

**DEPARTMENT OF HEALTH AND HUMAN SERVICES
CENTERS FOR DISEASE CONTROL AND PREVENTION
National Center for Emerging and Zoonotic Infectious Diseases
Division of Healthcare Quality Promotion**

**Meeting Summary Report
Healthcare Infection Control Practices Advisory Committee
June 16-17, 2011
Atlanta, Georgia**



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ATTACHMENT 1

List of Participants

(Note: The Designated Federal Official opened the floor for introductions on June 16 and 17, 2011 and verified the presence of a quorum with voting members and *ex-officio* members for HICPAC to conduct its business on both days of the meeting.)

DAY 1: JUNE 16, 2011

HICPAC Members

Dr. Neil Fishman, Chair
 Ms. Judene Bartley
 Dr. Dale Bratzler
 Dr. Ruth Carrico
 Dr. Daniel Diekema
 Dr. Alexis Elward
 Dr. Ralph Gonzales
 Dr. Mary Hayden
 Dr. Susan Huang
 Dr. Tammy Lundstrom
 Dr. Thomas Talbot

Designated Federal Official

Mr. Jeffrey Hageman
 Deputy Chief,
 Prevention and Response Branch, DHQP

Ex-Officio Members

Dr. William Baine (Agency for
 Healthcare Research and Quality)
 Ms. Jeannie Miller (Centers for Medicare
 and Medicaid Services)
 Dr. Sheila Murphey
 (Food and Drug Administration)
 Dr. Gary Roselle
 (Department of Veterans Affairs)

Liaison Members

Ms. Joan Blanchard (Association of
 periOperative Registered Nurses)
 Dr. William Brock
 (Society of Critical Care Medicine)
 Dr. Sheri Chernetsky-Tejedor (Alternate,
 Society of Hospital Medicine)
 Ms. Barbara DeBaun (Association of
 Professionals of Infection Control
 and Epidemiology, Inc.)

Dr. Beth Feldpush
 (American Hospital Association)
 Ms. Sandra Fitzler
 (American Healthcare Association)
 Dr. Charles Huskins (Infectious Disease
 Society of America)
 Ms. Lisa McGiffert (Consumers Union)
 Dr. Richard Melchreit (Alternate, Council of
 State and Territorial Epidemiologists)
 Dr. Mark Rupp (Society for Healthcare
 Epidemiology of America)
 Dr. Mark Russi (American College of
 Occupational and Environmental
 Medicine)
 Ms. Rachel Stricof (Advisory Council for
 the Elimination of Tuberculosis)
 Dr. Robert Wise (The Joint Commission)

CDC/HHS Representatives

Dr. Denise Cardo, DHQP Director
 Dr. Michael Bell, Deputy Director, DHQP
 Dr. Rima Khabbaz, OID Deputy Director
 Kathy Allen-Bridson
 James Baggs
 Albert Barskey
 Sandra Berrios-Torres
 Amit Chitnis
 Amy Collins
 Michael Craig
 Karen Deasy
 Kim Distel
 Maggie Dudeck
 Scott Fridkin
 Susan Fuller
 Scott Goates
 Jeremy Goodman
 Carolyn Gould
 Alice Guh
 Neil Gupta
 Rosa Herrera

Teresa Horan
Martha Iwamoto
Harold Jaffe
John Jernigan
Tanya Johnson
Rachel Kossover
David Kuhar
Preeti Kutty
Melanie Lawson
Courtney Lee
Paul Malpiedi
Laura McAllister
Malinda McCarthy
Clifford McDonald
Huong McLean
Kathy Meyer
Elizabeth Mothershed
Lyn Nguyen
Joseph Perz
Agam Rao
Catherine Rebmann
Susan Redd
Philip Ricks
Arezo Risman
Melissa Schaefer
Daniel Schwartz (CMS)
Doug Scott
Lynne Schulster
Dawn Sievert
Elizabeth Skillen
Jason Snow
Arjun Srinivason
Nimalie Stone
Cindy Weinbaum
Sarah Wiley
Heidi Williams
Sarah Yi
Joni Young
Karen Hoffmann (CMS)

Members of the Public

Travis Becker (CareFusion)
Angela Brown (C.R. Bard)
Russ Castioni (3M Company)
Jan Creidenberg (CareFusion)
Deborah DeLisi
(McKesson Medical Surgical)
Gary Evans (AHC Media)
Kathryn Foxhall (Public)
Hudson Garrett, Jr. (Professional
Disposables International, Inc.)

Leslie Jeter (American Association of
Nurse Anesthetists)
Sonya Kimsey-Lerch (ASP)
Jane Kirk (GOJO Industries, Inc.)
Michele Marill
(*Hospital Employee Health Newsletter*)
Daniel Marsh (Professional Disposables
International, Inc.)
Betty McGinty (Society of Gastroenterology
Nurses and Associates, Inc.)
Heather Misner (Association of State and
Territorial Health Officials)
Amber Mitchell (Johnson & Johnson)
Charles Pigneri (CareFusion)
Grace Powers (C.R. Bard)
Scott Robirds (C.R. Bard)
Cynthia Salem (Genentech)
Daniel Schwartz (Centers for Medicare and
Medicaid Services)
Edward Septimus
(Hospital Corporation of America)
Michelle Stevens (3M Company)
Thomas Weaver (Association of
Professionals of Infection Control and
Epidemiology, Inc.)
Cindy Winfrey (Professional Disposables
International, Inc.)

DAY 2: JUNE 17, 2011

HICPAC Members

Ms. Judene Bartley
Dr. Dale Bratzler
Dr. Ruth Carrico
Dr. Daniel Diekema
Dr. Alexis Elward
Dr. Mary Hayden
Dr. Susan Huang
Dr. Tammy Lundstrom
Dr. Thomas Talbot

Designated Federal Official

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Deputy Chief,
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Dr. Michael Bell, Deputy Director, DHQP
Dr. Beth Bell, Director, NCEZID
Katherine Allen-Bridson
Ramona Bennett
Nicole Coffin
Amy Collins
Michael Craig
Cecilia Curry
Maggie Dudeck
Julie Edelson
Jonathan Edwards
Scott Fridkin
Carolyn Gould
Neil Gupta
Teresa Horan
Martha Iwamoto
Tanya Johnson
David Kuhar
Taranisia MacCannell
Paul Malpiedi
Chukwuma Mbaeyi
Elizabeth Mothershed
Joseph Perz
Daniel Pollock
Agam Rao
Catherine Rebmann
Philip Ricks
Arezoo Risman
Daniel Schwartz
Alicia Shugart
Elizabeth Skillen
Jason Snow
Nimalie Stone
Nicola Thompson
Wendy Vance
Heidi Williams

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Cindy Winfrey (Professional Disposables
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ATTACHMENT 2

Glossary of Acronyms

| | |
|---------------------|---|
| AAP | American Academy of Pediatrics |
| ACET | Advisory Council for the Elimination of Tuberculosis |
| ACIP | Advisory Committee for Immunization Practices |
| ACOEM | American College of Occupational and Environmental Medicine |
| ACS | American College of Surgeons |
| AHA | American Hospital Association |
| AHRQ | Agency for Healthcare Research and Quality |
| AHRQ | Agency for Healthcare Research and Quality |
| AMP | Antimicrobial Prophylaxis |
| AORN | Association of periOperative Registered Nurses |
| APIC | Association for Professionals in Infection Control and Epidemiology, Inc. |
| APU | Annual Payment Update |
| ASCs | Ambulatory Surgical Centers |
| BSC | Board of Scientific Counselors |
| <i>C. difficile</i> | <i>Clostridium difficile</i> |
| CAUTI | Catheter-Associated Urinary Tract Infection |
| CDC | Centers for Disease Control and Prevention |
| CLABSI | Central Line-Associated Blood Stream Infection |
| CMS | Centers for Medicare and Medicaid Services |
| COP | Condition of Participation |
| CRE | Carbapenem-Resistant Enterobacteriaceae |
| CSTE | Council of State and Territorial Epidemiologists |
| DHQP | Division of Healthcare Quality Promotion |
| EIP | Emerging Infections Program |
| FDA | Food and Drug Administration |
| GAS | Group A Streptococcus |
| GRADE | Grading of Recommendations, Assessment, Development and Evaluation |
| GVHD | Graft-Versus-Host Disease |
| HAIC | Healthcare-Associated Infection Community (Interface Steering Group) |
| HAIs | Healthcare-Associated Infections |
| HCP | Healthcare Personnel |
| HCV | Hepatitis C Virus |
| HHS | Department of Health and Human Services |
| HICPAC | Healthcare Infection Control Practices Advisory Committee |
| ICU | Intensive Care Unit |
| IDSA | Infectious Diseases Society of America |
| IgG | Immunoglobulin G |
| IgM | Immunoglobulin M |
| IPPS | Inpatient Hospital Prospective Payment System |
| IPs | Infection Preventionists |
| IQR | Inpatient Quality Reporting |
| IRBs | Institutional Review Boards |
| LTACHs | Long-Term Acute Care Hospitals |
| LTCFs | Long-Term Care Facilities |

