21 October 2016

Army Public Health Weekly Update

Army Public Health Center

Notice:
There will be no Army Public Health Weekly Update next week. Publication will resume on 4 November 2016.

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**Subscription or Comments**

If you wish to be added to the APH Weekly Update mailing list, removed from the mailing list, or if you have comments or questions about the update, please contact us. We welcome your comments. Please feel free to share this update with others who may be interested.

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A reboot for wheelchair that can stand up and climb stairs

17 October - Thirteen years ago, just as the United States began what was to become its longest war, a futuristic wheelchair hit the market. The iBOT allowed paralyzed people, including many veterans of Iraq and Afghanistan, to stand up by rising to eye level. It also did something no wheelchair ever had: climb stairs. But even though users loved it, the iBOT went out of production in 2009 when Johnson & Johnson discontinued it. ... Now, however, the iBOT could be coming back. Toyota announced this year that it's bankrolling a reboot of the iBOT, which the machine's inventor, Dean Kamen, says will allow him to make some improvements. "With advances in computers, the advances in solid-state gyros and electronics ... we can take a hundred pounds out of it. We can take a lot of cost out of it. We can improve it," he told NPR. NPR

Air Force: Toxic chemicals released into Colorado city's sewer system

19 October - An Air Force base in Colorado said it accidentally released about 150,000 gallons of water containing toxic chemicals into the sewer system of the adjacent city of Colorado Springs, but the potential health hazards weren't immediately known. Peterson Air Force Base said Tuesday the water contained perfluorinated compounds or PFCs. ... The chemicals didn't get into the city's drinking water, said Steve Berry, a spokesman for Colorado Springs Utilities. The tainted water passed through a wastewater treatment plant, but the plant isn't set up to remove PFCs, so they were still in the water when it was discharged into Fountain Creek, Berry said. No communities take water directly from the creek downstream from the treatment plant. Air Force Times

Army and Tufts University study how people think, respond under stress

18 October - The U.S. Army and Tufts University are working together to learn more about how people think and respond under stress. Their new cognitive sciences center officially opened Tuesday in Medford, Massachusetts. The research aims to help soldiers and civilian first responders, such as firefighters. Scientists and engineers are figuring out how to
APHC Fact Sheet: Selecting the Appropriate Eye and Face Protection


September 2016 - During the 6-year surveillance period, a total of 56,935 incident diagnoses of osteoarthritis (OA) and 60,968 incident diagnoses of spondylosis were identified. Age-specific rates of OA and spondylosis increased markedly with age and were higher among Army members and those in armor/motor transport occupations, compared to their respective counterparts. Among service members aged 25 years or older, the rate of OA overall was higher among black, non-Hispanic than other race/ethnicity group members, and the rate of shoulder OA was higher among males than females. Among service members aged 35 years or older, rates of OA of the knee and pelvic region/thigh were higher among females than males. Age-specific rates of spondylosis were generally higher among white, non-Hispanic than other race/ethnicity group members. Crude overall incidence rates of spondylosis were generally similar between sexes for all anatomical locations except the cervical region (20% higher for females than males).

Medical Surveillance Monthly Report

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GLOBAL

After 40 years, the most important weapon against mosquitoes may be failing

13 October - ... The world still relies on the same class of insecticides, known as pyrethroids, as it did in 1977. Now, in part because of that neglect, these compounds may be nearing the end of their useful lives as mosquitoes develop resistance to them at alarming rates, and there is little in the pipeline to replace them. ... Malaria mosquitoes that are resistant to pyrethroids have spread across Africa in recent years, stoking fears that malaria cases will rise again. Many scientists have their hopes pinned on new approaches to vector control that would be less likely to run into resistance or prove toxic, such as mosquitoes genetically modified to die young, traps that lure the insects to their death, or insecticidal bacteria or fungi. Science

Gels to repair hearing loss? Drugmakers try new ear treatments

14 October - ... Drugmakers are jumping in to offer innovative treatments like gels and gene
APHC Fact Sheet: Chemicals, Contact Lenses, and Respirators

NIOSH recommends allowing contact lens wear "when handling hazardous chemicals provided that safety guidelines are followed and that contact lenses are not banned by regulation or contraindicated by medical or industrial hygiene recommendations."

The Tri-Service Vision Conservation and Readiness Program has additional recommendations.

Chemicals, Contact Lenses, and Respirators

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Healthy mice from lab-grown eggs

17 October - Japanese scientists say they have created healthy baby mice from eggs they made entirely in the lab using a sample of mouse skin cells. The pups born from the eggs appeared to be healthy and were able to go on to have babies themselves. Experts say the findings, in Nature journal, offer future hope of artificial eggs for couples who need fertility treatment. But they say many more years of study are needed to make that leap to humans. Bloomberg

IBM is counting on its bet on Watson, and paying big money for it

17 October – [IBM’s] campaign to commercialize Watson, the company’s version of artificial intelligence technology, stands out, even during the current A.I. frenzy in the tech industry. IBM has invested billions of dollars in its Watson business unit. ... IBM first focused on health care, and that business now accounts for two-thirds of the Watson unit’s employment. Three years ago, IBM experts began working with leading medical centers. And it has spent more than $4 billion buying a handful of companies with vast stores of medical data like billing records, patient histories, and X-ray and M.R.I. images. ... At the University of North Carolina School of Medicine, Watson was tested on 1,000 cancer diagnoses made by human experts. In 99 percent of them, Watson recommended the same treatment as the oncologists. In 30 percent of the cases, Watson also found a treatment option the human doctors missed. The New York Times

