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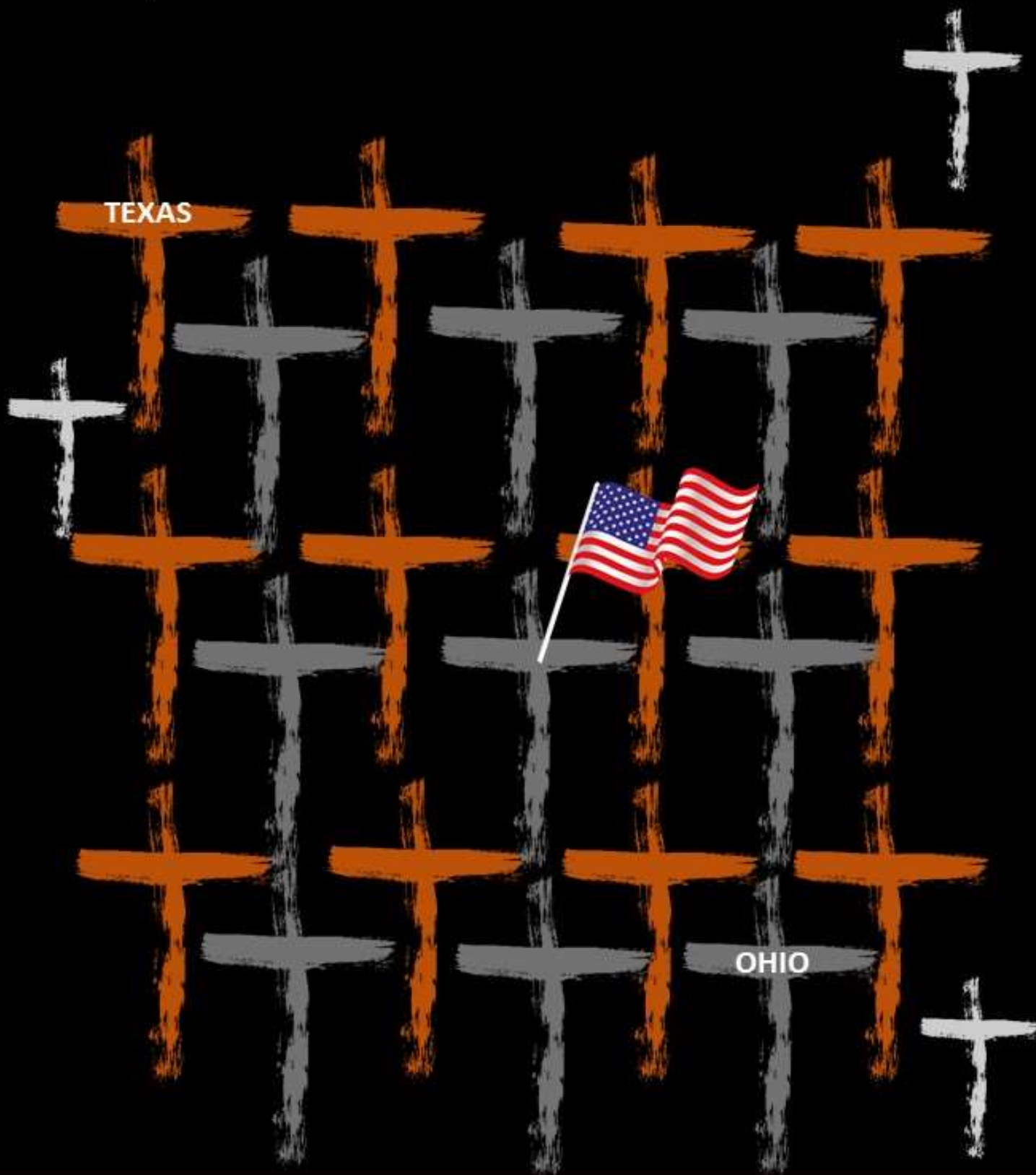
*Dedicated to Global  
First Responders*



# DIARY



August 2019



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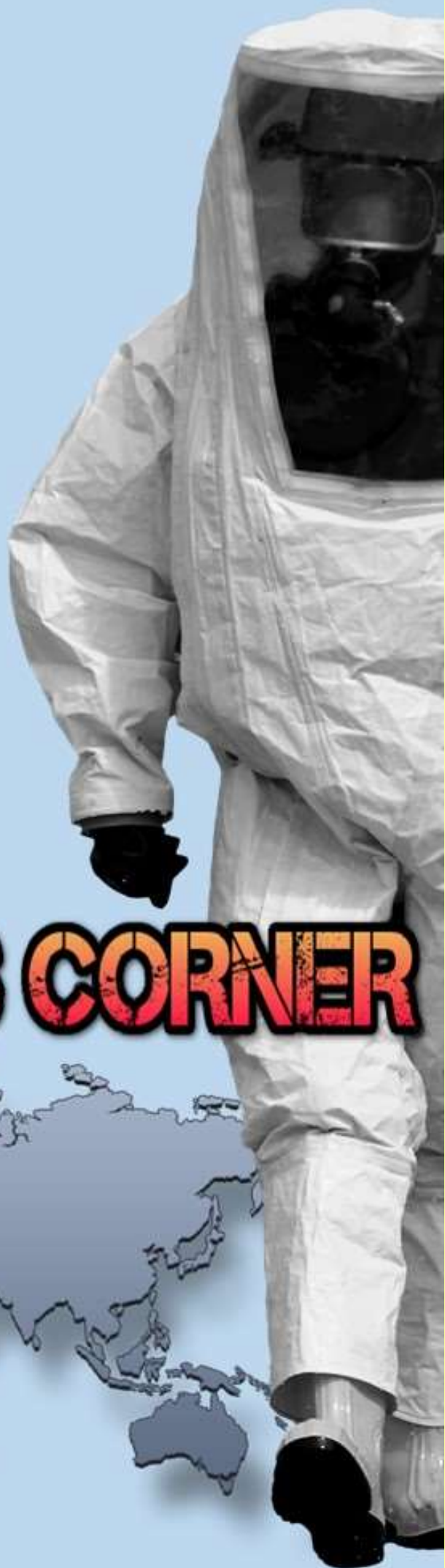
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# EDITOR'S CORNER





**Editorial**

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

*Editor-in-Chief*  
C<sup>2</sup>BRNE Diary*Dear Colleagues,*

Summer-time but Evil is still around us...

Some news from around the globe to keep you updated and alert while enjoying the sun and the sea:

- ◆ Mass shooting in the US (Walmart, El Paso, TX) – a lot of reading (again) on this topic with the best proposal being to increase the taxes on assault weapons ...
- ◆ A lot of reading on immigrants and asylum and alike. A universal problem that nobody is addressing seriously...
- ◆ Hamza bin Laden killed but al Qaeda is still alive. And so is the Islamic State – perhaps in a new (not so new) nest in Afghanistan.
- ◆ INF Treaty also died in August!
- ◆ Epigenome signatures to determine an individual's exposure to WMD materials.
- ◆ Tularemia outbreak (humans) in Sweden!
- ◆ **Two new Ebola treatments dramatically lower the death rate (trial) – one of the very good news this month!**
- ◆ Ramnolipids against antibiotic resistance – another hot issue!
- ◆ Bioweapons designed to kill only people of a particular race – a modern version of an older controversial issue of “ethnic bullets”...
- ◆ Radiation over Europe (Ruthenium-106, Russia?)
- ◆ Radiation spike after rocket engine blast (Russia)
- ◆ White Supremacists pursuit of dirty bombs – a hidden threat that needs to be taken seriously!
- ◆ A cyber-attack could wreak destruction comparable to a nuclear weapon – a scenario that can be easily become reality even as we speak.
- ◆ American nurses are not prepared for a catastrophe – what's new? Same with doctors. What we do about this? More papers and questionnaires!
- ◆ Water runs dry in dome parts of the world; sea levels are on the rise. Think of your children and grand-children and do something before it is too late (or is it already?)

Take care CBRN First Responders and enjoy some quality time with families and friends because tomorrow the unexpected might happen and you will be there in the line of duty – as you always do!

*The Editor-in-Chief*

## **Security Planning for Major Events**

**By Joseph Watson & Joseph Trindal**

Source: <https://www.domesticpreparedness.com/preparedness/security-planning-for-major-events/>

For Los Angeles, the recent memorial services for Michael Jackson were comparable to a state funeral in the nation's capital. Major events pose varying security and public-safety challenges requiring a systematic approach. However, there are very few criteria for determining what constitutes a major event from a public-safety and security perspective. Examination of the federal model for managing major national events is therefore a valuable template for state, local, and tribal communities to follow.

Presidential Decision Directive 62 (PDD-62), issued by President Bill Clinton in 1998, represented an early effort to address national major event standardization by assigning responsibility for coordinating "events of national significance" to the U.S. Secret Service (USSS). That executive action led to the Presidential Threat Reduction Act of 2000, which gives the USSS statutory authority as the lead federal agency for security planning of National Special Security Events (NSSEs). The president, or his designee – the secretary of the Department of Homeland Security (DHS) – determines which events merit the NSSE designation by considering, among other factors, the potential dignitary attendance, size, and significance of a specific event.

Surprisingly, perhaps, over the past 11 years there have been only about 30 NSSEs declared. Moreover, NSSE designation seems to be just as likely for an unfunded event as for an unfunded one. Congress did not provide funding to USSS for NSSEs, in fact, until 2006. Furthermore, obtaining federal funding for state, local, and tribal jurisdictions is even more difficult to achieve. However, non-federal agencies are usually able to use State Homeland Security Grant Program (SHSGP) and/or Urban Area Security Initiative (UASI) funds to support at least some NSSE security expenses. In addition, the cities hosting Democratic and/or Republican nominating conventions are usually provided some federal funding for security at those events.

The NSSE model provides a number of "gold standard" best-practice examples for lesser events. From a local perspective, it does not take federal designation for an event to be "Special and Significant" to the local community. For example, in the spring of 2002 Major League Baseball (MLB) sought NSSE designation for that year's All Star Game. The MLB request was denied, but only a few months later the Super Bowl (XXXVI) was declared an NSSE (as has been every Super Bowl since then). For the law-enforcement community of Milwaukee (Wis.), the All Star Game was a Local Special Security Event. Like NSSEs at the national level, that particular local event posed security challenges that far exceeded the capabilities of any single local jurisdiction participating. The structure used for coordinating and managing NSSE security, however, proved to be a useful model.

### **Security Coordination at Major Events**

There are few if any other metropolitan areas anywhere in the world that manage as many major events as the U.S. National Capital Region (NCR) – i.e., the greater Washington, D.C., area. During a preparation exercise for the 2005 Presidential Inauguration, then-DHS Secretary Tom Ridge asked Joseph Trindal, regional director of Federal Protective Service (NCR), and co-author of this article, if it was difficult coordinating security with so many law-enforcement agencies involved. "Not at all," Trindal responded, "we frequently work closely together because most events in Washington require interagency coordination." For the almost 40 jurisdictions within the NCR, almost every event is a local special security event.

Local special-security events provide excellent opportunities for state, local, and tribal jurisdictions to plan together with a common purpose. Planning and coordination are vital to safe and enjoyable local as well as national special events. The NSSE structure pre-establishes the basic principle that all major events are examined against security-relevant, risk-based criteria. Analysis of the NSSEs rests with a single department of the Executive Branch of government. On the federal side, therefore, there is no confusion or uncertainty about the DHS role. After an event has been declared an NSSE, a single agency is assigned the principal responsibility for security coordination and planning.



Leveraging the NSSE model at the local level should start, therefore, with ensuring that the responsibility for security coordination and planning is assigned to a pre-designated law-enforcement agency. Other municipal, county, state, and private-sector stakeholders can and should, however, support the security function within their own core competencies and capabilities.

#### The Pre-Planning Phase of Major Events

In 2006, the Office of Community Oriented Policing Services (COPS) of the U.S. Department of Justice (DOJ) issued an excellent report of best practices for major event planning. That report – *Planning and Managing Security for Major Special Events: Guidelines for Law Enforcement Administrators* (i.e., the Guidelines) – provides practical guidance for major event planning at the local level. With input from the USSS and numerous other contributors, early event planning was highlighted in the Guidelines as an essential best practice.

The planning for major events should balance public safety and public enjoyment with a realistic risk assessment. For example, a continuing risk related to the annual Independence Day celebrations on the National Mall in Washington, D.C., is the possibility that severe and/or fast-moving thunderstorms can produce dangerous lightning. After some rather tense events, a well coordinated plan was developed to provide early warning, rapid notification, and even temporary shelter for the hundreds of thousands of people who might be crowded together on or near the Mall when a thunderstorm approaches. That particular risk, and the contingency plan developed to deal with it, has turned out to be a repeated reality over the years.

The Guidelines also stress the need to plan for worst-case scenarios, including but not limited to natural disasters as well as criminal, crowd-control, and terrorist contingencies. Certain events also should include special sections for dealing with pre- and/or post-event protests.

Following the NSSE model, a local-event security-management structure should incorporate the Incident Command System (ICS). The Guidelines recommend the development of an event-specific organizational structure. Among the several important components of the ICS structure is the Administration and Finance Section – which also should reflect appropriate interagency collaboration and contributions.

Many local major events are recurring and/or otherwise well known in advance. The development of a 12-to-18 month planning timeline not only can greatly ensure the broad inclusion of all participating stakeholders but also provide sufficient time for thorough preparations in advance. In 2002, a local special-security event – but with national relevance – was thrust upon the City of Alexandria, Va. The DOJ had decided to hold a terrorist trial at the Albert V. Bryan U.S. Courthouse in this densely populated city just outside of the nation's capital. Fortunately, from the security planner's point of view, the U.S. judicial process is slow and deliberate – which meant, in this situation, that federal, state, and local agencies were able to coordinate, plan, and exercise extensively as the judicial proceeding for Zacharias Moussaoui moved steadily but very slowly toward his conviction and sentencing in 2006.

During the same period, not incidentally, other notable figures – including John Walker Lindh (the “American Taliban”) and Robert Hanssen (ex-FBI agent/Russian spy) – also faced federal justice. The pre-event preparations in those cases developed and greatly strengthened interagency relations across disciplines of police, fire, hazmat, medical, transportation, and emergency-management services. In addition, the private sector and community were engaged partners to the overall security profile. The community in general was well informed and an active participant by the timely reporting of suspicious activities to the proper authorities. In this example, each day of planning was in essence a prior-planning drill for major events in the Moussaoui trial such as key judicial rulings, the verdict, and sentencing as well as other closely related high-threat judicial events.

#### The Management of Local Major Events

The creation of a special-event organizational structure is of prime importance. As mentioned earlier, the ICS structure is well suited as a model because it provides a clear delineation of responsibilities along cross-discipline functional competencies and is “scalable” enough to meet both planned and unplanned dynamics related to the major event.

The establishment and equipping of an effective and reliable communications system is another vital component of event management. Communications challenges are ever-



present at major gatherings. Communications protocols must therefore provide for relaying routine event coordination information as well as separate security-specific and dedicated communications for law-enforcement and security officials. The protocols needed for communicating important safety and security information to the crowd gathered at and around the event also must be established beforehand. The special-services communications required for the area's medical care and highway departments are usually handled through the protocols of those respective agencies. Nonetheless, special-services communications should be integrated, at the command level, with the event's overall ICS structure. Communications integration includes real-time, constant monitoring as well as the capability to pass information from ICS Incident Command and/or Section Chiefs to and across a number of disciplines and jurisdictions.

Event-management contingency plans should include the creation of pre-established criteria for deciding and implementing the actions needed not only to call off the event, if and when necessary, but also to rapidly communicate that decision to the media and participants, and to the general public. Many outdoor special events are subject to dangerous and rapidly changing weather conditions that may require fast decision-making and/or public-safety actions.

Resource management, a particularly important aspect of planning, is already built into the NSSE model through its incorporation of the ICS guidelines. During the event, resources of the right competencies and numbers should be positioned to best prevent, mitigate, and respond to contingencies. In terms of resource management, major events often require the involvement of the emergency services assets of several jurisdictions. Multiple-jurisdiction participation should be based upon Mutual Aid Agreements; however, contingency plans also should consider: (a) the potential need to draw additional resources from other jurisdictions; and (b) the potential need for participating jurisdictions to recall their pre-committed assets to deal with an unexpected event in their own jurisdictions.

#### Post-Event Considerations

All too often, after a major event has ended, there is a rapid retrograde of the public-safety principles established. However, even the conclusion of a major event poses substantial security challenges. When large crowds are moving away from the event venue, for example, there is a greater propensity not only for accidents but also for criminal activity. Public safety resources should be re-positioned, therefore, to facilitate the safe movement of pedestrians and traffic – and, not incidentally, to put those resources in a better position to respond to post-event contingencies. From the terrorist's perspective, the chaos inherent in post-event activities is an opportunity to carry out attacks that maximize casualties and exceed public-safety response capacities.

The Secret Service's NSSE protocols, and the Guidelines, stress the need to plan for a rapid retrograde of security operations and resources. The Guidelines also highlight the importance of After-Action Reporting and Improvement Action Planning to maximize the lessons learned and, of perhaps greater importance, to prepare for the next Local Special Security Event. Continued training and planning, after the conclusion of a major event, is an important best practice.

Fortunately for security planners, most if not all major events are predictable – to at least some degree. Almost every community, of any size, throughout the United States hosts a series of events during the calendar year that are that community's equivalent of a National Special Security Event. Developing a system for evaluating the security challenges for each such event, then planning and scaling resources accordingly, is vital for the community's safe participation in the event. Here, the inclusion of public and private stakeholders in the planning process is an important best practice. The federal protocols developed and promulgated for the coordination and planning of NSSEs, combined with the DOJ Guidelines, are excellent resources for local communities to follow in developing their own Local Special Security Event procedures.

*Joseph W. Trindal recently retired as chief of the Inspections & Enforcement Branch of DHS's Infrastructure Security Compliance Division. That branch is responsible for administering and enforcing the Chemical Facility Anti-Terrorism Standards. A career federal law-enforcement investigator and executive, Trindal served with the U.S. Marshals Service for 20 years before accepting the position of*





director for the National Capital Region, Federal Protective Service, DHS. Trindal is presently serving as Director of the Critical Infrastructure Protection Division of Covenant Security International.

**Sergeant Joseph Watson** is a former Marine Military Police Officer and 25 year veteran of the City of Alexandria Police Department. He is currently team leader for the Department's Special Operations Division, Community Support Section Homeland Security Unit. Watson is the founder and President of Special Operations Solutions, LLC. Consulting, Planning, Training, Exercises, and Operations. He is also a trainer in Basic and Advanced Special Operations, Firearms, Defensive Tactics, ODP Awareness, and Hazardous Materials. He was the recipient of the 2002 Washington Metropolitan Council of Governments, Chiefs Training Committee, Instructor of the Year award.

## UK threat level system updated to include all forms of terrorism

Source: <https://www.continuitycentral.com/index.php/news/resilience-news/4254-uk-threat-level-system-updated-to-include-all-forms-of-terrorism>

July 26 – **Changes to the UK's terrorism threat level system came into effect on Tuesday 23rd July.** The changes follow an extensive review into the country's approach to counter-terrorism following the attacks in 2017, and mean that the system will now reflect the threat posed by all forms of terrorism, irrespective of ideology.

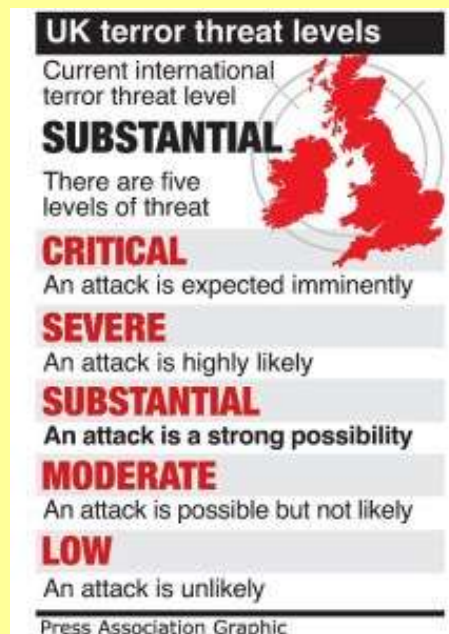
There will now be a single national threat level describing the threat to the UK. However, the threat from Northern Ireland-related terrorism in Northern Ireland will remain separate. This means, for the first time, the threat from extreme right and left-wing terrorism will be reflected in the published threat level.

The Joint Terrorism Analysis Centre (JTAC) began assessing the threat from all forms of terrorism in November 2018 and the published threat level will now reflect JTAC's wider assessment.

The definitions of the LOW, SUBSTANTIAL and CRITICAL threat levels have also changed. The new definitions are as follows:

- CRITICAL – an attack is highly likely in the near future
- SEVERE – an attack is highly likely
- SUBSTANTIAL – an attack is likely
- MODERATE – an attack is possible but not likely
- LOW – an attack is highly unlikely.

**The level of threat has not changed from SEVERE,** meaning an attack is highly likely. JTAC sets the threat level independently of the government.



**EDITOR'S COMMENT:** The problem is not the classification of threat levels. The problem is that the population is not aware of the actions should be taken when they will be informed about a specific threat level. What the restaurant or bar owner should do. What the hotel manager should do. What the



school director or the university dean should do. What the parents should do at home. Threat levels are not only for state officials and the armed forces; it is also about the people and their well-being. This is not a UK problem; it is a global problem and nobody cares about it. No surprise since the people – the most important player is civil response – are rarely included in the emergency response planning.

## Missile Strike False Alarm Most Stressful for Less Anxious Hawaiians: Study

Source: <http://www.homelandsecuritynewswire.com/dr20190726-missile-strike-false-alarm-most-stressful-for-less-anxious-hawaiians-study>

July 26 – After learning that a warning of a missile headed to Hawaii was a false alarm, the most anxious



local Twitter users calmed down more quickly than less anxious users, according to a study of tweets before, during and after the event, published by the American Psychological Association.

“Can a false alarm of an impending disaster itself be a form of trauma? Our results suggest that the experience may have a lingering impact on some individuals well after the threat is dispelled,” said Nickolas Jones of the University of California, Irvine, and lead author of the study published in the journal *American Psychologist*. “While those who before the alert had exhibited the least anxiety took the longest to stabilize, at approximately 41 hours, and the medium-anxiety group took 23 hours, the individuals who had exhibited the greatest anxiety before the alert stabilized almost immediately.”

In January 2018, residents of Hawaii received an alert from the Hawaii Emergency Management Agency over radio, television and smartphones warning that a ballistic missile was headed toward the state, that people should seek shelter and that the alert was “NOT A DRILL.” A second message was transmitted 38 minutes later stating that there was no missile

threat and that the original message had been a false alarm.

APS [says](#) that to better understand the psychological effects of event on the population, Jones and his colleague Roxane Cohen Silver, also of the University of California, Irvine, collected more than 1.2 million posts on Twitter from more than 14,000 users who followed local Twitter accounts across the state of Hawaii from six weeks before to 18 days after the event. Tweets were scanned for 114 words associated with anxiety (e.g., afraid, scared, worried). Each tweet that contained an anxiety-associated word was given a score of one and all others scored zero. The researchers then grouped users based on their tweets prior to the false alarm as low, medium or high anxiety.

Anxiety expressed on Twitter rose approximately 3.4% every 15 minutes during the false alarm and decreased after the all clear. What the researchers found interesting was how long it took anxiety levels to stabilize in the various groups after the event and what those new baseline levels were.

While the group that exhibited low anxiety prior to the alert showed a new baseline anxiety level 2.5% higher after the event, the group who exhibited high anxiety prior to the alert had a baseline that was 10.5% lower afterward.

“We were surprised about our findings for the high pre-alert anxiety group,” said Silver. “The literature suggests that people who experience negative psychological states, like anxiety, before a large-scale trauma, are at an increased risk for negative psychological consequences afterwards. However, those individuals who before the alert generally expressed much more anxiety on a daily basis than anyone else in the sample seem to have benefited from the false missile alert instead.”

Silver believes the decrease in anxiety levels for the high-anxiety group may have been because the threat of imminent death put their day-to-day stressors into perspective.

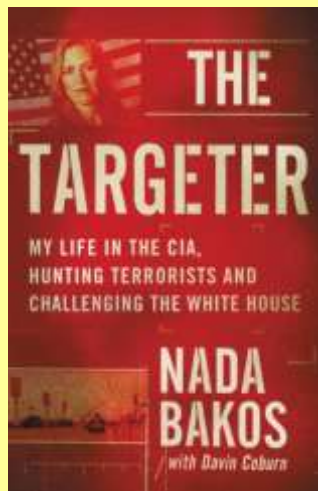
“Anxious individuals may have more to appreciate when they experience a near miss and thus express less anxiety on social media after having ‘survived’ what would have undoubtedly been construed as a deadly situation,” she said.



“Free and open access to public Twitter data, coupled with Hawaii’s false missile alert, provided us with an opportunity to study, for the first time, how several thousand people responded psychologically to the threat of an inescapable, impending tragedy,” said Jones. “Although it is fortunate we were able to study this phenomenon without loss of life, we show that, for many users, the anxiety elicited by this false alarm lingered well beyond the assurance that the threat was not real, which may have health consequences over time for some individuals. Our findings also highlight how important it is for emergency management agencies to communicate with the public they serve about potential threats and mishaps in emergency communications.”

## Women and the War on Terror: An Insider Account

Source: <http://www.homelandsecuritynewswire.com/dr20190724-women-and-the-war-on-terror-an-insider-account>



July 24 – I am often asked what it is like to work for the Central Intelligence Agency. I spent 30 years there, both as an analyst and an operator abroad. A new book by Nada Bakos—[\*The Targeter: My Life in the CIA, Hunting Terrorists and Challenging the White House\*](#) (with Davin Coburn, published by Little, Brown and Company 2019)—is one of the best books I know of that addresses the question.

Bruce Riedel writes in Brookings’ [\*Order from Chaos\*](#) that Bakos’ book is an important contribution to our understanding of the intelligence wars that erupted in 2001 over Iraq’s alleged connections to the 9/11 attacks and the George W. Bush administration’s bungled efforts to stabilize Iraq after the 2003 invasion. A former CIA analyst, Bakos had a ring-side seat for that whole sordid chapter in America’s endless wars in the Middle East. She also provides new insights into the hunt for Abu Musab al-Zarqawi, the Jordanian terrorist who created al-Qaida in Iraq, and ultimately the Islamic State.

## 40 U.S. Diplomats in Cuba Have Suffered Brain Damage (but still do not know what caused the damage)

Source: <http://www.homelandsecuritynewswire.com/dr20190724-40-u-s-diplomats-in-cuba-have-suffered-brain-damage-medical-report>

July 24 – Brain imaging of 40 U.S. government personnel who experienced a host of neurological symptoms after possible exposure of an unknown source while serving in Cuba revealed significant differences in brain tissue and connectivity when compared to healthy individuals, according to a new report from researchers at the University of Pennsylvania’s Perelman School of Medicine. The findings are [published in JAMA](#).

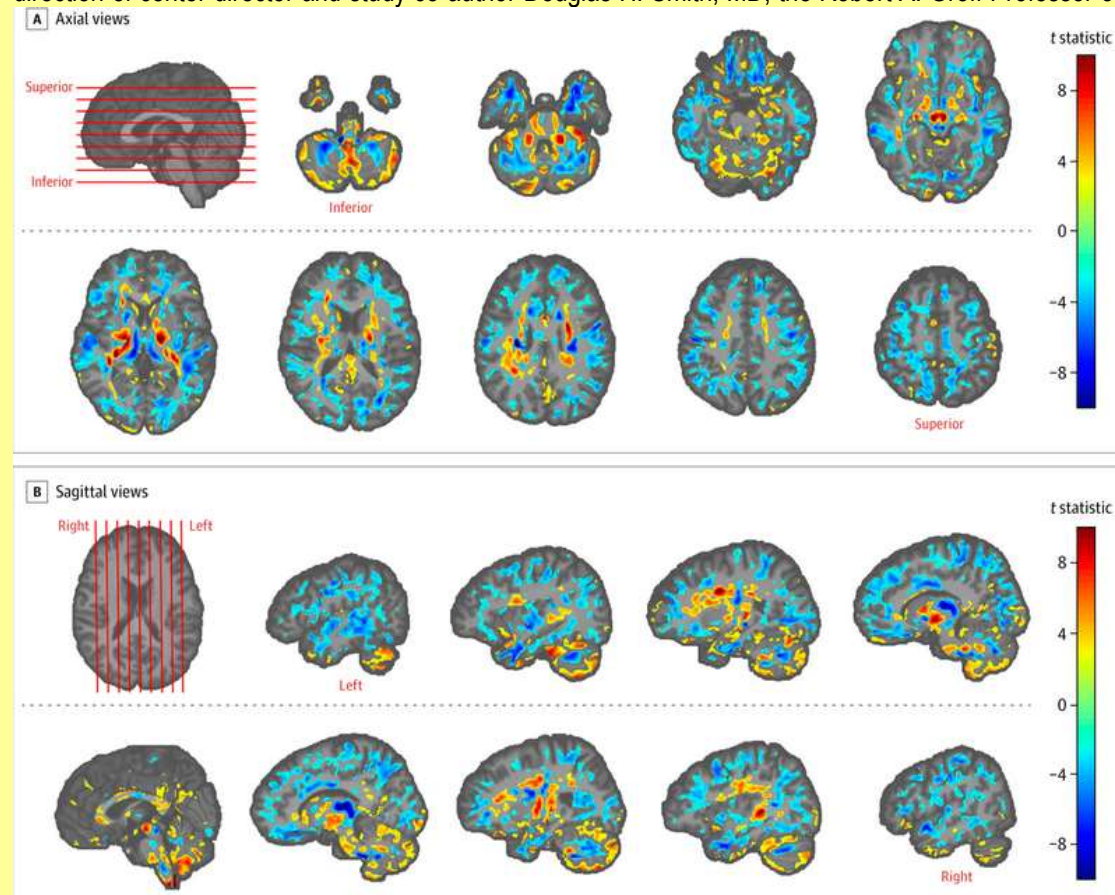
“The areas implicated in the patients’ brains, namely the cerebellum as well as the visuospatial and auditory networks, align with the neurological symptoms that were observed in the patients,” said lead author Ragini Verma, PhD, a professor of Radiology and head of the DiCIPHR (Diffusion and Connectomics in Precision Healthcare Research) imaging lab at Penn. “These differences persisted even when people with some history of brain injury were excluded from the analysis.”

In 2016, U.S. government personnel serving in Havana, Cuba, and their family members began to report a variety of neurological symptoms, including difficulty with concentration and memory, dizziness, visual issues, and balance problems. The symptoms were linked to sudden, intensely loud noises heard in their homes and hotel rooms, which State Department officials later referred to as a “sonic attack” or “directional phenomena,” though the specifics of the alleged event remain unsolved. UPenn [says](#) that After initial examinations, the patients were sent to Penn’s Center for Brain Injury and Repair for evaluation, treatment, and rehabilitation in the summer of 2017, under the





direction of center director and study co-author Douglas H. Smith, MD, the Robert A. Groff Professor of



Teaching and Research in Neurosurgery.

A 2018 [JAMAreport](#) published by Penn researchers documented the neurological symptoms that 21 patients who had reported exposure to the mysterious phenomena in Cuba experienced. Summing up these findings, Smith said that the symptoms were, “similar to those found in persistent concussion syndrome, yet there was no evidence of blunt head trauma.”

As part of the investigation into their signs and symptoms, the patients also underwent advanced neuroimaging with multimodal magnetic resonance imaging (MRI) at Penn, prior to receiving any comprehensive rehabilitation treatment. This retrospective analysis compared the brain images of 40 potentially exposed personnel to 48 healthy individuals who were not exposed and did not demonstrate these signs and symptoms.

The group-based analysis, published in the new 2019 JAMA study, used various computational tools to examine structural, diffusion, and functional MRI images, finding statistically significant differences in brain volume, tissue properties, and connectivity between the patients and healthy control group. There was reduced white matter volume in the affected patients, along with a pattern of differences in measures of water diffusion in the tissue. The imaging also revealed lower functional connectivity in the visuospatial and auditory subnetworks. Notably, differences in tissue volume, water diffusion, and connectivity were found in the cerebellum, the part of the brain responsible for performing voluntary tasks, such as walking and writing.

“The cerebellar findings in this neuroimaging study are notable, given that a number of the patients evaluated exhibited abnormalities in balance and the coordinated movement of the eyes, both of which are associated with cerebellar dysfunction in the brain,” said study co-author Randel Swanson, DO, PhD, an assistant professor of Physical Medicine and Rehabilitation at Penn, and a staff physician at the Veterans Affairs Medical Center in Philadelphia.



According to Verma, the pattern of differences found in this study do not resemble imaging-based investigations of any other pathology, like concussion and traumatic brain injury.

"These findings may represent something not seen before," Smith said.

Verma likened the brain to a highway system, comprising roads (white matter) and traffic. Structural MRI provides information about the size of the roads, while diffusion imaging gives insight into the road conditions and how they are connected. An injury to the brain could contribute to a deterioration in the condition of the roads (reflected in white matter differences), leading to an alternate traffic pattern (altered functional connectivity). Therefore, Verma said, a multimodal investigation is essential to see a more complete picture of the injury. As the brain recovers, while the traffic pattern may go back to normal, the overuse of some roads may lead to wear and tear, or compensatory changes in the brain.

"It's hard to tell where the problem started; the brain differences observed could be an immediate effect of the brain injury, or it could be a compensatory effect of the recovery process," Verma said. "It's very difficult to say, especially with a retrospective, heterogeneous study, where people were included at various times after potential exposure. **The important thing is that we did see differences at the group level.**"

## **Why Jamaica Tourism is booming when the Dominican Republic is on a free-fall ride?**

By Juergen T Steinmetz

Source: <https://www.eturbonews.com/259116/why-jamaica-tourism-is-booming-when-the-dominican-republic-is-on-a-free-fall-ride/>



July 27 – Is it safe to travel to Jamaica? Is it safe to travel to the Dominican Republic? Many Americans have been asking this question before booking their Caribbean dream vacation. Why is travel to Jamaica booming and the Dominican Republic is in a tourism free-fall? Tourism experts are asking these questions as well.

[Jamaica](#) and the [Dominican Republic](#) are two countries with a very different vision on how to handle a travel and tourism crisis. Recent statistics demonstrate that Jamaica has increased its tourism by some 54.3%.



Unfortunately, the same cannot be said of the Dominican Republic. Latest statistics show a 143% decline in tourism arrivals. The difference? Jamaica is both honest and proactive when it comes to tourism and tourism security. When confronted with a problem, Jamaica recognized the challenge and then solves it. This proactive policy is quite different from what the perception is of the Dominican Republic. During the recent crisis, the Dominican Republic appears to have taken a defensive position and rather than acknowledging a problem, tourists see it as trying simply to wash it away.

Tourism in Jamaica is booming after Jamaica's Tourism Minister, Hon. Edmund Bartlett recognized a problem and sought to fix it.

At the same time, Dominican Republic tourism is in a state of free-fall after the deaths of 11 Americans in just one month. American visitors who passed away were staying at the RIU and Hard Rock hotels. The problem became worse when reports surfaced of violent assaults.

The [Hard Rock Hotels](#) and [RIU hotels](#) chose to not respond to the many questions this publication had. The Dominican Republic Tourism Minister, Francisco Javier Garcia, blamed visitors' alcohol consumption as the cause of death for more than a dozen American tourists. RIU Hotel response came from Germany. The head of Communication, Martin Riecken, at [TUI](#) in Hannover told eTN "We consider this request for a response as concluded since eTN is only making acquisitions. German TUI owns a major stake in RIU hotels.

Jamaica has taken a different path. When confronted with possible issues of property crime and sexual assault, Jamaica took the accusations seriously, adopted a proactive security policy, and made it clear that it would conduct not only a full and complete investigation but would do whatever was needed to assure the security and safety of its visitors. The result of this proactive policy is a record gain in tourist arrivals of 54.3%.

Leading Jamaica-based resort hotel group [Sandals](#) and most other hospitality groups cooperated with both foreign embassies and with the head of Jamaica's tourism security team, Texas-based Dr. Peter Tarlow of [safertourism.com](#). This cooperation has directly contributed to renewed confidence in Jamaica as a destination and has provided a jump-start in that nation's tourism arrivals.

Different from the Dominican Republic hotels, Jamaica was responsive to eTurboNews, with the exception of [RIU Jamaica](#) in January. RIU's corporate communication in Mallorca, Spain, denied there was a problem in Jamaica, when in fact the hotel chain was presented with a long list of proven safety and security issues by this writer.

At the same time, the Dominican Republic hired a U.S.-based PR agency to downplay numbers, and a for-hire researcher, [ForwardKeys](#), published a report saying that the crisis appears to be abating. In reality, Dominican Republic arrivals in June showed a 143% decline. Although hotels in the Dominican Republic will not admit it, reliable sources indicate that some hotels have occupancy rates of 20% or less. Just a year ago in 2018, the rate of unnatural deaths of Americans in Jamaica was 1.04 per 100,000. That's higher than in the Bahamas (0.71 per 100,000) and the Dominican Republic (0.58 per 100,000). As of 2017, the rate of murders, homicides, and non-negligent manslaughter in the US was 5.3 per 100,000, according to the Pew Research Center, citing data from the FBI. All of this made the Dominican Republic, Jamaica, or the Bahamas a lot safer place to visit compared to the United States in 2018.

Cliff Spiegelman from the Texas Department of Statistics commented these numbers were unfair. He said deaths per 100,000 tourists are calculated on a typical 1-2 week vacation. So a rate of one death per 100,000 tourists should translate in an annual rate of about 25-50 deaths per 100,000 citizens if this is compared with a rate where citizens live for the entire year. Considering this fact the 13 deaths of Americans in just one month vacationing in the Dominican Republic would bring this number way up.

Playing down a crisis is not the solution, says [Dr. Peter Tarlow](#) of Safertourism, an international expert in tourism security and crisis management. Instead, Jamaica's Minister of Tourism Bartlett, has asked Dr. Tarlow to head a team that is conducting a full tourism and safety audit for Jamaica and is developing a national tourism security plan. The first results will be presented next week, during the time frame beginning July 28, 2019, when [Dr. Tarlow](#) is scheduled to present it at the Jamaica Ministry of Tourism in Kingston.

Concurrently, Minister Bartlett has opened the Global Tourism Resilience & Crisis Management Centre located at The University of the West Indies. The nation's Prime





Minister, the [Hon. Andrew Holness](#), supported this important milestone in global travel and tourism security, making Jamaica the home of tourism resilience and a worldwide benchmark of excellence in tourism. Other countries, including Malta and Nepal, are now part of the Jamaican model and have opened satellite centers as well.

