

**U.S. Department of Health & Human Services
Office of the Assistant Secretary for Health**

**2012 Health Care-Associated Infection Data
Summit**

Marriott Downtown
Kansas City, Missouri
May 30–31, 2012

Department of Health & Human Services
Office of the Assistant Secretary for Health

2012 Health Care-Associated Infection (HAI) Data Summit

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ABBREVIATIONS

| | |
|---------------------|--|
| ABCs | CDC Active Bacterial Core Surveillance |
| AHRQ | Agency for Healthcare Research and Quality |
| ARRA | American Recovery and Reinvestment Act of 2009 |
| CAUTI | catheter-associated urinary tract infection |
| CDC | Centers for Disease Control and Prevention |
| <i>C. difficile</i> | <i>Clostridium difficile</i> |
| CLABSI | central line–associated bloodstream infection |
| CMMI | CMS Center for Medicare and Medicaid Innovation |
| CMS | Centers for Medicare & Medicaid Services |
| CTSE | Council of State and Territorial Epidemiologists |
| EAS | electronically assisted surveillance |
| EHR | electronic health record |
| ESRD | end-stage renal disease |
| GAO | Government Accountability Office |
| HACs | hospital-acquired conditions |
| HAI | health care-associated infection |
| HCUP | AHRQ Healthcare Cost and Utilization Project |
| HEN | hospital engagement network |
| HHS | U.S. Department of Health & Human Services |
| HICPAC | Healthcare Infection Control Practices Advisory Committee |
| ICD-9 | World Health Organization International Classification of Diseases, Ninth Revision |
| ICU | intensive care unit |
| IP | infection prevention <i>or</i> infection preventionist |
| IQR | Hospital Inpatient Quality Reporting Program |
| IT | information technology |
| MPSMS | Medicare Patient Safety Monitoring System |
| MRSA | methicillin-resistant <i>Staphylococcus aureus</i> |

| | |
|-------|--|
| NHSN | CDC National Healthcare Safety Network |
| NSUHS | NorthShore University Health System |
| OASH | HHS Office of the Assistant Secretary for Health |
| ONC | HHS Office of the National Coordinator for Health Information Technology |
| PfP | Partnership for Patients |
| REC | Regional Extension Center |
| SCIP | Surgical Care Improvement Project |
| SIR | standardized infection ratio |
| SSI | surgical site infection |
| UTI | urinary tract infection |
| VAE | ventilator-associated events |
| VAP | ventilator-associated pneumonia |
| VBP | value-based purchasing |
| VRE | vancomycin-resistant enterococci |

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INTRODUCTION

Alice's Story

Alice Brennan was a unique, independent, and spontaneous woman who was cherished by her family. She drove herself and had a social schedule that would have exhausted most 20-year-olds. Except for an occasional episode of arthritis, she was healthy. When she was admitted to the local community hospital for suspected gout and then discharged to a rehabilitation facility, Mrs. Brennan and her family did not know that her days were numbered.

Mrs. Brennan expected to get stronger and dance at her high school reunion, which she had been planning for months. However, she contracted three infections during her stay at the hospital. She did not know to ask her provider why certain medications were or were not prescribed, or whether certain tests had been ordered. She certainly would not think she had to ask her providers whether they had washed their hands. That passivity cost Alice Brennan her life. She suffered from falls, dehydration, urinary tract infections (UTIs), and medical errors, and she died 48 days after her initial hospitalization for suspected gout. Her death certificate listed sepsis as the principal cause of death.

An investigation by the New York State Health Department found several problems, including a failure, indeed a lack of any attempt, to follow isolation protocols. Providers did not communicate with Mrs. Brennan or her family, and the hospital did not communicate with the rehabilitation center to which Mrs. Brennan was discharged. There was no transparency about outbreaks of methicillin-resistant *Staphylococcus aureus* (MRSA) or *Clostridium difficile* (*C. difficile*), so Mrs. Brennan's family could not make an informed choice of hospital. When Mrs. Brennan was diagnosed with a *C. difficile* infection (CDI), there were no changes in a plan of action, no efforts to maintain her room or bathroom differently, and no effort to educate Mrs. Brennan's family and friends. The only advice they received was to use hand gel, which is ineffective with *C. difficile*. As with other cases of health care-associated infections (HAIs), Mrs. Brennan's care lacked communication, transparency, and education.

More than 1,000 days after her mother's death, Mary Brennan-Taylor continues to grieve and ask what else could have been done to prevent Alice Brennan's suffering and death. Ms. Brennan-Taylor now works as an advocate for the Consumers Union Safe Patient Project, an interdisciplinary collaboration among patients, families, physicians, nurses, and hospitals, to promote a cultural change in which patient safety is a priority. The project focuses on electronic health records (EHRs), public reporting of HAIs, and national and state-level validation. Ms.

Brennan-Taylor and other advocates on the Safe Patient Project emphasize that every HAI has a human face ravaged by relentless, ruthless, and preventable conditions.

The Affordable Care Act: Improving Quality Measurement and Transparency

Jay Angoff, Acting Regional Director, HHS Region VII

The Centers for Disease Control and Prevention (CDC), an Operating Division of the United States Department of Health & Human Services (HHS), estimate that at least 5.7 million HAIs and 100,000 HAI-associated deaths occur annually, with a cost of up to \$30 billion per year. Until recently, however, physicians, hospitals, insurance companies, and regulators simply accepted that some patients would acquire HAIs, receive the wrong medications, or experience other adverse events as part of the hospital experience.

Now stakeholders have begun to push for increased patient safety, including a reduction or even an elimination of HAIs. For example, the Michigan Keystone Project has developed an evidence-based system to measure improvements and collect data on the control or elimination of HAIs. This system has reduced central line-associated bloodstream infections (CLABSIs) over 18 months and has sustained these reductions over the next 5 years, saving millions of dollars in health care spending. In another example, the Missouri Center for Patient Safety in Kansas City has coordinated efforts at 15 local hospitals and implemented the Comprehensive Unit-based Safety Program (CUSP), developed jointly by the Agency for Healthcare Research and Quality (AHRQ), the Health Research & Education Trust, John Hopkins University Quality and Safety Group, and Michigan Health & Hospital Association Keystone Center for Patient Safety & Quality, to reduce CLABSIs. As a result, CLABSIs have been reduced by 30%, with a savings of more than \$1.4 million, and the program, which now includes UTIs, has expanded statewide. In addition, 26 hospitals in Missouri and Kansas have agreed to adopt a safety culture and checklist to reduce HAIs by 25%.

The Affordable Care Act builds on these models and contains several provisions to promote patient safety, including adoption by HHS of the National Strategy for Quality Improvement in 2011. The Centers for Medicare & Medicaid Services' (CMS) Center for Medicare and Medicaid Innovation (CMMI) is working with health care providers, insurers, and researchers to identify affordable models of care—for example, bundled payments and strategies for medical homes—and to find the best strategies to treat patients with chronic illnesses and keep them out of the hospital. CMS is also moving toward a value-based purchasing system (VBP), which rewards health care facilities for improving quality, reducing errors, and preventing HAIs. The new payment system, which will begin on October 1, 2012, for acute care hospitals, will provide incentive payments to hospitals that improve their performance in five areas: myocardial infarctions, heart failure, pneumonia, and surgery. Hospitals' performance will be evaluated both in relation to other hospitals and with respect to how their performance has improved over time. In addition, underperforming facilities will be penalized. Beginning in 2013, hospitals will face reduced payments for excessive 30-day readmissions in the four critical areas, and beginning in 2015, hospitals will face payment reductions for failure to adopt EHRs. Payments will also be reduced by 1% for the 25% of hospitals with the highest frequency of HAIs.

The Affordable Care Act also provides incentives to insurance companies to reduce HAIs and to improve quality. In 2014, companies will no longer be able to compete by segmenting the

market, differentiating products, and separating out risk. Nor will they be able to discriminate according to group size, gender, occupation, or pre-existing condition. In addition, the insurance exchanges under the Affordable Care Act will be products of standard actuarial value, and competition among insurance companies will depend not only on price but also on quality, including the reduction of HAIs and the minimization of costs when HAIs occur. Thus, by 2014, everyone in the health care system will have a strong incentive to minimize HAIs.

The National Action Plan to Prevent Health Care-Associated Infections: Roadmap to Elimination (HAI Action Plan)—Overview, Measures, and Goals

Don Wright, MD, MPH, Deputy Assistant Secretary for Health, HHS Office of the Assistant Secretary for Health

Agencies of HHS, particularly CDC, CMS, and more recently AHRQ, have worked on the problem of HAIs. However, these agencies recommitted and refocused their efforts in 2008 with the release of a report by the U.S. Government Accountability Office (GAO), which acknowledged the work HHS had done but noted the need for leadership in prioritizing prevention practices and improving data to reduce the number of HAIs. Specifically, the GAO report recommended that HHS improve central coordination of its prevention and surveillance strategies, identify and promote the implementation of priorities from the CDC guidelines, and establish greater consistency and compatibility of HAI-related data across HHS systems.

In response to this report and congressional hearings, the HHS Deputy Assistant Secretary for Health formed a senior-level steering committee and charged it with creating an action plan to prevent, reduce, and ultimately eliminate HAIs. The HHS Steering Committee for the Prevention of HAIs established measurable nationwide goals, engaged in partnerships with stakeholders across the nation, and improved coordination of existing efforts. The committee also took a phased approach, focusing first on acute care hospitals, then on ambulatory surgical centers, end-stage renal disease (ESRD) facilities, and increasing influenza vaccination coverage among health care personnel (HCP) and then on long-term care facilities. A draft action plan was released for public comment in January 2009 and finalized in June 2009. This plan, which also serves as a guide for state health departments, is a living document that changes as the science of HAIs evolves and the most successful prevention strategies are identified.