Tasmanian devil milk fights superbugs

18 October - Milk from Tasmanian devils could offer up a useful weapon against antibiotic-resistant superbugs, according to Australian researchers. The marsupial’s milk contains important peptides that appear to be able to kill hard-to-treat infections, including MRSA, say the Sydney University team. Experts believe devils evolved...
this cocktail to help their young grow stronger. The scientists are looking to make new treatments that mimic the peptides. They have scanned the devil's genetic code to find and recreate the infection-fighting compounds, called cathelicidins. ... The Sydney team recreated the six devil peptides that they found and tested them on 25 types of bacteria and six types of fungi. One of the synthetic peptides - Saha-CATH5 - appeared to be particularly effective at killing the superbug methicillin-resistant Staphylococcus aureus or MRSA. BBC News

UNICEF clinches vaccine deal to protect children from five diseases

19 October - The United Nations Children's Fund (UNICEF) said on Wednesday it had reached an agreement with six vaccine suppliers to provide a combined vaccine against five deadly childhood diseases for half the price it currently pays. An estimated 5.7 million deaths a year could be averted under the deal to send 450 million doses to 80 countries between 2017-2020, the agency added. ... The vaccine, a cornerstone of routine immunization program, will protect children from five major infections in one shot: diphtheria, tetanus, pertussis, hepatitis B, and Haemophilus influenza type b known as Hib - a bacteria that causes meningitis, pneumonia and otitis. Reuters

When epidemics go viral

18 October - ... Since the turn of this century, the rise of online search engines and social media applications has allowed ordinary people around the world to find information during public-health scares at an ever-faster pace. The change has been especially dramatic in the Asia Pacific region, a global epicentre of internet users, smartphone sales, and also infectious-disease outbreaks. This new environment presents a complex mix of opportunities and challenges for health officials. On one hand, increased public engagement during a health crisis can allow officials to communicate more directly with citizens. But every new online platform is also a conduit for spreading criticism or misinformation. The rise of social media makes it “harder for governments to shut down the flow of information, but the information itself may be unreliable,” says Crawford Kilian, a Vancouver-based writer who covers the politics of public health. The Atlantic

ZIKA VIRUS

Amid government silence, Venezuela's microcephaly babies struggle

17 October - ... Venezuela does provide data to the World Health Organization, which shows it has had some 58,212 suspected Zika cases and 1,964 confirmed ones since the virus emerged in Brazil last year and then spread rapidly through the Americas. But it has
not, however, declared any cases of confirmed congenital syndrome associated with Zika, such as microcephaly, and has not mentioned any suspected cases either. To be sure, inadequate Zika testing has thwarted efforts to precisely diagnose Zika-caused microcephaly. But countries like Brazil have turned to clinical diagnoses and report "confirmed and probable cases" of Zika-associated congenital syndromes to the WHO. ... Venezuela's Institute of Tropical Medicine estimates the real number could be much higher by the end of the year - between 563 and 1,400. That estimate is based on the numbers in Brazil, which has more than 1,800 confirmed cases, and pregnancy rates in Venezuela. 

**Brazilian health experts’ Zika debrief**

18 October - ... [Paulo Gadelha of the Oswaldo Cruz Foundation, Brazil's leading public health research institute] noted that although Zika infection is common in Brazil's west-central region, few babies there have been born with microcephaly. Unlike in northeastern Brazil, most people in the region have been vaccinated against yellow fever. "Perhaps the vaccine becomes another factor that will enhance immune response," said Gadelha. "A lot of research will be needed." 

**CDC updates guidance for pregnant women and men of reproductive age for Zika virus infection**

19 October - ... CDC is strengthening travel recommendations for pregnant women to Miami-Dade County and also reinforcing recommendations for use of protective measures to prevent exposure to Zika. CDC is updating recommendations to emphasize testing for pregnant women with an epidemiologic link to Miami-Dade County. ... In addition, CDC has made specific recommendations for areas of identified active transmission. The Florida Department of Health (FL DOH) has identified a new area where local, state, and CDC officials have determined that the intensity of Zika virus transmission presents a significant risk to pregnant women in a designated one-square-mile area located in Miami-Dade County (NW 79th St. to the north, NW 63rd St. to the south, NW 10th Ave. to the west and N. Miami Ave. to the east). 

**Florida’s big decision**

19 October - A November vote in the Florida Keys may determine whether genetically modified mosquitoes—engineered to die before they mature and transmit disease—could be tested in the US for the first time. The string of humid islands spends nearly $1 million of its $10 million annual budget battling Zika-causing *Aedes aegypti*, which makes up only 1% of mosquitoes in the Keys. The British company Oxitec presented their genetically modified mosquitoes as an alternative, but questions surrounding the risks, the technology's safety and what's best for the public have inspired debate and concern. Voters are divided, and there's no clear indication what decision they may come to.
Zika funding to be split among CDC, NIH, emergency fund

18 October - Two weeks after Congress allocated $1.1 billion in supplemental funding to fight Zika, the Department of Health and Human Services (HHS) announced today during a teleconference how the pie of Zika funding will be sliced among major players. According to Caitlyn Miller, director of the division of discretionary programs for HHS, $394 million will go to the Centers for Disease Control and Prevention (CDC), $152 million to the National Institutes of Health (NIH), and $387 million toward the public health and social services emergency fund. Within that $387 million, $75 million will be used to reimburse healthcare providers who treat uninsured Zika patients, $40 million will be used to expand Zika resources in US territories, and $20 million will go to regional and national projects, such as creating microcephaly registries. ...