No longer is Jamaica seen as a country with a crisis. Former [U.S. President Clinton](#) was fascinated when he discussed the Global Tourism Resilience and Crisis Management Center with Jamaica Minister Bartlett during the recent World Travel & Tourism Council (WTTC) Summit in Seville, Spain.

A preliminary conclusion to be drawn is that those nations that embrace tourism security and safety not only become **world leaders** but it also adds to their nation's economic growth and prosperity.

*Juergen Thomas Steinmetz has continuously worked in the travel and tourism industry since he was a teenager in Germany (1977). He founded eTurboNews in 1999 as the first online newsletter for the global travel tourism industry.*

*Peter Tarlow is a member of the Editorial Board of the C<sup>2</sup>BRNE Diary*

## **Ground-Breaking Personal Mobility Solution Tested by Israel Police**

Source (+video): <https://i-hls.com/archives/93342>

July 24 – A ground-breaking Israeli development is currently undergoing a testing and confirmation process by the Israel Police – a four-wheeled tactical vehicle, the **EZRaider**. The DSRaider company is offering an innovative personal mobility solution for a wide range of missions by police and law enforcement, HLS (internal security), the military, home front command, and for any scenario of search and rescue, equipment transportation, injured evacuation, etc.

Chief Superintendent Amit Lifschitz, Head of Mechanics, Protection and Weapons Dept./ MAFAT/ Technology and C4I Branch, the vehicle will widen the envelope of the operational capabilities of the



various units of the Israel Police, which has been making constant efforts in order to implement advanced technological solutions based on an innovative and open approach.



## C<sup>2</sup>BRNE DIARY – August 2019

MAFAT (Technological Systems Development Dept.) headed by Commander Ofer Shenhav, is a department within the framework of the Technology and Teleprocessing Branch. It is responsible for the deployment of new measures and technologies at the Israel police in order to improve the operational response of the Police in its war against crime, terrorism and road accidents, and as result – to improve citizen services.

MAFAT operates in three major ways:

- Identifies operational needs and develops the appropriate technology
- Upgrades and changes existing equipment according to the police needs
- Tests the operational suitability of an off-the-shelf product

The **EZRaider** electric vehicle constitutes **a new category in the vehicle field**. The vehicle can carry two policemen and can be attached to a cart capable of carrying up to a 250 kg payload, designed for the logistical supply of ammunition, water and equipment, injured evacuation with a and other needs.

The compact vehicle demonstrating exceptional maneuverability has many advantages, including high speed (up to 40 km h), driving 4-5 hours on a single charge, a very low noise signature and an impressive navigability in various terrains, e.g. sidewalks, stairs, sand, deep mud, water paths and more, which enable response to a wide range of operational scenarios. The fact that two officers can use one vehicle is just another advantage, in comparison to electric bicycles, for example.

MAFAT, in collaboration with the police's Transportation Department, has conducted a testing process in order to check the vehicle's



capabilities, performance envelope, suitability with operational needs, and, of course, the reliability of the automotive systems and the body of the vehicle.

The vehicle use was tested by various units, including the Israel Border Police, whose commander, Maj. Gen. Kobi Shabtai was part of the development process, contributing to a large extent from his



operational experience.

"The vehicle excels in rapid and discreet arrival to the scene and its unique navigability and accessibility", adds Chief Superintendent Lifschitz. "The vehicle is capable of climbing to observation posts, rocky hills, conduct a swift chase, and pass urban obstacles such as stairs, beach sand, and more."

Indeed, an alert regarding a pickpocket operating at the beach just during the testing process in Tel-Aviv was responded by the vehicle's arrival at the scene within one minute, and thanks to its navigability capabilities in harsh terrain the policemen succeeded in arresting the pickpocket in action.

The various use cases of the vehicle could include urban patrol – on the street, along the promenade, at the beach, missions that will require higher visibility, e.g. by adding flashing lights. On the other hand, special units operations will require low noise signature.



**EZRaiders** was also tested from the aspects of automation, navigability, mechanics, etc., and was granted a professional approval regarding the perfection of all its systems by Magal Engineering.

Safety and the correct usage of the vehicle were regarded as first priority by the police. During the process, a training program was set and operational tests were executed, including the testing of the vehicle's performance envelope from the aspects of safety and capabilities.

A dedicated training and instruction array was formed, in collaboration with the police Transportation Department headed by Commander Ya'akov Lazar. The Department is responsible for the instruction, training, and engineering testing, and is part of the testing process all along the way. Until now, the vehicle had zero faults.

MAFAT submitted its conclusions to the organization, and a process began in order to check the possibility of police use of the vehicle, including instruction, maintenance, training, and of course – an operational concept.

According to MAFAT, the company has collaborated with the police in any possible way, has been responsive to all its needs, and has demonstrated flexibility during the complex process of integrating new technology in the police.

## **Israeli Ports Confronting GPS Jamming**

Source: <https://i-hls.com/archives/93375>



July 25 – In recent years, incidents of GPS tampering have disrupted the flow of commerce within ports around the world by blocking the signals needed for crane operators to locate and move goods. Last year, \$500,000 were allocated to the US Coast Guard to study this problem.

**In Israel, during the last two months, the Haifa and Ashdod ports have been experiencing disruptions in the operation of cranes and the location of containers, due to problems with GPS-based systems.**

A source involved with one of the ports was cited by clacalist.co.il as saying that “a month ago, disturbances have been demonstrated at the system installed at the port's cranes, assisting in unloading ships. The workers had to shift to manual operation of the crane and delays were caused to the unloading process”.

Systems installed at the ports guide the port cranes work through a GPS system connected to the port's main transmitter.

This is not the first time that GPS jamming interferes with transportation in Israel. Last month, the Israel Airports Authority announced that GPS jamming at the Ben-Gurion airport area were disturbing the aircraft traffic. As result, the Authority changed the landing tracks and

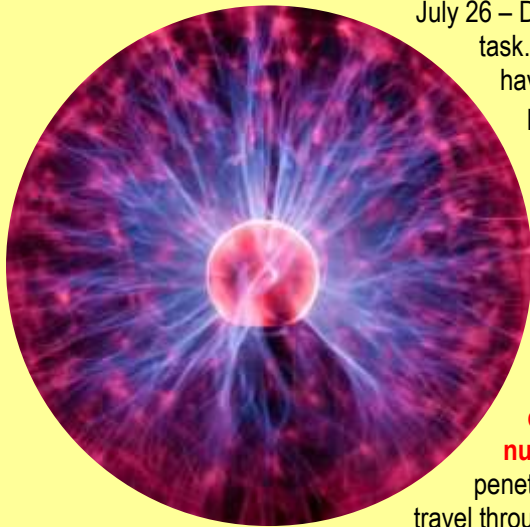




ordered the aircraft crews to use other landing methods. **According to foreign publication, the jamming efforts have been operated from Syria.**

## Plasma Laser Balls Developed to Deter People from Carrying out Violence

Source: <https://i-hls.com/archives/93312>



July 26 – Deterring people from engaging in violence has always been a very difficult task. Realistically, there will never be a legitimate solution to it since people have the right of discretion. What if there was a non-lethal way to discourage people from acting violent? Researchers have recently developed a “plasma ball” that can inflict pain on criminals who are creating conflict, rather than just killing them. However, the plasma ball does not only transmit pain, but it also gives the military the power to communicate with the threatening people from a relatively distant range away. This could potentially put a stop to people invading sensitive areas such as convoys and forward bases.

Currently, the plasma ball does not have the power to travel that far away. **Researchers are planning on improving the technology so it could travel up to around 100 meters and then eventually up to numerous kilometers away.** As of right now the plasma ball can only penetrate through glass, but researchers are preparing it to have the ability to travel through any solid barrier ultimately, according to [militarytimes.com](http://militarytimes.com).

The plasma ball can induce a form of pain that is pretty excruciating. It uses lasers to heat up an intruder’s skin to the point where it is physically agonizing. The way the laser creates plasma is by stripping electrons off a gas at a very short pulse rate through the use of high-energy lasers. The laser then pokes very tiny holes into the invader’s skins causing nerve responses to set off. The pain should be at a high enough point to distress the person and prevent them from intruding into these sensitive areas.



The plasma ball can also act similar to a flashbang grenade, as it pulses 155 decibel frequencies to fluster people and make them take off. Researchers are figuring out the appropriate wavelengths in order for the plasma ball to have the capability of mimicking human speech. This could let the military warn intruders before being forced to provoke pain on them. Researchers are not planning on creating the voice



command system to be perfectly comprehensible, but just enough for intruders to understand the message.

This technology was designed by the Laser Induced Plasma Effect program which stems from the Joint Non-Lethal Weapons Directorate program. The plasma ball is expected to be ready for use in the next five years.

## **Enhanced Security Starts at Entrance Door**

Source: <https://i-hls.com/archives/93307>

July 26 – **Sidegating, when two people attempt unauthorized side-by-side entry through a turnstile,** has become a growing security issue as changing regulations and customer demands for increased pedestrian and wheelchair user comfort dictate the need for wider turnstiles.

If a lane is wide enough to comfortably fit a wheelchair, it is also wide enough to fit two pedestrians' side-by-side. Until now, turnstiles have been unable to detect this kind of behavior, which leads to increased risk for unauthorized access and security breaches.

A new optical technology reduces the risk of this problem. Smarter Security, the intelligent entrance controls company, has launched its Fastlane Glassgate 155 intelligent optical turnstiles solution, claiming that security teams must approach insider threats and collusion with a layered security strategy that starts at the front of the building.

The optical turnstile technology is the first of its kind to identify and alert when sidegating is occurring. The ability for users to self-manage without the oversight of a dedicated security officer enables to achieve significant ROI.



An intelligent infrared matrix powered by neural network algorithms senses who or what is going through the turnstile in real-time and makes thousands of calculations per second based on speed of passage, luggage being carried or pulled, distance to the pedestrian behind and direction of movement, to determine if the entry should be authorized.

The system can distinguish between people and objects to minimize nuisance alarms, and process unsurpassed throughputs of up to one person per second. The system eliminates false alarms, improves compliance and strengthens effective building security, according to the company website.

IP communication and control maximizes uptime and improves performance.

The turnstiles are installed in thousands of iconic building lobbies, government buildings, corporate campuses and universities around the world, according to [campussafetymagazine.com](http://campussafetymagazine.com).



## Multi-Sensor Payload Assists in Real-Time Decision Making

Source: <https://i-hls.com/archives/93359>

July 27 – A new highly stable drone payload has recently been unveiled by an Unmanned Aerial Systems company. The payload, Trion, is a multi-sensor payload that is gyro-stabilized. Developed by Airobotics, Trion is the company's first payload that is developed and manufactured in house.

**Trion is a relatively small payload, weighing in at less than 1.2 kilograms.** The payload comes with high definition infrared and electro-optical sensors, giving off high definition images and videos by day and thermal vision when dark.

Airobotics have also integrated its data insights platform with Trion, meaning Trion is not just a pair of high tech eyes, but also a brain. It has various unique capabilities granting the operator superior object identification and tracking capabilities. The payload is also capable of gathering and storing data, then marking in real time for operators areas of interest such as security incidents and long range target tracking. This helps operators make informed decisions during real time operations.

Trion is capable of operating in all situations, day, night, and bad weather. Airobotics have also equipped the payload with continuous 360-degree panorama view and optical zoom capabilities.

Trion has been designed for maximum versatility. Uasvision.com mentions that Trion can be easily integrated into several Unmanned Aerial Systems, vehicles, and ground applications. Therefore, vastly increasing the flexibility and ease of data collection from the field.



## Hamad International Airport ranked second among world's best airports

Source: <https://www.qatarliving.com/travel-tourism/posts/hamad-international-airport-ranked-second-among-worlds-best-airports>



July 30 – *Hamad International Airport (HIA)* is on a transformational journey under its Smart Airport Program, designed to take customer experience to new heights.

*With several features added to enhance the airport experience*, HIA has once again been recognized among the world's leading airports.

HIA secured the second spot in the prestigious '2019 Travel + Leisure World's Best' awards that evaluate airports based on direct feedback and votes of their readers.





The criteria for review and assessment of the world's best airports include access, check-in, security, restaurants, shopping, and design.



HIA continues to position itself as a leading global aviation hub, focused on redefining airport experiences for travelers from across the globe.

HIA has achieved significant milestones within the criteria for which it has been voted as the second-best international airport.

HIA introduced the biometric-enabled self-check-in and bag drop counters, which have made the process of check-in much more convenient.

This also allows more passengers to be managed without physical expansion of the check-in facilities.

As part of its commitment to providing a seamless

transfer experience for passengers while ensuring high standards of security, HIA increased its security capacity for screening in its transfer areas and reduced queuing time.

The airport has also further improved customer service in the transfer security areas, allowing at least 95 percent of its transfer passengers to queue for under five minutes.

HIA chief operating officer Badr Mohamed Al Meer said, "We are very proud to be recognized by our loyal passengers for the seamless airport experience offered by Hamad International Airport."

"To be named the World's Second-Best Airport is a great achievement and testament to HIA's high international standards. While this is a great recognition, we never rest on our achievements, and constantly evolve to deliver a [truly] unique experience for our passengers," Al Meer said.

Earlier this year, [HIA was recognized as the fourth-best airport in the world at the Skytrax World Airport Awards 2019.](#)

Classified as a five-star airport, HIA is one of only five airports to achieve this outstanding rank.

## ISIS Claims More Than 1,800 Attacks in First Half of 2019

By Bridget Johnson

Source: <https://www.hstoday.us/subject-matter-areas/terrorism-study/isis-claims-more-than-1800-attacks-in-first-half-of-2019/>

July 30 – ISIS claims it has conducted more than 1,800 attacks in the first half of this year, and separately distributed a list of appropriate countries to strike due to their associations with the United States.

ISIS cells around the globe, from Africa to Asia, have been releasing videos vowing renewed allegiance to leader Abu Bakr al-Baghdadi, with several releases so far in the series "The Best Outcome Is for the Pious."

The infographic released by the terror group's Amaq news agency says that their attacks since the beginning of 2019 have killed and wounded more than 8,000 people and "wrecked & destroyed" 834 vehicles.

With a map graphic, ISIS claims 12 attacks in Libya, 135 in West Africa, 112 in Egypt, and 18 in the Democratic Republic of the Congo, where the group claimed its first attack in April, and Mozambique.

They also claimed 534 attacks in Syria, 666 in Iraq, 180 in Afghanistan, 46 in Yemen, 12 in Pakistan, 45 in Somalia, and 21 in the Philippines and Indonesia. Twenty-two more attacks, for a total of 1,803, included places such as Sri Lanka, where 259 people were killed in coordinated Easter bombings.

The ISIS infographic counted Sri Lanka among its "most significant events" of the first half of the year, stressing the targeting of churches and hotels with "nationals from international coalition countries."

Syria and Iraq were labeled significant for continued attacks in their former caliphate; Iraq attacks were characterized as "continuous operations to drain through attrition the Iraqi army, Iraqi police, Peshmerga," etc.



Jihadists were also lauded for the front they opened in Ebola-stricken DRC as well as multiple attacks across Nigeria, Niger, Chad, Cameroon, Mali and Burkina Faso. ISIS claimed last month's bombings at a base in the Philippines, and said they were "extending security operations" to new parts of Afghanistan. Separately, ISIS media channels distributed a list of countries "led by U.S. in war against the Islamic State." The target list also includes organizations: the Arab League, the Community of Sahel-Saharan States (CEN-SAD), INTERPOL, NATO and the European Union.



ISIS supporters who boost the terror group's recruitment and incitement operations through a glut of online propaganda posters have been lately [concentrating on London](#) in their barrage of threats. One image of Big Ben vows that "Crusaders" will "soon be pursued in your own homeland." It bears the branding of "Greenbirds," a reference to jihadists killed while conducting terror attacks.

"Greenbirds" also appears on an image of 10 Downing Street in flames, declaring "the mujahideen's fire will burn soon. Just you wait." Earlier in the month, ISIS supporters depicted a camouflage-clad child armed and sitting in front of Big Ben, with the text "London, stay tuned for the invasions of Caliphate cubs." ISIS refers to its jihadists

as "lions" and kids in their training programs as "cubs." The same image, in Arabic, was circulated in June. Around the same time, another "Greenbirds" poster depicted an explosion on the edge of Tower Bridge, with the words, "The London Bridge will fall soon."

*Bridget Johnson is the Managing Editor for Homeland Security Today. A veteran journalist whose news articles and analyses have run in dozens of news outlets across the globe, Bridget first came to Washington to be online editor and a foreign policy writer at The Hill. Previously she was an editorial board member at the Rocky Mountain News and syndicated nation/world news columnist at the Los Angeles Daily News. Bridget is a senior fellow specializing in terrorism analysis at the Haym Salomon Center. She is a Senior Risk Analyst for Gate 15, a private investigator and a security consultant. She is an NPR on-air contributor and has contributed to USA Today, The Wall Street Journal, New York Observer, National Review Online, Politico, New York Daily News, The Jerusalem Post, The Hill, Washington Times, RealClearWorld and more, and has myriad television and radio credits including Al-Jazeera and SiriusXM.*

## UN Warns Islamic State Leader Plotting Comeback from Iraq

Source: <http://www.homelandsecuritynewswire.com/dr20190730-un-warns-islamic-state-leader-plotting-comeback-from-iraq>

July 30 – The Islamic State terror group's self-declared caliphate may be dead, but its leaders are hanging on in Syria and Iraq, dreaming of the day when they can again direct attacks on targets around the world.

The conclusion is part of a sobering assessment in a newly released quarterly United Nations report on IS, also known as ISIS or ISIL, which warns the epicenter for the terror group's budding renaissance is Iraq, "where Abu Bakr al-Baghdadi and most of the ISIL leadership are now based."

"The leadership aims to adapt, survive and consolidate in the core area and to establish

sleeper cells at the local level in preparation for eventual resurgence," the report cautioned. "When it has the time and space to reinvest in an external operations capability, ISIL will direct and facilitate international attacks."

In the meantime, the report warns the terror organization, "has continued its evolution into a mainly covert network," since the fall of Baghuz, the last territory it held in Syria, this past March. While the assessment that Baghdadi is operating mostly out of Iraq is new, the other warnings are similar to concerns voiced by U.S. officials and others dating back to last year.



IS “is well-positioned to rebuild and work on enabling its physical caliphate to re-emerge,” Pentagon spokesman Commander Sean Robertson told VOA last August.

“This is not the end of the fight,” U.S. Special Representative for Syria, Ambassador James Jeffery, said this past March, following the fall of Baghuz.

More recently, a report by the Washington-based Institute for the Study of War (ISW), said the terror group is poised for a comeback that “could be faster and even more devastating” than when it first swept across parts of Syria and Iraq.

Intelligence from U.N. member states anticipates that “comeback” will take place in the Syrian and Iraqi heartlands, where IS has the majority of its estimated 10,000 to 15,000 fighters, many in clandestine cells.

Echoing U.S. intelligence and military assessments, the U.N. report stated IS operations are more advanced in Iraq but that its operatives are still able to move freely across parts of both Iraq and Syria.

The group’s attacks, which seem to be coming with increased frequency, appear aimed at frustrating the local populations, for example burning crops in northern Iraq to prevent any steps toward recovery and stabilization.

“Their hope is that the local populations will become impatient, blame the authorities and grow nostalgic for the time when ISIL was in control,” the report said, adding member states fear it may be working.

At the same time, intelligence officials said IS is effectively using its media and propaganda arms to maintain relevance until such time that it is again ready to strike on the global stage.

Adding to the concerns of intelligence officials around the world are the large number of foreign fighters that may still be at large, either in Syria and Iraq, or in the surrounding countries.

U.S. counterterror officials estimate that more than 45,000 fighters from 110 countries flocked to Syria and Iraq, almost all to fight for IS.

As of earlier this year, as many as 10,000 were thought to be at large, having escaped the fall of the terror group’s caliphate. But the new U.N. assessment warns that number could be higher, and that “up to 30,000 of those who travelled to the so-called ‘caliphate’ may still be alive.”

Despite all this, the U.N. report finds IS still faces some significant challenges, especially when it comes to money.

While IS still has an estimated \$50 million to \$300 million in revenue left over from its self-declared caliphate, the group “is reported to lack liquid funds to run operations,” according to the report. As such, member states told the U.N. that IS operatives have become more dependent on crime while also trying to profit from legitimate businesses.

IS has also become more dependent on provinces and its more established affiliates, so it runs the risk that its agenda will slowly become less international and more regionalized.

And it continues to face stiff competition from its main rival, al-Qaida, as the two terror groups battle in Syria and Iraq, and increasingly in parts of West Africa and the Sahel, for followers.

Al-Qaida, itself, also faces a somewhat uncertain future, at least in the near term, according the U.N. report, with its leader, Ayman al-Zawahiri, “reported to be in poor health and doubts as to how the group will manage the succession.”

## **The Roots of Discrimination Against Immigrants**

Source: <http://www.homelandsecuritynewswire.com/dr20190731-the-roots-of-discrimination-against-immigrants>

July 31 – All over the world, immigration has become a source of social and political conflict. But what are the roots of antipathy toward immigrants, and how might conflict between immigrant and native populations be dampened?

Political scientist [Nicholas Sambanis](#) has spent his career considering various forms of inter-group conflict, starting with civil wars and international interventions to help countries transition from war to peace. More recently, he has studied nonviolent forms of conflict, including discrimination between individuals of different ethnic or religious background. Understanding why groups come into conflict and how to resolve those conflicts and avoid violent escalations is the





mission of the [Penn Identity and Conflict \(PIC\) Lab](#), which he founded when he arrived at Penn in 2016. His [newest research](#) on identity politics, an experimental approach that explores the causes of discrimination against Muslim immigrants in Germany, was published in the *Proceedings of the National Academy of Sciences*.

“Opposition toward immigration can be due to economic reasons because of competition for jobs or due to the perceived cultural threat that immigrants pose to their host country by challenging dominant norms and changing the national identity,” he says.

He finds arguments centered on cultural threat more convincing than economic explanations of opposition to immigration, especially in Europe.

“Most previous research is limited to presenting survey-based attitudinal measures of antipathy toward immigrants or refugees and correlating them with socioeconomic characteristics of the survey respondents or their political beliefs,” Sambanis says. “We wanted to go beyond that and measure actual behavior in the field. We wanted to figure out what particular aspects of refugees or immigrants generate more hostility. Is it racial differences? Ethnic differences? Is it linguistic or religious differences? Is there merit to the idea that discrimination toward immigrants is due to the perception that they do not follow the rules and threaten dominant social norms?”

There’s very little experimental research, Sambanis says, on the causes of anti-immigrant bias, and even less research on how to reduce it.

Penn [says](#) that Sambanis, working with University of Pittsburgh assistant professor [Danny Choi](#), a former PIC Lab postdoc, and [Mathias Poertner](#), a PIC Lab fellow and postdoc at the University of California, Berkeley, designed the experimental study. They targeted Germany because of the high influx of immigrants and refugees and the political salience of immigration issues in recent elections there, and because Germans are strongly inclined toward conforming with social norms, especially around keeping order.

Their hypothesis: If it is true that opposition to immigration is driven by the perception that immigrants threaten valued social norms and pose a cultural threat, then in a country that values norm adherence they would see a reduction in discrimination toward immigrants if immigrants show that they respect local social norms and care about their new society.

They staged an intervention against a native male German who littered in a public space, since not littering is a social norm there. A female researcher would approach the person littering, asking him to pick up his trash and dispose of it properly. Bystanders, unaware that they were being studied, observed the interaction. Shortly thereafter, the woman would take a call and while speaking on the phone would drop a bag of groceries, causing oranges to spill out on the floor. The observing researchers recorded whether the bystanders who had witnessed this entire interaction helped the woman pick up her oranges.

In some versions, the woman dropping the oranges would have sanctioned the norm violator, signaling her integration with the German culture. In others, she did not intervene so as to seem indifferent to the littering.

Researchers also used the woman’s identity as a variable: In some versions, she was a native German, in others a Muslim immigrant wearing a hijab. Her degree of religiosity, her ethnic background, and her linguistic assimilation to German society were all manipulated as part of the experiment.

This allowed the researchers to measure whether immigrants who are more socially distant than the average German receive less assistance and whether following social norms offsets any bias toward them.

They ran this experiment more than 1,600 times in train stations in 30 cities in both western and eastern Germany using multiple teams of research assistants, with more than 7,000 bystanders unwittingly participating. Then, the researchers measured whether women who wore a hijab received less assistance than native Germans, whether ethno-racial differences between immigrants matters less than religious differences in generating bias, whether immigrants who wore a cross received more help than those who did not wear any outward symbols of religiosity, and whether good citizenship—enforcing anti-littering norms—generated more help from bystanders, eliminating any bias against immigrants.



"We found that bias toward Muslims is too pronounced and is not overcome by good citizenship; immigrant women who wore a hijab always received less assistance relative to German women, even when they followed the rules," Sambanis says.

"But we also found that good citizenship has some benefit, as the degree of discrimination toward Muslims goes down if they signal that they care about the host society. And ethnic or racial differences alone do not cause discrimination in our setup. Nor is religious assimilation—wearing a cross rather than a hijab—necessary to be treated with civility."

On average, women wearing a hijab who did not enforce the norm got help in about 60% of cases, whereas "German" women who did scold the litterer got help in 84% of the cases. The rates of assistance offered to a Muslim who enforced social norms by scolding the litterer were equivalent to those for a German who did not enforce the norm.

"The reason to run such an experiment focusing on everyday interactions is that it gives you a sense of the accumulated impact of discrimination in shaping perceptions of identity and belonging," Sambanis says. "Getting help to pick up something you drop on the floor seems like a small thing. But these small things—and small slights—add up to form lasting impressions of how others perceive you and, in turn, can inform the immigrants' own attitudes and behavior toward the host society."

Now, Sambanis, Choi, and Poertner are extending their research to new questions trying to understand the mechanisms underlying the effects they picked up with their experiments in Germany.

This collaborative effort between Sambanis, Choi, and Poertner will become a book on how conflict between immigrants and native populations can be managed and whether norms can form the basis for the reduction in discrimination. The German experiments will be expanded next year and applied to a different social context in Greece, which also faces an intense political crisis due to unsustainably high levels of immigration, and which differs from Germany with respect to the degree of public adherence to laws and rules.

Individuals there are less likely to follow rules and contribute less to the public good. So Sambanis and his co-authors think they may observe even lower effects of the ability of social norms to offset discrimination due to ethno-religious differences. That research will provide a useful comparison to better understand the existing experimental results.

"A key idea in sociobiological theories of intergroup conflict is that there is an almost innate antipathy or suspicion toward members of 'out groups' [immigrant], however those groups are defined. But clearly societies can manage sources of tension and avoid conflict escalation since there is very little observed conflict relative to how many different types of intergroup differences exist out there," Sambanis says. "A lot of the literature on immigration has suggested that assimilation is the key to reducing conflict between natives and immigrants—immigrants must shed their names, change their religion, or hide their customs so they can be more accepted."

"Is this really necessary? Or is it enough for immigrants to just signal credibly that they care about being good citizens as much as everybody else?"

Understanding these types of questions is at the heart of the PIC Lab's mission. A unifying theme of Sambanis' work has been reducing intergroup conflict, particularly interethnic conflict.

His interests were shaped by the wars in Bosnia and Rwanda, which were going on when he was in graduate school and pushed him away from international economics and toward studying peacekeeping. At the PIC Lab, researchers tackle questions both at the larger country level and at the smaller individual and group level, integrating ideas from political science, social psychology, and behavioral economics to understand human behavior and explore the outcomes of different policy interventions to reduce conflict. The lab conducts data-based, mostly quantitative research that can inform policy design but also theory-building in political science, Sambanis says.

"Ethnic differences, religious differences, racial differences—they all matter for politics, but they do not need to produce conflict," he says. "When people are faced with the hard realities of ethnic wars, separatist conflicts, genocides, or hate crimes, they usually assume that these are inevitable outcomes of innate human prejudices or fears and that people just can't get along because of deep differences in their preferences or their customs."



“A lot of the work that I do shows that ethnic conflict is not inevitable. The key is to understand the conditions that make ethnic differences salient and then find ways to defuse or manage conflict.”

## Adopting the Original Definition of Asylum

Source: <http://www.homelandsecuritynewswire.com/dr20190820-adopting-the-original-definition-of-asylum>

Aug 20 – [Negative Population Growth](#) (NPG), a non-profit organization advocating a gradual reduction in the U.S.(and the world's) population, has released a research paper that examines the current asylum crisis by taking a look back at U.S. policies and where the nation stands now.

The paper, titled [The Asylum Crisis: What Can We Do?](#), written by NPG researcher Edwin S. Rubenstein, examines who should be considered a refugee based on the UN's definition of the term.

Beginning with the story of the S.S. St. Louis in 1939, Rubenstein describes the time in history when 937 Jewish refugees fled Nazi persecution only to be returned to Europe because no country would accept the group. Because of this occurrence and others like it, years later, during the 1951 UN Convention on Refugees, the definition of refugees was redefined as “a person outside of his or her home country who cannot return home because of a ‘...well-founded fear of being persecuted for reasons of race, religion, nationality, membership of a particular social group or political opinion.’”

Rubenstein goes on to say: “There are a lot of things the Trump administration can do to resolve the current border crisis, but getting rid of the asylum process is not one of them. We signed the UN refugee convention. Its standards have been added to U.S. immigration law, which the President cannot change.” After establishing that the United States cannot simply opt-out of accepting all refugees seeking asylum, Rubenstein noted what President Trump tried to accomplish: “U.S. immigration law gives the President broad authority to restrict the entry of illegal aliens into the United States if he determines it to be in the national interest to do so. On November 8th, 2018 the acting Attorney General (AG) Matthew Whitaker declared that migrants crossing the southern border between official ports of entry would be ineligible for asylum... Had the rule been allowed to stand, illegal border crossers would have been subject to deportation. Unfortunately, ‘That rule was blocked by the courts.’”

Because of the push back, Rubenstein goes on to describe three alternate remedies to solve the current crisis.

The first remedy was to weaponize the U.S.–Mexico trade policy which, Rubenstein noted, did, in fact, affect the number of refugees seeking asylum: “According to the Pew Research Center, Mexico deported 64,000 migrants from Honduras, Guatemala and El Salvador in the first seven months of FY 2019.”

The second remedy was the Safe Third Nation Law, about which Rubenstein states: “This policy emerged in July 2019, when Trump administration officials said they would deny asylum to Central American migrants who failed to apply for asylum in the first safe country they passed through on their way north.”

The third remedy was a humanitarian program based in Mexico. This remedy “would open refugee application offices at U.S. consulates in Mexico and Central America ...Applicants for refugee status receive more comprehensive vetting - which helps exclude criminals, terrorists, and other undesirables - than do asylum claimants. And illegal entrants who refuse to apply as special humanitarian refugees can be denied both entry and asylum under our laws.”

Rubenstein summarized the U.S. asylum issue: “Our border is out of control, and asylum abuse is the reason. Due to a huge number of bogus asylum claims, a process designed to provide refuge to the oppressed has become an enabler for out-of-control illegal immigration... **Asylum was designed to protect individuals fleeing persecution, not those fleeing poverty.** Until this distinction is firmly entrenched in legal practice, our national sovereignty will be at risk.”

NPG Executive Vice President Craig Lewis said: “Ed’s ability to examine the facts of both what has happened in the past and the current tensions surrounding refugees seeking asylum in order to fully understand where the U.S. stands today, is exactly what we need. We must act now to slow, halt, and eventually reverse population growth in our nation. With the intention of reducing our population numbers, we cannot turn a blind eye to current events, instead we must continue to include these issues in our conversations.”





**EDITOR'S COMMENT:** It would also be good to define when a refugee is becoming an immigrant. Certain high officials need to open a book from time to time.

## Killed: Hamza bin Laden, son and heir of Osama bin Laden

Source: <http://www.homelandsecuritynewswire.com/dr20190801-killed-hamza-bin-laden-son-and-heir-of-osama-bin-laden>

Aug 01 – **Hamza bin Laden, the son and heir of al-Qaeda founder Osama bin Laden, has been killed in a U.S.-supported operation,** according to different media reports.

U.S. officials, speaking on the condition of anonymity, on Wednesday confirmed the death of Hamza bin Laden, who was in his early 30s, first reported by [NBC News](#).



[The New York Times](#) later [reported](#) the younger bin Laden had been killed within the past two years in an operation that involved the United States. Officials told the *Times* the government had yet formally to confirm his death and refused to share additional details.

The U.S. had been [offering a reward of up to \\$1 million](#) for information leading to the capture or death of Hamza bin Laden, who was by his father's side when al-Qaeda launched the Sept. 11, 2001, terror attacks against New York's World Trade Center and the Pentagon.

Letters found at Osama bin Laden's compound in Abbottabad, Pakistan, show that Hamza bin Laden had been groomed from an early age to succeed his father as the leader of the terror group.

VOA News reports that [the correspondences](#), captured by U.S. Special Forces soldiers during the May 2011 raid which killed Osama bin Laden, also show that the al-Qaeda founder was planning to have his son join him in Pakistan.

Notes from other senior leaders of Al-Qaeda, sent to the senior Bin Laden, show that these other leaders were worried that any attempt to smuggle Hamza bin Laden out of Iran and into Pakistan would be noticed, leading the United States to the senior Bin Laden's hideout.

The [Guardian reports](#) that in recent years, Hamza bin Laden had been gaining more influence within al-Qaeda, first having been officially introduced to the terror group's followers by current al-Qaeda leader Ayman al Zawahiri in a 2015 audio recording.

The U.S. first designated Hamza bin Laden as a Specially Designated Global Terrorist in January 2017. In his most recent video, issued in March 2018, Hamza bin Laden picked up on one of his father's favorite themes, denouncing the founders of Saudi Arabia's current monarchy as traitors to Islam. He also blamed the kingdom's close ties with the U.S. for the deaths of "hundreds of thousands" of Muslims.

Previously, Hamza bin Laden also issued calls for attacks on the United States to avenge his father's death.

Ali Soufan, a former FBI agent and counterterror expert, [told](#) VOA that the operation to kill Hamza bin Laden could have far-reaching implications.

"Hamza's death will be a significant blow to al-Qaeda's future plans on passing the leadership to the younger generation, and to reunifying the salafi-jihadi movement under another Bin Laden," Soufan told VOA via email.

**"There are probably other veteran al-Qaeda operatives ahead of him in the pecking order, so I doubt that he was next in the group's line of succession,"** Thomas Joscelyn, a senior fellow at the Foundation for Defense of Democracies, told VOA. "But there's no question al-Qaeda groomed him to be a key leader, someone who could articulate his father's conspiratorial worldview to a younger generation of jihadists."

The death of Hamza bin Laden may make it more difficult for the group to compete with the Islamic State for followers and recruits.



"For al-Qaeda, this has left the group without a charismatic and recognizable voice, which may limit its presence on the global stage," said Katherine Zimmerman, a research manager with the Critical Threats Project.

"But the decapitation strategy does not end the threat al-Qaeda poses to the U.S.," she added.

Earlier this week the UN released a report, based on the intelligence of member states, which said that terror groups aligned with al-Qaeda appear to be stronger than their IS-aligned rivals. But it also raised concerns about al-Qaeda's central leadership.

**"The immediate global threat posed by al-Qaeda remains unclear, with Aiman Muhammed Rabi al-Zawahiri (sic) reported to be in poor health and doubts as to how the group will manage the succession,"** the UN report said.

Hamza bin Laden was married to the daughter of al-Qaeda senior leader Abdullah Ahmed Abdullah.

Abdullah was convicted in the United States for involvement in the August 1998 bombing of the U.S. embassies in Dar es Salaam, Tanzania and Nairobi, Kenya, which killed 224 people and wounded thousands of others.

Despite Wednesday's report saying that the younger Bin Laden had been killed sometime in the last two years, earlier this year, the State Department offered a reward of up to \$1 million for information that would lead to him being brought to justice. That offer of a reward corresponded with Saudi Arabia revoking his citizenship. Despite the (alleged) death of the younger Bin Laden being widely reported by media organizations worldwide, a puzzling aspect is the Al Qaeda organization's reaction. Simply put, there hasn't been one. No confirmation. No eulogy, No explosion of online chatter, lamentations, or threats of reprisals. Perhaps Al-Qaeda, knowing value of Hamza's name and the role for which he was being groomed, may be hiding the fact of his death. Only time will tell.

## The INF Treaty Officially Died Today

By Matt Korda and Hans M. Kristensen

Source: <https://fas.org/blogs/security/2019/08/inf-treaty-died-today/>

Aug 02 – Six months after both the United States and Russia announced suspensions of their respective obligations under the Intermediate-Range Nuclear Forces Treaty (INF), the treaty officially died today.



The Federation of American Scientists strongly condemns the irresponsible acts by the Russian and US administrations that have resulted in the demise of this historic and important agreement.

In [a they-did-it statement](#) on the State Department's web site, Secretary of State Michael Pompeo repeated the accusation that Russia has violated the treaty by testing and deploying a ground-launched cruise missile with a range prohibited by the treaty. "The United States will not remain party [sic] to a treaty that is deliberately violated by Russia," he said.

By withdrawing from the INF, the Trump administration has surrendered legal and political pressure on Russia to return to compliance. Instead of diplomacy, the administration appears intent on ramping up military pressure by developing its own INF missiles.

Signed in 1987, the INF Treaty dramatically helped reduce nuclear threats and stabilize the arms race for thirty-two years, by banning and eliminating all US

and Russian ground-launched missiles with ranges between 500 and 5,500 kilometers—a grand total of 2,692 missiles. And it would have continued to have a moderating effect on



US-Russia nuclear tensions indefinitely, if not for the recklessness of both the Putin and Trump administrations.

The United States first [publicly accused](#) Russia of violating the treaty in its July 2014 Treaty Compliance Report, stating that Russia had broken its obligation “not to possess, produce, or flight-test a ground-launched cruise missile (GLCM) with a range capability of 500 km to 5,500 km, or to possess or produce launchers of such missiles.” Russia initially denied the US claims, repeating for years that no such missile existed. However, once the United States publicly named the missile as the 9M729—or SSC-8, as NATO calls it—Russia acknowledged its existence but [stated](#) that the missile “fully complies with the treaty’s requirements.” Since then, the United States [claimed](#) that Russia had flight-tested the 9M729 from fixed and mobile launchers to deceive, and has [deployed](#) nearly a hundred missiles across four battalions.