Some progress has been made since the steering committee first established its goals. Reductions in the standardized infection ratio (SIR) for CLABSIs, catheter-associated urinary tract infections (CAUTIs), surgical site infections (SSIs), and invasive MRSA infections are on track to meet targets for 2013. CLABSIs have decreased by 33%, MRSA infection have decreased by 18%, and CAUTIs by 7%, compared with the baseline. Likewise, adherence to central line insertion practices and surgical care improvement process (SCIP) measures are also on track to meet these targets. However, additional data on CDI and MRSA bacteremia are not yet available, and reductions in *C. difficile*-associated hospitalizations will not meet the steering committee's target.

In September 2010, the steering committee held a HAI Progress Meeting to assess its progress in combating HAIs. At this conference, both the committee and subject-matter experts (SMEs) agreed on the importance of reassessing the strategies described in the Information Systems and Technology chapter of the HAI Action Plan, and they conceived the idea of a Data Summit that

would bring together the public and private sectors to review existing data sources and to make recommendations for enhancing the HAI data supply chain. HHS and SMEs felt that such a summit would help to promote the collection of information needed to improve patient care without overburdening the health care delivery system.

The latest revision of the HAI Action Plan was announced in the *Federal Register* and was open for public comment until June 25, 2012. A chapter on long-term care facilities has also been developed and will soon be posted for public comment. The revised action plan, including the long-term care chapter, is expected to be finalized during early 2013.

FIRST PLENARY: ELECTRONIC HEALTH RECORDS SYSTEMS, STANDARDS, AND USE IN HAI REPORTING

The promise of the health care system is rooted in its demonstrated capacity for critical introspection and its ability to prepare prudently for observations that have yet to be made. The advance and implementation of health information systems and technology (IT) is therefore critical not only to meet the requirements of states and regulatory organizations but also to fulfill obligations to the patient.

The presentations in the first plenary, chaired by David Hunt, MD, FACS, of the HHS Office of the National Coordinator for Health IT (ONC), addressed key question 1:

When, how, and for which HAIs should the transition be made from traditional methods of case finding and reporting—which depend to a large extent on application of written protocol instructions by individuals working in health care facilities and manual methods of data collection and entry—to computer-based algorithms for case detection and use of electronic data sources for populating and submitting numerator and denominator records?

EHR Adoption in the U.S.: Meaningful Questions

David Hunt, MD, FACS, Office of Provider Adoption and Support, HHS Office of the National Coordinator for Health Information Technology

The use of health IT to reduce and ultimately to eliminate HAIs is ambitious, but the tacit assumption that little to no progress has been made feeds into a policy inertia that patients and practices cannot afford. EHR adoption has indeed seen progress. The total number of EHR products and companies has steadily risen, and the adoption of EHRs by various medical practice types has increased nationwide. The adoption of EHRs among hospitals has risen steadily, and in some areas, such as Kansas, adoption is progressing at a rate that might soon eclipse the national average. Small practices, which have the smallest margins and the most stretched resources, remain the most challenged in adopting EHRs, but they see the greatest gains in adopting them.

The willingness of a variety of health care practices to adopt EHRs is a cause for some celebration, but some areas still need work. For example, some states have dichotomous rates of adoption. For example, adoption of EHRs by hospitals in Utah is in the lowest quartile, and that in Wyoming is in the highest, but the trend is reversed for adoption of EHRs by physician practices in these two states. Each state has its own story with respect to EHR adoption, and

some states are moving faster than others are, but all states are moving forward, and any plans for tracking and reporting HAIs must acknowledge these variations.

In an article in the *New England Journal of Medicine*, Cebul and colleagues reported that diabetic patients in EHR-based practices fared much better in key processes of care than those in practices with paper medical records. Although EHR adoption is progressing, there is still much room for improvement.

CDC National Healthcare Safety Network (NHSN)

Daniel Pollock, MD, Division of Healthcare Quality Promotion, Centers for Disease Control and Prevention

Collaborations among practitioners, private sector groups, states, and the federal government are promoting HAIs as a vital statistic, one that can be reported publicly with validity, confidence, and sufficient information and detail to make it actionable. NHSN, an operating system for reporting mandates in several states and in CMS quality programs (as well as voluntary reporting), is a manifestation of those collaborations. Since its launch, approximately 4,800 hospitals and more than 9,000 health care facilities have joined NHSN, and 2012 has seen a surge in ESRD facilities that have joined the network. NHSN data are used for HAI prevention and quality improvement at all geographic levels.

The technical design of NHSN allows facilities to report on HAI manually, through a Web interface, or electronically via an industry standard file format. The HAIs that matter most in terms of morbidity and cost are included in NHSN with input from health care practitioners and SMEs, and patient care processes are reported because of their link to HAI prevention. Data on HAIs reported by facilities are stored in a CDC database and analyzed with NHSN tools. States and health care facilities have ready access to the system and can therefore analyze data and compare them to national benchmarks.

The paradigm shift from a dependence on manual methods for case identification, data acquisition, and reporting to electronic detection and reporting remains a challenge for most infections. However, using laboratory-identified events, which are by definition detectable from laboratory results data are prime candidates for electronic surveillance. CDC expects an increase in reporting of MRSA and CDI laboratory identified events in 2013 because of new CMS reporting requirements.

CMS CrownWeb

James Poyer, MS, MBA, Division of Quality Improvement Policy for Acute Care, Centers for Medicare and Medicaid Services

CrownWeb is a Web-based data collection system designed to allow all Medicare-certified ESRD facilities to securely submit facility- and patient-level data in real time. The system collects quality measures data and enables facilities to update their details, track admissions and discharges, submit clinical data, generate reports for internal use, and submit reports to CMS. CrownWeb thus provides the renal community with more complete and accurate information about patients on dialysis, and it will help the renal community move from paper-based to electronic reporting.

The system has improved the timeliness of clinical measures data from 2 years to 60 days, and by providing facilities with immediate access to patients' data when they are admitted, CrownWeb helps to simplify Medicare patient management. Facilities can track and validate patient outcomes rather than wait for end-reports from CMS, and the single-source data repository allows facilities to look for information in one place, thereby increasing their ability to focus on patients. Facilities also use CrownWeb to submit patients' CMS-2728 forms, which provide medical evidence of ESRD for Medicare entitlement and to register patients in the National Renal Registry, and the system reminds facilities when initial, supplemental, or re-entitlement forms are due. In addition, CrownWeb includes eight quality measures. Thus, this highly confidential system aids caregivers and ensures quality care.

Patients can also benefit from CrownWeb. The system keeps detailed histories of changes to patient modalities, as users must add a new treatment summary whenever treatment changes permanently. Patients can read their summaries, which include information about changes to primary dialysis setting, primary types of treatment, number of sessions per week, the amount of time per session, and the attending practitioner.

CMS has been working on CrownWeb since 2004, and it has released it in phases to perfect functionality and to allow users to register for access. Phase III, released in June 2012, will allow use for all Medicare-certified ESRD facilities, and it will include changes to the user interface and security procedures.

AHRQ Common Formats

Noel Eldridge, MS, Center for Quality Improvement and Patient Safety, Agency for Healthcare Research and Quality

The AHRQ Common Formats provide a standardized format for reporting all adverse events, including HAIs. This format grew out of the Patient Safety and Quality Improvement Act of 2005, which charged AHRQ with standardizing reporting to improve the ability to compare information about adverse events across systems. The Common Formats are designed for event reporting; they are not designed for measures or surveillance.

The Common Formats, which include both generic and event-specific modules, allow for local, state, and national agencies to aggregate comparable data to improve quality, and they encourage agencies to report close calls, near-misses, and unsafe conditions. Common Formats information for HAIs is based on the NHSN definitions and covers CLABSIs, ventilator-associated pneumonia (VAP), SSIs, CAUTIs, and *C. difficile*. However, this reporting, which is somewhat less detailed than NHSN, does not duplicate NHSN reporting.

Even with EHRs, event-reporting systems will be needed, because some information will be obtained after a patient is discharged and will therefore never be included in the patient's record. The Common Formats, which will collect information about the cause of and contributing factors to adverse events, close calls, or unsafe conditions, will:

- provide information on the entire spectrum of patient safety concerns,
- support local and regional quality improvement efforts, and,
- allow those collecting data to collect it once and supply it to organizations that need it.

The Common Formats are thus intended to serve the nation's needs for standardized reporting of adverse events, as articulated by the Institute of Medicine and the Patient Safety and Quality Improvement Act.

Discussion Highlights

The definition of meaningful use is not clear and most likely differs for institutions, consumers, and experts in health IT. Although consumers and health IT experts have been involved in constructing this definition, health care staff must be included in the next stage. In addition, the next stage of the meaningful use definition should include analyses of weaknesses and value added for each information stream; that is, it should highlight usability and value to end-users. It has not been clear what the meaningful use definition includes or what elements specifically ensure that patient safety events are included and that systems can collect that kind of information. Nor is it clear what codes or elements should be extracted when harm occurs. ONC has created a Chief Medical Officer position to look at safety and usability and ways to promote those elements. ONC has also brought together experts from both inside and outside the federal government to coordinate activities in safety and usability, and it has established an office focused on consumer health. ONC is also interested in creating a value model that incorporates more than return on investment. For example, the model also should examine the risks associated with not implementing a system for patient safety reporting. All these activities are intended to promote HHS's goals for communication, collaboration, and coordination.

Other Discussion Points:

- It is still difficult for patients and consumers to become empowered and obtain the information they need to make informed decisions about where to go for care.
- Institutions can use their own reporting systems and standardize their descriptions of events, unsafe conditions, and near-misses to be compatible with the AHRQ Common Formats. If an institution adopts the Common Formats, members of an institution's staff could report unsafe conditions, such as inadequate staffing, that they observe.
- Most health care facilities are still looking for blood culture results, but processes and policies for blood cultures have not been standardized.
- The paradigm of health care information and reporting is different for hospitals than for other types of facilities, and the ability to share data is hindered by individualized silos of care and increased security measures. HHS has started to grapple with these issues, and state-based health information exchange can help in this regard.

