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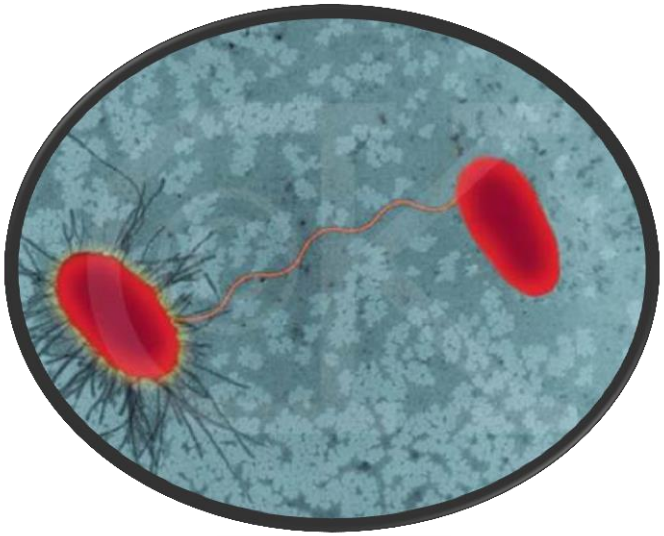
Infection Prevention
eBug Bytes

May 2016



R Factor Transmission of antibiotic resistance between microorganisms

Ultrasound Transducer Disinfection in Emergency Medicine Practice

- External ultrasound transducer disinfection is common practice in medicine. Unfortunately, clinically significant organisms, such as MRSA, Pseudomonas aeruginosa, and Klebsiella pneumonia spread throughout healthcare facilities via direct contact despite disinfection protocols. Ultrasound transducers and coupling gel provide potential vectors for pathogen transmission, especially in immunocompromised and high-risk patient populations. Researchers sought to conduct a survey to investigate the variety of cleaning solutions or sanitary wipes used and evaluate current standard practice for transducer disinfection across emergency medicine training programs in the United States. Eighty-three academic emergency medicine programs participated in this study. Eighty-seven percent of responding programs do not have a mandated protocol or standard contact time for transducer disinfection. Ninety percent of institutions use disinfectant solution or disinfectant wipes, as the standard of practice, to cleanse ultrasound transducers after every use. Currently, there is a great deal of variability with regard to non-endocavitary transducer disinfection protocols that seems to stem from the vast number of disinfectant products and ultrasound manufacturer disparate recommendations. In order to mitigate risk to patients and reduce healthcare costs linked to nosocomial infections; healthcare providers, ultrasound companies, and disinfectant manufacturers must develop a universal use disinfectant and a standard protocol for ultrasound device disinfection for noncritical device disinfection in the emergency department.
- Reference: Hoyer R, Adhikari S and Amini R. Ultrasound transducer disinfection in emergency medicine practice. Antimicrobial Resistance & Infection Control. 2016;5:12

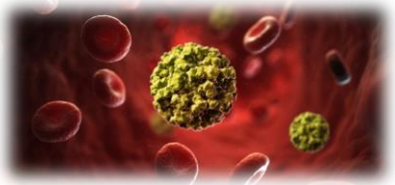
200 PeaceHealth St. John patients tested for HIV, hepatitis viruses

- Nearly 200 PeaceHealth St. John Medical Center patients have been tested for HIV and hepatitis since the hospital a month ago announced an infection control breach that potentially exposed 260 patients to bloodborne diseases.
- So far, no one has contracted hepatitis or HIV as a result of the breach, PeaceHealth spokesman Tim Strickland said Monday. He said the information was current as of 7:30 a.m. Monday. Strickland said PeaceHealth will announce findings from the testing in May but will continue to offer free testing to any patient potentially exposed to HIV and hepatitis.
- The affected patients at St. John were fitted with dental appliances for sleep apnea between Nov. 18, 2013, through Feb. 26, 2016. They were notified in early April by certified mail and offered free testing at the expense of PeaceHealth.
- Strickland emphasized that the risk of infection is “extremely low” and that the hospital is acting out of an “abundance of caution.”
- Source: http://tdn.com/news/local/nearly-patients-have-been-tested-at-st-john-since-infection/article_e4d85ed0-b95e-5ba8-af13-503102cd8241.htm