[We assess](#) that involves 16 launchers with 64 missiles (plus spares), likely collocated with Iskander SRBM units at Elanskiy, Kapustin Yar (possibly moved to a permanent base by now), Mozdok, and Shuya. It is possible, but unknown, if more battalions have been deployed.

It is possible that Russia made the decision to violate the INF Treaty as early as 2007, when its UN proposal to multilateralize the treaty failed. Although it’s likely that the groundwork was laid even further back. According to Putin, a new [arms race truly began in 2002](#) when the Bush administration withdrew from the Anti-Ballistic Missile Treaty—understood by Putin to be the cornerstone of the US-Russia arms control regime.

For its part, Russia has responded to US accusations with [claims](#) that the United States is the true violator of the treaty, stating that US missile defense launchers based in Europe could be repurposed to launch INF-prohibited missiles, among other violations. In a detailed report, the Congressional Research Service has [refuted](#) all three accusations.

Regardless of who violated the INF, the Trump administration’s decision to kill the treaty is the wrong move. As we wrote in the [Bulletin of the Atomic Scientists](#) when Trump first announced his intention to quit the treaty, withdrawal establishes a false moral equivalency between the United States, who probably isn’t violating the treaty, and Russia, who probably is. It also puts the United States in conflict with its own key policy documents like the [Nuclear Posture Review](#) and public statements made last year, which emphasized bringing Russia back into compliance through diplomatic, economic, and military measures. The bottom line is this: when someone breaks the law, you shouldn’t throw away the law. By doing so, you remove any chance to hold the violator accountable for their actions. If the ultimate goal is to coax or coerce Russia back into compliance with the treaty, then killing the treaty itself obviously won’t achieve that. Instead, it legally frees Russia to deploy even more INF missiles.

The decision to withdraw wasn’t based on long-term strategic thinking but appears to have been based on ideology. It was apparently the product of National Security Advisor John Bolton—a hawkish [“serial arms control killer”](#)—having the President’s ear. Defense hawks chimed in with warnings about Chinese INF-range missiles being outside the treaty (which they have always been) and recommendations about deploying new US INF missiles in the Pacific.

Now, we find ourselves on the brink of an era without nuclear arms control whatsoever. With the demise of the INF, the only remaining treaty – the New START treaty – is in jeopardy, a vital treaty that caps the number of strategic nuclear weapons the United States and Russia can deploy and [provides important verification and data exchanges](#). Although it could easily be extended past its February 2021 expiry date with the stroke of a pen, John Bolton maddeningly [says](#) that it’s “unlikely.” And Russian officials too have begun raising issues about the extension. Allowing New START to expire would do away with the last vestiges of US-Russia nuclear restraint, and open the world up to a new open-ended nuclear arms race. Congress must do whatever it can to convince President Trump to extend the New START treaty.

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## FBI's Director's New Threat Assessment

Source: <https://www.lexology.com/library/detail.aspx?g=beac1126-1d0f-4dd0-b230-865a5ee52019>



Aug 01 – On Capitol Hill last week, an FBI Director provided a troubling update regarding America's national security. Robert Muller's appearance before the House Judiciary Committee and the House Permanent Select Committee on Intelligence regarding his tenure as Special Counsel was not the source of this update, however. It was Christopher Wray, the current Director, who provided a stark warning about the state of terrorism in the United States and who, unfortunately, found his vital message largely eclipsed by his predecessor's appearance.

Appearing before the Senate Judiciary Committee, Director Wray stated that the FBI had recorded nearly 100 arrests of domestic terrorists (individuals motivated by predominantly domestic ideological convictions, like the neo-Confederate views motivating the 2015 Charleston, SC attack) in the past nine months. Adding valuable context, a FBI spokeswoman later indicated that the FBI is aware of 90 domestic terrorism arrests and 100 arrests linked to international terrorism (individuals whose ideological allegiances are predominantly foreign in nature, like the Islamic State or al-Qa'ida) over the same time frame. Capping this segment of his testimony, Director Wray stated: "Needless to say, we take domestic terrorism or hate crimes, regardless of ideology, extremely seriously."

Current trends – like the FBI's monitoring of arrests – indicate that domestic terrorism is nearly as dangerous, and potentially more dangerous to Americans, as international terrorism. However, the Executive Branch is simply not organized to challenge domestic terrorism in the way that post-9/11 reforms harmonized the government's approach to international terrorism. In short, Director Wray's claim is partly rhetorical, since the tools to be any more organized or aggressive against domestic terrorism at the federal level do not yet exist.

The past three administrations have varied greatly in their approach to international terrorism, and some of these efforts have been misguided, others were abject failures, and even certain programs were likely unlawful. This mixed record acknowledged, the re-organization of the intelligence community that led to innovations like the National Counterterrorism Center (NCTC), the employment of State Department and Department of the Treasury authorities against terrorist groups and individuals overseas, and consistent efforts within the intelligence community, law enforcement, and the military to prioritize pressing terrorist threats have achieved real successes. While the world remains violent, a 9/11-style attack against the United States is dramatically more difficult to initiate now that the federal government operates differently. No such architecture exists for domestic terrorism. NCTC, despite its name, is organized to monitor international terrorism. The Department of Homeland Security is oriented towards the country's borders and points of entry. Perhaps wisely, the United States does not have a domestic intelligence service to monitor domestic terrorists, rather a patchwork of law enforcement agencies at the federal, state, and local level are collectively responsible. Continuing, there is no "Domestic Terrorist Organization" designation available to policymakers to enhance efforts against the Atomwaffen Division or violent adherents of QAnon, for example.

Despite domestic terrorism – especially white nationalist motivated terrorism – being an active and serious threat to the country, it is unlikely that Congress will seek to re-organize the federal government in response or encourage large scale re-prioritization across law enforcement. Legislative will, fair concerns over civil liberties, and base domestic political realities will leave men like Director Wray attempting to prevent serious violence perpetrated against the American public with a limited toolkit. To again reference his testimony, "extremely seriously" must be qualified with an expectation that Congress will provide little additional support to aid his efforts. Unlike what Robert Mueller witnessed in the days following 9/11, the current Director's threat assessment will not be matched with an equivalent policy response.



## **U.S. Military Calls ISIS in Afghanistan a Threat to the West. Intelligence Officials Disagree**

Source: <https://www.nytimes.com/2019/08/02/world/middleeast/isis-afghanistan-us-military.html>



American forces from NATO and Afghan commandos at a checkpoint during a patrol against Islamic State militants in eastern Afghanistan last year. American military commanders have described the Islamic State affiliate in Afghanistan as a growing problem. Credit: CreditWakil Kohsar/Agence France-Presse — Getty Images

Aug 02 — Senior United States military and intelligence officials are sharply divided over how much of a threat the Islamic State in Afghanistan poses to the West, a critical point in the Trump administration's debate over whether American troops stay or withdraw after nearly 18 years of war.

American military commanders in Afghanistan have described the Islamic State affiliate there as a growing problem that is capable of inspiring and directing attacks in Western countries, including the United States.

But intelligence officials in Washington disagree, arguing the group is mostly incapable of exporting terrorism worldwide. The officials believe that the Islamic State in Afghanistan, known as Islamic State Khorasan, remains a regional problem and is more of a threat to the Taliban than to the West.

Differences between the American military and Washington's intelligence community over Afghanistan are almost as enduring as the war

itself. The Pentagon and spy agencies have long differed over the strength of the Taliban and the effectiveness of the military's campaign in Afghanistan.

Whether to keep counterterrorism forces in Afghanistan is at the heart of the Trump administration's internal debate over the future of the war.

Ten current and former American and European officials who are familiar with the military and intelligence assessments of the strength of the Islamic State in Afghanistan provided details of the debate to The New York Times. The officials spoke on the condition of anonymity to candidly discuss the issue and confidential assessments of the terrorism threat.

A State Department envoy is leading negotiations for a peace deal that would give the Taliban political power in Afghanistan and withdraw international troops. [For months](#), the Trump administration has been



[drafting plans](#) to cut the 14,000 American forces who are currently there by half. On Monday, Secretary of State Mike Pompeo said Mr. Trump had ordered a reduction in the number of troops in Afghanistan before the 2020 presidential election, but he did not specify a number.

“That’s my directive from the president of the United States,” Mr. Pompeo told the Economic Club of Washington. “He’s been unambiguous: End the endless wars. Draw down. Reduce. It won’t just be us.”

Yet at the same time, current and former officials, including the retired Army generals Jack Keane and David H. Petraeus, are lobbying the Trump administration to maintain several thousand Special Operations forces in Afghanistan. Doing so, they argue, will keep terrorist groups from returning and help prevent the collapse of the Afghan government and its security forces.

“U.S. troops in Afghanistan have prevented another catastrophic attack on our homeland for 18 years,” General Keane said in an interview. “Expecting the Taliban to provide that guarantee in the future by withdrawing all U.S. troops makes no sense.”

In Afghanistan, the threat of the Islamic State is not a point of debate.

Brig. Gen. Ahmad Aziz, the commander of an Afghan Special Police Unit, said that Islamic State attacks in Kabul, the capital, are becoming more advanced and that the group is growing. During a May tour of the communications ministry in Kabul, General Aziz pointed out a neat, circular hole cut at a weak point between two walls. A month earlier, he said, Islamic State gunmen had slipped through the hole and into the building to [kill at least seven people](#).

“Their breach points are evolving,” General Aziz said, “and they’re picking targets that are more difficult for us to get to.”

Military and intelligence officials do agree that the Islamic State, unlike the Taliban or other terrorist groups in Afghanistan, has focused on so-called soft targets such as civilian centers in Kabul and the city of Jalalabad.

But on the key question — whether the Islamic State can reach beyond the borders of Afghanistan and strike the West — the American military in Afghanistan and intelligence agencies in Washington diverge.

One senior intelligence official said the Islamic State’s Afghanistan branch lacks the organizational sophistication of the core group in Syria and Iraq, which had a bureaucracy dedicated to planning attacks in Europe and cultivating operatives overseas.

Ambassador [Nathan A. Sales](#), the State Department’s counterterror coordinator, called the Islamic State Khorasan “a major problem in the region.” And, he added, it poses a threat to the United States.

“What we have to do is make sure that ISIS-Khorasan, which has committed a number of attacks in the region, is not able to engage in external operations,” Mr. Sales told reporters at the State Department on Thursday.

Some analysts said it was dangerous to suggest that the Islamic State in Afghanistan did not have the capability to threaten the West.

“I would never rule out any of these jihadis ever threatening the West, because their ideology is inherently anti-America,” said Thomas Joscelyn, a senior fellow at the Foundation for Defense of Democracies in Washington.

But whether the American military should remain in Afghanistan, he said, should not hinge just on the threat from Islamic State or other extremists. “The war has been stagnant and poorly managed for so long,” Mr. Joscelyn said, “that it is hard to argue for the status quo.”

The Islamic State in Afghanistan surfaced in 2015 and was quickly dismissed by Pentagon officials merely as a breakaway group from the Taliban in Pakistan, but one with little ability to expand given the pervasiveness of other hard-liners.

Four years later, the Islamic State Khorasan is made up of roughly 3,000 fighters and is well resourced, funded and entrenched in the rural areas of eastern Afghanistan.

A [United Nations report](#) released this week concluded that the Islamic State Khorasan was responsible for 423 of the 3,812 civilians — about 11 percent — who were killed or wounded in Afghanistan during the first six months of 2019.

Intelligence officials in Washington said the territory controlled by the Islamic State in Afghanistan was not of strategic importance — much like Pakistan’s lawless frontier. Neither government officials in Kabul nor





foreign forces have ever truly controlled the rural mountain ranges that run along Afghanistan's eastern border.

When the Islamic State grabbed territory in Jowzjan Province last year, American officials and Taliban leaders alike were concerned. But officials said the Taliban, following a [concerted bombing campaign by American aircraft](#), pushed out the Islamic State, which since has been unable to capture land outside the provinces of Nangarhar and Kunar.

American military officials in Kabul said broad assessments from Washington often belie evidence that United States troops find on the battlefield, such as information gleaned on raids and from materials like cellphones. That intelligence, the officials said, has portrayed an expanding Islamic State recruiting network and an extremist influence that extends well outside the country.

In one example, a senior intelligence official said, evidence compiled from Afghanistan showed that an Islamic State leader in Nangarhar Province helped inspire and direct an April 7, 2017, [terrorist attack](#) that killed five people and wounded at least 12 in Stockholm.

The Islamic State remains a threat to American forces in Afghanistan. At least a half-dozen American troops have been killed fighting the group since 2015, and a C.I.A. contractor lost a leg in an Islamic State attack last fall.

But the size of the group remains a sticking point between the military and intelligence agencies. Military officials at the United States Central Command, which oversees the wars in Afghanistan and Iraq, have routinely doubled the estimated number of fighters that intelligence officials had separately predicted

would be present in a given village or area, according to two American officials.

In part, the spy agencies' assessments are the result of their reliance on technical intelligence collection, like drones sweeping over training camps and electronic eavesdropping on cellphones and other communications.

The National Security Agency can count cellphone signals from known insurgents or terrorists. But, officials said, many fighters do not carry cellphones, and those who do are increasingly encrypting their messages. An N.S.A. spokesman declined to comment.

The Islamic State, in both the Middle East and Afghanistan, has proved adept at swelling its numbers quickly. It has armed civilians and pushed them into battle, conscripted others into its ranks and converted administrative workers into fighters.

The undercounting of fighters has proved most dangerous ahead of raids on Islamic State safe houses, where Special Operation forces and Afghan commandos have found far more militants than intelligence agencies predicted.

Some military officials believe the undercounting has caused the intelligence agencies to underestimate the threat of the Islamic State.

The American military's reconsideration of the threat and expansion of the Islamic State is partly a byproduct of an intelligence failure in 2015, when United States forces were startled to find an expansive Qaeda [training camp in rural Kandahar Province](#).

The discovery alarmed military officials, who long thought the terrorist group had been reduced to a few dozen stragglers spread around the country, one former White House official said.

## BOOK: High Tech Terror

**Author: Robert Samuel Cromartie, III, MD, FACS**

Source: <https://www.samcromartie.com/High%20Tech%20Terror/treatingpatients.html>

This book has been written to serve as a readable, "user-friendly" text, principally for health care professionals and all the varied personnel involved in initial response teams, to aid them in the prompt recognition and management of patients suffering from acts of terrorism with biological, chemical, or nuclear weapons, and to outline preventive measures that need to be taken to reduce casualties. Discussions in the book include those diseases and/or injuries that are most serious and believed most likely to be encountered.

Those professionals who will benefit most from the information provided are those who deal directly with patients and people; that is, Physicians, especially those in Family Practice, Primary Care, Internal Medicine, and Pediatrics; as well as Surgeons, various Sub-



specialists, Intensivists, and Hospitalists; Emergency Department personnel; Physician Assistants and Nurse Practitioners; Nurses; and First Line Responders. The book is especially valuable for those who may be involved in the initial or early care of patients. In addition, Police and Security personnel; Public Health workers; Health Care Administrators; those involved in Disaster Preparedness; Legislators and those on their Staffs; and anyone responsible for the security and well-being of the nation, will also find this text informative and useful.

Because most all of the above people, including health care providers, have little or no experience with infectious, chemical, or nuclear agents that may be used in terrorist attacks, the book fills the need for an easily understandable source of information concerning the illnesses and/or injuries likely to occur. The



authors believe that familiarity with this text and access to data contained herein could be vital to salvaging not only critically ill patients, but also in preventing diseases and/or injuries to those who are otherwise healthy who might become secondarily involved.

For Legislators and non-medical personnel responsible for the safety and welfare of the people, the book serves as a ready reference and description of the source, type, breadth, and magnitude of the disasters that are likely to occur. These people need only to complement this information with their imaginations to motivate them into action.

In the first of three parts of the book, Biological Agents, the reader will find an overview and classification of biologic agents and their associated syndromes most helpful in putting the subject in perspective. This material precedes separate and distinct sections containing terse descriptions of expected clinical presentations that should arouse suspicions of the presence of terrorist-promoted diseases and/or injuries and outlines how to diagnose, treat, prevent, and contain each of the major threats

under consideration.

Similar approaches are utilized to present the second and third parts, Chemical Warfare and Terrorism and Nuclear Terrorism, respectively; that is, both of these subjects are previewed by helpful overviews of the history and basic sciences involved before the agents and diseases and/or injuries that might be encountered are separately discussed.

Although the thrust of this book focuses upon early recognition, appropriate treatment and management, and prevention of illnesses and/or injuries which might result from terrorist attacks; many of the agents, principles, and approaches discussed may also be applied to managing natural (e.g., pandemic influenza) or accidental (e.g., nuclear power plant accidents) disasters.

Since the past can teach us much about infectious, chemical, and nuclear agents, a generous dose of relevant history is included throughout. Such historical content prepares us to understand and anticipate: 1) how these agents have been and might be weaponized and exploited for evil purposes, 2) the likelihood of encountering them, 3) the delivery systems or mechanisms of agent dispersions that might be used, 4) the difficulties of prompt recognition of the illnesses they produce, and 5) the immediate and secondary consequences of such diseases/injuries, both in terms of morbidity and mortality. Through the lens of history, we are then compelled to reflect upon the unanticipated problems that these medical disasters might pose; such as, widespread hysteria, crippled healthcare systems, absence of public safety, economic chaos, and shortage of food supplies, just to name a few.

Finally, this text is intended to remind us that terrible weapons will always exist and are certain to be used against humanity in the future, not just in the military, but also in the civilian arenas. Thus, the more health care providers and everyone else involved with the health care industry know about this subject and the diseases and injuries these agents or weapons can produce, the more likely mankind will be able to successfully mute, survive, or prevent their catastrophic consequences.



## **This Technology will Revolutionize Border Control**

Source: <https://i-hls.com/archives/93516>

Aug 02 – Blockchain first gained wide notoriety as the system that runs the Bitcoin digital currency transaction confirmation process. As a shared, synchronized database, with no centralized data storage, the system is designed to remove the “single point of failure” risk (including technical malfunction and malicious alteration) that is present in many other systems.

So far, Blockchain has proven extremely resistant to any type of hacking or alteration, and that makes it especially attractive for US Homeland Security.

Blockchain should be introduced more widely amongst government departments in order to cut costs, save time and reduce fraud. The DHS technology branch (DHS S&T) has identified blockchain’s potential to render public services more transparent, as well as automate paper-based systems. Many of the applications involve the issue of entitlements, attestations and certifications.

S&T initially ran a successful pilot with U.S. Customs and Border Protection (CBP) and is extending that work to other agencies. The initial pilot with CBP involved leveraging blockchain to facilitate customs checks. Customs mainly wanted to use blockchain to verify that shipments comply with trade agreements such as NAFTA (the North American Free Trade Agreement) and CAFTA (The Dominican Republic-Central America Free Trade Agreement).

By introducing transparency and traceability to the import supply chain, customs officers can verify that goods meet the required standards, according to [ledgerinsights.com](http://ledgerinsights.com).

The proof of origin of goods is usually provided by certification from a local Chamber of Commerce at the point of origin. In the future, if those are attested on a blockchain, it will reduce fraud.

But for NAFTA in addition to a proof of origin, the exporter will often provide a letter or answer a questionnaire to demonstrate compliance with the trade agreement.

Last year DHS solicited for blockchain bids and outlined another hypothetical blockchain use case. That related to validating the identity of an organization. And also to ensure that the person acting on behalf of the organization is indeed affiliated with that organization.

The U.S. Citizenship and Immigration Service (USCIS) also expressed a desire to update their current manual, paper-based system. USCIS is responsible for issuing documents proving citizenship and immigration status, and work permits. These documents must be issued rapidly but must also be highly secure and difficult to forge. USCIS is now working with S&T to introduce blockchain technology to these processes. This involves digitizing official documents. It hopes to reduce instances of fraud.

The Transportation Security Administration (TSA), which is known as the agency that runs passport control at airports, wish to introduce blockchain to automate the document verification process. Currently, officers verify that passengers’ identity documents match the name on their ticket visually. They must make decisions quickly, to avoid the buildup of queues.

## **LiDAR to Cut Wait Times at Airports**

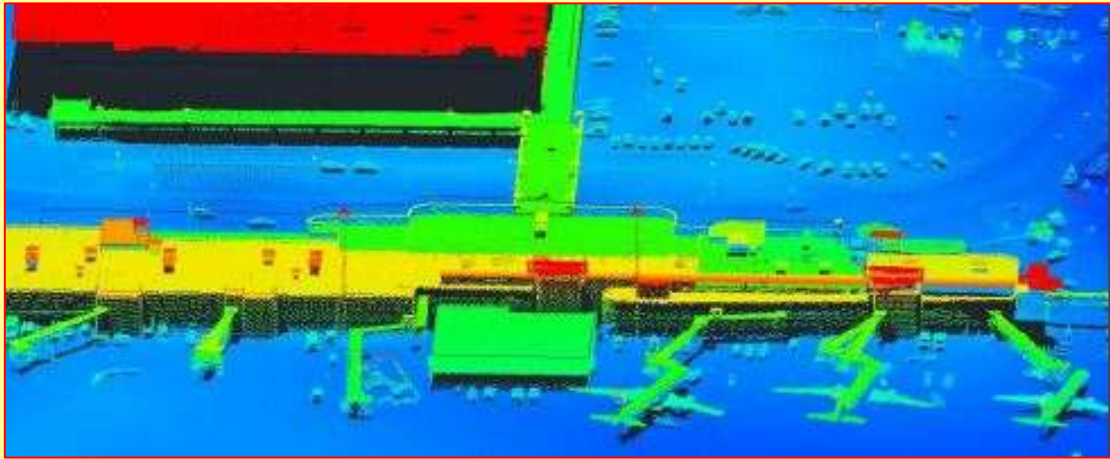
Source: <https://i-hls.com/archives/93505>

Aug 02 – The first US regional airport will incorporate LiDAR technology to monitor and report airport wait times. A LiDAR-based system has been installed for the first time at Jackson-Medgar Wiley Evers International Airport (JAN) in Mississippi. The airport is installed by linside and Infax, the LiDAR-based iQueue analytics service will provide fully automated operational intelligence on passengers waiting at security checkpoints. The system then can continuously inform travelers of expected security wait times. The new technology will provide travelers with accurate to the minute wait times available through the airport’s website and on digital displays throughout the airport. CEO of the Jackson Municipal Airport Authority, Perry Miller, mentions that the technology “is important to building a better passenger experience.”

The system utilizes 3D imaging technology that uses non visible lasers to illuminate a space and map out moving objects precisely.







The iQueue solutions takes the LiDAR data and applies machine learning in order to interpret the data. This will provide the airport with real-time intelligence regarding passenger behaviors and will also predict security wait times.

Hmgaerospace.com mentions how this technology will be able to forecast security checkpoint delays and be able to estimate time to gate. The technology will reduce traveler's stress and improve customer satisfaction with the airport.

### USA Domestic Terrorism

## Walmart shooting in El Paso among deadliest gun massacres in US history

Source: <https://abcnews.go.com/US/deadliest-mass-shootings-modern-us-history/story?id=50234345>

Aug 04 – Another mass shooting took place in America -- this time, at a Walmart in Texas -- that changed the infamous rankings of the deadliest mass shootings in the nation's modern history.



On Saturday morning, 20 people were killed and 26 others were injured as a result of a [shooting at an El Paso store](#).



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That tally makes it the deadliest shooting in the U.S. since the shooting at a high school in Parkland, Florida, a year and a half ago.

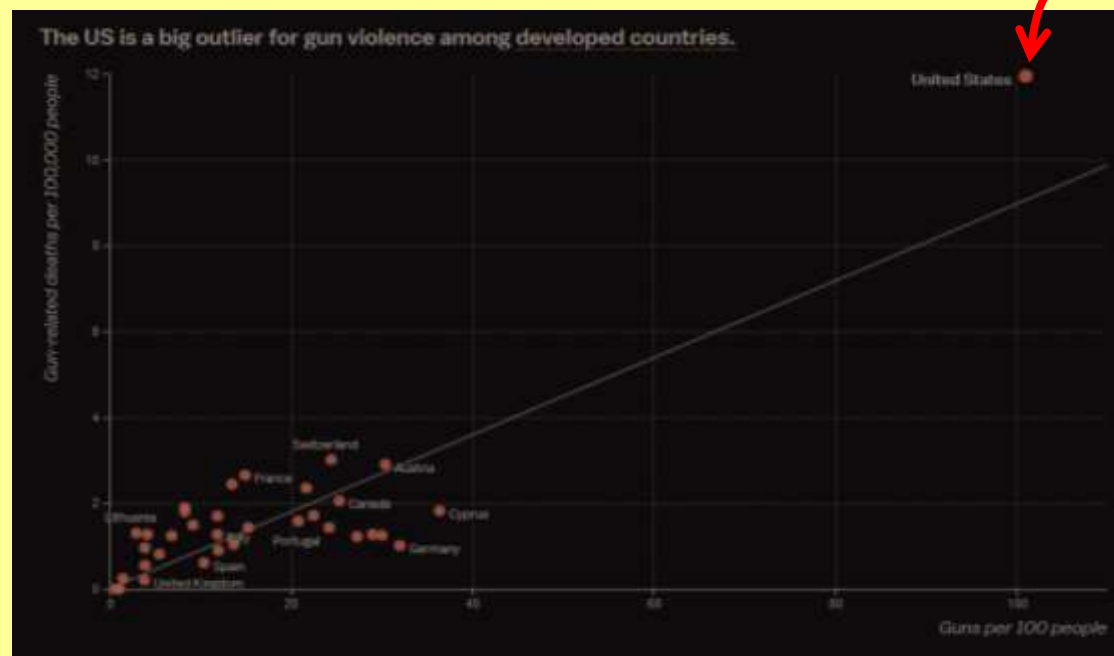
The list of the deadliest mass shootings spans 53 years and seven states. The shooting at the El Paso Walmart marks the fourth shooting of the deadliest 12 across America that took place in Texas.

Six of the 12 deadliest shootings in the country have taken place in the past five years, as the shootings at the Las Vegas music festival, Pulse nightclub, Sutherland Springs church, Marjory Stoneman Douglas High School, the San Bernardino regional center, and now the Walmart in El Paso, have all occurred since 2015.

[Mass shooting after Sandy Hook \(December 2012\)](#)



Four of the five worst gun massacres on the list -- including the deadliest, at a concert in Las Vegas --



occurred in the past two years.

The country "has experienced an increase in mass casualty attacks" wrought by mentally troubled individuals "who commit mass murder in furtherance of some perceived grievance



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or ideological cause," John Cohen, a former counterterrorism coordinator for the Department of [Homeland Security](#) and a consultant for ABC News, said after the massacre in Las Vegas, in which 58 people were killed.

ABC News has compiled a list of the 12 deadliest mass shootings, which includes some incidents that had the same death tolls. Any suspects who were killed in the incidents are not included in the death tolls.

### 1. Route 91 Harvest Festival, Las Vegas – 58 deaths – Oct. 1, 2017

Stephen Paddock, from Mesquite, Nevada, was identified by authorities as the shooter holed up in a Mandalay Bay Resort and Casino hotel suite, packing as many as 19 guns. Around 10 p.m. he opened fire on thousands of [country music](#) concert attendees across the street below, killing 58 people; more than 500 others were injured.

### 2. Pulse nightclub, Orlando, Florida – 49 deaths – June 12, 2016

Around 2 a.m. Omar Mateen, a 29-year-old former security guard, opened fire and [killed 49 people](#) who were in an Orlando gay nightclub called Pulse. During the rampage, Mateen, a U.S. citizen, was killed by responding police in a shootout. His ISIS-inspired [hate crime](#) injured more than 50 other people. Law enforcement sources told ABC News that Omar Mateen's wife, Noor Mateen, had tried to dissuade him from committing the act. She was charged with aiding and abetting him, as well as committing obstruction. Noor Mateen has pleaded not guilty.

### 3. Virginia Tech University, Blacksburg, Virginia - 32 deaths - April 16, 2007

Virginia Tech senior [Seung-hui Cho](#), 23, purchased a 9-mm Glock handgun on March 13, 2007, and a .22-caliber gun within a week before he started shooting people at the Blacksburg campus, including five professors and 26 fellow students. The South Korean-born Cho began his rampage in a dorm room, where two students were shot and killed. According to police, he reentered at his dorm room and left a note before going out and killing 30 more people in four classrooms. He then turned a gun on himself.

### 4. (tied) Sandy Hook Elementary School, Newtown, Connecticut – 26 deaths – Dec. 14, 2012

Adam Lanza was 20 years old when he entered Sandy Hook Elementary School wearing a bulletproof vest and armed with a semiautomatic rifle and two semiautomatic handguns — a Glock and a [Sig Sauer](#). He breached the school by shooting out a window pane of the front office, then [gunned down and killed 26 people](#), including 20 first-graders and six adult school staff members. Not included in the death count is Lanza's mother, Nancy Lanza, who police say was slain before he arrived at the school, as well as Adam Lanza, who took his own life at the school.

### 4. (tied) First Baptist Church, Sutherland Springs, Texas – at least 26 deaths – Nov. 5, 2017

At least 26 people were killed and 20 others were injured when a shooter opened fire at the First Baptist Church of Sutherland Springs. Further details of the shooting in the rural community, about 30 miles southeast of San Antonio, were not immediately clear.

### 5. Luby's Cafeteria truck ramming and shooting, Killeen, Texas – 23 deaths – Oct. 16, 1991

After slamming his Ford Ranger truck into the window of Luby's Cafeteria, 35-year-old George Jo Hennard said, [according to The Killeen Daily Herald](#), "This is what the women of Bell County made me do." He then [started firing his guns and murdered 23 people](#) and left 20 more wounded. Ten of Hennard's victims were killed by single shots to the head. Once police responded, Hennard retreated to a restroom, where he killed himself.

### 6. McDonald's, San Ysidro, California – 21 deaths – July 18, 1984

James Oliver Huberty entered the fast food restaurant armed with a long-barreled Uzi, a pump-action shotgun and a handgun and took the lives of 21 adults and children and injured 19 others, including an elderly person and a baby, [according to The San Diego Tribune](#). An hour after the shootings, a police sharpshooter killed Huberty, reported the Tribune. Before he went out to commit mass murder, he reportedly told his wife, "I'm going hunting ... hunting for humans," [according to The New York Daily News](#).

### 7. Walmart, El Paso, Texas - 20 deaths - August 3, 2019

The suspect was identified by authorities as Patrick Crusius, 21, of Allen, Texas, and he was "taken into custody without incident" and without any law enforcement officers firing their weapons, according to El Paso Police Department Sgt. Robert Gomez. He later told investigators he wanted to shoot as many Mexicans as possible, [two law enforcement officials told ABC News](#).





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The wounded ranged in age from a 2-year-old to an 82-year-old victim.

The officials also said an assault-style rifle, similar to an AK-47, was secured at the scene along with several magazines.

At a news conference on Saturday night, El Paso police chief Greg Allen said that 20 people had died and 26 more had been injured. Allen said authorities are examining what he called a "manifesto" they believe was written by the shooter and shows a possible "nexus" to a hate crime.

### 8. Marjory Stoneman Douglas High School, Parkland, Florida - 17 deaths - February 14, 2018

A former student who had been expelled from a Florida high school [returned to the campus](#) and opened fire both inside and outside of the school, at times firing through the glass windows of classroom doors. Authorities arrested 19-year-old Nikolas Cruz, who had been expelled from Marjory Stoneman over disciplinary problems, in the aftermath of what has become the deadliest school shooting since an attack on an elementary school in Newtown, Connecticut, in 2012.

There were 17 people killed in the Valentine's Day shooting and more than a dozen others were injured, some critically.

### 9. (tied) University of Texas, Austin, Texas – 14 deaths – Aug. 1, 1966

U.S. Marine sniper Charles Joseph Whitman lugged a cache of rifles, pistols and a sawed-off shotgun up to the observation deck of the university's landmark clock tower. He then [fired at will](#), striking unsuspecting students. He killed 14 people and wounded at least 30 others.

Whitman's terror was ultimately foiled after police officers Ramiro Martinez and Houston McCoy shot him dead.

Including the murders of his wife and mother, whom he killed earlier that day, the death toll stands at 16.

### 9. (tied) Inland Regional Center, San Bernardino, California – 14 deaths – Dec. 2, 2015

Husband and wife Syed Rizwan Farook, 28, and Tashfeen Malik, 27, dressed in tactical gear and armed themselves with assault rifles and pistols when they entered a mandatory Christmas party at a social services center where Syed worked, [fatally shot 14 of his unarmed colleagues](#) and left at least 17 others injured.

The couple [then fled the center and died in a hail of bullets on a San Bernardino street when police caught up to their car](#).

On the day of the attack, FBI agents later confirmed, the couple researched ISIS leader Abu Bakr al-Baghdadi online.

### 9. (tied) Edmond Post Office, Edmond, Oklahoma – 14 deaths – Aug. 20, 1986

Patrick Henry Sherrill, 44, was a part-time postman who returned to his office a day after receiving a poor performance review. Armed with three handguns, he entered the federal building through the back and [shot anyone in sight](#). He murdered 14 fellow postal workers 10 minutes before fatally shooting himself in the head. Authorities later determined Sherrill was angry that he might lose his job.

Several types of guns have been used in mass shootings in the United States. A 2014 study of 142 shootings by [Dr. James Fox](#) found 88 (62%) were committed with handguns of all types; 68 (48%) with semi-automatic handguns, 20 (14%) with revolvers, 35 (25%) with semi-automatic rifles, and 19 (13%) with shotguns. The study was conducted using the [Mother Jones](#) database of mass shootings from 1982–2018. High capacity magazines were used in approximately half of mass shootings. Semi-automatic rifles have been used in six of the ten deadliest mass shooting events

## Protect Our Communities: Resources on Mass Shooting Prevention, Response

Source: <https://www.hstoday.us/subject-matter-areas/infrastructure-security/protect-our-communities-resources-on-mass-shooting-prevention-response/>

Aug 04 – As America reels from more mass shootings, Homeland Security Today has gathered some of our most valuable content on prevention and response to various active shooter scenarios.



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HSToday also wants readers to read and use resources from the Department of Homeland Security's Cybersecurity and Infrastructure Security Agency: [Security of Soft Targets and Crowded Places-Resource Guide](#) and [Active Shooter Preparedness](#).

"We have resources that citizens can use today to help mitigate threats from an active shooter," said Brian Harrell, assistant director for infrastructure security at CISA. "At CISA, we have developed assessments, exercises, and training that helps stakeholders understand the 'pathways to violence,' behavioral indicators, and security mitigation measures to reduce risk."

Please study and share these resources and HSToday coverage of mass attacks as we work together to protect our communities.

### What Las Vegas Police Learned from the Deadliest Shooting in U.S. History



Las Vegas gunman Stephen Paddock days before the Oct. 1, 2017, mass shooting. (MGM Resorts surveillance video)

"Officers were overwhelmed by the crowd trying to commandeer available vehicles. In some instances, those fleeing tried to get officers' firearms, distracting officers from focusing on the threat or tending to the injured," the report said. "Looking for a way to transport critically injured attendees to the hospital, one attendee took a police truck and later called the Communications Bureau to report that it had been taken to

Desert Springs Hospital." Officers were also leaving their festival positions to form strike teams with other officers, searching for survivors and active threats. Because of this movement, the perimeter of the scene was not secured until sunrise.

[READ MORE](#)

### Fixations and Red Flags: NTAC Report Narrows Down Warning Signs of 2018's Mass Attackers



Nikolas Cruz (Police photo)

Most of the assailants used firearms in their attacks (10 of the 24 illegally possessed these weapons), while three used vehicles. Ninety-three percent preceded these attacks with "threatening or concerning communications" while more than three-quarters "elicited concern from others prior to carrying out their attacks" — including "expressing interest in

previous attackers, racist and misogynistic comments, referencing a desire to purchase a gun, and comments that suggest an aspiration to commit future violence." Two-thirds had a mental-health history, most commonly depression or psychotic symptoms, while half were motivated by a grievance such as trouble at work or home. Half either fled the scene of their attack or committed suicide.

[READ MORE](#)



**Hard Conversations About Soft Targets: DHS Workshop Aims to Save Lives in Mass Shootings**

Asked which preparedness relationships could use better development, Brian Harrell, assistant director for infrastructure security at DHS' Cybersecurity and Infrastructure Security Agency (CISA), told HSToday that it starts from the ground up: "It's having faith leaders, that campus vice principal, it's having the building manager of these large corporate campuses throughout the country having that very basic relationship with local law enforcement, the FBI and the Department of Homeland Security. Having those three relationships in place are going to ultimately bring a better response and save lives. That is incredibly imperative as we build these plans going forward."

[READ MORE](#)

**What a Security Professional Taught His Son to Survive Sri Lanka and Beyond**

Terrorism and terroristic attacks are not only designed to kill, wound, create chaos, divide and destroy, but also instill fear into the hearts and minds of those affected by the attacks – even to the point of disabling one's ability to communicate with others and function normally, becoming a recluse. Tragic events such as the attacks upon the people in Sri Lanka are stark reminders that all people everywhere must consider incorporating into their daily mindset an attitude of personal security and safety awareness, being united, not divided, working together – not against one another – and becoming vigilant in the fight against the tyranny that terrorism seeks to deploy. S.E.E. what is around you, understand and know your zone/theatre of Influence and purpose to remove complacency from your life, which is the ally of terrorism. We do not have to be the victims; we can become the victors.

[READ MORE](#)

**Former Boston Chief on Preparing for Next Terror Attack: Get 'Ready to Be Overwhelmed'**

[Dzhokhar Tsarnaev \(white hat\) and Tamerlan Tsarnaev \(black hat\), the individuals responsible for the Boston Marathon bombings, shortly before the attacks on April 15, 2013. \(FBI photo\)](#)

Intensive post-Mumbai training "absolutely saved lives on Boylston Street" on April 15, 2013. As he was every year, Linskey was at the marathon that morning, looking for bombs — which were feared and taken "very seriously" as a threat long before Tamerlan and Dzhokhar Tsarnaev turned pressure cookers into deadly weapons — and

checking to ensure that security was on the ball. The bombs weren't expected, though, nearly three hours after the winner of the race had passed the finish line, with thousands of runners still laboring to reach the end. "I got it completely wrong when they would hit us," the former chief said, noting that he hoped the first explosion had been a transformer "but I had a feeling we'd been hit."

