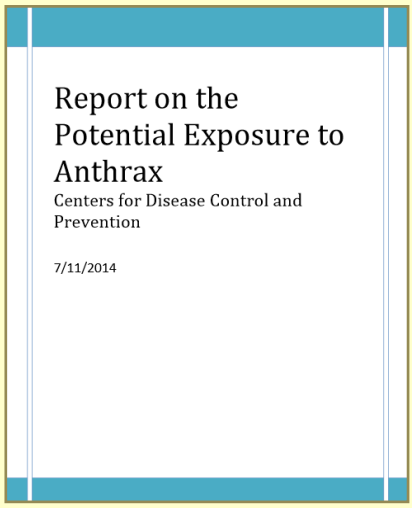
"Experience shows that there is a low risk for travelers," he said by phone. "People who get Ebola tend to get very sick very fast, and they are not really able to travel. That's why these outbreaks usually are self-contained."

Only 13 cases in the current outbreak have been confirmed as Ebola in laboratory tests and some of the others will "undoubtedly be ruled out," Gregory Hartl, a WHO spokesman, said on Twitter.

Report on the Potential Exposure to Anthrax -- Executive Summary

Source: http://www.cdc.gov/od/science/integrity/docs/Final_Anthrax_Report.pdf

The Centers for Disease Control and Prevention (CDC) conducted an internal review of an incident that involved an unintentional release of potentially viable anthrax within its Roybal Campus, in Atlanta, Georgia. On [5 Jun 2014], a laboratory scientist in the Bioterrorism Rapid Response and Advanced Technology (BRRAT) laboratory prepared extracts from a panel of 8 bacterial select agents, including Bacillus anthracis (B. anthracis), under biosafety level (BSL) 3 containment conditions. These samples were being prepared for analysis using matrix-assisted laser desorption/ionization time-of-flight (MALDI-TOF) mass spectrometry, a technology that can be used for rapid bacterial species identification.



What Happened

This protein extraction procedure was being evaluated as part of a preliminary assessment of whether MALDI-TOF mass spectrometry could provide a faster way to detect anthrax compared to conventional methods and could be utilized by emergency response laboratories.

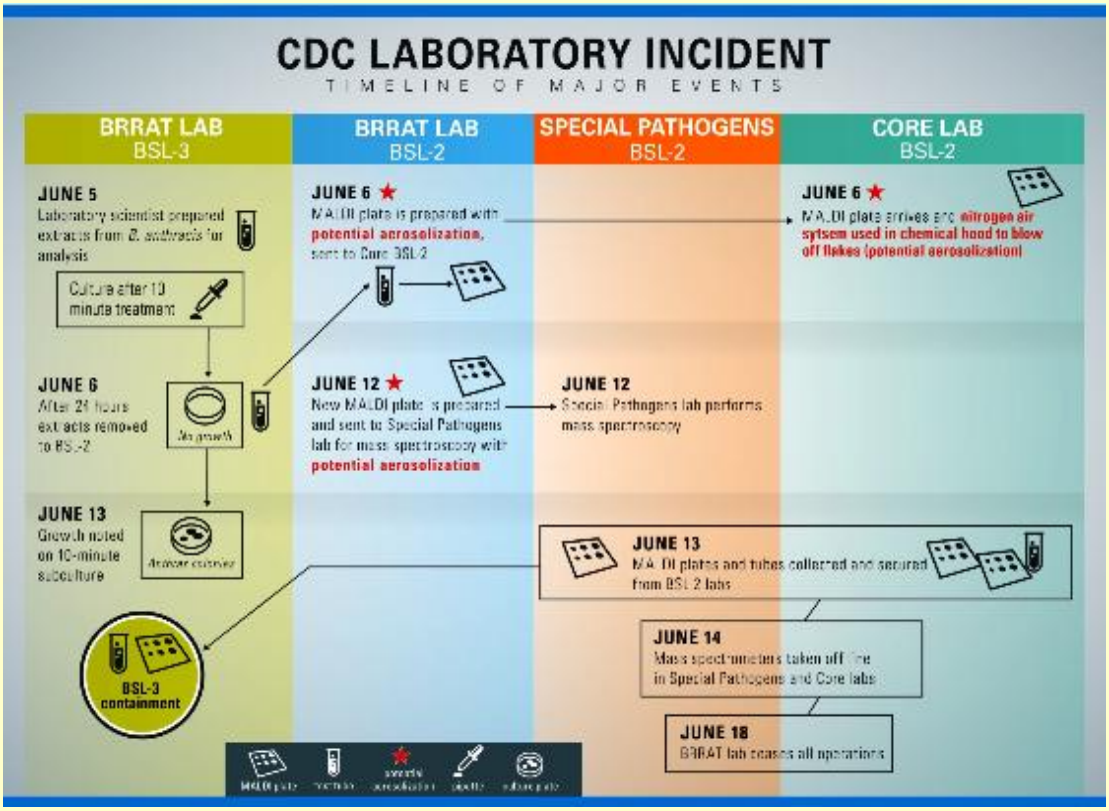
After chemical treatment for 10 minutes and extraction, the samples were checked for sterility by plating portions of them on bacterial growth media. When no growth was observed on sterility plates after 24 hours, the remaining samples, which had been held in the chemical solution for 24 hours, were moved

to CDC BSL-2 laboratories. On [13 Jun 2014], a laboratory scientist in the BRRAT laboratory BSL-3 lab observed unexpected growth on the anthrax sterility plate. While the specimens plated on this plate had only been treated for 10 minutes as opposed to the 24 hours of treatment of specimens sent outside of the BSL-3 lab, this nonetheless indicated that the B. anthracis sample extract may not have been sterile when transferred to BSL-2 laboratories.

Why the Incident Happened

The overriding factor contributing to this incident was the lack of an approved, written study plan reviewed by senior staff or scientific leadership to ensure that the research design was appropriate and met all laboratory safety requirements. Several additional factors contributed to the incident:

- Use of unapproved sterilization techniques
- Transfer of material not confirmed to be inactive
- Use of pathogenic B. anthracis when non-pathogenic strains would have been appropriate



for this experiment

- Inadequate knowledge of the peer-reviewed literature
- Lack of a standard operating procedure or process on inactivation and transfer to cover all procedures done with select agents in the BRRAT laboratory

What Has CDC Done Since the Incident Occurred

CDC's initial response to the incident focused on ensuring that any potentially exposed staff were assessed and, if appropriate, provided preventive treatment to reduce the risk of illness if exposure had occurred. CDC also ceased operations

of the BRRAT laboratory pending investigation, decontaminated potentially affected laboratory spaces, undertook research to refine understanding of potential exposures and optimize preventive treatment, and conducted a review of the event to identify key recommendations.

To evaluate potential risk, research studies were conducted at a CDC laboratory and at an external laboratory to evaluate the extent to which the chemical treatment used by the BRRAT laboratory inactivated B. anthracis. Two preparations were evaluated: vegetative cells and a high concentration of B. anthracis spores. Results indicated that this treatment was effective at inactivating vegetative cells of B. anthracis under the conditions tested. The treatment was also effective at inactivating a high percentage of, but not all _B. anthracis_ spores from the concentrated spore preparation.

A moratorium is being put into effect on [11 Jul 2014] on any biological material leaving any CDC BSL-3 or BSL-4 laboratory in order to allow sufficient time to put adequate improvement measures in place.

What's Next
Since the incident, CDC has put in place multiple steps to reduce the risk of a similar event happening in the future. Key recommendations will address the root causes of this incident and provide redundant safeguards across the agency; these include:
- The BRRAT laboratory has been closed since [16 Jun 2014], and will remain closed as it relates to work with any select agent until certain specific actions are taken
- Appropriate personnel action will be taken with respect to individuals who contributed to or were in a position to prevent this incident
- Protocols for inactivation and transfer of virulent pathogens throughout CDC laboratories will be reviewed
- CDC will establish a CDC-wide single point of accountability for laboratory safety
- CDC will establish an external advisory committee to provide ongoing advice and direction for laboratory safety
- CDC response to future internal incidents will be improved by rapid establishment of an incident command structure
- Broader implications for the use of select agents across the United States will be examined

This was a serious event that should not have happened. Though it now appears that the risk to any individual was either non-existent or very small, the issues raised by this event are important. CDC has concrete actions underway now to change processes that allowed this to happen, and we will do everything possible to prevent a future occurrence such as this in any CDC laboratory, and to apply the lessons learned to other laboratories across the United States.

