13 July 2018

Army Public Health
Weekly Update

Army Public Health Center

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Contents

U.S. MILITARY

- A new Army PT test is on its way. This is not a drill.
- Boston small business develops impact-detecting garments for warfighters to assist combat medics
- Congress calls on VA to study medical marijuana to treat PTSD
- FDA approves freeze-dried blood plasma for troops in combat
- How the EPA and the Pentagon downplayed a growing toxic threat
- Study: Transgender veterans are as healthy as their cisgender peers
- Variations in the incidence and burden of illnesses and injuries among non-retiree service members in the earliest, middle, and last 6 months of their careers, active component, U.S. Armed Forces, 2000–2015

GLOBAL

- Case series describes respiratory nerve palsy in babies born with Zika
- CDC team pinpoints incidence of GBS after Campylobacter infection
- Clues in forest food web help predict Lyme risk
- Database analysis more reliable than animal testing for toxic chemicals
- Ebola survivors suffer severe mental and neurological problems
- Hot temperatures may be bad for brains, even young and healthy ones: Study
- Natural lipid acts as potent anti-inflammatory
- NIH researchers identify sequence leading to release of malaria parasites from red blood cells
- Pulses of light restored hearing in gerbils. Could that lead to higher-tech cochlear implants?
- Senolytic drugs reverse damage caused by senescent cells in mice
- The case for approving a drug never to be used (we hope)
- Whooping cough vaccine: The power of first impressions
- Your dog’s flea meds might one day protect you from Zika

INFLUENZA

- NHRC: Operational Infectious Diseases - Weekly Surveillance Report
- NIAID scientists create 3D structure of 1918 influenza virus-like particles
- Scientists find new tricks for old drugs
- WHO: Influenza Update

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### VETERINARY/FOOD SAFETY

- Ancient dog DNA reveals close relationship with contagious cancer
- Bulgaria slaughters 1,800 head of livestock after PPR outbreak
- Eight EU countries report hepatitis A cases with Moroccan link
- Health officials: 548 sick after zipline experience; *E. coli* possible
- Maryland Department of Health warns not to eat fresh crab meat from Venezuela

### WELLNESS

- A simple emergency room intervention can help cut suicide risk
- E-cigarette flavorings may damage blood vessels and heart
- ‘Forest bathing’ really may be good for health, study finds
- HIV vaccine candidate triggers desired immune responses in humans and monkeys
- How this stealth STD could become the next superbug
- Multivitamin-mineral supplements do not reduce heart disease, deaths
- Study finds health risks for transgender women on hormone therapy
- U.S. opposition to breast-feeding resolution stuns world health officials

### USAFRICOM

- Democratic Republic of the Congo: Circulating vaccine-derived poliovirus type 2
- Uganda: Rift Valley fever outbreak in western Uganda

### USCENTCOM

- Iraq: A year on from battle, Mosul’s healthcare system is still in ruins
- Syria/Jordan: Scorpions, dehydration, disease - Syrians at the border face deadly threats

### USEUCOM

- Germany: Tuberculosis screening in asylum seekers in Germany: a need for better data
- Italy: Proof of children’s vaccinations? Italy will now take parents’ word for it
- Ukraine: Ukraine measles and diphtheria update
- United Kingdom: UK police hunt nerve agent container after woman dies

### USINDOPACOM

- Australia: Australian experiment wipes out over 80% of disease-carrying mosquitoes
- Japan: Japan floods - 141 killed after torrential rain and landslides
- Myanmar: Snakebite incidence in two townships in Mandalay Division, Myanmar
- Thailand U.S. troops deployed to lend a hand in Thai soccer team’s rescue from cave

### USNORTHCOM

- U.S.: American Indian and Alaska Native maternal and infant mortality - Challenges and opportunities
- U.S.: Cal/OSHA issues worker safety advisory for wildfire regions
- U.S.: Fewer older black patients survive long-term after cardiac arrest in the hospital
- U.S.: PTSD raises heart and stroke risk in World Trade Center cleanup crews
- U.S.: Rising numbers of deaths involving fentanyl and fentanyl analogs, including carfentanil, and increased usage and mixing with non-opioids
- U.S.: Sununu signs bills on PFAS, cancer treatment coverage for firefighters
- U.S.: U.S. cannot reunite dozens of child migrants with their parents
Public Health Information Paper: Environmental Health Concerns Related to Volcanic Activity in Hawaii

Volcanic eruptions create solid, liquid, and gas releases that can present a threat to human health and well-being.

In May 2018, the Kilauea Volcano on the island of Hawaii entered an active phase that is generating lava flows, gas emissions, and ash clouds that have persisted for weeks and are likely to continue in the short term.

There are many resources available to Hawaiian residents to facilitate health and safety during these events. Personnel in proximity to the eruptions, or downwind of the releases, should heed municipal authority precautions and take protective measures to mitigate potential hazards.

U.S. MILITARY

A new Army PT test is on its way. This is not a drill.

9 July - ... Army officials unveiled a new gender- and age-neutral PT test on Monday, and it’s set to replace the run/sit-ups/push-ups protocol that soldiers have known and hated for the past four decades. The new test is expected to be rolled out by late 2020. The reason for that, the head of the Center for Initial Military Training told Army Times in a Friday phone interview, is an upcoming year-long field study to determine how to grade the new six-event Army Combat Fitness Test, and how it will affect personnel policies like promotions and separations. ... All told, the ACFT predicts with 80 percent accuracy whether a soldier will be effective in combat, [Maj. Gen. Malcolm] Frost said, compared with 40 percent for the APFT. The new test’s work-to-rest ratio is also three times that of the APFT, which was generally broken up in a sit-ups and push-ups portion and a long break before the run. Now, there will be a continuously running clock with a 50-minute limit. Army Times

Boston small business develops impact-detecting garments for warfighters to assist combat medics

10 July - A Massachusetts-based, woman-owned small business is leveraging an Air Force-supported technology accelerator to improve high-tech clothing designed to detect and treat wounds on its own. Boston-based Legionarius brought its impact-detecting garments to the Tech Warrior OPS. ... The technology has the potential to help detect battle wounds, providing a significant benefit for the injured warfighter and the combat medics responsible for keeping them alive. The garment sends a distress signal and critical information – like wound type and location, as well as vital signs – to medics in the field. The garment also begins to apply compression to stop hemorrhaging in the event of a gunshot or other wound that punctures the skin. Air Force Medical Service

Congress calls on VA to study medical marijuana to treat PTSD

6 July - Members of Congress are calling on the Department of Veterans Affairs to study medical marijuana for treating veterans diagnosed with post-traumatic stress and chronic pain. Now, if the VA does this, it’d actually be a little late to the game. From member station KAZU in California, Krista Almanzan on reports. ... ALMANZAN: [W]hat's legal in California remains illegal in the eyes of the federal
government. And that prevents the Department of Veterans Affairs from prescribing cannabis or even conducting research into its use.