[READ MORE](#)

**Confined Space Protection: A Post-Vegas Playbook for Safeguarding Venues and Stadiums**

[The interior of room 32-134, the smaller adjoining room to Stephen Paddock's suite at the Mandalay Hotel that he used as a sniper's perch to attack a concert on Oct. 1, 2017. \(Las Vegas Metropolitan Police\)](#)

Post-Las Vegas, we are seeing increased liabilities exposure for contract security, hotel/hospitality/tourism and concert promoters within the vertical. The importance of brand protection, business continuity and





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resiliency cannot be understated in these endeavors. The constant ebb and flow of safeguarding today's sports and entertainment industry, a multi-billion-dollar juggernaut, is a constant work in progress. Safeguarding confined spaces begins with employee empowerment. Proactive training, continuing education and career development resources for those protecting the space will be the difference-maker in keeping fans safe and secure.

[READ MORE](#)

Spotting a Weapon on Camera Before a Shot Is Fired: The Evolution of Threat Detection Technology



SWAT agents demonstrate an active shooter scenario during FBI Atlanta Range Day on March 22, 2019. (FBI photo)

Detection technology isn't just about recognizing the face of a bad actor in a crowd, but spotting and relaying within a few seconds — no matter how vast the network of surveillance cameras — whether a stranger pulls a weapon on a campus, in a store or a hotel. The real-world implication, especially for school security, was “one of the reasons that we got into the threat detection

technology, detecting guns and weapons in real time and then people altering their behavior,” Shaun Moore, co-founder and CEO of Trueface, told HSToday at the Connect:ID biometrics expo in Washington.

[READ MORE](#)

Palm Beach County Forges Plan to Cut Through the Chaos of Mass Shootings



The Pulse nightclub and memorial in Orlando, Fla., site of a tragic mass shooting on June 12, 2016. (FBI photo)

BC DEM already had a Mass Casualty Incident/Mass Fatality Incident (MCI/MFI) Incident Support Plan in place. They had begun their regular process to update and enhance it when the Parkland shooting took place, and then the update became an urgent priority. PBC DEM decided they needed to create a Family Assistance and Survivor Care Center (FASCC) Annex to the MCI/MFI Plan. The FASCC would need to address aspects of family reunification, family assistance, and survivor support. And while the now comprehensive draft FASCC includes all of the key components an emergency manager would expect, such as command and control, client intake and flow,



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and key stakeholder roles and responsibilities, it also adds some unique components, consistently emphasizing the importance of the human element.

[READ MORE](#)

### What Faith-Based Organizations Can Learn from Christchurch Hostile Events Attack Cycle



(Video still/Brenton Tarrant)

Brenton Tarrant gave [insight](#) into his motivation behind the attack. In his manifesto he “identified himself by name and said he was a white supremacist who was out to avenge attacks in Europe perpetrated by Muslims.” Tarrant began “planning an attack roughly two years in advance and an attack at the location in Christchurch three months in advance... The attack was planned to allow enough time to train, form a plan, settle my affairs, write down my views, then enact the attack.” New Zealand was not the original choice for the attack, as he “only arrived to New Zealand to live temporarily whilst [he] planned and trained,” but he soon changed his mind and believed

New Zealand would show that nowhere in the West was safe for Muslims, and that “the invaders were in all of our lands, even in the remotest areas of the world.”

[READ MORE](#)

### 3 Keys to Hardening Concerts, Event Venues Against Inevitable Attack Attempts



Guns in the Mandalay Bay hotel room of mass shooter Stephen Paddock. (Las Vegas Metropolitan Police photo)

A good risk assessment prior to the event should include reviewing available intelligence and assessing other information on relevant threats and hazards, identify the event’s assets, identify vulnerabilities related to Protecting the P3, and identify required mitigation. Unfortunately, pre-event risk assessments are rarely accomplished. Even a very rudimentary

assessment focused on only the concentric layers of security – commonly categorized as the outer, middle, and inner layers – can pay dividends. In my lecture, I asserted that people might disagree on how to categorize each security layer at a given venue. It is more important that all stakeholders are aware of the layers and what they mean for protecting the P3. For example, sometimes the hardening of security layers is counterintuitive; they can be hardened *too much*.

[READ MORE](#)

### CISA Guide: How to Check Bags to Lessen Threat of Attack at Venues

Training can include how to watch for people who may be trying to evade security checkpoints, how to recognize harmful substances such as bomb-making materials, how to coordinate a response among bag-checkers and potentially law enforcement if an item is discovered, how to converse with and indirectly question people in line who may be acting suspicious, how to deal with someone angry about their bag being searched, and



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how to respond quickly to an active assailant. The guide encourages test runs to correct any bag-searching deficiencies before the event, and including law enforcement in the training process.

[READ MORE](#)

**Negligence Bleeds: The Catastrophic Results of Dismissing Counterterrorism Intelligence**



CCTV security camera footage of gunman Abdulkadir Masharipov attacking the Reina nightclub in Istanbul on Jan. 1, 2017.

The professional negligence and policy failures leading up the attacks in Sri Lanka are reminiscent of those prior to the Daesh attack on the Reina nightclub's New Year's Eve celebration in Istanbul a couple years ago. The early morning Jan.

1, 2017, attack, which killed 39 and injured 69, occurred after both the venue and government failed to heed general and specific intelligence warnings. Reina was one of Istanbul's most well-known symbols of Westernism, and a place for the rich and famous to be seen. The "atmospherics" and attack indicators began at least two and a half years before the attack and should have prompted increased armed security at the nightclub for the New Year's party.

[READ MORE](#)

**DHS Warns Houses of Worship to Prep for 'Uncertain Threat Environment' After Massacre**

The mass shooting at the Tree of Life Synagogue in Pittsburgh this past October underscored "that violent extremism is present in our nation and we must learn from previous incidents and apply best practices to avoid impacts to the core of the American way of life," he continued, and CISA "is steadfast in its commitment to supporting the faith-based community in enhancing security in a manner that still maintains the unique and open environment that places of worship provide to their parishioners."

[READ MORE](#)

**What Israel Taught D.C.-Area Emergency Managers About Preparedness**



A home in Israel that was hit by a rocket that traveled from Gaza, more than 75 miles away, on March 24, 2019. (IDF photo)

Jon Stewart, advisor to the director at the D.C. Homeland Security and Emergency Management Agency (DC HSEMA), recalled being stopped when he reached into his bag at a flea market — not by security, but everyday bystanders who saw a potential threat. "There are checkpoints everywhere — it's just part of their culture, what they expect,"

Stewart said, adding that he was stopped because "they're trying to determine the behavior of the person ... not necessarily a look." Israelis embrace "a lot of the things that we as a country push back against ... we as a culture aren't quite used to still being inconvenienced to a degree for safety and security."

[READ MORE](#)





## New wave of terrorist attacks possible before end of year, UN says

Source: <https://www.theguardian.com/world/2019/aug/03/new-wave-of-terrorist-attacks-possible-before-end-of-year-un-says>

Aug 03 – **The United Nations has warned that a recent pause in international terrorist violence may soon end, with a new wave of attacks possible before the end of the year.**

[In a report](#), specialist monitors at the UN security council paint a worrying picture of a global Islamist extremist movement that continues to pose a significant threat despite recent setbacks.

**The authors raise concerns about up to 30,000 foreigners who travelled to the “caliphate” to fight and who may still be alive.**

“Their future prospects will be of international concern for the foreseeable future,” the report says. “Some may join al-Qaida or other terrorist brands that may emerge. Some will become leaders or radicalizers.” The report is based on information supplied by intelligence agencies of UN member states, and provides a glimpse of collective thinking among security services around the world.

It notes that, though the geographical caliphate of Islamic State has ceased to exist, member states agree many of the underlying factors that gave rise to [Islamic State] still exist, which suggests that [the threat from it and al-Qaida, or similar groups](#) is unlikely to decline further.

Though there have been fewer successful attacks since 2015 and 2016, when extremists killed hundreds of people in France, Belgium and Germany, the threat to [Europe](#) “remains high”.

A major concern is the radicalization of prison “inmates afflicted by poverty, marginalization, frustration, low self-esteem and violence”. A further challenge is the imminent release of some of the first wave of returnees to be imprisoned after returning from the Islamic State’s caliphate, which was established across a swath of land in Iraq and [Syria](#) in 2014.

“Deradicalization programs have not proven to be fully effective .... The most combat-hardened fighters serving longer sentences are not yet approaching release from prison. They remain dangerous and continue to pose a challenge both inside and outside the penal system,” the report notes.

European states estimate that as many as 6,000 of their citizens travelled to [Iraq](#) and Syria to join Isis or other extremist groups. About a third were killed, while another third remains detained in the region or have travelled elsewhere.

**Two thousand or more may have returned to Europe, the report says.**

The challenge posed by dependants of foreign terrorist fighters living in overcrowded displacement camps in Syria where US-backed militia are holding thousands of militants and their family members is also significant.

Isis members brought a large number of children into territories run by the group or bore babies who are now orphaned, destitute or even stateless, and whose future is uncertain.

Western countries have so far been unwilling to take back citizens who went to Syria to join [Islamic State](#) – seeing them as a security risk if they return home but knowing they may be unable to prosecute them.

According to the report, Isis has access to between \$50m and \$300m remaining from the revenues of the caliphate and is using propaganda to maintain the group’s reputation as the leading global terrorist brand – the “virtual caliphate”.

“When it has the time and space to reinvest in an external operations capability, Isis [Islamic State] will direct and facilitate international attacks in addition to the Isis-inspired attacks that continue to occur in many locations around the world .... The current abatement of such attacks, therefore, may not last long, possibly not even until the end of 2019.”

The report says Isis leaders did not have advanced knowledge about bloody attacks on churches and hotels in Sri Lanka.

“It was a [locally instigated and led attack](#) inspired by [Isis] ideology. The bombings aimed to boost the global image of [Isis] after its military defeat in Iraq and the Syrian Arab Republic. The report notes that al-Qaida remains resilient, but points out that the health of its 68-year-old leader, Ayman al-Zawahiri is poor.



Officials in the US confirmed this week that [Hamza bin Laden, a son of Osama bin Laden](#), the founder of the organisation, was killed within the last two years. Hamza, 30, was being groomed as a possible leader of al-Qaida.

A major part of the report is devoted to west Africa, which has seen a sharp rise in violence motivated by Islamic militants.

Intelligence services appear divided over whether [the newly established Isis affiliate in central Africa](#), based in the east of the Democratic Republic of Congo posed a genuine threat or had any substantial links to the main group.

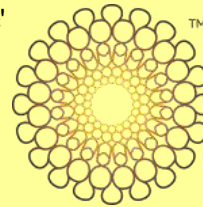
Some central African states expressed concerns that the group might evolve, attract returning and relocating foreign terrorist fighters and establish links with other Isis affiliates operating in Africa. But other services said the claims were “opportunistic”.

## Expo 2020 Dubai emergency centre to provide 'Olympic quality' care to visitors

Source: <https://www.thenational.ae/uae/expo-2020-dubai-emergency-centre-to-provide-olympic-quality-care-to-visitors-1.894928>

Aug 05 – Expo 2020 Dubai is putting safety first - with an 'Olympic' standard onsite emergency centre ready to cope with the demands of an expected 25 million visitors.

The centre, which has been fully operational since November, is kitted out with an isolation room, emergency care room and a helicopter pad. Officials are confident that the state-of-the-art facility will be able to deal



إكسبو 2020  
دبي، الإمارات العربية المتحدة  
DUBAI, UNITED ARAB EMIRATES



with any medical emergencies that might arise during the six-month-long world fair, which opens to the public on October 20, 2020.

Staff at the centre have had crucial preparation for the grand opening, as they have already been caring for the 40,000 constructions helping the sprawling Expo site take shape.





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"We have got all the necessary equipment and capabilities to deal with emergencies should they arise as well as a range of preventative measures," said Dr Rob Cooling, vice president of health, safety and environment at Expo 2020 Dubai, during a tour of the venue.

"We are able to analyse the range of risks and deal with them accordingly.

"There are a lot of health-related issues that come with people working outside in a hot environment, we have the most stringent standards in place to make sure we are able to provide support."

The centre will play a key role in providing immediate care and stabilisation in the "golden hour" after treatment, referring to the vital first sixty minutes after an injury or illness when medical care is most effective.

There is also a fully operational helipad outside the centre, as well as the expo's on-site ambulances to deal with any scenario.



During the event, it is expected that three doctors and five nurses from the emergency facility will move to Expo 2020's main operations centre.

Expo organisers expect to welcome thousands of visitors a day to the 4.38 sq km site in Dubai South.

Dr Cooling said the emergency care facility was on a par with, if not better than, those provided for similarly sized global gatherings.

"This is very much in line with facilities that are provided for events like World Cups and Olympics," he said.

"We have a full time team here working 24/7 and we are able to deal with all sorts of emergencies."

The facility has already been in full swing with the launch of a campaign aimed at improving the overall health of workers on the site.

"We have been running a campaign for the three months of summer, focusing on nutrition and health awareness and providing screenings," he said.

"In the last few weeks nearly 500 workers have been going through health screening here, we are looking at blood sugar levels, dental checks, eye examinations and this will continue right up until the end of the event."

The centre will not cease to operate when the curtain falls on the world fair, as it will continue to provide care for the tens of thousands of construction workers who will be tasked with dismantling the site.





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"We have signed an agreement with Dubai Health Authority that will take us right up until the end of 2021," he said.

Mouayad Abdulghani, acting head of the Expo Emergency Centre, was full of praise for the care provisions on offer.

"You will find nothing else like it on any other construction site in the region," he said.

The facility is also home to a triage room with three beds and a recovery room that has five beds.



The isolation room will be used to prevent the spread of any potentially infectious diseases.

The theme of Expo 2020 is "connecting minds, creating the future" and there are three subthemes of opportunity, mobility and sustainability.

It will be the largest event of its kind held in the Middle East region with 192 countries participating

**EDITOR'S COMMENT:** OK, the facility looks nice for conventional health problems. What about provision for dealing with mass asymmetric (CBRN) casualties? What about mass decontamination? What about a big shelter capable of hosting and isolate 100 people with similar sudden onset symptomatology? What are they going to do then? Use the helipad or call the military? Of course, all these and many more could be parts of another classified plan but the essence of this comment is that in all the plans and premises we construct and employ the CBRN threat should be seriously addressed and properly supported.

## AI Lie Detector Developed for Airport Security

Source: <https://www.hstoday.us/subject-matter-areas/airport-aviation-security/ai-lie-detector-developed-for-airport-security/>

Aug 06 – A group of researchers are quietly commercializing an artificial intelligence-driven lie detector, which they hope will be the future of airport security.

**Discern Science International** is the start-up behind a deception detection tool named the Avatar, which features a virtual border guard that asks travelers questions.

The machine, which has been tested by border services and in airports, is designed to make the screening process at border security more efficient, and to weed out people with



dangerous or illegal intentions more accurately than human guards are able to do. But its development also raises questions about whether a person's propensity to lie can be accurately measured by an algorithm.

## Mass Shootings as a Contagion

Source: <http://www.homelandsecuritynewswire.com/dr20190807-mass-shootings-as-a-contagion>

Aug 07 – Research shows that mass-shooting incidents usually occur in clusters and tend to be contagious. Moreover, contagion correlates with the level of intensity of media coverage: the more intense the coverage, the more likely it is that contagion will occur, researchers say.

Back in 2014 and 2015, researchers at Arizona State University analyzed data on cases of mass violence. They included *USA Today's* data on mass killings (defined as four or more people killed using any means, including guns) from 2006 to 2013, data on school shootings between 1998 and 2013, and mass shootings (defined as incidents in which three people were shot, not necessarily killed) between 2005 and 2013 collected by the [Brady Campaign to Prevent Gun Violence](#).

ASU professor Sherry Towers and her colleagues also found that what set apart shootings that were contagious was the amount of media coverage they received. "In the incidences where there were four or more people killed, and even school shootings, those tended to get national and even international media attention," Towers [told](#) NPR's "All Things Considered."

She also found that there is a window when a shooting is most likely to lead to more incidents — about two weeks. Towers and her team [published their results](#) in 2015.

[Jillian Peterson](#), a criminologist at Hamline University in Minnesota and founder of the nonpartisan think tank, [The Violence Project](#), told NPR that mass-shooting contagion is similar to suicide contagion, with a high-profile suicide, which is intensely covered by the media, leading more people to take their own lives. For example, following the suicide of actor Robin Williams, researchers documented [a 10 percent spike](#) in suicides in the months following his death.

Researchers who interviewed mass shooters who survived their attacks, and analyzed the social media postings of mass shooters who killed themselves or who were killed by the police, concluded that about "about 80 percent were [actively suicidal](#) prior to the shooting," Petersen says.

The overwhelming majority of individuals who commit suicide do so alone, away from the public eye. But Peterson says that in very rare cases, a tiny minority of people considering suicide go down the path of violence toward others. She has come to think of mass shootings as a form of suicide. "They're angry, horrible suicides that take a lot of people with them," she says. "The shooter never intends to live; there's never a getaway plan. Typically, they tend to think of this [as] their kind of last moment."

Petersen adds: "So a mass shooting happens and then vulnerable individuals who are actively suicidal and in crisis and hear about the shooting and see this as kind of a script that they could also follow."

In October 2015, after the publication of the [study](#) which she co-authored about mass-shooting contagion, [talked](#) with *ASU Now* about the subject:

**ASU Now: Does this recent incident seem to fall within the findings of your research?**

*Sherry Towers:* Our research examined whether or not there was evidence that mass killings appear to inspire copycat killings. We found evidence that killings that receive national or international media attention do indeed inspire similar events a significant fraction of the time. In the case of this particular tragedy in Oregon, there have been reports that the killer apparently had a blog where he praised Vester Flanagan, the killer who shot two news reporters and a bystander on camera in August. If the reports are true, then indeed this recent killing may be an example of the contagion we have seen evident in so many other killings

**ASU Now: So, is conventional wisdom correct that some mass shootings are copycats?**

*Towers:* Yes, we believe so. In fact, during the trial of the Aurora theater shooter, the father of one of the victims asked the media not to cover the trial, because he feared that the coverage would inspire copycat killings. Unfortunately, his prediction came true. A gunman



opened fire in a Louisiana movie theater, and in a Tennessee movie theater a man attacked people with a hatchet. All within two weeks.

**ASU Now: How does just looking at numbers prove that?**

Towers: The hallmark of contagion is seeing events unusually bunched together in time. The details of our analysis, where we fit a mathematical model of contagion to the data to quantify the level of contagion, are quite technical. But really, what it essentially amounts to is seeing if there are unusual groupings of events. In mass killings (four or more people killed), where the tragedies usually get national or international media attention, we saw significant evidence of this kind of unusual bunching. In mass shootings — with less than four people killed, but at least three people shot — we didn't see any evidence of unusual bunching. Interestingly, those events are so common in the U.S., happening once every few days, that they don't even make it past the local news. Because we saw evidence of contagion in high-profile events, and no evidence of contagion in events that mostly just got local news, we hypothesize that media attention may be the driver of the patterns we see. This kind of contagion has been suspected for a long time; our study is the first to quantify it.

**ASU Now: How does this compare to the probability of, say, a disease spreading, since we're talking about a contagion phenomenon?**

Towers: With a disease, you usually need close contact to spread it to someone else. In this case, the news media act as a "vector" that can transmit the infection across a very large area. The people who are susceptible to ideation to commit these terrible acts are quite rare in the population ... that's why it appears that it takes a lot of media coverage over a wide geographic area for this kind of contagion to take place.

**ASU Now: What is the news media's role in this? Do they push up the numbers?**

Towers: It appears that yes, national media coverage does end up increasing the frequency of these tragedies. However, the U.S. Constitution ensures freedom of the press ... we cannot legislate restrictions on the press to avoid this. It has to be a voluntary move. In fact, most press agencies will not report on suicides for exactly this reason ... suicides have been shown to be contagious. The sheriff in Oregon made the decision not to mention the killer's name. Perhaps his choice will be the beginning of a larger national conversation on how we can choose (or choose not) to cover these events.

**ASU Now: What is the next step in this research? What can you answer by taking it further?**

Towers: It needs to be pointed out that we did this research without funding, because there has been a Congressional moratorium since the 1990s on funding for research into firearm violence. We had to do this study unpaid, in our spare time. This lack of funding is a huge barrier to better understanding of the dynamics that underlie these tragic events. No other developed country in the world expects its scientists to work for free, spending their evenings and weekends studying public-health problems as pressing as the out-of-control firearm violence in the U.S. Because of this moratorium on funding, there aren't even official statistics on these events. Given the amount of media attention that is paid to these tragedies, it always surprises me that the complete lack of federal funding for research into the problem is rarely mentioned. So yes, I and many other researchers would like to devote more of our time to studying this problem, but there are only so many hours available of our time that we can afford to work for free.

— Read more in Sherry Towers et al., "Contagion in Mass Killings and School Shootings," *PLOSOne* (2 July 2015).

## Can Experts Determine Who Might Be a Mass Killer? 3 Questions Answered

By Arash Javanbakht

Source: <http://www.homelandsecuritynewswire.com/dr20190808-can-experts-determine-who-might-be-a-mass-killer-3-questions-answered>

*Editor's Note (Aug 08): After mass shootings, people naturally search for answers. We also want to find the root cause. One subject which often arises is mental illness. People, and politicians, raise questions about "red flags," or warning signs a person might commit a*





*violent act, and whether someone could have intervened to stop a mass murderer. Psychiatrist Arash Javanbakht answers some questions about mental illness, mass murder and whether it's possible to prevent horrific shootings.*

### **1. Is person who commits mass murder mentally ill?**

Not necessarily. In psychiatry, we do not have diagnostic criteria for a mass murderer, terrorist or violent person. There are psychiatric conditions that may include anger, aggression, impulsivity, violence, or lack of remorse or empathy among their symptoms. But there is [no one illness](#) that would be found in all mass murderers, or murderers in general.

On the top of the list of the conditions that may lead to violent acts are substance use and personality disorders, specifically antisocial personality disorder. This condition, commonly known as “psychopathy” among the public, entails disrespect for social norms and law; deceitfulness; impulsivity; aggression; lack of responsibility; and remorse. It is highly prevalent among the [criminal and prison population](#), and less often treated in the psychiatric clinic. That is because no one comes to the clinic asking us to fix their “lack of conscientiousness.”

Another condition is when a psychotic person has paranoid or persecutory delusions with a conviction that others are there to harm them. [These conditions](#) are rare. In general, most of the psychiatric conditions that affect nearly a fourth of the population, such as depression, anxiety, phobias, post-traumatic stress disorder, obsessive compulsive disorder, hair picking, etc., do not increase the risk of violence [toward others](#).

As I have noted before, only a [small percentage of violent acts](#) are committed by the mentally ill, and violent behavior does not have to necessarily be coming from mental illness.

Putting a label on something can only be helpful when we are able to treat it, or when it proves the person is not responsible for the act due to the illness. Furthermore, there could always be coincidence: A person who commits violent acts could have depression, and he or she also could have eczema. But the correlation would not necessarily be causal.

### **2. What is the difference between extremism and mental illness?**

Broadly, a mental illness is a diagnosable condition that significantly changes one's emotions, thinking, or behavior, and that leads to dysfunction or distress. There are more than 200 of them listed in the [diagnostic manual](#) of psychiatry. The profession does not have psychiatric diagnoses for extremism or terrorism.

The person who does commit a crime is an outlier from society in terms of their behavior. People who are overly suggestible, isolated and angry, based on their social and environmental circumstances may get attracted to dangerous ideologies, or join a criminal group or cult. That does not qualify them for a mental illness diagnosis. I have previously discussed [humans' tribal nature](#), and that in the wrong context, especially when fear circuitry in a person's brain is hijacked by the group leaders, people can be manipulated to heinous acts in service to the tribe's ideology.

### **3. Are there 'red flag' behaviors that can indicate risk?**

Yes. In general, a person's previous actions are great predictors of their future actions: most often, history of violence predicts future violence. However, hindsight is 20/20. We often hear retrospectively that people remember what was wrong with a person who committed a terrible crime, while others could never think “such a nice person” would do what they did.

But in general, history of violence or abuse, substance use and history of self-harm would be among the red flag signs that the person [may act violently](#) toward others or themselves. I could also add history of paranoid or persecutory delusions to that.

The good news is that, to prevent a violent person from access to firearms, we do not need an established diagnosis of a mental illness. The history of unreasonable violence itself is enough. These measures may not prevent some of the mass shootings, but they can help with a lot of murders and deaths by suicide.

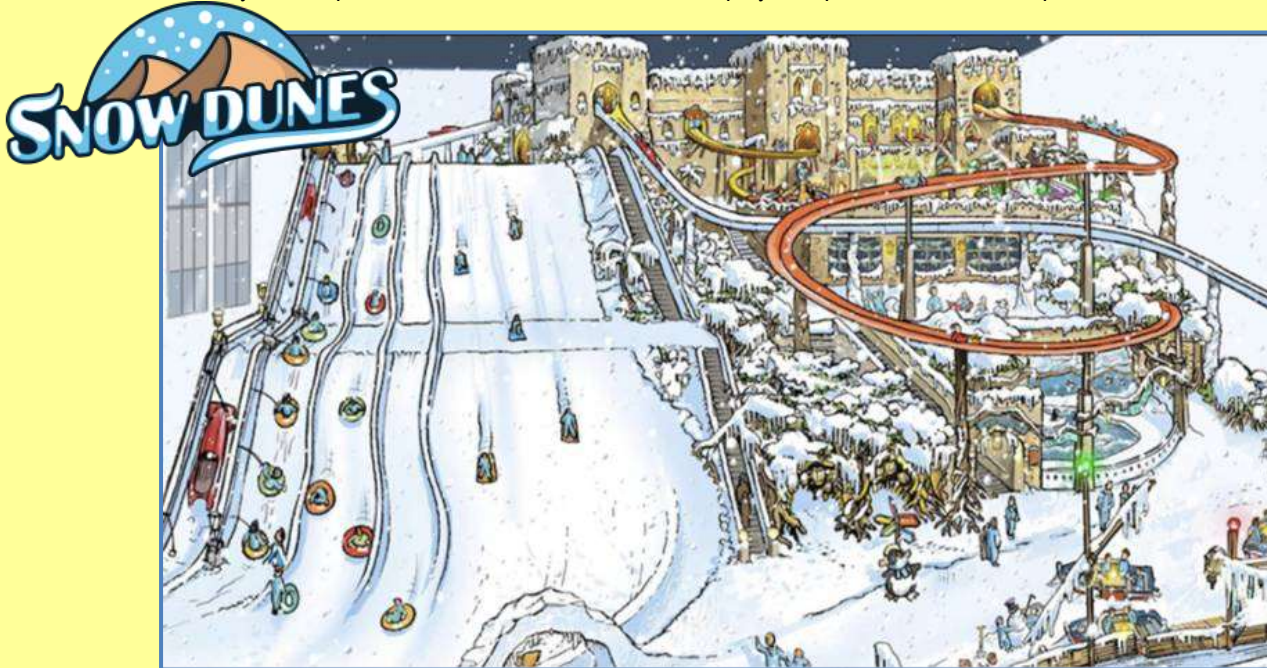
*Arash Javanbakht Assistant Professor of Psychiatry, Wayne State University.*



## Qatar's first indoor snow-themed park opens its doors to public

Source: <https://www.qatarliving.com/forum/arts-culture/posts/qatars-first-indoor-snow-themed-park-opens-its-doors-public>

Aug 14 – While the heat in Qatar may be challenging to deal with, a newly-opened park in town is offering a snowy retreat packed with entertainment, fun, and play at a place where the temperature remains -4C



all year round!

Known as this newest addition to entertainment venues in Qatar offers a variety of rides and attractions for all ages.

The park, which welcomed its first set of visitors on the second day of Eid Al Adha, covers an area of 9,500 square meters and is located at Doha Festival City Mall.

If you're looking to 'chill out' and get away from the sun for a while, perhaps you should drop by the park that features many different packages to delight visitors.

There are Silver, Gold and Platinum packages for individuals priced at QR190, QR240, and QR490 respectively, in addition to VIP rooms and party packages that cost between QR1500 - QR2000.

Snow Dunes is the third indoor theme park operated by Trimoo Parks at DHFC after

The park also comprises food and beverage outlets and retail stores.

**EDITOR'S COMMENT:** Apart from entertainment, the new facility should be included in the emergency response plan as an ideal place for temporary storage of CBRN contaminated corps.

## Tackling Cargo Shipping Security

Source: <http://www.homelandsecuritynewswire.com/dr20190815-tackling-cargo-shipping-security>

Aug 15 – Each day, thousands of containers travel the globe. Security agencies need to ensure the cargo that originally was shipped in them is what is in them when they reach their destination. Harmful or illegal content, added after the cargo was cleared for transport, must be detected and intercepted.

Securing the global supply chain, while ensuring its smooth functioning, is essential to U.S. national security. The Department of Homeland Security [Science and Technology Directorate](#) (S&T) and Israel's Ministry of Public Security (MOPS) teamed up to tackle that issue through the Low Cost Disposable Electronic Seals Pilot.



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Container security devices (CSDs) are used in the shipping environment to ensure the integrity of the container and track the movement of the container in the supply chain. The Low Cost Disposable Electronic Seals Pilot arose from the need to develop technologies that ensured cargo shipments aren't tampered with and to enhance the end-to-end security of the supply chain.

S&T [says](#) that the U.S. and Israel's MOPS selected Hi-G-Tek, a company based in both the U.S. and Israel, to develop the electronic



seals. Hi-G-Tek provides wireless container security devices that provide security information. **The electronic seals use Radio Frequency Identification (RFID) technology to communicate, and they store customer specific information like container and manifest number.** The seal also acts as a lock and can replace the International Organization for Standards certified mechanical bolt seal. Using embedded sensors, the seals can prevent attempts at detaching, bypassing or tampering and will record any such attempts to do so. Upon arriving at a port, the port authority will use an application on a standard smart phone to scan the seal which will provide this critical information and determine whether the cargo container should be inspected further or continue on. MOPS also identified three Israeli companies – Caesar Stone, Tama Plastics and Hadera Paper – that would participate in the pilot by providing products to be shipped in containers using the electronic seals.

### Enhancing U.S. and Israeli Maritime Cargo Security

This work should reduce the risk of terrorists and transnational criminal organizations from manipulating cargo passing through multiple cargo methods through the international supply chain.

The commercial market for CSDs is growing and technology continues to advance. This pilot, which officially kicked off in April 2019 and ends in November 2019, will demonstrate the use of CSD technology and will help U.S. Customs and Border Protection (CBP) understand how to best use the data. If successful, the data interfaces and analysis can be integrated into CBP systems and could be used by the National Targeting Center to better identify high-risk cargo and facilitate the processing of low-risk cargo.

### Next Steps

S&T, in cooperation with MOPS, CBP, Hi-G-Tek and Sandia National Labs, will evaluate the data collected on the electronic seals as they arrive from Israel in Savannah, Georgia, the port of entry. The pilot will end in November 2019 at which point a final evaluation report will be generated.





### International Partners

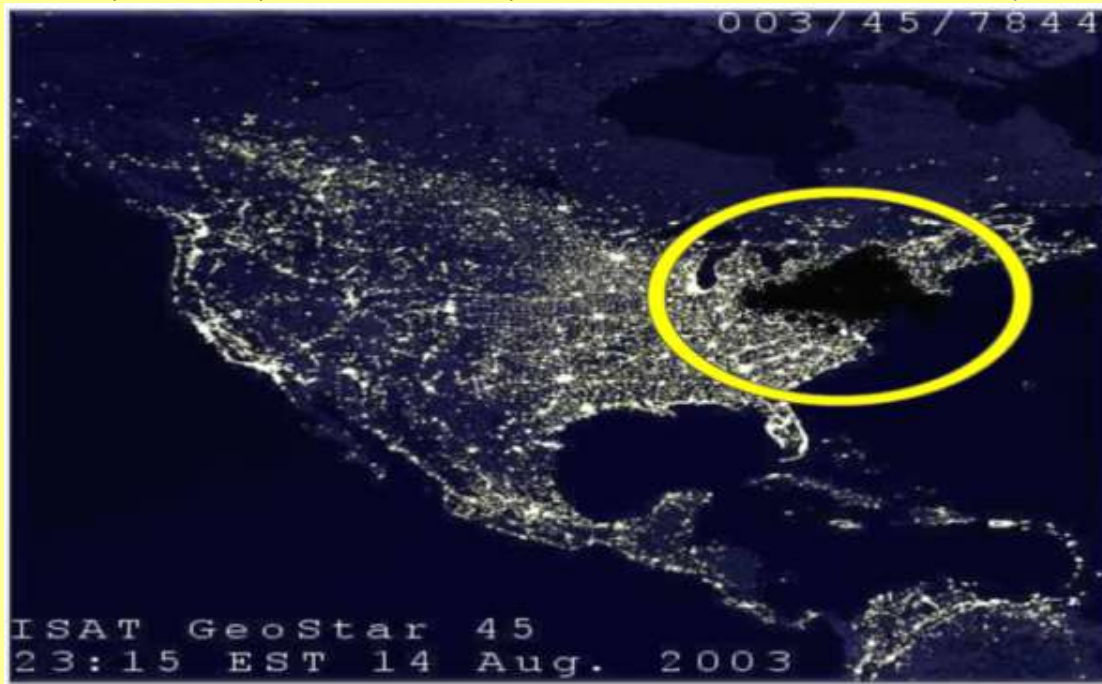
Since 2009, S&T has partnered with MOPS to promote cooperative research and development (R&D), test and evaluation activities and the exchange of science and technology information sharing to address homeland security challenges like border and maritime cargo security. To date we have partnered on 17 projects valued at more than \$25 million.

As the R&D arm of DHS, S&T understands the importance of global cooperation and international partnerships to enhance homeland security capabilities. Currently, S&T's International Cooperative Programs Office manages 13 international partnerships actively sharing solutions and information to help keep all nations' critical infrastructure, national security and economic interests secure. Among these international partners, Israel stands out as a unique partner for their challenging operational environment. Faced daily with a wide-array of threats, Israel's government and industry has become innovative, agile and responsive to keeping pace with new and emerging threats.

## When the Lights Went Out: On Blackouts and Terrorism

Source: <http://www.homelandsecuritynewswire.com/dr20190815-when-the-lights-went-out-on-blackouts-and-terrorism>

Aug 15 – When the Northeast Blackout of 2003 killed electricity to more than 50 million people in the United States and Canada, the night sky turned so pristinely dark that in some cities the milky way could be seen by the naked eye. But in New York City, where hundreds of commuters were [suddenly trapped](#)



in stranded subway trains and stalled elevators, stargazing remained far from people's minds, at least until initial fears subsided. One reporter in Times Square [observed](#) "the bewildered, disoriented throngs, frightened by thoughts of terror" who "were trying to get their bearings in an environment that had been transformed in an instant."

David E. Nye writes in the [MIT Press Reader](#) that the FBI, like many in New York who were still reeling from the September 11, 2001 attacks, shared these concerns. Just the previous year the agency concluded that terrorists were studying weaknesses in power grids. Meanwhile, groups across the country had been preparing for and speculating about doomsday scenarios — scenarios that the first moments of the 2003 blackout mimicked to a disquieting degree.



## Want to Stop Mass Shootings?

Source: <http://www.homelandsecuritynewswire.com/dr20190813-want-to-stop-mass-shootings>

Aug 13 – The mass shootings over the weekend in El Paso, Texas, and Dayton, Ohio, killed at least 31 people and wounded scores more. Those incidents were just the latest such deadly attacks in the United States, which has tallied more than 250 since Jan. 1, according to a new report by [Gun Violence Archive](#). The group defines a mass shooting as one that claims the lives of at least four victims. [David Hemenway](#), professor of health policy at [Harvard T.H. Chan School of Public Health](#), director of the Harvard Injury Control Research Center, and author of the 2006 book [Private Guns, Public Health](#), has spent much of his career studying gun violence. He recently [spoke](#) with the *Harvard Gazette*'s Colleen Walsh about what can be done to stop mass shootings.

*Colleen Walsh: How do other countries, where mass killings are less common, handle gun issues differently?*

*David Hemenway:* First, it's important to recognize the other high-income countries start off with many fewer guns and much stronger gun laws. Second, often when there is a mass shooting in another country it's a time when everyone is thinking about guns, and it becomes an opportunity to think about what kinds of gun laws are needed. Typically it is a time when countries improve their gun laws, making them stronger, not solely to prevent mass shootings but to also to help prevent other firearm-related problems, such as homicides, suicides, gun robbery, gun intimidations, and gun accidents.

***Walsh: How do you respond to the suggestion that shooters would be dispatched more quickly and inflict fewer injuries if more people carried weapons?***

*Hemenway:* Too many of us watch television shows and movies where guns are the solution to so many problems. The good guy with the gun is the big hero. One huge problem is that so many people in the U.S. are armed who really aren't well trained. Going to a gun range and shooting a few times does not make you well equipped to deal with violent situations where your adrenaline is going like crazy, your heart is beating a mile a minute, and you have seconds to make the right decision. It takes good training — repetition, practicing over and over — to react to that kind of situation. You can't, on the fly, suddenly think you are going to be this great hero; instead you could shoot the wrong person, or you could get in the way of the police or others who are well trained and trying to figure out what's going on. Most people, unless they are with the armed services or a member of the police force, never encounter such violent scenarios. So it's going to be incredibly rare for you to be in a situation where you could actually do something. Do we really want continuously to train millions of people for an event that virtually almost none of them will ever encounter? Even for something as simple as CPR, continued training is needed. I was taught CPR 10 years ago, but I don't feel at all confident that I would really know what to do if I was alone and had only seconds to respond effectively. For mass shootings you would have to keep training over and over for the training to be at all effective.

***Walsh: Some gun control opponents have pointed to mental health issues and violent video games as major factors in the number of mass shootings in the United States. Are those two things more prevalent here than in other countries with lower rates of gun violence, and, if so, why?***

*Hemenway:* There are a whole range of things that could play a role in prevention, including better parenting, less racism, better education, more job opportunities. All of these things might have some effect on reducing shootings in the U.S. We should improve all those things. But the most cost-effective interventions involve doing something about guns. For example, as far as we can tell, virtually all developed countries have violent video games and people with mental health issues. There's no evidence that I know of that shows that people in the U.S. have more mental health issues, especially violent mental health issues. Compared to other high-income countries we are just average in terms of non-gun crime and non-gun violence. The elephant in the room, the thing that makes us stand out among the 29 other high-income countries, is our guns and our weak gun laws. As a result, we have many more gun-related problems than any other high-income country. Every other developed country has shown us the way to vastly reduce our problems. Our guns, and our



permissive gun laws, are what make us different than France, Italy, the Netherlands, South Korea, New Zealand, you name it.