Harvard mumps outbreak persists: 59 cases confirmed

- A mumps outbreak at Harvard University has affected 59 members of the school community over the last two months. Nearly a dozen students were in isolation.
- Harvard first announced two confirmed cases of mumps at the school in March. Despite investigations into the infection's cause and efforts to isolate affected students, the number has continued to rise.
- A viral infection, mumps causes swelling in the salivary glands and cheeks. Its symptoms include fever, aching, headache, and a loss of appetite. Often, mumps spreads through direct physical contact with an infected person or an object or surface which someone with mumps has touched. The Cambridge Public Health Department has been tracking the infection's spread, interviewing those infected to determine with whom the students had contact. Harvard students aren't alone — during the time of the school's outbreak, Massachusetts had already confirmed 12 cases of mumps across the state this year, including UMass Boston two confirmed cases in March at UMass Boston and one case in February at Bentley University in Waltham.
- Source: https://www.boston.com/news/local-news/2016/04/26/harvard-40-cases-mumps

Norovirus costs over $60 billion

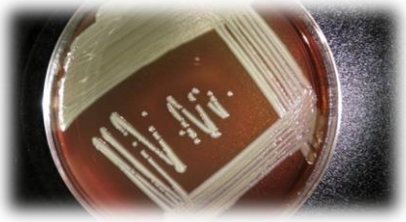


- Norovirus sickens nearly 700 million people worldwide annually and costs health care systems more than $4 billion a year. And when lost productivity and other societal costs are included, that price tag jumps to more than $64 billion. Researchers assessed the global economic impact of the highly contagious virus, which is common in both poor and rich nations. Norovirus can cause symptoms such as nausea, diarrhea and vomiting. There is no vaccine or treatment once you are infected. The study, published online April 26 in the journal *PLoS One*, shows the need for increased efforts to prevent the disease. "The costs associated with norovirus are high -- higher than for many diseases, including rotavirus -- that have gotten a lot more attention. Our study presents an economic argument for greater consideration of norovirus. It has been flying under the radar for too long," study senior author Dr. Bruce Lee said in the news release. He is an associate professor in the department of international health at the Bloomberg School.
- Measures to prevent transmission of norovirus include: proper hand washing; following safety precautions when preparing food; improving food and water sources; and keeping people who are sick with norovirus away from others.
- http://journals.plos.org/plosone/article/asset?id=10.1371%2Fjournal.pone.0151219.PDF

Infection alert in catheters could tackle hospital superbugs

- A new infection alert system in catheters could prevent serious infections in millions of hospital patients worldwide. The system, detailed in a new paper in Biosensors and Bioelectronics, changes the color of the urine so patients and caregivers can see easily if bacteria are starting to block the catheter.
- Over time bacteria can build a layer called a biofilm inside the catheter tubes that eventually blocks them. The urine can't escape and pushes back into the kidneys where the bacteria can cause kidney failure, body-wide infection and death. Up to half of people who use catheters long-term have problems with blockages caused by bacteria, but there is currently no way to detect potential blockages before they cause problems.
- infection alert system The new coating detects biofilms built by a bacterium called Proteus mirabilis, the most common cause of catheter blockage. The system gives advanced warning of a catheter blockage 10 to 12 hours before it happens. The coating is made up of two layers. The first reacts to changes in urine caused by the bacteria, the second layer releases the dye. The dyed urine gathers in the collection bag, turning the urine bright yellow. The color change reveals the infection.
- Source: Scarlet M et al. An in-situ infection detection sensor coating for urinary catheters. Biosensors and Bioelectronics, 2016; 81: 166