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|------------------|---|
| MDROs | Multidrug-Resistant Organisms |
| MICU | Mobile Intensive Care Unit |
| MMR | Measles-Mumps-Rubella |
| MRSA | Methicillin-Resistant <i>Staphylococcus aureus</i> |
| MSSA | Methicillin-Sensitive <i>Staphylococcus aureus</i> |
| NCEZID | National Center for Emerging and Zoonotic Infectious Diseases |
| NHSN | National Healthcare Safety Network |
| NICU | Neonatal Intensive Care Unit |
| NQF | National Quality Forum |
| OID | Office of Infectious Diseases |
| OSHA | Occupational Safety and Health Administration |
| PCR | Polymerase Chain Reaction |
| PPACA | Patient Protection and Affordable Care Act |
| PPE | Personal Protective Equipment |
| QAPI | Quality Assessment and Performance Improvement |
| REALM | Regional Evaluation of Legislative Mandates |
| REDUCE | Randomized Evaluation of Decolonization vs. Universal Clearance to Eliminate (MRSA) |
| RSV | Respiratory Syncytial Virus |
| <i>S. aureus</i> | <i>Staphylococcus aureus</i> |
| SCCM | Society of Critical Care Medicine |
| SCG | Survey and Certification Group |
| SENIC | Study on the Efficacy of Nosocomial Infection Control |
| SHEA | Society for Healthcare Epidemiology of America |
| SHEPheRD | Safety and Healthcare Epidemiology Prevention Research Development |
| SHM | Society of Hospital Medicine |
| SIRs | Standardized Incidence Ratios |
| SSI | Surgical Site Infection |
| UPHS-CEP | University of Pennsylvania Health System Center for Evidence-Based Practice |
| UTI | Urinary tract infection |
| VA | Department of Veterans Affairs |
| VAP | Ventilator-Associated Pneumonia |
| VRSA | Vancomycin-Resistant <i>Staphylococcus aureus</i> |
| VZV | Varicella Zoster Virus |

EXECUTIVE SUMMARY

The Department of Health and Human Services and the Centers for Disease Control and Prevention (CDC), National Center for Emerging and Zoonotic Infectious Diseases (NCEZID), Division of Healthcare Quality Promotion (DHQP) convened a meeting of the Healthcare Infection Control Practices Advisory Committee (HICPAC) on June 16-17, 2011 in Atlanta, Georgia.

The Designated Federal Official (DFO) verified the presence of a quorum with voting members and *ex-officio* members for HICPAC to conduct its business on both days of the meeting. None of the HICPAC voting members declared any new conflicts of interest for the record that were pertinent to the items on the published agenda for the June 16-17, 2011 HICPAC meeting. The DFO officially recognized the seven new HICPAC members for the record.

The Deputy Director of the CDC Office of Infectious Diseases (OID) reported on CDC's FY2011 and FY2012 budgets, recent activities by the OID Board of Scientific Counselors, OID's ongoing efforts to develop an infectious disease framework for CDC, CDC's healthcare-associated infection (HAI) winnable battle, and the biennial "International Conference on Emerging Infectious Diseases" that would be held on March 11-14, 2012.

The Director of DHQP reported on DHQP's priority areas, core functions, National Healthcare Safety Network (NHSN), Emerging Infections Program (EIP), and activities with partners to focus on HAI prevention and elimination at the national level. The Deputy Director of DHQP described the evolution of HICPAC's guideline development process for the benefit of the new HICPAC members.

HICPAC members and CDC staff reported on the status of three draft CDC guidelines that are in various stages of development:

1. Neonatal Intensive Care Unit (NICU) Infection Prevention Guideline
2. Healthcare Personnel (HCP) Infection Prevention and Control Guideline
3. Prevention of Surgical Site Infection Guideline

CDC staff and guest speakers presented comprehensive updates and overviews of current and future healthcare infection control activities to orient the new members. These topics included:

- the Centers for Medicare and Medicaid Services (CMS) and CDC new survey tool to that assess infection control in acute care hospitals as part of the survey and certification process;
- CDC's applied research and surveillance activities under the Emerging Infections Program;
- recent data from the CDC measles surveillance system;
- CDC's current and planned HAI extramural prevention research activities;
- CDC's draft and unpublished HAI prevention cost-effectiveness tool;
- NHSN's history, current activities and future plans;
- potential topics that are being considered by the HICPAC HAI Surveillance Workgroup; and
- the CMS "Partnership for Patients: Better Care, Lower Costs" Initiative.

Over the course of the meeting, HICPAC provided extensive commentary, suggestions and input on these activities for CDC to consider.

HICPAC did not vote on any documents or issues during the business session. New HICPAC members volunteered to serve on the core writing group for the HCP Infection Prevention and Control Guideline and on the expert review panel for the NICU Infection Prevention Guideline.

HICPAC's liaison and *ex-officio* members submitted written reports and provided additional details during the meeting on recently completed, ongoing and upcoming activities of their organizations and agencies. The verbal and written reports highlighted organizational and agency position statements, new or pending legislation, campaigns and related activities, press activities, publications, and other items of note.

The HICPAC Chair and DFO called for public comments at all times noted on the published agenda for the June 16-17, 2011 meeting. The next HICPAC meeting would be held on November 3-4, 2011 in Washington, DC.

Department of Health and Human Services
Centers for Disease Control and Prevention
National Center for Emerging and Zoonotic Infectious Diseases
Division of Healthcare Quality Promotion

HEALTHCARE INFECTION CONTROL PRACTICES ADVISORY COMMITTEE
June 16-17, 2011
Atlanta, Georgia

Minutes of the Meeting

The Department of Health and Human Services (HHS) and the Centers for Disease Control and Prevention (CDC), National Center for Emerging and Zoonotic Infectious Diseases (NCEZID), Division of Healthcare Quality Promotion (DHQP) convened a meeting of the Healthcare Infection Control Practices Advisory Committee (HICPAC). The proceedings were held on June 16-17, 2011 in Building 19 of the Tom Harkin Global Communications Center at the CDC Roybal Campus in Atlanta, Georgia.

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| Opening Session: June 16, 2011 |
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Mr. Jeffrey Hageman, MHS

Deputy Chief, Prevention and Response Branch, DHQP
HICPAC Designated Federal Official (DFO)
Centers for Disease Control and Prevention

Mr. Hageman opened the floor for introductions to determine the HICPAC voting members, *ex-officio* members and liaison representatives who were in attendance. He verified that the voting members and *ex-officio* members in attendance constituted a quorum for HICPAC to conduct its business on June 16, 2011. The list of participants is appended to the minutes as Attachment 1.

Mr. Hageman called the meeting to order at 9:07 a.m. He welcomed the participants to the proceedings and recognized the seven new HICPAC members:

- Neil Fishman, MD; Associate Chief Medical Officer, University of Pennsylvania Health System, HICPAC Chair
- Judene Bartley, MS, MPH, CIC; Vice President, Epidemiology Consulting Services, Inc.
- Ruth Carrico, PhD, RN, CIC; Assistant Professor, University of Louisville, School of Public Health and Information Sciences
- Daniel Diekema, MD; Director, Division of Infectious Diseases, Professor, Departments of Internal Medicine and Pathology, University of Iowa Carver College of Medicine

- Ralph Gonzales, MD, MSPH; Professor of Medicine, University of California-San Francisco
- Mary Hayden, MD; Associate Professor of Medicine and Pathology, Director, Division of Clinical Microbiology, Rush Medical Laboratories, Rush University Medical Center, Rush Medical College
- Tom Talbot, MD, MPH; Associate Professor of Medicine and Preventive Medicine, Vanderbilt University School of Medicine, Chief Hospital Epidemiologist, Vanderbilt University Medical Center

Mr. Hageman asked the HICPAC members to be mindful of conflicts of interest and recuse themselves from participating in discussions or voting on issues in which they have a real or perceived conflict. During the introductions, he also asked the voting members to declare any conflicts of interest for the record that were relevant to the published agenda for the June 16-17, 2011 HICPAC meeting.

- Alexis Elward, MD: Recipient of research funds from SAGE Products to conduct studies on chlorhexidine bathing in pediatric intensive care unit patients.
- Ralph Gonzales, MD, MSPH: CDC collaborator to develop multidisciplinary practice guidelines for appropriate antibiotic use.

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| CDC Office of Infectious Diseases (OID) Deputy Director's Report |
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Rima Khabbaz, MD

Deputy Director, Office of Infectious Disease
Centers for Disease Control and Prevention

Dr. Khabbaz covered the following topics in her Deputy Director's report to HICPAC. Congress passed CDC's FY2011 budget in April 2011 and CDC developed an operating plan for the budget. CDC's \$5.66 billion budget reflects a significant reduction of \$740 million below the FY2010 budget (or an 11% decrease).

CDC's infectious disease activities in the emergency preparedness line item sustained a significant reduction of \$185 million that severely impacted internal preparedness and laboratory capacity.

The CDC FY2011 budget is benefiting from ~\$750 million from the Patient Protection and Affordable Care Act (PPACA) Prevention and Public Health Fund to accelerate high-priority prevention programs and initiatives. These activities include eliminating healthcare-associated infections (HAIs), strengthening the immunization infrastructure, and enhancing the information technology infrastructure through the Epidemiology and Laboratory Capacity Program. The CDC FY2011 budget summary is posted on the CDC.gov website.

Dr. Khabbaz informed HICPAC of recent activities by the OID Board of Scientific Counselors (BSC). All advisory committees in the OID National Centers have appointed liaisons to serve on

the BSC. Dr. Stephen Ostroff serves in this role for HICPAC. During its most recent meeting in May 2011, the BSC proposed potential strategies to transition CDC's infectious disease programs in light of current and future budget cuts. The BSC discussed changes in health care, opportunities to advance infectious disease prevention and control programs, and the important need to retain core infectious disease capacity and critical infectious disease activities. The BSC meeting minutes are available to the public on the CDC.gov website.

Dr. Khabbaz announced that OID is currently developing an infectious disease framework for CDC. OID widely distributed the draft framework in December 2010, solicited broad input from the BSC and other external partners, and is revising the document based on comments submitted. OID plans to release an abbreviated version of the framework to highlight key themes and priorities. The full framework will be posted on the CDC.gov website to provide guidance to external infectious disease programs.