SECOND PLENARY: HHS HAI REPORTING SYSTEMS: OVERVIEW OF SELECTED SYSTEMS, PUBLIC REPORTING OF HAI DATA

The presentations in the second plenary, co-chaired by Dr. Hunt and Hui-Hsing Wong, MD, JD, of the HHS Office of the Assistant Secretary for Planning and Evaluation, focused on key questions 3 and 4:

With HHS analyzing and reporting HAI data acquired through a variety of programs and systems, each with its own methodology, and because these differences sometimes produce incongruent

estimates of HAI scope, magnitude, or trends, what are the priorities of stakeholder groups as policies for HAI data reporting are being addressed?

What policies and standards are needed to facilitate consistent public reporting of the CDC National Healthcare Safety Network (NHSN) data at the state and federal levels, and how should those policies be identified, developed, or maintained?

Because NHSN was discussed during the first plenary, that system was not discussed during this plenary session.

Overview of Key HHS Data Sources Available for Longitudinal Assessment of HAI Rates: Results from the IMPAQ/RAND Evaluation of the HAI Action Plan

Daniel Weinberg, PhD, IMPAQ International

In 2009, IMPAQ International and RAND undertook an evaluation of the HAI Action Plan. This evaluation included an inventory of all HHS data systems that could be used to track HAIs at various geographic levels, as well as a baseline assessment report of HAI rates derived from these systems. The collaboration between IMPAQ International and RAND overlaps with HAI Action Plan surveillance activities by focusing on the same HAIs and data sources, by examining baseline information, and by tracking progress over time. However, this work is also complementary, as it looks at additional data sources and time periods, as well as different geographic levels. IMPAQ and RAND also combine multiple data sources into a single compendium and study the extent of their concordance.

Both the inventory and the baseline assessment included NHSN, CDC Active Bacterial Core surveillance (ABCs), Medicare's Hospital Compare, Medicare fee-for-service claims, and the AHRQ Healthcare Cost and Utilization Project (HCUP). Once these data sources were identified, IMPAQ and RAND researched and proposed HAI surveillance specifications for administrative data and then recommended data for inclusion in the baseline report. They collected, organized, and analyzed data; examined HAI rates across data systems; interpreted results; and refined their interpretations in collaboration with the agencies. These activities were carried out under the guiding principle that no single data system provides a comprehensive assessment of HAIs in the United States.

Partnership for Patients Hospital-Acquired Conditions Measurement Strategy

Noel Eldridge, MS, Center for Quality Improvement and Patient Safety, Agency for Healthcare Research and Quality

The Partnership for Patients (PfP) Hospital-Acquired Conditions (HACs) Measurement Strategy was launched by the HHS Secretary in 2011 to improve patient safety and reduce hospital readmissions. Baseline data from 2010 indicated that 145 HACs were measured per 1,000 discharges, with a total of 4.75 million occurring overall, and that the rate of 30-day readmissions was 14.4%. The PfP aims to reduce preventable HACs by 40% and overall readmissions by 30% by 2013. It includes national measurements based on methods used by HHS agencies, as well as a local strategy based on measures already used by local and regional hospitals and hospital networks. No new federal data submissions have been mandated.

PfP targeted four of its nine HACs on CAUTI, CLABSI, SSIs, and VAP because of the amount of harm they cause, because evidence exists on how to prevent them, and because there are proven intervention programs for them. However, four other HAIs—hospital-acquired MRSA, vancomycin-resistant enterococci (VRE), postoperative pneumonia, and *C. difficile*—are measured as part of the “all other HACs” category. Baseline data indicate that HAIs account for 1 in 6 adverse events measured by the PfP and that half of those are CAUTIs.

Provider-Level Perspective: Resource Requirement of Surveillance and Snapshot of HAI and Other Patient Safety Metrics

Russ Olmsted, MPH, CIC, Infection Prevention and Control Services, St. Joseph Mercy Health System

Providers want to provide as much data as they can, but their ability to report is limited by the current process of manually screening and sifting data, and by limited ability to conduct day-to-day data aggregation and analysis of patient care. In the *American Journal of Infection Control*, Stricof and colleagues report that typical infection preventionists (IPs) spend 45% of their time on surveillance and information collection. This overwhelming demand prevents IPs from reaching the bedside to assist care teams, even as they want to participate in patients’ care. Education, investigation of problems, and automated screening can improve providers’ ability to report.

In this regard, the EHR shows a considerable amount of promise. For example, St. Joseph Mercy Health employs a comprehensive health informatics system in which the main EHR platform allows for several points of care to feed into the system. Other examples of EHR-based provider support includes a system that alerts providers about the need to insert or remove a catheter, as well as a system of isolation precautions, including an educational component to engage patients and family members in identifying key strategies for improving quality and safety. However, data extraction remains a challenge; no composite pulls data into a large warehouse. Likewise, more work is needed to increase providers’ capacity to make the most sense out of data, implement algorithms such as one to help providers detect HAIs, and examine and improve the cost-effectiveness of advanced analytical tools. Ultimately, providers need real-time decision supports that give them as much information as possible to ensure a successful health care episode. Vendors should be encouraged to consider key data to build in for HAIs, as well as systems to extract and archive data. Some vendors are already working with NHSN to develop standards.

State Perspective on Multiple National Reporting Systems

Steve Ostroff, MD, Pennsylvania Department of Health

HHS has established metrics and specified data sources to track core conditions in the acute care setting, and it has established priorities and metrics for other segments of the health care system. However, states remain concerned about attempts to produce and present measures using alternative data sources. For example, in 2011, AHRQ set out to produce CLABSI data using a method different from that in the HAI Action Plan. States are also concerned about differences among national, state, and facility measures and who should do them. CDC and others have attempted to produce state-specific SIRs for CLABSIs, CAUTIs, and SSIs, but state-specific *C. difficile* data are collected through HCUP, and facility-specific information on CLABSIs is

collected through CMS Hospital Compare. In addition, most communications about HAIs refer to national goals for HAI reductions, rather than state-specific ones.

State public health agencies measure HAIs to track progress, optimally target resources, maximize prevention, and help patients and their families make informed decisions about where to go for their care. These objectives require confidence in the reliability of data. However, data reliability continues to be a problem for states because of the rapid expansion of NHSN, the quarterly outputs (now 6-month outputs) of Hospital Compare, and extreme variability in the amount of auditing. In addition, many HAI measures have been developed under the philosophy of “letting 1,000 flowers bloom,” resulting in incompatible measures between federal and state systems. For example, CLABSI rates reported by Hospital Compare differ from those reported by state departments of health because of differences in where data are collected, what measure is reported, and what baseline is used. Thus, consumers are left with conflicting information and are unsure how to use that information to inform their decisions.

Because HAI monitoring and reporting is still young, the variability in approaches might be of less concern. However, such variability might limit the ability of states to monitor trends in a meaningful way. Thus, outputs should be defined at each geographic level, and inputs and outputs should be standardized to maximize use of the information.

NHSN Data Presentation, Standardized Infection Ratio (SIR), Display of Comparisons, Aggregation of Data

Dawn Sievert, PhD, MS, Division of Healthcare Quality Promotion, Centers for Disease Control and Prevention

The SIR, a summary measure used to track HAIs over time, adjusts for risk factors that are significantly associated with differences in infection incidence. By incorporating risk adjustment, the SIR can serve as a single summary statistic that can be aggregated at a facility, state, regional, or national level. CMS can use the SIR to compare facilities, whereas CDC can use the SIR to monitor state and national progress in HAI prevention.

There is wide use of NHSN in health care facilities across the United States, and many users are viewing, reviewing, and reporting their data. However, there is still wide variation in how data coming into the system are reported. As noted in previous discussions, CMS and state mandates for data submission vary by type of facility, HAI, and locations within acute care hospitals. NHSN presents confidence intervals around the SIR to assist consumers in interpreting the SIR, but for some entities, such as Hospital Compare, the graphics do not yet allow for presentation of confidence intervals.

Both standardized reporting and harmonized presentation of data are still works in progress. Work is under way to improve graphics for Hospital Compare so that confidence intervals will be included by the end of 2012.

Discussion Highlights

Caution is needed when reviewing the data. Data reported for HAIs are based on surveillance definitions. CDC recognizes the discrepancy between clinical and surveillance definitions and notes physicians’ difficulty in buying into surveillance if they disagree with its definitions. CDC

is working to harmonize the information collected so that it is meaningful to everyone who uses it. This work includes a constant review and update of definitions and criteria.

Other Discussion Points:

- SIRs are valuable but difficult to explain to the public. For example, the SIR baseline should be set instead to an understandable benchmark from a consumer's point of view.
- The ability to use NHSN rates to follow a facility's performance over time will be helpful.
- Care should be taken in controlling for facility-associated factors, as Hospital Compare is intended to compare facilities.
- For an overwhelming number of hospitals, reporting data on less than a 90-day basis is challenging. Thus, a quarter's worth of data from 80% to 90% of hospitals is somewhat meaningless.
- Risk adjustments include both harmonized and patient-level factors. CDC would like to include more patient-level data, but the added burden in data entry and collection must be addressed. The move toward EHRs can help with that.
- To compare metrics in an intellectually honest way, one must consider how well the metrics perform. The SIR could become problematic, because device days are used as a denominator, and interventions aimed at reducing HAIs are in effect aimed at reducing device days. CDC is working on this problem.

