

HHS Action Plan to Prevent Healthcare-Associated Infections: EXECUTIVE SUMMARY

Background on Healthcare-Associated Infections

The Department of Health and Human Services (HHS) “Action Plan to Prevent Healthcare-Associated Infections” (Plan) represents a culmination of several months of research, deliberation, and public comment to identify the key actions needed to achieve and sustain progress in protecting patients from the transmission of serious, and in some cases, deadly infections.

Healthcare-associated infections are infections that patients acquire while receiving treatment for medical or surgical conditions. HAIs occur in all settings of care, including acute care within hospitals and same day surgical centers, ambulatory outpatient care in healthcare clinics, and in long-term care facilities, such as nursing homes and rehabilitation facilities. HAIs are associated with a variety of causes, including (but not limited to) the use of medical devices, such as catheters and ventilators, complications following a surgical procedure, transmission between patients and healthcare workers, or the result of antibiotic overuse.

Healthcare-associated infections exact a significant toll on human life. They are among the top ten leading causes of death in the United States, accounting for an estimated 1.7 million infections and 99,000 associated deaths in 2002. In hospitals, they are a significant cause of morbidity and mortality.¹ Hospital stays for Methicillin-resistant *Staphylococcus aureus* (MRSA) infection have more than tripled since 2000 and have increased nearly ten-fold since 1995.²

Four categories of infections account for approximately three quarters of HAIs in the acute care hospital setting. These four categories are: 1) Surgical site infections; 2) Central line-associated bloodstream infections; 3) Ventilator-associated pneumonia, and; 4) Catheter-associated urinary tract infections. In addition, infections associated with *Clostridium difficile* and MRSA also contribute significantly to the overall problem. The frequency of healthcare-associated infections varies by location. Currently, urinary tract infections comprise the highest percentage (34%) of HAIs followed by surgical site infections (17%), bloodstream infections (14%), and pneumonia (13%).³

In addition to the substantial human suffering exacted by HAIs, the financial burden attributable to these infections is staggering. It is estimated that HAIs incur nearly \$20

¹ Klevens RM, Edwards J, Richards C, Horan T, Gaynes R, Pollock D, Cardo D. Estimating Health Care-Associated Infections and Deaths in U.S. Hospitals, 2002. *Public Health Reports* 2007; 122:160-166.

² Elixhauser A and Steiner C. Infections with Methicillin-Resistant Staphylococcus Aureus (MRSA) in U.S. Hospitals, 1993–2005. *AHRQ Healthcare Cost and Utilization Project Statistical Brief* 2007; 35:1-10.

³ Klevens RM, Edwards J, Richards C, Horan T, Gaynes R, Pollock D, Cardo D. Estimating Health Care-Associated Infections and Deaths in U.S. Hospitals, 2002. *Public Health Reports* 2007; 122:160-166.

billion in excess healthcare costs each year.^{4,5,6} Whereas not all *Staphylococcus aureus* infections are healthcare-associated, healthcare charges for *Staphylococcus aureus* bloodstream infections for Medicare patients exceeded \$2.5 billion in 2005.⁷

The HHS Action Plan to Prevent Healthcare-Associated Infections

In response to the increasing threat of HAIs and national and international concern, the Department has composed a Steering Committee of senior-level representatives from the Offices and Operating Divisions of HHS and conducted a number of in-person meetings and conferences with Federal experts. HHS' Plan toward the prevention and elimination of healthcare-associated infections includes goals toward which the healthcare and public health communities have been moving over the past several years. Despite uncertainty about whether there ultimately will be a limit on meeting this goal, the decision to move forward has been embraced by the Steering Committee.

A five-point draft strategy was developed by HHS for this Plan and included:

- 1) Establishing an HHS Steering Committee for the Prevention of Healthcare-Associated Infections to develop an action plan.
- 2) Beginning to prioritize, in partnership with the HHS Secretary's Healthcare Infection Control Practices Advisory Committee (HICPAC), the significant scientific questions that need to be addressed to move the field forward rapidly and the current 1,200 recommended clinical practices to facilitate rapid implementation amongst healthcare organizations.
- 3) Identifying and explore policy options for regulatory oversight of recommended practices and provide critical compliance assistance to select hospitals.
- 4) Working to establish greater consistency and compatibility of HAI data through developing standardized definitions and measures for HAIs.
- 5) Striving to build on the principles of transparency and consumer choice to create incentives and motivate healthcare organizations and providers to provide better, more efficient care.

Some of the most prominent clinicians, scientists, and other public health professionals within HHS in concert with key individuals from other federal Departments worked to develop a road-map for addressing this important public health and patient safety issue in the short- and long-term. Five working groups of the HHS Steering Committee met this past year, deliberated on known facts, research needs, and how to prevent HAIs. The primary topics of the five working groups with their respective agency leads were:

⁴ Stone PW, Braccia D, Larson E. Systematic Review of Economic Analysis of Health Care-Associated Infections. *American Journal of Infection Control* 2005; 33:501-509.

⁵ Roberts RR, Scott RD, Cordell R, Solomon SL, Steele L, Kempe LM, Trick WE, Weinstein RA. The Use of Economic Modeling to Determine the Hospital Costs Associated with Nosocomial Infections. *Clinical Infectious Diseases* 2003; 36:1424-1432.

⁶ Stone P, Larson E, Kawar LN. A systematic audit of economic evidence linking Nosocomial infections and infection control interventions: 1990-2000. *American Journal of Infection Control* 2002; 30,3:145-152.