Wisconsin and Illinois Elizabethkingia Outbreak



- **Wisconsin Outbreak:** As of Wednesday, the Wisconsin Department of Health Services have reported 59 confirmed cases of *Elizabethkingia anophelis* in the state. There are an additional four cases that tested positive for *Elizabethkingia* but cannot be confirmed as the same strain because the specimens are no longer available for additional testing. Eighteen individuals with confirmed cases of the bacterial strain associated with the outbreak have died in the state. Another Wisconsin resident infected with an *Elizabethkingia* strain that can no longer be confirmed as being attributable to the bacterial strain responsible for the outbreak has also died, for a total of 19 deaths in the state. On April 12, Illinois health officials confirmed 1 case of *Elizabethkingia* related to the Wisconsin outbreak in a deceased resident. The Wisconsin strain has also been linked to a death in Michigan. Most of those infected are over the age of 65. It has not been determined whether the reported deaths were directly caused by the infection or other pre-existing comorbidities.
- **Illinois cluster:** The Illinois Department of Public Health announced 10 state residents have been diagnosed with Elizabethkingia infections, and six of them have died. However, the strain in Illinois is different than that of the Wisconsin outbreak.
- The sources of infection for both the Wisconsin outbreak and the Illinois strain remain unknown. CDC officials have categorized the Wisconsin outbreak as the largest of its kind that the organization has ever investigated. www.cdc.gov

Hepatitis C now kills more Americans than any other infectious disease

- The Centers for Disease Control and Prevention announced Wednesday that one infectious disease now kills more Americans than all others combined.
- New data shows hepatitis C killed nearly 20,000 people in 2014. Even more worrying for doctors is that an estimated 3.5 million people in the U.S. have the hepatitis C virus, but half of them don't even know.
- Hepatitis C symptoms, like fever, nausea and joint pain are often too mild to warrant a trip to the doctor, so it sometimes goes undiagnosed.
- The virus can usually be knocked out with a 12-week pill regimen, but if left untreated, it can cause cirrhosis or cancer in the liver.
- Most of those killed by hepatitis C are baby boomers because the virus was unknown to doctors when they were kids. Blood banks were not screening the blood supply for hepatitis C and many people got infected that way. Also, health care systems were not as diligent in practicing good infection control.
- And most new cases are generally found in young people with a history of intravenous drug use, since the virus is passed either through blood or sexual contact. The CDC recommends one-time testing for everyone born between 1945 and 1965 and regular testing for those with a high risk of contracting the virus. www.cdc.gov

Endoscopy Linked to 3 'Superbug' Deaths at Pasadena's Huntington Hospital

- At least three patients died following an endoscopic procedure performed last year at Huntington Hospital in Pasadena (CA). Each of the patients was infected with a multidrug-resistant Pseudomonas bacteria after undergoing ERCP.
- Although this deadly outbreak was identified in August 2015, only now are Huntington Hospital officials acknowledging the deaths of these three patients (previously thought only to have been infected with *Pseudomonas,* not necessarily to have expired). The mortality rate of patients infected with multidrug-resistant bacteria — CRE is another example — can be as high as 50%. Both Pseudomonas and CRE can be found in soil, water, and a patient's gastrointestinal tract. Last year, on August 19, 2015, The Los Angeles Times reported that Huntington Hospital was investigating a suspected outbreak related to a contaminated duodenoscope –the same type of endoscope that had been linked between 2012 and 2015 to more than a dozen other outbreaks of CRE — or "carbapenem-resistant Enterobacteriaceae" — and related superbugs. Today's Times report discloses for the first time what the hospital, state and local health officials have not previously revealed to the public about this outbreak: that the three infected patients expired.
- http://www.latimes.com/business/la-fi-olympus-scope-pasadena-20160504-snap-story.html

‘Superbug’ Strikes Again, Infects 8 Endoscopy Patients, 2 Die in Colorado

- At least eight patients were infected with a deadly bacteria earlier this year — two of whom died — following an endoscopic procedure performed at a hospital in Colorado. Olympus filed a regulatory report with the Food and Drug Administration (FDA) on February 24, 2016, documenting at least six patients who were infected with deadly multidrug-resistant E. coli bacteria. Reported now for the first time, this deadly outbreak occurred earlier this year at University of Colorado Hospital in Aurora, CO). The hospital’s infections appear to be this year’s most significant bacterial outbreak linked to ERCP and duodenoscopes. Olympus’ same regulatory report provides additional details about this hospital’s patients, stating that Olympus was informed five days later, on February 29, 2016, that two more patients had become infected with the outbreak’s resistant bacteria, totaling eight infected patients. These patients were infected following ERCP, which the hospital performed using an Olympus TJF-Q180V duodenoscope — the same censured endoscope that the company recalled the previous month, on January 15, 2016.
- Source: http://endoscopereprocessing.com/2016/03/8-endoscopy-patients-infected-2-die-in-colorado-possibly-from-a-superbug/

