Ignaz Philipp Semmelweis (July 1, 1818 – August 13, 1865), was a Hungarian physician called the “savior of mothers” who discovered, by 1847, that the incidence of puerperal fever, also known as childbed fever could be drastically cut by use of hand washing standards in obstetrical clinics.

While employed as assistant to the professor of the maternity clinic at the Vienna General Hospital in Austria in 1847, Semmelweis introduced hand washing with chlorinated lime solutions for interns who had performed autopsies. This immediately reduced the incidence of fatal puerperal fever from about 10 percent (range 5–30 percent) to about 1–2 percent. At the time, diseases were attributed to many different and unrelated causes. Each case was considered unique, just like a human person is unique.

Semmelweis’ hypothesis, that there was only one cause, that all that mattered was cleanliness, was extreme at the time, and was largely ignored, rejected or ridiculed. He was dismissed from the hospital and harassed by the medical community in Vienna, which eventually forced him to move to Budapest.

Semmelweis’ practice only earned widespread acceptance years after his death, when Louis Pasteur developed the germ theory of disease which offered a theoretical explanation for Semmelweis’ findings. Semmelweis is considered a pioneer of antiseptic procedures.

A Welcome from Joseph Scaletta

Welcome to the Semmelweis Times! This new publication from the Kansas Department of Health and Environment’s HAI program will highlight late-breaking infection prevention and control research, training opportunities, and resources geared specifically for infection preventionists working in acute care settings. I thought it appropriate that in this, our inaugural issue, we pay tribute to the newsletter’s namesake Ignaz Semmelweis, the father of hand hygiene. Additionally, we’ve included new data regarding antimicrobial prescribing practices and suggestions for monitoring hand hygiene compliance.

We hope that you will find this new resource valuable. Please know that we welcome your comments and suggestions, so if there’s something that you would like to see within these pages, send us your ideas so we can get them published.

As we begin this new year, I personally would like to thank each of you for your continued work and dedication to improving patient safety.

Cheers,

Joseph M. Scaletta

Joseph M. Scaletta, MPH, BSN, RN, CIC
Hand Hygiene: How Does Your Facility Measure Up?

Growing concern about the frequency of healthcare-associated infections (HAIs) has made hand hygiene an increasingly important topic for hospital administrators. About 5% of all hospitalized patients in the United States contract HAIs each year resulting in:

- Approximately 750,000 million infections
- Almost 80,000 deaths, and
- An economic impact in the billions

Healthcare providers should practice hand hygiene at key points in time to disrupt the transmission of microorganisms to patients including: before patient contact; after contact with blood, body fluids, or contaminated surfaces (even if gloves are worn); before invasive procedures; and after removing gloves (wearing gloves is not enough to prevent the transmission of pathogens in healthcare settings).

Though hand hygiene (HH) is a respected infection control method that is more than 150 years old, recent success stories, economic analysis, and comments from world infection prevention leaders are proof that HH programs for institutions, large or small, are an important, cost-efficient part of an infection prevention program.

The CDC and World Health Organization have published guidelines, and accrediting agencies now require healthcare facilities to develop infection control programs that include a measurement of hand hygiene, as well as a process to show improvement. There are three main methods for measuring hand hygiene performance:

- Directly observing
- Measuring product use
- Conducting surveys

Changing entrenched behaviors to improve hand hygiene requires time, focus, and people. Establish baselines and goals, identify and correct the root causes of hand hygiene lapses, educate staff on how to use the data, share best practices and tools to help reinforce behavior, and provide ongoing support, including solutions for issues that emerge. Researchers have developed detailed data collection methodologies, audit tools, and scoring systems to help assess these issues. "Measuring Hand Hygiene Adherence: Overcoming Challenges" will help health care organizations target their efforts in measuring hand hygiene performance. The monograph offers examples of measurement tools. You can read the full monograph on Observation Schedules, Glove Monitoring, Survey Questions etc. on the CDC site:

Surveillance is one of the core activities of public health assessment. It requires accurate, complete, and most importantly timely data. Advances in health information technology and electronic health records are helping to make surveillance more effective and timely. Under provisions of the American Recovery and Reinvestment Act of 2009, the concept of meaningful use was established to enable electronic exchange of healthcare information for public health purposes.

The Kansas Department of Health and Environment (KDHE) has been accepting healthcare information under meaningful use. Program areas such as syndromic surveillance, electronic laboratory reporting, notifiable disease reporting, immunization registry reporting, and cancer registry reporting are all benefitting from this electronic exchange. Linda Greene, RN, recently wrote in Infection Control Today, “HAIs and antimicrobial resistance are major problems in U.S. healthcare institutions. Surveillance is a critical component of prevention efforts.”

