18 November 2016

Army Public Health Weekly Update

Army Public Health Center

Notice:
There will be no update next week. Publication will resume on 2 December.

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INFLUENZA

- APHC: U.S. Army Influenza Activity Report
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Approved for public release, distribution unlimited.
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• Flu vaccine can be improved: Texas researchers
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• Nigeria: Nigeria records 35 per cent decline in malaria cases
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• South Sudan: WHO strengthens South Sudan’s disease detection and response

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• Iraq: ISIS fires near Mosul sicken 1,500 people, U.N. says
• Saudi Arabia: Middle East respiratory syndrome coronavirus
• Syria: WHO condemns massive attacks on five hospitals in Syria
• Yemen: Yemen’s suspected cholera cases double to 4,000-plus: WHO

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• Romania: CDC issues travel notice for Romania due to measles outbreak
• Russia: Measles outbreak blamed on Russian anti-vaxxers

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• Canada: High-income men now outliving low-income women in Canada, study finds
• U.S.: Chagas disease burden in the Rio Grande Valley of Texas
• U.S.: Ecotourism and military deployments driving up leishmaniasis cases in the US
• U.S.: How New York hunts for early signs of disease outbreaks
• U.S.: Judge orders bottled water delivery to Flint residents amid lead crisis
• U.S.: Potentially preventable deaths among the five leading causes of death — United States, 2010 and 2014
• U.S.: Southern wildfires have threatened communities on edge
• U.S.: Surgeon General’s report on alcohol, drugs, and health
• U.S.: United States comes in last again on health, compared to other countries

**USPACOM**

• China: China to burn, not bury, as it tackles trash challenge
Fact Sheets: Depleted Uranium

Two fact sheets, one for medical providers and one for individuals have been updated.

Exposure to DU (as an aerosol or as part of an embedded fragment) is only one of many potentially hazardous substances that Soldiers may be exposed to during deployment and combat operations. There are two potential hazards when large amounts of DU are taken in to the body. The first concern is the effect associated with heavy metal toxicity on the kidney. The second area of concern is the possible long-term effect related to DU's low-level radioactivity.

Follow up of individuals with retained DU fragments has not shown evidence of adverse health effects. Those individuals who show elevated DU in the screening urine bioassay are being followed as described in the previous section.

Depleted Uranium - Medical
Depleted Uranium: Individual

USSOUTHCOM

- Brazil reports 136,000 new chikungunya cases

U.S. MILITARY

2016 Annual Report of the Interagency Task Force on Military and Veterans Mental Health

18 November - The Departments of Defense (DoD), Health and Human Services (HHS), and Veterans Affairs (VA) released the 2016 Annual Report of the Interagency Task Force on Military and Veterans Mental Health. The report addresses several key areas in care, including how to improve the transition from military health care to the VA. In addition, it looks at how to better share information between the HHS and its state and community-level partners and how to improve training for community providers who deliver services to veterans, service members and their families. The report details progress across eight key policy areas. Some of these include: suicide prevention, joint clinical and outcome measures, and partnerships with local communities. Federal Health Care News (first item)

Army: New record low for mishap fatalities, but motor vehicle deaths are up

15 November - The Army reports the number of fatalities in mishaps fell in fiscal 2016 for the seventh year in a row, even while motorcycle deaths were up 32 percent, according to data from the U.S. Army Combat Readiness Center. In fiscal 2016, 109 soldiers died in accidents that occurred on duty and off duty, according to an Army news release. That number is down from the 110 who died the year before, and it is the lowest number recorded in 45 years, the release said. Accidental deaths have dropped 32 percent for active-duty soldiers, along with fewer such deaths in the Guard and Reserve, the release said. Army Times

Epilepsy among Iraq and Afghanistan war veterans — United States, 2002–2015

11 November - ... U.S. veterans with epilepsy who were deployed in the Iraq and Afghanistan conflicts were more likely than those without epilepsy to have mental and physical comorbidity, and were 2.6 times more likely to die during 2011–2015, even after controlling for demographic characteristics and other conditions associated with death. Veterans with epilepsy who were deployed in the Iraq and Afghanistan conflicts could benefit from evidence-based chronic disease self-management programs to reduce physical and psychiatric comorbidity, and linkages to U.S. Department of Veteran Affairs clinical
Health of Those Who Have Served Report

November 2016 - ... Despite reporting better overall health, those who have served face distinct health challenges, including higher rates of coronary heart disease, heart attack, and cancer than their civilian peers. Across several chronic conditions, differences in rates between those who have served and civilians increase with age. For example:

- Slightly more than one out of five individuals 80+ years of age who served have coronary heart disease, compared to about one out of eight civilians in that age cohort.
- Nearly half of people 80+ years of age who served have been diagnosed with cancer, compared with roughly one-third of civilians.

The report also finds that people aged 18-39 who have served have lower rates of certain chronic conditions such as diabetes, but they sleep less and smoke more than civilian peers.

ICC prosecutor: U.S. forces may have tortured in Afghanistan

14 November - U.S. armed forces and the CIA may have committed war crimes by torturing detainees in Afghanistan, the International Criminal Court’s chief prosecutor said in a report Monday, raising the possibility that American citizens could be indicted even though Washington has not joined the global court. "Members of US armed forces appear to have subjected at least 61 detained persons to torture, cruel treatment, outrages upon personal dignity on the territory of Afghanistan between 1 May 2003 and 31 December 2014," according to the report. ... The report added that CIA operatives may have subjected at least 27 detainees in Afghanistan, Poland, Romania and Lithuania to "torture, cruel treatment, outrages upon personal dignity and/or rape" between December 2002 and March 2008.