UPMC mold infections stemmed from improper use of negative-pressure rooms

- The CDC released findings Thursday from its investigation into a cluster of mold infections at two UPMC hospitals in Pittsburgh that contributed to the deaths of four organ transplant patients.
  - 1. Three of the infections were classified as probable cases, and the fourth case was classified as suspected. All four patients had solid organ transplants — in the three probable cases, patients received heart (two) and lung (one) transplants, while the fourth patient received a second liver transplant.
  - 2. The three patients with probable cases received care in the same room of a 20-bed cardiothoracic intensive care unit. That room was the only negative-pressure isolation room in the unit, and none of the three patients needed negative-pressure isolation.
  - 3. The room had a door leading to a carpeted hallway and family room. "Frequent use of this door by personnel and visitors might have disturbed airflow, allowing dust and mold spores, if present, to enter the room," reads the CDC report.
  - 4. "Caring for immunosuppressed patients in negative-pressure environments has been previously identified as a risk factor for invasive mold infections, possibly related to the potential to concentrate dust and mold spores in these rooms," the CDC report concludes. "This investigation highlights how unnecessary placement of immunocompromised patients in negative-pressure rooms could result in net harm and therefore should be avoided."
  - 5. In a statement to Trib Live, Tami Minnier, MSN, RN, UPMC's chief quality officer, said, "Our hope is that other medical centers will learn from our experience and implement the rigorous controls we voluntarily put in place to ensure patient safety. We appreciate the ongoing support from the CDC, as well as that of our local and state health authorities."

UV light kills CRE on high-touch surfaces in 15 minutes

- Researchers at Johns Hopkins Hospital in Baltimore assessed the efficacy of using ultraviolet light to disinfect high-touch areas in patient rooms in a recent study published in the journal *Infection Control & Hospital Epidemiology*.
- Specifically, the research focused on eliminating Carbapenem-resistant *Enterobacteriaceae* organisms such as *Klebsiella pneumoniae*, *E. coli* and *Enterobacter cloacae*. The high-touch areas in the patient room and bathroom chosen by the authors of the study included the bed rail, vitals monitor, keyboard, tray table, call box, sink, shower curtain and toilet seat.
- Ultimately, the study found UV light treatment was "highly effective" at killing CRE on high-touch surfaces within 15 minutes of exposure. In fact, the light treatment completely eliminated bacteria on 25 different high-touch surfaces. The researchers identified CRE growth on only two surfaces after UV treatment — the shower curtain and the bed rail.
- "UV technology is an effective method to disinfect CRE from high-touch surfaces in the patient-care environment," the study concluded. "Methods such as this may become increasingly important as antimicrobial-resistant Gram-negative pathogens continue to emerge.“ Source: ICHE – May 2016 issue

