

# SYNERGY: COMBINING EFFORTS FOR HAI PREVENTION

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News from the Virginia Department of Health's  
Healthcare-Associated Infections (HAI) Program

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## Notes from VDH

Thank you to all hospital infection preventionists who reviewed the NHSN data cleaning report for 2014 and 2015 data and made edits in NHSN, as appropriate. This helps ensure data quality on the state level.



The VDH HAI Program plans to send out a similar report for 2016Q1 (Jan-Mar) in the coming weeks. Please look out for that and submit the data acknowledgment form after checking and editing your data. This VDH deadline is before the CMS 2016Q1 deadline to help you catch potential errors before the data are sent to CMS. Please contact **Sarah.Lineberger@vdh.virginia.gov** with any questions.

## Burkholderia cepacia Multi-State Investigation

The Centers for Disease Control and Prevention (CDC) is collaborating with the Food and Drug Administration, multiple state and local health departments, and numerous healthcare facilities to investigate a multi-state outbreak of *Burkholderia cepacia* infections. These infections have occurred primarily in ventilated patients without cystic fibrosis who are being treated in intensive care units.

*Burkholderia cepacia* (<http://www.cdc.gov/HAI/organisms/bCepacia.html>) is the name of a group or “complex” of bacteria that can be found in soil and water. *B. cepacia* bacteria are often resistant to common antibiotics and pose little medical risk to healthy people. However, people who have certain health problems such as weakened immune systems or chronic lung diseases, particularly cystic fibrosis, are more susceptible to bacterial infections caused by this organism.

VDH will continue to share updates on this investigation with infection preventionists as they become available.

Current recommendations are:

- Facilities should not use any oral liquid docusate products for patients who are critically ill, ventilated, or immunosuppressed.
- Facilities that experience *B. cepacia* complex infections among non-cystic fibrosis (CF) patients or clusters of *B. cepacia* complex infections among CF patients should sequester all oral liquid docusate products.
- Healthcare providers and laboratories should remain on alert for *B. cepacia* complex infections occurring among non-CF patients and should inform infection prevention staff when these infections occur.
- In addition, clusters of *B. cepacia* complex infections among patients with CF should be reported when infection rates appear above endemic rates.
- Please report clusters of cases (i.e., 2 or more hospital-acquired infections) that have occurred since January 1, 2016 to the local health department. Individual cases may be reported for situational awareness.

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## Upcoming Events:

**August 15:** CMS deadline for acute care hospitals, inpatient rehabilitation facilities, and long-term acute care facilities (Jan 1—Mar 31 data)

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## NHSN Notes

### Website Update

In September, all CDC websites will be transitioned to secure websites. To make sure you will be able to continue to access the NHSN website, check your compatibility by going to: <https://www.cdc.gov/nhsn/index.html>. If the NHSN website appears, no further action is necessary. If the website is blocked or does not load, talk with your facility's IT team to identify a solution.

### Training Updates

- Slides from the **2016 NHSN Member's Meeting** held during the APIC Annual Conference have been posted: <http://www.cdc.gov/nhsn/newsletters/index.html>
  - ◇ There is a new optional field on the NHSN BSI form: "Any hemodialysis catheter present: Yes/No". This field is designed to help IPs assess potential CLABSI prevention needs for hospitalized hemodialysis patients.
- The **2016 NHSN Annual Training** presentations are available for viewing on the CDC website, and **Continuing Education (CE) credits are now available**. To access the training videos, and for more information about CE credits, please see the NHSN email sent June 20, or visit <http://www.cdc.gov/nhsn/Training/continuing-edu.html>
  - ◇ **2016 Self-paced Interactive Trainings** are also now available at the same link. These online courses provide instructional slides with detailed graphics, screen shots with step by step examples of form completion for instructional purposes, practice questions, and case study examples.
- Training resources for long-term care facilities are available, including six train-the-trainer webinars and additional guidance documents. Visit the following websites to access this information:
  - ◇ <http://www.cdc.gov/nhsn/training/enrollment-setup/index.html>
  - ◇ <http://www.cdc.gov/nhsn/training/ltc/index.html>