[A] letter published in *The Lancet Infectious Diseases* describes the Zika virus in the genital tract of a French woman who transmitted the disease to her partner. This is the second documented case of female-to-male sexual transmission of the virus. The woman had contracted Zika while traveling to Guadalupe. Researchers said Zika virus was detected in a cervical swab on day 11 after symptom onset. By day 17 it was cleared from vaginal secretions but still detected in her urine. *CIDRAP*

**INFLUENZA**

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

During week 40 (October 2-8, 2016), influenza activity was low in the United States.

- Viral Surveillance: The most frequently identified influenza virus type reported by public health laboratories during week 40 was influenza A. The percentage of respiratory specimens testing positive for influenza in clinical laboratories is 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 40/2016 (3-9 October 2016)

- This is the first weekly influenza report for the season 2016-2017
- Low influenza activity was reported by 41 countries.
Only one influenza virus was detected in the community and none were detected in hospitalized cases. European Center for Disease Prevention and Control/WHO

NHRC: Febrile Respiratory Illness Surveillance Update

For 2016 Week 41 (through 15 October 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 Fort Benning. Naval Health Research Center

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

During 2 - 15 October 2016 (Surveillance Weeks 40 & 41), a total of 55 specimens were collected from 25 locations. Results were finalized for 52 specimens from 24 locations. During Week 40, one influenza A(H3N2) was identified. One influenza A(H3N2) was also identified during Week 41. Approximately 3% of specimens tested positive for influenza during Week 40. The percent positive for Week 41 increased to approximately 4%. The influenza percent positive for the season is currently 4%.

US Air Force School of Aerospace Medicine & Defense Health Agency

WHO: Influenza Update

17 October - Influenza activity decreased in Oceania, South Africa and temperate South America. Influenza activity in the temperate zone of the northern hemisphere remained at inter-seasonal levels. WHO

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VETERINARY/FOOD SAFETY

Europe: Foodborne viruses - identifying research needs to tackle public health risks

20 October - EFSA has published a scientific report on the outcomes of a scientific workshop on foodborne viruses organised jointly by EFSA and the UK Food Standards Authority. ... Against the background of an increasing number of outbreaks caused by foodborne viruses, the participants assessed the state of knowledge in this field. They focused on norovirus, the hepatitis A virus and the hepatitis E virus, which are of great public health concern in the EU. Knowledge gaps and research needs were identified and are summarised in the report. European Food Safety Authority
Europe: Use of strongest antibiotics rises to record levels on European farms

16 October - Use of some of the strongest antibiotics available to treat life-threatening infections has risen to record levels on European farms, new data shows. ... According to the data from the European Medicines Agency, medicines classified as “critically important in human medicine” by the World Health Organisation appear to be in frequent use on farm animals across the major countries of the EU, including the UK. This comes in spite of WHO advice that, because of their importance, these drugs should be used only in the most extreme cases, if at all, in treating animals. The latest report from the EMA collates data from member states on the sales of antibiotics for veterinary purposes in 2014, and shows that antibiotic use on farms fell by about 2% on the previous year overall, and by as much as 12% in many countries. But this disguises the rise in the use of the strongest medicines, such as colistin, which is a last resort for life-threatening human illness. The Guardian

Robotic scan for horses could hold promise for human health

19 October - Veterinarians hope an innovative type of CT scan can advance medical care for horses and possibly be adapted for humans, eliminating the need for people to lie still inside a tube. Robotic CT at the University of Pennsylvania's veterinary school allows a horse to remain awake and standing as scanners on two mechanical arms move around it. The resulting high-quality images, including some in 3D, for the first time offer detailed anatomical views of the animal in its normal, upright state. ... While traditional CT requires the subject to be still, this new system compensates for slight movement. Eventually, vets hope they'll be able to capture CT images of a horse running on a treadmill. ... For humans, the technology could be helpful when dealing with squirming children or claustrophobic adults. ABC News

U.S.: Mighty Taco outbreak caused by Bacillus cereus

19 October - The food poisoning outbreak at Mighty Taco restaurants in Erie and Niagara Counties in New York state was caused by Bacillus cereus, Mary C. St. Mary of the Erie County Department of Health told Food Poisoning Bulletin. At least 158 people have been sickened in this outbreak. ... “The Wadsworth Center, the public health laboratory of the New York State Department of Health, has identified Bacillus cereus in patient clinical specimens, as well as from refried beans collected from Mighty Taco restaurants, as part of an investigation into gastrointestinal illness among several patrons of certain Mighty Taco restaurants. Food Poisoning Bulletin

U.S.: Prevalence of drug-resistant staph bacteria higher in young children living with hog workers

18 October - Young children who reside with adults who work on large industrial hog
operations in rural North Carolina had a higher prevalence of antibiotic-resistant *Staphylococcus aureus* bacteria in their nasal passages than children who live with adults who live in the same community but do not work on such operations, a new study suggests. While no children or adults participating in the study became sick, the researchers say the findings raise concerns because of how many children living with hog workers carried potentially harmful antibiotic-resistant *S. aureus*—methicillin-resistant *S. aureus* (MRSA) and multidrug-resistant *S. aureus* (MDRSA) —in their noses.