LOU CORREA: Our veterans deserve better.

ALMANZAN: That's California Democratic Congressman Lou Correa. He's been pushing legislation that explicitly tells the VA it has the legal right to do the research. ... The bill has made it out of committee and is slated to get voted on by the full House in June. NPR

top of page...

**FDA approves freeze-dried blood plasma for troops in combat**

10 July – The Food and Drug Administration (FDA) on Tuesday approved freeze-dried blood plasma for use to treat combat injuries from U.S. troops, after a dispute over whether access would be allowed. House Armed Services Committee Chairman Mac Thornberry (R-Texas) last year tried to go around the FDA by granting the Department of Defense the ability to allow the freeze-dried plasma use. Eventually, an agreement was reached to prevent that more drastic measure, and the FDA is now approving the use of the freeze-dried plasma from a French company, even though it is not approved for wider use in the United States. The Hill

top of page...

**How the EPA and the Pentagon downplayed a growing toxic threat**

9 July - ... [P]erfluoroalkyl substances, or PFAS ... were a boon to the military ... which used them in foam that snuffed out explosive oil and fuel fires. It’s long been known that, in certain concentrations, the compounds could be dangerous if they got into water or if people breathed dust or ate food that contained them. ... Now two new analyses of drinking water data and the science used to analyze it make clear the Environmental Protection Agency and the Department of Defense have downplayed the public threat posed by these chemicals. Far more people have likely been exposed to dangerous levels of them than has previously been reported because contamination from them is more widespread than has ever been officially acknowledged. ... The EPA and the Department of Defense calibrated water tests to exclude some harmful levels of contamination and only register especially high concentrations of chemicals, according to the vice president of one testing company. Several prominent scientists told ProPublica the DOD chose to use tests that would identify only a handful of chemicals rather than more advanced tests that the agencies’ own scientists had helped develop which could potentially identify the presence of hundreds of additional compounds. ProPublica

top of page...
Study: Transgender veterans are as healthy as their cisgender peers

11 July - A new study finds the mental and physical health of transgender veterans is similar to the health of cisgender veterans, adding more evidence to support the contention that a ban on transgender troops is unnecessary and discriminatory. According to the study ... the only difference in the health of transgender and cisgender veterans was that transgender veterans had higher odds of having at least one disability, such as a debility in vision, cognition, mobility, self-care or independent living. The study also found demographic and economic differences between the two populations. Transgender veterans experienced higher rates of poverty and less education and less likely to be married or partnered than cisgender veterans. The study analyzed responses from 517,539 people living in 31 states and Guam, who participated in the 2014-2016 Behavioral Risk Factor Surveillance System, a survey from the CDC. Metro Weekly

Variations in the incidence and burden of illnesses and injuries among non-retiree service members in the earliest, middle, and last 6 months of their careers, active component, U.S. Armed Forces, 2000–2015

June 2018 - This report uses routinely collected data in the Defense Medical Surveillance System (DMSS) to characterize the incidence and burden of medical conditions throughout the careers of service members separating from the active component of the U.S. Armed Forces between 1 October 2014 and 30 September 2015. Three surveillance periods between 30 September 2000 and 30 September 2015 were defined by each individual’s time in service: early (first 6 months), middle (middle 6 months), and late (last 6 months). Overall, separating service members were most often aged 25–34 years (59.4%), male (84.0%), non-Hispanic white (64.0%), junior enlisted (52.4%), in the Marine Corps (33.1%), serving in a repair/engineering occupation (33.0%), and had never deployed (52.5%). The top five burden of disease categories across surveillance periods by sex were very similar, including mental health disorders, which exhibited similar upward trends across the three surveillance periods. ... The most common diagnoses exhibiting upward, downward, or bimodal trends by incidence rate differences were mental health disorders, respiratory infections/diseases, and musculoskeletal diseases, respectively.
2017 NDAA: Transfer of Army Military Treatment Facilities

The FY17 National Defense Authorization Act (NDAA), Section 702, directs the Defense Health Agency (DHA) to assume responsibility for the administration and management of healthcare delivery at all military medical treatment facilities effective Oct. 1, 2018. This transfer maximizes efficiencies while maintaining a ready and lethal Army, with the clear objective of providing community care during seamless transition.

Starting with Womack Army Medical Center at Fort Bragg, North Carolina, the transition for administration and management of medical facilities will occur in a phased approach that will take place over the next 24 to 36 months. OCONUS Army Medical Treatment Facilities (MTFs) will be the last phase of the transition.

GLOBAL

Case series describes respiratory nerve palsy in babies born with Zika

11 July - Researchers today reported a case series of four babies with congenital Zika infections who were born with right unilateral diaphragmatic paralysis, suggesting that the virus can cause additional damage in the peripheral nervous system. ... Three of the babies were born in Brazil and one was born to a mother from Guatemala who immigrated to the United States. All four of the babies were girls, and all of the women who delivered them were first-time mothers who reported Zika symptoms in the first trimester of pregnancy.

CIDRAP News Scan (first item)

CDC team pinpoints incidence of GBS after Campylobacter infection

About 8% to 12% of GBS cases in the United States may be due to Campylobacter infection, researchers from the US Centers for Disease Control and Prevention (CDC) reported yesterday. ... They said that although Campylobacter infection is known to be one of the common infections that precede GBS, there are few data on the risk level. Along with the 8% to 12% of GBS cases they found linked to Campylobacter infection or diarrheal illness consistent with the disease, they estimated that 434 to 650 cases of post-diarrheal GBS occur in the United States each year and that GBS occurs in 49 of 100,000 patients who have Campylobacter illnesses.