Lessons from the battlefield

17 November - Treating injuries caused by bombs and shrapnel is far from routine for most doctors. ... [T]he quality of trauma care across the United States varies substantially, with large differences in expertise, triage and best practices. After suffering a trauma like a car crash, fall or fire, a patient is twice as likely to die at the worst trauma centers compared to the best. ... There are nearly 150,000 trauma deaths annually — 20 percent of which could be prevented with optimal trauma care, according to the National Academies of Sciences, Engineering and Medicine. A new report from the academies suggests that we could substantially reduce the health and economic burden of trauma in the United States if we integrated insights from military care into civilian hospitals. Even as weapons have grown more deadly, the fatality rate for wounded soldiers has fallen significantly over time, from nearly 25 percent in Vietnam to less than 10 percent in Afghanistan and Iraq.
They made it home from Vietnam. Now, these vets battle a rare form of cancer

11 November - They were the lucky ones who managed to make it home from Vietnam. Now, half a century later, some veterans are finding out they, too, are victims of the war. The enemy is a known killer in parts of Asia: parasites ingested in raw or poorly cooked river fish. These liver flukes attach to the lining of the bile duct and, over time, cause inflammation and scarring. Decades after infection, a rare cancer called cholangiocarcinoma can develop. Symptoms typically do not occur until advanced stages. Ralph Erickson, who heads post-deployment health services at the Department of Veterans Affairs, says about 700 cholangiocarcinoma patients have passed through the agency's medical system in the last 15 years. ... Fewer than half of those 700 submitted claims, however, in part because they were unaware of any possible link to their service. Of the claims submitted, 3 out of 4 have been rejected, according to data obtained by the Associated Press through the Freedom of Information Act. The Los Angeles Times

VA drops plans to allow sex change surgeries

14 November - Veterans Affairs officials are dropping controversial plans to allow sex-change surgeries for transgender veterans, not because of criticism but instead due to budget constraints. The move ... is a significant setback for LGBT advocates and raises questions on whether the surgeries will be offered anytime in coming years, given conservative control of the White House and Congress in 2017. Military Times

Where even nightmares are classified: Psychiatric care at Guantánamo

12 November - ... [Lt. Cmdr. Shay] Rosecrans, now retired from the Navy, led one of the mental health teams assigned to care for detainees at the [Guantanamo Bay, Cuba] island prison over the past 15 years. Some prisoners had arrived disturbed — traumatized adolescents hauled in from the battlefield, unstable adults who disrupted the cellblocks. Others, facing indefinite confinement, struggled with despair. Then there were prisoners who had developed symptoms including hallucinations, nightmares, anxiety or depression after undergoing brutal interrogations at the hands of Americans who were advised by other health personnel. At Guantánamo, a willful blindness to the consequences emerged. Those equipped to diagnose, document and treat the effects — psychiatrists, psychologists and mental health teams — were often unaware of what had happened. The New York Times
Chikungunya more prevalent in women

16 November - An investigation of a 2012 chikungunya outbreak in Bangladesh showed that women were disproportionately affected by the virus. Researchers used an integrative approach to better understand disease transmission and determined that women were more likely to develop infection because of the amount of time they spend at home. ... They found that women were 1.5 times (95% CI, 1.4-1.6) more likely to be in or around their homes between the hours of 8:00 a.m. and 8:00 p.m. compared with men (66% vs. 45%). “It appears that mosquitoes are very lazy,” Salje said in the release. “They bite someone in a household and get infected with a virus and then hang around to bite someone else in the same home or very nearby. The extra time women spend in and around their home means they are at increased risk of getting sick.” Healio

Huge study finds 1 billion people suffer from high blood pressure

15 November - The number of people with high blood pressure has almost doubled in 40 years to over 1.1 billion worldwide, scientists said on Wednesday, with the burden of the condition shifting from the rich to the poor. In the largest study of its kind analyzing blood pressure in every nation between 1975 and 2015, the scientists said that it has dropped sharply in wealthy countries - possibly due to healthier diets and lifestyles - but risen in poorer ones. The increases are especially significant in Africa and South Asia, the researchers said, and could be partly due to poor nutrition in childhood. ... In Europe, Britain had the lowest proportion of people with high blood pressure in 2015. South Korea, the United States and Canada had the lowest hypertension rates in the world. VOA

International research initiative brings leading experts to track health impacts of climate change

14 November - The Lancet Countdown: Tracking Progress on Health and Climate Change is being launched today (Monday 14th Nov) at the COP22 climate talks taking place in Morocco. An international, multi-disciplinary research initiative, it brings together leading experts to track and analyse the impacts of climate change on public health. ... With the aim of ensuring the case for action on health and climate change is more widely evidenced and understood, the Lancet Countdown will inform decision-making and drive an accelerated policy response to climate change. News-Medical.net

Malarial benefits noted for long-acting drugs, treated nets

16 November - An oral capsule that unfolds into a star shape once it enters the stomach can deliver long-acting malaria protection that might offer a new weapon against the
disease, and there's hope that the new drug delivery system could also help battle other
diseases—such as tuberculosis and HIV—that require strict medication adherence. A
research team based at the Massachusetts Institute of Technology (MIT) reported the first
promising results today from tests on pigs, plus mathematical modeling estimates showing
how the new drug-delivery method could fit into malaria elimination strategy. CIDRAP

'Minibrains' could help drug discovery for Zika and for Alzheimer's

13 November - Some tiny clusters of brain cells grown in a lab dish are making big news. ... Known as "minibrains," these rudimentary networks of cells are small enough to fit on the head of a pin, but already are providing researchers with insights into everything from early brain development to Down syndrome, Alzheimer's and Zika. ... [R]esearchers said minibrains are helping them figure out how the Zika virus can disrupt human brain formation in the early stages of fetal development. Minibrains are highly organized structures that actually start out as human skin cells. They are then coaxed in the lab to become neural stem cells, then to differentiate into some of the different types of cells found in a real brain. What makes these lab-grown structures so useful is that they replicate part of the cell diversity and connectivity of the human brain. NPR