Dr. Khabbaz informed HICPAC that Dr. Thomas Frieden, Director of CDC, established six winnable battles for CDC. Of the six priority areas, three are related to infectious diseases: domestic HIV, HAIs and food safety. The CDC.gov website contains information on the six winnable battles.

For HAIs, CDC is closely collaborating with federal and state partners on a variety of activities to accelerate progress in this area. Data show that the vast majority of HAIs are preventable, but costly. CDC released a *Vital Signs* report on HAIs in March 2011, "Making Health Care Safer." CDC's monthly *Vital Signs* reports serve as a call to action to highlight data, document trends and outline strategies to address an important public health topic.

Dr. Khabbaz invited the HICPAC members to attend the biennial "International Conference on Emerging Infectious Diseases" on March 11-14, 2012 in Atlanta. The first conference was held in 1998 and continues to serve as a helpful and unique forum to convene domestic and international groups to address a broad range of emerging infectious disease issues.

The conference is being planned with various plenary sessions and panel discussions that are timely and relevant to the field. Each division in the three OID National Centers is represented on the Scientific Planning Committee. The call for abstracts for the 2012 conference can be accessed at www.iceid.org or on the CDC.gov website.

Dr. Khabbaz concluded her OID Deputy Director's report by thanking the HICPAC members for continuing to take time from their busy schedules to provide CDC and HHS with sound advice and solid guidance on healthcare infection control practices for the nation.

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| DHQP Director's Report |
|-------------------------------|

Denise Cardo, MD

Director, Division of Healthcare Quality Promotion
Centers for Disease Control and Prevention

For the benefit of the new members, Dr. Cardo explained that her Director's reports to HICPAC typically are structured to provide brief updates on recent healthcare infection control practice activities at the division level (DHQP), agency level (CDC), and department level (HHS). Due to the large turnover in HICPAC's membership, however, this report would serve as an overview of DHQP's portfolio of healthcare quality promotion initiatives. Dr. Cardo covered the following topics in her Director's report to HICPAC.

DHQP's top two and largest priority areas are HAIs and immunization safety, but smaller programs collaborate with internal and external partners to address other important aspects of healthcare safety (e.g., adverse drug events, healthcare preparedness, transfusion/transplant safety, and antimicrobial safety).

DHQP collaborates with partners to perform six core functions: outbreak investigations, surveillance, prevention recommendations, implementation and evaluation of interventions, extramural research, and laboratory research and support. DHQP collaborates with both internal and external partners in these activities.

DHQP has two programs in which data are used to take action. The first program is the National Healthcare Safety Network (NHSN). NHSN is a national system that is designed to track and prevent HAIs. As of June 3, 2011, 4,500 healthcare facilities were enrolled in NHSN. Metrics were developed to demonstrate progress in achieving the NHSN goals. NHSN data are used at three levels: the healthcare facility level to improve local practices; the state level to assess progress in HAI prevention and identify gaps to guide the development of future interventions; and the federal level to monitor Centers for Medicare and Medicaid Services (CMS) payment policies and measure the impact of the HHS Action Plan to eliminate HAIs.

The second program is the Emerging Infections Program (EIP). EIP is a population-based surveillance system that is implemented in nine states. EIP is particularly important for understanding the dynamic epidemiology and transmission of HAIs due to methicillin-resistant *Staphylococcus aureus* (MRSA), *Clostridium difficile* (*C. difficile*) and other emerging multidrug-resistant bacteria that cause HAIs. DHQP used EIP to administer the HAI Prevalence Survey in 2011 to increase knowledge of the overall burden of all HAIs.

For its laboratory science function, DHQP's National Reference Laboratory focuses on Staphylococci, anaerobic bacteria and enteric gram-negative rods. The laboratory also has developed new methods in three major areas: (1) susceptibility testing of new resistant patterns; (2) environmental testing to assess and decrease the burden of environmental issues; and (3) outbreak support to hospitals and health departments.

For its outbreak response and control function, DHQP collaborates with partners to conduct investigations in three major categories. Investigations of emerging pathogens have included vancomycin-resistant *Staphylococcus aureus* (VRSA), *C. difficile*, and carbapenemase-resistant Enterobacteriaceae. Investigations of contaminated devices and products have included the national heparin recall and total parenteral nutrition solutions contaminated with the *Serratia* species.

Investigations of failures in basic and safe infection control practices have included the reuse of syringes or misuse of single-dose vials. Over the past 10 years, DHQP and its partners have investigated at least 40 outbreaks involving failures in basic and safe infection control practices. Of the 40 outbreaks, 24 were related to transmission of blood-borne pathogens and required notification to ~120,000 patients.

For its prevention science function, DHQP uses CDC/HICPAC guidelines as a basis to develop infection prevention checklists and incorporate this language into the CMS “Conditions of Practice” as standards for healthcare facilities to follow. CDC and CMS are jointly creating survey tools to assess the current status of healthcare infection control practices in facilities. DHQP is using its Epicenter Program to develop new prevention strategies to improve capacity in outbreaks.

Healthcare facilities traditionally had the primary role in HAI prevention and surveillance efforts and conducted the vast majority of prevention projects. However, state health department increasingly are leading prevention initiatives at regional and state levels. This changing trend emphasizes the need for close collaboration and coordination among health departments, hospital associations, quality improvement organizations and payers. Prevention initiatives led by states are expected to have a greater impact at the national level in the future.

DHQP has gathered data to document the national impact of HAI prevention. NHSN data showed decreases in standardized infection ratios for two major HAIs in 2009: an 18% reduction in central line-associated bloodstream infections (CLABSI) and a 5% reduction in surgical site infection (SSI). CDC’s March 2011 *Vital Signs* report documented that CLABSI prevention in 2001-2009 resulted in a 58% reduction in intensive care unit (ICU) patients. This achievement is equivalent to 27,000 lives saved and \$1.8 billion in costs averted since 2001 and 3,000-6,000 lives saved and \$414 million in costs averted in 2009 alone.

Dr. Cardo concluded her Director’s report by encouraging the new HICPAC members to contact Dr. Fishman and Mr. Hageman to request an update or additional information on any of DHQP’s core functions during a future meeting. She also raised the possibility of including a tour of the National Reference Laboratory during a future HICPAC meeting.

In response to HICPAC’s concern regarding the variation of NHSN data across facilities and states, Dr. Cardo explained that validation of NHSN data is extremely important to DHQP, particularly when assessing public reporting and state prevention initiatives. She confirmed that DHQP is currently collaborating with several states to validate NHSN data.

In response to HICPAC’s questions regarding translational research, Dr. Cardo noted that an update on CDC’s current and planned extramural prevention research activities for HAIs was placed on the agenda.

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| Overview of the CDC/HICPAC Guideline Production Process |
|--|

Michael Bell

Deputy Director, Division of Healthcare Quality Promotion
Centers for Disease Control and Prevention

Dr. Bell described the evolution of CDC/HICPAC guideline development process for the benefit of the new members. CDC/HICPAC infection control guidelines have shifted from “optional” to “pseudo-mandatory” recommendations that are now incorporated into CMS payment strategies, licensure and regulatory requirements. As the use and impact of CDC/HICPAC guidelines have changed there was a need to reassess and improve the process including using consistent and transparent methods as well as creating a more user-friendly guideline by avoiding the voluminous documents that have been hundreds of pages.

To resolve these problems, CDC, HICPAC and the University of Pennsylvania Health System Center for Evidence-Based Practice (UPHS-CEP) developed a more streamlined process to produce concise guidelines of 12-20 pages over an approximate 18-month period. A modified “Grading of Recommendations, Assessment, Development and Evaluation” (GRADE) methodology is a key feature of the current guideline development process.

The second major change between the previous and current guideline development process is extensive engagement of professional societies and other partners. This approach increases credibility of the guidelines, assures implementation in the field, and encourages publication of the guidelines in journals of professional societies. DHQP publishes the guidelines on the CDC website, but publication in other venues is at the discretion of the authors and professional partners.

The third major change between the previous and current guideline development process is systematic updates of segments of guidelines rather than entire documents. Dr. Bell encouraged the new members to visit the CDC website to review a methods paper describing the GRADE methodology.

Dr. Bell concluded his overview by emphasizing that DHQP is aware of the increasing need to accommodate new developments, techniques, products, substances or technologies with potential implications for infection control guidelines.

The new members commended DHQP and HICPAC on the more streamlined, concise and transparent guideline development process. The members noted that the more rapid approach of updating segments of guidelines rather than entire documents would be extremely useful to IPs in the field.

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| Update on the Neonatal Intensive Care Unit (NICU) Infection Prevention Guideline |
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Alexis Elward, MD, MPH

Assistant Professor, Pediatrics Infectious Diseases

Dr. Elward covered the following topics in her update on CDC's NICU guideline. The workgroup has engaged a broad range of stakeholders in developing the guideline, including IPs, neonatologists, neonatal NICU nurses, pediatric infectious disease experts and hospital epidemiologists. These stakeholders represent the American Academy of Pediatrics (AAP), Society for Healthcare Epidemiology of America (SHEA), Association for Professionals in Infection Control and Epidemiology, Inc. (APIC), Vermont Oxford Network, and National Association of Neonatal Nurses. AAP is a co-sponsor of the NICU guideline along with HICPAC.

HICPAC, CDC, AAP, UPHS-CEP, the Emergency Care Research Institute and a number of professional societies are represented on the workgroup as either members of the core writing group or subject-matter expert reviewers.