THIRD PLENARY: NATIONAL AND STATE-LEVEL VALIDATION EFFORTS

The third plenary session, chaired by Lisa McGiffert, Director of the Consumers Union's Safe Patient Project, and Rani Jeeva, MPH, CPH, of the HHS Office of the Assistant Secretary for Health, addressed key question 5:

What can and should be done to improve, extend, and sustain efforts at the local, state, and national levels to validate facility-specific HAI data that are collected, analyzed, and publicly reported?

Consumer Perspective: Validation

Lisa McGiffert, Consumers Union, Safe Patient Project

In general, the public expects the information it uses to guide health decisions has been validated and is accurate. When the Consumers Union drafted the first model bill for public reporting, it included a requirement for reported information to be checked for quality and accuracy. Later funds from the American Recovery and Reinvestment Act of 2009 (ARRA) allowed states to validate their data and showed that a small amount of funds could significantly improve data that were collected.

Although both federal and state agencies are responsible for validating data, states oversee health care facilities and are more aware of challenges in their geographic regions, and they have revolutionized the concept of validation. In particular, New York is the only state that has consistently devoted enough resources to validation and thus serves as a model for the nation. Validators visit hospitals and review patient records, but they also educate IPs, look for

unreported infections, provide guidance on HAI prevention, and recommend improving data quality. Thus, the unique role of the states in validation should not be given to the federal government; rather, federal agencies should empower and engage the states.

A study published in *Health Affairs* reported evidence that adverse events in hospitals occur at a higher rate than previously imagined. The study found not only that a third of a hospital's patients were harmed but also that self-report or AHRQ patient safety indicators missed about 90% of adverse events. Thus, validation should employ and merge several different types of data and methods to generate a complete picture. Likewise, caution should be exercised when using the term "validation," as the definition of this term varies across stakeholders. Validation means more than ensuring the accuracy of documenting and coding; it also means assessing the data for false positives and false negatives, and it can be merged into prevention. Stakeholders also have differing definitions for transparency and disclosure. Standard definitions are needed.

CMS Validation of Hospital Inpatient HAI Measures

James Poyer, MS, MBA, Division of Quality Improvement Policy for Acute Care, Centers for Medicare and Medicaid Services

The Hospital Inpatient Quality Reporting Program (IQR), which was mandated by the Medicare Modernization Act of 2003 (MMA), requires hospitals to collect and post data on quality of care. The program therefore guides CMS VBP and provides consumers with information to guide their decision making. IQR includes 72 (soon to be 59) quality measures in several domains and these measures are validated by medical records extraction. Each year, CMS randomly selects 800 out of 3,400 eligible hospitals for auditing; hospitals that failed the previous year's auditing are automatically subject to validation during the current year. For each hospital, CMS selects up to 18 medical records of patient-level episodes of care per quarter and stratifies them by clinical topic. Hospitals submit the selected records to a contractor, who independently extracts information using quality measures, adjudicates quality information and mismatches, and computes a validation score.

With respect to HAI measures, CMS has finalized a validation of CLABSI measures and will validate intensive care unit (ICU) events beginning with those occurring in January 2012. For each hospital, CMS will estimate the reliability of data for all chart-abstracted metrics and ensure that the hospital meets a minimum validity level of 75%. CMS will also validate across hospitals to evaluate the predictive power of validation for ICU patients. Randomly selected hospitals will submit a list of positive blood cultures for all ICU patients, as well as information about central lines inserted, particularly for ICU patients. The CMS validation support contractor will identify candidate CLABSIs and, for a random sample of three candidate CLABSIs per hospital per quarter, provide CDC with information and assess whether that information was reported to NHSN accurately. Validation of CLABSI measures will begin in August 2012, with the first validation results expected by the summer or fall of 2013.

This process faces several challenges. CMS requests information on hospital admissions and episodes of care and selects events occurring only in a discharge quarter, but patients could experience infections other than those occurring in the discharge quarter. In addition, IQR, which is primarily designed to detect underreporting of CLABSI events, does not validate central line days.

For 2013, CMS is proposing a similar process for CAUTI, except it will request a list of positive urine cultures. The agency is also proposing a validation process for SSIs, but this process will use Medicare claims information for index and 30-day readmissions. Because it will require more information starting in 2013, CMS has proposed to reduce the annual sample size to 400 to 600 hospitals, request a random sample of 12 candidate HAIs per hospital per quarter, and provide separate scores for HAIs and clinical processes of care. Chart samples for clinical processes of care will not be abstracted or scored for CLABSIs. These changes were posted in the *Federal Register* for public comment.

CDC Support for Valid HAI Data and Lessons Learned from State Validation

Kathryn Arnold, MD, Division of Healthcare Quality Promotion, Centers for Disease Control and Prevention

Validation and credible data are vital for prevention, public reporting, and incentive programs. Training in use of NHSN and application of NHSN definitions has also become especially important as the rapid expansion of NHSN raises concerns about uneven data quality. CDC provides such training through professional meeting venues and through Web-based, self-paced interactive modules that contain case studies and provide continuing education credits. Likewise, many state health departments and QIOs provide local training to help hospitals within their jurisdictions.

Additional support activities include continuing efforts to refine NHSN, including built-in business rules and data checks to reduce data entry errors, analyses to allow users to explore data quality, and a CDC user support team to answer questions. CDC is also consulting with partners about NHSN methods and definitions to ensure more clinical integrity, objectivity, and standardization. CDC also supports CMS validation by integrating existing CMS validation programs with NHSN definitions. In 2009, CDC disbursed ARRA grants to support validation and HAI prevention in the states. These funds allowed states to create innovative approaches and tools such as structured sampling frames; ways to identify the numerator, checklists, denominator methods surveys; and risk factor investigations for CLABSIs. States also linked NHSN procedures to hospital discharge data and developed in-house case-finding surveys and risk-factor audits for SSIs. However, although several states have mandates to report CLABSIs and SSIs, only a subset have performed external validations, and after expiration of ARRA funds in 2011, that subset has shrunk. CDC continues to disburse funds under the Affordable Care Act, but those funds are considerably less and do not support enough manpower for validation.

On the basis of lessons learned from CDC's support efforts, reporting can improve over time. However, validation efforts must look for what is not reported. In addition, validation must be an ongoing effort because of the turnover in the health care workforce. Validation efficiency depends on sampling frame design, and the approaches used by CMS and the states, though different in focus and statute, are all important. CDC has adapted state methodologies and tools into a validation toolkit and vetted it at the June CTSE meeting, with the goal of sharing resources and lessons learned, outlining strategic options for efficient data quality improvement and periodic comprehensive reviews, and seeking consensus on national standards.

State-Level Validation: Results and Lessons Learned from California

Lynn Janssen, MS, CIC, HAI Program, California Department of Health

In 2011, IPs from the California HAI Liaison Program and Quality Surveillance conducted on-site data validation to determine whether facilities have understood and applied definitions since the implementation of NHSN. More than 100 California hospitals with one full year of experience volunteered to participate in the program data validation effort. At each hospital, a team of one or two Liaison IPs began with data from laboratory line lists for 3 months and reviewed medical records to assess the completeness and accuracy of reporting. They interviewed two key hospital staff members for denominator data collection process and hospital location mapping, and they used standardized forms to capture data. Liaison IPs then presented quantitative findings on identification and reporting of HAIs (sensitivity), the ability to rule out infections (specificity) and whether hospitals knew how to apply HAI rules (positive predictive value). Results of the validation were left with the hospitals, which were expected to correct and update their data. Hospital characteristics were similar between the validation sample and all California hospitals.

Out of 3,000 emergency department and inpatient tests positive for *C. difficile*, 2,172 had been reported, 55 of those in error, and 221 had not been reported but should have. Out of 1,300 MRSA infections reviewed, 442 had been reported, 15 of those in error, and 150 had not been reported but should have. Results for VRE were similar. Because the program did not review all 3 months in all hospitals for CLABSIs, the program reviewed these infections in clusters. Out of almost 4,100 clusters of bloodstream infections, hospitals had reported 135 cases of VRE, 23 of which were in error. The program identified 68 that should have been reported, as well as 210 infections that should not have been reported. Cases reported in error generally arose from tests performed before the admission date or on patients who were not admitted at all. Missed cases often resulted from inconsistencies in the information IPs had to review or in the information received from hospital information systems or laboratories. In some cases, positive blood cultures simply were not reviewed. The HAI Liaison Program also found that location attribution and mapping was often wrong, especially for *C. difficile* surveillance.

This work is not a research study or formal evaluation of HAI reporting in California; therefore, findings from the program might not be generalizable. However, on the basis of these efforts, the HAI Liaison Program has identified gaps and developed targeted education, training, and outreach efforts for all hospitals in California. The program is also facilitating internal data validation by providing hospital systems with validation forms adapted for their use. In addition, the low sensitivity seen at health care facilities points to a need for improved case finding, for example, by including a minimal dataset in the NHSN protocol. The program is continuing its analyses of its findings.

HAI surveillance requires consistency, coordination among clinicians and state and federal agencies, the confidence needed to empower adjudication committees to define infections, and the compassion that motivates the desire to identify all infections in order to improve them. Thus, advancing HAI prevention must go beyond public reporting and comparisons among

hospitals. Hospitals must focus on identifying all infections within their own facilities and on setting prevention rules and targets.

Discussion Highlights

As demonstrated by presentations in this plenary session, CMS focuses on the numerator for HAI rates, and at present, the agency is not examining anything related to the denominator. Although state and CMS validation approaches can be complementary, they also can be competitive by focusing on the same hospitals and even the same charts. In light of the limited resources many states face, ways must be found to merge CMS and state validation efforts to avoid duplication.

Differences between instructions for CMS reporting and those for NHSN reporting have led to confusion for IPs otherwise eager to submit their data. CMS encourages IPs unsure about their data to submit it with all related information. Although this could prove more burdensome, CMS can work with CDC to obtain the most reliable validation and to fine-tune instructions to reduce future confusion. However, in the view of some summit participants, the CMS protocol is underpowered, and validation of HAI inpatient measures should thus be left to agencies with more and better expertise.