*Mycobacterium abscessus* infections in cystic fibrosis patients spreading: UK researchers

11 November - A multi-drug resistant infection that can cause life-threatening illness in people with cystic fibrosis (CF) and can spread from patient to patient has spread globally and is becoming increasingly virulent, according to new research. ... The study ... suggests that conventional cleaning will not be sufficient to eliminate the pathogen, which can be transmitted through contaminated surfaces or in the air. *Mycobacterium abscessus* ... can cause a severe pneumonia leading to accelerated inflammatory damage to the lungs, and may prevent safe lung transplantation. It is also extremely difficult to treat – fewer than one in three cases is treated successfully. Outbreak News Today

NIH-led effort examines use of big data for infectious disease surveillance

14 November - Big data derived from electronic health records, social media, the internet and other digital sources have the potential to provide more timely and detailed information on infectious disease threats or outbreaks than traditional surveillance methods. ... Traditional infectious disease surveillance ... can have time lags, is expensive to produce, and typically lacks the local resolution needed for accurate monitoring. Further, it can be cost-prohibitive in low-income countries. In contrast, big data streams from internet queries, for example, are available in real time and can track disease activity locally, but have their own biases. Hybrid tools that combine traditional surveillance and big data sets may provide a way forward, the scientists suggest, serving to complement, rather than replace,
Skin patch might someday track your health

17 November - A new type of acoustic sensor that resembles a small Band-Aid on the skin can monitor your heartbeat and other health measures, researchers say. The sensor may one day offer a way to painlessly and wirelessly track an individual’s health. The patch, which weighs less than one-hundredth of an ounce, can help doctors monitor heart health, stomach condition, vocal cord activity, lung performance and potentially many other bodily functions, researchers say. “We’ve developed a soft, skin-like device that can listen to internal sounds created by function of internal organs,” explained study co-author John Rogers. UPI

Study suggests West Nile virus is deadlier than expected

14 November - West Nile virus may be deadlier than public health officials and doctors have thought, according to a new study. The virus, which like Zika is transmitted to humans mostly by mosquitoes, causes a fever and other symptoms in about one out of every five people it infects. While the majority of those infected never develop any symptoms, patients in about 4% of the 43,937 U.S. cases reported to the Centers for Disease Control and Prevention from 1999 to 2015 died. Yet researchers in Texas discovered a much higher death rate in an analysis of West Nile cases in their state. Of 4,144 patients who were ill from 2002 to 2012, 13% died, they found in their analysis of data, which went through the end of 2013. Nearly half of the deceased were patients who had recovered from their initial illnesses, only to die months or years later of causes related to the virus.

The Wall Street Journal

UK to investigate human health impact of microplastics

14 November - The government is to conduct an investigation into the impact on human health of microplastic particles found in shellfish and other marine animals. ... The move follows the announcement in September that the government is to ban the use of plastic microbeads in cosmetics and toiletries after the Commons environmental audit committee raised concerns about their effect on the marine environment. ... [T]he government acknowledged there was “little evidence” available on the impact to human health of microplastics - defined as particles smaller than five millimetres. It said that research had however shown high concentrations could cause physical harm to marine worms and microplastics could transfer along a “simple” food chain - such as from a mussel to a crab. In its report, the committee said someone eating six oysters was likely to have consumed 50 particles of microplastics and that the human health impacts should be a “priority subject for research”. The Guardian
ZIKA VIRUS

Experts: Multiple Zika vaccine platforms likely needed

15 November - ... Zika will likely be combated by two, and not one, vaccines: First a DNA-based vaccine that will confer immunity for a shorter period and could help stamp out the current outbreak, and later a live-attenuated-virus–based vaccine that could offer lifelong immunity to recipients. While Fauci said it's impossible to tell which vaccine will most likely be the first to succeed and begin protect people from the mosquito-borne illness, he said a few are more "temporally likely" than others. "A straightforward DNA-based vaccine could be used in the middle of an outbreak, or before travel to an area experiencing an outbreak," said Fauci. In that way, the Zika vaccine would act like dengue or yellow fever immunization. In fact, because Zika is a flavivirus, and so many flaviviruses have successful vaccines, researchers and pharmaceutical companies have been quick to assume Zika will be similar.

CIDRAP

Global health leaders failing women in Zika-hit areas, experts warn

14 November - Public health experts are warning that the failure of global health agencies to challenge political and religious resistance to contraception in Zika-affected countries in Latin America and the Caribbean is leading to a humanitarian crisis for women. The World Health Organisation (WHO) and US Centre for Disease Control (CDC) recommended women in the region delay pregnancy or not have sex well before the Zika virus was definitively linked in April to the birth defect microcephaly. But family planning experts say that women are merely being told to avoid pregnancy without being given the means to do so and that such advice is insufficient in the face of a global epidemic. ... Most Zika-affected countries in Latin America and the Caribbean are predominantly Catholic and have strong political and cultural barriers to women accessing and using contraception. The Guardian

Incidence of Zika virus disease by age and sex — Puerto Rico, November 1, 2015–October 20, 2016

11 November - ... Among 28,219 nonpregnant persons with laboratory evidence of Zika virus disease identified in Puerto Rico during November 1, 2015–October 20, 2016, incidence was highest among women aged 20–49 years. Women aged 40–79 years with suspected cases were more likely to test positive for Zika virus infection than those in males in the same age group. Morbidity and Mortality Weekly Report