**Walsh: Why does it seem many law-abiding American gun owners fear restrictions like background checks and the elimination of high-capacity magazines, bump stocks, and assault rifles? How would most gun owners be affected by such changes?**

Hemenway: The overwhelming majority of American gun owners favor universal background checks, at least that is what they say on survey after survey. Most favor the elimination of military weapons in everybody's hands. If you asked them whether they feel comfortable with some of the people in this country who own guns legally, they would say "no." Just as there are some bad drivers, there are also some irresponsible gun owners. A problem is that responsible gun owners have been convinced that there are people out there trying to take away their guns. The U.S. gun lobby has been very effective in preventing changes that might reduce gun sales, regardless of the effect on public health and public safety.

In our work at the School of Public Health we are making gun owners part of the solution. My colleague Cathy Barber is working with gun owners, gun advocates, gun trainers, and gun shop owners. Together they are finding common ground and developing solutions. The first area where they have found much common ground is around suicide. The evidence is overwhelming that a gun in the home increases the risk of suicide. More people die from gun suicide than gun homicide, and the people dying are gun owners and their families. Cathy has helped get gun shops in 20 states to play a role in reducing suicide. One grass-roots education effort includes guidelines on how to avoid selling or renting a firearm to a suicidal customer. To activate gunners, you need the right message and the right messenger. And the right messenger isn't Harvard or public health professionals, it is responsible gun owners themselves. She is hoping to expand her focus to work on preventing guns from moving from the licit to the illicit market. Gun advocates have great ideas; they know about guns; and they are big into safety, so there are large potential benefits to get them to work together with public health professionals. That's the goal.

**Walsh: Will it require some especially savage mass shooting to change the political equation?**

Hemenway: It doesn't look like any one mass shooting is going to make the difference. In other countries where there has been a mass shooting, enough conservatives have sometimes been willing to step up and say, "Enough is enough." That is what happened in Australia. The conservative government said, "Even if we get voted out by our conservative colleagues, we just can't stand this anymore." In this country, after mass shootings, very few people on the conservative side are willing to stand up. In public health there have been many great victories, but typically they take a long time. Fortunately, eventually there's a tipping point.

One scenario for a tipping point is if the Republican Party suffers a big enough election defeat. That would be one way that you might see real change. There are also other ways, and there are a lot of things happening since the Parkland high school shooting in 2018 that suggest we may be nearing a tipping point. At least we are finally moving in the right direction. For example, we now have three states that are funding gun research (New Jersey, California, Washington). I used to only talk to reporters after mass shootings; now they call all the time to talk about many other various aspects of the gun issue. We now have [The Trace](#), a daily journalism outlet devoted to gun-related issues in the U.S. There are also many new researchers who have begun studying gun issues. This year I am getting at least two requests a week to review journal articles about guns — because there are so many new researchers writing about it, so that's a real plus. And, for the first time in 20 years we have Democrats who want to talk about guns. Finally, there is also the sense that gun violence is hitting home more in white suburbia, and I think that could push change forward. Interpersonal gun violence is still focused in cities in the U.S., and often involves underrepresented communities who have little political or social power. But with the increase in public mass shootings, often it's white people and upper-middle-class children who are at risk. Getting more women involved in trying to help reduce gun violence is a way forward. Women are so much better at understanding gun issues than men, because for men it's somehow bound up with notions of virility and masculinity and protecting the home.

**Walsh: What is the one most important thing to do?**





*Hemenway:* You can't just do one thing. That's the whole point. It's like asking what's the one thing you can do to reduce cancer in the U.S.? There are many things. Some might say you could ban smoking, but there is a lot of cancer among nonsmokers, and banning smoking wouldn't stop smoking and will create black markets. It's a bad policy. Instead the public health approach is focused on harm reduction. So if we are going to have lots of guns — which we clearly are for the next 50 years at least — we have to do lots of things. One of the many big success stories in injury prevention has been the reduction in the rate of motor vehicle deaths. Years ago, when I worked for Ralph Nader, if you had asked me for the one big thing to improve motor vehicle safety I would have said the airbag. The airbag is great, but it only reduced motor vehicle deaths by about 10 or 11 percent — it doesn't save pedestrians or bicyclists and hasn't been effective in rollovers. Yet overall, since I got my first driver's license, motor vehicle deaths per vehicle mile have fallen over 85 percent — because we did lots and lots of things. And if we are going to have lots of guns, that's what we need. If I were required to pick one thing we should do that's semi-feasible I would say licensing of gun owners and all that entails, including strong background checks, and only allowing firearm sales to a licensed owner. More broadly, we need something like a National Highway Traffic Safety Administration for guns, which would address the issue in a range of ways.

*This [interview](#) is published courtesy of the [Harvard Gazette](#), Harvard University's official newspaper.*



## Don't Ban Assault Weapons—Tax Them

Source: <http://www.homelandsecuritynewswire.com/dr20190813-don-t-ban-assault-weapons-tax-them>

Aug 13 – The United States is debating what to do about assault-style weapons, what gun-rights advocates like to call modern sporting rifles. Gun-rights champions argue that these weapons are in common use, and hence protected by the Second Amendment. Gun-control supporters respond that these weapons have no place on our streets and ought to be banned. Saul Cornell writes in [The Atlantic](#) that there's a better solution, and one that avoids the constitutional objections typically raised by gun-rights advocates. Rather than banning these weapons, the time has come to tax them.

**Taxation offers one of the most promising and underutilized tools to change the calculus of gun violence in America.** Few Americans realize that guns and ammunition are already taxed to pay for conservation efforts. Gun owners have happily tolerated federal taxes for years to support this worthwhile public-policy goal. Surely even the most die-hard gun-rights supporter could not argue that, although it is constitutional to tax weapons and ammo to protect animals, it is not constitutional to tax them to protect people.

Taxation sidesteps entirely the constitutional qualms some have over assault-weapons bans. It also addresses the criticism often voiced that singling out assault weapons is irrational because it would leave hunting rifles that have many of the same features on the streets. One of the problems that gun bans pose is that that gun makers simply modify their weapons to make them street-legal. Moreover, gun bans do not address the problem posed by guns already in private possession. Rather than requiring an expensive buyback program, gun taxation would use a market-based strategy to reduce the number of guns in circulation by effectively raising the price of ownership. The additional revenue generated by this policy could be used to fund research on violence reduction and support existing programs to help local communities deal with the ravages of gun violence.

## How many bullets do we need?

By Glenn Mollette - Contributing Columnist

Source: <https://www.recordherald.com/opinion/42871/how-many-bullets-do-we-need>

Aug 13 – Terrorists proved on September 11, 2001 that guns are not necessary to kill 2753 people. Timothy McVeigh proved that a truck load of explosives can kill



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168 people and injure 680 while destroying one third of building and damaging many others in Oklahoma City. A man with a knife killed four people and wounded two others in Los Angeles last week.

A weapon of mass destruction can be a plane, an automobile, a knife, a gun or whatever an evil person chooses to utilize at a certain moment.

By and large the weapon of choice has been an automatic weapon capable of holding a high-capacity magazine. Whether it was Las Vegas, Columbine, Charleston, El Paso, Dayton or sadly too many other locations to name, the weapon of choice has been an automatic rifle with high-capacity bullet magazines. A truck can kill people but normally you can hear and see a truck coming. A knife can kill people but not as many as a rifle with a magazine clip holding 70 or more bullets.

An evil person can walk into a church, theatre, Walmart or school and immediately have a couple of hundred people



huddled together as a target. He doesn't have to aim. He just points the weapon and pulls the trigger. The gun acts like a sprayer of bullets hitting people so fast that running or dodging is almost impossible. The shooter looks for scenarios where people are trapped with limited escape door opportunities. **Thus, a shooter with a bullet clip of 50, 70 or more has a potential of killing many people in just a minute or less.**

This is why Congress must enact background checks, strict licensing for high powered rifles and limit the number of bullets a clip can hold at one time. However, here is the problem. What is the magic number? My ordinary pistols hold six shells and my automatic ones hold more so what is the magic number of bullets that Americans will be limited to in one clip? Will it be 10 or 15 or 20? Honestly, there is no right number because a skilled marksman will still be able to kill. The hope is that maybe the ending of one clip or emptying of one pistol would give someone a chance to tackle the monster if anyone is still alive. Hopefully someone in the room will have a gun and be able to stop the shooter.

I'm for limiting magazine capacity but it won't eliminate terrorism and mass shootings. It's a Hail Mary and our Congress has to do something but we have to do more. All gatherings must take security measures. Hollywood and network television has to change. Universal Studios/NBC television is the biggest hypocrite of all. They constantly bark gun control and are negative toward the National Rifle Association while coming out with a movie titled "The Hunt" which is supposedly about liberals hunting deplorables and killing them. This kind of junk is a huge part of the problem. Hollywood, the music industry and video games must dramatically change their tone. Barney Fife in the Andy Griffith show carried a gun but he never made any of us want to kill anyone or hate people.

**Guns, knives, trucks and airplanes can all kill and there are many other weapons that will kill massive numbers of people. We can't eliminate them. Our greatest need is a culture change.**





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# CHEM NEWS







## **Military working dogs train for CBRN exposure in Kuwait**

Source: <https://www.usar.army.mil/News/News-Display/Article/1815206/military-working-dogs-train-for-cbrn-exposure-in-kuwait/>



Military working dog, Oopey, a Belgian Malinois who does patrol work and explosive detection, wears protective gear and is guided by his handler to the decontamination element to complete the Chemical, Biological, Radiological, or Nuclear (CBRN) decontamination training in Kuwait April 11, 2019. This is the first time Oopey conducted CBRN decontamination training. Members of the 637th Chemical Company, the 719th Medical Detachment Veterinary Service Support, and the 386th Expeditionary Security Forces Squadron came together to conduct a live exercise to train to save the lives of military working dogs and their handlers in the event they were exposed to a CBRN substance. Live training events help prepare service members for real world events which may require them to recall the skills they learned in training to stay in the fight and survive. (U.S. Army Reserve photo by Sgt. 1st Class Anaidy G. Claudio, U.S. Army Central Public Affairs Office) (Photo by Sgt. 1st Class Anaidy Claudio)

April 2019 – Hoping for the best but preparing for the worst is something military service members do every day. Risk assessments are conducted regularly to prepare service members to identify risks and plan to implement controls to mitigate risks. Military working dogs are no exception but require a little more guidance than the average troop.

Members of the 637th Chemical Company, the 719th Medical Detachment Veterinary Service Support, Central Medical Area Readiness Support, [Army Reserve Medical Command](#), and the 386th Expeditionary Security Forces Squadron came together to conduct a live exercise to train to save the lives of military working dogs and their handlers in the event they were exposed to a chemical, biological, radiological and nuclear (CBRN) substance.



Sgt. Cory Gwynn, a CBRN noncommissioned officer in charge with the 719th MDVSS, explained training military working dogs and their handlers to prepare for a CBRN exposure helps them plan for risks that they would not otherwise know to prepare for if they did not practice what they would do ahead of time.

"This training gives both sides an opportunity to be prepared in the event of CBRN exposure, which is great because it's not something that is often trained, so the decon element gets to see the dogs and the humans coming through in a live event; there are no dummies. You get to see things that situationally you wouldn't normally see when you are just walking through some training," said Gwynn.

"For the military working dogs and handlers, they don't normally do this type of training, so it gives them the opportunity to see how the dogs are going to react, which is one of the most important elements of this; because keeping the dogs safe as well as the handlers and the element that is deconing them safe is the most important part in all of this."

Air Force Staff Sgt. Porschia Easom, a military working dog handler with the 386th ESFS, said this is the first time she conducted this type of training and thought it was a great way to prepare her military working dog, Beki, a Belgian Malinois that does bite work and finds explosives, for what she may experience in the event of a live CBRN exposure.

"She is very wary about new things, so you've seen the little machine that we've been trying to use [Joint Chemical Agent Detector (JCAD)] it makes different sounds, so just to get them used to that, because if a chemical attack does happen everything is gonna be already heightened," said Easom.

"So she'll be more skittish of things. If we go ahead and do it while it's mellow she can get more used to it so it won't be as crazy if it were to happen in real life."

Gwynn said this is the first time the CBRN, veterinarian and MWD units conducted a training like this because there is no standard manual for MWD CBRN exposure. He explained that it was a joint effort to write a new standard operating procedure (SOP) to create a live exercise to prepare MWD for a CBRN exposure.

"I've never trained to decon the dogs before," explained Gwynn. "This is something that is going to be completely new to a lot of people. We're creating SOP; we're taking from a couple of joint task force manuals and combining a few different elements, and this is looking forward to any future issues for any CBRN exposure."

The training involved the military working dogs and their handlers going through a Homeland Response Force Mission exposure scenario, which is an exposure event that could happen in the United States. They had a "hot" and "cold" section, hot being the exposed area and cold the area where with the decontamination process is complete. Veterinarians and a veterinarian technician were available in the hot and cold areas to check on the MWDs. The military work dogs enjoyed some coddling while getting their exam at the end of the exercise which they seemed to enjoy evidenced by wagging tails and relaxed panting.

"The reason why we're doing this is because traditionally military working dogs don't go through this process of decon, so it's an improved opportunity for us to save lives, assets, and keep the dogs with the working handlers if they were exposed to a CBRN element," said Gwynn.

"It is important to keep the dogs safe because they are not only an asset, they are a battle buddy, and that affects morale for the military working dog units as well as people around them who work with the dogs. The Army keeps an asset right there as well as keeping Soldiers trained."

## **DARPA Awards ASU \$38.8M to Build Epigenetic-Based Device to Measure WMD Exposure**

Source: [https://www.genomeweb.com/research-funding/darpa-awards-asu-388m-build-epigenetic-based-device-measure-wmd-exposure#.XTIW30dS\\_IU](https://www.genomeweb.com/research-funding/darpa-awards-asu-388m-build-epigenetic-based-device-measure-wmd-exposure#.XTIW30dS_IU)

July 24 – Arizona State University announced today that it has been awarded \$38.8 million by the US Defense Advanced Research Projects Agency (DARPA) to build a field-deployable,

point-of-care device that can determine if a person has been exposed to weapons of mass



destruction or their precursors, in 30 minutes or less.

The grant, which will be funded over four years in phases and options, was awarded under DARPA's Epigenetic Characterization and Observation (ECHO) program, which aims to identify epigenetic signatures created by exposure to threat agents and to develop technology that performs highly specific forensic and diagnostic analyses to reveal the exact type and time of exposure.

ASU said the device it plans to develop will be capable of detecting the health effects of a number of substances associated with weapons of mass destruction — including biological agents, radiation, chemicals, and explosives — from a single drop of blood. The technology could also eventually be used for simple, low-cost monitoring of epigenetic changes to detect a broad range of human diseases.

The ASU project — known as DEPICT, or Diagnostic Epigenetics of Infectious agents and Chemical Toxicity — will use novel approaches to identify changes in global epigenetic signatures, and implement bioinformatics and machine learning tools to identify epigenetic

biomarkers that can quickly and accurately reveal the nature and severity of exposures, the university added.

"ASU has long been committed to working across disciplines, often in tandem with corporate partners and government entities, to identify, address, and solve global grand challenges. We're proud to utilize our innovative approaches to advance our military's capability in this critical capacity," Sethuraman Panchanathan, ASU Knowledge Enterprise executive vice president and chief research and innovation officer, said in a statement. "Warfighting technology of the future will increasingly rely on the ability to rapidly develop and deploy highly integrated, responsive technologies like the ECHO project."

In June, [DARPA awarded a \\$27.8 million contract to the Icahn School of Medicine at Mount Sinai](#) as part of the ECHO program, to find epigenetic markers in blood that would identify previous exposures and time of exposure to materials that could be associated with weapons of mass destruction, and to develop a field-deployable instrument.

## Portable Gas Detection Shrinks to New Dimensions

Source: <https://www.domesticpreparedness.com/updates/portable-gas-detection-shrinks-to-new-dimensions/>

July 20 — A sensor for detecting toxic gases is now smaller, faster and more reliable. Its performance sets it up for integration in a highly sensitive portable system for detecting chemical weapons. Better miniature sensors can also rapidly detect airborne toxins where they occur, providing key information to help emergency personnel respond safely and effectively to an incident.

Chemical identification typically involves collecting a sample at the scene of a chemical release and bringing it back to a room full of equipment operated by trained personnel. The machines sift through a

sample of various gases and weigh the molecules to determine their identities. And while portable versions of these instruments, known as mass spectrometers, are commercially available, they are less sensitive than their lab-based counterparts.

For more than 20 years, researchers at Sandia National Laboratories have been working to avoid the performance penalty for portable gas detection. Their sensors employ a technique called gas chromatography, or GC for short.

**Briefcase-sized instruments from Sandia have sniffed for nerve and blister agents continuously for 22 months in the Boston subway without a false alarm. Sensors about the size of a AA battery can detect a compound in sweat that signals smuggled humans.** Handheld gas sensor systems can also [monitor crop health](#) by identifying gases that plants

release when stressed by drought or sickness.





Now, Joshua Whiting, an analytical chemist at Sandia, and his colleagues shrunk their sensor to about the **size of a dollar** bill while also increasing the performance of the sensor. The system now separates a gas sample twice — yet the entire analysis happens in less than 10 seconds. The extra separation step reduces interference from solvents, cleaners and diesel fuel that could also be in the air during a chemical weapons release. Less interference also means the signal for detected target compounds is more reliable. "The false alarm rate for this multidimensional GC system is even lower than before," Whiting said. In [a paper recently published](#) in *Lab on a Chip*, the researchers used the **sensor to identify each ingredient of a 29-compound mixture in seven seconds.** The system also reliably detected compounds that simulate mustard gas and phosphonate-based nerve agents during 40 days of continuous operation.

"With rapid analysis, operators can learn about an exposure to toxic gases in time for people to take personal precautions, evacuate an area and mitigate potential damage," Whiting said. The trick to that rapid analysis is a pressure valve in the sensor that controls how quickly gases flow through each separation step. Controlling this flow with pressure means the sensor uses less energy than similar temperature-controlled systems.

Energy efficiency, combined with reliable detection in an increasingly small package, sets the researchers up for the next phase of the project: building a fully portable analytical system with integrated chemical separation, selective detection and computerized data analysis that performs as well as — or better than — lab-based equipment.

The majority of the funding for the micro-gas sensing research has come from the Defense Advanced Research Projects Agency (DARPA) and the Defense Threat Reduction Agency (DTRA), along with some funding from Sandia's [Laboratory Directed Research and Development](#) program. The researchers are now seeking funding to build the integrated system and to incorporate additional functionalities that can compete with lab-scale equipment.

## Russian Opposition Leader Navalny May Have Been Poisoned, Says Doctor

Source: <https://www.themoscowtimes.com/2019/07/28/russian-opposition-leader-navalny-may-have-been-poisoned-says-doctor-a66601>

July 28 – Russian opposition leader Alexei Navalny was hospitalized on Sunday after suffering an acute allergic reaction which one doctor said may have been the result of him being poisoned with an unknown chemical substance.

Navalny, 43, was rushed to hospital on Sunday morning from jail where he is serving a 30-day sentence for violating tough protest laws, a day after police in Moscow detained over 1,000 people for an illegal demonstration which Navalny called for.



His spokeswoman Kira Yarmysh said Navalny had signs of an acute allergy with "severe swelling of the face and skin redness."

Doctors at the hospital treating him have yet to publicly disclose their diagnosis and the precise cause of his symptoms remains unknown.

But one doctor who has treated him in the past and was able to briefly speak to him and look at him through the crack of a door on Sunday said she could not rule out that he had been poisoned.

"We cannot rule out that toxic damage to the skin and mucous membranes by an unknown chemical substance was inflicted with the help of a 'third party'," Anastasia Vasilyeva, the doctor, wrote on Facebook.

Vasilyeva, who said Navalny had a rash on his upper body, skin lesions, and discharge from his eye, called for samples of Navalny's bed sheets, skin and hair to be tested for chemicals. She said she found the fact that she had not been allowed to examine him properly suspicious.



The Moscow hospital where Navalny's spokeswoman said he was being treated could not be reached for comment.

Separately, Navalny's lawyer, Olga Mikhailova, wrote on Facebook on Sunday evening that doctors did not know what was wrong with her client, but that she deemed his symptoms strange given that he had never suffered from allergies in the past.

Navalny suffered a serious chemical burn to his right eye in 2017 as a result of an assault. Doctors were able to restore his sight and save the eye.

He was jailed on Wednesday this week for 30 days for calling for Saturday's unauthorized march to protest against the exclusion of several opposition candidates from a local election later this year.

While Navalny was behind bars, police rounded up more than 1,000 people in the Russian capital at the rally on Saturday in one of the biggest crackdowns in recent years against the opposition, drawing international criticism.

A spokeswoman for the U.S. Embassy in Moscow, Andrea Kalan, wrote on Twitter on Sunday that the large number of detentions in Moscow and the "use of disproportionate police force undermine rights of citizens to participate in the democratic process."

### **Opposition activist detained**

In a separate incident on Sunday, Russian activist Dmitry Gudkov, who was among the opposition candidates barred from running in local elections later this year, said he had been detained and taken to a Moscow police station.

The reason for Gudkov's detention was not immediately clear, his spokesman Alexei Obukhov said.

Russia's Interior Ministry did not respond to a request for comment on Navalny and Gudkov's detention.

Police on Sunday night detained about 10 people, including journalists, who had gathered in front of the hospital where Navalny was being treated.

Navalny, a lawyer and anti-corruption activist, has served several stints in jail in recent years for organizing anti-government demonstrations.

The European Court of Human Rights last year ruled Russia's arrests and detention of Navalny in 2012 and 2014 were politically motivated and breached his human rights, a ruling Moscow called questionable.

## **Battelle to Work with DARPA on WMD 'Fingerprint' Test**

Source: <https://www.hstoday.us/industry/industry-news/battelle-to-work-with-darpa-on-wmd-fingerprint-test/>

July 29 – Battelle has won an Associated Contractor Agreement for a new Defense Advanced Research Projects Agency (DARPA) Epigenetic Characterization and Observation (ECHO) program. The aim is to build a field-deployable platform technology that quickly reads someone's epigenome and identifies signatures that indicate whether that person has ever—in his or her lifetime—been exposed to materials that could be associated with weapons of mass destruction (WMD).

Battelle will examine blood samples from people known to have handled materials associated with biological, chemical, explosive, pesticide or herbicide contaminants and compare those results to control subjects who have not handled these materials to identify unique epigenome signatures.

The epigenome is biology's record keeper. Though DNA does not change over a single lifetime, a person's environment may leave marks on the DNA that modify how that individual's genes are expressed. This is one way that people can adapt and survive in changing conditions, and the epigenome is the combination of all these modifications. Though modifications can register within seconds to minutes, they imprint the epigenome for decades, leaving a time-stamped biography of an individual's exposures.

Whereas current forensic and diagnostic screening technologies only detect the immediate presence of contaminants, the envisioned ECHO technology would read someone's epigenome from a biological sample even when other physical evidence has been erased.

"We'll be developing methods to identify these signatures and how to interpret them for attribution—what did the person handle, when and for how long," said Battelle Biologist and



Principal Research Scientist Rachel Spurbeck, PhD, who is leading the effort. "This will even allow for diagnosing illnesses in individuals as a result of their exposure."

## Second police officer contaminated in Salisbury Novichok poisoning

Source: <https://www.bbc.com/news/uk-england-wiltshire-49361327>

Aug 15 – A second police officer was contaminated with Novichok during the 2018 poisonings in Salisbury, it has been revealed. Former Russian spy Sergei Skripal and his daughter Yulia [were targeted with the nerve agent](#) in March 2018.

Det Sgt Nick Bailey [was also contaminated with the nerve agent](#) at the Skripal's home.

The Metropolitan Police has now confirmed the nerve agent was found in the blood sample of another officer.

The force said the Wiltshire Police officer, who does not wish to be identified, displayed signs at the time that indicated exposure to a very small amount of Novichok.

The officer received medical treatment and returned to duties shortly afterwards.

Detectives from the Counter Terrorism Policing (CTP) network said a forensic examination of the officer's blood has now confirmed that traces of Novichok were in the sample. The officer is the sixth person to be confirmed through

forensic testing as a victim of the initial Salisbury attack. Mr Skripal and his daughter recovered after intensive care in hospital, and their current whereabouts are being kept secret.

Det Sgt Bailey needed hospital treatment but returned to full active duty two months after the attack.

Dawn Sturgess was fatally poisoned after suffering high levels of exposure to Novichok in nearby Amesbury in June 2018. Ms Sturgess and her partner Charlie Rowley - who was also contaminated but has since recovered - are believed to have come into contact with a bottle of Novichok discarded by the Skripals' attackers.

A UK investigation blamed Russian agents for the Novichok attack, identifying two suspects using the names Alexander Petrov and Ruslan Boshirov. Both deny any involvement.

The attack prompted the UK and its Western allies to expel many Russian diplomats, with Russia retaliating with its own expulsions.

**EDITOR'S COMMENT:** Why now?

## ASU building device to detect exposure to weapons of mass destruction

Source: <https://www.statepress.com/article/2019/08/spscience-new-asu-project-to-create-wmd-detector>

Aug 16 – The [ASU Biodesign Institute](#) is leading a project to create a field device that can detect traces of material in human DNA associated with weapons of mass destruction.

The \$38.8 million project called Epigenetic Characterization and Observation program, or [ECHO](#), is funded by the [Defense Advanced Research Projects Agency](#) and is led by principle investigator and University faculty member Joshua LaBaer.

The device will be able to identify whether an individual has ever been exposed to such material by examining the signatures in their epigenome to help quickly diagnose military personnel.

"The epigenome is biology's record keeper," according to DARPA's website. "Though DNA does not change over a single lifetime, a person's environment may leave marks on the DNA that modify how that individual's genes are expressed."

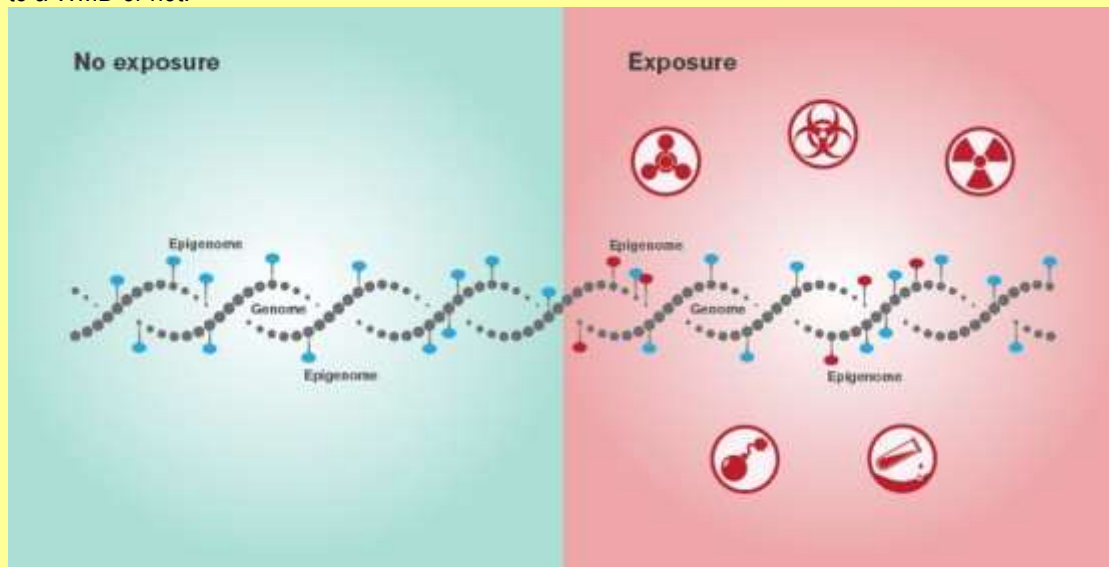
Vel Murugan, a research scientist at the Biodesign Institute working on the project, said that earlier detectors for [WMDs](#) required samples to be sent to a lab for identification and had no way of telling what chemicals a person had been exposed to or for how long.







"Those are the finer details we can get from this technology because this actually comes out of a person's body," Murugan said. "You can actually take a drop of blood and then identify whether they were exposed to a WMD or not."



The Biodesign Institute at Arizona State University / Courtesy

How epigenetic DNA is affected by material related to weapons of mass destruction. Testing for the device will take place in secure locations away from ASU's campus to limit the exposure of harmful material.

"This will be done under strict regulatory compliance, and we have a process in place to acquire samples from different places at different locations throughout the United States," Murugan said. "So, this technology will not be tested on-campus."



Eric Van Gieson, the program manager for ECHO, said in an email to The State Press that recent advancements in epigenetic research to [treat cancer](#) was a significant inspiration for the ECHO project. Van Gieson also said that ASU has been included in DARPA projects before. However, these past projects did not influence DARPA's choice to work with ASU on the project.

"ASU has worked with DARPA extensively in the past," he said in the email. "While those past efforts did not play a role in why ASU was selected for ECHO, they do reflect that researchers at the University embrace DARPA's mindset and are willing to take on the high-risk projects that we favor."

The Biodesign Institute has a number of scientific programs that will be used for the ECHO project, said Dianne Price, director of marketing and communications for the Biodesign Institute.

"ASU is in a somewhat significant position to be able to do this because at Biodesign, we have multiple disciplines that are needed," she said.

According to DARPA's website, "ECHO is focused specifically on diminishing the threat posed by WMD and improving diagnostics for troops who may have been exposed to threat agents."

However, because of possible applications of the technology, DARPA "intends to proactively engage with several independent ethical and legal experts" in the research and development of the device.

"We want the researchers we work with to be willing to take on high-risk efforts with the possibility of high payoff if they succeed," Van Gieson said.

## **Latin American and Caribbean Countries Focus on Chemical Defense Training**

Source: <https://dialogo-americas.com/en/articles/latin-american-and-caribbean-countries-focus-chemical-defense-training>



Service members from 18 countries participated in the Regional Assistance and Protection Exercise for Member States of the Latin American and Caribbean Region, in Rio de Janeiro. (Photo: Brazilian Army)



**EDITOR'S COMMENT:** The stretcher carrier is nice – suitable for rough grounds, but the cocoon used mainly for transportation of biological casualties does not fill well in a field exercise CWA-oriented.

Aug 19 – An enemy attack, an accident due to human error or a natural disaster could trigger the alarm for a chemical threat, exposing people and nature to potentially harmful agents. The objective of the Regional Assistance and Protection Exercise for Member States of the Latin American and Caribbean Region (EXBRALC IV, in Portuguese) is to enable a rapid and efficient response during emergencies.



EXBRALC IV activities included lectures, trainings, and chemical emergency simulation exercises, covering the detection of harmful agents to decontamination. (Photo: Brazilian Army)

“Chemical, biological, radiological, and nuclear [CBRN] defense has global relevance to prevent the use of weapons of mass destruction and accidents with toxic industrial materials. There are CBRN troops in almost all the armed forces of developed and developing countries,” said Brazilian Army (EB, in Portuguese) Captain Roney Magno de Sousa, head instructor for the CBRN division of the Army’s Specialized Instruction School.

The 2019 edition of EXBRALC took place in Rio de Janeiro, June 3-7, at facilities of EB and the Brazilian Navy (MB, in Portuguese). The training brought together 38 participants from 18 countries: Argentina, Belize, Bolivia, Brazil, Chile, Costa Rica, Cuba, the Dominican Republic, El Salvador, Ecuador, Spain, Guatemala, Honduras, Mexico, Panama, Peru, the United Kingdom, and Uruguay. Brazilian participants included service members from the armed forces, police officers, firefighters, and representatives from the Brazilian Intelligence Agency.

Activities kicked off with lectures conducted by representatives of the Organization for the Prohibition of Chemical Weapons (OPCW), an international institution headquartered in The Hague, Netherlands, whose mission is to supervise the implementation of the Chemical Weapons Convention. OPCW aims to eradicate this type of weapon worldwide. Representatives from the Brazilian government participated in the lectures, discussing the structure of Brazilian chemical defense and its legislation.





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### Completing the stages

Aside from lectures, participants attended theoretical trainings. They were introduced to concepts on the handling of different types of equipment — for individual protection, screening, and decontamination of chemical agents — used in those types of emergencies.



Training took place at facilities of the Brazilian Navy and Army. (Photo: Brazilian Army)

An MB facility served as the venue for this phase and for the first hands-on EXBRALC IV exercise. This activity simulated a contamination in a port terminal. The group's challenge consisted of collecting samples suspected of being contaminated with CBRN agents, and then turning them over to a test laboratory. The mission ended with the decontamination of all participating personnel.

"The integrative exercise aimed to create a situation where the maritime authority had to decide to use the Navy's response capacity, restoring operations of a port terminal, thus benefitting Brazilian citizens," said Captain Márcio da Mota Xerém, commander of MB's Biological, Chemical, Radiological, and Nuclear Defense Center.

In addition to this exercise, EXBRALC offered three other hands-on workshops, which EB coordinated at the Specialized Instruction School. "The first two workshops consisted of simulations of environments contaminated by toxic industrial chemicals in potential real-life situations: an accident at a gas station and a container with toxic chemicals at a commercial port," said Capt. Magno.

Faced with these scenarios, students isolated and assessed the area, collected samples, all while protecting the personnel against harmful agents, and recorded their activities, ending with decontamination procedures.

The final exercise was more comprehensive, and included a simulated accident with several victims. The scenario consisted of a bus full of passengers that had collided with a truck loaded with chemicals.

Participants formed teams assigned to different areas: logistics, reconnaissance, first aid and triage, isolation of the area, threat containment, sampling, and evacuation of the injured and decontamination, among others.





Source: <http://www.decongel.com/>

[DeconGel](#) offers a unique way to clean up all types of contaminants from solid surfaces.



Whether it's heavy metals to meth lab contaminants, mercury, asbestos, chemicals, or radioactive isotopes, DeconGel works on concrete, steel, plastics, wood, and many other solid surfaces. DeconGel can also be used as a fixative to hold contaminants in place until you're ready to address the situation. DeconGel is non-hazardous and can be disposed of just like regular waste.





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## Diagnostic lab helps identify, track anthrax outbreak

Source: <https://www.feedstuffs.com/nutrition-health/diagnostic-lab-helps-identify-track-anthrax-outbreak>

July 23 – On average, the Texas A&M Veterinary Medical Diagnostic Laboratory (TVMDL) diagnoses two or three positive cases of anthrax annually in summer months, but so far in 2019, the agency has confirmed 10 positive cases in several species, including exotic antelope, goats, horses, white-tailed deer and cattle.

All positive cases have come from a Texas region with a historical presence of anthrax, TVMDL said.

“Detection of this summer’s increased number of anthrax cases is just one example of the ongoing role TVMDL plays in protecting animal health, human health, a safe food supply and the financial well-being of the second-largest part of the Texas economy,” TVMDL director Dr. Bruce Akey said.

Anthrax, caused by *Bacillus anthracis*, is a spore-forming bacterium that occurs naturally in soil in certain parts of Texas and around the world, TVMDL said. As the veterinary diagnostic laboratory for Texas, TVMDL conducts thousands of surveillance tests each year for the early detection of high-consequence diseases that could have a devastating effect on the livestock and poultry industries.

*B. anthracis* spores can lie dormant in soil for several years, or even decades. Typically, the bacterium infects grazing animals when they ingest contaminated soil, TVMDL said, noting that animals may also be exposed to anthrax via inhalation and through the skin; however, those are less common routes of transmission.

Anthrax is on the federal list of potential bioterrorism agents and is a zoonotic disease — a disease that can also infect people. Therefore, anyone handling animals suspected of having exposure to anthrax should take necessary precautions, such as wearing long sleeves and gloves.

### Identifying anthrax

Once a suspected anthrax specimen arrives at the laboratory, TVMDL’s microbiologists obtain a pure bacteriological sample: isolation. After isolation, microbiologists identify diseases, like *B. anthracis*, on the basis of physical characteristics of the bacteria itself and how it grows on culture plates. Following identification, the microbiologists use additional specific tests to confirm the identity of the bacteria.

When it comes to identifying, tracking and stopping the spread of diseases like anthrax, TVMDL is one of many partners working together to protect Texas livestock. In accordance with state and federal regulations, TVMDL must report certain high-consequence diseases to various regulatory agencies, such as the Texas Animal Health Commission, the Department of State Health Services and, in the case of a potential bioterrorism agent like anthrax, the U.S. Centers for Disease Control & Prevention and the U.S. Department of Agriculture. Once reported, regulatory agencies work with affected parties to control the spread of the disease.

### Anthrax in livestock, wildlife

According to TVMDL, clinical signs of anthrax in cattle, sheep, goats and deer may include fever, disorientation, labored breathing, muscle tremors, congested mucous membranes and collapse. It is possible for sudden death to occur without the presence of clinical signs; an animal can appear healthy and be dead within a matter of a few hours.

In addition to the above clinical signs, horses may show signs of colic, enteritis and swelling of the neck and lower abdomen, the agency said.

TVMDL encourages animal owners who have an interest in testing for anthrax to first contact a private veterinarian who can assist with evaluating suspect animals and the proper collection of samples. Once testing has been conducted, a TVMDL veterinary diagnostician can consult with private veterinarians and animal owners on additional testing and sampling requirements.



## **New Chip Device Identifies Miniscule Blood Residues for Forensic Applications**

Source: <http://www.homelandsecuritynewswire.com/dr20190723-new-chip-device-identifies-miniscule-blood-residues-for-forensic-applications>

July 23 – Criminologists use luminol to identify microscopic blood drops, as well as low hydrogen peroxide concentrations, proteins and DNA. These are all invisible to the naked eye but become visible through a chemical reaction known as “chemiluminescence.” Detecting biological residues using this method is cost effective and advantageous since the detected signal does not depend on an external light source.

The BGU microfluidic chip not only increases the chemiluminescent intensity severalfold, but also prolongs the glow time of luminol, enabling the detection of much smaller blood samples in a forensic scene. The chip device was developed by BGU Prof. Alina Karabchevsky, head of BGU’s Light-on-a-Chip Group, a member of the BGU Unit of Electro-Optical Engineering and the Ilse Katz Institute for Nanoscale Science and Technology.

The innovation combines the use of luminol with gold or silver nanospheres in a specially designed microfluidic device that increases the detection limit by amplifying chemiluminescent light emission and facilitating imaging in the chip.

“Our findings open the door to new integrated microfluidic chips,” said Prof. Karabchevsky. “Practical implementation of this discovered effect will include further superior chemiluminescence-based sensors for forensic science, research in biology and chemistry, and no-source opto-chemical lasers.”

“Identifying trace quantities of blood can increase the efficiency and accuracy of a forensic investigation of a crime scene but requires more sensitive detectors than those that are currently available,” says Netta Cohen, chief executive officer of BGN Technologies. “We are looking for partners to further develop this promising patented invention.”