⁷ <http://hcupnet.ahrq.gov/>

- The Prevention and Implementation working group led by the Centers for Disease Control and Prevention (CDC),
- The Research working group led by the Agency for Healthcare Research and Quality (AHRQ),
- The Information Systems and Technology working group co-chaired by the Office of the National Coordinator for Health Information Technology (ONC) and CDC,
- The Incentives and Oversight working group led by the Centers for Medicare and Medicaid Services (CMS), and,
- The Outreach and Messaging working group led by the Office of Public Health and Science (OPHS).

The HHS Steering Committee and its sub-groups, which composed the Action Plan to Prevent Healthcare-Associated Infections, accomplished the following:

- Identified seven metrics with corresponding national 5-year prevention targets
- Identified gaps in the current knowledge of HAIs and created an agenda for current and future research on HAIs
- Recommended standardization of data elements and adoption and use of data and technology standards to track HAIs
- Documented the current regulatory and administrative authority and initiatives/strategies of CMS (working with other HHS agencies and federal partners) used to prevent and combat HAIs
- Developed a progressive campaign to release and publicize the Plan in concert with a number of national partners in the federal, academic, non-profit, and private sectors. This messaging and communications strategy will target a number of audiences using the principles of social marketing and risk communication to also reach the public at large.

Top Ten Messages on HAIs and the Action Plan⁸

- Many healthcare-associated infections are preventable.
- A systemic approach to reducing the transmission of disease can be more effective than disease-specific approaches.
- Developing and supporting basic and translational studies to address the gaps in the science in this field will allow generation of additional strategies to reduce the risks of HAI transmission.
- It will take a strong partnership between federal and local/state governments and communities to truly help prevent HAIs. HHS is committed to this partnership and many of its agencies are and will be involved.
- The education of best practices for providers and other healthcare personnel is critical to prevent HAIs.

⁸ That HHS and Collaborators will communicate these to many stakeholders and the public – including healthcare organizations, professional provider organizations, governmental agencies, non-profit public health organizations, and the public.

- Specific metrics and national targets have been developed by HHS in concert with national experts on controlling infections.
- Educating patients on HAIs and how to prevent them is a critical part of the national effort.
- An informed media can help promote the education of the American public about the need to prevent HAIs and what HHS and its partners are doing.
- Preventive steps to control and prevent HAIs are cost-effective, save lives, and reduce disability for Americans.
- The time to act on HAIs is now, and HHS and its partners are working closely with providers, health systems, community leaders, and governments to help prevent HAIs.

Priority Recommendations of the Prevention and Implementation Group

- Progress towards 5-year national prevention targets
- Use and improve the metrics and supporting systems needed to assess progress towards meeting the targets
- Consider recommendations, grouped by priority module, outlined for each of the guidelines addressed

Priority Recommendations of the Research Group

- 1) Perform Research Projects to Address Specific Knowledge Gaps (Basic Science, Epidemiology, and Practices)
 - Basic Science
 - Develop strategies for preventing and/or eliminating biofilms associated with medical devices
 - Epidemiology
 - Study the epidemiology of bloodstream infections that occur outside of the hospital
 - Establish the preventability of *Clostridium difficile* infection (CDI) through a regional hospital collaborative intervention
 - Establish the preventability of unnecessary antimicrobial use through a multi-center collaborative intervention
 - Establish the preventability of surgical site infection (SSI) through a multi-center collaborative intervention
 - Practices
 - Assess the effectiveness of the ICU-wide application of a MRSA decolonization strategy
- 2) Perform Research Projects to Enhance the Implementation and Impact of Existing, Evidence-Based Infection Control Practices
 - Investigate the human cultural and organizational barriers to successful implementation of practices at the unit and institutional levels

- Develop and evaluate novel and automatable strategies for measuring HAIs
- Evaluate and validate standardized post-discharge surveillance methodology
- Develop proxy measures for ventilator-associated pneumonia (VAP) (i.e., acute lung injury) for inter-facility comparisons
- Develop standardized methods for measuring and reporting compliance with broad-based prevention practices (e.g., hand hygiene)

Priority Recommendations of the Information Systems and Technology Group

- Form an Interagency Working Group to enhance the federal capacity to lead a national prevention strategy
- Conduct a comprehensive HAI database inventory to guide future plans for near-, mid-, and long-term integration and interoperability projects and to establish the extent of definitional alignment and data element standardization needed to link HAI data across the nation
- Enhance individual agency systems to extend their coverage or establish new interfaces with other systems
- Accelerate transition to electronic reporting by healthcare facilities to reduce their reporting burden and increase timeliness, efficiency, comprehensiveness, and reliability of the data

Priority Recommendations of the Incentives and Oversight Group

- Improve regulatory oversight of hospitals and CMS oversight of the hospital accreditation program by refining the current method of measuring Accreditation Organization performance, enhancing surveyor training and tools, and adding sources and uses of infection control data
- Continue to incorporate measures of infection prevention and outcomes into Hospital Value-Based Purchasing (VBP) Plan methodology through implementing performance-based payment for hospitals, including measures of infection prevention and outcomes as a basis for payment
- Expand measures in CMS Hospital Compare which improves the quality and transparency of hospital care by increasing public accountability and provides consumers access to important hospital quality of care measures

Priority Objectives of the Outreach and Messaging Group

- Increase support for the HHS Action Plan to Prevent Healthcare-Associated Infections
- Increase knowledge and awareness of key messages and prevention practices among providers, consumers, the media, and general public

Conclusion and Contacts

Healthcare-associated infections are one of the most preventable causes of leading mortality in the U.S. The infections also add a significant economic burden to the healthcare system. The Department, in conjunction with experts, has developed an action plan to help reduce, prevent, and eventually eliminate much of the significant burden to our nation, health systems, communities, and individuals of HAIs.

We strongly encourage you to read the HHS Action Plan to Prevent HAIs. For additional details on what is in the Plan or on what HHS is doing to address this critical public health issue, please contact the HHS Office of Public Health and Science.