Study: Zika virus can linger on hard surfaces

15 November - Zika virus can be transmitted from an environmental source—underscored by a worker infected from a needle stick injury in a Pennsylvania lab earlier this year—and a study today found that it can survive several hours on nonporous surfaces but is easily killed by commonly used disinfectants. ... Zika can live on hard, nonporous surfaces for as long as
Zika infection in U.S. is still rare so far, blood donations indicate

14 November - By the end of this week, all blood banks in the continental United States must begin testing donated blood for contamination with the Zika virus. Many banks are doing so already, and the early results indicate that the country has dodged a bullet — for now. Screenings in a dozen states suggest that Zika infection remains exceedingly rare. Among the approximately 800,000 blood donations tested in the past six months or so, about 40 were initially positive for the virus. *The New York Times*

Zika virus teams up with other viruses to sicken people

14 November - Two studies out Monday show that the Zika virus may not be working alone in causing strange infections in South America. It may be getting help from dengue and chikungunya, too. One team found that mosquitoes can be infected with Zika and chikungunya at the same time and could, in theory, infect people with both viruses in a single bite. And a second team found a range of unusual symptoms in people in Brazil last year as Zika, chikungunya and dengue all swept through populations, often infecting people at the same time. One of the oddest is known as "dancing eyes-dancing feet syndrome." … "Our analysis shows that each of these viruses may have the potential to cause a range of neurological complications, some very severe." *NBC News*

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INFLUENZA

APHC: U.S. Army Influenza Activity Report

For the week ending 5 November 2016 (Week 44)

Influenza vaccination coverage has increased across Army service components since week 43. The number of influenza A-positive specimens has also increased.

- **ILI Activity:** Army incident ILI outpatient visits in week 44 were 6% lower than the same week last year.

- **Influenza cases:** No hospitalized influenza cases were reported to APHC through DRSi in week 44. At this same time during the last influenza season, two influenza-associated hospitalizations were reported.

- **Viral specimens:** During week 44, 73 of 667 (11%) laboratory specimens tested positive for respiratory pathogens. RHC-E reported most (42%) of the influenza A-positive specimens, followed by RHC-P (33%), RHC-C (17%), and RHC-A (8%). *APHC*
CDC: Flu View - Weekly U.S. Influenza Surveillance Report

During week 44 (October 30-November 5, 2016), influenza activity was low in the United States.

- Viral Surveillance: The most frequently identified influenza virus subtype reported by public health laboratories during week 44 was influenza A (H3). The percentage of respiratory specimens testing positive for influenza in clinical laboratories increased slightly but remained low.

- Pneumonia and Influenza Mortality: The proportion of deaths attributed to pneumonia and influenza (P&I) was below the system-specific epidemic threshold in the National Center for Health Statistics (NCHS) Mortality Surveillance System. [CDC](#)

ECDC: Flu News Europe

Week 44/2016 (31 October-6 November 2016)

- Activity remained low in the region, with few specimens testing positive for influenza viruses (1% of sentinel specimens), and is at a level similar to that observed for the same period in recent seasons.

- Since week 40/2016, influenza A viruses have predominated, with most of those subtyped being A(H3N2). [European Center for Disease Prevention and Control/WHO](#)

'First flu' affects lifetime risk

11 November - A person's chances of falling ill from a new strain of flu are at least partly determined by the first strain they ever encountered, a study suggests. Research in [Science](#) journal looked at the 18 strains of influenza A and the hemagglutinin protein on its surface. They say there are only two types of this protein and people are protected from the one their body meets first, but at risk from the other one. A UK expert said that could explain different patterns in flu pandemics. The researchers, from University of Arizona in Tucson and the University of California, Los Angeles, suggest their findings could explain why some flu outbreaks cause more deaths and serious illnesses in younger people. [BBC News](#)

Flu vaccine can be improved: Texas researchers

16 November - A team of engineers and scientists at The University of Texas at Austin is reporting new findings on how the influenza vaccine produces antibodies that protect against disease, research that suggests that the conventional flu vaccine can be improved. ... The UT Austin team suggests that quadrivalent influenza vaccines — which are currently recommended by the Centers for Disease Control and Prevention to protect against four virus strains and which may cost more for consumers and health insurers to use — may not offer significant benefits over trivalent influenza vaccines. The team also discovered a new class of antibodies that are effective at offering the body protection from several influenza virus strains. [Outbreak News Today](#)
New bird flu outbreaks reported in Germany and Switzerland

12 November - Germany and Switzerland reported new outbreaks of a severe strain of bird flu on Saturday in the latest in a series of cases across Europe. The H5N8 virus has also been found in Austria, Hungary, Poland, the Netherlands, Denmark and Croatia. In Germany, the state of Schleswig-Holstein reported one case of bird flu confirmed at a farm where 30,000 chickens would now be culled. The state's agriculture ministry said an area of 3 square km (1.2 square miles) had been sealed off. Reuters

NHRC: Febrile Respiratory Illness Surveillance Update

For 2016 Week 45 (through 12 November 2016):

- Influenza: No new cases of NHRC laboratory-confirmed influenza among US military basic trainees.