## **Defense Officials See Increased Threat from Chinese, Russian Chem-Bio Weapons**

Source: <https://www.nationaldefensemagazine.org/articles/2019/7/23/defense-officials-see-increased-threat-from-chinese-russian-chembio-weapon>

Much attention has been focused on Russia and China’s modernization of their nuclear and conventional forces. But there is growing concern at the Pentagon about those nations’ chemical and biological weapons, U.S. officials said July 23.

There is now an increased focus on threats posed by near-peer adversaries, noted Andrew Kilianski, chief intelligence officer at the joint program executive office for chemical, biological, radiological and nuclear defense.

“They’re in that emerging space ... in terms of things we haven’t seen before or things that we don’t have a lot of information on,” he said during remarks at the National Defense Industrial Association’s annual CBRN Conference and Exhibition in Wilmington, Delaware. The question now is, “how do we build capability against a threat space which ... we don’t know much about?” he added.

James Madsen, lead clinical consultant and clinical laboratory director at the chemical casualty care division at the U.S. Army Medical Research Institute of Chemical Defense, pointed to Russia as the greatest chemical threat. Last year, Moscow was widely blamed for the poisoning of former Russian double agent Sergei Skripal and his daughter Yulia with the nerve agent Novichok in the United Kingdom. But China is the leader in toxin-based weapons, Madsen said.

“China knows more about marine toxins in particular than any other country in the world,” he said.

Madsen said there are many deadly and frightening chem-bio threats that are not on many people’s radar. One, which he would not name, can infect a person and have a long latency



period. "When you have symptoms ... it's too late and you deteriorate over a period of months to weeks and you die," he said.

North Korea, Iran and non-state actors also pose a threat, officials noted.

"Over the past few years, we've gotten numerous examples of the emerging and reemerging threats space out there, ... from non-state and state adversaries," Kilianski said.

It's no longer rare for nations to use these types of lethal agents, he said.

"What we've seen over the past few years is the norms around chemical and biological weapon use have been eroded almost completely," Kilianski said. "The norms surrounding these and the treaties surrounding these have really taken a hit."

Retired Army Brig. Gen. William King, who now works as an executive advisor with Booz Allen Hamilton focusing on countering weapons of mass destruction, said the Defense Department has to prepare now. It's only a matter of when — not if — a chemical or biological attack will occur, he said. "It's already happened and [is] happening, and the inhibition to use some of these threats is no longer there." King pointed to high-profile events such as the use of nerve agents against populations in Syria and the assassination of North Korean leader Kim Jong Un's brother, Kim Jong Nam, in Malaysia with the nerve agent VX in 2017.

Despite these growing threats, the joint PEO for chemical, biological, radiological and nuclear defense has a "flatlined" budget, said Doug Bryce, who heads the office.

"We've been at steady state," he said. "Our buying power has gone down [due to inflation]. ... It's the same amount of money year after year."

President Donald Trump's fiscal year 2020 budget request included \$1.4 billion that would be "aligned against the highest CBRN-defense priorities for the department, joint service and combatant commands to improve near-term joint force readiness and modernize the force over the long term."

## **No, Lyme Disease Is Not an Escaped Military Bioweapon, Despite What Conspiracy Theorists Say**

By Sam Telford

Source: <http://www.homelandsecuritynewswire.com/dr20190726-no-lyme-disease-is-not-an-escaped-military-bioweapon-despite-what-conspiracy-theorists-say>

July 26 – Could Lyme disease in the U.S. be the result of an accidental release from a secret bioweapons experiment? Could the military have specifically engineered the Lyme disease bacterium to be more insidious and destructive – and then let it somehow escape the lab and spread in nature?

Is this why [300,000 Americans are diagnosed annually](#) with this potentially debilitating disease?



It's an old conspiracy theory currently [enjoying a resurgence](#) with lots of sensational [headlines](#) and [tweets](#). Even Congress has ordered that the [Pentagon must reveal whether it weaponized ticks](#).

And it's not true.

Ticks can indeed carry infectious agents that could be used as biological weapons.

Military research has long [focused on ticks](#). Sites around Long Island Sound, near the military's Plum Island research lab, were some of the first places where the American Lyme disease epidemic was identified.



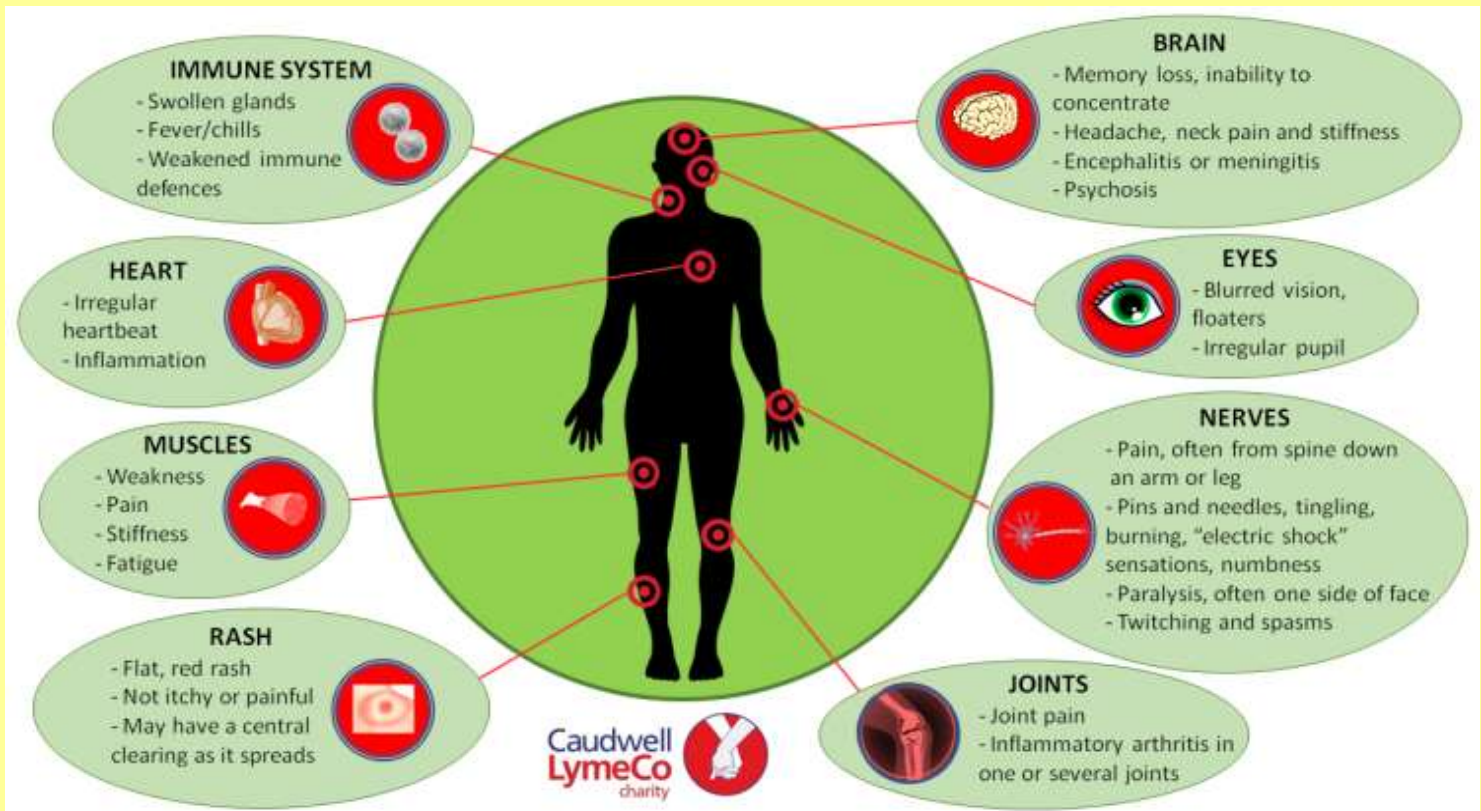


## C<sup>2</sup>BRNE DIARY – August 2019

But there was no release of the Lyme disease agent or any other onto American soil, accidental or otherwise, by the military.

I started working on Lyme disease in 1985. As part of my doctoral thesis, I investigated whether museum specimens of ticks and mice contained evidence of infection with the bacterial agent of Lyme disease prior to the first known American human cases in the mid 1970s.

Working with microbiologist [David Persing](#), we found that ticks from the South Fork of Long Island collected in 1945 were infected. Subsequent studies found that mice from Cape Cod, collected in 1896,



were infected.

So decades before Lyme was identified – and before military scientists could have altered or weaponized it – the bacterium that causes it was living in the wild. That alone is proof that the conspiracy theory is wrong. But there are plenty of other lines of evidence that show why Lyme disease did not require the human hand changing something Mother Nature had nurtured.

### Lyme Is an Unlikely Bioweapon

I teach a graduate course in biodefense. [Biowarfare](#), the use of biological agents to cause harm, was once an interest of the U.S. military and that of many other countries.

One of the most important characteristics of a biowarfare agent is its ability to quickly disable target soldiers. The bacteria that cause Lyme disease are not in this category.

Many of the agents that biowarfare research has focused on are transmitted by ticks, mosquitoes, or other arthropods: plague, tularemia, Q fever, Crimean Congo hemorrhagic fever, Eastern equine encephalitis or Russian spring summer encephalitis. In all of them, the early disease is very debilitating, and the fatality rate can be great; [30% of Eastern equine encephalitis cases die](#). [Epidemic typhus killed 3 million people during World War I](#).

[Lyme disease](#) does make some people very sick but many have just a flu-like illness that their immune system fends off. Untreated cases may subsequently develop arthritis or neurological issues. The disease is rarely lethal. Lyme has a weeklong incubation period – too slow for an effective bioweapon.



And, even though [European physicians had described cases](#) of Lyme disease in the first half of the 20th century, the cause had not been identified. There was no way the military could have manipulated it because they did not know what “it” was. None of us knew – until 1981, when the late [Willy Burgdorfer, a medical entomologist](#), made his serendipitous discovery.

### **Burgdorfer's Discovery of the Lyme Bacterium**

Burgdorfer had done his graduate studies in Switzerland in the late 1940s, investigating the biology of [tick-borne relapsing fever](#), a bacterial disease that can spread from animals to people. During the course of that work, he developed new methods to detect infection in ticks and to infect ticks with specific doses of a pathogen. Those methods are still used today by people like me.

Eventually, Burgdorfer moved to the Rocky Mountain Laboratories in Montana, an outpost of the U.S. Public Health Service and National Institutes of Health – at the time, the [world center for tick research](#). Burgdorfer's unique expertise was studying how microbial agents were adapted to the internal tissues of their tick hosts, using experimental infections and microscopy. Until Lyme disease came along, his reputation was as the world's expert on the life cycle of [Rocky Mountain spotted fever](#) (RMSF).

It was RMSF that led Burgdorfer to the cause of Lyme disease. He had been working to better understand RMSF on Long Island in New York. Why were dog ticks, the acknowledged vector, uninfected even in areas where people were getting sick? He knew that a new tick, the deer tick, had recently become common on Long Island and been incriminated as a disease vector.

So Burgdorfer asked his colleague [Jorge Benach at Stony Brook University](#) for some deer ticks to test for the presence of RMSF bacteria. Benach happened to have some from nearby Shelter Island that he sent along.

In testing the “blood” of the deer ticks, Burgdorfer did not find RMSF bacteria. But he did [find spiral-shaped bacteria](#) called spirochetes. The spirochetes were very similar to what he had studied as a graduate student: the cause of relapsing fever. If spirochetes caused relapsing fever, perhaps other spirochetes were responsible for the mysterious new Lyme arthritis for which a cause was not known.

This ah-ha moment led to the landmark 1982 paper in Science with a question for a title: [“Lyme disease – a tick-borne spirochetosis?”](#)

### **Conspiracy Theory Can't Account for the Facts**

Some have overanalyzed the fact that Lyme disease spirochetes were first found in ticks from New York's Shelter Island, right next to Plum Island, an isolated facility used as a military research lab [until 1954](#).

But it was just a coincidence that Benach's Shelter Island ticks were the ones in which Burgdorfer made his serendipitous finding. By 1984, once researchers knew what to look for, Lyme disease spirochetes were found in ticks from coastal [Connecticut](#), [New Jersey](#) and even [California](#).

But let's pretend the military started working immediately on the newly found agent of Lyme disease in 1981. That's long after Fort Terry on Plum Island was repurposed in 1954 by the U.S. Department of Agriculture to [study exotic animal diseases](#). It's also after President [Richard Nixon outlawed biowarfare research](#) in 1969. If the bacteria was manipulated, it had to have been done after 1981 – so the conspiracy theory's timeline just doesn't work.

The real nail in the coffin for the idea that Lyme disease in the U.S. was somehow accidentally released from military bioweapons research is to be found in the fact that the first American case of Lyme disease turns out not to have been from [Old Lyme, Connecticut, in the early 1970s](#). In 1969, a physician identified [a case in Spooner, Wisconsin](#), in a patient who had never traveled out of that area. And Lyme disease was found infecting people [in 1978 in northern California](#).

How could an accidental release take place over three distant locations? It couldn't.

[Population genetics research on \*Borrelia burgdorferi\*](#), the bacterial agent of Lyme disease, suggest that the northeastern, Midwestern and Californian bacteria are separated by geographical barriers that [prevent these populations from mixing](#). Had there been a lab strain, particularly one engineered to be more transmissible, that escaped within the last 50 years, there [would be greater genetic similarity](#) between these three geographic populations. There is no



evidence for a recent single source – such as a release from a lab – for Lyme disease spirochetes.

The [real reasons for the epidemic](#) becoming so burdensome include reforestation, suburbanization and a failure to manage deer herds.

Conspiracy thinkers make much of the military's interest in tick-borne infections and how it influenced top researchers. Until Lyme disease came along, the number of tick laboratories in the world could be counted on both hands. As an acknowledged expert on ticks and the infections they transmit, it's surely possible that Willy Burgdorfer received funding from the military, undertook studies for them, or was consulted by them. They were one of the few sources of research funds for tick projects in the period from 1950 to 1980. The overarching [goal of such applied work](#) would have been understanding the tick-related risks American soldiers faced while deployed, and how to protect them.

That Burgdorfer alluded to biowarfare or biodefense programs in interviews toward the end of his life should not be construed as an admission of participation in top-secret work. I met Burgdorfer several times and was struck by his wry sense of humor. It's my guess that his hints that there was a bigger story to what he did for the military was a prankster's way to toy with the interviewer.

As someone who has worked for more than three decades to understand the epidemiology and ecology of Lyme disease in order to reduce the risk of Americans getting infected, I am appalled that this conspiracy theory is taken so seriously that Congress is now involved. The idea that Lyme disease is due to bioweapons research gone wrong is easily disproven. Our legislators could better spend their time fighting for efforts to prevent disease instead of investigating a far-fetched story that's based on misinterpretation and innuendo.

*Sam Telford is Professor of Infectious Disease and Global Health, Tufts University.*

## **Mass Casualty Trauma Triage – Paradigms and Pitfalls**

Source: <https://files.asprtracie.hhs.gov/documents/aspr-tracie-mass-casualty-triage-final-508.pdf>

July 18 – This document contains planning considerations that emergency medical services (EMS) medical directors, EMS systems planners, and hospital emergency planners should review when developing mass casualty incident plans and training programs. The focus of this paper is specifically designed to educate emergency planners on the key distinctions of no-notice, dynamic incident scenes with exceedingly large numbers of patients.

## **Ebola for Bunnies: Rabbit Hemorrhagic Disease Strikes Washington State**

Source: <https://www.acsh.org/news/2019/07/24/ebola-bunnies-rabbit-hemorrhagic-disease-strikes-washington-state-14179>

July 25 – Not all worrisome infectious diseases target humans. Some target animals, and the consequences can be devastating.

Consider [African Swine Fever](#), a fatal hemorrhagic fever of pigs. Though the virus does not infect people, it still has the potential to devastate entire communities. Many who live in rural areas around the globe rely on livestock, such as pigs, for their livelihoods. With one strain causing a fatality rate at or near 100% -- and with at least one million pigs having died or been culled (as of November 2018) -- African Swine Fever has the ability to wreak havoc, not just for these small towns and villages but for the global pork industry.

Now, a new virus is sweeping the globe. Though it targets rabbits and therefore does not pose nearly the same economic threat as that posed by African Swine Fever, it nonetheless reveals how frightening new plagues can rapidly spread across our highly interconnected planet.





### Ebola for Bunnies: Rabbit Hemorrhagic Disease Strikes Washington State



Earlier this week, it was reported that Rabbit Hemorrhagic Disease Virus 2 (RHDV2) was detected in a domesticated rabbit in the San Juan Islands, which are located north of Puget Sound in Washington State. Reports suggest that it is almost invariably lethal.

According to an [article](#) by Carlos Rouco and colleagues in the journal *Transboundary and Emerging Diseases*, RHDV2 was first detected in France in May 2010. It then spread like wildfire. Within one year, the virus was in southern Europe, and then in northern Europe shortly thereafter. Within five years, RHDV2 had spread to Africa and Australia. By 2016, the virus was in North America, and by 2018, in the United States and Israel. The authors conclude that a virus could only spread this quickly among rabbits if it was facilitated by humans, perhaps via transport of farmed rabbits.

Not all rabbits are affected by the virus. RHDV2 infects the European rabbit (*Oryctolagus cuniculus*), but this species has been introduced in places all over the world, such as the San Juan Islands. (It's considered an [invasive species](#).)

It is thought that [hares, jackrabbits, and eastern cottontail rabbits](#) may also be vulnerable to RHDV2.

### A Lesson About Bioterrorism

It's quite unlikely that a bioterrorist would seek to kill off a bunch of bunny rabbits, but he might want to inflict damage upon a nation's food supply, perhaps by killing cows, pigs, or chickens. The lessons from African Swine Fever and Rabbit Hemorrhagic Fever should not be taken lightly.

## The Challenge: Feeding 11 billion People Without Spread Infectious Disease

Source: <http://www.homelandsecuritynewswire.com/dr20190724-the-challenge-feeding-11-billion-people-without-spread-infectious-disease>



July 24 – Within the next 80 years, the world's population is expected to top 11 billion, creating a rise in global food demand — and presenting an unavoidable challenge to food production and distribution.

But a new article published in *Nature Sustainability* describes how the increase in population and the need to feed everyone will also, ultimately, give rise to human infectious disease, a situation the authors of the paper consider “two of the most formidable ecological and public health challenges of the 21st century.”

Notre Dame [says](#) that the article, “[Emerging human infectious disease and the links to global food production](#),” is the first to draw connections between future population growth, agricultural development and infectious disease.

“If we start exploring how increasing population and agriculture will affect human diseases, we can prepare for and mitigate these effects,” said [Jason Rohr](#), the Ludmilla F., Stephen J. and Robert T. Galla College Professor of [Biological Sciences](#) at the University of Notre Dame. “We need to anticipate some of the problems that may arise from an explosion of human population in the developing world.”

According to the article, the fastest area of population growth expected by the year 2100 will occur in the developing world where disease control, surveillance and access to health care already face significant challenges. Currently, some estimates suggest that infectious disease accounts for 75 percent of deaths in developing countries in tropical regions. Each



year in the United States, an estimated 48 million people suffer from foodborne infections, and foodborne illnesses have been linked to imported food from developing countries — where sanitation and food safety is lacking or poorly enforced. Of that number, 128,000 are hospitalized and approximately 3,000 people each year die from foodborne infection.

As the world's population grows, the state of rural economies, use of agrochemicals and exploitation of natural resources, among other factors, are poised to further contribute to infectious disease outbreaks. "There are many modern examples where high human contact with farm animals or wild game is a likely cause of new human diseases that have become global pandemics," such as avian and swine flu, and mad cow disease, Rohr said.

Rohr, who also works as part of Notre Dame's [Environmental Change Initiative](#) and the [Eck Institute for Global Health](#), studies human schistosomiasis, a worm infection transmitted from snails to humans in many tropical and subtropical parts of the world.

Through that research, he has seen firsthand how farming practices can affect disease because the snails thrive in waters with algae that grow prolifically in areas of agricultural runoff containing fertilizer. The primary predators of snails are prawns that migrate to estuaries to breed, but these estuaries often become unreachable because of dams installed to facilitate the irrigation of cropland.

"There is the perfect storm with schistosomiasis: Agriculture has decimated snail predators, irrigation ditches provide more snail habitat, and fertilizer use causes the proliferation of snail food," he noted. "Agriculture is important for nutrition that can be crucial for combating disease, but the right balance needs to be struck."

Rohr and collaborators offer several potential solutions to various challenges, such as improving hygiene to combat the overuse of antibiotics to promote the growth of farm animals. They also suggest that farmers add genetic variability to their crops and animals to reduce epidemics caused in part by monocultures and too many closely related animals living in close quarters.

Other solutions include enhancing education and health literacy, which has been documented as a major factor in reducing infections. The researchers also suggest investing in predictive mathematical models that integrate associations between agricultural practices and infectious diseases. These models could forecast risk across spatial scales to facilitate targeting preventive and mitigating measures.

## Drug-resistant malaria spreading in Southeast Asia: Study

Source: <https://www.aljazeera.com/news/2019/07/drug-resistant-malaria-spreading-southeast-asia-study-190723082343305.html>

July 23 – A strain of [malaria](#) resistant to two key anti-malarial medicines has become dominant in [Vietnam](#), Laos and northern Thailand after spreading rapidly from [Cambodia](#), scientists have warned.

Using genomic surveillance to track the spread of drug-resistant malaria, the scientists found that the strain, known as KEL1/PLA1, has also evolved and picked up new genetic mutations that may make it yet more resistant.

"We discovered [it] had spread aggressively, replacing local malaria parasites, and had become the dominant strain in Vietnam, Laos and northeastern Thailand," said Roberto Amato, who worked with a team from Britain's Wellcome Sanger Institute and Oxford University and [Thailand's](#) Mahidol University. Olivo Miotto, who co-led the study, warned of a "terrifying prospect" of the parasite spreading to Africa, where most malaria cases occur.

"This highly successful resistant parasite strain is capable of invading new territories and acquiring new genetic properties," he said.

"Other drugs may be effective at the moment but the situation is extremely fragile and this study highlights that urgent action is needed," he added.



A similar resistance to a long-time front-line malaria drug, chloroquine, contributed to millions of deaths across Africa in the 1980s.

#### Transmitted by mosquitoes

Malaria is caused by Plasmodium parasites which are carried and transmitted by mosquitoes and spread through their blood-sucking bites.

Almost 220 million people were [infected](#) with malaria in 2017, according to World Health Organization estimates, and the disease killed 400,000 of them. The vast majority of cases and deaths are among babies and children in Sub-Saharan Africa.

Malaria can be successfully treated with medicines if it is caught early enough, but resistance to anti-malarial drugs is growing in many parts of the world, especially in Southeast Asia.

**The first-line treatment for malaria in many parts of Asia in the last decade has been a combination of dihydroartemisinin and piperazine, also known as DHA-PPQ.**

Researchers found in previous work that a strain of malaria had evolved and spread across Cambodia between 2007 and 2013.

The latest research, [published](#) in The Lancet Infectious Diseases journal, found it has crossed borders and tightened its grip.

## Bashar al-Assad's Updated, Sinister Version of Biological Warfare

Source: <http://www.homelandsecuritynewswire.com/dr20190729-bashar-alassad-s-updated-sinister-version-of-biological-warfare>

July 29 – Biological warfare is generally understood as the deliberate wartime introduction of a lethal pathogen with the intent to kill or maim. Syria under President Bashar al-Assad is pursuing a sinister variation—one with long and dangerous historical precedents. Assad's government has allowed pathogens normally controlled by public health measures—such as clean water, sanitation, waste disposal, vaccination, and infection control—to emerge as biological weapons through the deliberate destruction and withholding of those measures. The conflict has in effect reversed public health advances to achieve levels of disease not seen since the Napoleonic era.

Annie Sparrow writes in [Foreign Policy](#) that biological weapons such as anthrax or sarin have significant drawbacks: they unpredictable and difficult to control, and are too visible and risk a global reaction. In war, they kill in far smaller numbers and much less reliably than common diseases and wound infections. In contrast, the behavior of Assad's preferred pathogens is predictable. Here lies the key to a far more insidious strategy: By deliberately degrading an already precarious public health situation, the new biological warfare is able to fly under the radar.

Assad's most visible mass atrocities include indiscriminate attacks on and the resulting forced displacement of civilians, devastating sieges, and assaults on hospitals. But an unappreciated dimension of his total-war strategy has been his attacks on public health infrastructure and programs in order to fast-track the epidemic diseases that thrive in the crowded living conditions created by mass displacement, while simultaneously withholding essential public health tools and medicines.

The aim is to weaken the entire population in these areas and overburden the rudimentary medical facilities that were able to survive in an effort to punish populations opposed to Assad. Beyond bombing hospitals, primary health clinics, laboratories, and blood banks, Assad's forces went after doctors, criminalizing those who treated civilians and arresting, torturing, and executing any health care worker who defied government policy. Assad withheld vaccinations against polio, measles, and all other vaccine-preventable diseases from populations deemed politically unsympathetic.

Sparrow, a medical doctor and assistant professor at the Arnhold Global Health Institute at the Icahn





School of Medicine at Mount Sinai Hospital in New York, writes that “Assad’s war strategies have effectively returned Syria to 19th-century levels of conflict-driven disease—with one

important difference. Most victims are now civilians—not soldiers—and measures to protect them are being deliberately destroyed and withheld.”

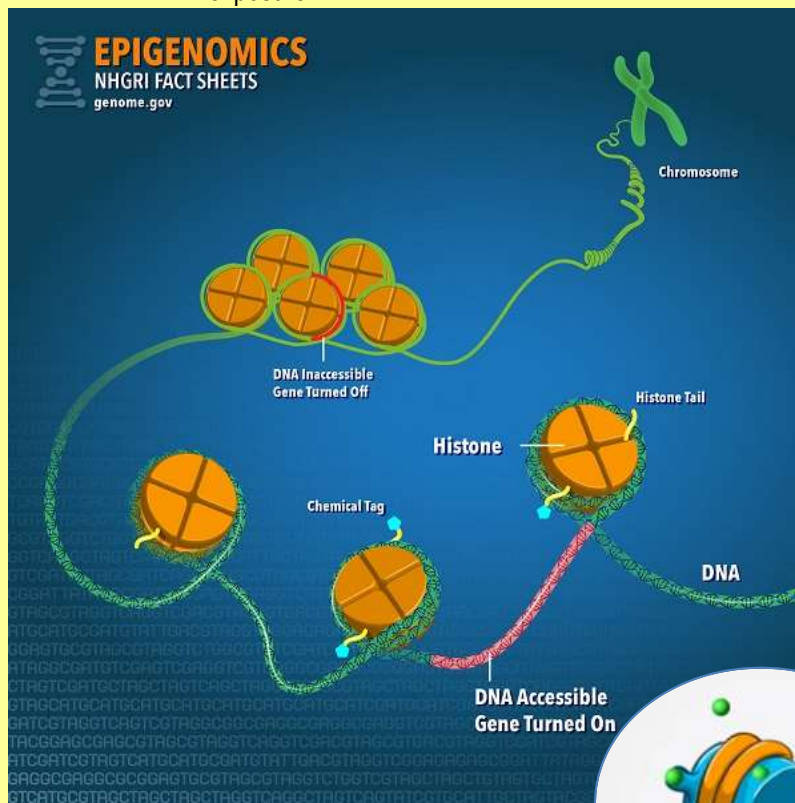
## Battelle to Develop Epigenome Identifier Tech Under DARPA Agreement

Source: <https://www.govconwire.com/2019/07/battelle-to-develop-epigenome-identifier-tech-under-darpa-agreement/>

July 30 – [Battelle](#) has entered into a contractor agreement with the Defense Advanced Research Projects Agency to develop a platform designed to identify epigenome signatures that could be used to determine an individual’s exposure to materials associated with weapons of mass destruction.

Under DARPA’s Epigenetic Characterization and Observation program, Battelle [said Monday](#) it will identify unique signatures by comparing blood samples from individuals that have dealt with chemical, biological, pesticide or herbicide contaminants to those of control subjects.

“We’ll be developing methods to identify these signatures and how to interpret them for attribution—what did the person handle, when and for how long,” said Rachel Spurbeck, a principal research scientist and biologist at Battelle. “This will even allow for diagnosing illnesses in individuals as a result of their exposure.”



pollutants, can also impact the Epigenetic changes can help turned on or off and can influence proteins in certain cells, ensuring that are produced. For example, proteins that promote bone growth are not produced in muscle cells. Patterns of epigenetic modification vary among individuals, different tissues within an individual, and even different cells.

The nonprofit company said the proposed technology will trace a specific epigenome from a biological sample despite the absence of other physical evidence.

### What is epigenetics?

DNA modifications that do not change the DNA sequence can affect gene activity. Chemical compounds that are added to single genes can regulate their activity; these modifications are known as epigenetic changes. The epigenome comprises all of the chemical compounds that have been added to the entirety of one’s DNA (genome) as a way to regulate the activity (expression) of all the genes within the genome. The chemical compounds of the epigenome are not part of the DNA sequence, but are on or attached to DNA (“epi-” means above in Greek).

Epigenetic modifications remain as cells divide and in some cases can be inherited through the generations. Environmental influences, such as a person’s diet and exposure to epigenome.

determine whether genes are the production of only necessary proteins



A common type of epigenetic modification is called methylation. Methylation involves attaching small molecules called methyl groups, each consisting of one carbon atom and three hydrogen atoms, to segments of DNA. When methyl groups are added to a particular gene, that gene is turned off or silenced, and no protein is produced from that gene.

Because errors in the epigenetic process, such as modifying the wrong gene or failing to add a compound to a gene, can lead to abnormal gene activity or inactivity, they can cause genetic disorders. Conditions including cancers, metabolic disorders, and degenerative disorders have all been found to be related to epigenetic errors.

Scientists continue to explore the relationship between the genome and the chemical compounds that modify it. In particular, they are studying what effect the modifications have on gene function, protein production, and human health.

## **Biodefense Market 2019 statistics and research analysis released in latest report**

Source: <http://reportsgo.com/biodefense-market-2019-statistics-and-research-analysis-released-in-latest-report>

July 30 – Biodefense market to be characterized by innovative product developments by prominent industry stalwarts: global valuation to hit US\$19 billion by 2024. The global biodefense market is experiencing a transformational shift in dynamics in the recent times owing to extensive technological advancements in biotechnology sector. One of the prime instances of the same is the massive number research and development studies undertaken in bioterrorism detection devices, which are utilized to assess the threats against deliberate release of microbes and viruses. Powered by the impact of technological advancements observed across the biotech industry, along with the rising demand for vaccines and bioterrorism identifying agents like reagents and assays, biodefense market is anticipated to traverse alongside a profitable growth path in the upcoming years.

Rising awareness among governments in developed countries, about the major impact of bioterrorism attacks on economy, has a major role to play in the expansion of biodefense market. Various strategies are being implemented to safeguard the population against bioterrorism attacks. Initiatives like stocking vaccines as well as the development and production of bio-threat detection devices would also escalate the growth of biodefense market in the years to come. For example, economies like India have higher susceptibility towards agricultural bioterrorism, on the grounds of which, the government is undertaking several initiatives for protecting the

nation since a major portion of the population is dependent on agriculture as their main occupation.

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Notable companies across this vertical have seemingly been reinforcing their expertise by implementing several strategic initiatives like mergers and acquisitions to expand their regional presence. Securing FDA approvals for newly launched products has also contributed to enhancing the stance of these companies across the biodefense industry. A gist of the contribution by some of the prominent companies in the biodefense market has been mentioned below:

### **SIGA Technologies**

The New York based pharmaceutical firm SIGA Technologies, Inc. has recently announced that the U.S. Food and Drug Administration (FDA) has approved the use of TPOXX (tecovirimat) in the treatment of smallpox disease. Responsible for smallpox infection, the often-deadly and highly contagious variola virus is described as among most devastating disease in the world known to humanity by the World Health Organization and is mostly spread through direct contact among people.



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The FDA approved TPOXX targets and inhibits the orthopoxvirus VP37 protein's activity, along with blocking its interaction with cellular Rab9 GTPase and TIP47. Accomplishments like the aforementioned are estimated to further augment the trust factor and goodwill of the company, which in turn will help the firm enhance its position in the biodefense market.

### Emergent BioSolutions

Biopharmaceutical company Emergent BioSolutions Inc. has recently developed a vaccine for anthrax which might elicit a faster immune response compared to the anthrax vaccines currently available. The multinational specialty firm has submitted an application on December 28, 2018, to the U.S. FDA for the use of its anthrax vaccine **NuThrax**.

As a next generation anthrax vaccine, NuThrax has been developed for post-exposure prophylaxis of disease due to confirmed or suspected *Bacillus anthracis* exposure. The submission is predicted to undergo review in the first half of 2019. The launch of such advanced vaccines is certain to advance the commercialization potential of the biodefense market in the years to come.

### PathSensors Inc.

Biotech firm PathSensors has recently announced that it is providing a Los Angeles based robotic juice dispensers company, JuiceBot, with its biosensor technology. The proprietary cell-based **biosensor technology, CANARY**, delivers extremely quick detection of pathogens at unseen levels of specificity and sensitivity. The technology has been tailored to sensitively and rapidly detect biological threats in agricultural, food and building security applications. Driven by the technology's widespread application spectrum majorly inclusive of biodefense, PathSensors is on its way to establishing itself as one of the most proactive stakeholders of the biodefense market.

Analyzing the efforts undertaken by leading market players, it is evident that the biodefense market would register a significant growth rate in the upcoming years. The competitive spectrum of biodefense market is quite diverse, and comprises renowned companies such as BBI Detection, Alnylam Pharmaceuticals, Nanotherapeutics, Achaogen, Bavarian Nordic, Cleveland BioLabs, DynPort Vaccine Company, Ichor Medical Systems, Elusys Therapeutics, Dynavax Technologies, AlSense and Altimmune.

## VIEWPOINT: The Tools and Threats of Synthetic Bioweapon Development

By James Giordano and Joseph DeFranco

Source: <https://www.nationaldefensemagazine.org/articles/2019/8/2/viewpoint-the-tools-and-threats-of-synthetic-bioweapon-development>

Aug 02 – As noted by Andrew Kilianski, chief intelligence officer at the joint program executive office for chemical, biological, radiological and nuclear defense, in a July 23 *National Defense* online article, [“Defense Officials See Increased Threat from Chinese, Russian Chem-Bio Weapons.”](#) both China and Russia are developing scientific techniques and technologies that “we haven’t seen before or... that we don’t have a lot of information on.”

As detailed in the annual Worldwide Threat Assessment of the U.S. Intelligence Community report to the Senate Select Committee on Intelligence, China in particular has increased its economic and resource investments, and deepened political interest in research and innovation to assert growing leverage and power, if not hegemony, in international scientific, biomedical and technological markets.

One of these emerging domains is the growing viability of **utilizing synthetic biology to develop novel biological weapons**. In 2018, Chinese scientist Dr. He Jiankui used **CRISPR/Cas9** germline editing to create human twins with a genetically-induced resistance to HIV. This generated significant ethical and legal controversy, and ultimately led to the





World Health Organization determination and assertion that genetic modifications of human germlines are “irresponsible.”



However, China has demonstrated that by working at the frontiers of current sciences (i.e. – in some cases, by asserting differing cultural values and ethical norms that guide and govern biomedical research and its uses) they can create, engineer, and foster biological advancements that are as yet unattainable by — and therefore ahead of — other countries.

Avant Garde — and often controversial — synthetic biology synergizes China’s research and of weaponizable biologicals and toxins. Gene editing and other synthetic biology technologies (e.g., artificial proteins) can be employed to increase the potency of a toxin, thereby requiring less to incur a desired effect. This science could be used to **genetically modify a low-toxicity bioagent to become more potent and lethal, or could allow the creation of new, unique —and heretofore unknown —agent.** Indeed, as James Madsen, lead clinical consultant and clinical laboratory director at the chemical casualty care division at the U.S. Army Medical Research Institute of Chemical Defense, stated in the article: **China is the world leader in toxin-based biothreats**, and such efforts would only establish that position ever more solidly.

However, the use synthetic biology and gene editing to fortify bioweapons’ development and production is not limited to organic toxins. Prion diseases — or transmissible spongiform encephalopathies (TSEs) — are fatal neurodegenerative disorders that are caused by the misfolding and aggregation of normal prion proteins to then form the disease-causing isoform. Our ongoing research is focused upon prion research, tools, and the ways that increased knowledge and capabilities of genomics and proteomics can enthruse and advance current and near-term future methods and viability of prion synthesis, modification and pathogenicity.

These applications of emerging trends and tools may allow bioweapon programs to produce prion-based agents for kinetic engagements. However, we believe that it is more likely that these agents will be used in non-kinetic engagements to incur multi-domain and multi-scalar disruptive effects that can lead to destructive consequences. Such non-kinetic efforts evoke the types and levels of latent manifestations that are most significant, and therefore of greatest value to strategic competition.

The new methods and tools of synthetic biology can enable the R&D of agents that are not currently listed by the Biological and Toxin Weapons Convention. This makes this R&D — and the agents produced — difficult to surveille, regulate and govern. In light of this, we have called for the update, revision, or new approaches to regnant biochemical weapons’ conventions/treaties and regulatory/governance processes that better reflect and respond to the rapidly changing capabilities fostered by novel techniques and technologies.