▶ **Read the full report at source's URL.**

High-Containment Laboratories: Assessment of the Nation's Need Is Missing

Source: http://www.gao.gov/products/GAO-13-466R

There is still no one agency or group that knows the nation's need for all U.S. high-containment laboratories, including the research priorities and the capacity, number and location, to address priorities. This deficiency may be more critical today than 3 years ago because current budget constraints make prioritization essential. Since the publication of our report in 2009, the number of high-containment laboratories has increased. Although modern high-containment technologies (for example, high-efficiency particulate air [HEPA] filtration) in conjunction with laboratory design have been effective in reducing the level of risk, there is nevertheless some degree of risk associated with design, construction, operations, and maintenance of high-containment laboratories. This was realized following a Centers for Disease Control and Prevention (CDC) power failure incident in Atlanta, Georgia, where no biological agent was released but that showed the difficulties in maintaining biological containment, and a leaky pipe incident in Pirbright, United Kingdom, that failed to maintain biological containment. Increasing the number of laboratories also increases the aggregate national risk.

GAO found a continued lack of national standards for the design, construction, commissioning, and operation of high-containment laboratories. These laboratories are expensive to build, operate, and maintain. As we noted in our 2009 report, in the absence of national standards, it is likely that there may be variations resulting from local requirements, but without an underpinning set of standards to ensure safe operations. In the absence of some fundamental criteria, each laboratory can be designed, constructed, and maintained according to local requirements. This will make it difficult to be able to assess and guarantee safety, as we noted in our 2009 report. For example, while investigating a power outage incident in its recently constructed BSL-4 laboratory, the CDC later determined that, some time earlier, a critical grounding cable buried in the ground outside the building had been cut by construction workers digging at an adjacent site. The cutting of the grounding cable, which had hitherto gone unnoticed by CDC facility managers, compromised the electrical system of the facility that housed the BSL-4 laboratory. Given that grounding cables were cut, it is apparent that the building's integrity as it related to adjacent construction was not adequately supervised. CDC officials stated in 2009 that standard procedures under local building codes did not require monitoring of the integrity of the new BSL-4 facility's electrical grounding. This incident highlighted the risks inherent in relying on local building codes to ensure the safety of high-containment laboratories, as there are no building codes and testing procedures specifically for those laboratories.

Why GAO Did This Study

High-containment laboratories, biosafety level (BSL)-3 and BSL-4 laboratories, are used to (1) develop medical and veterinary countermeasures against biological agents and (2) research the risks these agents pose to human health, animal health, the food supply, and the U.S. economy. In 2009 GAO reported on the expansion of these laboratories, which began in the 1990s and accelerated after the 2001 anthrax attack. GAO found that although this expansion was occurring, no single federal agency was responsible for assessing overall laboratory needs. Instead, departments and agencies only assessed laboratory needs that were within the scope of their respective missions. GAO therefore determined that a national strategy for oversight, including periodic assessments of the nation's need for these laboratories, was called for. GAO also found that the absence of national standards for laboratory design, construction, commissioning, operations, and maintenance raised concerns and increased the risk of laboratory accidents.

GAO's 2009 report made two recommendations to the National Security Advisor, located in the Executive Office of the President (EOP), to address these weaknesses. Specifically, GAO recommended that the National Security Advisor identify a single entity, charged with periodic government-wide strategic evaluation of high-containment laboratories, that will (1) determine (a) the number, location, and mission of the laboratories needed to effectively meet national goals to counter biothreats; (b) the existing capacity within the United States; (c) the aggregate risks associated with the laboratories' expansion; and (d) the type of oversight needed and (2) develop, in consultation with the scientific community, national standards for the design, construction, commissioning, and operation of high-containment laboratories, specifically including provisions for long-term maintenance. This report addresses the following questions:

1. What actions have been taken to implement the recommendations made in our 2009 report?

2. To what extent is action still needed concerning (1) an assessment of the nation's need for high-containment laboratories, including their numbers, functions, and research priorities and (2) the development of any national standards for designing, constructing, commissioning, maintaining, and operating high-containment laboratories?

What GAO Recommends

GAO recommends that the Office of Science and Technology Policy (OSTP) ensure that periodic assessments of national biodefense research and development needs are conducted. These assessments would include whether appropriate resources, in particular, high containment laboratories, exist to meet those needs. GAO also recommends that the OSTP examine the need to establish national standards relating to designing, constructing, commissioning, maintaining, and operating high-containment laboratories.

▶ **Read the full GAO Report at:** http://www.gao.gov/assets/660/6523 08.pdf

Use of Anthrax Vaccine in the United States

Recommendations of the Advisory Committee on Immunization Practices (ACIP), 2009
Recommendations and Reports
July 23, 2010 / 59(rr06);1-30
Source: http://www.cdc.gov/mmwr/preview/mmwrhtml/rr5906a1.htm

EDITOR'S COMMENT: **A very interesting "must read" article on anthrax with special focus on vaccine and vaccination.**

How to fix U.S. biosecurity leaks? Close some labs

Source: http://www.reuters.com/article/2014/07/14/us-usa-anthrax-labs-analysis-idUSKBN0FJ0BC20140714

Centers for Disease Control Biotechnology Core Facility (Building 23) is shown in Atlanta, Georgia June 20, 2014 (Credit: Reuters/Tami Chappell)

In the wake of disclosures that top government labs mishandled anthrax, smallpox and avian flu, U.S. health authorities are considering the once unthinkable: cutting the burgeoning number of labs working with the planet's most dangerous microbes.

When the U.S. Centers for Disease Control and Prevention last week unveiled a report documenting multiple safety breaches at its labs, its director for the first time suggested the country turn back the rapid-fire proliferation of such research units, which have tripled in little more than a decade to at least 1,500.

"One of the things that we want to do is reduce the number of laboratories that work with dangerous agents to the absolute minimum necessary," said CDC Director Dr Thomas Frieden. "Reduce the number of people who have access to those laboratories to the absolute minimum necessary. Reduce the number of dangerous pathogens we work with."

His remarks may vindicate the views of a small group of biosafety and biosecurity experts who see that as the only way to protect dangerous viruses and bacteria from both lab accidents and thefts. They point to an alarming rise in the number of incidents of lost or escaped microbes from such labs in recent years and see the CDC cases as proof that even the best facilities are vulnerable.

Following through on this idea would require a wholesale shift in U.S. biodefense policy, which spans preparedness for disease outbreaks and for the use of biological agents in terror attacks.

While the CDC and U.S. Department of Agriculture are responsible for registering labs that work with "select agents" - microbes and poisons that could be used as bioweapons – they cannot rescind that approval unless there has been a clear violation of the rules for handling those microbes. "Just as with domestic spying by the National Security Agency, drone attacks and a long list of other things, the White House seems to feel it must maintain the policies of the last administration or risk being called weak on homeland security," said molecular biologist Richard Ebright of Rutgers University.

TESTING DEADLY POWDERS

According to a 2013 report by the Government Accountability Office, the investigative arm of Congress, 415 labs had registered with the CDC or the USDA in 2004 to work with select agents. By 2010, the number had grown to 1,495, the GAO found.

That was intentional.

In 2001, anthrax stolen from a federal bioweapons lab killed five people and sickened 17 more. At the time, only two U.S. labs were capable of identifying anthrax in samples of mysterious powders, which "were flowing in by the thousands," said epidemiologist D.A. Henderson, a distinguished scholar at the University of Pittsburgh Medical Center.

Henderson was tapped by the federal government to vastly increase the number of such labs, both to detect suspected pathogens like anthrax and to conduct biodefense research, such as developing vaccines.

"We had more white powder coming out of more places than you can possibly imagine," he said. "The number of powdered donuts that got subjected to testing, I'd hate to think."

As a result, "there was a rush to get more BSL-3 and BSL-4 facilities," he said, referring to the highest levels of biosafety. "Universities were anxious to build them," since the work brought millions of dollars in funding as well as prestige.

A decade later, the country had spent $19 billion on biodefense research. But there has been no national assessment of how many such labs are needed for security, the GAO found.

"Increasing the number of (such) laboratories," it concluded, "increases the aggregate national risk" because of the chances of intentional or accidental escape.

It also increases the number of individuals with federal approval to work with select agents. With the additional spending, the number of people with access to bioweapons agents also "increased by a factor of 20 to 40," said Ebright.

According to a 2012 report by CDC scientists, there were 16 incidents of lost or escaped microbes from select-agent labs in 2004, meaning everything from misplaced samples to an infected researcher walking out the door harboring a virus. That rose to 128 in 2008 and 269 in 2010.

"It is almost exactly two per week and accelerating," said epidemiologist Marc Lipsitch of Harvard School of Public Health, and suggests that staff training, physical measures, and other elements of biosafety are failing more often rather than less.