The workgroup began the process of developing the guideline by identifying priorities in the field of pediatric infection prevention. A survey was administered to the SHEA Pediatric Special Interest Group and discussions were held with the Child Health Corporation of America Neonatology Network in this effort.

The core writing group and expert reviewers held regular conference calls to review the key research questions, generate a broad list of topics, and triage and consolidate key questions. Initial literature searches were performed to determine existing or developing guidelines to address topics and identify topics with adequate literature to include as key questions and formulate recommendations. Subsequent literature searches were conducted to prioritize the key research questions, avoid redundancy with existing guidelines and fill current data gaps in the NICU setting.

The workgroup revised the key research questions based on vetting with the subject-matter expert reviewers. Dr. Elward's summary of the revised key questions for five infections is outlined as follows. For respiratory viral infections, what are the most effective methods of prevention and control of respiratory illnesses in the NICU, including respiratory syncytial virus (RSV), pertussis and varicella zoster virus (VZV)? Should transmission-based precautions be modified for patients in isolettes? What is the most effective diagnostic approach to identifying respiratory pathogen outbreaks in the NICU?

For CLABSI, what are the most effective strategies to prevent CLABSI in the NICU? For MRSA, what are the risk factors for MRSA colonization in NICU patients? What are the most effective strategies to screen for MRSA colonization in NICU patients? Does screening of MRSA colonization result in fewer MRSA infections? What are the most effective measures to prevent hospital-acquired infection or colonization with MRSA?

For fungal disease, what are the risk factors for invasive candidal infections? What are the most effective strategies to prevent invasive infection with *Candida* and *Malassezia*? What are the most effective strategies to prevent colonization with *Candida* and *Malassezia*? Does

prevention of candidal colonization result in fewer invasive candidal or malassezian infections? What are the most effective methods of identifying invasive fungal infections (e.g., *Candida*, *Aspergillus*, Zygomycoses, *Pichia* and *Malassezia*) in NICU patients?

For *C. difficile*, what are the most effective strategies for *C. difficile* testing in NICU patients? When should testing for *C. difficile* be performed in NICU patients? What is the significance of a positive *C. difficile* test in a NICU patient?

The workgroup utilized a number of databases to perform its comprehensive literature searches, including MEDLINE, the Cochrane Library, Excerpta Medica Database, Cumulative Index to Nursing and Allied Health Literature, and National Guideline Clearinghouse. The workgroup also reviewed existing guidelines developed by various professional societies (e.g., CDC/HICPAC, AAP, APIC, SHEA and the Infectious Diseases Society of America (IDSA)).

Articles that are included in the guideline have the following characteristics: original data and a systematic review or meta-analysis with data. Articles that were excluded from the guideline have the following characteristics: not relevant to key questions, not primary research, meeting abstract only, no full text available, not in English, no NICU patients or infants in the study, mixed patient population without NICU or infant subgroup analysis, methods on HAI surveillance only, non-U.S. descriptive epidemiology study only and general HAI surveillance. However, the workgroup agreed to include non-U.S. studies that examine and describe multi-modal interventions and include pre-/post-intervention data to determine an effect.

The workgroup created a sampling strategy to reliably apply the inclusion and exclusion criteria. Reviewer 1 reviewed all abstracts, reviewer 2 reviewed 20% of abstracts, and two independent reviewers conducted a full-text review of articles that met the inclusion criteria. A kappa statistic was calculated to compare inter-reviewer reliability for both the abstract and full-text reviews.

Kappa values range from 0 (no degree of agreement beyond chance) to 0.8-1.0 (almost perfect degree of agreement beyond chance). The workgroup agreed to accept a kappa score of ≥ 0.4 . In terms of inter-reviewer agreement on the NICU guideline topics, the kappa scores ranged from 0.58 (*C. difficile*) to 0.80 (varicella) in the abstract review and from 0.32 (pertussis) to 0.66 (respiratory viral infections and fungal disease) in the full-text review. These results showed that agreement between reviewers was substantial in the abstract review and moderate in the full-text review.

Dr. Elward's summary of the results of the study selection process is outlined as follows. Of 2,980 articles identified in the abstract review, 1,603 were selected for full-text review to address the key questions. Of 513 references identified for title and abstract screening for respiratory viral infections, 207 references were selected for full-text review. Of those, 55 references were selected for extraction into evidence tables. Of 98 references identified for title and abstract screening for varicella, 32 references were selected for full-text review. Of those, 8 references were selected for extraction into evidence tables.

Of 147 references identified for title and abstract screening for pertussis, 31 references were selected for full-text review. Of those, 14 references were selected for extraction into evidence

tables. Of 499 references identified for title and abstract screening for CLABSI, 299 references were selected for full-text review. Of those, 57 references were selected for extraction into evidence tables, but the workgroup is still reviewing 400 abstracts on chlorhexidine use.

Of 663 references identified for title and abstract screening for MRSA, 347 references were selected for full-text review. Of those, 56 references were selected for extraction into evidence tables. Of 160 references identified for title and abstract screening for *C. difficile*, 106 references were selected for full-text review. Of those, 6 references were selected for extraction into evidence tables. Of 900 references identified for title and abstract screening for fungal infections, 584 references were selected for full-text review. Of those, 127 references were selected for extraction into evidence tables.

The workgroup completed master lists to incorporate data for *C. difficile*, respiratory pathogens, pertussis, VZV and MRSA into the evidence tables. Full tables also have been completed for *C. difficile*, pertussis and VZV. Dr. Elward presented examples of two tables to present the data and answer key questions based on various categories (e.g., study design, number of subjects, outcomes reported, conclusions and limitations).

The workgroup's next steps to finalize the NICU guideline are to complete the abstract and full-text reviews for the CLABSI chlorhexidine articles; complete data abstraction for the fungal infection, MRSA and CLABSI full evidence tables; circulate the bibliography to the expert panel for review; write and distribute the narrative summary to the expert panel for review; obtain feedback from HICPAC on the draft recommendations; and publish the draft guideline in the *Federal Register* for public comments.

In June 2011, the workgroup will finalize the data extraction process and begin to grade the quality of the evidence using the GRADE approach. In November 2011-February 2012, the workgroup plans to draft and finalize the narrative summaries.

Martha Iwamoto, MD, MPH

Surveillance Branch, DHQP

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Dr. Iwamoto reported that the NICU guideline will serve as a targeted and systematic review of the best available evidence on infection prevention in NICUs. The workgroup will use the GRADE approach to provide explicit links between the available evidence and the resulting recommendations.

Of the seven steps in the guideline development process, the workgroup is currently conducting step 5, data extraction and synthesis and grading of the quality of evidence. Data from each study that met the inclusion criteria will be extracted into evidence tables to inform the development of recommendations. GRADE tables will be developed for each key question by examining outcomes across studies and determining the overall quality of available evidence across outcomes.

Dr. Iwamoto presented the characteristics of a GRADE table (e.g., intervention or factor of interest for comparison, outcomes listed in evidence tables that are judged to be clinically important, and quantity and type of evidence for each outcome, relevant findings, GRADE of evidence for each outcome, and the overall GRADE of the evidence base for the given interventions or question). Dr. Iwamoto showed an example of a GRADE table to answer one of the key questions for the NICU guideline: What is the significance of a positive *C. difficile* test in a NICU patient?

After the workgroup completes data extraction and develops GRADE tables for all key questions and outcomes, narrative evidence summaries will be drafted to develop recommendations for the NICU guideline. The overall GRADE of the evidence base is one factor that determines the strength of a recommendation. The workgroup plans to present draft recommendations of the NICU guideline to HICPAC for review and comment during the November 2011 meeting.

HICPAC commended the workgroup on its outstanding progress since the November 2010 meeting in drafting the NICU guideline.

Update on the Prevention of Surgical Site Infection Guideline

Sandra Berríos-Torres, MD

Medical Officer, DHQP
Centers for Disease Control and Prevention

Dr. Berríos-Torres covered the following topics in her update on the CDC and HICPAC SSI prevention guideline. The 2008 Anderson, *et al.* study reported that the current U.S. burden of ~300,000 SSIs per year accounts for 17% of all HAIs. Urinary tract infections (UTI) and SSI are the top two HAIs. SSI occurs in 2%-5% of patients undergoing inpatient surgery. The overall SSI mortality rate is 3%, but SSI is directly attributable to 75% of deaths among SSI patients. In terms of morbidity, SSI accounts for long-term disabilities and additional postoperative hospital days of ~7-10 days. Depending on the procedure and pathogen, the estimated cost of SSI can range from \$3,000-\$29,000 for a total of up to \$10 billion annually for treatment.

During the June 2010 HICPAC meeting, CDC proposed a new approach to update the 1999 SSI prevention guideline to increase its impact. The “cross-specialty” core section would describe principles that might be applicable across multiple surgical fields. The “procedure-specific component” section would focus on high-volume and high-burden procedures with a targeted and effective strategy to meet CDC’s and HICPAC’s needs (e.g., rapid guideline development, timely updates, rapid response to emerging needs, and evidence to address key clinical questions). This section also would be used to engage the surgical community in a multidisciplinary approach and establish a foundation to develop an evidence-based research agenda to guide future studies on SSI prevention.

During the June 2010 HICPAC meeting, CDC also proposed to focus on arthroplasties as the first specialty component of the updated SSI guideline. The 2007-2009 Kurtz, *et al.* studies reported that 1.2 million arthroplasties are performed in the United States each year with hips

and knees accounting for 96% of these procedures. Arthroplasties are the highest volume procedure and the third highest number of SSIs reported to NHSN. SSIs in primary arthroplasties have a high treatment burden and account for an even higher burden in revision arthroplasties. Significant increases in both the number of procedures and SSIs are projected.