CIDRAP News Scan (second item)

Clues in forest food web help predict Lyme risk

10 July - A nearly 20-year study of the forest food web at a Lyme disease hot spot in New York state found an important clue about what seems to drive the number of ticks that carry the disease: high numbers of rodents in settings where their predators, such as foxes, are low. ... To untangle the variables that influence tick populations, they monitored small mammals, blacklegged (deer) ticks, tick-borne pathogens, deer, acorns, and climate. Also, the team tracked predator communities and tick infection rates at 126 sites throughout Dutchess County over 2 years. ... During the study period, the team set out seed baskets to monitor acorn production, and their analysis found that high acorn abundance during boom parts of oak tree cycles boosted rodent populations the following year and reliably pointed to an increase in infected nymphal ticks 2 years after acorn boom years. ... To see if small mammalian predators influence tick infection rates, researchers placed camera traps at dozens of sites throughout Dutchess County in the summers of 2012 and 2013. Trap visitors included coyote, fox, bobcat, fisher,
raccoon, and opossum. ... Locations with high predator diversity had lower infection prevalence of nymphal ticks than sites dominated by coyotes. CIDRAP News top of page...

Database analysis more reliable than animal testing for toxic chemicals

11 July - Advanced algorithms working from large chemical databases can predict a new chemical’s toxicity better than standard animal tests. ... The researchers ... mined a large database of known chemicals they developed to map the relationships between chemical structures and toxic properties. They then showed that one can use the map to automatically predict the toxic properties of any chemical compound—more accurately than a single animal test would do. The most advanced toxicity-prediction tool the team developed was on average about 87 percent accurate in reproducing consensus animal-test-based results—across nine common tests, which account for 57 percent of the world’s animal toxicology testing. By contrast, the repetition of the same animal tests in the database were only about 81 percent accurate.

Johns Hopkins Bloomberg School of Public Health News top of page...

Ebola survivors suffer severe mental and neurological problems

11 July - People who survive the deadly Ebola virus can continue to suffer severe psychiatric and neurological problems including depression, debilitating migraines, nerve pain and stroke, according to a study published on Wednesday. Researchers who analyzed patients infected during the 2014-2016 Ebola outbreak in West Africa found that some survivors had such severe health conditions that they were left unable to care for themselves. “We knew that a disease as severe as Ebola would leave survivors with major problems - however, it took me aback to see young and previously active people who had survived but were now unable to move half their bodies, or talk, or pick up their children,” said Janet Scott of Britain’s University of Liverpool, who co-led the research. ... [T]he study looked at patient notes from of more than 300 Ebola survivors in Sierra Leone, one of the countries worst hit in the 2014-2016 epidemic. Thirty-four selected patients were then asked to attend a joint neuro-psychiatric clinic in 2016 where they underwent a full neurological examination, psychiatric screening and specialist investigations including brain scan imaging. Reuters top of page...

Hot temperatures may be bad for brains, even young and healthy ones: Study

11 July - A new study out of Harvard’s T.H. Chan School of Public Health found that high temperatures are linked to cognitive impairments, even in resilient populations. Researchers at the university followed 44 college students who were living in dorms at a college in the
greater Massachusetts area. Half of the students had air conditioning in the dorms, and half did not. Those with air conditioning performed better on cognitive tests. Students were followed via wearable monitors and surveyed from July 9-20, 2016, during five days that were considered a heat wave. Students were tested on their cognitive speed and working memory through two tests; one consisted of addition and subtraction, while the other made them identify the color of a word displayed on the screen. The students who lived in the non-air conditioned dorms performed between 4.1 percent to 13.4 percent worse compared to the group of students in air conditioned dorms and their own scores prior to the heatwave. Environmental Health News

Natural lipid acts as potent anti-inflammatory

6 July - National Institutes of Health researchers have identified a naturally occurring lipid—a waxy, fatty acid—used by a disease-causing bacterium to impair the host immune response and increase the chance of infection. Inadvertently, they also may have found a potent inflammation therapy against bacterial and viral diseases. Lipids are known to help *Francisella tularensis* bacteria, the cause of tularemia, to suppress host inflammation when infecting mouse and human cells. In a new study [researchers] found a form of the lipid phoshatidylethanolamine, or PE, present in the bacterium. The composition of PE found in *F. tularensis* differs from PE found in other bacteria. In cell–culture experiments, the researchers discovered that the natural and a synthetic form of PE reduced inflammation caused by both tularemia bacteria and dengue fever virus. NIH

NIH researchers identify sequence leading to release of malaria parasites from red blood cells

11 July - The vacuole, a compartment inside human red blood cells in which malaria parasites reproduce and develop, takes on a distinct spherical shape just minutes before its membrane ruptures, leading to the release of parasites into the blood stream, according to researchers. The researchers, working with red blood cells from healthy donors, were able to chemically block the sequence of events leading to this rounding of the vacuole. They note that targeting this sequence could inform new treatment strategies against *Plasmodium falciparum*, the species of malaria parasite that causes the most deaths worldwide and, in several areas, has become drug-resistant. NIH

Pulses of light restored hearing in gerbils. Could that lead to higher-tech cochlear implants?

11 July - Could light one day be used to restore hearing loss? To try to answer that question, a team of German bioengineers surgically installed coiled strips of optical fibers in the ears of deaf gerbils. While they still had their hearing, the gerbils had learned to hurdle a small barrier upon hearing an alarm. Now researchers sent a pulse of blue laser light deep
into the animals' ears. They jumped. The experiment was part of a study seeking to improve upon cochlear implants — electronic devices that stimulate auditory neurons to partially restore hearing. Instead of using electrical currents, scientists are trying to determine whether optogenetics, a new field that uses light to control living cells, could one day help improve someone's sense of hearing. STAT

Senolytic drugs reverse damage caused by senescent cells in mice

9 July - Injecting senescent cells into young mice results in a loss of health and function but treating the mice with a combination of two existing drugs cleared the senescent cells from tissues and restored physical function. The drugs also extended both life span and health span in naturally aging mice, according to a new study in Nature Medicine, published online on July 9, 2018. ... A research team ... found that injecting even a small number of senescent cells into young, healthy mice causes damage that can result in physical dysfunction. The researchers also found that treatment with a combination of dasatinib and quercetin could prevent cell damage, delay physical dysfunction, and, when used in naturally aging mice, extend their lifespan. ... The researchers noted that current and future pre-clinical studies may show that senolytics could be used to enhance life span not only in older people, but also in cancer survivors treated with senescence-inducing radiation or chemotherapy and people with a range of senescence-associated chronic diseases. NIH