The KDHE Syndromic Surveillance Program (SyS) is working to support the agency’s HAI staff. At present, SyS staff are onboarding eligible hospitals (EH). To date about 25 hospitals accounting for over 17% of emergency department (ED) visits are now sharing electronic information. Another 81 hospitals accounting for about 74% of the state’s ED visits are still testing their interface for sharing electronic exchange.

KDHE participates in the National Syndromic Surveillance Platform and uses a Centers for Disease Control and Prevention (CDC)-funded syndromic Surveillance application called BioSense. Hospitals providing electronic information can provide their data directly to BioSense or provide it to the Kansas Health Information Network (KHIN) which submits the data in a batch mode to the BioSense servers.

As Kansas syndromic data collection matures it is hoped that facilities will submit at least once per day. Once processed into the National Syndromic Surveillance Platform, CDC and KDHE hope to make available a front-end application to evaluate the information. Electronic Surveillance System for the Early Notification of Community-based Epidemics or ESSENCE was developed by Johns Hopkins University. It will be possible for hospitals, epidemiologists, and local health departments to log into ESSENCE and assess syndromic activity. Rollout of ESSENCE is slated for 2016-2017.

In the meantime, KDHE epidemiologists query the Syndromic Surveillance data monitor disease trends; follow the size, spread, and tempo of outbreaks; and reassure that an outbreak has not occurred.

To assure there is involvement from all healthcare segments in syndromic surveillance KDHE has established a Syndromic Surveillance Governance Group (SySGG). Meeting quarterly the SySGG will evaluate results, identify topics and mass gatherings for syndromic surveillance and support the use of the data.

The HAI and SyS programs are seeking interested hospital infection preventionists (IP) to serve on the SySGG. IPs play an important role in the surveillance and prevention of HAIs. In the coming years as electronic systems become more advanced there will be new opportunities to use this information for infection prevention. If you have questions or are interested in participating in syndromic surveillance contact Greg Crawford at gcrawford@kdheks.gov or 785-296-1531.

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Source: Infection Control Today
Kansas Infection Prevention Certification Reimbursement Program

Kansas Department of Health & Environment (KDHE) has a very exciting opportunity for professionals interested in getting certified as a IPC in Kansas! We heard from the members of Kansas Association of Professionals in Infection Control and Epidemiology (APIC) about the financial barriers associated with the certification exam cost. KDHE has partnered with Kansas Healthcare Collaborative (KHC), Kansas Hospital Association (KHA) to provide reimbursement assistance to applicants interested in taking the Certification Board of Infection Control and Epidemiology exam for the first time. Our goal is to help you expand your future and develop new capabilities for leading effective infection control programs within your health care setting. The eligibility criteria is simple:

- First time taking exam
- Provide proof of completion of examination and receipt of exam cost.
- Have not received other funding for reimbursement cost.

Complete the application and fax or mail with your receipts to KDHE. Application and reimbursement information can be found at: [http://www.kdheks.gov/epi/download/KS_CIC_Reimbursement_Program.pdf](http://www.kdheks.gov/epi/download/KS_CIC_Reimbursement_Program.pdf)

Source: KDHE - HAI Program

KDHE VPD Common Rash Illness Reference Cards

The Infectious Disease Epidemiology and Response Section and the Kansas Immunization Program at the Kansas Department of Health and Environment have developed reference cards on vaccine preventable diseases (VPDs) and common rash illnesses. This booklet was designed for nurses that work with school-aged children as a compact, but thorough resource on causative agents, transmission routes, symptoms, treatment, and reporting requirements. In addition, the book includes pictures of typical symptoms persons will experience with most VPDs or rashes. We hope these reference cards will be helpful and may serve as a good review for certification/recertification in infection control. If you would like a VPD and Common Rash Illness booklet, please contact Karen Crawford by email at kcrawford@kdheks.gov or phone at 785-291-3970.

Source: KDHE - Infectious Disease Epidemiology and Response/Kansas Immunization Program
WHO Issues List of Top Emerging Diseases Likely to Cause Major Epidemics

A panel of scientists and public health experts convened by the World Health Organization (WHO) met in Geneva last week to prioritize the top five to 10 emerging pathogens likely to cause severe outbreaks in the near future, and for which few or no medical countermeasures exist. These diseases will provide the basis for work on the WHO Blueprint for R&D preparedness to help control potential future outbreaks.

The initial list of disease priorities needing urgent R&D attention are: Crimean Congo hemorrhagic fever, Ebola virus disease and Marburg, Lassa fever, MERS and SARS coronavirus diseases, Nipah and Rift Valley fever. The list will be reviewed annually or when new diseases emerge.