During the HAI Liaison Program and Quality Surveillance effort, the time needed for adjudication depended on the complexity of each case. Program IPs looked closely only at a sample of positive blood cultures based on whether a central line had been placed or whether the patient had been infected at the time of admission. Although the data validation did include sensitivity and specificity, it did not assess those aspects observed during the program IP review versus those observed during review by hospital staff. However, when program IPs pointed out cases that were missed, hospital staff agreed with the program's assessment.

Other Discussion Points:

- CMS validation of hospital inpatient HAI measures requests reports of all positive blood cultures only for the facilities targeted for validation that year.
- The American Society for Quality writes guidelines for quality, but representatives have not been included in meetings like this summit.
- Data reliability is subject to accuracy in documentation and to limitations of the medical record. Oftentimes, medical records are missing critical information, even though hospitals are expected to keep complete and accurate records to retain their Medicare certification.

FOURTH PLENARY: ENHANCING THE HAI DATA SUPPLY CHAIN

The presentations in this plenary session, chaired by Dr. Pollock at CDC, addressed key question 2:

With increasing adoption of EHR systems and advances in information technology for detecting and reporting HAIs and for collecting and submitting closely related data, what actions need to be initiated or intensified to ensure that the data supply chain is as fully developed and widely used as possible, produces valid data, and meets prevention, public reporting, and payment purposes?

EHR Adoption in the U.S.: From Meaningful Questions to Tides

David Hunt, MD, FACS, Office of Provider Adoption and Support, HHS Office of the National Coordinator for Health Information Technology

After 2 years of planning, ONC has begun work to support a national framework for health IT. Although the office's plans are not perfect, they are sufficiently complete for stakeholders to be asked important questions about choices they will make regarding their practices, institutions, and patients. Importantly, stakeholders should consider whether they are using all available resources to deliver the best possible care. The questions of most relevance to ONC have nothing to do with which EHR system a practice might use, because the overall problem is not a technical one. The business of HHS is health and health care, and its overarching goals should therefore aim to improve the health of all Americans. Thus, the single thread connecting all work in health IT must begin and end with patients' well-being. Success creates a "rising tide that lifts all boats," but that tide must be channeled toward safety and effectiveness, with a set of values that do not allow for islands of mediocrity.

ARRA introduced the concept of "meaningful use" by calling for incentives to eligible providers who meaningfully use an EHR. The act highlighted certified EHR technology, information exchange, and the use of EHRs for reporting as criteria that must be included in any discussion or rule regarding meaningful use. It gave ONC authority to define the requirements for certified technology and left other details of meaningful use to be addressed by ONC and CMS. The department has issued meaningful-use rules in three stages. Stage 1 is ongoing, Stage 2 will be released later in 2012, and ONC has already begun to think about what to include in Stage 3, which will cover 2015 and 2016. These rules outline specific uses, such as electronic prescription, vital signs, or clinical summaries, as examples of meaningful use, and facilities must choose five of these to show that they are meaningfully using EHRs.

In the larger picture, however, meaningful use is a policy initiative to support changes in the way health care is documented, away from outdated methods that have been used since the turn of the twentieth century. Although most stakeholders have raised questions about the definition of "meaningful," and although many discussions have focused on the adoption or installation of EHRs, the key element in this policy and the department's expectations is "use." ONC has established 62 regional extension centers (RECs) to provide technical assistance and to catalog the challenges the medical community faces in achieving meaningful use and providing high-quality, efficient, and effective care. Some solutions to these challenges can be found in the policies and programs developed by HHS during the past 2 years, but these solutions are not enough. Stakeholders must therefore reflect on their own situations and ways in which they can improve.

When confronted with deficiencies and disparities in the system, the medical community must have a clear idea of what work needs to be done to address them. Moreover, the work of HHS and the medical community must demonstrate clear and convincing value. Meaningful use of an EHR can represent a rising tide, but to be taken seriously, providers and HHS agencies must understand that no one can be an island. In addition, the medical community must understand that EHRs, while necessary, do not constitute the whole answer to challenges in improving care, quality, and safety for all Americans. The Institute of Medicine (IOM) has called for health care to be efficient, safe, equitable, and timely, but only through stakeholders' introspection and

additional tools, such as the HAI Action Plan and the use of information systems, will the full value of the medical community's work be realized.

EHR Systems Configuration to Automatically Produce HAI Data to CDC's NHSN

Marc-Oliver Wright, MT (ASCP), MS, CIC, NorthShore University Health System

The web of surveillance in the NorthShore University Health System (NSUHS) comprises four acute-care hospitals, 80 outpatient or ambulatory care facilities, and one home care system, all of which use EHRs and share information. NSUHS has invested resources in an enterprise data warehouse that stores EHR data from more than 700 unique categories and converts it to accessible and usable formats.

A structural data element within the NSUHS data warehouse allows nurses and physicians to document and upload information on the presence of Foley catheters, thus automating the documentation of device days for each patient and reducing both cost and the risk for error. Some EHRs also have customizable patient lists based on specific criteria, such as Foley catheter use, allowing dedicated staff to monitor patients in real time and to intervene when problems arise. Likewise, the system includes best practice alerts, based on automated rules, to alert staff when an action is needed. NSUHS constantly reviews and updates these alerts to ensure that they are precise, timely, and actionable and to avoid alert fatigue on the part of staff. Since the implementation of EHR and data warehouse system, Foley catheter use for all four hospitals in NSUHS has declined dramatically.

Other applications of the IT system at NSUHS include:

- Infection prediction. If a patient shows signs of an infection, staff can run the patient's medical record number through the data warehouse and obtain a list of staff members who opened the record and interacted with the patient. This system can be used to track communicable disease exposures, as well as "exposures" to recorded implants or devices.
- Syndromic surveillance. Diagnostic codes for influenza-like illness have been captured in the EHR and used to develop a query that looks for a combination of signs or symptoms of such illness in both the outpatient and emergency department settings.
- Clinical decision support for MRSA surveillance. NSUHS has derived prediction rules based on risk factors observed with MRSA-positive patients and validated these rules based on colonization-associated risk factors in a larger cohort of patients. These rules have been built into the EHR system to alert staff when MRSA screening is needed.

As demonstrated by Friedman and colleagues in 2001, adoption of an EHR can increase the rate at which infections are identified. Electronically assisted surveillance (EAS) through the EHR has thus been proposed as a means to reduce errors and the amount of time IPs spend identifying organisms. EAS could allow IPs more time for education and prevention, all while employing low-tech items in the EHR and functions they might use in common computer programs. Although a survey of 241 California hospitals correlated adoption of EAS with greater use of evidence-based practices to prevent HAIs, however, increased adoption of EAS did not decrease the amount of time spent on organism identification, suggesting a need to incorporate workflow redesigns. In addition, vendor-based EAS systems are expensive, with no evidence of cost-effectiveness, and in-house EAS systems require infrastructure that is just as costly. Moreover,

these systems simply identify sentinel events and might identify patterns; they do not conduct the surveillance.

NSUHS has built and validated a successful model of truly automated surveillance for CLABSIs at Stroger Hospital in Cook County, Illinois. Algorithms within the NSUHS data warehouse perform well, compared with expert review, and NSUHS has expanded the system such that the final model resembles NHSN. Attempts to disseminate this model to other hospitals have failed because of differences in the way hospitals operate. However, automated surveillance is attainable and scalable. The tools and algorithms developed by NSUHS are open to access by other institutions.

Future of Reporting Quality Data and Using Data for Various Accountability Programs

James Poyer, MS, MBA, Division of Quality Improvement for Acute Care, Centers for Medicare and Medicaid Services

As discussed during other plenary sessions, CMS is moving toward VBP, which links payments to quality performance and reporting and penalizes facilities for HAIs and HACs. CMS also is implementing several initiatives to encourage the meaningful use of EHRs and the use of these records for reporting on quality. Beginning in FY2015, CMS will link Medicare and Medicaid payments to hospitals with meaningful use of EHRs, with preference given to hospitals that use IQR measures to report their meaningful use. With this change and statutory requirements, the HAI Action Plan will be used not only to promote transparency and reporting among health care facilities but also as a basis for VBP and certification of meaningful use. Facilities will likely use EHR measures to meet their meaningful-use requirements, and to do so, they and HHS agencies will need to align their EHR measures and share information on how these measures were developed.

Ultimately, these requirements address CMS's three-part aim of better care, better health, and affordable care. They also align with the HHS National Quality Strategy, which aims to make care safer, ensure the engagement of patients and their families as partners, promote efficient communication and coordination of care, promote the most effective prevention and treatment practices for leading causes of mortality, work with communities to promote use of best practices, and make quality care more affordable. CMS has proposed rules for the FY2016 VBP, and it is working to make the link between incentive payments and performance even more transparent and to align that link with National Quality Strategy goals. To further reduce reporting burden to providers, facilitate care coordination, and promote EHR adoption, CMS is also collaborating with the HHS Secretary's Measure Endorsement Entity to harmonize measures across settings.

Discussion Highlights

Ideally, implementation of HHS rules, which at present is often a task of integration, would encapsulate standards-based rules and facilitate development of a common set of fields, data, and knowledge across agencies. An example can be found with Illinois Public Health Note, where NHUHS is creating a setting with vendor-neutral rules and a common data model that vendors and providers must use when submitting data. Although initial HHS efforts have focused on data

submission, grants have been awarded to support the development of standards-based rules, and other initiatives are planned to encourage vendors to improve usability and reporting.

The NSUHS EHR/data warehouse system includes an element that captures prescriptions in both inpatient and outpatient settings. With this element, NSUHS was able to follow physicians' prescription patterns and develop physician-based scorecards during flu season. NSUHS has attempted to incorporate prescription capture in its hospitals' EHRs, but so far, hospital administrators are pushing back. At present, the NSUHS EHR system does not automatically populate information into NHSN.