HOW MANY LABS?

The CDC's anthrax breach, plus its mishandling of a highly pathogenic flu virus also revealed last week, show that even the most respected labs can violate protocols in potentially dangerous ways. It therefore makes no sense for the United States to have a dozen BSL-4 labs, which work with pathogens that are easily transmitted by air between people (anthrax is not contagious and so is handled in BSL-3 labs) and cause severe or fatal diseases for which there

are no vaccines or treatments, said biologist Lynn Klotz, a member of the Scientists' Working Group on Chemical and Biological Weapons.

"At minimum, these labs should be in a remote, rural area," said Klotz. "That way, if there is a mechanical failure and something gets out, there is much less risk of harm." He and others say several high-security labs should be candidates for closing.

After years of litigation, Boston University received permission from city, state, and federal authorities this year to open a BSL-4 lab in the city's densely populated South End, but critics consider it a prime example of a facility whose potential contribution to research is swamped by the risks of exposing a large urban area to an escaped pathogen. Other labs targeted by both scientists and community members include the National Bio- and Agrodefense Facility in Manhattan, Kansas, partly because it is located in a tornado zone and will work with pathogens that could devastate the cattle industry.

Some experts argue that having fewer labs is not the solution, and that improving adherence to safety protocols makes more sense. To many, however, it is simple mathematics: the fewer labs working with nature's most dangerous microbes, the lower the probability of an escape.

“Reducing the number of labs may help better police the remaining ones," said Michael Osterholm of the University of Minnesota, a member of the National Scientific Advisory Board for Biosecurity, which advises the government.

The first chance to gauge any political support for that option may come this week, when CDC's Frieden testifies before a House subcommittee about the anthrax and flu releases. "I'm sure there will be many changes to come," said biosafety consultant Debra Sharpe. "I just hope they will be well thought out and not knee-jerk fixes for political expediency."

FDA found more than smallpox vials in storage room

By Brady Dennis and Lena H. Sun

Source: http://www.washingtonpost.com/national/health-science/fda-found-more-than-smallpox-vials-in-storage-room/2014/07/16/850d4b12-0d22-11e4-8341-b8072b1e7348_story.html

Federal officials found more than just long-forgotten smallpox samples recently in a storage room on the National Institutes for Health campus in Bethesda, Md. The discovery included 12 boxes and 327 vials holding an array of pathogens, including the virus behind the tropical disease dengue and the bacteria that can cause spotted fever, according to the Food and Drug Administration, which oversees the lab in question.

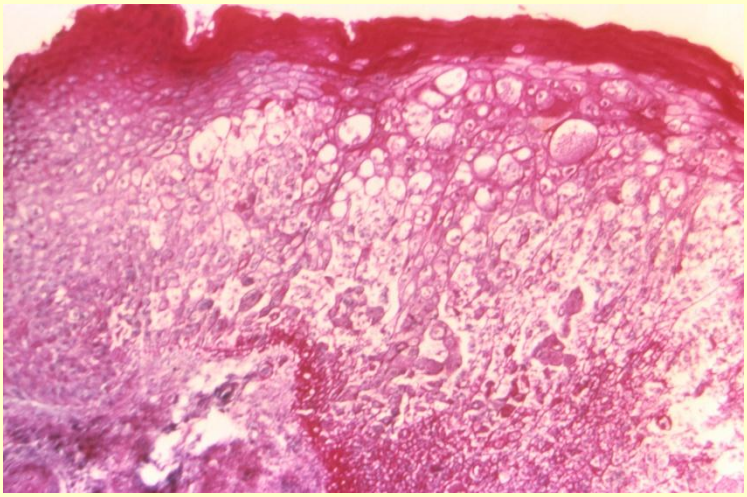
“The fact that these materials were not discovered until now is unacceptable,” Karen Midthun, director of the FDA’s Center for Biologics Evaluation and Research (CBER), told reporters Wednesday. “We take this matter very seriously, and we’re working to ensure that this doesn’t happen again.”

The disclosure came hours after Thomas Frieden, director of the Centers for Disease Control and Prevention, testified on Capitol Hill that researchers at the agency mishandled live anthrax and other deadly pathogens in a string of mishaps in recent years. “We missed a critical pattern,” he told

lawmakers. "And the pattern is an insufficient culture of safety."

Both the smallpox discovery and the previously undisclosed safety lapses at the CDC have sowed doubt about how the nation's premier public health and research institutions are safeguarding some of the most lethal organisms on Earth.

The vials of smallpox, a scourge that was eradicated decades ago after killing hundreds of millions of people in the 20th century alone, remain the most disturbing find this month inside the third-floor cold storage room in Building 29A. Those samples were flown to the CDC in Atlanta, and at least two have shown growth in tissue cultures, meaning they are viable, or alive.



A magnified human skin-tissue sample from the site of a smallpox lesion. (Centers for Disease Control and Prevention/AP)

On Wednesday, the FDA said that along with dengue and rickettsia, the bacteria that can cause spotted fever, the additional vials contained microbes such as influenza and Q fever, a bacteria that can cause complications with the heart, lungs and liver. The samples were in well-packed, heat-sealed vials and showed no signs of leakage. No evidence exists that anyone has been exposed to the pathogens, the agency said.

"The reasons why these samples went unnoticed for this long is something that we're actively trying to understand," said Peter Marks, CBER's deputy director, adding that the boxes were in a seldom-accessed storage area.

Agency officials said 32 of the samples were destroyed at an NIH facility. An additional 279 were transferred to the Department of Homeland Security's National Biodefense Analysis and Countermeasures Center in Maryland. No additional smallpox samples were found.

The FDA said the collection "was most likely assembled between 1946 and 1964 when standards for work with and storage of biological specimens were very different from those used today."

The smallpox vials were labeled with a date — Feb. 10, 1954 — Frieden said last week, adding that it appeared that whoever left them at NIH "didn't do so out of malice."

The FDA said Wednesday that it is reviewing its safety protocols and digging through all other similar storage rooms, at its headquarters and nationwide, to make sure no more vials are tucked away in forgotten corners.

Frieden was summoned to testify before a House Energy and Commerce subcommittee about last month's incident in which more than 80 CDC employees may have been exposed to live anthrax when samples were transferred from one lab to others. The agency said last week that there had been at least four other incidents in the past decade in which deadly pathogens were mishandled, including one in which employees mistakenly sent a sample contaminated with the deadly H5N1 influenza virus to government researchers in Georgia. None of those incidents had been previously disclosed.

The head of the the Centers for Disease Control and Prevention was grilled by members of Congress Wednesday about last month's security lapse at the agency involving anthrax. (AP)

Subcommittee Chairman Tim Murphy (R-Pa.) said government watchdogs have documented numerous systemic safety lapses over the years. He called the most recent incident "sloppy" and "inexcusable," saying the agency's labs are supposed to be

"the gold standard" for the U.S. health system.
Rep. Fred Upton (R-Mich.), noting that Frieden had made similar promises to improve safety and accountability in the wake of previous incidents, asked, "Why should we believe you this time that things are going to be different?"
Although Frieden pointed out that no one had been hurt and that all pathogens were killed in the incidents, he said that was no excuse and vowed to improve the agency's overall safety culture, as well as put in place stronger oversight measures. He said workers must be encouraged to report any incidents that happen and "apply the same rigor" to safety as to disease prevention and research.
In response to the recent lapses, the CDC has closed two labs — its bioterrorism rapid response lab and an influenza lab that deals with highly pathogenic flu viruses. It also has halted shipment of biological materials from 22 of its highest-security labs until a safety review is complete. Priority for reopening will go to those doing work related to immediate patient care and public health, Frieden said. The CDC's work on this year's upcoming flu vaccine is finished and won't be affected, agency spokesman Tom Skinner said. But work on vaccines for countries in the Southern Hemisphere, where flu season arrives later, is likely to be affected by the moratorium, he said.
At several points during the hearing, Murphy held up a zip-top bag containing petri dishes with photos of anthrax bacteria glued to them and asked why scientists would be using plastic bags to transport dangerous pathogens. Murphy was referring to an investigation by the Agriculture Department's animal and plant health inspection service, which found that, among other safety failures, samples of the bacteria were stored in unlocked refrigerators in unrestricted hallways and that dangerous material was transferred in such bags.
Frieden said researchers working with those samples thought the anthrax had been inactivated, but scientists at the CDC bioterrorism lab had not killed the bacteria before transferring samples to other labs.
Witnesses also described the lack of coordination and oversight at laboratories inside and outside the federal government that conduct research on microbes that could be used as bioterrorism agents. Nancy Kingsbury, a managing director of the Government Accountability Office, told the committee that since the 2001 anthrax attacks that killed five people, her agency has repeatedly warned about problems that could arise from the proliferation of biosafety labs. Nearly 1,500 registered laboratories in the United States conduct this kind of research, according to the GAO.
But no single agency sets national standards or provides oversight, she said. No one, she said, has been able to address key questions: "How many do we really need? For what purpose? Against what threat?"
Richard Ebright, a professor of chemical biology at Rutgers University who conducts biosafety research, said multiple safety lapses at CDC labs over the years have been documented by government watchdogs, including the inspector general's office at the Department of Health and Human Services and the GAO.
Last month's event was "not an isolated event," Ebright said. It occurred, he said, because "hubris is a fundamental part of the problem," noting that researchers often think they can proceed without restrictions or management.