- FRI surveillance at all eight U.S. military basic training centers indicated FRI rates were elevated at MCRD Parris Island. Naval Health Research Center

USAFSAM & DHA: DoD Global, Laboratory-Based, Influenza Surveillance Program

During 30 October - 12 November 2016 (Surveillance Weeks 44 & 45), a total of 153 specimens were collected from 41 locations. Results were finalized for 127 specimens from 37 locations. During Week 44, two influenza A(H3N2) viruses and one influenza B virus were identified. During Week 45, one influenza A(H3N2) virus was identified. Approximately 3% of specimens tested positive for influenza during Week 44 and 2% tested positive for influenza during Week 45. The influenza percent positive for the season is approximately 3%. US Air Force School of Aerospace Medicine & Defense Health Agency

WHO: Influenza Update

14 November - Influenza activity in temperate southern hemisphere countries is back at inter-seasonal levels. Influenza activity in the temperate zone of the northern hemisphere has not yet picked up and remained at inter-seasonal levels. WHO
VETERINARY/FOOD SAFETY

Red squirrels in the British Isles are infected with leprosy bacilli

With the exception of armadillos in the Americas, leprosy infections are considered almost exclusively restricted to humans. Avanzi et al. examined warty growths on the faces and extremities of red squirrels in the British Isles and found that two species of leprosy-causing organisms were to blame. ... *Mycobacterium leprae* in the southern population of Brownsea Island squirrels originated from a medieval human strain. *M. lepromatosis* was found in red squirrels from elsewhere in the United Kingdom and Ireland. Human leprosy is proving hard to eradicate, despite available drugs. Perhaps other wildlife species are also reservoirs for this stubborn disease. *Science*

Secondary ice cream and product recalls for *Listeria* roundup

11 November - In the past two months, there have been a dozen recalls of ice cream and other products for possible *Listeria monocytogenes* contamination. These are all secondary recalls, which means that these products were made in a contract supplier’s facility where *Listeria* was found, or they were made with products recalled for possible *Listeria* contamination. It can be difficult to keep track of all of these recalls. So, as we have done in the past with other massive recalls, we are keeping a list of the recalled products in one place so you can check back and stay informed. *Food Poisoning Bulletin*

Some hog workers developing drug-resistant skin infections linked to livestock-associated *Staph*

16 November - New ... research suggests that some workers at industrial hog production facilities are not only carrying livestock-associated, antibiotic-resistant bacteria in their noses, but may also be developing skin infections from these bacteria. ... [T]he results highlight the need to identify ways to protect workers from being exposed to these bacteria on the job, and to take a fresh look at antibiotic use and resistance in food animal production. ... The researchers found that 45 of 103 hog workers (44 percent) and 31 of 80 household members (39 percent) carried S. aureus in their noses. Nearly half of the S. aureus strains being carried by hog workers were multidrug-resistant and nearly a third of S. aureus strains being carried by household members were. Six percent of the hog workers and 11 percent of the children who lived with them reported a recent skin and soft tissue infection (no adult household members reported such infections). Those hog workers who carried livestock-associated S. aureus in their noses were five times as likely to have reported a recent skin or soft tissue infection as those who didn’t carry those bacteria in their noses. *Johns Hopkins Bloomberg School of Public Health News*
Vaccines that rob microbes of iron could fight food poisoning, UTIs

14 November - You’re probably not aware of it, but when you’re suffering from a bad case of food poisoning or another infection, bacteria are busy stealing iron from you. Many microbes use special chemicals to snatch away the metal, which they need to reproduce. But this need could be their downfall, according to new research. For the first time, two separate groups have developed candidate vaccines that protect against infection by targeting iron-scavenging molecules. The shots didn’t prevent disease in mice, but they did slow down infection, showing the concept might work. Science

WELLNESS

Experimental vaginal ring fights HIV, but will women wear it?

14 November - An experimental vaginal ring that continuously releases the anti-HIV drug dapivirine has the potential to save lives. But what’s it going to do to sex lives? That’s a question researchers posed as part of the ASPIRE study, which tested the flexible silicone rings with women ages 18 to 45 living in Malawi, South Africa, Uganda and Zimbabwe. ... Some women reported worrying about what would happen if their partners felt or discovered the ring, which is 2.2 inches in diameter and a third of an inch thick. They feared being interrogated in the middle of sex, despite the fact that Fauci notes, "That's not what happens. It's less obvious than a diaphragm." But because of this anxiety, several women slipped out the ring prior to intimate contact, while others avoided certain positions. ... The ring, when used as directed, is inserted just once a month and left in place, then taken out and replaced with a new ring for the next month. ... [The] group is already working on the next generation of ring. It will also provide contraception, which may help women make a stronger case for using it. NPR

Pessimism and risk of death from coronary heart disease among middle-aged and older Finns: an eleven-year follow-up study

17 November - ... Research on the risk factors and the treatment of CHD has focused on physiological factors, but there is an increasing amount of evidence connecting mental health and personality traits to CHD, too. ... This was an 11-year prospective cohort study on
a regional sample of three cohorts, aged 52–56, 62–66, and 72–76 years at baseline (N = 2815). The levels of dispositional optimism and pessimism of the study subjects were determined at baseline using a revised version of the Life Orientation Test (LOT-R). Eleven years later, those results and follow-up data about CHD as a cause of death were used to calculate odds. ... Those who died because of CHD were significantly more pessimistic at baseline than the others. This finding applies to both men and women. ... Optimism did not seem to have any connection with the risk of CHD-induced mortality. BioMed Central

**Soda tax could save thousands of lives and $1 billion in Mexico**

11 November - Mexico’s soda tax is on course to prevent diabetes, heart attacks and strokes in more than 200,000 adults and to save nearly $1 billion in healthcare costs over a decade, a new study suggests. The research bolstered arguments in favor of soda taxes approved this week in three Northern California cities as well as in Boulder, Colorado and Cook County, Illinois. The taxes were designed to wean consumers off sugar-sweetened beverages, to curb a worldwide surge in obesity and diabetes, an epidemic fueled by soda, public health experts say. ... Over the course of 10 years, the tax could save the lives of 18,900 Mexicans age 35 and older, according to a report online in PLOS Medicine. It also could prevent 189,300 new cases of adult-onset diabetes and 20,400 strokes and heart attacks in the same group over the decade, the study found. Reuters