Data reporting and the ability to track performance are difficult for smaller hospitals, raising concerns that VBP will skew toward rewarding larger health systems. CMS recognizes these limitations and is working to address them. For example, CMS is soliciting comments on a proposal to omit from its CLABSI measures any hospital that had less than one case. The agency is also proposing a patient-safety metric that is claims based, but composite measures are better served by clinical data and quality measures.

Other Discussion Points

- It is likely too late to incorporate NHSN reporting in the Stage 2 rules for meaningful use. However, stakeholders are encouraged to push for it to be included in Stage 3 rules. Through close coordination, some work on incorporating such reporting is under way, and some measures might be included as they arise in IQR.
- Competency levels and resource availability will vary widely. HICPAC has drafted a model identifying core competencies IPs need at various stages in their careers, and IT staff from NHUHS have shown some facilities how to improve reporting and quality with the tools they have. Facilities might also benefit from HHS training opportunities that shorten the learning curve for ICD-10 codes.
- The data supply chain will need a vendor-neutral, implementation-ready mechanism to collect data on laboratory-identified MRSA and *C. difficile* infections and submit it to NHSN. Mapping public health infection codes to laboratory information systems could be a good start toward infrastructure that supports clinical decision making for HAIs and reduces discrepancies between reports from facilities and those from public health.
- States vary in how well they have encouraged adoption of EHRs; those that do best have fostered close coordination between health IT at state governments and health information exchanges with RECs.

FIFTH PLENARY

The final plenary session of the HAI Data Summit focused on key question 6:

Moving forward, what ongoing relationships, informational forums, and policies are needed to help states, and other key stakeholders, meet our common goals in the HAI Action Plan?

Summit participants broke into small groups and discussed practical steps they could take in their own organizations. Small groups were then invited to share their ideas with all Summit participants.

Practical Steps toward Meeting Common Goals in the HAI Action Plan

- **Relationships and Communication.** HHS was commended for inviting IPs to participate in the summit, and participants agreed the summit is a good start. However, more opportunities are needed for HAI stakeholders to discuss their concerns with HHS. Participants suggested regular meetings to clarify the vision of the HAI Action Plan, discuss HAI measurement, and provide ongoing training to NHSN. If resources are limited, HHS should consider regional meetings, because regional coordinators serve as intermediaries for communication between HHS and the states. Webinars were also suggested. HICPAC, the Society of Healthcare Epidemiologists of America, consumers and advocates, and frontline staff (e.g., nurses) should participate or continue to participate in these meetings.

Thousands of stakeholders are tracking and reporting HAIs, but many, particularly those in rural areas, are doing it alone, and frustration with the overwhelming nature of reporting leads to a high amount of turnover. Therefore, vendors should visit smaller facilities and learn about their needs for reporting.

- **Common Threads and Standards.** Common threads among reporting systems are needed to remove redundancies and inconsistencies. Participants suggested that vendors be engaged in establishing NHSN data-sharing rules and definitions and incorporating them into their systems, as well as a certification process for EHR products. They also suggested forums for EHR vendors, data miners, and IPs to ensure vendor transparency and to develop vendor-neutral standards. In addition, standards toolkits can avoid duplication and unnecessary competition to allow stakeholders to share best practices. Participants emphasized that standards should allow facilities to use and report data in a meaningful way without being overburdened by reporting requirements. Standards can also help with data sharing.

Specific ideas included:

- Using the CTSE HAI Standards Committee to provide governance processes that could be used to report state- and hospital-specific HAI summary statistics.
- Implementing a coordinated approach to validation, including federal-level standards and a certification process for validation programs.
- Incorporating NHSN HAI reporting into meaningful use measures.

Participants also suggested that HHS set a national standard for the number of IPs needed per facility bed size.

- **Data Sharing.** Ultimately, stakeholders will need patient-centered data to be shared across different types of facilities and regional structures of care. However, statutes and structures such as the Health Insurance Portability and Accountability Act can sometimes hamper sharing and should therefore be tweaked.
- **Reporting.** Participants suggested that HHS require reporting not only of aggregate data but also of hospital data. Data also should be reported in a clear and accessible way to

consumers. Participants suggested that HHS and stakeholders consider different formats of information sharing based on target audiences (i.e., consumers, providers, public health agencies, quality improvement organizations, or the federal government).

- **Resources.** Funding and expertise are important in helping states to continue their work, but the level of available resources varies across states. States need to know the long-term funding strategy for sustaining the HAI Action Plan, and funding and expertise should be channeled through state health departments, which are the leaders in sustaining HAI programs. In addition, facilities administrators need guidance on the level of resources needed by IP programs to meet mandates.
- **Education.** States need education and training, for example, in NHSN data analysis to continue their efforts to prevent and to reduce HAIs. Health professionals and the public also require education on preventing, recognizing, and treating or caring for HAIs.

TRACK SESSION D: ACUTE CARE HOSPITALS

The track session, co-chaired by Dr. Wong and Russ Olmsted, MPH, CIC, of St. Joseph Mercy Health System, presented data from the IMPAQ-RAND Longitudinal Study of HAI Rates across Key HHS Data Sources and the PfP HACs Measurement Strategies, as well as an overview of how NHSN works with external partners. The presentations and discussions in this session addressed key question 3:

With HHS analyzing and reporting HAI data acquired through a variety of programs and systems, each with its own methodology, and because these differences sometimes produce incongruent estimates of HAI scope, magnitude, or trends, what are the priorities of stakeholder groups as policies for HAI data reporting are being addressed?

After hearing and discussing these presentations, track session participants broke into subgroups to discuss the following sub-questions:

What strategies are needed to advance the use and value of the HHS data systems for all stakeholders? Discuss the advantages and limitations of these systems, for example, the use of administrative claims data versus epidemiological data to develop shared understanding and assess potential for preference based on specific site of HAI.

As we improve our surveillance and data collection efforts, how do we capture and incorporate this information while sustaining consistency in the goals and metrics as originally defined?

Longitudinal Study of HAI Rates across Key HHS Data Sources

Daniel Weinberg, PhD, IMPAQ International; Katherine Kahn, MD, RAND Corporation

CAUTI rates were determined from each HHS data source using data source inclusion criteria, such as indwelling catheter, and the units in which they were expressed, such as discharges or catheter days, for the denominator. The numerator for these rates included timing of catheter placement and UTI diagnosis, antibiotic requirement, and, if included in the dataset, laboratory requirements, as well as other criteria, such as International Classification of Diseases, Ninth

Revision (ICD-9) codes, or UTI symptoms. On the basis of these determinations, the rate of CAUTIs among Medicare claims increased by 25% from 2005 to 2010 and then plateaued in later years. Likewise, HCUP rates rose by 36% from 2007 through 2009, although the rate of increase slowed during the second year. Medicare Patient Safety Monitoring System (MPSMS) rates showed no significant changes over time, and NHSN rates actually declined in 2010. There was some concordance among data sources as the rate of CAUTI increases slowed.

The denominator for CLABSI surveillance rates included data source inclusion criteria, such as AHRQ Patient Safety Indicator 7 specifications, central line insertions, or discharges with central line insertion and no infection on admission, and the units in which these criteria were described, such as discharges or central line days. The numerator for CLABSI rates included time from central line insertion to bloodstream infection and/or laboratory or clinical requirements. From 2005 through 2010, CLABSI rates among Medicare claims fell by 69%, but they increased by 4% during the last year of the sample. HCUP rates decreased by 42%, and NHSN decreased by 32% between 2006–8 and 2010. Again, the change in rates was not significant for MPSMS, but they did show a trend toward declining. Thus, the concordance among data sources was more pronounced, and all data sources showed a decline in CLABSI.

For SSIs, there was some mismatch among data sources in the types of surgeries included in the denominator, and these could be expressed as either discharges or surgical procedure. The numerator for SSI rates included specific criteria for infection or codes indicating type of surgical procedure, and the numerator for Medicare claim also included follow-up time. Among Medicare claims, rates of SSIs declined by almost 10% between 2005 and 2010. HCUP rates decreased by approximately two percent and NHSN rates decreased by eight percent from baseline. All three data sources showed declining rates of SSIs between 2008 and 2010. MPSMS did not conduct SSI surveillance.

For MRSA surveillance, Medicare claims, HCUP, and MPSMS denominator inclusion criteria focused on discharges, whereas the CDC Emerging Infections Program ABCs focused on the population in nine catchment areas. Numerators included days to MRSA and/or other criteria such as ICD-9 codes or MRSA isolation from a normally sterile site. A new set of MRSA codes were issued in 2008. MRSA rates among Medicare claims decreased by approximately 4% between 2009 and 2010. HCUP rates increased from 2007 and 2009, and no changes in rates were observed following the change in codes. Among ABCs surveillance, MRSA rates decreased by almost a third between 2005 and 2009 and by two-thirds following the change in codes. MPSMS showed no statistically significant changes over time. IMPAQ and RAND are particularly confident in the ABCs rate changes, because they were measured for a constant cohort with the same definitions over time.

Discussion Points

HAI rate determinations are complex and could be affected by several factors, including the person reading the chart or mechanical problems associated with catheter or central line placement. In addition, claims data appear to answer the wrong questions, and clinicians have been held responsible for surveillance definitions, which are therefore subject to bias across the continuum of care. Simpler measures might sacrifice some specificity but provide more guidance

on improvement over time. However, ease of measurement should be balanced with opportunities to maximize all available data and achieve meaningful use.

The IMPAQ/RAND longitudinal study did not look for concordance in rates but in trends.