Johns Hopkins Bloomberg School of Public Health News

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**WELLNESS**

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**Cervical cancer screening could be less frequent, start later**

17 October - Women may only need cervical cancer screening every five to 10 years — instead of every three years, as currently recommended — and may be able to start screenings later in life, according to a new study from the Harvard T.H. Chan School of Public Health. The researchers found that women who have been vaccinated against human papillomavirus (HPV) require less-intensive screening because HPV causes almost all cases of cervical cancer. Accordingly, the risk of these women developing cervical cancer is quite low. Harvard Gazette

**How gaps in mental health care play out in emergency rooms**

17 October - Nearly 1 in 5 children each year suffers a psychiatric illness, according to research estimates. But a national shortage of medical specialists and inpatient facilities means that many still go untreated — despite national efforts to improve mental health care. ... Compared with physically ill patients, people with mental health conditions rely more on the emergency department for treatment and are more often admitted to the hospital from the ER, the scientists found. Also, they tended to be stuck in the ER longer than people who show up in the ER with physical symptoms. ... About 11 percent of these patients with mental health problems required transfer to another facility, compared with 1.4 percent of the patients with physical ailments. NPR

**Living as a man, fighting breast cancer: how trans people face care gaps**

16 October - ... About 1.4 million adults in the United States report they are transgender, according to a recent analysis of federal and state data. That figure is twice the previous
estimate, and as awareness has increased, the health care system has begun scrambling to meet their needs. The government lifted a ban on Medicare coverage for transgender surgery and hormone treatment in 2014. ... This year, a rule under the Affordable Care Act banning discrimination in health care specifically included protection for transgender people. Hospitals and professional schools have begun training employees and students on transgender medicine, and on basic etiquette like addressing trans men and women by the name and pronoun they prefer. ... [E]xperts said it was common for transgender people to avoid screenings and other medical care for parts of their bodies associated with their original gender. The New York Times

**Obesity and diabetes tied to liver cancer**

14 October - A large study has found that body mass index, waist circumference and diabetes are all associated with an increased risk for liver cancer. Liver cancer is the sixth most common cancer, and its incidence has tripled since the mid-1970s in the United States. For the study, in Cancer Research, researchers pooled data from 14 prospective studies with more than 1.5 million participants. After controlling for age, sex, alcohol use, smoking and race, they found that being overweight increased the relative risk for liver cancer by between 21 percent and 142 percent as B.M.I. increased. For each 2-inch increase in waist circumference, the risk of liver cancer increased by 8 percent, even after controlling for B.M.I. And those with Type 2 diabetes had more than double the risk of liver cancer, even among the non-obese. The New York Times

**Overweight mothers give birth to biologically older babies**

18 October - Women who are overweight while pregnant are more likely to have babies who are biologically older than those born to women of a healthy weight. This could put the babies at a higher risk of developing chronic diseases later in life, and may reduce their life expectancy. Our biological age is linked to the length of our telomeres – bits of DNA that cap the ends of our chromosomes. Our telomeres shrink every time our cells divide, and continue to shorten throughout life. ... The [research] team found that a woman’s BMI seems to have a significant effect on the telomere length of her baby. The telomeres of babies born to overweight women were around 2.5 per cent shorter than those whose mothers were a healthy weight, while those born to obese women had telomeres 5.5 per cent shorter than the babies of mothers with a healthy BMI. New Scientist

**Pre-teens need only two HPV shots, not three, CDC recommends**

19 October - Two doses of a vaccine that protects against cervical and several other types of cancer are enough for 11-to 12-year-olds, rather than the previous three-shot regimen, the U.S. Centers for Disease Control and Prevention said on Wednesday. Vaccines against the human papillomavirus, or HPV, Merck & Co Inc's Gardasil and GlaxoSmithKline Plc's
Cervarix, have been available for years, but acceptance by the public has been slow. ... The CDC now recommends that 11- to 12-year-olds receive two doses of HPV vaccine at least six months apart. Adolescents aged 13 and 14 can also receive the two-dose schedule, but teens and young adults who start the series later, at ages 15 through 26 years, will continue to need three doses, the agency said. Reuters

**Prostate cancer treatment can raise dementia risk**

13 October - Reducing testosterone levels with androgen deprivation therapy, or A.D.T., is a common treatment for prostate cancer. But a new study has found that it more than doubles the risk of dementia. Previous studies have linked the hormone treatment to an increased risk of depression and Alzheimer’s disease. This new study considered all types of dementia. Researchers reviewed the medical records of 9,272 men diagnosed with prostate cancer between 1994 and 2013 and who had no previous diagnosis of dementia. They found that the absolute increased risk of dementia after five years was 7.9 percent among those who had been given hormone treatment compared with 3.5 percent among those who had not. Patients who had been receiving A.D.T. for a year or more had the highest increased risk. The New York Times

**Reported cases of sexually transmitted diseases are on rise**

19 October - There were more cases of sexually transmitted diseases reported in the United States last year than ever before, according to new federal data. Rates of chlamydia, gonorrhea and syphilis — three of the most common S.T.D.s — grew for the second consecutive year, with sharper increases in the West than other regions. And while all three diseases are treatable with antibiotics, most cases continue to go undiagnosed, potentially causing infertility and other problems. The syphilis rate rose most sharply, by 19 percent. Public health officials are particularly worried about an increase in the number of babies whose mothers are passing it to them in utero, which can cause stillbirths and infant deaths. Progress in the fight against S.T.D.s has "unraveled," according to a report from the Centers for Disease Control and Prevention. Young people, members of racial minorities and men who have sex with other men are at most risk of getting an S.T.D. The New York Times