**Studies show little benefit in supplements**

14 November - Americans spend more than $30 billion a year on dietary supplements — vitamins, minerals and herbal products, among others — many of which are unnecessary or of doubtful benefit to those taking them. ... The passage of the Dietary Supplement Health and Education Act of 1994 opened the floodgates to an industry that can bring these products to market without submitting any evidence to the Food and Drug Administration that they are safe and effective in people. ... The government can halt sales of an individual product only after it is on the market and shown to be mislabeled or dangerous. The latest study, published in October in JAMA, found that overall use of dietary supplements by adults in this country has remained stable from 1999 through 2012, although some supplements have fallen out of favor while the use of others has increased. The New York Times

**Trying to bring home hope from Cuba in the form of a cancer vaccine**

14 November - ... [Cuba] has a robust biotechnology industry that has generated an innovative vaccine called Cimavax. It is part of a new chapter of cancer treatment known as immunotherapy, which prompts the body’s immune system to attack the disease. Cimavax is a therapeutic vaccine developed not to prevent cancer, but to halt its growth and keep it from recurring in patients with non-small-cell lung cancer. Developed in Cuba and available to patients there since 2011, it works by targeting a protein called epidermal growth factor,
or E.G.F., that enables lung cancer cells to grow. The vaccine stimulates the body’s immune system to make antibodies that bind to E.G.F., preventing it from fueling the cancer’s growth. Last month, Gov. Andrew M. Cuomo of New York announced that the Roswell Park Cancer Institute, a nonprofit cancer center designated by the National Cancer Institute in Buffalo, had received authorization from the Food and Drug Administration to conduct a clinical trial of Cimavax. The New York Times

What do we know about suicide? Not nearly enough

17 November - ... [A] new paper that examined 365 studies of suicide risk factors over the past 50 years ... found that even the most modern studies predicted suicidal behavior only slightly better than random chance. The solution, says senior author Matthew Nock, a Harvard psychology professor, may lie in taking a new approach to studying suicide by bundling multiple risk factors, much in the same way researchers consider factors like diet, exercise, and family history when evaluating heart disease risk. Nock and colleagues argue that suicide researchers have for too long focused on the same risk factors in isolation. These include mental disorders such as depression and anxiety, substance abuse, socio-demographics, negative life events, and prior suicidal thoughts or behavior. ... “We developed a machine-learning algorithm that combs through medical records and weighed each code as increasing or decreasing your risk,” Nock said. “By evaluating thousands of risk factors, we were able to predict about 40 percent of suicide attempts, on average, about three to four years before they occurred.” Harvard Gazette

USAFRICOM

Nigeria: Nigeria records 35 per cent decline in malaria cases

14 November - Nigeria has recorded a 35 per cent decline in malaria cases in five years with only 25 per cent of children under the age of five testing positive for the disease in 2015 compared to 40 per cent in 2010. Good as the news is, however, it follows a dismal report by the World Health Organisation (WHO): “Since June 6, 2016, health clinics in displaced persons’ camps in Borno State have seen increasing numbers of measles cases. From early September until late October, 744 suspected cases of measles and two deaths were reported from WHO-established Early Warning and Response System (EWARS) reporting sites. The majority of these children had never been vaccinated against measles and most of them were aged less than five years.” The Guardian
Sierra Leone: ‘Minimally symptomatic’ cases show Ebola outbreak may have been larger

17 November - Researchers who found previously unreported cases of “minimally symptomatic” Ebola virus infection in Sierra Leone say the discovery means the largest Ebola outbreak in history may have been even bigger. The researchers tested inhabitants of a Sierra Leonean village and found that some had signs of previous Ebola infection without ever having been diagnosed with the disease. Most, in fact, never had any symptoms, and those who did reported only mild symptoms. “The findings provide further evidence that Ebola, like many other viral infections, presents with a spectrum of clinical manifestations, including minimally symptomatic infection,” Eugene T. Richardson, MD ... wrote in *PLoS Neglected Tropical Diseases*. Healio

South Sudan: WHO strengthens South Sudan’s disease detection and response

November 2016 - WHO is working with the Ministry of Health and partners to develop local skills and knowledge, including training more than 1300 health workers in such areas as disease detection, outbreak investigation and response. ... WHO estimates that 12.3 million people in South Sudan are at risk due to disease outbreaks. In 2015 and 2016, WHO helped to identify, investigate and respond to 49 disease outbreaks, including outbreaks of cholera, measles, viral haemorrhagic fever, malaria and hepatitis E virus from multiple locations. With nearly 3 million cases reported since 2015, malaria is one of the biggest causes of illness and death in South Sudan. Cholera is also a major public health concern with more than 4 500 cases reported since 2015. Measles and kala azar are also major concerns. WHO

Iraq: ISIS fires near Mosul sicken 1,500 people, U.N. says

15 November - The United Nations says fires set by Islamic State militants at oil wells and a chemical plant near Mosul have forced over 1,500 people to seek medical treatment for respiratory problems. The group’s humanitarian affairs coordination office says Tuesday the fires have emitted toxic smoke for 25 to 60 days, affecting 14 towns. It says the mid- and long-term effects on people’s health, the environment, agriculture and livelihoods could be dire. IS shelled and set fire to the al-Mishraq Sulfur Gas Factory south of Mosul in late October, causing the deaths of at least four people from toxic fumes, the U.N. has said,
likening the attack to the use of chemical weapons. Nearby oil wells set ablaze by ISIS have been burning uncontrollably since June. *Time*

**Saudi Arabia: Middle East respiratory syndrome coronavirus**

11 November - Between 15 and 29 October 2016 the National IHR Focal Point of Saudi Arabia reported thirteen (13) additional cases of Middle East Respiratory Syndrome (MERS) including four (4) fatal cases. A MERS outbreak has affected a hospital in Hofouf city, Al Ahssa Region. Four (4) cases are associated with this hospital outbreak. ... Globally, since September 2012, WHO has been notified of 1826 laboratory-confirmed cases of infection with MERS-CoV including at least 649 related deaths have been reported to WHO. *WHO*