The case for approving a drug never to be used (we hope)

9 July - The drug is tecovirimat and the disease it treats is smallpox. Smallpox, through the power of vaccination, was eradicated in 1980. ... The basic reproduction number, also known as R0, of smallpox is 5–7, meaning each infected individual infects an additional 5–7 people on average. The multiplier effect is huge. ... After nearly 4 decades post-eradication, herd immunity is gone. A smallpox outbreak could kill hundreds of thousands if we're lucky, millions if we're not. Luck favors the prepared, though, so it seems reasonable to create medications that could treat smallpox after the infection appears. ... [T]ecovirimat is on its way to FDA approval – the FDA's independent scientific advisory panel voted unanimously that the drugs benefits outweigh the risks. But how well will the drug work in a human infected with smallpox? Well, let's hope we never find out. MedPage Today

Whooping cough vaccine: The power of first impressions

9 July - The current whooping cough vaccine was universally adopted in the US in 1996 to replace the original vaccine based on killed Bordetella pertussis because of a stronger safety profile. The new formulation was found to be effective in preventing whooping cough during vulnerable stages in the lifespan but the kind of pertussis vaccine used to prime the immune system leaves a lasting impression. In their latest study, researchers at La Jolla...
Institute for Allergy and Immunology (IJI) report that individuals who had been inoculated with the newer vaccine as part of their initial series of shots, mount a weaker recall response when receiving booster shots later on. Science Daily

Your dog’s flea meds might one day protect you from Zika

5 July - Each year, thousands of people suffer from malaria, the Zika virus, and other diseases transmitted by pests such as mosquitoes. However, humans may soon be in the clear, thanks to the drugs used to protect man’s best friend from fleas and ticks. In a new study, researchers found that fluralaner and afoxolaner, sold as Bravecto and Nexgard, respectively, effectively killed infectious mosquitoes and sand fleas when they consumed human blood laced with the compounds, according to Time. Through computer modeling, these researchers also found that if enough people took the drug, 97% of infections could be prevented in Zika-prone areas, and 70% of new malaria cases could be prevented in countries that experience seasonal malaria, they reported this week in the Proceedings of the National Academy of Sciences. To test these findings, researchers are already planning clinical trials in healthy human volunteers. Science

INFLUENZA

CDC: Flu View - Weekly U.S. Influenza Surveillance Report

2017-2018 Influenza Season Week 26 ending June 30, 2018

- Novel Influenza A Virus: One human infection with a novel influenza A virus was reported by Indiana. This person was infected with an influenza A(H3N2) variant (A(H3N2)v) virus and reported indirect exposure to swine at an agricultural fair during the week preceding illness onset. The patient was a child < 18 years of age, was not hospitalized, and has fully recovered from their illness.
- Pneumonia and Influenza (P&I) Mortality Surveillance: Based on National Center for Health Statistics (NCHS) mortality surveillance data available on July 5, 2018, 5.6% of the deaths occurring during the week ending June 16, 2018 (week 24) were due to P&I. This percentage is below the epidemic threshold of 6.3% for week 24. CDC

NHRC: Operational Infectious Diseases - Weekly Surveillance Report

5 July – An influenza H1N1 case was detected at Marine Corps Recruit Depot Parris Island in
mid-June.
Febrile respiratory illness cases:
- Military Recruits - 13 positive of 35 tested
- CDC Border Infectious Disease Surveillance and Zika Surveillance - 1 positive of 10 tested
- DoD Beneficiaries – 8 positive of 25 tested. Naval Health Research Center

NIAID scientists create 3D structure of 1918 influenza virus-like particles

11 July - Virus-like particles (VLPs) are protein-based structures that mimic viruses and bind to antibodies. Because VLPs are not infectious, they show considerable promise as vaccine platforms for many viral diseases, including influenza. Realizing that fine details about influenza VLPs were scant, a team of researchers who specialize in visualizing molecular structures developed a 3D model based on the 1918 H1 pandemic influenza virus. They say their research… could benefit VLP vaccine projects, targeting a range of viruses from HIV to Ebola and SARS coronavirus. NIH

Scientists find new tricks for old drugs

9 July - … Researchers are now exploring whether some cheap and common drugs have side effects that could help people fight off the flu and other lung infections. … [Dr. David Fedson] started to wonder what would happen if, all of a sudden, the world was gripped with a flu pandemic. … Antiviral medications like Tamiflu are expensive and far from perfect. So Fedson decided what the world needed was a cheap and simple drug that wouldn’t cure the flu, but would help people weather the symptoms and survive. He focused on drugs that would tamp down inflammation, which can make an infection deadly. … That led him to think about the world’s most widely prescribed drugs, the statins – and it also led him to Dr. Jeffrey Jacobson [who has] been studying the drugs to see if they can help people with severe lung infections. They don’t attack the virus directly, but “if we can do something to protect people during the course of their infection or injury we ideally would buy them enough time to survive,” Jacobson says. … Studies to date have been mixed, but some suggest there’s a benefit. One study found that people who were already taking statins when the flu stuck did better than patients who weren’t on these drugs. NPR
WHO: Influenza Update

9 July - Influenza detections continued to increase in Southern Africa and in recent weeks started to increase in South America. However, influenza activity remained at inter-seasonal levels in Australia and New Zealand. In the temperate zone of the northern hemisphere influenza activity returned to inter-seasonal levels. Increased influenza activity was reported in some countries of tropical America. Worldwide, seasonal influenza subtype A viruses accounted for the majority of detections. WHO

top of page...

VETERINARY/FOOD SAFETY

Ancient dog DNA reveals close relationship with contagious cancer

9 July - By analyzing dog DNA from archaeological remains, researchers last week pinned down the evolutionary history of domesticated dogs in North America. ... Frantz says [canine transmissible venereal tumor’s] ancestry was the study’s “biggest surprise,” although his team also answered a broader set of questions about the history of ancient American dogs. First, their genomic evidence indicates domesticated dogs traveled with people from Siberia to North America, eliminating the possibility Native Americans tamed wolves after arriving on the continent. Second, Frantz says their study provides “definite proof” European dog breeds almost completely replaced ancient American breeds following colonization. The researchers found no traces of ancient American dog ancestry in the genetic makeup of modern American dogs. Scientific American

top of page...