This priority list forms the backbone of the new WHO Blueprint for R&D preparedness by focusing accelerated R&D on dangerous pathogens which are the most prone to generate epidemics. As well as advocating for the initiation or enhancement of the R&D process to develop diagnostics, vaccines and therapeutics for the five to 10 diseases, the Blueprint will also consider behavioral interventions, and filling critical gaps in scientific knowledge to allow the design of better disease control measures.

The group of experts who developed the list represented a range of disciplines, including virology, microbiology, immunology, public health, clinical medicine, mathematical and computational modelling, product development, and respiratory and severe emerging infections. The conclusions of the experts were reviewed by the Blueprint’s independent Scientific Advisory Group. Future action in this area includes fine-tuning of the prioritization methodology and the development of practical tools to assess any new diseases that may emerge. Three other diseases were designated as serious, requiring action by WHO to promote R&D as soon as possible: chikungunya, severe fever with thrombocytopenia syndrome, and Zika. Other diseases with epidemic potential, such as HIV/AIDS, tuberculosis, malaria, avian influenza and dengue, were not included in the list because there are major disease control and research networks for these infections, and an existing pipeline for improved interventions.

Source: ICT Infection Control Today, ICTech Immersion Center

AHRQ Releases new Carbapenem-Resistant Enterobacteriaceae (CRE) Control and Prevention Toolkit

Leaders in infectious disease and infection control, as well as those concerned with patient safety and performance improvement, can use this toolkit to develop interventions to control carbapenem-resistant Enterobacteriaceae (CRE). CRE are the result of a complex family of plasmid-borne resistance factors that circulate among Enterobacteriaceae. In the United States, the overwhelming majority of CRE cases are caused by the plasmid-borne Klebsiella pneumoniae carbapenemase (KPC) gene circulating among Enterobacteriaceae, mostly commonly among Klebsiella pneumoniae isolates. KPC-producing organisms have spread epidemically in the United States and around the world among hospitalized patients.


Source: Agency for Healthcare Research and Quality
AHRQ Report: Hospital-Acquired Conditions Continue To Decline

Saving Lives and Costs

A new AHRQ report released by the Department of Health and Human Services shows that an estimated 87,000 fewer patients died in hospitals and nearly $20 billion in health care costs were saved as a result of reductions in hospital-acquired conditions (HACs) from 2010 to 2014. The report indicates that HACs were reduced by 17 percent in 2014, contributing to an overall reduction of 2.1 million HACs since 2010. A new infographic highlights important findings. To develop the report, Saving Lives & Saving Money: Hospital-Acquired Conditions Update, AHRQ analyzed the incidence of avoidable HACs compared with 2010 rates, using as a baseline estimates of deaths and excess health care costs that were developed when the Partnership for Patients was launched. AHRQ's analysis included a number of HACs including adverse drug events, catheter-associated urinary tract infections, central line-associated bloodstream infections, pressure ulcers and surgical site infections, among others. AHRQ has produced a variety of tools and resources to help hospitals and other providers prevent hospital-acquired conditions, such as infections, pressure ulcers and falls. Recently the Toolkit for Reducing CAUTI in Hospitals was released, which is based on the experiences of more than 1,200 hospitals nationwide that participated in an AHRQ-funded project to apply the Comprehensive Unit-based Safety Program to reducing catheter associated urinary tract infections (CAUTI). This new report updates data released in December 2014. [http://www.ahrq.gov/news/newsletters/e-newsletter/496.html]

Source: Agency for Healthcare Research and Quality

Antibiotic Prescribing Rates and Super Bugs

At least 2 million Americans become infected every year with bacteria that are resistant to antibiotics. At least 23,000 people die as a direct result of these infections.

Worldwide, antibiotic-resistant bacteria is already implicated in at least 700,000 deaths annually, and it trends continue, some estimate that death toll could Skyrocket to 10 million a year by 2050.

In the United States, CDC estimates that about 50 percent of antibiotic prescriptions written in outpatient settings, such as primary care offices and clinics, are unnecessary.

The map shows how prescribing rates differ by geography. West Virginians had the highest antibiotic-prescribing rate in 2014, at 1.24 per person, more than double the rate for Alaskans.

Source: IMS health, Center for Disease Control and Prevention (CDC)
Active Shooter: Run, Hide, Fight

Recent events have demonstrated that no place is considered safe in today’s society. If schools and churches are targeted by such acts of violence, then healthcare facilities should be aware that this type of incident can occur at any time. Are you prepared?

The FBI uses the Run, Hide, Fight response for active shooters. This is a three step process to prevent or reduce the loss of life in this situation.