***Brady Dennis** is a national reporter for The Washington Post, focusing on food and drug issues.*
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CDC: Smallpox found in NIH storage room is alive

Source: http://edition.cnn.com/2014/07/11/health/smallpox-found-nih-alive/index.html

July 11 – **At least two** of the vials employees at the National Institutes of Health found in an unused storage room earlier this month contain **viable samples of the deadly smallpox virus**, the Centers for Disease Control and Prevention said Friday.
Employees found six forgotten vials when they were preparing to

move a lab from the Food and Drug Administration's Bethesda, Maryland, campus to a different location. The laboratory had been used by the NIH but was transferred to the FDA in 1972.

When the scientists found the vials, they immediately put them in a containment lab and on July 1 notified the branch of the government that deals with toxic substances, called the Division of Select Agents and Toxins.

The CDC said previously there is no evidence that any of the vials was breached, nor were any of the lab workers exposed to the virus.

On Monday, law enforcement agencies transferred the vials to the CDC's high-containment facility in Atlanta. The CDC is one of only two official World Health Organization designated repositories for smallpox.

CDC Director Tom Frieden said his scientists worked through the night on the samples as soon as they got them. Testing confirmed that there was variola DNA in the vials.

Additional test results showed "evidence of growth" in samples from two of the vials, suggesting that the smallpox virus is alive.

The other four vials still need to be tested for evidence of growth, Frieden said Friday. After their investigation is complete, the CDC will destroy the vials and all the growth that came out of them. The World Health Organization will oversee that destruction.

Smallpox, known also by its scientific name as variola, was the deadly virus that was the scourge of civilization for centuries. It's been considered an eradicated disease since 1980, following successful worldwide vaccination programs. The last known outbreak in the U.S. was in 1947 in New York.

The vials were created February 10, 1954; that is before the smallpox eradication campaign began.

Frieden says that the NIH is currently scouring their buildings to make sure there are no other surprises left in unused storerooms. He says the problem in this case is not in the creation of the vials; the discovery points to a "problem in inventory control."

300 vials labeled influenza, dengue found at lab

Source: http://www.foxnews.com/health/2014/07/17/300-vials-labeled-influenza-dengue-found-at-lab/?intcmp=latestnews

July 17 – **The same federal scientist who recently found forgotten samples of smallpox at a federal lab also uncovered over 300 additional vials, many bearing the names of highly contagious viruses and bacteria.**

Food and Drug Administration officials said Wednesday the undocumented collection contained 327 carefully packaged vials, listing pathogens like **dengue, influenza and rickettsia**. Last week the government only disclosed that it had recovered six glass vials of smallpox dating from the 1950s.

The new revelations raise serious concerns about the government's ability to secure its collections of potentially deadly pathogens.

"The reasons why these samples went unnoticed for this long is something we're actively trying to understand," said FDA deputy director for biologics Dr. Peter Marks.

The samples, including those labeled smallpox, were found in 12 boxes in a corner of a cold storage room at the National Institutes of Health in Bethesda, Maryland, that has been used by the Food and Drug Administration since 1972. FDA officials estimate the collection was assembled between 1946 and 1964 by government scientists.

"The fact that these materials were not discovered until now is unacceptable," said Karen Midthun, of FDA's director for biologics. "However, upon finding these materials our staff did the right thing - they immediately notified the appropriate authorities who secured the materials and determined there was no exposure."

FDA scientists said they have not yet confirmed whether the newly disclosed vials actually contained the pathogens listed on their labels. The agency is conducting a nationwide search of all cold storage units for any other missing samples.

Investigators destroyed 32 vials containing tissue samples and a non-contagious virus related to smallpox. Several unlabeled vials

were sent to the Centers for Disease Control and Prevention for testing and the remaining 279 samples were shipped to the Department of Homeland Security for safekeeping. FDA officials said there is no evidence anyone was exposed to any of the agents, which were packed in heat-sealed glass vials with no signs of leakage.

The finding of freeze-dried smallpox samples was disturbing because smallpox was declared eradicated in 1980, and world health authorities said the only known samples left were safely stored in super-secure laboratories in Atlanta and in Russia.

It was the second recent incident in which a U.S. government health agency appeared to have mishandled a highly dangerous biologic agent. Last month, scores of employees at the CDC in Atlanta were feared exposed to anthrax because of a laboratory safety lapse. The CDC began giving them antibiotics as a precaution.

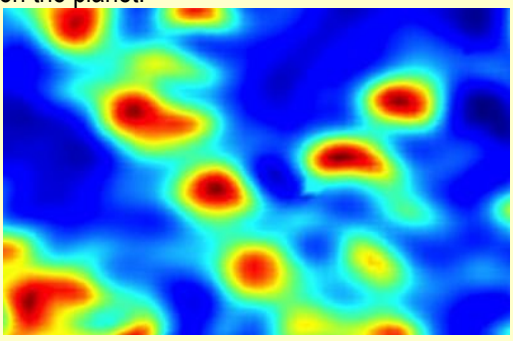
In separate congressional testimony Wednesday, CDC director Dr. Tom Frieden acknowledged that systemic safety problems have for years plagued federal public health laboratories that handle dangerous germs such as anthrax and bird flu. Frieden added that his agency had long thought of the lapses as unrelated accidents.

Killing malaria parasites dead with anti-tank missile detection technology

Source: http://www.homelandsecuritynewswire.com/dr20140721-killing-malaria-parasites-dead-with-antitank-missile-detection-technology

Malaria kills 1.2 million people every year. Existing tests look for the parasite in a blood sample. The parasites, however, can be difficult to detect in the early stages of infection. As a result the disease is often spotted only when the parasites have developed and multiplied in the body. Scientists say that state-of-the-art military hardware could soon fight malaria: they have used an anti-tank Javelin missile detector, more commonly used in warfare to detect the enemy, in a new test rapidly to identify malaria parasites in blood.

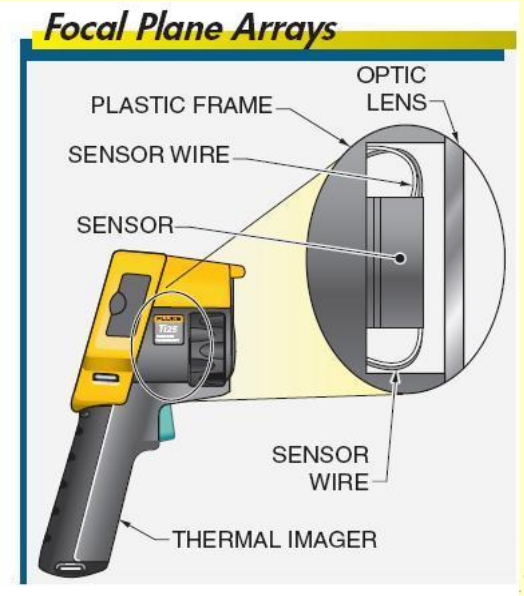
State-of-the-art military hardware could soon fight malaria, one of the most deadly diseases on the planet.



Researchers at Monash University and the University of Melbourne have used an anti-tank Javelin missile detector, more commonly used in warfare to detect the enemy, in a new test rapidly to identify malaria parasites in blood.

Scientists say the novel idea, published in the journal *Analyst*, could set a new gold standard for malaria testing. **The technique is based on Fourier Transform Infrared (FITR) spectroscopy, which provides information on how molecules vibrate.**

A Monash University release reports that researchers used a **special imaging detector known as a Focal Plane Array (FPA) to detect malaria parasite-infected red blood cells.** Originally developed for Javelin anti-tank



heat seeking missiles, the FPA gives highly detailed information on a sample area in minutes. The

heat-seeking detector, which is coupled to an infrared imaging microscope, allowed the team to detect the earliest stages of the malaria parasite in a single red blood cell.