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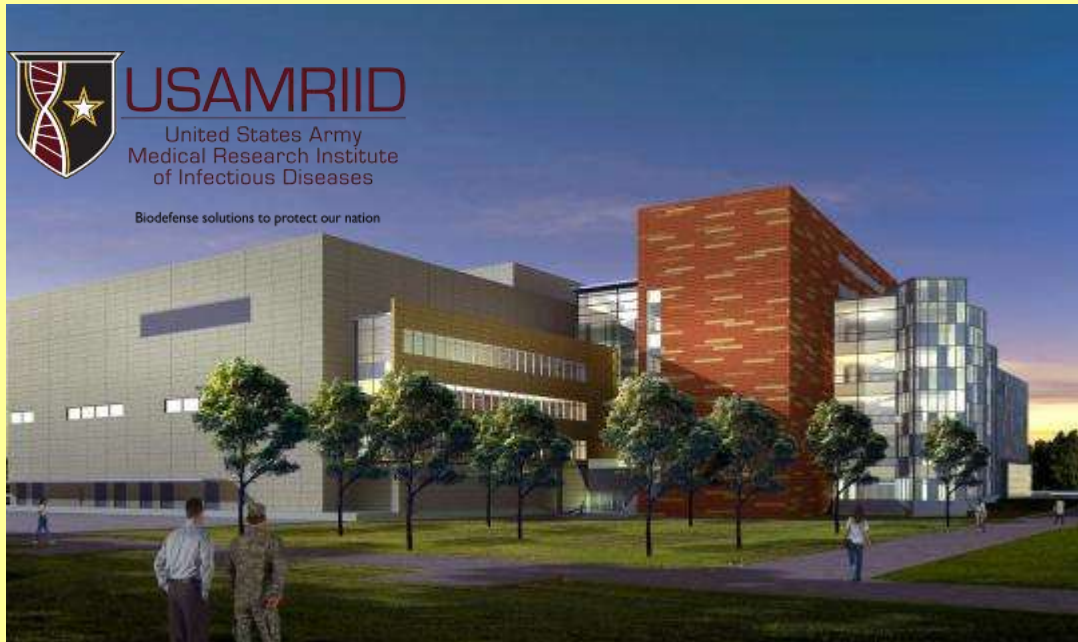
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## **Fort Detrick lab shut down after failed safety inspection; all research halted indefinitely**

Source: [https://www.fredericknewspost.com/news/health/fort-detrick-lab-shut-down-after-failed-safety-inspection-all/article\\_767f3459-59c2-510f-9067-bb215db4396d.html](https://www.fredericknewspost.com/news/health/fort-detrick-lab-shut-down-after-failed-safety-inspection-all/article_767f3459-59c2-510f-9067-bb215db4396d.html)



Aug 02 – All research at a Fort Detrick laboratory that handles high-level disease-causing material, such as Ebola, is on hold indefinitely after the Centers for Disease Control and Prevention found the organization failed to meet biosafety standards.

No infectious pathogens, or disease-causing material, have been found outside authorized areas at the U.S. Army Medical Research Institute of Infectious Diseases.

The CDC inspected the military research institute in June and inspectors found several areas of concern in standard operating procedures, which are in place to protect workers in biosafety level 3 and 4 laboratories, spokeswoman Caree Vander Linden confirmed in an email Friday.

The CDC sent a cease and desist order in July.

After USAMRIID received the order from the CDC, its registration with the Federal Select Agent Program, which oversees disease-causing material use and possession, was suspended. That suspension effectively halted all biological select agents and toxin research at USAMRIID, Vander Linden said in her email.

The Federal Select Agent Program does not comment on whether a program such as USAMRIID is registered and cannot comment on action taken to enforce regulations, Kathryn Harben, a spokeswoman for the CDC, wrote in an email.

“As situations warrant, [Federal Select Agent Program] will take whatever appropriate action is necessary to resolve any departures from regulatory compliance in order to help ensure the safety and security of work with select agents and toxins,” Harben said in the email.

The suspension was due to multiple causes, including failure to follow local procedures and a lack of periodic recertification training for workers in the biocontainment laboratories,



**C<sup>2</sup>BRNE DIARY – August 2019**

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according to Vander Linden. The wastewater decontamination system also failed to meet standards set by the Federal Select Agent Program, Vander Linden said in a follow-up email.

“To maximize the safety of our employees, there are multiple layers of protective equipment and validated processes,” she said.

Vander Linden could not say when the laboratory would be able to continue research.

“USAMRIID will return to fully operational status upon meeting benchmark requirements for biosafety,” she said in an email. “We will resume operations when the Army and the CDC are satisfied that USAMRIID can safely and consistently meet all standards.”

USAMRIID has been working on modified biosafety level 3 procedures and a new decontamination system since flooding in May 2018. This “increased the operational complexity of bio-containment laboratory research activities within the Institute,” she said.

At the time of the cease and desist order, USAMRIID scientists were working with agents known to cause tularemia, also called deer fly or rabbit fever, the plague and Venezuelan equine encephalitis, all of which were worked on in a biosafety level 3 laboratory. Researchers were also working with the Ebola virus in a biosafety level 4 lab, Vander Linden said.

Of the pathogens, Ebola, bacteria *Yersinia pestis* (plague), and bacterium *Francisella tularensis* (tularemia) are on the list of the Health and Human Services select agents and toxins. The three are considered Tier 1 agents, which pose a severe public health and safety threat.

Venezuelan equine encephalitis also falls under the Federal Select Agent Program, according to the Code of Federal Regulations.

The military research institute is looking at each of its contracts to see what will be affected by the shutdown. USAMRIID work outside the lab is not expected to be affected, including on Ebola, Vander Linden said.

“We are coordinating closely with the CDC to ensure that critical, ongoing studies within bio-containment laboratories are completed under appropriate oversight and that research animals will continue to be cared for in accordance with all regulations,” she said in an email. “Although much of USAMRIID’s research is currently on hold, the Institute will continue its critical clinical diagnostic mission and will still be able to provide medical and subject matter expertise as needed to support the response to an infectious disease threat or other contingency.”

According to the Code of Federal Regulations, which also lists required training, records and biosafety plans, Federal Select Agents Program registration can be suspended to protect public health and safety. It is not clear if this is why the USAMRIID registration was suspended.

The code also gives the Department of Health and Human Services, under which the CDC falls, the right to inspect any site and records, without prior notifications. Vander Linden said in the email that the CDC inspected USAMRIID several times over the past year, both unannounced and on a regularly scheduled basis.

USAMRIID will work to meet requirements set by the Army and the CDC and have its suspension lifted, Vander Linden said.

“While the Institute’s research mission is critical, the safety of the workforce and community is paramount,” she said. “USAMRIID is taking the opportunity to correct deficiencies, build upon strengths, and create a stronger and safer foundation for the future.”





## Bioterrorism: Using Foods and Beverages as Deadly Weapons

By Dr. William Oliver Hedgepeth

Source: <https://inpublicsafety.com/2019/08/bioterrorism-using-foods-and-beverages-as-deadly-weapons/>



Aug 05 – “**The food industry should start thinking seriously about various terrorism-related scenarios that could potentially involve radioactive materials** and make preparations for dealing with these situations should they become reality,” [Robert A. Norton, Ph.D., urges in Food Safety Magazine](#).

“The most immediate element of concern for a food facility — maybe a large production plant or sprawling warehouse — would actually be from the direct blast effects emanating from an improvised explosive device (IED) rather than from any radioactive material that might be present,” Norton added.

He was particularly concerned about possible radioactive elements being inserted into foods and beverages to cause illnesses or death. But the U.S. Department of Agriculture (USDA) has provided the food industry very rigid safeguards against poisonous chemicals entering our food. The USDA has a detailed list of Food Safety Standard Operating Procedures (SOPs) on food handling, cleaning, cooking and personal hygiene.

According to the [Department of Homeland Security](#), there are “an estimated 2.1 million farms, 935,000 restaurants, and more than 200,000 registered food manufacturing, processing, and storage facilities. This sector accounts for roughly one-fifth of the nation’s economic activity.”

Bioterrorism and Food Safety Research to Protect People

[The Johns Hopkins University Bloomberg School of Public Health](#) is a national leader in bioterrorism and food safety research. Scientists there are studying how harmful elements can enter the complex, often invisible food and beverage supply chain that extends from raw materials to a final product on the dinner table.

There are two categories currently under research:

1. Terrorist targeting of livestock and crops during production, harvesting and storage (agroterrorism)
2. Terrorist targeting of processed foods during processing, manufacturing, storage, transport, distribution or service

Agroterrorism is an economic weapon that could target the estimated [\\$150 billion livestock industry](#). That would include cattle, sheep, pigs and chickens, as well as produce such as grains, fruits and vegetables. An attack on the U.S. food industry would cause great harm to the nation’s economy and destroy the livelihoods of thousands of farmers and grocers. Furthermore, it would affect restaurants, warehouses and distribution centers, online companies, and the transportation systems of truck, rail, air and sea. And that does not include the cost of affected logistics, supply chains and transportation systems.

Public Laws to Protect the US from Bioterrorism

Congress enacted the [Public Health Security And Bioterrorism Preparedness And Response Act of 2002](#) to prevent agricultural bioterrorism. Its focus is to put in place federal and state assistance and organizations to ensure that what we regularly eat and drink is safe. This law outlines the legal reporting provisions to keep us safe from bad actors’ malevolent intentions or from accidents in any part of the supply chain.

[The US. Food and Drug Administration \(FDA\) is the regulatory arm](#) of the Department of Health and Human Services (HHS). It protects the public from deliberate attacks against our food and beverage supply as well as accidents that can lead to foodborne illnesses, such as the [recall of E.coli-contaminated romaine lettuce in 2018](#).



#### University War Game Exercise Provides Training on How to Cope with Bioterrorism Attack

[The University of Washington](#) is one of the creators of a tabletop war game exercise involving a mock bioterrorist attack on food and an infectious disease. According to the UW website, this scenario involves “four fictional countries varying in population size and resources and their respective health departments and local emergency responders.”

In responding to 22 separate incidents as the outbreak unfolds, participants discuss policy issues, such as:

- Who is responsible?
- What information is needed?
- When is public information given out?

The game’s intended audience is “anyone who would be responding to a public health emergency.” According to UW, that includes people such as:

- Hospital administrators and clinicians
- Public health administrators
- Nurses
- Laboratory directors
- Environmental health staff
- School district administrators
- First responders such as emergency medical services, fire safety, law enforcement and emergency medical technicians

#### 2005 Workshop Identified Foodborne Threats to Public Health

In 2005, the Institute of Medicine’s Forum on Microbial Threats hosted a public workshop in Washington, D.C., to examine issues critical to the U.S. food supply. The workshop resulted in the production of a 2006 report, [Addressing Foodborne Threats to Health](#), which described how to protect the U.S. food supply. The report documents the range of chemicals — from natural and man-made contamination sources — that could poison the U.S. food and beverage supply.

The workshop also identified more [than 250 foodborne diseases](#) from information provided by the Centers for Disease Control and Prevention (CDC). The workshop also focused on ways to prevent accidental poisoning as well as deliberate threats. The workshop was partially the result of the U.S. government taking a serious stand on food and beverage safety with more than 15 federal agencies practicing oversight of our distribution systems.

#### Universities are Leading the Way in Food and Beverage Safety

Besides the U.S. government, state and local agencies, many U.S. universities are focusing on education, research and reporting on ways to improve U.S. food safety. For instance, [Purdue University](#) is one of many universities conducting research on chemicals that contain harmful microorganisms that could enter vegetables and other plants. Similarly, [Regent University of California](#) researchers are examining cantaloupes for harmful pathogens from washing and storage methods.

Food safety is a worldwide concern. In the Netherlands, [Wageningen University](#) has announced that it will open a new research facility for food safety in 2019.

Today’s college students, as well as industry and government agencies, are well positioned to address the subject of bioterrorism thanks to education, training and awareness. In the future, terrorists seeking to contaminate U.S. foods and beverages will have a more difficult chance of success thanks to greater bioterrorism awareness.

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## IIT Guwahati researchers develop low-cost hand-held device to detect bacteria, can be used for anti-bioterrorism measures

Source: <https://www.indiatoday.in/education-today/news/story/iit-guwahati-researchers-develop-low-cost-hand-held-device-to-detect-bacteria-can-be-used-for-anti-bioterrorism-measures-1577858-2019-08-06>

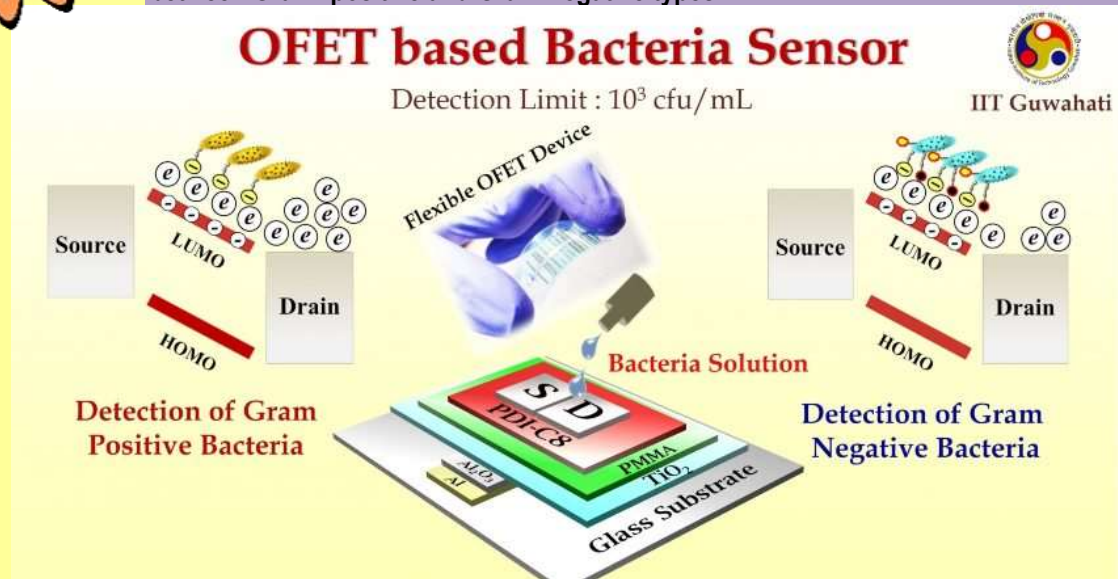
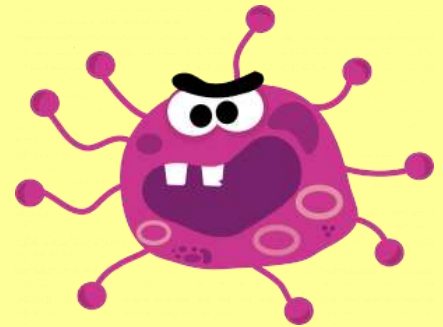
Aug 06 – IIT Guwahati researchers have developed a low-cost, hand-held device to detect bacteria which is a major development not only for the healthcare industry, but also for anti-bioterrorism measures and environmental monitoring applications.

Who invented the hand-held device to detect bacteria?

The research team led by Prof Parameswar K Iyer, Department of Chemistry, and Prof Siddhartha S Ghosh, Department of Biosciences and Bioengineering, IIT Guwahati, has developed this novel, low-cost, bio-compatible sensor that can detect bacteria almost instantaneously without the need for cell culture and microbiological assays.

The IIT Guwahati team consisting of Dr Anamika Dey, Dr Ashish Singh, Dr Deepanjalee Dutta (all three former PhD scholars from Center for Nanotechnology, IITG), Prof. Siddhartha Sankar Ghosh and Prof. Parameswar Krishnan Iyer, has brought portable bacterial detection kits closer to reality.

The Organic Field Effect Transistor (OFET)-based bacterial diagnostic device has been shown to have the ability to detect  $10^3$  cfu mL<sup>-1</sup> of bacteria and distinguish between Gram- positive and Gram-negative types.



Their work has been patented as well as published in the July 2019 issue of the reputed peer-reviewed Journal of Materials Chemistry A of the Royal Society of Chemistry.

Why is such a device that detects bacteria quickly so important?

Bacterial infection is a common cause of morbidity and mortality worldwide and despite development of a range of antibiotics, the challenge continues to lie in detecting and diagnosing bacterial infection early on, as present detection techniques tend to be time-consuming.

At present, the detection of bacteria in body fluids is done in laboratories. The cells that are derived from the patient are initially cultured or grown so that enough of the bacterial cells are available for microbiological analysis.





"Current diagnostic processes are frustratingly time-consuming, especially when time is of the essence in administering treatment," said Prof Iyer, explaining the need to develop faster and easier methods to detect bacteria.

## Tularemia – Sweden

Source: <https://www.thelocal.se/20190807/harpest-what-you-need-to-know-about-the-mosquito-borne-disease>

Aug 07 – There have been several reported cases of tularemia or rabbit fever, known as 'harpest' in Sweden, this summer [2019], mostly in the north and centre of the country.

The animals most likely to carry the disease are wild hares, hence the name rabbit fever, and rodents, but it can also be transferred to humans via mosquito bites and occasionally tick bites. It's also possible for the infection to be transmitted by inhaling dust or drinking water that is contaminated by urine or feces from animals with the disease, according to Swedish healthcare service 1177. The disease cannot be carried from human to human.

It is too early to measure the exact extent of the disease this year [2019], since statistics from the Public Health Agency won't be available until later. But the Swedish Veterinary Institute has warned of several findings of dead animals that had been infected with the disease, and a "suspected outbreak".

**A total of 33 people in the Gavleborg region have been affected by rabbit fever since the start of July [2019],** according to regional healthcare authorities. In most cases, the patients had been infected in the Ljusdal area, and one case related to a patient who became sick after cleaning out a barn.

At least 12 people have been affected by rabbit fever in the Dalarna region alone, a doctor in communicable diseases told SVT Dalarna, and he said the figure was expected to increase. "It looks like there will be a lot of cases this year [2019], more than last year [2018]," doctor Anders Lindblom said, adding: "Not everyone [who is affected by rabbit fever] seeks medical care and reports the illness."

At least a further 5 people have confirmed cases of rabbit fever in Norrbotten too. Sweden had a large outbreak of rabbit fever in 2015, when 859 people across the country suffered from the illness, the majority of them in Norrbotten and Vasterbotten. In 2018, 107 cases were reported across Sweden, with Dalarna the most severely affected region.

Symptoms of rabbit fever typically begin with swelling or tenderness in the lymph node and a skin lesion at the site of any bite or direct contact, followed occasionally by symptoms that can include a skin rash, nausea, and headaches.

The best way to protect yourself from infection is to avoid mosquito bites as much as possible (either by using repellents, or wearing long, loose clothing when going outside between dusk and dawn), and being especially careful if you need to touch a dead animal such as a rodent or hare, using precautions such as a face mask and gloves.

### Comment

*Francisella tularensis* subsp. *tularensis* (Type A) is associated with lagomorphs (rabbits and hares). Wild rodents are also frequently infected, and occurrence of human cases is usually linked to these host species. *F. tularensis* is transmitted primarily by ticks and biting flies, and is highly virulent for humans and domestic rabbits.

Tularemia is largely confined to the Northern Hemisphere and is not normally found in the tropics or the Southern Hemisphere. *F. tularensis* subspecies *holarctica* naturally infects several mammalian wildlife species in northern Europe, in particular, mice, rabbits, hares, beavers, voles, lemmings, and muskrats. The ticks *Dermacentor reticularis* and *Ixodes ricinus* are vectors for the bacterium, although previous research has suggested that mosquito bites are the most frequent route of transmission to humans in Sweden.



In addition to vector transmission, tularemia may be spread via contact with infected animals or environmental fomites by inhalation, or by ingestion of the poorly cooked flesh of infected animals or contaminated water. – Mod.PMB

### **Tularemia**

Tularemia can be transmitted by aerosol, direct contact, ingestion, or arthropods. Inhalation of aerosolized organisms (in the laboratory or as an airborne agent in an act of bioterrorism) can produce a pneumonic form. Direct contact with, or ingestion of, infected carcasses of wild animals (such as cottontail rabbit) can produce the ulceroglandular, oculoglandular, oropharyngeal (local lesion with regional lymphadenitis), or typhoidal form. Immersion in or ingestion of contaminated water can result in infection in aquatic animals. Ticks can maintain infection transstadially [pathogen remains with the vector from one life stage ("stadium") to the next] and transovarially [transmission of a pathogen from an organism (as a tick) to its offspring by infection of eggs in its ovary], making them efficient reservoirs and vectors. – Mod.LL

## **GAO report details challenges to defend U.S. against biological threats**

Source: <https://homelandprepnews.com/stories/35230-gao-report-details-challenges-to-defend-u-s-against-biological-threats/>

Aug 07 – The U.S. Government Accountability Office (GAO) recently identified several challenges related to the nation's ability to detect and respond to biological events. These hurdles transcend what any one federal department or agency can individually address. The GAO found four precarious areas, including assessing enterprise-wide threats; situational awareness and data integration; bioterrorism technologies; and biological laboratory safety and security, according to a [study](#) released earlier this summer that discussed GAO reports issued from December 2009 through March 2019 on various biological threats and biodefense efforts.

"Catastrophic biological events have the potential to cause loss of life and sustained damage to the economy, societal stability, and global security," said Chris P. Currie, director of Homeland Security and Justice at the GAO. He told the U.S. House Oversight and Reform Subcommittee on National Security in June that, "Among those biological threats is the unpredictable nature of naturally occurring disease, which could affect human and animal health and agricultural security. Further, while the revolution in biotechnology presents opportunities to advance the life sciences, that same technology in the wrong hands could be used to create crippling biological weapons."

Catastrophic biological events have the potential to cause loss of life and sustained damage to the economy, societal stability, and global security.

In 2011, the GAO reported that there was no broad, integrated national strategy that encompassed all stakeholders with biodefense responsibilities. The organization called for the development of a national biodefense strategy. Since that time, efforts have been made to coordinate and collaborate across the complex interagency, intergovernmental, and intersectoral biodefense enterprise. Although in October 2017, the GAO found there was no existing mechanism across the federal government that could leverage threat awareness information to direct resources and set budgetary priorities across all agencies for biodefense, the organization said a new biodefense strategy may address this.

In September 2018, the White House released a National Biodefense Strategy. However, because implementation of the strategy is in early stages, it remains to be seen how or to what extent the agencies responsible for implementation will institutionalize mechanisms to help the nation make the best use of limited biodefense resources. The GAO is



currently reviewing the strategy and will release a report later this year.

When it comes to situational awareness and data integration, the GAO reported in 2009 and 2015 that the Department of Homeland Security's (DHS) National Biosurveillance Integration Center (NBIC) — created to integrate data across the federal government to enhance detection and situational awareness of biological events — has suffered from longstanding challenges related to its clarity of purpose and collaboration with other agencies. DHS implemented GAO's 2009 recommendation to develop a strategy, but in 2015 GAO found NBIC continued to face complications, such as limited partner participation in the center's activities.

The GAO reports that DHS has faced biodefense technologies challenges in clearly justifying the need for and establishing the capabilities of the BioWatch program — a system designed to detect an aerosolized biological terrorist attack. In October 2015, the GAO recommended that DHS not pursue upgrades until it takes steps to establish BioWatch's technical capabilities. While DHS

agreed and described a series of tests to establish these capabilities, it continued to pursue upgrades, according to the press release.

Since 2008, the GAO has identified challenges and areas for improvement related to the safety, security, and oversight of high-containment laboratories, which, among other things, conduct research on hazardous pathogens, such as the Ebola virus. The GAO recommended that agencies take actions to avoid safety and security lapses at laboratories, such as better assessing risks, coordinating inspections, and reporting inspection results. Many recommendations have been addressed, but others remain open, such as finalizing guidance on documenting the shipment of dangerous biological material.

"The biological threat landscape is vast and requires a multidisciplinary approach," Currie said. "The biodefense enterprise is the whole combination of systems at every level of government and the private sector that contribute to protecting the nation and its citizens from potentially catastrophic effects of a biological event."

## **Italians Decided to Fight a Conspiracy Theory. Here's What Happened Next.**

Source: <http://www.homelandsecuritynewswire.com/dr20190809-italians-decided-to-fight-a-conspiracy-theory-heres-what-happened-next>

Aug 09 - Alongside the flat-earthers, 9/11 truthers and Obama birthers, the anti-vaccine conspiracy theorists have always had a special distinction: They can do immediate and specific damage in a way that the others can't. Birtherism surely increased Americans' distrust of politics, though in ways that are hard to pin down. By contrast, when anti-vaxxers persuade parents not to vaccinate children, the result can be sickness and even death.

How, then, to push back against them? Does sympathy with parents who are spooked by vaccines help to bring them around, or is it better to be tough? Anne Applebaum writes in the [Washington Post](#) that over the past few years, both of these tactics have been tried in Italy, a country where, [starting in about 2012](#), vaccination rates plunged. In 2015, Italy had one of the [lowest rates of vaccination](#) against measles in Europe. At 85 percent, the rate was lower than India. In 2017, Italy [suffered](#) a predictably large outbreak of measles, with more than 5,000 cases and four deaths.

It's not hard to work out how this happened. Italians have famously low levels of trust in their government, and a tradition of medical hoaxes. On top of that, the issue became politicized: Italy's Five Star Movement — a "non-party" party, founded by a comedian and formed on the Internet — spent a long time nodding and winking to anti-vaxxers. Unsurprisingly, a movement founded on hatred of "the establishment" was also suspicious of the medical establishment. In both Italy and the United States, the arguments behind the campaign are the same: the fear (derived from a now-discredited scientific paper) that the most common childhood vaccines cause autism; the





belief that vaccines are a rip-off perpetrated by Big Pharma; the conviction that the dangers of vaccines have been deliberately concealed.



## Finally, some good news about Ebola: Two new treatments dramatically lower the death rate in a trial

By Kai Kupferschmidt

Source: <https://www.sciencemag.org/news/2019/08/finally-some-good-news-about-ebola-two-new-treatments-dramatically-lower-death-rate>

Aug 12 – A trial of four experimental Ebola treatments carried out in the Democratic Republic of the Congo (DRC) has been stopped early after two of them showed strong signs of being able to save patients' lives. The preliminary results were reported this morning by Anthony Fauci, director of the U.S. National Institute of Allergy and Infectious Diseases (NIAID) in Bethesda, Maryland, one of the partners in the study. The two treatments will now be made widely available and could help end the yearlong outbreak in the DRC, which has already killed more than 1800 people, scientists say.

The PALM trial (short for the Swahili expression *pamoja tulinde maisha*, which means “together save lives”) evaluated three Ebola antibody preparations and one antiviral drug in a randomized controlled trial conducted in the midst of the devastating outbreak, which has hit two provinces in the eastern DRC mired in violence. “Today, we have started a new chapter. From now on, we will no longer say that Ebola is not curable,” Jean-Jacques Muyembe-Tamfum, head of the DRC's National Institute for Biomedical Research in Kinshasa, a partner in the trial, said at the press conference. “This advance will, in the future, help save thousands of lives.” (Muyembe, who was part of the team that discovered Ebola 43 years ago, [took over command of the outbreak response](#) in the DRC on 22 July.)

Jeremy Farrar, head of the Wellcome Trust in London, concurs: “This will undoubtedly save lives,” he wrote in a statement. “In the middle of the worst possible conditions, a very solid clinical trial was done that has given us very important information,” Fauci told *Science* in an interview this morning. “And the beauty of it is that you can now immediately apply it in the field.”

So far, no drugs exist for Ebola; in the current outbreak, two-thirds of all known patients have died. Scientists have tried to treat the disease with existing drugs and develop new treatments tailored to the virus. One of these, the antibody cocktail ZMapp, [was hailed as a potential game changer](#) during the West African epidemic, but a trial conducted during in 71 patients, 36 of whom received ZMapp in addition to the standard of care, [did not show a significant effect on mortality](#). Many [other therapeutic studies came up empty-handed as well](#).

Still, the data on ZMapp were deemed good enough to use the drug as a control in future trials. In the PALM trial, three other drugs were compared to ZMapp:

- The **monoclonal antibody mAb114**, which has its roots in the 1995 Ebola outbreak in Kikwit, DRC. During that episode, Muyembe attempted to treat patients with a mixture of antibodies from Ebola survivors. Years later, researchers at NIAID isolated antibodies from those survivors; mAb114, which is now being developed with Ridgeback Biotherapeutics in Miami, Florida, was the most promising one.
- **REGN-EB3, a cocktail of three monoclonal antibodies** developed by Regeneron Pharmaceuticals in Tarrytown, New York. The antibodies were generated by inoculating mice with “humanized” immune systems with the Ebola virus.
- The antiviral drug **remdesivir**, produced by Gilead Sciences in Foster City, California.

The trial started in November 2018 in four Ebola treatment units in the communities of Beni, Butembo, Katwa, and Mangina, with the aim of enrolling 725 patients. On 9 August, an independent data and safety monitoring board reviewed data for 499 patients and found that REGN-EB3 was much better than ZMapp.

Overall, 49% of patients receiving ZMapp—and 53% of those who received remdesivir—died, compared with only 29% of those on REGN-EB3. That difference was big enough to meet the predetermined criterion for stopping the trial early. In the group that received



mAb114, mortality was 34%, a rate deemed close enough to that of the Regeneron cocktail that its use should continue.

In the 41% of trial participants who sought treatment early after infection and had lower levels of Ebola virus in their blood, the two new treatments had astonishing success: Mortality plummeted to 6% in the Regeneron antibody group and to 11% with mAb114. (With ZMapp and remdesivir, mortality rates in people with low viral load were 24% and 33%, respectively.) There is far less hope for patients with a high viral load, however: Even with the best treatment, REGN-EB3, their death rate was 60%.

Fauci stressed that the data are preliminary. "The only thing that is sure is that mAb114 and [REGN-EB3] are clearly better than ZMapp and remdesivir," he says.

(A separate study taking place in the DRC has shown that Merck's Ebola vaccine, which has been given to 180,000 people in the current epidemic, also powerfully reduces mortality, even when it fails to prevent infection. Of the people enrolled in the four-arm treatment study, 15% had been vaccinated; the study's preliminary data do not factor in the impact of vaccination.)

In an extension of the original trial, patients in the four treatment centers will now be randomized either to REGN-EB3 or mAb114. Patients in all other DRC treatment centers will also be eligible to receive one of the two treatments, despite the fact that they are not yet licensed; this is possible thanks to a framework called Monitored Emergency Use of Unregistered and Investigational Interventions, developed by the World Health Organization (WHO) in Geneva, Switzerland. Fauci says there is enough of the two therapies available. ZMapp and remdesivir will no longer be used.

Gary Kobinger, a virologist at the Public Health Agency of Canada's laboratory in Winnipeg who developed ZMapp, says he is happy to see the other drugs do well. "ZMapp was a proof of concept," he wrote in an email. "Without it, [the other treatments] would never have been developed."

The encouraging results could aid efforts to end the epidemic, because better treatment outcomes may convince more people to seek help in Ebola treatment units, which makes them less likely to infect others. Now, "People think that if you enter a treatment center, you'll leave in a coffin," Muyembe said today. But with cure rates of 90% or higher, "We have a great message," he said: "A treatment center is a place where you can recover and that you leave alive." Public health officials are also likely to emphasize the fact that people who seek treatment early have a higher chance of surviving their ordeal.

Still, scientists stress that the challenges remain daunting. "I think the news today is fantastic. It gives us a new tool in our toolbox against Ebola," says Mike Ryan, executive director of WHO's Health Emergencies Programme. "But it doesn't stop Ebola. What will stop Ebola, under professor Muyembe's leadership and that of the government of the DRC, is good surveillance, good infection prevention and control, good community engagement, excellent vaccinations, and the use of these therapeutics in the most effective way possible."

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## Powerful Potential Weapon May Overcome Antibiotic Resistance

Source: <http://www.homelandsecuritynewswire.com/dr20190815-powerful-potential-weapon-may-overcome-antibiotic-resistance>

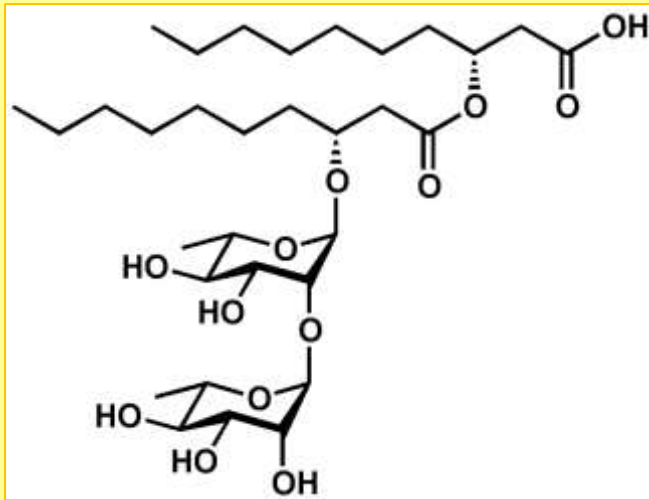
Aug 15 – *Staphylococcus aureus* bacteria are a major cause of serious infections that often persist despite antibiotic treatment, but scientists at the UNC School of Medicine have now discovered a way to make these bacteria much more susceptible to some common antibiotics.

The scientists, in a [study published in Cell Chemical Biology](#), found that adding molecules called **rhamnolipids** can make aminoglycoside antibiotics, such as tobramycin, hundreds of times more potent against *S. aureus* – including the strains that are otherwise very hard to



kill. The rhamnolipids effectively loosen up the outer membranes of *S. aureus* cells so that aminoglycoside molecules can get into them more easily.

"There's a great need for new ways to kill bacteria that tolerate or resist standard antibiotics, and to that



end we found that altering membrane permeability to induce aminoglycoside uptake is an extremely effective strategy against *S. aureus*," said study senior author Brian Conlon, PhD, an assistant professor in the department of microbiology and immunology at the UNC School of Medicine.

**UNC notes that the U.S. Centers for Disease Control has estimated that in 2017 there were more than 119,000 cases of serious bloodstream Staph infections in the United States, of which more than 20,000 were fatal.**

Standard treatments for many strains of the *S. aureus* do not kill the bacteria,

either because the bacteria have genetically acquired specific antibiotic resistance or because they grow in the body in a way that makes them inherently less vulnerable. For example, *S. aureus* can adapt its metabolism to survive in low-oxygen zones in abscesses or in the mucus-filled lungs of people with cystic fibrosis. In these environments, the bacterial outer wall or membrane becomes relatively impermeable to aminoglycosides, such as tobramycin.

Conlon and colleagues, including first author Lauren Radlinski, a PhD candidate in the Conlon laboratory, found in a 2017 [study](#) that rhamnolipids greatly enhance tobramycin's potency against standard test strains of *S. aureus*. Rhamnolipids are small molecules produced by another bacterial species, *Pseudomonas aeruginosa*, and are thought to be one of *P. aeruginosa*'s natural weapons against other bacteria in the wild. At high doses they make holes in rival bacteria's cell membranes. The UNC researchers found that rhamnolipids greatly boost the uptake of tobramycin molecules, even at low doses where they have no independent anti-bacterial effect.

In the new study, Conlon, Radlinski and colleagues tested rhamnolipid-tobramycin combinations against *S. aureus* populations that are particularly hard to kill in ordinary clinical practice. **The researchers found that rhamnolipids boost tobramycin's potency against:**

- *S. aureus* growing in low-oxygen niches;
- MRSA (methicillin-resistant *S. aureus*), which are a family of dangerous *S. aureus* variants with genetically acquired treatment resistance;
- tobramycin-resistant *S. aureus* strains isolated from cystic fibrosis patients;
- and "persister" forms of *S. aureus* that normally have reduced susceptibility to antibiotics because they grow so slowly.

Radlinski said, "Tobramycin doses that normally would have little or no effect on these *S. aureus* populations quickly killed them when combined with rhamnolipids."

Conlon, Radlinski, and colleagues determined that rhamnolipids even at low doses alter the *S. aureus* membrane in a way that makes it much more permeable to aminoglycosides. Each antibiotic in this family that they tested – including tobramycin, gentamicin, amikacin, neomycin, and kanamycin – had its potency enhanced. The experiments showed, moreover, that this potency-boosting strategy is effective not just against *S. aureus* but several other bacterial species, including *Clostridioides difficile* (C-diff), which is a major cause of serious, often-fatal diarrheal illness among the elderly and patients in hospitals.

Rhamnolipids come in many variants, and the scientists now hope to determine if there is an optimal variant that works powerfully against other bacteria while having little or no toxic





effect on human cells. The team also plans to study other microbe-vs.-microbe weapons to find new ways to enhance the potency of existing antibiotics.

“There’s a huge number of bacterial interspecies interactions that could be influencing how well our antibiotics work,” Radlinski said. “We aim to find them with the ultimate goal of improving the efficacy of current therapeutics and slowing the rise of antibiotic resistance.”

## **Isolation & Quarantine: How, When, and How Much**

By Jerry Mothershead

Source: <https://domprep.com/healthcare/isolation-quarantine-how-when-and-how-much/>

Isolation and quarantine are topics of much recent debate among U.S. policymakers, emergency managers, and both public-health and medical-system officials. The recent State and Federal Public Health Preparedness Summit (22-24 February in Washington, D.C.) included several sessions dedicated to exploring these issues. The Summit was a follow-on to the January 2006 release of Issues to Consider: Isolation & Quarantine, a checklist developed by the National Association for City and County Health Officials.

Although both isolation and quarantine are important public-health working tools, emergency managers and other public officials involving in mitigating a public-health disaster must have a firm working knowledge of the risks, benefits, and challenges in using either of these tools. First, some basic definitions:

- Isolation is a medical procedure, applied to an individual, a group of individuals, or potentially an entire population, who have a communicable (read “contagious”) disease, whereby the affected individual is separated from those not so affected for the duration of the time that the disease in question is communicable. It traditionally is applied in a hospital setting, but could be instituted in one’s home. Inherent in this definition are the following: Isolation is not applied to asymptomatic individuals; the isolated individual must be infected with a live, biological pathogen; and the person infected must be capable of transmitting the pathogen to others. Theoretically, all infectious diseases are communicable, but the ones of greatest concern are those transmitted through the air.
- Quarantine is the restriction, through voluntary or compulsory methods, of individuals who are without symptoms but are presumed to be infected with a biological pathogen capable of producing a communicable disease. The quarantine, a status established by a legally empowered authority, continues until those under quarantine no longer pose a transmission risk
- “Shielding” – i.e., social distancing – includes those non-pharmacological actions taken to reduce an individual’s risk of exposure to a communicable disease or to reduce the probability of exposing someone else to the disease.

### **The Black Plague, SARS, and the U.S. Code**

Isolation is a relatively new construct that has evolved in step with man’s knowledge of how diseases are transmitted. Quarantine has been around since at least Biblical times, and has sometimes been imposed incorrectly. During the Black Plague, a cordon sanitaire was instituted around some cities – reflecting the belief that transmission could occur only through infected humans – to keep those infected with the plague from coming in contact with other people.

Quarantine has been used in the United States since colonial days, when it was imposed by city or colonial governments – primarily on arriving maritime traffic. Quarantine authorities are divided among federal, state, county, and local officials. In general, state and local public-health officials are responsible for quarantine issues within their states.

Under a declared State of Emergency, though, governors have extraordinary powers to impose certain restrictions to protect the public.

Most recent uses of quarantine and isolation laws have targeted relatively small numbers of individuals, however. But experience in large-scale quarantine is rather skimpy, and many experts in this field have deemed state laws inadequate for dealing with large-scale public-



health emergencies. For that and other reasons, many states have revised, or are in the processing of revising, their public-health laws, including those related to isolation and quarantine.