- Run: Immediately evacuate the area if it is safe to do so.
- Hide: Seek a secure place where you can hide or deny access to the shooter.
- Fight: This should only be used as a last resort. Each individual has to make this decision based on the situation.

Remember, your number-one job in this type of situation is to ensure your own safety. Preparedness and training are vital to survive an active shooter incident. The FBI states that training provides the means to regain your composure, recall at least some of what you have learned, and commit to action. In order to be effective in these situations, you need to know your active shooter policy. If you are not sure, ask so you are prepared.

Source: Apic - Prevention in Action, Winter 2015 - Tonya Wagner, RN, APIC Emergency Preparedness Committee member

Disinfection Practices To Reduce HPV Ultrasound Probe Transmission Risks

In the US, transvaginal and transrectal ultrasound probes are classed as “semi-critical” medical devices as they come into contact with mucous membranes. Multiple US guidelines recommend high level disinfection (HLD) of probes between patients to prevent cross contamination. HLD completely eliminates all microorganisms on the probe, except for a small number of bacterial spores.

Ultrasound probe covers do not reduce the requirements for HLD. Studies show covers have a high rate of perforation before use and probes may become contaminated during handling, or when the cover is placed onto, or removed from, them. Due to the difficulties of producing natural, infectious HPV for research, disinfectant efficacy testing against HPV has not previously been possible. This changed recently when a method to produce sufficient infectious HPV for testing was developed and the first HPV disinfectant efficacy study was published in 2014.

The results showed that two disinfectants commonly used for high level disinfection in medical and healthcare facilities, glutaraldehyde and ortho-phthalaldehyde (OPA), do not kill native HPV16 - even after 24 hours of contact time. Facilities may wish to re-visit current practices as they relate to transvaginal and transrectal ultrasound probes.

Source: ICT— Infection Control Today, ICTech Immersion Center
Ebola Situation Report

No confirmed cases of Ebola virus disease (EVD) were reported in the week to 20 December. All contacts associated with the cluster of 3 confirmed cases of EVD reported from Liberia in the week to 22 November have now completed 21-day follow-up. The first-reported case in the cluster, a 15-year-old boy, died on 23 November. Two subsequent cases, the boy’s father and younger brother, tested negative twice for Ebola virus on 3 December and were discharged.

Human-to-human transmission linked to the recent cluster of cases in Liberia will be declared to have ended on 14 January 2016, 42 days after the 2 most-recent cases received a second consecutive negative test for Ebola virus, if no further cases are reported. Human-to-human transmission linked to the primary outbreak in Guinea will be declared to have ended on 29 December 2015, 42 days after the country’s most recent case, reported on 29 October, received a second consecutive negative test for Ebola virus. In Sierra Leone, human-to-human transmission linked to the primary outbreak was declared to have ended on 7 November 2015. The country has now entered a 90-day period of enhanced surveillance scheduled to conclude on 5 February 2016.

In order to effectively manage and respond to the consequences of residual Ebola risks, Guinea, Liberia, and Sierra Leone have each put surveillance systems in place to enable health workers and members of the public to report any case of illness or death that they suspect may be related to EVD to the relevant authorities. In the week to 20 December, 1036 community deaths alerts were reported in Guinea from all of the country’s 34 prefectures. Over the same period 9 operational laboratories in Guinea tested a total of 537 new and repeat samples from 13 of the country’s 34 prefectures. In Liberia, 842 alerts were received from all 15 of the country’s counties. The country’s 5 operational laboratories tested 939 samples for EVD over the same period. In Sierra Leone, 1446 alerts were reported from all of the country’s 14 districts in the week ending 29 November (the most recent week for which data are available). 991 new samples were tested for EVD by the country’s 8 operational laboratories in the week ending 20 December.

The deployment of rapid-response teams following the detection of a new confirmed case continues to be a cornerstone of the national response strategy in Guinea, Liberia, and Sierra Leone. Each country has at least 1 national rapid-response team, with strengthening of national and subnational rapid-response capacity and validation of incident-response plans continuing through December and January.


Educational Opportunities

Save the Date – Kansas Hospital Association Infection Prevention Conference is March 9. The Kansas Hospital Association will once again be hosting their annual Infection Prevention Conference on Wednesday at the DoubleTree by Hilton, Wichita Airport. CNE credits will be provided. A block of rooms has been reserved at the DoubleTree under a special rate of $119.00 plus tax. The block is open until Feb. 23, 2016. Make your reservation by calling (316) 945-5272. If you have any questions about the 2016 Infection Prevention Conference, please contact Hayley Finch at (785) 233-7436.

Contact Information

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