Dr. Berrios-Torres highlighted the writing group's accomplishments from June 2010-June 2011. The writing group engaged non-traditional public health stakeholder to serve as content experts. In addition to the HICPAC liaison organizations, these partners represent surgical, surgical infectious disease and nursing professional societies and other groups (e.g., American Academy of Orthopaedic Surgeons, American College of Surgeons, Association of periOperative Registered Nurses, Surgical Infection Society and Musculoskeletal Infection Society, European Union and academic institutions). CDC staff and external partners with specialized expertise will develop sections of the SSI guideline on *Staphylococcus aureus* (*S. aureus*), environmental issues and biofilms. CDC, HICPAC, and UPHS-CEP serve on the core writing group.

A preliminary literature search was conducted to identify existing guidelines and meta-analyses on SSI prevention. The expert panel submitted 480 questions based on topics in five categories that were covered in the 1999 SSI guideline: patient risk factors (100 questions), perioperative issues (110 questions), preoperative issues (70 questions), intra-operative issues (140 questions) and postoperative issues (60 questions). The expert panel also submitted 100 questions on the new *S. aureus* colonization topic.

The writing group developed a spreadsheet to group the recommendations and supporting data from the 1999 guideline, more recent Cochrane reviews, and the preliminary questions into one of the six categories. The spreadsheet was used to begin narrowing the 580 preliminary questions and selecting key topics based on the following criteria. Is the topic a high priority or a key clinical question? Does the topic relate to recommendations that were vague, outdated or absent from the 1999 guideline? Could the topic potentially be used to implement prevention strategies? Does the topic have current or future policy implications? Can the topic be addressed questions in a one-year timeline?

The writing group used the criteria to finalize a list of 16 key topics. The core section of the updated SSI prevention guideline will cover 8 key topics: glycemic control, tissue oxygenation, antimicrobial prophylaxis, normothermia, skin preparation, *S. aureus* colonization, surgical checklists and bundles. The arthroplasty section of the updated SSI prevention guideline will cover 8 key topics: transfusion, immunosuppressive therapy, anticoagulation, surgical attire, surgical technique, anesthesia, environmental issues and biofilms.

Four essential components of the PICO format to develop key research questions for the 16 topics: Patient, Intervention/exposure, Comparator and Outcome. The writing group completed the key research questions for the core section and is currently finalizing subtopics for the arthroplasty section.

Dr. Berrios-Torres concluded her update by summarizing the writing group's next steps on the updated SSI prevention guideline. The guideline search and development of key research questions will be completed by the end of June 2011. The literature search for the key topics will be initiated in July 2011 followed by the abstract and full-text screening.

HICPAC viewed the workgroup's ongoing efforts to update the SSI prevention guideline as extremely timely and important. However, some members asked the workgroup to prioritize the key topics for the core and arthroplasty sections due to the ambitious timeline of finalizing the SSI prevention guideline in one year.

The HICPAC members also asked the workgroup to consider three other topics in its further development of the guideline: (1) a different type of laminar flow that has slower velocity and affects normothermia; (2) the risk of SSI with other prosthesis, such as megaprosthesis in cancer patients; and (3) the contribution of noise levels and distraction in the operating room to SSI rates.

Overview of the Acute Care Hospital Infection Control Tool for Surveyors

Daniel Schwartz, MD

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Carolyn Gould, MD, MSCR

Medical Epidemiologist & Acute Care Team Lead, DHQP
Centers for Disease Control and Prevention

Drs. Schwartz and Gould presented an overview of CMS's new survey tool to assess infection control in the hospital setting. The vision and ultimate goal of this effort are to develop a tool that will promote HAI prevention and patient safety in hospitals. The tool will be used by CMS surveyors and accrediting organizations to assess the minimum health and safety standards needed for hospitals to meet the Medicare Condition of Participation (COP) for Infection Control. The tool will be freely accessible online for hospitals to self-assess best practices and proactively self-assess their institutional practices in advance of a survey.

The framework for developing the new infection control tool for the hospital setting is based on three major initiatives. The first initiative is the HHS HAI Action Plan. The Incentive and Oversight Section of the Action Plan targets specific requirements to hospitals. Hospitals should require their infection control programs to follow currently recognized national standards of practice. Hospitals should specifically require their infection control programs to be an integral part of the hospital's quality assessment and performance improvement (QAPI) program.

The second initiative is the CDC/CMS Survey and Certification Group (SCG) interagency agreement that was developed following the agencies' investigation of a hepatitis C virus (HCV)

outbreak in a Nevada endoscopy clinic in 2008. CDC and SCG jointly developed and implemented an ASC infection control worksheet in three pilot states. The worksheet became a standard part of the survey process beginning in 2010. The results of the pilot project were published in the *Journal of the American Medical Association* in 2010 and showed a significantly high deficiency rate of infection control practices in ASCs.

CDC is currently reviewing 1,500 surveys in the CMS database to gather additional information on infection control practices in ASCs. An IP is now housed in SCG to serve as a liaison between CDC and CMS on infection control issues in hospital settings. CDC and CMS are continuing to jointly conduct other infection control activities to reduce HAIs in all types of facilities that undergo CMS surveys.

The third initiative is Partnership for Patients. CMS began planning this initiative in 2010 with an overarching goal to significantly reduce harm and HAIs in the hospital setting. SCG is currently developing three new tools to help surveyors assess COPs for infection control, QAPI and discharge planning. The new tools will be incorporated into the survey process in the future.

CDC and CMS agreed on three guiding principles to develop the ASC infection control tool. For the “boundarilessness” principle, CDC and CMS assessed their existing infection control tool for hospitals and other settings during a site visit to Nevada in January 2011. A conference call was held with the Joint Commission to understand its survey structure and process. CMS colleagues held further discussions on the survey process, COPs and surveyor training.

In February-March 2011, the infection control tool was drafted based on a review of existing CDC guidelines, input from subject-matter experts, and lessons learned from the Nevada outbreak and the development of the previous ASC worksheet. CDC and CMS decided to shift their efforts beyond a checklist format and focus on tracer methodology. In April 2011, CMS solicited feedback on the draft infection control tool from surveyors and IPs in California, Maryland and Nevada. In May-June 2011, additional input was obtained from CMS and the tool was modified to ensure consistency with existing COPs.

For the “patient-focused” principle, the infection control tool will help surveyors focus on direct patient care and high-risk locations for HAIs in the hospital setting. The tool was aligned with the HHS HAI Action plan and specific HAIs that are being measured.

For the “innovation” principle, the survey process uses specific patient and location tracers. Surveyors will use their judgment on identifying the best strategies to use the tool. In response to CMS’s request, many states have volunteered to pretest the tool. However, results of the pretest will be used to make adjustments to the tool. Hospitals will not be cited for deficiencies identified during the pretest. CDC and CMS hope to incorporate an electronic form into a database to identify infection control trends and use the data for other relevant purposes in the future. The overarching goals of the tool are to promote consistency in the infection control process and provide a resource for hospitals to self-assess their institutional practices.

CDC and CMS have proposed the following survey process using the draft infection control tool for acute-care hospitals. Surveyors would hold an initial interview with IP staff to evaluate the

scope and design of the infection control program. The interview questions would cover multiple areas, such as the infection prevention program, its resources and infrastructure; occupational health and training; and antimicrobial stewardship and prevention of multidrug-resistant organisms (MDROs).

If surveyors need to perform an additional review of policies and procedures based on outcomes of the interview and observations, IPs must be able to produce nationally recognized guidelines or state/federal laws that serve as the basis of the hospital's policies and procedures. If the policies are deemed to be sound, surveyors would determine whether the hospital provides training on the policies and procedures.

Surveyors would use checklists to observe certain areas of the hospital. The "general location" checklist would be used to observe basic infection control standards (e.g., hand hygiene, personal protective equipment (PPE), safe infection practices, environmental services, non-critical device reprocessing, single use device reprocessing (if applicable), and laundry management). Wards, ICUs and emergency departments are examples of areas that would be surveyed with the general location checklist.

The "specialty location" checklist would be used to observe additional elements of infection control practices. These areas include disinfection of bassinets and incubators in NICUs; spinal injection procedures and high-level disinfection of trans-vaginal ultrasound probes and specula in labor and delivery units; whirlpool cleaning and disinfection in inpatient rehabilitation units; and protective environments in bone marrow transplant units.

Surveyors may determine that additional locations and services also need to be assessed, such as environmental services, high-level disinfection practices (*i.e.*, reprocessing of semi-critical equipment), and sterilization practices (*i.e.*, reprocessing of critical equipment).

Surveyors would perform case tracers based on a list of services provided by the hospital and eligible patients. Case tracers potentially could involve patients undergoing surgical procedure in operating rooms, patients undergoing other invasive and non-invasive procedures, patients with invasive devices, or patients on isolation precautions. Surveyors would review policies and procedures if deficiencies are noted during their interviews and observations.

The purpose of incorporating the tracer methodology into the infection control tool is to allow surveyors to observe implementation of policies and procedures in a systematic fashion and follow specific patients through the hospital's processes of care. The Joint Commission's January 2011 *Comprehensive Accreditation Manual for Hospitals* states that "the tracer methodology is a way to analyze a hospital's system of providing care, treatment, or services using actual patients as the framework for assessing standards compliance."

CDC and CMS have included a proposed list of case tracers in the draft infection control tool. Procedures could include endoscopy, invasive and non-invasive radiologic procedures, spinal injection procedures, point of care device usage, and surgical procedures performed in operating rooms. Insertion and maintenance of devices could include central venous catheters,

indwelling urinary catheters, and ventilator/respiratory therapy. Isolation precautions could include contact precautions, droplet precautions and airborne precautions.