### Updates – New National Baselines in NHSN ('Rebaseline') Using 2015 Data:

- All new SIRs will use the term 'predicted' instead of expected. Variable names and labels for new SIRs will change from numExp to numPred.
- Separate models are being developed for acute care hospitals (ACHs) and critical access hospitals; models are also being developed for LTACHs and Inpatient Rehabilitation Facilities (IRFs).
- Device-associated models: Previously-excluded inpatient locations (e.g., telemetry wards, mixed acuity wards) will be included under the new baseline.
- CLABSI models: Mucosal barrier injuries will be excluded from the new baseline and SIR calculations.
- SSIs: New indicator variables will be added to the SSI line list that will show if the SSI is included in the corresponding SIR model/output. The variables will be similar to current 'FW' LabID indicator variables.
- New procedure exclusion variables will also be added to indicate if a procedure is excluded from the SIR for one or more reasons.
- SSIs: The 'All SSI Model' and the 'Complex Admission/Readmission SSI Model' will be separated for adults and pediatrics. The 'Complex 30-day SSI Model' already contains data for adults only.
- SSIs: New models will exclude SSIs reported as present at time of surgery (PATOS).

#### Updated rebaseline timeline:

- 2016Q1 HAI SIRs will be calculated using the new risk models for CMS submission (deadline 8/15), in addition to being submitted with the original baseline/calculations.
  - ◇ ACHs: 2015 data will be resubmitted to CMS using the new baselines.
- December 10<sup>th</sup> is the scheduled release date for NHSN v8.6 with new models/2015 baseline.
  - ◇ The Dec 2016 release will continue to use the minimum precision criterion requirement of  $\geq 1$  predicted infections to calculate the SIR.
  - ◇ The original (current) baselines and output options will still be available in NHSN, and will be moved to a 'Baseline Set 1' folder.

## CMS Proposed Rule—Conditions of Participation for Hospitals

On June 16th, the Centers for Medicare and Medicaid Services (CMS) published a proposed rule that would update the requirements that hospitals and critical access hospitals (CAHs) must meet to participate in Medicare and Medicaid. Under the new proposed rule, hospitals and CAHs would be required to:

- Have hospital-wide infection prevention and control and antibiotic stewardship programs for the surveillance, prevention, and control of healthcare-associated infections and other infectious diseases, and for the appropriate use of antibiotics;
- Designate leaders of the infection prevention and control program and the antibiotic stewardship program respectively, who are qualified through education, training, experience, or certification. This requirement allows for flexibility in staffing in order to suit the needs of each hospital or CAH.

Clarifications and revisions to the current requirements for hospitals:

- Would require that a hospital's Quality Assessment and Performance Improvement (QAPI) program

incorporate quality indicator data related to hospital readmissions and hospital-acquired conditions;

- Would require that each patient's medical record contain information to justify all admissions and continued hospitalizations, support the diagnoses, describe the patient's progress and responses to medications and services, and document all inpatient stays and outpatient visits to reflect all services provided to the patient; and
- Would require that all patient medical records document discharge and transfer summaries, including any patient discharge instructions.

An overview of all proposed changes are outlined in this CMS press release: <https://www.cms.gov/Newsroom/MediaReleaseDatabase/Fact-sheets/2016-Fact-sheets-items/2016-06-13.html>

To view the proposed rule in the Federal Register and submit a formal comment, go to: <https://federalregister.gov/a/2016-13925>

Comments must be received by August 15, 2016 at 11:59 PM EDT.

## Colistin-Resistant Bacteria Identified

Bacteria carrying the *mcr-I* resistance gene were recently identified in a 49-year-old woman in Pennsylvania. The *mcr-I* gene, first described in 2015, is not susceptible to the antibiotic colistin. Until now, the *mcr-I* gene was not known to be present in the United States. Colistin is one of the last antibiotics that are effective against highly resistant bacteria.

Researchers found that the woman's urine contained *Escherichia coli* possessing the *mcr-I* gene. After susceptibility testing, the pathogen was identified as extended-spectrum beta-lactamase (ESBL) producing *E. coli*, which is often resistant to several common antibiotics. Polymerase chain reaction (PCR) showed the presence of the *mcr-I* gene and indicated significant drug resistance.