The infrared signature from the fatty acids of the parasites enabled the scientists to detect the parasite at an earlier stage, and crucially determine the number of parasites in a blood smear.

Lead researcher, Associate Professor Bayden Wood from Monash University said to reduce mortality and prevent the overuse of antimalarial drugs; a test that can catch malaria at its early stages is critical.

"Our test detects malaria at its very early stages, so that doctors can stop the disease in its tracks before it takes hold and kills. We believe this sets the gold standard for malaria testing," Associate Professor Wood said.

"There are some excellent tests that diagnose malaria. However, the sensitivity is limited and the best methods require hours of input from skilled microscopists, and that's a problem in developing countries where malaria is most prevalent," he said.

As well as being highly sensitive, the new test has a number of advantages — it gives an automatic diagnosis within four minutes, does not require a specialist technician and can detect the parasite in a single blood cell.

The disease, which is caused by the malaria parasite, kills 1.2 million people every year. Existing tests look for the parasite in a blood sample. **The parasites, however, can be difficult to detect in the early stages of infection.** As a result the disease is often spotted only when the parasites have developed and multiplied in the body.

Professor Leann Tilley from the University of Melbourne said the test could make an impact in large-scale screening of malaria parasite carriers who do not present the classic fever-type symptoms associated with the disease.

"In many countries only people who display signs of malaria are treated. But the problem with this approach is that some people don't have typical flu-like symptoms associated with malaria, and this means a reservoir of parasites persists that can reemerge and spread very quickly within a community," she said.

"Our test works because it can detect the malaria parasite at the very early stages and can reliably detect it in an automated manner in a single red blood cell. No other test can do that," Professor Tilley said.

FPA detectors were originally developed for portable Javelin anti-tank missiles in the 1990s. The heat seeking detector is used on shoulder fired missiles but can also be installed on tracked, wheeled or amphibious vehicles, providing spatial and spectral information in a matter of seconds and are currently used by the defense force.

The FPA detector used in this project was coupled to a synchrotron source located at InfraRed Environmental Imaging (IRENI) facility at the Synchrotron Radiation Center (SRC) in Wisconsin, developed by Professor Carol Hirschmugl. The continued development of brighter laboratory based infrared sources along with optical refinements will see this type of technology make an enormous impact in the clinical environment.

The release notes that the next phase of research will see Associate Professor Wood's team work with Professor Patcharee Jearanaikoon from the Kohn Kaen University in Thailand to test the new technology in hospital clinics.

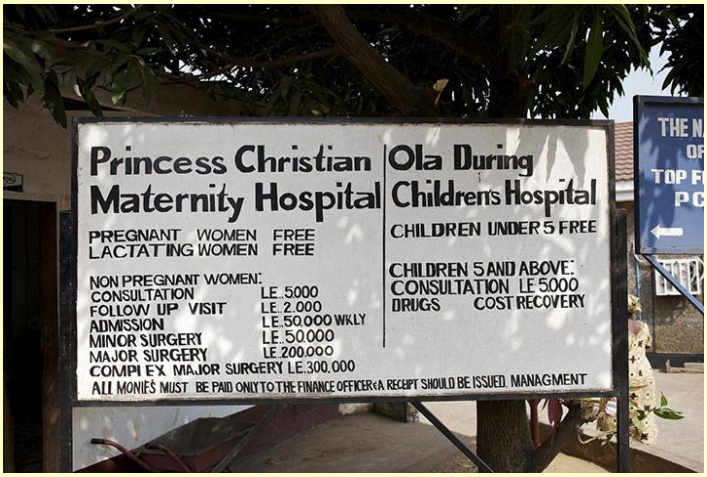
— Read more in Bayden Robert Wood et al., "Diagnosing malaria infected cells at the single cell level using focal plane array Fourier transform infrared imaging spectroscopy," Analyst *(14 July 2014)*

Sierra Leone News : Serious Lapses in Freetown ...as Ebola Suspect Escapes Hospital

Source: http://news.sl/drwebsite/publish/article_200525813.shtml

Events in the night of Friday 18th July 2014 saw the escape from Isolated Observation, of a pregnant woman by the name Mariatu (surname and address withheld) from the Princess Christian Maternity Hospital (PCMH) along

Fourah Bay Road. According to medical staff who asked not to be named, Mariatu, from her presenting symptoms, was presumed to be a suspected Ebola case. Blood samples were



taken from her and sent to Kenema for testing. It was whilst the medical team were awaiting confirmation that she was advised to be kept under observation in isolation from other pregnant patients.

According to numerous residents of Fourah Bay Road, the fracas first happened on Thursday 17th July, when Mariatu's relatives refused the possibility of her being an Ebola patient and vehemently rejected for her to be kept in isolation. Mariatu's relatives and close friends laid siege at the PCMH isolation unit, demanding her release. The police however were called in and managed to quell that riot and send her relatives away that Thursday.

On Friday evening, the relatives came back but with a huge group of well-muscled young men said to have been recruited from places near her residence in Eastern Freetown's Kissy suburbs.

The youths and a loud bunch of women, manhandled the security personnel at the gates, marched to the Isolation room and forcibly helped Mariatu to escape from the hospital. The nurses on duty were threatened and over-powered by the group from Kissy in the east end of Freetown.

One of the nurses on duty was slapped and further threatened for attempting to stop the escape. Mariatu was then put on a motorbike which sped off with her under the pouring rain. This newspaper correspondents were right at the scene as Mariatu was being driven off on an okada under a heavy rainfall.

"If this lady is found to be positive when the test results are out, it is obvious that the okada rider who drove off with her under the pouring rain, other close relatives and friends who touched her, stand the risk of being infected," a resident of Fourah Bay Road, Madam Rahman pondered.

"With all the reports about Ebola, if these people still do not believe this is a security threat to all of us, they will not come back to the hospital even if they get infected. They are the ones who will hide and continue spreading the disease until the situation gets worse. It is only when they start dying that they will believe. May God help us in this country and give our authorities the wisdom to handle this deadly plague," John Koroma, a university student visiting his sister said.

Neither the security nor the nurses at the PCMH obliged to grant an interview on record except to confirm the dismal incident that a suspected Ebola patient had left the premises without waiting for her test results to come in.

However, according to an eyewitness Sorie Kamara, whose pregnant wife was also admitted, the escapee's people became angry when they were refused access to see their loved one.

As the matter was being widely discussed on

social media, Mr. James Kanu, one of the neighbours of the pregnant woman on Saturday morning, in an exchange with popular musician Nasser Ayoub, stated that the Health officials just wanted to "kill" the pregnant woman. Writing in the local Krio parlance, he stated, (as translated):

"It is lies. They just wanted to kill the family's poor pregnant woman. The lady went to deliver her baby only for her to be told

she had Ebola. They locked her up without food and water so she called her people enquiring if they want her to die? That is why her people went to take her away from the hospital. Let these officials get out from in front of citizens. Now commodity prices going up and citizens suffering."

Continuing on Facebook to justify the forceful removal of the patient from the hospital, James Kanu wrote to Nasser Ayoub:

"Nasser believe me that people are now afraid to go to hospital when they develop fever. I know the lady in question. Just that the lady's condition was deplorable with the pregnancy and she was weeping in serious pains according to a close relative".

Meanwhile, still on social media, another eye-witness to the initial fracas, is popular phone-in texter, Tunde Scott who lives next to the hospital. He wrote thus:

"I live next to PCMH and I was fortunate to witness the incident unfolding... I was at PCMH the day before when the riot was on between relatives and medical staffs. One of her relatives was demanding that they must discharge her - 'mekebola go kill wi now naose' - her words. I blame the police at PCMH; why did they allow her to escape? The nurse on duty even received a slap from one of relatives. This is no make-up because I was there up to when the team dealing with suspected Ebola victims arrived in an ambulance at PCMH. Let anyone challenge my facts!"

However, in fairness to the Sierra Leone Police, our press team observed after the incident that adequate security or rather efficient security is not present at the PCMH 'Cottage Hospital'. The police officers on duty were not adequately protected enough to try to restrain an escaping Ebola suspect. Infact, we observed that only one gateman in plain clothes wore gloves that night. The gloves on his hands were stained and filthy giving the impression he had wore them the whole of the day.

In further investigations, this newspaper deployed a team to monitor the hospital on Saturday and Sunday and we can confirm that the security personnel stationed there seem ill-equipped to prevent a repeat of the last two riots at their location by Mariatu's relatives.

There are other serious lapses that need attention apart from the inadequate security. During the two days observation of PCMH, we did not see any chlorine water in tapped buckets or soap for washing of hands of visitors and patients moving in or out of the hospital. There was also no evidence of sanitizers for people moving in and out of the various sections of the facility.