Partnership for Patients Hospital-Acquired Conditions HAI Local Measurement Strategies

Noel Eldridge, MS, Agency for Healthcare Research and Quality

The MPSMS sample is based on the IQR sample that CMS already collects. The MPSMS sample thus includes patients with principal diagnoses of pneumonia, acute myocardial infarction, or heart failure and patients participating in the Surgical Care Improvement Project (SCIP). The sample has been expanded to include CLABSI and CAUTI, and a complementary sample of patients outside the four principal groups has been added. Thus, the MPSMS sample will represent the entire patient population, beginning with data from 2012.

The national PfP measurement strategy involves sampling and extrapolation of measured HACs from MPSMS. However, another key element in the PfP project is the local measurement strategy, which relies on 26 hospital engagement networks (HENs) paid by CMS to reduce adverse events of all types. Each HEN uses its own methods to measure HACs, and although they are expected to measure outcomes and processes, the majority of HENs are also measuring HAC rates. Although there is no mandatory reporting of specific measures, HENs must provide CMMI with run charts and other data they collect.

The MPSMS sample through 2007 includes all fee-for-service Medicare patients, whereas the sample for 2009–2010 includes the four patient categories mentioned above. To adjust for this discrepancy, PfP uses data from the earlier sample only for patients with the four principal diagnoses, and it has removed all patients younger than 65 years from the later sample. The two samples are therefore similar, but not identical. However, data from these samples indicate that from 2005 through 2010, rates declined by 9% for CDI, 17% for CAUTIs, 25% for VAP, and 60% for CLABSIs, whereas they rose slightly for postoperative pneumonia. The numbers of MRSA and VRE were too small to suggest any trends. Overall, MPSMS data indicate that HAIs have declined by 15%. Analyses will continue through 2013.

Discussion Points

Some summit participants are suspicious that through HENs, PfP has simply funded projects that use measures most consider to be invalid, even as the PfP asks them to submit trend charts to enable PfP to assess progress in reducing HAIs. One participant questioned whether the HENs were familiar with the HAI Action Plan and expressed frustration that various HHS agencies did not appear to know what the others were doing. However, the PfP National Measurement Strategy does not require reporting. Rather, MPSMS piggybacks on the IQR charts CMS collects for other purposes and abstracts based on PfP algorithms. Likewise, PfP does not impose a national measure or new measures. It has allowed HENs to propose the most appropriate methods to measure adverse events and implement programs to reduce these events. Most HENs will likely use NHSN for the HAIs targeted within the HACs, although that was not initially required.

Other discussion points:

- MPSMS appears to do a good job of extracting information about the presence of infection at the time of admission.
- The summary data presented here is preliminary and was compiled just as the National Measurement Strategy was ramping up. At present, it appears to report a mix of outcome and process measures, which might not have been used consistently across hospitals.
- PfP and MPSMS do not intend to develop a common standard; rather, they will monitor contracts to ensure organizations are adhering to their proposals.

CDC National Healthcare Safety Network and External Partners

Dawn Sievert, PhD, MS, Centers for Disease Control and Prevention

NHSN works with partners from a variety of disciplines, with surveillance and analytical expertise focused on public reporting and process improvement. To evaluate the risks and benefits of requested changes in reporting, NHSN and its partners engage in in-depth discussions, review published literature and conference abstracts highlighting issues with NHSN surveillance definitions and methodology, identify and propose solutions for examples of users' problems and concerns, and consult with additional experts linked to collaboration members or other partners with access to the appropriate data or infrastructure.

The CTSE HAI Standards Committee is one such partnership. Led by CSTE with CDC participation, the committee deliberates on issues such as case definitions, clinical and laboratory criteria, electronic criteria, validation and risk adjustment, and the release of NHSN data. The committee also develops CTSE position statements. It has just completed work on a statement regarding CLABSI reporting, and it is discussing antimicrobial resistance reporting.

A second example of NHSN partnerships is the Healthcare Infection Control Practices Advisory Committee (HICPAC) Surveillance Working Group. This group is more dynamic, with membership, collaborations, and partnerships changing based on the topic under review. The HICPAC Surveillance Working Group has recently revised the NHSN CLABSI definition such that laboratory-confirmed bloodstream infections resulting from mucosal barrier injury are reported but set aside as a specific subset. The working group also has revised the overall NHSN HAI definition so that it is more amenable to electronic reporting, and most recently, the working group has begun revising NHSN procedures, definitions, and reporting variables for SSIs.

Another partnership, the VAP Surveillance Definition Work Group, has begun revising definitions for adults, moving from VAP to "ventilator-associated events" (VAEs). The revision, which could include definitions of ventilator-associated conditions, infection-related ventilator-associated conditions, and possible or probable VAP, will represent a new NHSN model that incorporates available criteria across the spectrum of mechanically ventilated patients. CDC will propose metrics to the National Quality Forum and expects to have a manual application available for the February 2013 NHSN release. Once measures are stabilized, CDC will consider electronic reporting for VAEs. The current definitions for VAP will remain in place for children until NHSN meets with pediatric groups, and because facilities have already begun their 2012 data collection for VAP in adults, NHSN is allowing this reporting off-plan so that networks can finish and perform their comparisons.

Discussion Points

- At present, NHSN does not differentiate between specific lines in patients with multiple lines. CDC is not discussing such reporting but might revisit the issue if evidence later shows the importance of collecting data for distinct lines.
- The definition of surgical implants is a subject of debate, particularly for items such as staples or hemoclips. HICPAC and CDC have discussed this concern and will remove implants as a variable beginning January 2013. In addition, NHSN will require only a 30-day follow-up for most surgical procedures. The 90-day follow-up requirement will remain for a subset of procedures.

Track Session Discussion Highlights

- MPSMS contains data on the number of line insertions per patient and the number of patients with lines inserted, although the system does not provide information on the number of patients with simultaneous line insertions.
- There is some concern that because the MPSMS sample is fairly random, it might not allow PfP to detect significant differences. However, the 2012 sample will be enriched for CAUTI and CLABSI, and PfP has access to the charts. How best to analyze this sample is under discussion.
- Monitoring and reducing HAIs will require not only data collection and process tools but also valid outcomes measures. For example, risk for infection might differ from device risk, which might increase even as facilities intervene against HAIs. Thus, the appearance of heavy federal investment in process measures is a concern. The different rates and outcomes seen by HENs might provide an opportunity for hospitals to learn from one another.

NEXT STEPS AND ACTION ITEMS

- OASH will review the discussions and responses to summit key questions. Participants are asked to participate in an electronic survey and provide constructive feedback on the strengths and limitations of the summit.
- PowerPoint presentations from the summit will be posted on the OASH Web site once they have been modified to comply with Section 508 of the US Rehabilitation Act.
- A complete report on the summit will be developed and posted by Fall 2012.
- An update on metrics will be provided at the 2012 Progress Toward Eliminating Health Care-Associated Infections meeting, which will be held at the Washington Marriott Hotel Washington, DC, on November 27, 2012.

Dr. Wright noted that HHS will continue to promote implementation-based science to reduce HAIs and focus on metrics that are not on target to meet 2013 goals. He added that HHS will need continued engagement with summit participants.

FINAL THOUGHTS FROM MARY BRENNAN-TAYLOR

While summit participants have considered the definition of “meaningful use,” what matters most to patients is that data are timely, actionable, and transparent. Data not only should be used by health care providers to guide lifesaving corrective actions but also should be readily available to the public to enable informed decision making. Consumers need to see clearly whether hospitals are meeting the HAI Action Plan goals.

It is significant and moving that HHS has not only invited patients and advocates to the table at this summit but also allowed them the first and last word. The Consumers Union looks forward to continued robust and interdisciplinary work with all stakeholders in achieving the goals of the HAI Action Plan. Although patients thank HHS, the states, providers, and other stakeholders for all they do, they remind them that every statistic is a cherished and irreplaceable person like Alice Brennan. Even one death from an HAI is unacceptable.

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APPENDIX 2: SUMMIT AGENDA

Day 1: Wednesday, May 30, 2012

| Time | Session | Location |
|-----------------------|---|----------|
| 8:30 AM – 9:00 AM | <p>Welcome and Background</p> <p>Opening: Alice’s Story Mary Brennan-Taylor <i>Patient Advocate</i> <i>Consumer Report, Safe Patient Project</i> <i>Adjunct Faculty, University of Buffalo School of Medicine, Department of Family Medicine</i></p> <p>Welcome David Muntz, MBA <i>Principal Deputy National Coordinator</i> <i>HHS Office of the National Coordinator for Health Information Technology</i></p> <p>Data Summit: Background, Goals, and Key Questions “National Action Plan to Prevent Health Care-Associated Infections: Roadmap to Elimination:” Overview, Measures, and Goals Don Wright, MD, MPH <i>Deputy Assistant Secretary for Health</i> <i>HHS Office of the Assistant Secretary for Health</i></p> | Imperial |
| 9:00 AM – 10:15 AM | <p>First Plenary: Electronic Health Records Systems, Standards, and Use in HAI Reporting <i>(Key Question Addressed: QI)</i></p> <ul style="list-style-type: none"> • EHR Adoption in the U.S.: Meaningful Questions David Hunt, MD, FACS <i>Medical Director, Office of Provider Adoption & Support</i> <i>HHS Office of the National Coordinator for Health Information Technology</i> • Brief Overview, Level Setting for Remainder of Data Summit – Statistics on EHR Adoption in the U.S. David Hunt, MD, FACS <i>Medical Director, Office of Provider Adoption & Support</i> <i>HHS Office of the National Coordinator for Health Information Technology</i> • CDC National Healthcare Safety Network Dan Pollock, MD <i>Surveillance Branch Chief, Division of Healthcare Quality Promotion</i> <i>HHS Centers for Disease Control and Prevention</i> • CMS CROWNWEB Jim Poyer, MS, MBA <i>Director, Division of Quality Improvement Policy for Acute Care</i> <i>HHS Centers for Medicare & Medicaid Services</i> • AHRQ Common Formats Noel Eldridge, MS <i>Center for Quality Improvement and Patient Safety</i> <i>HHS Agency for Healthcare Research and Quality</i> • Q&A | Imperial |
| 10:15 AM | Break | |