**Skeptics question the value of hydration therapy for the healthy**

17 October - ... Why would you need a boost of vitamins delivered straight to a vein? Skeptical physicians say you probably don’t need it. A healthy gut absorbs all the nutrients we need from food. And anyone well enough to drink fluid, they say, can get all the rehydration they need by mouth. Still, clinics that market treatments of intravenous fluid to the stressed out and worried well can now be found nationwide. ... Ather Ali, a doctor of naturopathic medicine and health researcher at the Yale School of Medicine, says that if an IV infusion of this type makes people feel better, it’s probably because of the placebo effect. And the placebo effect can be powerful. The New York Times
Think it’s cathartic to run angry? Think again

19 October -  Exercising with unusual vigor while you are enraged or emotionally distraught could be dangerous for your heart, according to a cautionary new study of the types of events that may trigger heart attacks. ... The new study ... [uses] data about almost 12,500 men and women from 52 countries who recently had experienced their first heart attack. ... [T]his study was meant to focus on what might have set off someone’s heart attack, with particular attention being paid to people’s physical and emotional states just before they fell ill. ... Heavy physical exertion and anger or emotional upset were both closely associated with an increased risk of having a heart attack, they found. About 13 percent of the people said that they had been heavily active just before their cardiac arrest, with about 14 percent saying that they had been angry or upset. There was quite a bit of overlap: Many said that they had been both active and emotionally distraught before having their heart attack. 

The New York Times

Vaginal bacteria affect HIV risk

20 October -  Bacteria in the vagina and cervix might affect the risk of HIV infection, a researcher said here. In a cohort of HIV-negative women in South Africa, a cervicovaginal microbiome dominated by Lactobacillus crispatus was associated with a much lower risk of HIV than one that was more diverse, according to Christina Gosman, PhD, of the Ragon Institute in Cambridge, Mass. Exactly why that should be so is not completely clear. ... But she told MedPage Today that one possibility is increased inflammation associated with the primarily Gram-negative bacteria found in the more diverse microbiomes. She added that it’s not clear if trying to alter the biome -- by antibiotics or probiotics, for instance -- would affect the HIV risk. MedPage Today

Weight loss leads to strong increase in appetite

14 October - Analysis of a trial that used the drug canagliflozin found that as people lost weight, their appetite increased proportionately, leading to consumption of more calories and weight loss plateau (leveling off). The findings provide the first measurement in people of how strongly appetite counters weight loss as part of the body’s feedback control system regulating weight. ... [Researchers] analyzed data from a year-long, placebo-controlled, double-blind trial in people with type 2 diabetes who could eat and drink without restriction. ... Of the 242 participants, 153 received canagliflozin, a drug that caused a substantial increase in the amount of glucose excreted in their urine. Those people were not directly aware of that calorie loss, which caused a gradual decrease in weight averaging about eight pounds. ... They found no long-term calorie intake changes in the 89 people who got a placebo. However, for every pound of lost weight, the people treated with canagliflozin consumed about 50 calories per day more than they were eating before the study. This increase in appetite and calorie intake led to slowing of weight loss after about six months. NIH
What do tweets say about our health?

19 October - Using geotagged tweets, researchers at the Universities of Utah and Washington were able to build a map of the U.S. by neighborhood, with indicators of how happy and active people in that neighborhood are and what their diets are like. ... About 20 percent of tweets were classified as happy. ... Proximity to fitness centers or parks only modestly predicted mentions of physical activity, but density of fast food restaurants by neighborhood did predict how many mentions of fast food people in the neighborhood made. At the state level, more positive mentions of physical activity and healthy foods, as well as happiness, were associated with lower all-cause mortality and the prevalence of chronic conditions like obesity and diabetes. Fox News

Women report vaginal ring for preventing HIV had little effect on sexual intercourse

18 October - Most women who used an experimental vaginal ring for HIV prevention report that the physical act of sex was largely unaffected by using the product, which is inserted monthly for continuous wear. ... ASPIRE evaluated whether the ring, which continuously releases the anti-HIV drug dapivirine, could safely reduce HIV infection among 2,629 women aged 18-45 years living in Malawi, South Africa, Uganda and Zimbabwe. Among participants randomized to receive the dapivirine ring, risk of HIV infection fell by 27 percent. A further analysis found that the ring reduced the risk of HIV infection by at least 56 percent among women who used it with greater frequency, and up to 75 percent or higher among those who used it consistently. NIH

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USAFRICOM

Africa: Air pollution more deadly in Africa than malnutrition or dirty water, study warns

20 October - Africa's air pollution is causing more premature deaths than unsafe water or childhood malnutrition, and could develop into a health and climate crisis reminiscent of those seen in China and India, a study by a global policy forum has found. The first major attempt to calculate both the human and financial cost of the continent's pollution suggests dirty air could be killing 712,000 people a year prematurely, compared with approximately 542,000 from unsafe water, 275,000 from malnutrition and 391,000 from unsafe sanitation. While most major environmental hazards have been improving with development gains and industrialisation, outdoor (or "ambient particulate") air pollution from traffic, power generation and industries is increasing rapidly, especially in fast-developing countries such as Egypt, South Africa, Ethiopia and Nigeria. "Annual deaths from ambient [outdoor] particulate matter pollution across the African continent increased by 36% from 1990 to
2013. Over the same period, deaths from household air pollution also continued to increase, but only by 18%.” The Guardian