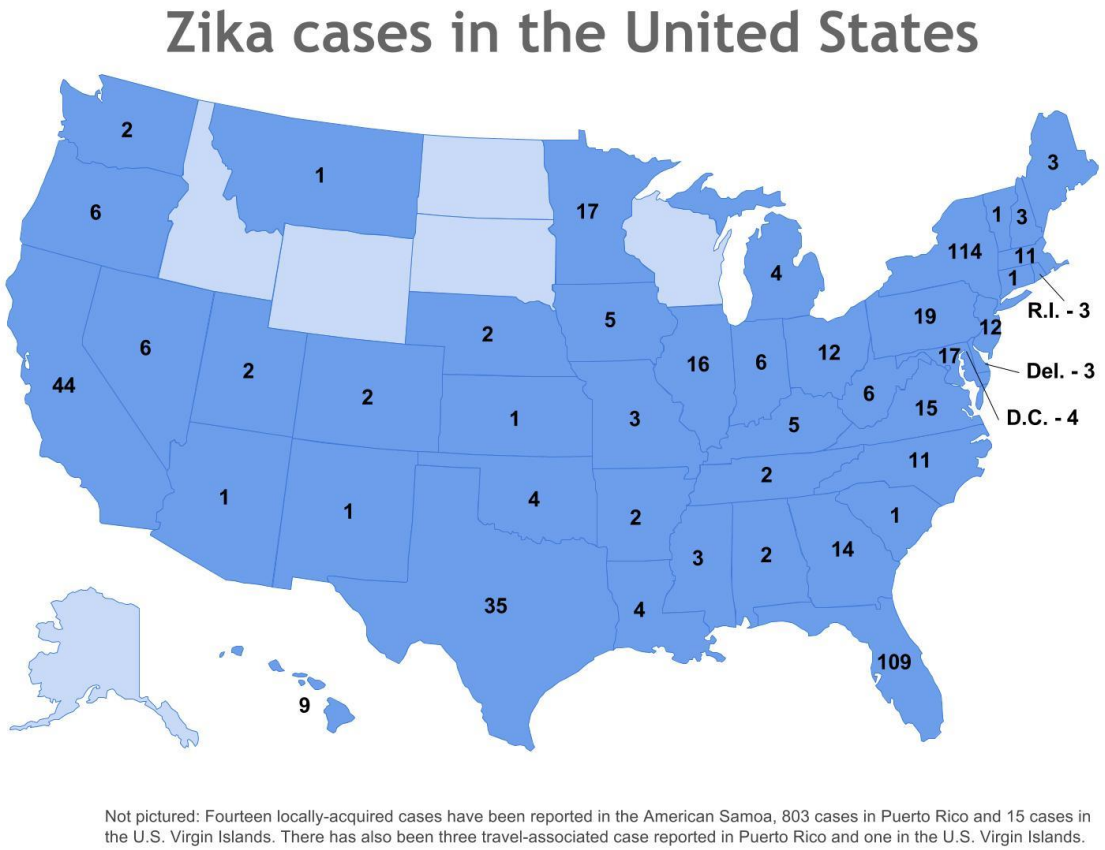
Chickenpox outbreak infects 75 in an Orthodox Jewish community in Brooklyn

- The New York City Health Department is warning parents about a chickenpox outbreak that has infected 75 people in the Orthodox Jewish community in Williamsburg, Brooklyn, according to CBS New York.
- Of those infected, 72 percent had not been vaccinated, and 14 percent of those vaccinated did not receive the appropriate number of recommended doses. The average age of those infected is 3 years old.
- Fidel Garcia, MD, medical director of PM Pediatrics of Brooklyn, told CBS New York that being near someone with chickenpox can be especially dangerous for infants, pregnant women and anyone with compromised immune systems. "Very risky, very dangerous," he said. "It's always important to monitor for every cough, runny nose."
- Recently, in Michigan, cases of the chickenpox have reportedly increased by more than 50 percent. Most of the infections have occurred in unvaccinated children.
- Source: http://www.beckershospitalreview.com/quality/chickenpox-outbreak-infects-75-in-an-orthodox-jewish-community-in-brooklyn.html

Decaying Long Island V.A. Hospital Closes Operating Rooms

- Usually, there are 10 operations a week scheduled at the Northport Veterans Affairs Medical Center on Long Island. But since mid-February, the hospital's five operating rooms have stood empty and unused, shut down after sand-size black particles began falling from air ducts. The ducts are part of the hospital's HVAC system. Providing heating, ventilation and air-conditioning, the system is integral to improving the hospital's air quality and mitigating the airborne transmission of germs that could lead to infections. Patients in need of surgical treatment have been sent to other facilities, such as Stony Brook University Hospital a half-hour away, or to sister facilities like the James J. Peters V.A. Medical Center in the Bronx or the Manhattan campus of the V.A.'s New York Harbor Healthcare System, said Philip Moschitta, Northport's director. Others are being referred to the V.A.'s Choice Card program, which allows some veterans to obtain taxpayer-funded care from private doctors, though it has been troubled by delays.
- Northport is a 502-bed teaching hospital that serves about 18,000 patients per year. Doctors there perform 633 inpatient and 1,822 outpatient surgeries a year.
- http://www.nytimes.com/2016/05/20/nyregion/decaying-long-island-va-hospital-closes-operating-rooms.html?_r=0

On May 20, the CDC announced that two Zika virus infection surveillance systems — U.S. Zika Pregnancy Registry and the Puerto Rico Zika Active Pregnancy Surveillance System — are monitoring 157 pregnant women in the states and 122 pregnant women in U.S. territories with laboratory evidence of Zika infection



As of May 19, 2016 www.cdc.gov