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| – 10:30 AM | | |
| 10:30 AM – 11:45 AM | <p>Second Plenary: HHS HAI Reporting Systems: Overview of Selected Systems, Public Reporting of HAI Data (<i>Key Questions Addressed: Q3, Q4</i>)</p> <ul style="list-style-type: none"> • Introduction to Plenary Session David Hunt, MD, FACS <i>Medical Director, Office of Provider Adoption & Support</i> <i>HHS Office of the National Coordinator for Health Information Technology</i> Hui-Hsing Wong, MD, JD <i>Medical Officer</i> <i>HHS Office of the Assistant Secretary for Planning and Evaluation</i> • Overview of Key HHS Data Sources Available for Longitudinal Assessment of HAI Rates: Results from the IMPAQ/RAND Evaluation of the HAI Action Plan Daniel Weinberg, PhD <i>IMPAQ International</i> Katherine Kahn, MD <i>RAND Corporation</i> • Partnership for Patients Hospital-Acquired Conditions Measurement Strategy Noel Eldridge, MS <i>HHS Agency for Healthcare Research and Quality</i> • Provider-Level Perspective: Resource Requirement of Surveillance and Snapshot of HAI and Other Patient Safety Metrics Russ Olmsted, MPH, CIC <i>Director, Infection Prevention & Control Services</i> <i>St. Joseph Mercy Health System</i> • State Perspective on Multiple National Reporting Systems Steve Ostroff, MD <i>HAI Coordinator</i> <i>Pennsylvania Department of Health</i> • NHSN Data Presentation, Standardized Infection Ratio (SIR), Display of Comparisons, Aggregation of Data Dawn Sievert, PhD, MS <i>Epidemiologist</i> <i>Lead, NHSN Protocol and Public Reporting Team, Surveillance Branch</i> <i>Division of Healthcare Quality Promotion</i> <i>HHS Centers for Disease Control and Prevention</i> • Q&A | Imperial |
| 11:45 AM – 1:00 PM | Lunch On Your Own | |
| 1:00 PM – 2:15 PM | <p>Third Plenary: National and State-Level Validation Efforts (<i>Key Question Addressed: Q5</i>)</p> <ul style="list-style-type: none"> • Introduction to Plenary Session Rani Jeeva, MPH, CPH <i>HAI Team Leader</i> <i>HHS Office of the Assistant Secretary for Health</i> Lisa McGiffert <i>Project Director, SafePatientProject.org, Consumers Union</i> • Consumer Perspective: Validation Lisa McGiffert <i>Consumers Union, Safe Patient Project</i> • CMS Validation of Hospital Inpatient HAI Measures James Poyer, MS, MBA <i>Director, Division of Quality Improvement Policy for Acute Care</i> | Imperial |

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| | <p><i>HHS Centers for Medicare and Medicaid Services</i></p> <ul style="list-style-type: none"> • CDC Support for Valid HAI Data and Lessons Learned from State Validation Kathryn Arnold, MD <i>Medical Officer, Division of Healthcare Quality Promotion</i> <i>HHS Centers for Disease Control and Prevention</i> • State-Level Validation: Results and Lessons Learned from California Lynn Janssen, MS, CIC <i>Liaison Program Coordinator, HAI Program</i> <i>California Department of Public Health</i> • Q&A | |
| 2:15 PM – 2:30 PM | <p>Introduction to Track Sessions A, B, C, and D Don Wright, MD, MPH <i>Deputy Assistant Secretary for Health</i> <i>HHS Office of the Assistant Secretary for Health</i></p> | |
| 2:30 PM – 5:00 PM | <p>Track Sessions (Concurrent Sessions)</p> <p>Track A: Ambulatory Surgical Centers (<i>Key Question Addressed: Q2</i>)</p> <p>Track B: End-Stage Renal Disease Facilities (<i>Key Question Addressed: Q2, Q3</i>)</p> <p>Track C: Long-Term Care Facilities (Cancelled)</p> <p>Track D: Acute Care Hospitals (<i>Key Question Addressed: Q3</i>)</p> | <p>Trianon</p> <p>Colonial</p> <p>Truman</p> <p>Imperial</p> |

Day 2: Thursday, May 31, 2012

| Time | Session | Location |
|--------------------|--|----------|
| 8:30 AM – 9:00 AM | <p>Opening and Welcome CAPT Jose H. Belardo, JD, MSW <i>HHS Regional Health Administrator, Region VII</i></p> <p>Affordable Care Act: Improving Quality Measurement and Transparency Jay Angoff <i>HHS Regional Director, Region VII</i></p> | Imperial |
| 9:00 AM – 10:15 AM | <p>Fourth Plenary: Enhancing the HAI Data Supply Chain (<i>Key Question Addressed: Q2</i>)</p> <ul style="list-style-type: none"> • Introduction to Plenary Session Dan Pollock, MD <i>Surveillance Branch Chief, Division of Healthcare Quality Promotion</i> <i>HHS Centers for Disease Control and Prevention</i> • EHR Adoption in U.S.: From Meaningful Questions to Tides David Hunt, MD, FACS <i>Medical Director, Office of Provider Adoption & Support</i> <i>HHS Office of the National Coordinator for Health Information Technology</i> • EHR Systems Configuration to Automatically Produce HAI Data to CDC's NHSN Marc-Oliver Wright, MT(ASCP), MS, CIC <i>Director of Infection Control</i> <i>NorthShore University Health System</i> • Future of Reporting Quality Data and Using Data for Various Accountability Purposes | Imperial |

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| | <p>Jim Poyer, MS, MBA <i>Director, Division of Quality Improvement Policy for Acute Care HHS Centers for Medicare & Medicaid Services</i></p> <ul style="list-style-type: none"> • Q&A | |
| 10:15 AM – 10:30 AM | Break | |
| 10:30 AM – 11:30 AM | <p><i>Small Group Discussion: Key Questions (Concurrent Sessions)</i></p> <p><i>Q1. When, how, and for which HAIs should the transition be made from traditional methods of case finding and reporting—that depend to a large extent on application of written protocol instructions by individuals working in healthcare facilities and manual methods of data collection and data entry—to computer-based algorithms for case detection and use of electronic data sources for populating and submitting numerator and denominator records?</i></p> | Trianon |
| | <p><i>Q2. With increasing adoption of electronic health record systems and advances in information technology for detecting and reporting HAIs and collecting and submitting closely related data, what actions need to be initiated or intensified to ensure that the data supply chain is as fully developed and widely used as possible, produces data that are validated, and meets prevention, public reporting, and payment purposes?</i></p> | Colonial |
| | <p><i>Q4. What policies and standards are needed to facilitate consistent public reporting of the Centers for Disease Control and Prevention (CDC) National Healthcare Safety Network (NHSN) data at the state and federal levels and how should those policies be identified or developed or maintained?</i></p> | Truman |
| | <p><i>Q5. What can and should be done to improve, extend, and sustain efforts at the local, state, and national levels to validate facility-specific HAI data that are collected, analyzed, and publicly reported?</i></p> | Imperial |
| 11:30 AM – 12:30 PM | Lunch On Your Own | |
| 12:30 PM – 1:45 PM | <p><i>Small Group Discussion: Key Questions (Concurrent Sessions)</i></p> <p><i>Q1. When, how, and for which HAIs should the transition be made from traditional methods of case finding and reporting—that depend to a large extent on application of written protocol instructions by individuals working in healthcare facilities and manual methods of data collection and data entry—to computer-based algorithms for case detection and use of electronic data sources for populating and submitting numerator and denominator records?</i></p> | Trianon |
| | <p><i>Q2. With increasing adoption of electronic health record systems and advances in information technology for detecting and reporting HAIs and collecting and submitting closely related data, what actions need to be initiated or intensified to assure that the data supply chain is as fully developed and widely used as possible, produces validated data, and meets prevention, public reporting, and payment purposes?</i></p> | Colonial |
| | <p><i>Q4. What policies and standards are needed to facilitate consistent public reporting of the Centers for Disease Control and Prevention (CDC) National Healthcare Safety Network (NHSN) data at the state and federal levels and how should those policies be identified, developed, or maintained?</i></p> | Truman |
| | <p><i>Q5. What can and should be done to improve, extend, and sustain efforts at the local, state, and national levels to validate facility-specific HAI data that are collected, analyzed, and publicly reported?</i></p> | Imperial |
| 12:30 PM – 1:45 PM | Poster Presentations and Exhibits | Exhibit Hall |
| 1:45 PM – 2:00 PM | Break | |

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| <p>2:00 PM – 2:55 PM</p> | <p>Fifth Plenary: Moving Forward: Next Steps in Ensuring Accurate and Reliable Data to Monitor Progress in the Reduction of HAIs (<i>Key Question Addressed: Q6</i>) Don Wright, MD, MPH <i>Deputy Assistant Secretary for Health</i> <i>HHS Office of the Assistant Secretary for Health</i></p> <p>Rani Jeeva, MPH, CPH <i>HAI Team Leader</i> <i>HHS Office of the Assistant Secretary for Health</i></p> <ul style="list-style-type: none"> • Small-Group Discussion and Report-Outs | <p>Imperial</p> |
| <p>2:55 PM – 3:00 PM</p> | <p>Next Steps and Acknowledgments Don Wright, MD, MPH <i>Deputy Assistant Secretary for Health</i> <i>HHS Office of the Assistant Secretary for Health</i></p> <p>Final Thoughts Mary Brennan-Taylor <i>Patient Advocate</i> <i>Consumer Report, Safe Patient Project</i> <i>Adjunct Faculty, University of Buffalo School of Medicine, Department of Family Medicine</i></p> | <p>Imperial</p> |