Democratic Republic of the Congo: Cholera outbreak tops 22,000

14 October - The number of cholera cases and deaths in the Democratic Republic of the Congo (DRC) to date in 2016 is significantly higher than the same period in 2015, according to UNICEF data published today. Between January and October 2016, a total of 22,002 cases of cholera with 646 deaths were reported in the DRC. Compared to the same period in 2015, 12,269 cases of cholera with 192 deaths were reported. 660,000 people, including 316,800 children between 0 and 14 years old are currently at risk for cholera in just eight provinces, the report notes. The UN agency also says the epidemic is already present in the densely populated capital city of Kinshasa. Outbreak News Today

Kenya: Mass circumcision cut HIV acquisition

20 October - An aggressive program of voluntary male circumcision in Kenya -- a procedure shown to reduce the risk of acquiring HIV -- has already prevented thousands of infections, a researcher said here. And the program is on track to prevent many thousands more in the next 14 years even if no more men are circumcised, according to John Stover, of Avenir Health in Glastonbury, Conn. The finding is based on three separate models of the effect of the program, begun by Kenyan authorities in 2008 to capitalize on the results of three landmark clinical trials that showed circumcision cuts the risk of HIV by about 50%. ... The three models were in "general consensus," Stover said, suggesting a range of from 21,000 to 33,000 infections had been averted. MedPage Today

Rwanda: Rwanda turns to drones to deliver vital blood supplies

14 October - Rwanda has launched a drone delivery network to transport vital blood supplies to far-flung areas of the country. The project will see unmanned aerial vehicles or drones used to deliver small packages by parachute, bypassing traffic or washed-out roads in a country dubbed the Land of a Thousand Hills. It was introduced on Friday in Rwanda’s Muhanga district, but is expected to expand to the rest of the country by early 2017. On demand, the drones are expected to make around 150 deliveries of blood to 21 facilities each day, according to Zipline, the company behind the project. Health professionals can order the emergency packages by text message and deliveries will be made in approximately 30 minutes, officials said. Al Jazeera

Sierra Leone: Fears and misperception of the Ebola Response System during the 2014-2015 outbreak

18 October - ... To decrease the severity of epidemics in [countries with weak health systems], lessons can be drawn from the Ebola outbreak in West Africa. ... Using an
experienced ethnographer, we conducted 30 semi-structured in-depth interviews in public spaces in Ebola-affected areas. ... Most participants feared that calling the national hotline for someone they believed had Ebola would result in that person's death. Many stated that if they developed a fever they would assume it was not Ebola and self-medicate. Some thought the chlorine sprayed by ambulance workers was toxic. Although most knew there was a laboratory test for Ebola, some erroneously assumed the ubiquitous thermometers were the test and most did not understand the need to re-test in the presence of Ebola symptoms. Fears and misperceptions, related to lack of trust in the response system, may have delayed care-seeking during the Ebola outbreak in Sierra Leone.

PLOS Neglected Tropical Diseases

**Sudan: Whooping cough outbreak in North Darfur**

14 October - The North Darfur Ministry of Health has reported the outbreak of whooping cough in El Sereif Beni Hussein locality in early September. As of 7 October, 323 suspected cases were reported in the locality. The Health Ministry and the World Health Organization (WHO) are coordinating the response with partners to ensure that daily reporting, proper case management, and effective community mobilisation campaigns take place. A three-month action plan has been prepared to deal with this outbreak. allAfrica

**USCENTCOM**

**Syria: Attack targets health facility in Hama, Syria**

17 October – At least 5 people, including 2 children and 2 women, were reportedly killed when a primary health care centre in Kafr Zita, northern Hama governorate, Syria, was hit on 15 October. At least 10 others were injured, including 2 health staff. The centre sustained major damages and is temporarily out of service. Hundreds of people are now deprived of medical consultations. On a monthly basis, the centre was providing more than 900 consultations and 4 obstetric deliveries. As violence continues across the country, the numbers of health facilities destroyed or damaged by attacks are increasing, leaving growing numbers of patients with limited access to urgently need health care. This year alone, more than 90 attacks have occurred on health facilities in the Syrian Arab Republic. ReliefWeb

**Yemen: War-torn Yemen faces threat of cholera epidemic**

18 October - The World Health Organization warns that war-torn Yemen is facing the threat of a cholera epidemic. The WHO is urgently appealing for $22.35 million to prevent the deadly disease from spreading throughout the country. The World Health Organization reports 340 suspected cases of acute watery diarrhea. It says 18 of the cases are confirmed
to be cholera. WHO Spokeswoman Fadela Chaib says fortunately, none of the sick have
died. “Thanks to our local staff and NGOs [non-governmental organizations] working on the
ground, we were able to catch the first cases of cholera and to be able to respond partially,
said Chaib. VOA