Bulgaria slaughters 1,800 head of livestock after PPR outbreak

11 July - Bulgarian authorities said on Wednesday they had slaughtered 1,800 animals following the first outbreak in the European Union of the highly contagious Peste des Petits Ruminants (PPR). Last month the Balkan state reported the outbreak of the disease, also known as ovine rinderpest or sheep and goat plague, on livestock farms in the village of Voden in the southeast, near the border with Turkey. ... Once introduced, the virus can infect up to 90 percent of an animal heard. The virus does not infect humans. Reuters

top of page...

Eight EU countries report hepatitis A cases with Moroccan link

11 July - Two distinct Hepatitis A virus strains are causing infections in travelers returning from Morocco, according to researchers. From January to June 2018, two outbreaks are
ongoing affecting people coming back from Morocco and cases in Europe without travel history, resulting in 163 patients in eight European countries. In the first cluster, 55 cases of Hepatitis A virus (HAV) infection have been reported. The UK has the highest number of cases with 36. Denmark, France, Germany, Ireland, the Netherlands, Spain, and Sweden each reported between one and six infections. Food Safety News

Health officials: 548 sick after zipline experience; *E. coli* possible

11 July - In response to a survey sent out by health officials, at least 548 people reported gastrointestinal illness after visiting CLIMB Works in Gatlinburg, Tennessee since June 15. That number is likely a low estimate. According to Gail Harmon, East Tennessee regional assistant director with the Tennessee Department of Health, 2,901 surveys were sent out to people who booked zip line tours online with CLIMB Works. As of Tuesday morning, 808 people had responded with 548 of those reporting illness. Of the 808 responses, Harmon said 505 people said they had parties varying in size from two to 30 people, but the surveys did ask how many in the party became sick. It did determine one common denominator though: well water served out of coolers placed along the zipline course. A spokeswoman with the health department said water testing was conducted, and several samples came back positive for *E. coli* and total coliforms. WJHG

Maryland Department of Health warns not to eat fresh crab meat from Venezuela

7 July - The Maryland Department of Health has put out a warning not to eat fresh crab meat imported from Venezuela due to a “potential risk of infection.” The department released the statement: “The Department is investigating a cluster of Vibrio infections in individuals who reported eating “fresh” (non-pasteurized) crab meat—from a plastic tub—with a label indicating that it is imported from Venezuela. The imported crab meat is sold under different brand names. Maryland crab product has not been associated with this cluster. The implicated foods have been prepared in both household and restaurant settings. ... At least 9 cases who consumed imported crab meat have been confirmed in the state of Maryland. Two of the individuals were hospitalized and there have been no deaths. WJLA
A simple emergency room intervention can help cut suicide risk

11 July - Many people who attempt suicide end up in an emergency room for immediate treatment. But few of those suicide survivors get the follow-up care they need at a time when they are especially likely to attempt suicide again. Now, a study shows that a simple intervention conducted by staff in emergency departments can reduce the risk of future attempts. The intervention involves creating a safety plan for each patient and following up with phone calls after discharge. "It reduced the odds of suicidal behavior by half," says Barbara Stanley, a psychologist at Columbia University and the lead author of the study. "That's a phenomenal difference." The study ... included 1,200 patients at five Veterans Affairs hospitals around the country. The findings offer a way for hospitals and clinics to help reduce the rising numbers of death by suicide across the country. NPR


9 July - The potential of electronic nicotine delivery systems (ENDS) to reduce the cardiovascular and other disease risks of smoking is of great interest. While many smokers report using ENDS for cessation, their impact under real-world use patterns and conditions on adult smokers' quitting behavior is uncertain. The objective of this study was to generate more recent and comprehensive evidence on the effect of "real world" ENDS use on the population quit rates of adult smokers. ... We conducted a population-based, prospective cohort study of a random probability sample of 1284 U.S. adult smokers recruited in August/September 2015 and re-contacted one-year later (September 2016). ... 858 completed the follow-up survey. The primary outcome was smoking abstinence for at least 30 days prior to follow-up. Secondary outcomes were making a quit attempt during the 12-month study period and number of cigarettes smoked per day at follow-up. The adjusted odds of quitting smoking were lower for those that used ENDS at baseline compared to smokers who did not use at ENDS. Smokers who used ENDS daily at some point during the study period were also less likely to quit smoking than nonusers. PLOS

E-cigarette flavorings may damage blood vessels and heart

11 July - E-cigarette liquids sweetened with flavorings like clove and vanilla may damage cells in the blood vessels and heart even when they don't contain nicotine, a small experiment suggests. Researchers examined what happened in lab tests when they exposed
endothelial cells, which line arteries and veins as well as the inside of the heart, to a variety of popular e-cigarette flavorings. They tested the effect of different doses and concentrations of nine popular chemical flavorings: banana, butter, cinnamon, clove, eucalyptus, mint, strawberry, vanilla and “burnt” - which is used to impart a popcorn or tobacco-like flavor to foods. At high concentrations, all nine flavorings damaged cells in lab tests. ... Five flavors - vanilla, mint, cinnamon, clove, and burnt - impaired production of nitric oxide, a molecule that inhibits inflammation and clotting and helps blood vessels widen in response to increased blood flow. Reuters

'Forest bathing' really may be good for health, study finds

10 July - ‘Forest bathing’ or shinrin yoku—spending time in a forest or other green space to reap the health benefits—has become an increasingly popular activity in recent years, especially in some countries, like Japan, which take it pretty seriously. ... A new meta-analysis in the journal Environmental Research finds that people who spend more time in green spaces have significantly reduced risks for a number of chronic illnesses. There are probably several mechanisms behind the connection, but one of the more fascinating ones likely has something to do with phytochemicals that trees emit, and humans breathe in. ... All told, the research tracked a whopping 290 million participants, from 20 different countries. ... Spending more time in green spaces was linked to reduced levels of the stress hormone cortisol, lower heart rate, reduced risk of coronary heart disease, lower blood pressure, lower cholesterol, reduced risk of type II diabetes, reduced all-cause mortality and death from heart disease. Forbes