In doing so, some states have used the guidelines spelled out in the Model State Emergency Health Powers Act, which was developed in 2001 for the Centers for Disease Control and Prevention (CDC). Title 42 of the U.S. Code authorizes the U.S. Surgeon General to take any action needed, including the imposition of isolation and/or quarantine, to prevent the introduction from overseas, or through interstate spread, of certain communicable diseases (which must be identified as such by Executive Order). In 2003, Executive Orders added several diseases, including Severe Acute Respiratory Syndrome (SARS), to the list. Proposed (and sometimes controversial) revisions to 42 USC that will expand federal quarantine powers and empower certain non-governmental authorities already have been posted in the Federal Register.

States may assist the federal government, and vice versa, in implementing and enforcing isolation and quarantine. The use of this valuable containment tool in situations affecting a large number of people will therefore require both vertical coordination among several levels of government and horizontal collaboration across the nation's public-health, public-safety, governmental-affairs, and law-enforcement communities.

### **Inequality Among Bugs**

There are several fundamental issues that have yet to be addressed, however, and some important questions that have not yet been answered. Following are a few of the most important of those questions:

**1. Can quarantine and isolation work?** Here the not totally satisfactory answer is "It depends." Not all bugs are created equal. Each has specific characteristics that will influence the effectiveness of quarantine efforts. Smallpox and influenza victims, for example, may transmit those diseases at the end of the disease incubation periods, but before the victims indicate signs of suffering from a major illness. In that situation, secondary victims will likely not even know they have been exposed prior to themselves becoming ill, thus allowing sufficient time for further spread. In only one of the 20th-century influenza pandemics did quarantine have any effect, and that was in merely slowing disease progression.

On the other hand, the overall transmissibility of SARS is relatively low – which was a major factor in the apparent success of the quarantine and travel-advisory measures taken during the 2004-2005 outbreaks. Nonetheless, some level of quarantine may be mandatory to contain an epidemic more rapidly. A CDC analysis focused on the containment of smallpox revealed that, without the institution of at least some limited quarantines, eradication in the United States of that disease might well take more than a year after even a relatively small outbreak.

**2. Can an effective quarantine strategy be devised?** Again, the answer is "It depends." Quarantine could be instituted on a large scale to exclude a disease from the United States (scenario 1). It also could be instituted to halt the interstate or inter-regional spread within the United States (scenario 2). Considering the much discussed leakiness of the U.S. borders with Canada and Mexico, scenario 1 seems impossible.

However, whole-nation quarantines were imposed in Australia, Madagascar, and elsewhere during the 1918-1919 Spanish Influenza Pandemic. Vigorous controlled quarantines on island nations appeared to be very effective, but in Australia only slowed, but did not stop, the spread of the disease. It should be remembered that the quarantine measures then instituted were well before widespread (and rapid) travel became the global norm. During the SARS epidemics, passenger screening was instituted in many locations, but because of the minimal size of the outbreaks it is difficult to ascertain the effectiveness of the measures taken. Proposed changes to 42 USC Sections 70 and 71 would empower the airline industry to "make the call" against individuals suspected of harboring a quarantinable disease. Many experts question the ability to train lay industry personnel to adequately make such decisions.

Scenario 2 harkens images from the movie thriller "Outbreak," but no one can doubt the extreme economic, emotional, and logistical support burdens that would arise from an attempt to quarantine even a small town or village in today's United States. Road closures were attempted in Australia, Canada, and elsewhere during the 1918 pandemic, but were



shown to have little effect, and many other countries rejected such measures outright as being unenforceable.

There may, however, be some utility in ordering a quarantine, even knowing it could not or would not be enforced. Slowing the progression of a pandemic would allow more time for the development, mass production, and distribution of medicines, and for taking various related medical countermeasures. Moreover, quarantines can be graduated, ranging from imposition on high-risk segments of society through the most draconian entire-population quarantine.

In any event, quarantine advisories are likely to be effective only to the degree that the public trusts the government. Targeted population quarantines may include the cancellation of mass-gathering events, or mass-transportation restrictions (imposed, for example, on bus, train, and airline travel).

As the more extreme forms of compulsory quarantine (e.g., border closures and/or nighttime curfews) are instituted, compliance will be more difficult to ensure, enforcement will be problematic, and the logistical burden of maintaining critical-infrastructure operations will increase exponentially. One very real option is to develop a cordon sanitaire approach to guarding many of these critical infrastructures – city reservoirs and nuclear power plants are among the more obvious examples – with volunteer skeleton crews sequestered at or close to those sites.

**3. Are there other quarantine-related actions that may be of value?** Here the answer is a clear “Yes.” First among these actions should be a pre-outbreak public information and education program. Most citizens would be more inclined to follow instructions if those instructions make sense, are considered to be personally useful, and are presented in a non-alarming fashion by trusted sources. Unfortunately, there is abundant evidence that many citizens will not take the common-sense steps they should take before a catastrophe strikes. Hurricanes Katrina and Rita demonstrated the value, to individuals and to families, of personal-emergency action plans. But it cannot safely be assumed that the lessons learned from those catastrophes will be applied by large segments of the population prior to the onslaught of similar disasters in the future.

### **Preparing for the Super-Catastrophe**

However, personal shielding and protective actions still may be of value. Simple common-sense actions such as the frequent washing of hands and, in times of disaster, the avoidance of highly crowded environments would greatly reduce (but not completely eliminate) the transmission of many diseases. The voluntary wearing of masks, although not proven to be totally effective, also may have value, if only to serve as a constant visible reminder to take other precautions.

Private businesses and corporations should review their own continuity plans as a corollary to whatever public actions are being taken. Telecommuting and outsourcing to the home environment should be made easier for as large a number of employees as possible. Even internally, the sequestration of company personnel into smaller cohorts of employees may help reduce the spread of disease – again, not eliminate, but reduce.

As part of this process, companies and public institutions should review their plans for “snow days” and consider using the same plans, modified as appropriate, in times of major emergencies. The greatest difference in using such plans to cope with disasters rather than for actual inclement-weather operations would be that the duration of the disaster probably would be significantly longer – and have a much greater impact on operations. That impact, however, could be mitigated to at least some extent through pre-planning.

To summarize: The imposition of quarantine as the primary solution to containing a highly contagious disease would probably not be practical. If history is any guide, it would not work with 100 percent effectiveness, compliance and enforcement would be extremely difficult, and the logistical problems that develop would be nearly impossible to overcome. A targeted quarantine, however – combined with personal shielding and/or other quarantine-like actions – might prove to be as effective in the long run. Nonetheless, quarantine may serve as a valuable adjunctive containment measure to buy time – either to start other mitigation actions, or to maintain business and governmental continuity during a major public-health super-catastrophe.





## Black Swans - Preparing for Pandemic & Biological Threats

By Robert C. Hutchinson

Source: <https://domprep.com/healthcare/black-swans-preparing-for-pandemic-biological-threats/>

In his 2007 best-selling book "The Black Swan: The Impact of the Highly Improbable," Nassim Nicholas Taleb, a Lebanese American statistician, described a [Black Swan](#) event as a highly improbable event with three principal characteristics. "It is unpredictable; it carries a massive impact; and, after the fact, we concoct an explanation that makes it appear less random, and more predictable, than it was."

It is difficult to argue with Taleb's assessment. Humans have certain psychological limitations preventing them from foreseeing such events. Even a significant incident or disaster that seems reasonably predictable can still have an element of surprise when the threat is ignored for one or more reasons – limited resources, for example, or competing priorities, wishful thinking, or even willful blindness. In addition, many significant events often seem obvious and/or expected – *after* they occur.

All of which raise a very important question for the scientific community: Is a future novel pandemic illness, or biological threat, actually a Black Swan event that was not recognized as such until after a major eruption and/or severe international impact? There may be no definitive answer to that question, but the question itself is at least plausible. Pandemics are certainly not new, and have been the subject of many best-selling books and movies, in large part because of their possible real-life consequences. The 2011 movie "Contagion," for example, sparked numerous conversations, unfortunately rather short-lived, that focused on: (a) the level of national awareness and preparedness for a possible pandemic illness; and (b) the serious and cascading consequences that might occur in any nation not properly prepared to deal with an emerging novel virus or biological attack.

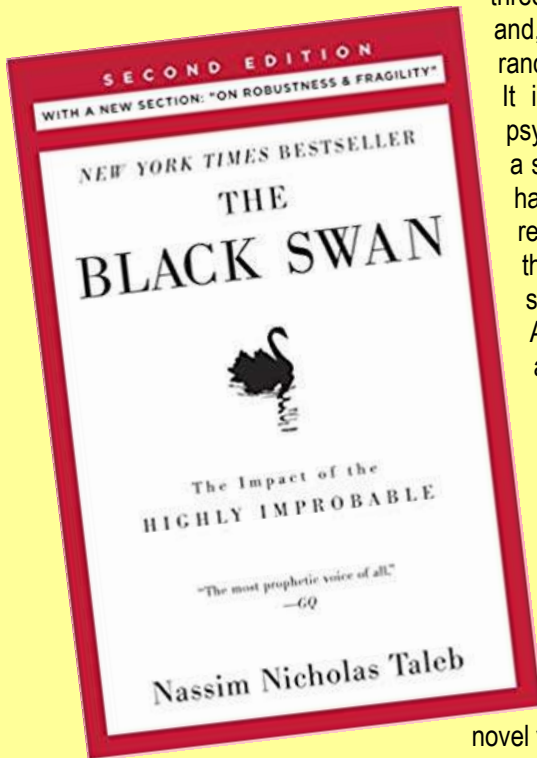
As with many other homeland security and law enforcement concerns, the interest in this low-probability but high-consequence threat faded from the national discourse – in the United States, at least – when, and because, more pressing issues demanded the limited time and resources of the nation's emergency planners and public health professionals. Nevertheless, the possibility of suddenly identifying a highly pathogenic virus has not diminished. Moreover, most communities probably have not adequately prepared to deal with such an event, even under the umbrella of all-hazards or whole-of-community planning.

In 2012, the identification of a novel coronavirus – now known as Middle East Respiratory Syndrome ([MERS](#)) – raised new concerns about another viral respiratory illness that, it was feared, could evolve into the next Severe Acute Respiratory Syndrome ([SARS](#)) or even worse. Not quite half (63) of the first 149 cases reported died after being infected. Most of the fatalities occurred in Saudi Arabia, but cases in the United Kingdom have confirmed human-to-human [transmission](#). In July 2013, to prevent further spread of the disease, the World Health Organization established an [emergency committee](#) to effectively monitor this still-emerging virus.

A quick identification of the new coronavirus, particularly if encountered in other nations, will help facilitate its containment and timely typing to institute the appropriate responses and medical countermeasures. A major U.S. concern is the possibility that the new virus could reach the same level of human-to-human transmission experienced during the SARS outbreak.

### Serious Impacts Both Overseas & in the United States

Recurring events around the world involving mass illnesses and/or deaths in domesticated animal populations, especially those linked to viruses – including influenza – raise serious



concern even within the United States. The March 2013 discovery of approximately 15,000 pig carcasses floating down a river in China, for example, caused public health officials throughout the entire world to wonder if it might be another indicator of a still emerging threat. Beyond the cause of death from a reported circovirus found in the pigs tested, there are serious ramifications of any novel or evolved microbes widely spreading to other locations both within China itself and in neighboring countries, especially with the current H7N9 virus threat. In China, ducks and swans were among the additional die-offs in that nation's other animal populations. These events strongly reinforce lingering epidemic or pandemic concerns – including possible viral reassortment or mutations that today could swiftly travel around the world via the wings of birds, aboard containerships, and/or on commercial aircraft.

The impact of a serious pandemic influenza could be far greater than that caused by a conventional terrorist attack or an act of war. In its October 2011 [Bio-Response Report Card](#), the Bipartisan WMD Terrorism Research Center, a U.S. nonprofit organization co-chaired by two former U.S. Senators – Bob Graham (D-Fla.) and Jim Talent (R-Tenn.) – pointed out that an H1N1 influenza virus strain, known as the Spanish Flu, killed an estimated 20 million people worldwide during the winter of 1918-1919. During that winter, the Report Card stated that, “more U.S. soldiers died from influenza than had died on World War I battlefields.”

If the novel coronavirus MERS, the [H7N9](#) influenza, or any other serious pathogen were to be identified in the United States, it would trigger a response in many of the nation's critical sectors, especially in such fields as medical services, public health, and law enforcement. It also would severely test the nation's current medical-detection and surge-capacity capabilities – to a level that at least some officials believe may demonstrate insufficient planning and preparedness in today's all-hazards environment.

In that situation, one of the first and most important lines of defense, and of possible failure points, would be the initial screening and identification of the virus as early as possible – i.e., in time to implement the pre-designated quarantine and isolation procedures and practices needed to contain the spread of the virus. Containment, if possible, would be the most effective way to assess and control further exposure of any emerging threat. That conclusion implies at least two questions that any of the organizations involved – especially law enforcement and public health agencies – must ask themselves: (a) Are the current law enforcement and public health communities adequately prepared to mandate and to enforce federal- or state-ordered quarantine or isolation procedures – with little or no notice – at a border, medical facility, screening location, or city limit? (b) Do the nation's law enforcement and public health agencies have in place the comprehensive plans and resources needed to support this infrequently exercised mission?

### Plans, Strategies & Other Applications

For those not directly involved in this field or area of interest, this topic may be unfamiliar and seemingly irrelevant insofar as their day-to-day duties and priorities are concerned. Too many citizens may view an emerging biological threat solely (and inaccurately) as a federal responsibility to interdict and contain at an international border. It is true, of course, that there already are several national strategy plans in place to assist in the framing and assignment of responsibilities for an obligation shared by all levels of government and by the private sector.

Among the most important examples of these plans are: (a) The White House's National Strategy for Pandemic Influenza ([2005](#)) and National Strategy for Pandemic Influenza – Implementation Plan ([2006](#)); and (b) the U.S. Department of Health and Human Services' (HHS) Pandemic Influenza Plan ([2005](#)). Individually and collectively, these documents spell out in specific detail how the nation as a whole should prepare for, detect, and respond to a potential pandemic threat, particularly influenza. Following are selected excerpts from each of those documents.

*The 2005 National Strategy for Pandemic Influenza* identifies three pillars for the national strategy, the third of which focuses on Response and Containment: “Actions to limit the spread of the outbreak and to mitigate the health, social, and economic impacts of a pandemic; and, where appropriate, use governmental authorities to limit non-essential movement of people, goods, and services into and out of areas where an outbreak occurs.”



*The 2006 National Strategy for Pandemic Influenza – Implementation Plan* begins with the following prologue to frame the threat and explain the need for the involvement of all levels of government and private citizens as well: “In the last century, three influenza pandemics have swept the globe. In 1918, the first pandemic (sometimes referred to as the ‘Spanish Flu’) killed over 500,000 Americans and more than 20 million people worldwide. One-third of the U.S. population was infected, and average life expectancy was reduced by 13 years. Pandemics in 1957 and 1968 killed tens of thousands of Americans and millions across the world.”

*The 2006 Implementation Plan* also identifies numerous key considerations such as delaying pandemics, screening procedures, and other proactive measures (covered in the Transportation and Borders chapter) and law enforcement responses that should be considered during outbreaks, quarantines, and other movement restrictions (in the Law Enforcement, Public Safety, and Security chapter). The numerous and detailed topics covered in these national strategies confirm the truism that all incidents begin and end locally.

*The 2005 HHS Pandemic Influenza Plan* asserts that state, local, and tribal agencies should, if needed, help enforce community containment measures: “In extreme circumstances, public health officials may consider the use of widespread or community-wide quarantine, which is the most stringent and restrictive containment measure.” There are at least two reasons for that strong mandate: (a) The orders given may involve a legally enforceable action; and (b) A quarantine restricts travel into or out of an area circumscribed by a real or virtual *cordon sanitaire* (sanitary barrier), except for authorized persons, which include public health or healthcare workers. The HHS plan also confirms the need for law enforcement agencies to maintain security at U.S. borders and to enforce movement restrictions during widespread community quarantine, including establishment of the *cordon sanitaire*.

These pandemic strategies acknowledge that there are in fact several unique challenges that state, local, and tribal organizations would encounter during a pandemic illness that require: (a) expanded mutual aid between and among those various jurisdictions; and/or (b) assistance from the federal government. Primarily for that reason, the national documents encourage governmental agencies to formulate truly comprehensive pandemic response plans as well as to plan and carry out the training required for the effective execution of those plans.

There are a number of other applicable federal strategies, plans, and policy guidance documents that should be taken into consideration by policy makers at all levels when developing a thorough and actionable plan to cope with a pandemic threat. Among the most important of those documents are the following:

- President Obama’s 2011 Presidential Policy Directive 8 ([PPD-8](#));
- The Public Health Service Act ([PHSA](#)) updated by Congress in March 2013;
- The U.S. Department of Homeland Security’s 2008 National Incident Management System ([NIMS](#)); National Response Framework ([NRF](#)), updated in May 2013; 2013 [National Preparedness Report](#); Robert T. Stafford Disaster Relief and Emergency Assistance Act ([Stafford Act](#)), updated in April 2013; and
- The U.S. Department of Justice’s 1984 Emergency Federal Law Enforcement Assistance Program ([EFLEA](#)).

The EFLEA program is an option for obtaining certain federal law enforcement resources but, depending on the current appropriations level, supplemental funding may be needed to execute various complex or prolonged missions that might be authorized. The Stafford Act gives the federal government the authority to provide additional funding or other national resources through an annually funded mechanism. Exercising that authority, though, requires an approved presidential declaration. Mission support funded by the Stafford Act would be coordinated through the NRF’s Emergency Support Functions process. The PHSA provides the federal authority needed to prevent the entry and spread of communicable diseases from foreign countries into the United States and/or between states.

In addition to the general authority and possible funding sources listed above, federal law also identifies the federal officials specifically responsible for certain enforcement and quarantine activities during a public health emergency. The officials possessing the authority, and in some instances specifically mandated, to enforce federal and state quarantines are





identified in the 2006 Implementation Plan and in other federal statutes – for example, [42 U.S.C. 97](#) (State Health Laws Observed by United States Officers), in effect as of 1 February 2010; and [42 U.S.C. 268](#) (Quarantine Duties of Consular and Other Officers), in effect as of 7 January 2011.

Public health and law enforcement officials must clearly recognize, though, that it is particularly important to identify and understand both: (a) the different authorities needed for the assistance requested; and (b) the appropriate method that must be followed for obtaining support (if available). The enforcement of quarantines is not limited to any one level of government; nor can a single agency successfully execute it without cooperation, coordination, and collaboration with diverse public and private organizations.

The nation's state and local governments have a long history of using quarantines to contain emerging pathogens. For example, government agencies used quarantines during an 1878 yellow fever epidemic in the Memphis, Tennessee, area; and a 1916 poliomyelitis (polio) outbreak in various areas of New York and New Jersey. During these and other outbreaks, the state and local governments directly involved found themselves in extremely challenging circumstances addressing those Black Swans. The challenges involved in quarantine enforcement and the resolution of conflicting policies and practices are not limited to these two examples, of course, nor are they likely to be in the future.

### **Agency Roles During Any Response**

Agencies now must ask themselves if they: (a) have a specific role in any response dealing with a low-probability, high-consequence threat event; (b) are fully prepared for such an event; and (c) are taking into consideration the possible roles and expectations for state, local, and tribal law enforcement agencies. In a 2006 article by attorney and law enforcement consultant Charles Friend, entitled "QUARANTINES: The Law Enforcement Role," numerous important issues and considerations were identified for state, local, and tribal law enforcement agencies to evaluate and prepare for the enforcement of quarantines during a possible pandemic illness or biological terrorist attack.

The 2006 National Strategy for Pandemic Influenza – Implementation Plan also stresses the importance of understanding the statutory framework governing a legal and effective response. Anticipating that need, the Implementation Plan includes a list of 23 actions and expectations, many of which involve state, local, and/or tribal considerations and expectations.

Because of the current financial challenges that federal, state, local, and tribal organizations are experiencing, it is unlikely that a majority of the nation's public health and law enforcement organizations are adequately prepared, trained, and outfitted to handle a rapidly emerging threat such as a quickly expanding epidemic or pandemic illness. As with numerous other homeland security and law enforcement responsibilities, agencies may suddenly become involved in such incidents, with little or no prior notice. Of course, many of those same organizations did not anticipate their immediate response or support role following the 9/11 terrorist attacks or Hurricanes Katrina and Sandy. Therefore, they had to rely on their existing guidance, training, and resources.

A pandemic-prone virus – stemming from MERS, H1N1, H5N1, H7N9, or any other highly pathogenic strain – is often viewed as the responsibility of the public health and medical services communities. Law enforcement, military, and numerous other public and private sector agencies, however, also have critical responsibilities to carry out – usually in close coordination and collaboration with the other agencies involved. As is true of many significant incidents and disasters, there is usually very little if any time to plan and prepare when a new threat suddenly appears, rapidly expands, and eventually overwhelms medical services and public health officials. In addition, quarantine and isolation procedures may be required to contain a new disease outbreak or biological attack and, in some situations, any subsequent public unrest.

Each state has enacted its own laws, published its own regulations, and/or mandated its own procedures to provide the guidance needed on this subject, but the question is: Are they sufficient and well understood? A review of the national strategies, recently emerging viruses, or even a Hollywood movie may hopefully encourage a reassessment of current planning and preparedness for this low-probability but high-consequence Black Swan threat. If not, a new review could help initiate valuable discussions on the subject.



The greatest takeaway of such discussions may well be to help all those participating: (a) to fully understand and acknowledge the extent of each organization's intentions and capabilities; and (b) to plan accordingly before the arrival of a pandemic or other biological threat. However, history shows that many significant incidents and major disasters have occurred over the past 30 years that initially were considered to be low-probability, high- consequence threats before they actually occurred. A serious pandemic illness or biological attack could have a massive national impact, with extremely grave and cascading consequences – possibly even greater than dramatized in "Contagion" or other Hollywood epics. Waiting to fully experience a Black Swan before admitting that it already exists is by far the worst of all possible options facing decision-making officials at all levels.

*The opinions expressed herein are solely those of the author in his individual capacity and do not necessarily represent the views of the agency, the department, or the U.S. government.*

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## **Disarming enemy: Monash study finds way to disarm dangerous bacteria**

Source: <https://www.miragenews.com/disarming-enemy-monash-study-finds-way-to-disarm-dangerous-bacteria/>

Aug 13 – Researchers from the [Monash Biomedicine Discovery Institute](#) (BDI) have discovered an antibiotic (**Cephameycin**) that could prevent the life-threatening diarrhea caused by *Clostridioides difficile* – a serious bacterial infection often acquired while in hospital.

The treatment strategy could also potentially counter diseases caused by other similar spore-producing, including the lethal anthrax, a key bioterrorism tool.

The research, co-led by [Professor Dena Lyras](#) and [Dr Sheena McGowan](#), was published today in [Nature Microbiology](#).

## **India – anthrax [human, toxic mushrooms]**

Source: Odisha TV [edited]: <https://odishatv.in/odisha/food-poisoning-anthrax-cases-soar-in-odisha-as-tribal-rely-on-wild-mushroom-or-dead-cattle-goat-meat-394317>

Aug 18 – Here is food for thought for the state's powers-that-be. Due to lack of access to cheap protein, poor, backward and tribal districts in the state are turning to wild mushrooms and dead cattle/goat meat, which is leading to a rise in food poisoning and anthrax cases in Odisha.

Though the Odisha Government has launched with much fanfare the Odisha Food Security Act with an objective to ensure food security of 34 lakh [3 400 000] more families, a reality check reveals how many villages in the backward and tribal districts of the state for want of nutrition bank on wild mushrooms and dead cattle, which have even resulted in outbreaks of anthrax. According to the data available with the Integrated Disease Surveillance Centre, the state had reported until the end of July [2019], around 50 food poisoning cases and around half a dozen anthrax cases.

Though outbreaks have come from across the state, most have been reported from tribal and backward districts like Koraput, Nabarangpur, Rayagada, Kalahandi and Sundergarh.



The district disease surveillance centers declare a disease as an outbreak when it affects either an area (village/wards), or a community (SC/ST), or both.

An analysis of the reports at the nodal surveillance center suggest how villages in districts like Koraput,



Rayagada and Nabarangpur have witnessed outbreaks of food poisoning because of consumption of wild mushrooms collected from nearby jungles. Reports show how villages in the districts of Koraput and Sundergarh reported anthrax outbreaks in June-July this year [2019] linked to consumption of meat of dead cattle and goats. Even Subarnapur, grouped among 250 backward districts nationally in 2006, has reported food poisoning outbreak caused by consumption of castor fruits by children.

The disease outbreaks in such tribal and backward districts give some subtle hints to the policy planners of the state. As almost all the districts are high in poverty, they can't afford the dals or meat when they need proteins in their diet, and they rely on wild mushrooms and dead cattle or goats to meet their needs. Lack of awareness regarding food hygiene and safety in the villages of such districts make them vulnerable to bouts of food poisoning.

These districts, especially Kshipur in Rayagada, showed high rates of mango-kernel poisoning deaths in early 2000s. The tribes had depended on mango kernel for lack of staple food, which in turn led to food poisoning deaths. As mango seed kernels contain

significant amount of tannins, it has a deleterious effect when consumed in large quantities.

The bouts of food poisoning in tribal and backward districts reveal very little change in nutritional security there. The neighboring Chhattisgarh government supplies dal via the Public Distribution System to BPL [Below Poverty Line] card holders.

Worldwide, human anthrax is a function of rural poverty and malnutrition. And it would not be surprising to find it associated also with the consumption of toxic mushrooms, even toxic fish, fruit, and roots. When the medical teams are investigating rural human cases of anthrax, they should remember that the source is a dead animal, usually a cow. So, to control this problem, they must include their veterinary colleagues, and the sooner the better.

### Comment

[There is no indication of the type of mushrooms collected. A number of mushrooms are toxic and capable of causing death or serious illness.

Tannins were mentioned in relation to the mango seed kernel, which are high in proteins. Tannins are responsible for the astringent taste we experience when we partake of wine or unripe fruits. Tannins are naturally occurring plant polyphenols. Their main characteristic is that they bind and precipitate proteins. They can have a large influence on the nutritive value of many foods eaten by humans and feedstuff eaten by animals. Tannins are common in fruits (grapes, persimmon, blueberry, etc.), in tea, in chocolate, in legume trees (*Acacia spp.*, *Sesbania spp.*, etc.), and in grasses (sorghum, corn, etc.). High levels of tannins in a monogastric, such as a child or young goat or calf may cause depressed growth rates, low protein utilization, damage to the mucosal lining of the digestive tract, alteration in the excretion of certain cations, and increased excretion of proteins and essential amino acids. So, in addition to consideration of unhealthy aspects of consuming an animal that may have died of anthrax or other disease or toxicity, these people are under food shortage stress and lack knowledge as to what they can safely eat, including native plants in their area. Likely





there are other toxic plants aside from mushrooms and plants containing tannins. One also wonders about the quality and availability of safe drinking water in the area.

## Stretchy sensor tracks its wearer's health via their skin

Source: <https://newatlas.com/bodynet-skin-sensor/61101/>

Aug 16 – It was just last year that we heard how scientists from Stanford University had designed a skin-worn sensor that measures stress via cortisol levels in the sweat. Now, researchers from that same institute have announced a similar sensor that tracks other vital signs.



Known as BodyNet, the new technology was developed by a team led by chemical engineering professor Zhenan Bao. She's no stranger to our pages, having previously brought us innovations such as touch-sensitive robot skin, an implantable blood flow sensor that dissolves when no longer needed, and an e-waste-reducing biodegradable semiconductor.

Her BodyNet sensor is made of a clear, stretchable, non-allergenic elastomer, onto which are screen-printed metallic-ink sensing electronics and a flexible radio-frequency identification (RFID) antenna.

In lab tests, a couple of the devices were adhered onto a test subject's wrist and abdomen, where they accurately measured the person's pulse and rate of respiration by detecting the expansion and contraction of their skin. Additionally, sensors applied to their elbows and knees were able to track the movement of those body parts, by measuring the tightening or relaxation of the skin every time the corresponding muscle flexed.

Data is gathered from the BodyNet sensors using a separate RFID reader, which temporarily powers up the devices using its own radio signal. The wearable sensors themselves contain no batteries or other rigid components.

Currently, one reader has to be affixed to the wearer's clothing over top of each sensor. Down the road, however, it is hoped that a single piece of RFID-reading "smart" clothing – with antennas woven into the fabric – could be used instead. It would periodically transmit the sensor data to a nearby computer, smartphone or tablet via Bluetooth.

Ultimately, once it's capable of measuring additional vitals such as body temperature, the BodyNet technology may find use in the non-disruptive monitoring of patients with sleep disorders or heart conditions, or in the assessment of athletes wishing to optimize their performance.

A paper on the research was recently published in the journal Nature Electronics.

For other recent examples of skin-worn bodily-function sensors, check out what's been created by scientists at the University of Bath, the University of California San Diego, and the Georgia Institute of Technology.

## Weaponizing Biotech: How China's Military Is Preparing for a 'New Domain of Warfare'

By Elsa Kania and Wilson Vorndick

Source: <https://www.defenseone.com/ideas/2019/08/chinas-military-pursuing-biotech/159167/>

Aug 14 – We may be on the verge of a brave new world indeed. Today's advances in biotechnology and genetic engineering have exciting applications in medicine — yet also alarming implications, including for military affairs. China's national strategy of military-civil fusion (军民融合) has highlighted biology as a priority, and the People's Liberation Army could be at the forefront of expanding and exploiting this knowledge.



The PLA's keen interest is reflected in strategic writings and research that argue that advances in biology are contributing to changing the form or character (形态) of conflict. For example:

- In 2010's *War for Biological Dominance* (制生权战争), Guo Jiwei (郭继卫), a professor with the Third Military Medical University, emphasizes the impact of biology on future warfare.
- In 2015, then-president of the Academy of Military Medical Sciences He Fuchu (贺福初) argued that biotechnology will become the new “strategic commanding heights” of national defense, from biomaterials to “brain control” weapons. Maj. Gen. He has since become the vice president of the Academy of Military Sciences, which leads China's military science enterprise.
- Biology is among seven “new domains of warfare” discussed in a 2017 book by Zhang Shibo (张仕波), a retired general and former president of the National Defense University, who concludes: “Modern biotechnology development is gradually showing strong signs characteristic of an offensive capability,” including the possibility that “specific ethnic genetic attacks” (特定种族基因攻击) could be employed.
- The 2017 edition of *Science of Military Strategy* (战略学), a textbook published by the PLA's National Defense University that is considered to be relatively authoritative, debuted a section about biology as a domain of military struggle, similarly mentioning the potential for new kinds of biological warfare to include “specific ethnic genetic attacks.”



These are just a few examples of an extensive and evolving literature by Chinese military scholars and scientists who are exploring new directions in military innovation.

Following these lines of thinking, the PLA is pursuing military applications for biology and looking into promising intersections with other disciplines, including brain science, supercomputing, and artificial intelligence. Since 2016, the Central Military Commission has funded projects on military brain science, advanced biomimetic systems, biological and biomimetic materials, human performance enhancement, and “new concept” biotechnology.

### Gene Editing

Meanwhile, China has been leading the world in the number of trials of the CRISPR gene-editing technology in humans. Over a dozen clinical trials are known to have been undertaken, and some of these activities have provoked global controversy. It's not clear whether Chinese scientist He Jiankui, may have received approval or even funding from the government for editing embryos that became the world's first genetically modified humans. The news provoked serious concerns and backlash around the world and in China, where new legislation has been introduced to increase oversight over such research. However, there are reasons to be skeptical that China will overcome its history and track record of activities that are at best ethically questionable, or at worst cruel and unusual, in healthcare and medical sciences.

But it is striking how many of China's CRISPR trials are taking place at the PLA General Hospital, including to fight cancer. Indeed, the PLA's medical institutions have emerged as major centers for research in gene editing and other new frontiers of military medicine and biotechnology. The PLA's Academy of Military Medical Sciences, or AMMS, which China touts as its “cradle of training for military medical talent,” was recently placed



directly under the purview of the Academy of Military Science, which itself has been transformed to concentrate on scientific and technological innovation. This change could indicate a closer integration of medical science with military research.

In 2016, an AMMS doctoral researcher published a dissertation, “Research on the Evaluation of Human Performance Enhancement Technology,” which characterized CRISPR-Cas as one of three primary technologies that might boost troops’ combat effectiveness. The supporting research looked at the effectiveness of the drug Modafinil, which has applications in cognitive enhancement; and at transcranial magnetic stimulation, a type of brain stimulation, while also contending that the “great potential” of CRISPR-Cas as a “military deterrence technology in which China should “grasp the initiative” in development.

The intersection of biotechnology and artificial intelligence promises unique synergies. The vastness of the human genome — among the biggest of big data — all but requires AI and machine learning to point the way for CRISPR-related advances in therapeutics or enhancement.

In 2016, the potential strategic value of genetic information led the Chinese government to launch the National Genebank (国家基因库), which intends to become the world’s largest repository of such data. It aims to “develop and utilize China’s valuable genetic resources, safeguard national security in bioinformatics (生物信息学), and enhance China’s capability to seize the strategic commanding heights” in the domain of biotechnology.

The effort is administered by BGI, formerly known as Beijing Genomics Inc., which is Beijing’s *de facto* national champion in the field. BGI has established an edge in cheap gene sequencing, concentrating on amassing massive amounts of data from a diverse array of sources. The company has a global presence, including laboratories in California and Australia.

U.S. policymakers have been concerned, if not troubled, by the company’s access to the genetic information of Americans. BGI has been pursuing a range of partnerships, including with the University of California and with the Children’s Hospital of Philadelphia on human genome sequencing. BGI’s research and partnerships in Xinjiang also raise questions about its linkage to human rights abuses, including the forced collection of genetic information from Uighurs in Xinjiang.

There also appear to be links between BGI’s research and military research activities, particularly with the PLA’s National University of Defense Technology. BGI’s bioinformatics research has used *Tianhe* supercomputers to process genetic information for biomedical applications, while BGI and NUDT researchers have collaborated on several publications, including the design of tools for the use of CRISPR.

### Biotech’s Expansive Frontier

It will be increasingly important to keep tabs on the Chinese military’s interest in biology as an emerging domain of warfare, guided by strategists who talk about potential “genetic weapons” and the possibility of a “bloodless victory.” Although the use of CRISPR to edit genes remains novel and nascent, these tools and techniques are rapidly advancing, and what is within the realm of the possible for military applications may continue to shift as well. In the process, the lack of transparency and uncertainty of ethical considerations in China’s research initiatives raise the risks of technological surprise.

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## Bioweapons designed to kill only people of particular race

Source: <https://guardian.ng/features/health/bioweapons-designed-to-kill-only-people-of-particular-race/>



Aug 20 – Scientists warn that humans should be worried about being wiped out by a killer pathogen that is specifically designed to kill people of only a particular race, based on their genetic material/ Deoxy ribonucleic Acid (DNA).



A new report from Cambridge University's Centre for the Study of Existential Risk says that world governments have failed when it comes to preparing against threats like futuristic bioweapons powered by Artificial Intelligence (AI) and genetic manipulation. Such weapons would have to power to target specific DNA, and kill certain races of people leaving other swaths of the population unharmed.

Imagine it being sprayed in the form of the tinfoil hat conspiracy of chemtrails, and wiping out certain portions of the population. The authors warn: "The technology is becoming increasingly sophisticated at ever cheaper prices, democratising the ability to harm more quickly and lethally. In a particularly bad case, a bio-weapon could be built to target a specific ethnic group based on its genomic profile".

A biological weapon is any infectious agent, such as bacteria, virus or toxin, which is used intentionally to inflict bodily harm to people, animals or nature. They can be used to cause massive casualties, social disruption, economic losses, and environmental problems as a means of warfare or terrorism. Biological weapons are difficult to handle after release because they are infectious agents that spread uncontrollably beyond the target area.

Rapid scientific developments and the possible misuses of scientific achievements to create biological weapons make this an area of growing concern for the disarmament community.

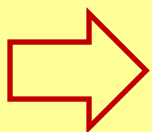
The only major confirmed use of bio-weapons was the Japanese attack on Manchuria in the 1930s.

**However, the number of states with biological warfare programs has been estimated to be in the range of 16 to 20. The number of states with the capacity to make biological weapons is over 100.**

Due to the secrecy with which such programmes are conducted and the fact that facilities for producing biological weapons are easier to hide than the ones for nuclear and chemical weapons, it is hard to know exactly how many states possess biological weapons or to detect bio-weapons programmes. A further problem is the dual-use nature of many installations; it is difficult to distinguish defensive from offensive uses.

Biological weapons are considerably cheaper than nuclear and chemical weapons and have a large effect-to-quantity ratio. In other words, a relatively small amount of biological agent can cause a relatively large number of deaths – equivalent, in some assessments, to those resulting from nuclear use. They do not require complex delivery systems, and their ease of manufacture is increasing with advances in science.

Given their relative affordability, effectiveness and flexibility, biological weapons are increasingly being considered as an attractive option by non-state actors, making bioterrorism one of the major threats regarding this type of weapon. The use of biological agents to force the eradication of drug production crops is promoted by the USA, notably in **Colombia**.



**The US is developing infectious agents that kill drug plants.** This controversial strategy carries great dangers of undermining international prohibitions on biological weapons, presenting risks for human health and posing dangers to the environment. The 1925 Geneva Protocol outlawed the use of biological weapons as well as chemical ones. However, it contains serious limitations: it does not prohibit the development, production and stockpiling of biological weapons, and some countries assert the right to retaliate if attacked with biological weapons.

The Biological and Toxin Weapons Convention (BTWC), which entered into force in 1975, supplemented the Geneva Protocol. It was the first multilateral disarmament treaty to ban the production and use of an entire category of weapons. The BTWC has currently 165 States Parties and 12 signatories. It aims at banning the development, production, stockpiling, acquisition, retention, transfer, and use of biological weapons by anyone.

**However, unlike the Chemical Weapons Convention, the treaty lacks verification and compliance procedures, and there is no implementing body to monitor observance.**



An attempt was made in 1991 to establish a verification system, but the talks collapsed due essentially to a withdrawal of cooperation by the USA. Several developments in the 1990s revealed that the BTWC does not prevent states from conducting biological weapons programmes (example: Russia and Iraq, both signatories to the Convention had conducted clandestine bioweapons programmes) showing that the current regime is inadequate.

Effectively countering the threat from biological weapons requires a number of mutually-reinforcing actions, including a strengthened prohibition regime and enhanced political will. It will, over time, increase transparency and build confidence that all States Parties are in compliance with the Convention, as well as deterring would-be violators. But to achieve this there needs to be a greater awareness among the public and pressure on governments to toughen the regime.

**EDITOR'S COMMENT:** Nothing new or surprising here. Remember the “ethnic bullets” of the past that all considered as a ridiculous perspective?