Greenland calls on Denmark to clean up toxic waste buried in melting ice sheet

18 October - A vast pit of toxic waste buried in the Greenland ice sheet is threatening
indigenous peoples' rights to a clean and safe environment, Greenlandic officials claim. The
decades-old waste is part of a long-simmering dispute between Denmark, Greenland and
the United States over Cold War-era military bases established around the country (some of
which are still operating). The waste buried at Camp Century is becoming more of a threat
now that the Greenland ice sheet is melting due to global warming. ... Officials cited a
recent study that found global warming could eventually unearth millions of liters of
sewage, chemicals and nuclear waste stored deep below the Greenland Ice Sheet at Camp
Century. ... When the U.S. decommissioned Camp Century in 1967, both Denmark and the
U.S. assumed the hazardous waste would remain permanently entombed in the ice. ...
However, in an Aug. 4 study, climate scientists warned that if nations keep emitting
greenhouse gases at today's pace, Greenland's ice sheet would melt to the point where the
waste at Camp Century would surface as early as 2090, and potentially spread into the
ocean. Mashable

United Kingdom: British doctors and health professionals call for rapid coal phase-out

19 October - Groups representing Britain's 600,000 doctors and health professionals say it is
“imperative” to phase out coal rapidly to improve health and reduce NHS costs. The doctors
and nurses say tackling outdoor air pollution from traffic and power stations would cut
climate emissions, reduce air pollution, and deliver a powerful boost to the nation's health.
... “In the UK, burning coal is linked to 1,600 premature deaths, 68,000 additional days of
medication, 363,266 working days lost and more than 1m incidents of lower respiratory
symptoms,” says the report. The Guardian
U.S.: Arkansas mumps outbreak grows to more than 500 cases

18 October - Health officials said an outbreak of mumps in northwestern Arkansas has reached more than 500 cases — the largest ever recorded in the state. Some 567 patients in Benton, Madison and Washington counties, 71% of them children, either displayed symptoms of mumps or had their cases confirmed by a laboratory as of Monday, according to the Arkansas Department of Health (ADH). ... The outbreak, which also is affecting 15 workplaces, comes during a nationwide increase in mumps cases this year in the United States. According to the CDC, as of Sept. 10, 44 states had reported nearly 1,900 cases of mumps — the most since 2010. Healio

U.S.: Baltimore is attacking the roots of violence with public health measures—and saving lives

November 2016 - ... [B] by tackling violence as a public health issue, Baltimore is forging a new model for how to keep citizens safe. In 2007 the city launched its Safe Streets program, modeled after the Cure Violence program in Chicago. Targeting high-risk youth, Safe Streets hires “violence interrupters” to mediate conflict before it has the chance to escalate into violence. ... Three of four program sites saw significant reductions in gun violence; homicides dropped by 56 percent in one neighborhood and by 26 percent in another. ... In October 2015 the Baltimore City Health Department declared overdose to be a public health emergency and issued a blanket prescription for naloxone ... for every one of the city’s residents. The health department trained more than 8,000 people to use naloxone in 2015—in jails, public housing, bus shelters, street corners and markets. Scientific American

U.S.: Factory farming practices are under scrutiny again in N.C. after disastrous hurricane floods

16 October – A filthy brown sea, a slurry of mud, debris, chemicals and waste, has overtaken miles of rural counties in North Carolina. Against the drab water, the shiny metal roofs of hog houses are impossible to miss, visible from the air, as are the rectangular and diamond-shaped outlines of massive lagoons constructed just feet away. When those lagoons are doing their job, the liquid excrement they hold is a deep reddish-pink. Berms and pumps are designed to keep that bacteria-laden sludge from spilling out. But across coastal plain here ... the lagoons’ content now looks more like the surrounding floodwater. In a state already reeling from lost lives, homes and livelihoods, the color is evidence of major environmental risks. The Washington Post
**U.S.: Kids should watch out for that snake in the grass**

20 October - The number of children getting bitten by copperheads and other venomous snakes has more than doubled in recent years, a U.S. study suggests. Half of the 18,721 snakebites reported to U.S. poison control centers from 2000 to 2013 involved venomous snakes, the study found. Over that period, reported bites from copperheads surged by 137 percent and bites from other types of venomous snakes increased 107 percent. These bites are rarely fatal – just four deaths were reported. But one in five cases required admission to intensive care units, and treatments may give some parents sticker shock. “Treatment of a snakebite can cost easily more than $100,000 if anti-venom is needed,” said lead study author Dr. Joann Shulte, a pediatrics researcher at the University of Louisville in Kentucky.

 Reuters

**U.S.: Missed adult vaccines cost U.S. nearly $9 billion in 2015**

18 October - ... According to a new study from Health Affairs missed vaccines cost the U.S. economy $8.95 billion in 2015. ... “Low rates of vaccine uptake lead to costs to individuals and society in terms of deaths and disabilities, which are avoidable, and they create economic losses from doctor visits, hospitalizations, and lost income,” the authors argued. “To identify the magnitude of this problem, we calculated the current economic burden that is attributable to vaccine-preventable diseases among US adults. Not surprisingly, preventable influenza exacted the highest cost, estimated to be $5.8 billion. Pneumococcal disease was second, with an estimated cost of $1.9 billion, followed by herpes zoster ($782 million), human papillomavirus, and hepatitis B ($173 million). Federal Practitioner