HIV vaccine candidate triggers desired immune responses in humans and monkeys

9 July - ... In a new study ... a team of researchers ... evaluated a series of preventative HIV vaccine regimens in uninfected human volunteers in five countries. In a similarly designed study, Barouch and colleagues tested the same vaccine for its ability to protect rhesus monkeys challenged with an HIV-like virus from infection. The findings showed the vaccines induced robust and comparable immune responses in humans and monkeys and protected monkeys against acquisition of infection. “This study demonstrates that the mosaic Ad26/Ad26 plus gp140 vaccine candidate induced robust and comparable immune responses in human and monkeys,” said Barouch, who is also Professor of Medicine at Harvard Medical School. “Moreover, the vaccine provided 67 percent protection against viral challenge in monkeys.” ... “Based on these data, the mosaic Ad26/Env HIV-1 vaccine has been advanced into a phase 2b clinical efficacy study to determine whether this vaccine will prevent HIV infection in humans in southern Africa,” said Barouch.
How this stealth STD could become the next superbug

12 July - A little-known, sometimes symptomless sexually transmitted disease is set to be the next superbug within a decade. ... *Mycoplasma genitalium*, or MG, is a sexually transmitted bacteria that can cause pelvic inflammatory disease and, ultimately, infertility in women if not treated properly. Symptoms of MG can be similar to gonorrhea and chlamydia — but often, there are no signs of an infection at all. That means some people may not even be aware they’ve been infected until bigger problems arise. If left untreated, MG, which was first discovered in the early 1980s and spreads through unprotected sex, can also develop a resistance to antibiotics. "This is not curing the infection and is causing antimicrobial resistance in MG patients," Dr. Paddy Horner told the *Telegraph*. "If practices do not change and the tests are not used, MG has the potential to become a superbug within a decade, resistant to standard antibiotics." Fox News

top of page...

Multivitamin-mineral supplements do not reduce heart disease, deaths

10 July - Taking multivitamins and minerals does not reduce the risk of cardiovascular disease or associated deaths, according to a new review of existing research. ... [Dr. Joonseok’s] team pooled evidence from 18 studies with more than 2 million participants to investigate associations between MVM supplementation and various cardiovascular problems, including coronary heart disease and stroke. Use of MVM supplements was not associated with the risk of death from cardiovascular disease or coronary heart disease, or stroke incidence or deaths. Reuters

top of page...

Study finds health risks for transgender women on hormone therapy

9 July - Transgender women on hormone therapy may be at a higher risk for cardiovascular problems, such as stroke, blood clots and heart attack, researchers reported Monday. The study was done by reviewing eight years of medical records of nearly 5,000 transgender patients in the Kaiser Health system, and looked at patients over the age of 18 who took hormones for gender transition. Over 97,000 cisgender patients — people whose sex assigned at birth matches their gender identity — with similar age and health characteristics were studied for comparison. ... The study found that transgender women, who are assigned the male sex at birth, were twice as likely as cisgender men or women to have the blood clot condition venous thromboembolism. Transgender women on hormone therapy were also found to be 80 to 90 percent more likely to have stroke or a heart attack than cisgender women. NBC News

top of page...
U.S. opposition to breast-feeding resolution stuns world health officials

9 July - A resolution to encourage breast-feeding was expected to be approved quickly and easily by the hundreds of government delegates who gathered this spring in Geneva for the United Nations-affiliated World Health Assembly. Based on decades of research, the resolution says that mother's milk is healthiest for children and countries should strive to limit the inaccurate or misleading marketing of breast milk substitutes. Then the United States delegation, embracing the interests of infant formula manufacturers, upended the deliberations. American officials sought to water down the resolution by removing language that called on governments to “protect, promote and support breast-feeding” and another passage that called on policymakers to restrict the promotion of food products that many experts say can have deleterious effects on young children. MSN

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Democratic Republic of the Congo: Circulating vaccine-derived poliovirus type 2

10 July - In the Democratic Republic of the Congo, three different circulating vaccine-derived poliovirus type 2 (cVDPV2) outbreaks have been detected in acute flaccid paralysis (AFP) cases. In February 2018, the government declared cVDPV2 to be a national public health emergency. The cVDPV2 strain initially detected and reported in June 2017 from Haut Lomami Province spread in late 2017 and early 2018 to Tanganyika and Haut Katanga provinces, respectively. The same virus was confirmed in Ituri Province in June 2018, close to the border with Uganda, from an AFP case with onset of paralysis on 5 May 2018. Investigations are ongoing. WHO assessed the overall public health risk at the national level to be very high and the risk of international spread to be high due to the proximity of the recent detection of the AFP case in Ituri which is close to an international border and with known population movement. WHO

uganda:

Uganda: Rift Valley fever outbreak in western Uganda

9 July - Rift Valley fever (RVF) cases have simultaneously been confirmed in two districts in the western region of Uganda, with further investigation of another case in third district going on. The first case-patient was a 47-year-old male. ... The case-patient died at home on the evening of 21 June 2018, with the body oozing blood from multiple orifices. ... The second case-patient was a 35-year-old male. ... The case-patient died on 30 June 2018 and a supervised burial was carried out. There is a report of another confirmed RVF case in Ibanda District, on which more information is being sought. Two other suspected cases are
reportedly being investigated in Mbarara (1) and Kasese (1) districts. Outbreak News Today top of page...

USCENTCOM

Iraq: A year on from battle, Mosul’s healthcare system is still in ruins

9 July - One year since the battle between the so-called Islamic State (IS) group and the Iraqi forces officially ended in Mosul, Iraq, the healthcare system is still in ruins and struggling to cope as thousands of people continue to return to the city, Médecins Sans Frontières (MSF) said. During the conflict, nine out of 13 public hospitals were damaged in Mosul, slashing healthcare capacity and the number of hospital beds by 70 per cent. The reconstruction of health facilities has been extremely slow and there are still less than 1,000 hospital beds for a population of 1.8 million people. This is half of the internationally-recognised minimum standard for health service delivery in a humanitarian context. Médecins Sans Frontières top of page...

Syria/Jordan: Scorpions, dehydration, disease - Syrians at the border face deadly threats

6 July - Thousands of Syrians who fled a government offensive in the southwestern province of Dara’a are now at risk from scorpions, snakes, disease and dehydration. At least 15 Syrians have died in camps near the Jordanian border because of “scorpion bites, dehydration and diseases transmitted through contaminated water,” according to a report published this week by the United Nations Office for the Coordination of Humanitarian Affairs. Twelve of the dead were children; two women and one elderly man also died. More than 320,000 people in the Dara’a region have been displaced by the fighting, according to the United Nations. Most are living in campsites near the Jordanian border and the Israeli-controlled Golan Heights without adequate shelter, food or water. Thousands are sleeping in the open desert. The New York Times top of page...