CDC and CMS have proposed the following case tracer approach. Surveyors would select at least three tracers based on their discretion and services provided by the hospital. Multiple checklists may apply in the course of completing one tracer. Deficiencies observed during a case tracer should prompt a review of the hospital's applicable policies and procedures.

CMS's next steps to advance the development and implementation of the draft infection control tool are to clearly define the survey process for surveyors, articulate a strategy for surveyors to cite deficiencies, change the Interpretive Guidelines to include instructions to surveyors, coordinate the tool with the QAPI COP, and provide surveyors with training and education on using the tool.

Overall, CDC and CMS are making strong efforts to develop a highly effective, streamlined and easy-to-use tool to ensure consistency throughout the survey process without adding burden to surveyors. CMS plans to host a webinar in July 2011 for surveyors to use the tool in the field beginning in fall 2011. CDC and CMS will solicit broad input from HICPAC, the pilot states and other stakeholders before the tool is finalized.

HICPAC appreciated the joint CDC/CMS effort to build consistency into the survey process by developing the infection control tool. The members were particularly pleased that hospitals would be able to use the tool as a self-assessment to achieve their infection control goals.

HICPAC welcomed the opportunity to review and provide input in the final tool during a future meeting. In the interim, however, several members advised CDC and CMS to address specific gaps in the draft infection control tool.

- Procedures performed in traditional invasive procedure areas are emphasized in the draft tool. With the exception of vascular catheters and urinary tract insertion, however, no other traditional bedside procedures are included on the proposed list of case tracers.
- "Direct patient care" is not clearly defined in the draft tool.
- The draft tool does not appear to be designed to assess the case tracer methodology on an ongoing basis outside of the survey process to assure patient safety.
- Hospital construction or renovation is not addressed in the environmental services checklist.
- The draft tool does not include a case tracer to assess healthcare personnel (HCP) (e.g., training, tuberculin skin testing, fit-testing for PPE and immunizations).
- The draft tool does not mention transitions of care during the transportation of patients with infection prevention challenges. HCP with responsibility for moving patients in the facility (e.g., from ICUs to radiology departments) typically have minimal training and are more likely to breach common infection control practices.
- CDC and CMS did not describe a rigorous evaluation process to assess the efficacy and impact of the tool, particularly the ability of infection control programs to track, monitor, and prevent or reduce HAIs, perform ongoing surveillance and collect solid data.

The HICPAC members also made general comments and suggestions for CDC and CMS to consider in their ongoing efforts to further develop the draft infection control tool.

- The initial interview might be problematic due to the variation in training and resources across infection control programs, particularly those in small and mid-size hospitals. Moreover, most state health departments are understaffed and are struggling to meet the demands of their frequent survey requirements. CMS should provide more robust education and rigorous training beyond the webinar because many state surveyors are unfamiliar with the case tracer methodology.
- CDC and CMS should extensively engage the Council of State and Territorial Epidemiologists (CSTE) in the rollout of the tool. CSTE would be an important partner in publicizing the tool to state HAI programs, state surveyor agencies and HAI coordinators in state health departments. CSTE also would play a key role in strengthening relationships among infection prevention epidemiologists, state surveyors and hospitals.
- CDC and CMS should take advantage of two valuable resources in further developing the draft tool. First, Dr. Beth Feldpush volunteered the services of the American Hospital Association to assist CDC and CMS in broadly soliciting public comments on the draft tool. Second, Dr. Robert Wise confirmed that the Joint Commission would share its seven-year history, experiences and lessons learned with CDC and CMS on providing training and education to surveyors on the case tracer methodology.
- The purpose of tool should not be limited to improving infection control practices in hospitals. Instead, the primary goal of the tool should be for CMS to provide oversight and accountability for patient safety.
- The draft tool should be designed with as much flexibility as possible. For example, HICPAC's NICU Guideline and HCP Infection Prevention and Control Guideline would serve as valuable resources to strengthen the occupational health and NICU sections in future iterations of the tool.

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| <p style="text-align: center;">Update on the Emerging Infections Program (EIP) Applied Research and Surveillance Activities</p> |
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Dr. Fridkin and Ms McAllister presented an update on EIP's applied research and surveillance activities, including the HAI prevalence survey and the HAI Community Interface Steering Group (HAIC). Federal support for the prevention of HAIs and the promotion of state-based HAI prevention programs has increased the role of state health departments in HAI detection and prevention. CDC designed the EIP HAIC activity to serve two key functions. A critical

evaluation would be conducted of the epidemiology and public health impact of HAIs to understand emerging pathogens and populations at risk. Innovations in HAI surveillance methodology would be explored to improve surveillance and evaluation of HAI prevention and control strategies at the national level.

The EIP cooperative agreement reflects a longstanding collaboration between CDC and state health departments. CDC currently funds 10 EIP sites to conduct surveillance in six areas: foodborne infections, bacterial infections, hepatitis, human papillomavirus, influenza and HAIs. The EIP Steering Group oversees all activities conducted by the 10 funded sites.

Since the inception of the EIP HAIC activity in 2009, CDC has made significant progress on seven projects. Population-based surveillance of diseases due to key HAIs includes *C. difficile* infection (CDI), *Candida* bloodstream infections (BSI), infections due to multidrug-resistant gram-negative bacilli, and MRSA conducted by the EIP Active Bacterial Core Surveillance Program.

HAI surveillance innovation projects are aimed at reducing the burden of HAIs and enhancing the validity, reliability and clinical credibility of CDC's HAI surveillance. A multi-state HAI and antimicrobial use prevalence survey was administered. A pilot project is underway to perform surveillance for HAIs in high-risk patient populations, particularly dialysis patients.

Dr. Fridkin and Ms. McAllister presented updates on 2 of the 7 EIP HAIC projects. Project 1 is the CDI surveillance project. The objectives of this project are to determine the population-based incidence of community-/healthcare-associated CDI; characterize *C. difficile* strains by focusing on strains from community-associated cases; and describe the epidemiology of community-/healthcare-associated CDI to generate hypotheses for future research activities.

In 2010, 8 EIP sites collected data to determine the national incidence of CDI. CDC will utilize and analyze data from the CDI surveillance project to conduct three multi-site projects. The 2010 population-based incidence data will be used to better understand and explain variability between sites. Changes in *C. difficile* diagnostics will be evaluated across laboratories. The effect of shifting to polymerase chain reaction (PCR) on the frequency, positivity and impact of CDI incidence will be assessed at the population level.

Clinical outcomes and exposure sources will be used to describe the epidemiology of California's reported CDI cases. CDC also will utilize the CDI surveillance project data to conduct two single-site projects: a *C. difficile* household environment study and a study to determine the burden of *C. difficile* in long-term care facilities (LTCFs) in Monroe County.

Project 2 is the HAI and Antimicrobial Use Prevalence Survey. NHSN is CDC's current HAI surveillance system. At this time, >4,500 healthcare facilities participate in NHSN. NHSN primarily receives data on device-/procedure-associated HAIs that occur in selected hospital locations. The focus on risk-adjusted HAI incidence rates to analyze and report NHSN data presents challenges in estimating and comparing the relative burden of HAI types.

The CDC HAI/Antimicrobial Use Prevalence Survey will complement NHSN data by addressing all HAIs across all acute care inpatient populations, including those that are not device- or procedure-associated. This effort will be CDC's first large-scale HAI prevalence survey since the "Study on the Efficacy of Nosocomial Infection Control" (SENIC) was conducted in the 1970s. The survey also will allow CDC to provide an updated HAI prevalence estimate and describe antimicrobial use in acute care inpatients in the United States using a large-scale prevalence survey design for the first time.

The survey was developed in three phases. The phase 1 "single-city pilot" was conducted in August 2009. The phase 2 "limited rollout" was conducted in July-August 2010 with 22 acute care hospitals across the 10 EIP sites. Primary data collection was completed for this phase in December 2010. The phase 3 "full-scale survey" is underway with >187 acute care hospitals across the 10 EIP sites. Data collection for this phase will be completed by the end of 2011.

Ms. McAllister provided additional details on the phase 2 limited rollout survey. The objectives of the study were to refine logistical issues with the survey methodology and procedures to prepare for the phase 3 full-scale survey. The phase 2 survey was designed to support the goals of the overall HAI/antimicrobial use prevalence survey effort: (1) estimate HAI prevalence among inpatients of participating acute healthcare facilities; (2) determine the distribution of HAIs by major infection site and pathogen, including antimicrobial-resistant pathogens; and (3) estimate the prevalence and describe the rationale for antimicrobial use in acute healthcare facilities.

DHQP, the 10 EIP sites and 1-3 volunteer hospitals in each EIP site conducted the phase 2 prevalence survey. Inclusion criteria were patients of any age who were admitted to acute care units. Exclusion criteria were outpatients, patients on observation with a stay <24 hours, and patients in psychiatric units, rehabilitation units, skilled nursing care units, same-day treatment or surgery, and emergency departments. Patients meeting the inclusion criteria were selected from a random sample from the morning inpatient census on the survey date of each hospital. Each hospital was responsible for surveying ~33% of its average daily census.

Data collection for the phase 2 survey was conducted by the Primary Team at the hospital level, the EIP Team at the EIP site level, and the Evaluation Team at the CDC level. The teams collected demographic, device use and limited antimicrobial data; used NHSN definitions to retrospectively collect data on HAIs; and conducted data validation activities on a 30% sample of surveyed patients in each EIP site.