**U.S.: More than half of mentally ill U.S. adults get no treatment**

19 October - Mental Health America just released its annual assessment of Americans with mental illness, the treatment they receive and the resources available to them — and the conclusions are sobering: Twenty percent of adults (43.7 million people) have a mental health condition, and more than half of them do not receive treatment. Among youth, the rates of depression are rising, but 80 percent of children and adolescents get either insufficient treatment or none at all. ... The national community-based nonprofit ranked all 50 states and the District of Columbia on 15 measures, including adults with any mental illness, youth with at least one major depressive episode in the past year, and the availability of mental-health workers. Even though more Americans are insured, the report found a dire need for adequate treatment, especially in the Deep South. Arkansas, Mississippi and Alabama had the least access to care for the mentally ill and the highest rates of imprisonment, with a total of more than 57,000 incarcerated men and women in those states suffering mental-health conditions. The Washington Post
U.S.: Ohio *cryptosporidium* outbreak inches up, 937 cases

20 October - The outbreak of the parasitic disease, cryptosporidiosis, in Central Ohio increased by 22 cases in the past week, bringing the total in the three counties of Columbus, Franklin and Delaware counties to 937. *Outbreak News Today*

U.S.: Toxic chemicals tied to $340B in US health costs and lost wages

18 October - Chemicals found in plastic bottles, flame retardants, metal food cans, detergents, cosmetics and pesticides cost the U.S. more than $340 billion a year in health costs and lost earnings, a new study estimates. That's more than twice the annual estimated cost of $163 billion in the European Union, where regulations may limit exposure to some of these chemicals. ... The chemicals in question are known as endocrine disruptors. ... 

Researchers reviewed blood sample and urine analyses that documented the presence of endocrine disruptors among U.S. participants in the National Health and Nutrition Examination Survey (NHANES). They estimated total costs linked to these chemicals based on both the direct cost of treatment and the indirect cost of lost productivity or earnings. Then, they compared the U.S. results to findings from a previous study done in Europe. Costs are higher in the U.S. in large part due to widespread use of a chemical mixture applied to furniture to make it less flammable that has been restricted in Europe since 2008. *Fox News*

U.S.: Trust for America's Health releases "Blueprint for a Healthier America" report

19 October - Today, the Trust for America's Health (TFAH) released *Blueprint for a Healthier America 2016: Policy Priorities for the Next Administration and Congress* which calls for a new approach to health – prioritizing improving health and addressing major epidemics in the United States. "It's time for a sea change from our current sick care system to a true health system, where we focus on preventing disease and improving quality of life," said Richard Hamburg, Interim CEO and President of TFAH. "In the Blueprint, we highlight high-impact policies that could help spare millions of Americans from preventable health problems and save billions in avoidable healthcare costs – if we make them a priority." The report highlights pressing crises and how investments could yield positive returns on investment by adopting proven health strategies. *PR Newswire*
China touts reforms, vows to battle corruption in organ donation system

17 October - China has zero tolerance for non-voluntary organ transplants and is fighting corruption in its fledgling donor system, an official who has led reform said on Monday, as Beijing seeks to leave behind an era of controversial organ harvesting. Last year, China officially ended systematic use of organs from executed prisoners in transplant procedures, a practice long condemned by international human rights groups and medical ethicists. Authorities keen to promote an image of a donor system more in keeping with China's growing prominence have cracked down on a black market in organ trafficking and stepped up public donor rates to help meet a huge demand for transplants. Reuters

India: 22 killed in Bhubaneswar hospital fire

18 October - At least 22 people have died when a fire broke out at a private hospital in the eastern Indian state of Odisha, according to police, with officials warning the death toll could rise. More than 40 critically ill patients were trapped in an intensive care unit by the blaze on Monday, which is believed to have been triggered by an electric short circuit in the dialysis ward of the SUM hospital building in Bhubaneswar. ... [Yogesh] Khurania said initial reports suggested that most of the victims had died owing to smoke inhalation, with toxic smoke filling the entire floor of the building and hampering rescue efforts. Al Jazeera

Haiti: Cholera deepens Haiti’s misery after hurricane

15 October - Even before the winds and rain toppled nearly everything standing, cholera was already [in Rendel]. It came down from the mountains, washing into the lives of the thousands who once lived above the river. Now the only sign of life is in a makeshift clinic dealing with hundreds of suspected cholera cases, a small concrete building where just a few nurses contend with the swarms of patients arriving every hour. There is only one public official left. The mayor was struck by cholera and left on foot to seek treatment hours away. One deputy died of the disease last week. Another fled, like so many others, to escape the ruin visited on the town of Rendel by Hurricane Matthew and its aftermath. "Ninety percent of our village is gone," said Eric Valcourt, a priest in the Roman Catholic parish that
runs the clinic and a school that now serves as a shelter for those too sick or poor to leave. "Many left by foot to escape the disease and devastation. The rest died from cholera or the hurricane." *The New York Times*

**Venezuela: ‘Like doctors in a war’ - inside Venezuela’s healthcare crisis**

19 October - ... [Venezuela’s economic] problems all converge in the nation’s hospitals, where doctors report rising levels of mortality thanks to a dire shortage of medical supplies, shutdowns of operating theatres, staff declines and violent crime, including gunshots during surgery and mugging in corridors. ... Reliable data is hard to find. The government has acknowledged that maternal mortality – a key healthcare indicator – has doubled in the past year. The opposition says the deterioration is five-fold – and that death of newborns increased 100-fold. The Venezuelan Health Observatory, a research centre at the Central University of Venezuela in Caracas, estimates that fewer than 10% of operating theatres, emergency rooms and intensive care units are fully operational. It says 76% of hospitals suffer from scarcity of medicines, 81% have a lack of surgical materials and 70% complain of intermittent water supply. "We are seeing a collapse in the public health system."

*The Guardian*