**Syria: WHO condemns massive attacks on five hospitals in Syria**

16 November - WHO condemns the attacks on five hospitals that took place in Syria on 13–15 November 2016, including three hospitals in Western Rural Aleppo and two hospitals in Idlib. At least two people were reportedly killed as a result of the attacks and 19 people were wounded, including six medical staff. Shockingly, such attacks on health in Syria are increasing in both frequency and scale. Throughout 2016, WHO and partners have documented 126 such attacks across the country. *WHO*

**Yemen: Yemen's suspected cholera cases double to 4,000-plus: WHO**

14 November - Yemen is at risk of a significant cholera outbreak with the number of suspected cases doubling within 12 days to over 4,000, the World Health Organization said. The outbreak in a country ravaged by a 20-month war that has killed thousands was declared by Yemen's Health Ministry on Oct. 6. By Nov. 1 there were 2,070 suspected cases, rising to 4,119 by Sunday. "The numbers of cholera cases in Yemen continue to increase, sparking concerns of a significant outbreak," the WHO said in a report on Monday. ... Eight people have died in the outbreak, as well as 56 from acute diarrhoea. *Reuters*

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**USEUCOM**

**Romania: CDC issues travel notice for Romania due to measles outbreak**

14 November - As of the end of October, Romanian health officials have recorded approximately 1,000 measles cases, this compares to seven cases in 2015. The outbreak in
Romania has prompted the Centers for Disease Control and Prevention (CDC) to issue a travel alert for Americans going to the southeastern European country.

**Outbreak News Today**

**Russia: Measles outbreak blamed on Russian anti-vaxxers**

11 November - A mass outbreak of measles in the Russian city of Yekaterinburg has been blamed by officials on the anti-vaccine movement, the *RIA Novosti* news site reported Friday. Twenty-four cases have so far been diagnosed in the city in 2016, despite the illness having previously almost disappeared from the region. “This has not happened since the 1960s,” said the Mayor of Yekaterinburg, Yevgeny Roizman. “People began to massively abandon the principle of vaccination in the early 2000s, and this has yielded results. Now, we have 2090 children under 18 who are not vaccinated, creating the danger of an epidemic,” he told the FM City Radio Station. *The Moscow Times*

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**USNORTHCOM**

**Canada: High-income men now outliving low-income women in Canada, study finds**

14 November - The life-expectancy gap between men and women is quickly closing in Canada, but not everyone is benefiting equally from the changes, a new study reveals. Low-income Canadians are dying sooner than their peers with higher incomes, according to a new study published Monday in the journal BMJ Open. The trend is most pronounced among high-income men, who are now living longer than low-income women. ... [Researchers] found that over the 20-year period, mortality rates for men and women dropped 39.2 and 29.8 per cent, respectively, meaning both sexes are living longer overall. But from 2000 on, the biggest life-expectancy gains were experienced by men. And in particular, high-income men began to outlive low-income women. *The Globe and Mail*

**U.S.: Chagas disease burden in the Rio Grande Valley of Texas**

12 November - Chagas disease (*Trypanosoma cruzi* infection) is a parasitic infection that can lead to fatal cardiac disease. While Latin America is known as an endemic area, there have been relatively few studies investigating the prevalence of Chagas disease in the Rio Grande Valley of Texas. A paper published in PLOS Neglected Diseases led by researchers at the National School of Tropical Medicine at Baylor College of Medicine suggests that the disease burden in southern Texas is much higher than previously thought. Considering up
to 30% of people infected with Trypanosoma cruzi can develop fatal cardiomyopathy, this study's findings carry important implications to the health of the population of south Texas. Outbreak News Today

U.S.: Ecotourism and military deployments driving up leishmaniasis cases in the US

15 November - Driven by burgeoning ecotourism and military campaigns in Iraq and Afghanistan, a parasitic infection called leishmaniasis is showing up in more U.S. patients, often stumping doctors. Rapid diagnostic tests and innovative treatments are among the strategies to address leishmaniasis highlighted in new guidelines. Outbreak News Today

U.S.: How New York hunts for early signs of disease outbreaks

16 November – [In 2013] Sharon Greene, lead author of a new paper describing New York’s outbreak detection program and director of the Data Analysis Unit at the city’s Bureau of Communicable Disease … and her team began to develop a system, using free software called SaTScan, to automatically monitor, map and detect disease outbreaks throughout New York City. To do that, the system relies on the staggering amount of data that the city health department receives daily. To track disease outbreaks in the city of more than 8.5 million people, health care laboratories submit about 1,000 reports daily on various confirmed diagnoses. Greene's system identifies the location of those diagnoses within the city’s 2,216 census tracts. ... She and her team published the exact code they use in order to make it easier for other health departments to adopt the system. FiveThirtyEight

U.S.: Judge orders bottled water delivery to Flint residents amid lead crisis

11 November - A federal judge has ordered state and local governments to provide home delivery of bottled water to the residents of Flint, Mich., as they continue to navigate a years-long crisis over lead-laced water. U.S. District Judge David Lawson said in his order that the city and state must provide at least four cases of water per resident every week, unless the officials verify the household has a water filter installed that is properly maintained or the residents opt out. ... For months, officials have been handing out water filters and distributing bottled water at points throughout the city. But on Thursday, the judge said that’s not enough. The water filters do bring the lead levels below the EPA’s action levels, he said, but the distribution and monitoring efforts have been "uneven at best." There’s no guarantee the filters are “properly installed and maintained,” Lawson wrote. NPR

U.S.: Potentially preventable deaths among the five leading causes of death — United States, 2010 and 2014

18 November - There has been a significant decrease in the number of potentially
preventable deaths among three of the five leading causes of death (diseases of the heart, cancer, and stroke) during 2010–2014. However, the number of potentially preventable deaths from unintentional injuries increased significantly during the same period. This is mostly attributed to an increase in drug poisoning (overdose from prescription and illicit drugs) and falls. No significant change was observed in potentially preventable deaths from chronic lower respiratory disease (e.g., asthma, bronchitis, and emphysema).