Most importantly also, there was no sensitization presence; (that is a sort of briefing centre where visitors will be given official sensitization on Ebola and how to contain its spread, especially to convince and warn the unbelievers). Neither the security post nor main entrance to the hospital itself, had any form of active sensitisation about Ebola going on. Throughout the whole two days, we did not see anyone stopping PCMH visitors to speak to them about Ebola.

As stated earlier in this report, with the police officers not adequately dressed or protected against contact with an Ebola suspected patient, many observers at the scene told this newspaper that the police should not be blamed for the escape of the suspected Ebola patient.

As we went to press, the Ministry of Health & Sanitation has yesterday Sunday 20th July 2014, issued a statement saying the test results from the escaped patient had now come in and it showed the

escaped patient was not an Ebola positive patient.
"The case been (sic) referred to was kept in the Observation unit at PCMH while (sic) her blood sample was taken to the Kenema Lassa Laboratory for the Ebola test. The test result came out negative and that patient was (sic) longer considered suspected Ebola case" stated the Health Ministry last night.
The Ministry also reported that currently the number of Ebola cases confirmed through laboratory testing in Sierra Leone, was now over four hundred (400) in number and have been reported in all four regions of the country.

Parts of Chinese city quarantined as resident dies of BUBONIC PLAGUE after being bitten by rodent

Source: http://www.dailymail.co.uk/news/article-2701641/Parts-Chinese-city-quarantined-resident-dies-BUBONIC-PLAGUE-bitten-rodent.html

Chinese officials have sealed off large parts of a city after a resident who was bitten by a rodent died of bubonic plague.
The 38-year-old victim from the city of Yumen in Gansu province was infected by a marmot, a wild rodent, last week.

Around 30,000 residents have now been told they cannot leave and police at roadblocks on the perimeter of the city are telling motorists to find alternative routes.

- **Around 30,000 people from Yumen have been sent to quarantine zones**
- **A 38-year-old victim infected by a wild marmot and died last week**
- **151 people who came into contact with the victim are also being checked**
- **City is now surrounded by police roadblocks and emergency services**

It said 151 people who came into direct contact with the victim have also been placed in quarantine and are being analysed by epidemic prevention teams deployed around the city.

Reports by China Central television say that those in quarantine are in a stable condition and there have been no further cases.
The city is said to have enough rice, flour and oil to supply all its residents for up to one month after setting aside 1 million yuan ($161,200) for emergency vaccinations.

The plague is a bacterial disease spread by the fleas of wild rodents such as marmots.
While the disease can be effectively treated, patients can die 24 hours after the initial infection, the World Health Organisation says.
Outbreaks in China have been rare in recent years, and most have happened in remote rural areas of the west.
China's state broadcaster said there were 12 diagnosed cases and three deaths in the province of Qinghai in 2009, and one in Sichuan in 2012.

Beijing's disease control centre sought to dispel worries about a wider outbreak of the disease in China, saying on its website that the risk of the disease spreading to the capital was minimal

DISEASE WHICH DEVASTATED EUROPE IN THE MIDDLE AGES AND STILL THREATENS PARTS OF THE WORLD

Black Death: A town crier says 'bring out your dead'

Bubonic plague is one of the most devastating diseases in history, having killed around 100million people during the 'Black Death' in the 14th century.
Drawings and paintings from the outbreak, which wiped out about a third of the European population, depict town criers saying 'bring out your dead' while dragging trailers piled with infected corpses.
It is caused by a bacterium known as Yersinia pestis, which uses the flea as a host and is usually transmitted to humans via rats.
The disease causes grotesque symptoms such as gangrene and the appearance of large swellings on the groin, armpits or neck, known as 'buboes'.
It kills up to two thirds of sufferers within just four days if it is not treated, although if antibiotics are administered within 24 hours of infection patients are highly likely to survive.
After the Black Death arrived in 1347 plague became a common phenomenon in Europe, with outbreaks recurring regularly until the 18th century.
Bubonic plague has almost completely vanished from the rich world, with 90 per cent of all cases now found in Africa.
However, there have been a few non-fatal cases in the U.S. in recent years, while in August 2013 a 15-year-old boy died in Kyrgyzstan after eating a groundhog infected with the disease.
Three months later, an outbreak in a Madagascan killed at least 20 people in a week. A year before 60 people died as a result of the infection, more than in any other country in the world.
Outbreaks in China have been rare in recent years, and most have happened in remote rural areas of the west.
China's state broadcaster said there were 12 diagnosed cases and three deaths in the province of Qinghai in 2009, and one in Sichuan in 2012.
In the United States between five and 15 people die every year as a result, mostly in western states.

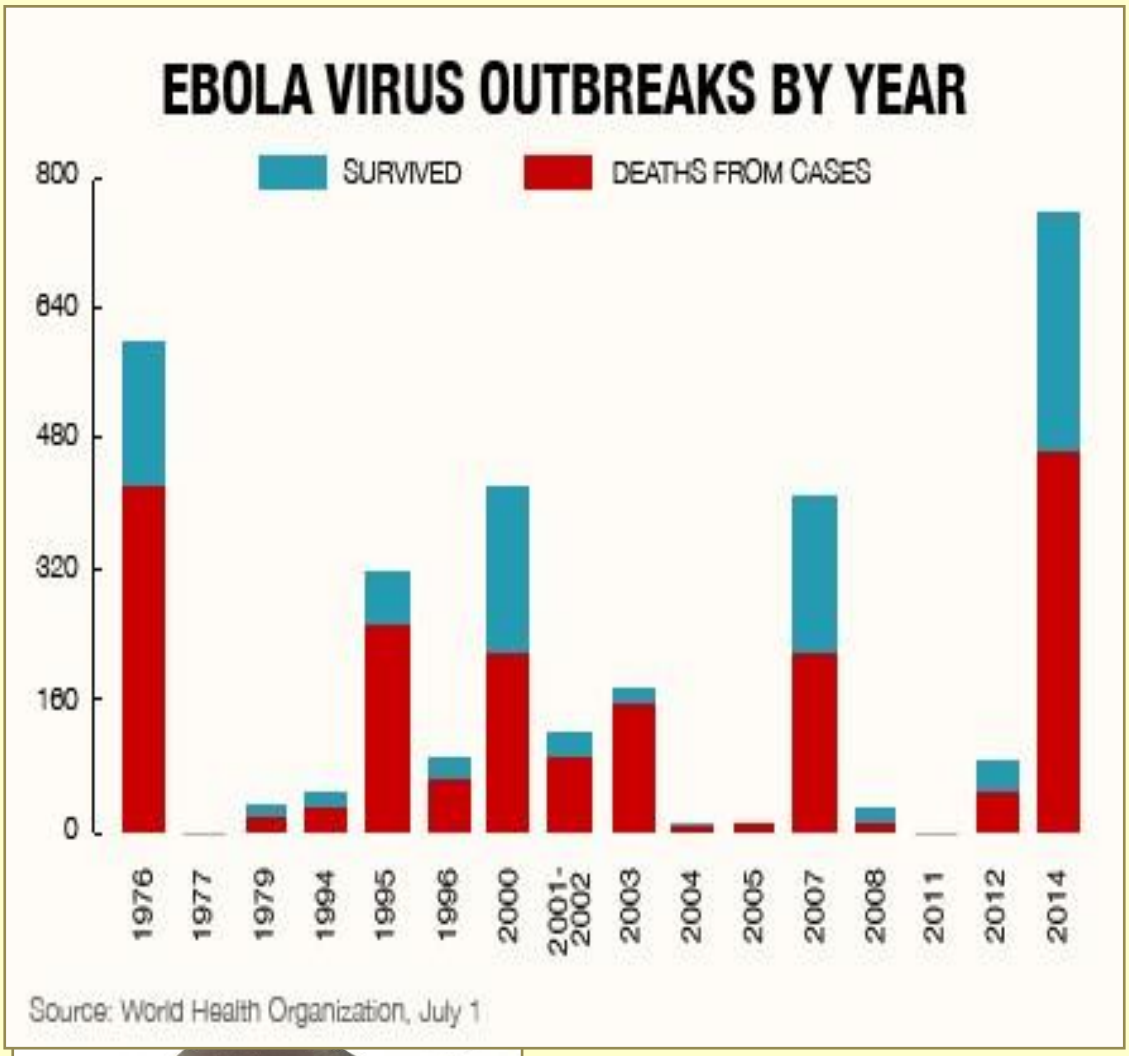
Top Ebola doctor in Sierra Leone infected with virus