Preliminary results suggest HAI prevalence was found to be extremely similar across the phase 1 single-city pilot, phase 2 limited rollout, and estimates from the Study on the Efficacy of Nosocomial Infection Control (SENIC). CDC is applying several lessons learned from the phase 2 limited rollout to the ongoing phase 3 full-scale surveys. In phase 3, each EIP site is attempting to engage up to 25 volunteer hospitals for a total of <10,000 surveyed patients across >184 hospitals. The larger sample will provide more robust estimates of HAI prevalence, antimicrobial use prevalence and the distribution of specific HAI types. Analysis and presentation of the phase 3 data will be completed in 2012.

HICPAC was impressed by CDC's portfolio of EIP applied research and surveillance activities, particularly the three-phase HAI prevalence survey. Several members made comments and suggestions for CDC to consider in its ongoing efforts to implement the phase 3 survey and launch other HAI prevalence surveys in the future.

- CDC should take caution in comparing the 2011 phase 3 results to the 1985 SENIC study. Care, acuity and capacity to diagnose infections have vastly changed and improved over the past 26 years since CDC published the SENIC study. If the prevalence of HAIs is found to be the same between the 2011 phase 3 results and the 1985 SENIC data, the media, policymakers and consumers could interpret these outcomes to mean that CDC has made no progress in reducing or preventing HAIs over the past 26 years.
- CDC should extensively engage and regularly solicit input from front-line providers on EIP, particularly since plans are underway to repeat the HAI prevalence survey beyond phase 3. Front-line providers who submit data to EIP have anecdotally reported that CDC provides no feedback, outreach or guidance on the EIP findings and only uses their hospitals as "data collectors."
- CDC should place more emphasis on the 50% of HAIs that are not procedure- or device-associated due to their tremendous importance to hospitals.
- CDC should consider exploring HAI racial/ethnic disparities in the survey. For example, a recent study reported a disproportionate rate of MRSA among African Americans in Baltimore.

Update on CDC's Measles Surveillance

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Centers for Disease Control and Prevention

Dr. Kutty covered the following topics in her update on CDC's measles surveillance. Measles is one of the leading causes of death among young children worldwide. Prior to the introduction and licensure of the measles vaccine in the United States in 1963, ~3-4 million persons were estimated to acquire measles in this country each year. Of ~500,000 measles cases reported annually, 500 persons died, 48,000 were hospitalized, and 1,000 had permanent brain damage from measles encephalitis. The highest occurrence of measles was among children 5-9 years of age, while the highest risk of death was among young children <1 year of age.

Licensure of the measles vaccine in the United States in 1963 resulted in a dramatic reduction of cases. Due to the resurgence of measles in 1989-1991, the CDC Advisory Committee for Immunization Practices (ACIP) recommended a second dose of measles vaccine. Measles was declared to be eliminated from the United States in 2000, but 140 cases were reported in 2008.

ACIP provided provisional recommendations for measles evidence of immunity requirements for HCP in June 2009. All persons who work in healthcare facilities were recommended to have presumptive evidence of immunity to measles. ACIP defined “presumptive evidence of immunity” for persons who work in healthcare facilities as follows: written documentation of vaccination with 2 doses of live measles or MMR vaccine administered at least 28 days apart, laboratory evidence of immunity, laboratory confirmation of disease, and birth before 1957.

CDC collected data to document the cumulative number of measles cases reported in 2011 in the United States by month of rash onset. The data show that the number of cases from January 1-June 10, 2011 reflects more cases reported over this six-month time frame compared to the past decade. As of June 10, 2011, 152 measles cases have been reported to date compared to 147 cases reported for the entire year of 2008; 35% were hospitalized, including 9 pneumonia cases. The percentage of measles-associated hospitalizations in the United States in the first six months of 2011 is the second highest proportion over the past decade.

At the international level, the World Health Organization recently published data of measles cases reported worldwide with an onset date from October 2010-April 2011. As of May 6, 2011, 38 countries in Europe confirmed 7,028 measles cases by laboratory confirmation (2,632 cases or 37%), clinical confirmation (3,929 cases or 60%), and epidemiologic linkage to a laboratory-confirmed case (467 cases or 3%). Of the 7,028 reported cases in Europe, 29% received no measles-containing vaccine doses and 67% had no documentation of immunity or an unknown vaccination status. The vast majority of the measles cases in Europe were in young persons ≥ 20 years of age.

Of all countries in Europe affected by measles, France has had the most significant impact. France reported >7,500 measles cases as of April 19, 2011. Of these cases, 12 had encephalitis, 12 had Guillian-Barré, and 2 had pneumonia resulting in death.

Overall, the increase seen in the number of measles cases in 2011 in the United States represents the highest number of cases since 1996. Unvaccinated U.S. travelers accounted for the majority of cases, but persons accessing healthcare also accounted for a high proportion of cases. ACIP recommends all HCP to have adequate immunity or up-to-date vaccination, be aware of measles among travelers, take adequate isolation precautions, perform active surveillance in hospitals when measles is reported in the community, and immediately inform public health departments. Retention of high vaccine coverage is critical to sustaining measles elimination in the United States.

Dr. Bell explained that the measles update was placed on the agenda to inform HICPAC about the mis-diagnosis of cases in urgent care settings and the potential risk of spreading disease in healthcare facilities. He asked HICPAC to share this information with their institutions, agencies and professional societies to assist CDC in widely publicizing the high prevalence of measles in 2011 in the United States and the critical need for healthcare facilities to be vigilant.

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| Update on the CDC HAI Prevention Research Agenda |
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John Jernigan, MD, MS

Director, Office of HAI Prevention Research and Evaluation, DHQP
Centers for Disease Control and Prevention

Dr. Jernigan covered the following topics in his update on CDC's current and planned HAI extramural prevention research activities. The goal of the Safety and Healthcare Epidemiology Prevention Research Development (SHEPheRD) Program is to foster research that advances prevention and control of HAIs, antimicrobial resistance and other adverse healthcare events. The components of the SHEPheRD Program include the Prevention Epicenters Program, health department cooperative agreements, the task order system and interagency agreements.

CDC recently completed the re-competition process for the current five-year cycle of the Prevention Epicenters Program and awarded five institutions from 2011-2016: Chicago Antimicrobial Resistance and Infection Prevention Epicenter, Duke University Prevention Epicenter, Translation Prevention Research Epicenter, Southeastern Pennsylvania Adult and Pediatric Prevention Epicenter Network, and Washington University and BJC Epi-Center for Prevention of Healthcare Associated Infections.

The Prevention Epicenters use the five phases of translational research and evaluation to guide their HAI prevention research efforts and identify gaps. The "T0" phase is characterized by the identification of opportunities and approaches to health problems through technologic advances, surveillance, outbreak investigation and epidemiologic studies. The "T1" phase seeks to move discovery into the first application of candidate interventions in healthcare settings and patient populations.

The "T2" phase assesses the value of the candidate interventions leading to the development of evidence-based guidelines. The "T3" phase attempts to move evidence-based guidelines into health practice through delivery, dissemination and diffusion research. The "T4" phase seeks to evaluate "real world" health outcomes of population health practice. The 2011 Pronovost, *et al.* study described this research framework for reducing preventable patient harm.

The Prevention Epicenter Program includes two types of research projects. For investigator-initiated projects, each Prevention Epicenter proposed a five-year research program in their applications to develop and test novel prevention strategies. For prevention research emphasis projects, the Prevention Epicenters will conduct collaborative research across multiple sites.

For collaborative multi-center research, the Prevention Epicenters will perform streamlined surveillance for VAP to reduce the burden and demonstrate preventability. The study will be designed to achieve three major objectives. Prospective streamlined VAP surveillance will be implemented in at least 9 acute care hospitals that are affiliated with Prevention Epicenters. The participating hospitals currently conduct or are fully prepared to initiate streamlined VAP surveillance using existing NHSN definitions.

The total streamlined VAP surveillance burden will be compared to the total burden associated with use of existing NHSN VAP definitions. The association between streamlined VAP rates and prevention measure compliance rates will be assessed by implementing an evidence-based streamlined VAP prevention initiative and evaluating streamlined VAP preventability.

CDC is continuing to enhance collaborative prevention research projects with health departments to facilitate HAI prevention research and evaluation from a distinctly public health perspective. Moreover, opportunities are available for research and evaluation beyond the scope of studies conducted by academic centers. This mechanism also enhances partnerships between public health and healthcare institutions and supports the role of state and local health departments in HAI prevention

The task order system of the SHEPherD Program is designed to recruit other groups to conduct research projects on a contractual basis. The HAI prevention research development domain will include the design, development and planning of research, studies, protocols and database. The HAI prevention research implementation domain will include conducting single- and multi-center HAI prevention research studies in clinical setting.

Criteria for the implementation domain include contractors who own, operate or have access to large networks of healthcare facilities, preferably those with a common information technology infrastructure. Contractors who own, operate or have access to insurance providers and managed care organizations with centralized access to administrative claims and other clinical data for large populations also would be eligible for the implementation domain. CDC will release the funding opportunity announcement for the task orders in July 2011 and make awards in September 2011.

Dr. Jernigan highlighted CDC's other ongoing HAI prevention research projects. The REDUCE MRSA trial is a unique partnership among public health, academia and private industry. The 3-way cluster randomized trial randomized 74 adult ICUs in 42 hospitals across 16 states. The study design includes three arms to test the reduction of MRSA in ICUs. Routine care involves screening and isolating patients. Targeted decolonization involves screening, isolating and decolonizing MRSA-positive patients with a chlorhexidine/nasal mupirocin regimen. Universal decolonization involves decolonizing all patients, isolating known MRSA-positive patients and discontinuing screening.