The concern over this discovery comes from the ability of this gene to transfer to other organisms due to its location on plasmids. In addition, the bacteria found contained 15 antibiotic-resistance genes on two plasmids, one of which being a rare IncF plasmid. The relationship

between the *mcr-I* gene and IncF plasmid is alarming because these plasmids disseminate resistance and virulence among Enterobacteriaceae.

A CDC Health Alert published on June 13<sup>th</sup> provides more detail about the situation and gives recommendations to prevent the transmission of antibiotic-resistant bacteria, including those resistant to colistin or carrying the *mcr-I* gene. Enhanced surveillance to identify reservoirs of this gene is critical to prevent its spread. Healthcare providers are advised to take standard and contact precautions and keep the environment clean. Any suspected cases should be reported to the local health department, after which, isolates of suspected cases should be retained and forwarded through the Division of Consolidated Laboratory Services (DCLS) for testing at CDC.

For more information: <http://aac.asm.org/content/early/2016/05/25/AAC.01103-16.full.pdf>

To read the CDC Health Alert, go to: <http://emergency.cdc.gov/han/han00390.asp>

## **IDSA and SHEA Antibiotic Stewardship Recommendations**

The Infectious Diseases Society of America (IDSA) and the Society for Healthcare Epidemiology of America (SHEA) recently published evidence-based guidelines for the implementation of antibiotic stewardship programs (ASPs). The goal of an ASP is to utilize interventions that help improve and measure the use of antibiotics. The benefits of an ASP are improved patient outcomes with reduced adverse effects, such as *Clostridium difficile* infection (CDI), and improved rates of antibiotic susceptibility to targeted antibiotics.

The report suggests that ASPs should be led by infectious disease physicians that have stewardship-specific training.

The recommendations for ASPs focus on interventions for targeting specific infectious diseases, measurement to quantify the impact of ASPs and interventions, and developing clinical practice guidelines surrounding antibiotic prescriptions.

Antibiotic stewardship is becoming increasingly important in combating drug resistant diseases. These guidelines from IDSA and SHEA for developing antibiotic stewardship programs present positive steps toward prevention.

To access the guidelines: <http://cid.oxfordjournals.org/content/62/10/1197.long#sec-3>

## **Antibiotic Stewardship Programs in U.S. Acute Care Hospitals: 2014 NHSN Findings**

A report on the 2014 National Healthcare Safety Network (NHSN) annual survey findings on antibiotic stewardship programs (ASPs) was recently published in *Clinical Infectious Diseases*. Antibiotic stewardship has become an important topic as overuse of antibiotics has been associated with causing resistance that increases risk of diseases such as *Clostridium difficile*.

The NHSN annual survey includes 15 questions about antibiotic stewardship, based on the CDC's Core Elements for Hospital Antibiotic Stewardship Programs. The seven Core Elements were divided into characteristics of infrastructure (leadership, accountability, and drug expertise) and implementation (action, tracking, reporting, and education).

Based on the self-reported data from the NHSN survey, hospitals with more than 200 beds had the highest percentage of participation in ASPs, with 59% of those

hospitals implementing a program. Hospitals with more than 50 beds reported more leadership support (69%) and antibiotic stewardship education (69%) than those with fewer than 50 beds (40% and 46%, respectively). However, 25% of hospitals with less than 50 beds reported compliance with all seven Core Elements. The percentage of hospitals in each state that reported meeting all seven Core Elements ranged from 7-58%, with Virginia reporting 49% in 2014.

The National Action Plan to Combat Antibiotic Resistant Bacteria calls for United States hospitals to improve antibiotic prescribing as a key strategy to prevent resistance. Future surveys will continue to evaluate the progress towards implementing these antibiotic stewardship programs and preventing antibiotic resistance.