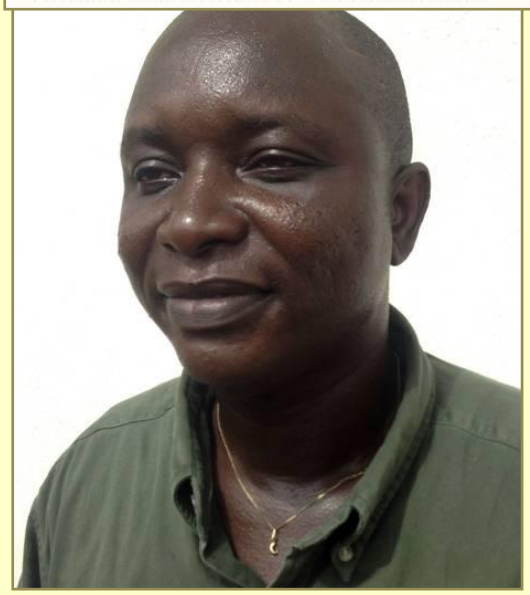
Source: http://www.shreveporttimes.com/usatoday/article/13113437

The chief doctor who has been leading the fight against the Ebola virus epidemic in Sierra Leone has contracted the disease himself, officials from the country's Ministry of Health said.
Sheik Umar Khan, 39, was credited with treating more than 100 victims of the virus in West Africa during the deadliest Ebola outbreak ever recorded. He is now being treated by the medical humanitarian organization Doctors Without Borders in a facility in Kailahun in Sierra Leone. Organization spokesperson Sandra Murillo, citing patient-doctor confidentiality, could not disclose Khan's condition.
More than 1,000 cases and 660 deaths in West Africa have been reported to date, according to the World Health Organization.
The outbreak has affected Sierra Leone, Liberia and New Guinea. Sierra Leone is the epicenter of the epidemic with 454 cases

recorded thus far, according to Doctors Without Borders.
Khan was one of more than 200 staff members

epidemic. Even before he caught the virus, he was worried about the close proximity to the virus.





in Sierra Leone working to combat the

"I am afraid for my life, I must say, because I cherish my life," he told Reuters in late June. "Health workers are prone to the disease because we are the first port of call for somebody who is sickened by disease. Even with the full protective clothing you put on, you are at risk."
Sierra Leone Health Minister Miatta Kargbo called Khan a national hero, Reuters reported, and said she would "do anything and everything in my power to ensure he survives."
Three nurses who worked in the same Ebola treatment center as Khan are believed to have died from the disease.
Ebola is transmitted through contact - usually of bodily fluids like vomit, blood, urine or feces. The virus can infect people even

after death, often resulting in the infection of morticians or mourners who come in direct contact with the body, according to Anthony Fauci, the director of the National Institute of Allergy and Infectious Diseases. Ebola can also be transmitted through fruit bats or by the consumption of infected bush meat such as primates. Ebola has up to a 90% fatality rate, according to the WHO. There is currently no cure for Ebola and no vaccine to prevent it.

WHO, the local governments and Doctors Without Borders have been struggling to contain the outbreak, ramping up their efforts in case management, infection prevention, and control and public awareness of the virus. Local workers are trained in these protocol in addition to safe burials, WHO spokesperson Tarik Jasarevic said.

Fauci said there is a likelihood that the virus will spread to other countries despite the government and organizations' efforts.

"Previous outbreaks were usually in very rural areas, so they were geographically self-contained," Fauci said. "These (epidemics) are spreading to the cities."

BioCryst Bets on New Ebola Drug to Fight Bioterror, Outbreak Threats

By Frank Vinluan

Source: http://www.xconomy.com/raleigh-durham/2014/07/24/biocryst-bets-on-new-ebola-drug-to-fight-bioterror-outbreak-threats/?single_page=true

The unfortunate few infected by Ebola learn quickly that the rare disease is a near-certain death sentence. Outbreaks have led to fatality rates up to 90 percent, according to the World Health Organization. Treatment options are limited: no approved vaccines or drugs for treating Ebola exist, the WHO says.

As the current virus outbreak continues in West Africa, a small Durham, NC, biotechnology company is quietly working on a drug that, if all goes well, could become the first Food and Drug Administration-approved Ebola treatment. BioCryst Pharmaceuticals (NASDAQ: BCRX) is still in the early stages and has yet to test its experimental drug in humans. But its initial results have shown effectiveness treating hemorrhagic fevers in monkeys, and have prompted calls from interested healthcare officials from around the world.

"We can't do anything about the current outbreak," BioCryst chief medical officer William Sheridan says. "But we intend to work as hard as we can to figure out how would we make the drug available after we've got safety data in people, should there be another outbreak in Africa. And we know there will be. These things will keep happening, we just don't know where and when."

Like other viruses, Ebola hijacks an infected person's cells and uses those cells to produce more viruses, which overwhelm the body's immune system. In Ebola, initial symptoms of fever, muscle pain, and weakness progress to more severe symptoms including internal and external bleeding. BioCryst's experimental antiviral drug, called BCX4430, works by preventing virus replication. The goal of an antiviral drug is to suppress virus production enough to allow the human body's immune system to kick in and make antibodies to fight it, Sheridan explains. The company's drug is a nucleoside analogue, just like Sovaldi, the Gilead Sciences (NASDAQ: GILD) hepatitis C drug approved last year that has since gone on to become a blockbuster drug. In fact, BCX4430 emerged from BioCryst's own failed efforts in hepatitis C drug research.

BioCryst's nucleoside antiviral program in hepatitis C didn't advance beyond the preclinical stage. Jon Stonehouse, the company's CEO (pictured), says the compounds showed some activity in hepatitis C but not enough to justify

pursuing a new hepatitis C drug. Seeing some activity in hepatitis C, an RNA virus, prompted BioCryst scientists to pursue tests of BCX4430 against other RNA viruses. That's what led the company to filoviruses, the family of viruses that cause viral hemorrhagic fevers. Both Ebola and Marburg are filoviruses.

Last September, BioCryst entered into a government contract to develop BCX4430 for Marburg virus through the National Institute for Allergy and Infectious Disease (NIAID), a division of the National Institutes of Health. The contract, valued at up to $22 million, would take BCX4430 through testing in animals and as far as phase 1 studies in humans. BioCryst received $5 million upon entering the contract. In June, the NIAID released an additional $1.8 million, allowing the company to continue preclinical work.

Testing against filoviruses requires a biosafety level 4 lab, the highest level of safety for testing life-threatening infectious diseases such as Ebola and Marburg. BioCryst has no such lab, so those tests were done in collaboration with the U.S. Army Medical Research Institute for Infectious Diseases at its facility in Fort Detrick, MD. Preclinical results published earlier this year in the journal *Nature* showed that all of the monkeys infected with Marburg virus that were treated with BCX4430 survived the two-week trial. Marburg infection killed all of the monkeys in the control group. BioCryst will still need to conduct additional trials in monkeys, including tests of BCX4430 in monkeys infected with Ebola.

A report in the journal *Cell Research* notes that while there have been small molecules showing efficacy against filovirus infections in lab tests, the BCX4430 results were the first showing efficacy in tests with primates. Monkeys infected with Marburg showed up to 100 percent protection when administered with BCX4430 as late as 48 hours following infection, the report says. In addition to showing efficacy in the animal tests for Marburg virus, the compound also showed efficacy in lab tests for different species of Ebola virus.

The first Marburg epidemics were documented in 1967 in Belgrade, Yugoslavia as well as the German cities of Frankfurt and Marburg, which gave the virus its name, according to the WHO. Ebola was first discovered in Africa in the 1970s. These virus outbreaks are unpredictable. The rarity of the outbreaks and the small numbers of patients affected by these viruses mean the private sector sees few incentives for developing and commercializing treatments.

BioCryst sees the U.S. government as the main customer for its experimental antiviral. The 2004 Project BioShield Act was enacted to spur research and development of bioterror countermeasures by giving the government the authority to fund, develop, and stockpile such drugs. The Centers for Disease Control and Prevention lists Marburg and Ebola as "Category A" bioterrorism agents and diseases, putting them in the same class as anthrax and smallpox.

A handful of other companies are pursuing Ebola and Marburg drugs with government funding. But Cambridge, MA-based Sarepta (NASDAQ: SRPT) and Vancouver, BC-based Tekmira (TSX: TKM) have had to halt some of their research. Sarepta's Ebola research program was terminated in 2012 due to government funding constraints. The Marburg program was left intact and Sarepta reported positive results in phase 1 tests earlier this year. The FDA in early July placed a clinical hold on Tekmira's Ebola drug tests in healthy human volunteers, seeking more data on how the drug works at higher doses. The FDA also asked for changes in Tekmira's study to ensure patient safety. Meanwhile, Colorado company Corgenix Medical (OTC: CRTX) was awarded a $2.9 million NIH grant in June to develop an Ebola diagnostic.