USEUCOM

Germany: Tuberculosis screening in asylum seekers in Germany: a need for better data

10 July - Screening for tuberculosis among asylum seekers is a cornerstone of tuberculosis prevention and control strategies in many European countries. ... Asylum seekers constitute
a dynamic population whose countries of origin, circumstances, and routes—and thus whose tuberculosis risk—vary over time. ... Nationwide data for the number of asylum seekers screened by country of origin are, however, scarce in Germany. This scarcity is mainly due to a fragmented reception and public health system: the 16 federal states organise reception and registration of asylum seekers according to their own policies, including screening for, and documentation of, tuberculosis. National law requires notification of tuberculosis cases only. The Lancet

Italy: Proof of children’s vaccinations? Italy will now take parents’ word for it

5 July - Italian parents will no longer have to provide state-run schools with a doctor’s note to show that their children have been vaccinated, the country’s new populist government announced on Thursday — a move that raised alarm among experts who fear that compliance with vaccines will drop. The new rule, announced at a news conference by Giulia Grillo, Italy’s health minister and a prominent member of the anti-establishment Five Star Movement, requires only the assurance of parents that their children are immunized to enroll in school this September. ... [C]ritics of the move say the Italian government is eroding faith in science and public norms. The New York Times

Ukraine: Ukraine measles and diphtheria update

10 July - Ukrainian health officials recorded an additional 1,021 measles cases in the past week, bringing the total cases for the year to 25,008. Of this total, 10,085 adults and 14,923 children have been affected. ... The measles death toll remains at 12 for the year, eight in children. In addition, health authorities have reported an additional diphtheria case, the third of the year, in a 15-year-old teenager in the Kyiv region. The child has been treated with anti-diphtheria serum and her condition is stable. Outbreak News Today

United Kingdom: UK police hunt nerve agent container after woman dies

8 July - A woman who died after being poisoned with a nerve agent that also struck a former Russian spy in March must have handled a contaminated item, and tracking it down is key to police investigations, Britain’s top counter-terrorism officer said. Dawn Sturgess, 44, died on Sunday just over a week after she was exposed to Novichok in southwestern England, a few miles from where Russian double agent Sergei Skripal and his daughter Yulia were attacked with the same poison. The death of Sturgess, a mother of three, was being treated as a murder, police said. Reuters
Australia: Australian experiment wipes out over 80% of disease-carrying mosquitoes

10 July - In an experiment with global implications, Australian scientists have successfully wiped out more than 80% of disease-carrying mosquitoes in trial locations across north Queensland. The experiment... targeted *Aedes aegypti* mosquitoes, which spread deadly diseases such as dengue fever and Zika. In JCU laboratories, researchers bred almost 20 million mosquitoes, infecting males with bacteria that made them sterile. Then, last summer, they released over three million of them in three towns on the Cassowary Coast. The sterile male mosquitoes didn't bite or spread disease, but when they mated with wild females, the resulting eggs didn't hatch, and the population crashed. ... The successful experiment offers a potential new solution against diseases which infect millions every year. CNN

Japan: Japan floods - 141 killed after torrential rain and landslides

10 July - At least 141 people are now known to have died in floods and landslides triggered by torrential rain in western Japan, says the government. It is the highest death toll caused by rainfall that Japan has seen in more than three decades. Rescuers are now digging through mud and rubble in a race to find survivors, as dozens are still missing. About two million people have been evacuated from the region after rivers burst their banks. Authorities have opened up school halls and gymnasiums to those who have been displaced by the rainfall. There remains a risk of landslides, with rain-sodden hilltops liable to collapse. ... More than 70,000 rescue workers, including the fire service and the army, are involved in the relief effort. BBC News

Myanmar: Snakebite incidence in two townships in Mandalay Division, Myanmar

9 July - ... Historically, Myanmar has one of the highest incidences of venomous snakebites. ... Since data from health facilities lack information about those who do not seek health care from government health services, a new population-based survey was conducted in 2 rural areas of Mandalay region. ... One respondent from each of 4,276 households represented 19,877 residents from 144 villages. 24 people in these households had suffered snakebite during the last one year giving an annual incidence of 116/100,000. During the last ten years, 252 people suffered snakebites. 44.1% of the victims were women. 14% of the villages reported 4 or more bites during the last ten years, whereas 27% villages reported no
snakebites. 92.4% of the victims recovered fully, 5.4% died, and 2% suffered long term health issues. ... This incidence reported by the community members points to substantially more snakebites than the number of snakebite patients attending health facilities. PLOS

Thailand U.S. troops deployed to lend a hand in Thai soccer team’s rescue from cave

10 July - The entire Wild Boars soccer team, including 12 boys and their coach, was successfully rescued from a flooded cave complex in Thailand, where dozens of U.S. military personnel were deployed to assist in the operation. The boys, ages 11-16, rescued from the Tham Luang Cave complex in northern Thailand were recuperating at a hospital in the nearby city of Chiang Rai, the Associated Press reported Tuesday. ... For the rescue, 42 U.S. military personnel and one member of the Joint U.S. Military Advisory Group Thailand were deployed to the multinational rescue effort, according to a Pentagon statement. ... The U.S. military personnel involved in the rescue effort helped stage equipment and prepare the first three chambers of the cave system for safe passage, according to Pentagon spokesman Army Col. Rob Manning. They also assisted in transporting the evacuees through the final chambers of the cave system and provided medical and technical assistance. Military Times

USNORTHCOM

U.S.: American Indian and Alaska Native maternal and infant mortality - Challenges and opportunities

9 July - ... In a geographically diverse sample of urban areas, for example, American Indian and Alaska Native mothers were 4.5 times more likely to die from pregnancy and childbirth related causes than non-Hispanic white mothers. Nationwide, American Indian and Alaska Native infants are nearly twice as likely to die by their first birthday as non-Hispanic white infants, with the most common causes being congenital malformations, sudden infant death syndrome (SIDS), and prematurity. More worrying still, the American Indian and Alaska Native infant mortality rate remains unrelentingly high; between 2005 and 2014, it was the only racial or ethnic group that did not experience a decline in infant mortality. These trends illuminate the need for greater understanding of the problem as well as the development of culturally appropriate solutions. Center for American Progress
U.S.: Cal/OSHA issues worker safety advisory for wildfire regions

12 July - Cal/OSHA issued an advisory Thursday to remind employers that special precautions must be taken to protect workers from wildfire smoke hazards. Wildfire smoke contains chemicals, gases, and fine particles that can be harmful to health. Breathing fine particles is the biggest hazard, as it can reduce lung function, worsen asthma and other existing heart and lung conditions, and cause coughing, wheezing, and difficulty breathing. Cal/OSHA has guidance for employers and workers on working safely in conditions with heavy smoke caused by wildfires on its website, including frequently asked questions about N95 masks. Occupational Health and Safety

top of page...