Morbidity and Mortality Weekly Update

U.S.: Southern wildfires have threatened communities on edge

17 November - Thick smoke has settled over a wide area of the southern Appalachians, where dozens of uncontrolled wildfires are burning through decades of leaf litter and people breathe in tiny bits of the forest with every gulp of air. It’s a constant reminder of the threat to many small mountain communities, where relentless drought and now persistent fires and smoke have people under duress. ... More than 5,000 firefighters and support personnel, including many veterans of wildfires in the arid West, and 24 helicopters are battling blazes in the fire zone, which has spread from northern Georgia and eastern Tennessee into eastern Kentucky, the western Carolinas and parts of surrounding states.

ABC News

U.S.: Surgeon General’s report on alcohol, drugs, and health

17 November - On November 17, 2016, the Office of the Surgeon General released Facing Addiction in America: The Surgeon General’s Report on Alcohol, Drugs, and Health. This is the first surgeon general’s report to focus on substance misuse, substance use disorders, and related harms, and it places substance abuse disorders in a public health framework rather than in a criminal justice framework. ... The report builds the foundation for these approaches by establishing the neurobiological basis for substance use disorders; assembling the evidence base for prevention, treatment, and recovery services; and calling attention to policy and systems-level change that will enhance access to these services.

Journal of the American Medical Association

U.S.: United States comes in last again on health, compared to other countries

16 November - Americans are still struggling with their health, and rank last against citizens of 10 other wealthy countries when it comes to emotional distress, struggling to pay for care and skipping doctor visits, a new report finds. The latest report from the Commonwealth Fund, which routinely points to the shortcomings of the U.S. healthcare system, shows not much has changed in 15 years or longer. Americans still pay far more for medical care than people in other rich Western nations but have little to show for all that spending. The group surveyed 26,863 adults from Australia, Britain, Canada, France,
Germany, the Netherlands, New Zealand, Norway, Sweden, Switzerland, and the United States. It found 43 percent of low-income Americans went without medical care because of costs. In the other countries, these rates ranged from 8 percent in Britain to 31 percent in Switzerland. NBC News

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China: China to burn, not bury, as it tackles trash challenge

14 November - Thousands of tonnes of urban waste are hidden behind scrubbed white walls at a new power plant on the outskirts of the Chinese city of Wujiang, with even its chimney disguised as a clock tower. Desperate to fight mounting trash problems but wary of public opposition, China is building new incineration capacity designed to blend into its surroundings and limit environmental damage. Located in sparsely populated farmland around 60 miles (100 km) west of Shanghai, with white geese dotting the lake around it on three sides, the Wujiang plant is designed to burn 1,500 tonnes of garbage every day. It generates heat to run turbines that deliver 500,000 kilowatt-hours of electricity to the power grid at preferential tariffs, around double those of coal-fired plants and the source of two-thirds of its revenue. ... With land scarce and consumption surging, China has little choice but to burn as much trash as it can. Reuters

Fleet of international warships to help out with earthquake response

15 November - A fleet of international warships is bypassing Auckland’s historic naval celebrations and heading for Kaikoura to assist with the earthquake response. The fleet includes the first United States warship to visit New Zealand in 33 years. The USS Sampson was due to enter Auckland Harbour today for the International Naval Review as part of celebrations for the 75th anniversary of the Royal New Zealand Navy. ... Defence Minister Gerry Brownlee confirmed that New Zealand had accepted offers of help with the quake recovery from five nations attending the International Naval Review - the United States, Australia, Canada, Japan and Singapore. NZ Herald

New Zealand hit by aftershocks after severe earthquake

14 November - Strong aftershocks have roiled New Zealand following a 7.5-magnitude earthquake that killed two people. The South Island has seen hundreds of tremors, including a 6.3-magnitude quake, after the initial one struck after midnight on Monday. The epicentre is northeast of
Christchurch, near the town of Kaikoura which has been cut off by landslides. A large river dammed up by a landslide also breached its banks, sending a "large wall of water" downstream. BBC News

Vietnam: No wife for millions of Vietnamese men

14 November - The imbalance in sex ratio at birth and a preference for sons has become a pressing issue in Vietnam. Some four million men in Vietnam will have no opportunity of getting married by 2050 if the current imbalance in the nation’s sex ration persists, according to experts. The Hanoi Population and Family Planning Department revealed that the capital city’s boy-to-girl ratio at birth in the first 9 months of this year remained high at 113.6:100. Similar imbalances nationwide will lead to a shortage of women, which means that by 2050, 2.3-4.3 million men in Vietnam will have no chance of finding wives, the General Directorate of Population and Family Planning estimates. The Star

US SOUTHCOR

Brazil reports 136,000 new chikungunya cases

14 November - The Pan American Health Organization (PAHO) late last week reported 137,528 new chikungunya cases—almost all of them in Brazil, which documented 5 weeks’ worth of data. The newly reported infections also included 29 fatalities attributed to the mosquito-borne disease. Countries and territories in the Americas have now reported 441,075 suspected, confirmed, and imported cases this year, according to the Nov 11 PAHO update, but numbers are sure to climb higher because Brazil has yet to report on the most recent 8 weeks of data. ... [Brazil] is the hardest-hit country this year by a wide margin. CIDRAP News Scan (second item)
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