Sheridan says that while foreign governments could be interested in building a stockpile of antiviral reserves to guard against bioterror attacks, he expects the U.S will be the only one that will commit funding for BCX4430. To develop the compound beyond phase 1, BioCryst plans to seek more federal dollars, perhaps from the U.S. Department of Defense or the Biomedical Advanced Research and Development Authority (BARDA). BioCryst has been down this path before.

BioCryst's roots are in Alabama, where the company was founded in 1986 by Charles Bugg, a University of Alabama at Birmingham biochemistry professor and the company's first CEO. BioCryst

went public in 1994, focusing for years on developing treatments for immunological and infectious diseases and disorders. In 2006, BioCryst opened a North Carolina office to handle clinical and regulatory operations. The company formally relocated its headquarters to Durham in 2010 but kept its labs in Birmingham.

BioCryst had little clinical success until peramivir, an experimental antiviral flu drug. In 2007—the year Stonehouse joined as CEO—BARDA awarded BioCryst a $102.6 million contract to develop the treatment to prepare for possible flu pandemics. Additional funding in later years brought the total to $235 million. Peramivir brought BioCryst revenue through licensing deals with companies in Japan and South Korea, where the drug has since been approved. BioCryst filed for FDA approval for peramivir last December.

Stonehouse points to peramivir's development as a model for the company. BARDA funding of peramivir allowed BioCryst to take the compound through clinical testing without resorting to sales of additional BioCryst stock to finance clinical trials. In a similar fashion, Stonehouse says revenue from government purchase orders could cover BioCryst R&D expenses without a stock sale that would dilute shareholders.

BioCryst is not going to become an Ebola drug company or even an antivirals company. No company can build a business around stockpile orders from the government, Stonehouse says. But those government orders of antivirals would financially support what Stonehouse now says is BioCryst's core focus: rare disease drugs. BioCryst's lead rare disease drug is currently in mid-stage clinical trials as a possible treatment for the rare genetic disease hereditary angiodema (HAE). Stonehouse says government orders of BCX4430 could finance commercialization of the HAE drug, should the latter treatment secure FDA approval.

BCX4430 should have a shorter regulatory path than peramivir. Unlike peramivir, BCX4430 won't have to go through lengthy and expensive phase 2 and phase 3 clinical trials. The same risks that require Marburg and Ebola to be tested in a BSL-4 facility also mean that the drugs to treat these viruses aren't tested in humans in randomized placebo-controlled clinical trials. Instead, BioCryst will test BCX4430 under the FDA's animal safety rule. Like all drugs vying for FDA approval, BioCryst must show its compound is both safe and effective. But animal results—likely from more monkey tests—will be enough to meet the efficacy threshold under the animal rule. To demonstrate safety, BioCryst needs only to test BCX4430 in healthy humans using the same drug levels used to cure monkeys infected by the virus.

What's more, BCX4430 may be able to treat more than Ebola and Marburg: additional virus targets are on the horizon. The compound is a broad spectrum antiviral that has shown effectiveness against a wide range of pathogens, which Stonehouse boils down to the phrase "one drug, many bugs." Already, a BioCryst collaboration with Utah State University scientist Justin Julander showed that BCX4430 was effective treating hamsters infected with yellow fever. The potential to address multiple pathogens would give the government more bang for its buck in its own effort to develop and stockpile antivirals, Stonehouse says. And if the FDA approves BCX4430 in Marburg, adding another disease would require only an additional animal trial to show efficacy for that disease. The preclinical, toxicology, and safety studies will have already been done.

Stonehouse expects BioCryst will be ready to file an investigational new drug application for BCX4430 and start phase 1 clinical trials early next year. By the end of 2015, if BioCryst can show the drug is safe in people—still a big if—Stonehouse says the company will be in a position to provide the drug during a virus outbreak. The current Ebola outbreak now exceeds 900 cases and 600 deaths, according to the WHO.

Stonehouse says BioCryst has no intention of making money off of viral outbreaks in Africa. If BCX4430 wins FDA drug approval and the U.S. government buys the drug as a bioterror countermeasure, Stonehouse says, the company will give away its remaining stores of the drug when and where it's needed. That could mean working with health organizations such as WHO or nonprofit groups such as the Bill & Melinda Gates Foundation. The company has already had discussions with Medicins Sans Frontieres.

"If we get a stockpiling order, we've achieved our business goal," Stonehouse says. "So then it's doing what's right, which is to make it available to these places that can't afford it."

Frank Vinluan is a contributing editor at Xconomy, based in Research Triangle Park.

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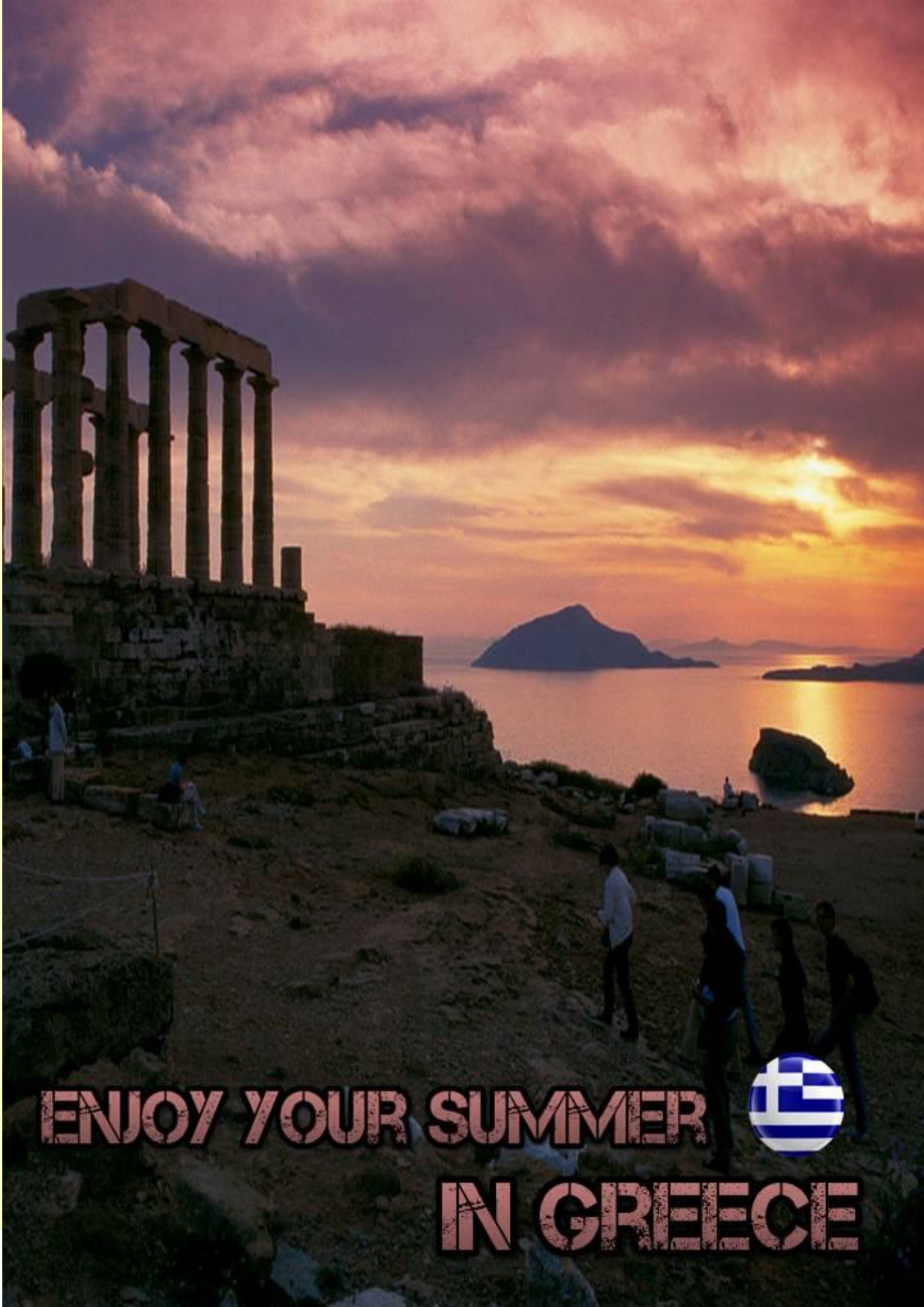
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