To read the report, go to: <http://cid.oxfordjournals.org/content/early/2016/05/18/cid.ciw323.abstract>

## **Antibiotic Stewardship in Acute Care: A Practical Playbook**

National Quality Forum's National Quality Partners (NQP) convened more than 25 experts and national stakeholders from the public and private sectors to develop *Antibiotic Stewardship in Acute Care: A Practical Playbook*. The Playbook is designed to help hospitals and health systems strengthen existing antibiotic stewardship initiatives or create antibiotic stewardship programs from

the ground up. Based on CDC's Core Elements of Hospital Antibiotic Stewardship Programs, NQP's Playbook offers practical strategies for implementing high-quality antibiotic stewardship programs in hospitals nationwide. To download the publication, go to: [http://www.qualityforum.org/Publications/2016/05/Antibiotic\\_Stewardship\\_Playbook.aspx](http://www.qualityforum.org/Publications/2016/05/Antibiotic_Stewardship_Playbook.aspx)

## Estimates of Sepsis Mortality in the United States, 1999-2014

The Centers for Disease Control and Prevention (CDC) recently published an *MMWR* article on the estimation of deaths due to sepsis in the United States from 1999-2014.

The difficulty in diagnosing sepsis is due in part to the lack of confirmatory testing. Death certificates and administrative claims data were used in this study to assess sepsis mortality; estimations for sepsis varied by data source.

The annual data on sepsis mortality based on administrative claims was 15-140% higher (range 168,000 – 381,000) than the annual estimates based on death certificates (multiple causes) (range 146,000 – 159,000).

Between 1999-2014, nearly 2.5 million (2,470,666) death certificates had sepsis listed as one of the causes of death; this represented 6% of all deaths during that time period.

Sepsis was indicated as the underlying cause of death for 22% of the deaths with sepsis listed on the death certificate.

Over the 16-year period, the annual estimation of all reported sepsis-related deaths based on death certificate data increased 31%. This increase in the reporting of sepsis may be due to increased reimbursement or increased recognition and awareness of sepsis.

This CDC report emphasizes the need for a reliable definition for sepsis surveillance in order to obtain more accurate data and track national sepsis trends. With this improved data collection, the impacts of sepsis may be better understood and improvements in prevention may be made.

To read the *MMWR* article: <http://www.cdc.gov/mmwr/volumes/65/wr/mm6513a2.htm>

***Did you miss Dr. Michael Stevens' presentation "The Antibiotic Resistance Crisis: Are We Entering the Post-Antibiotic Era" on June 21st? You can check out the on-demand webinar on VHQC's online community! (<http://vhqc-qinqio.ning.com>) Please note: new users will need to create a username and password to access the recording.***

## Infection Prevention and Healthcare Disparities

Qualis Health recently presented a webinar about infection prevention and healthcare disparities. The discussion covered the importance of health equity and data that show the impacts of health disparities on healthcare-associated infections.

According to a 2014 study of Medicaid data between 2009 and 2011, Asian and Hispanic patients hospitalized for cardiovascular disease, pneumonia, or major surgery had much higher rates of HAIs (1.8/100,000 for Asian patients and 1.5/100,000 for Hispanic patients) than white non-Hispanic patients (1.1/100,000). This difference is thought to be a result of language barriers and miscommunication between physicians and their patients.

Data from a disparities report by the Agency for Healthcare Research and Quality (AHRQ) and Centers for Medicare & Medicaid Services (CMS) were also presented. This report showed that from 2009-2013, Black patients aged 18 years and older experienced more mechanical adverse events associated with central venous

catheter placement than White adult patients, with the exception of the year 2012. In 2013, more than 6% of Black patients experienced adverse events associated with central venous catheter placement, while only a little less than 3% of White patients experienced these adverse events.

In order to better understand these disparities the presenters suggested that race and ethnicity or other disparities data be collected and monitored by healthcare facilities for associations with HAIs. CMS has an interactive map of healthcare disparities in the U.S. that is useful for recognizing the prevalence of health disparities in specific areas of the United States. Tools like this map can be used to educate and bring awareness to these health disparities as a way to improve infection prevention within healthcare facilities.

To access the interactive CMS Healthcare Disparities Map, go to: <https://data.cms.gov/mapping-medicare-disparities>