U.S.: Fewer older black patients survive long-term after cardiac arrest in the hospital

9 July - After a cardiac arrest in the hospital, older black patients don’t survive as long as older white patients, new data show. ... Earlier studies have shown that black patients who have a cardiac arrest in the hospital are 27 percent less likely to survive their hospitalization, compared with white patients. The current study looked at nationwide data on longer-term survival among 1,112 blacks and 7,652 whites, all over the age of 65, who left the hospital alive. One year later, the survival rate was much lower among black patients than among white patients, at 43.6 percent versus 60.2 percent. At three years after cardiac arrest, the survival rate was 31.6 percent among blacks versus 45.3 percent among whites. ... Only a small proportion of the difference in survival could be explained by racial differences in hospital treatments and care. About half could be explained by differences in care after discharge. Reuters

top of page...

U.S.: PTSD raises heart and stroke risk in World Trade Center cleanup crews

10 July - More than 16 years after cleanup was completed at the site of the September 11, 2001 attack on New York City’s World Trade Center complex, many who worked at the disaster site still struggle with post-traumatic stress disorder (PTSD) and may also have an elevated risk of heart attack and stroke as a result, researchers say. Among more than 6,000 men and women who worked at “ground zero” in the last few months of 2001, the risk of heart attack or stroke more than 10 years later was up to three times higher among those with PTSD, the study team found. Neither exposure to dust from the site, nor depression explained the results, researchers note. ... The implications of the research go beyond ground zero clean-up workers, said senior study author Dr. Alfredo Morabia of the City University of New York and Columbia University’s Mailman School of Public Health. “The message for everyone suffering from PTSD, whether they are men or women, is that they are at higher risk of heart attack and stroke,” Morabia told Reuters Health. Reuters
U.S.: Rising numbers of deaths involving fentanyl and fentanyl analogs, including carfentanil, and increased usage and mixing with non-opioids

11 July - This Health Alert Network (HAN) Update is to alert public health departments, health care professionals, first responders, and medical examiners and coroners to important new developments in the evolving opioid overdose epidemic, which increasingly involves illicitly manufactured fentanyl and an array of potent fentanyl analogs (i.e., compounds that are chemically related to fentanyl). ... The current update includes information on: (1) the continued increase in the supply of fentanyl and fentanyl analogs detected by law enforcement; (2) the sharp rise in overdose deaths involving fentanyl and fentanyl analogs in a growing number of states, in particular the growing number of deaths involving the ultra-high potency fentanyl analog known as carfentanil; (3) the expanding number of poly-drug combinations implicated in opioid overdose deaths, which include non-opioids, such as cocaine; (4) the updated comprehensive guidance available to law enforcement and other emergency responders to prevent occupational exposure to fentanyl and fentanyl analogs; and (5) updated recommendations for public health professionals and health care providers regarding prevention and response efforts. CDC

U.S.: Sununu signs bills on PFAS, cancer treatment coverage for firefighters

10 July – [New Hampshire] Governor Chris Sununu was on the Seacoast today, signing two bills dealing with chemical contamination and health risks. One bill could lead to stricter limits on PFAS chemicals in drinking water. ... The bill lets the state hire a toxicologist and a health risk assessor to dig into the science of PFAS and create new limits for it in drinking water. It also lets officials look at pollution in a new way -- regulating any contaminants in air that can settle into groundwater. ... Sununu also signed a bill letting firefighters qualify faster for workers’ compensation after a cancer diagnosis, by making it assumed that their cancer is work-related. The bill also creates a fund, made up of insurer fees, to help firefighters pay for their medical treatment. NHPR

U.S.: U.S. cannot reunite dozens of child migrants with their parents

11 July - The Trump administration has said 27 young migrant children are “not eligible for reunification” with their parents, according to a court filing. Twelve other children’s mothers or fathers have already been deported from the US, said the government. “Legitimate logistical impediments” are delaying reunions for many of the 102 children under five years old who were taken from parents, US officials say. Nearly 3,000 children were split from undocumented adults entering the US. The government was bound by a court order to
reunite children aged five and under by 10 July. ... Some 75 of the 102 separated children have been determined eligible to be reunited with their families, according to the Department of Health and Human Services (HHS). But as of Tuesday afternoon, the government said it had only reunited four of those children with their parents. BBC News top of page...

USSOUTHCOM

Brazil/Venezuela: Yanomami tribe hit by measles outbreak

7 July - Survival International, an organization that champions tribal peoples around the world, reported recently on a measles epidemic that has hit Amazon tribe, Yanomami, on the Brazil-Venezuela border. To date, 23 measles cases have been seen at the hospital since March and as Survival notes, the isolated tribe has little immunity and outbreak has the potential to kill hundreds of tribespeople. The total number of people affected is still unknown. Survival's Director Stephen Corry said today: “When tribal people experience common diseases like measles or flu which they’ve never known before many of them die, and whole populations can be wiped out.” ... It is believed that the contagious viral disease was brought in by gold miners that have entered the region. Outbreak News Today top of page...

Latin America: A breakthrough for malaria elimination starts in the Americas

9 July - A new global push in the fight against malaria began last month when Paraguay became the first country in the Americas to be certified malaria-free since 1973. Paraguay’s success is an important accomplishment for the country, and is helping to accelerate progress across Latin America. Between 2000 and 2015, Latin America saw a 62 percent drop in malaria cases. Chile and Uruguay are already malaria-free, and Argentina is expected to be certified malaria-free later this year. Several more Latin American countries — Mexico, Costa Rica, Belize, Suriname and El Salvador — could be malaria-free by 2020 or soon after. The Hill top of page...
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