The major outcome of the REDUCE MRSA trial is any clinical MRSA isolate attributed to an ICU or post-ICU. The secondary outcomes are ICU, post-ICU and hospital-wide analyses of blood and urine infections from MRSA and all pathogens and antibiotic resistance to mupirocin or chlorhexidine.

An evaluation is underway to determine the impact of an intervention to reduce *C. difficile* infection and transmission in LTCFs. The major objectives of the study are two-fold: (1) determine the role of *C. difficile* colonization pressure on transmission and CDI incidence in LTCFs and (2) develop evidence-based strategies to identify asymptomatic carriers of *C. difficile* who pose a significant risk for transmission in LTCFs through microbiologic screening tests or clinical prediction rules. A cluster-randomized trial of the intervention will focus on both

symptomatic and asymptomatic *C. difficile* carriers by applying universal glove use and enhanced environmental disinfection.

CDC is collaborating with partners to determine the role of technology in improving hand hygiene. The University of Iowa developed an innovative system that uses a wireless sensor network of “motes.” The motes can determine the location of HCP and dispenser use. Experimental validation studies were conducted by deploying the motes in mobile ICUs. The study showed that interaction with peers, direct observation and feedback affect hand hygiene among HCP. The University of Maryland developed a radio frequency identification method to monitor hand hygiene. The system has implications for pinpointing limitations in direct observation and tracking adherence to hand hygiene over time.

Introduction of the CDC HAI Prevention Cost-Effectiveness Tool

Clifford McDonald, MD, FACP, FSHEA

Chief, Prevention and Response Branch, DHQP
Centers for Disease Control and Prevention

John Jernigan, MD, MS

Director, Office of HAI Prevention Research and Evaluation, PRB, DHQP
Centers for Disease Control and Prevention

Drs. McDonald and Jernigan presented a draft of CDC’s HAI prevention cost-effectiveness tool to obtain preliminary input from HICPAC. However, they emphasized that the presentation would be limited to a general overview of the tool and initial beta test results because CDC has not yet officially cleared the tool.

The tool is an Excel spreadsheet that is limited to CLABSI and *C. difficile* and is only targeted to hospital administrators at this time. However, CDC hopes to develop more tools in the future for other target audiences (e.g., federal and state government policymakers). Administrators would input specific characteristics of their hospitals into the tool:

- type of hospital;
- preferred time interval to express outputs;
- participation in the Inpatient Hospital Prospective Payment System (IPPS);
- type of infection to determine cost-effectiveness;
- type of unit;
- number of admissions per year by unit;
- average length of stay of patient;
- device utilization ratio; and
- proportion of patients with a central line on a typical day.

After the hospital administrator inputs information for CLABSI, the tool would calculate patient-line days, provide an estimate of the number of CLABSI cases, and provide the total number of

cases for all units identified. The outputs will be different for *C. difficile* because NHSN benchmarks are not yet available for this infection.

The hospital administrator can use the summary of the expected number of CLABSI and *C. difficile* cases per year to make comparisons depending on whether their hospitals are in the “best” or “worst” percentile in terms of the number of HAIs based on NHSN definitions. The administrator would input the facility-wide average cost to treat an HAI per patient. Fixed and variable cost multipliers would be generated to show extra costs to the hospital of caring for a patient based on the specific HAI. The tool also would show excess costs to the hospital due to the specific HAI.

The tool is designed to show expected reimbursements to hospitals in preventing specific HAIs and actual reimbursements due to penalties as a result of the presence of HAIs. This field will require information on the proportion of Medicare/Medicaid patients versus private insurance patients. CDC noted an important problem with outputs for the reimbursement field because the tool found some HAIs to be “cost beneficial.”

CDC recognizes the need for more rigorous data because the preliminary beta test results are extremely uncertain. Additional information is needed from controlled studies, payers and hospitals on HAI reimbursement, the effectiveness and cost of specific interventions, and behavioral or cultural changes in institutions. The primary function of the tool is to determine the cost-effectiveness of HAI prevention, but CDC also is interested in using the tool to analyze the actual impact of interventions on HAI rates and costs.

Dr. Cardo emphasized that the purpose of the HAI prevention cost-effectiveness tool is for hospitals to understand and have knowledge of the cost-benefits of reducing their HAI rates. She clarified that the tool is not designed for CDC to collect additional data or for researchers to publish studies. Dr. Cardo reiterated the need for HICPAC to be involved in the ongoing development and implementation of the tool to promote HAI prevention in hospital settings.

HICPAC commended CDC and its partners on developing the HAI prevention cost-effectiveness tool. The members viewed the tool as a solid resource for infection control programs to make a strong business case to and obtain endorsement from their hospital administrators on the critical need to invest in HAI prevention. The HICPAC members also noted that the tool would play a valuable role in presenting hospital administrators with actual data on potential cost-savings from the number of HAI cases averted.

In response to the request by Drs. McDonald and Jernigan, several HICPAC members made comments and suggestions for CDC to consider in further development of the HAI prevention cost-effectiveness tool.

- The tool is exciting, but hospital CEOs most likely would not utilize this resource. CDC should ensure that data are displayed in a format to be understandable to hospital finance committees and boards.
- The fields for hospital administrators to input data into the tool should be more conservative. Additional thought should be given to messaging projections of HAI

prevention cost-effectiveness. CDC could achieve these goals by including an evidence-based default value in the tool. Dr. Susan Huang is a HICPAC member and Principal Investigator of the University of California-Irvine Prevention Epicenter. She offered the services of this institution to pilot the HAI prevention cost-effectiveness tool.

- The tool should be redesigned to break out fixed versus variable cost-savings. Because most hospitals now operate at near or full capacity, this approach would allow hospitals to document decreased length of patient stay as a positive outcome. This goal could be achieved by changing the terminology in the tool as “bed-days saved.”
- CDC should ensure that the tool focuses on better throughput, improved efficiency and a safer environment in hospital settings. Emphasis on these areas would allow hospitals to increase their revenue, profits and capacity in terms of admission without increasing cost.
- CDC should use results from its HAI prevalence survey to capture the day at which an HAI event occurred and ask hospitals to provide the total length of stay. Because data in these areas are scarce, linkage to a national HAI prevention cost-effectiveness tool could be extremely valuable.
- CDC should engage states to inform the further development of the HAI prevention cost-effectiveness tool. For example, New York State has linked NHSN data with its discharge database to compare costs associated with persons who did or did not develop HAIs. The New York State database contains more risk factors than the CDC tool.
- Dr. Beth Feldpush confirmed that the American Hospital Association would help CDC to obtain input from the field on the draft tool to inform revisions prior to pilot testing. The feedback would focus on the usefulness, flexibility, ease of use, and ability to tailor the tool to meet local needs.

Liaison and *Ex-Officio* Reports

Mr. Hageman opened the floor for the HICPAC liaison and *ex-officio* members to provide updates of recently completed, ongoing or future activities of their organizations and agencies (e.g., position statements, new or pending legislation, campaigns and related activities, press activities, publications, and other items of note). Written reports by the liaison and *ex-officio* members submitted into the official HICPAC record for the June 16-17, 2011 meeting and their additional comments are summarized below.

- Joan Blanchard, RN, BSN, MSS, CNOR, CIC (Association of periOperative Registered Nurses) (AORN). Ms. Blanchard reported that AORN is supporting a central sterile supply certification bill that was introduced by the International Association of Healthcare Central Service Material Management. AORN compiled tools and developed new resources in support of National Time Out Day on June 15, 2011. AORN is continuing to implement with its SYNTEGRITY® Standardized Perioperative Framework to facilitate the perioperative nursing plan, nursing documentation and compliance tracking. AORN

and other professional societies endorsed the updated recommended practice for sterilization in the perioperative setting with the term “immediate use steam sterilization.”

- Barbara DeBaun, MSN, RN, CIC (Association of Professionals of Infection Control and Epidemiology, Inc.) (APIC). Ms. DeBaun reported that APIC released a position paper in January 2011 with a recommendation to make influenza vaccination a condition of employment for HCP unless medically contraindicated. APIC launched a new consumer awareness campaign, “Infection Prevention and You,” to educate the public about the role of IPs in healthcare settings. APIC is offering new online training courses on infection prevention in hemodialysis units and disinfection and sterilization of surgical instruments. APIC will host its annual conference in Baltimore in June 2011.
- Sheri Chernetsky-Tejedor, MD (Alternate, Society of Hospital Medicine) (SHM). Dr. Chernetsky-Tejedor reported that the SHM Center for Hospital Innovation and Improvement offers mentored implementation programs at 300 hospitals in 44 states and Canada. SHM met with CDC to discuss building a resource room for CLABSI and catheter-associated UTI (CAUTI) for its membership. SHM developed a new data repository with a searchable database for its membership to share quality improvement projects. SHM is pursuing a 50-state collaborative on CAUTI prevention.
- Charles Huskins, MD, MSc (Infectious Diseases Society of America) (IDSA). Dr. Huskins reported that IDSA is continuing its active participation in efforts to combat antimicrobial resistance. IDSA participated in a Congressional briefing in April 2011. IDSA participated in World Health Day 2011 with its focus on antimicrobial resistance. IDSA recently published a paper in *Clinical Infectious Diseases* with policy guidance on combating antimicrobial resistance to save lives. IDSA published a clinical practice guideline for the treatment of MRSA infections in adults and children. The IDSA Standards and Practice Guidelines Committee administered a survey to members to obtain feedback on the usefulness and value of IDSA’s practice guidelines. Of >900 respondents, the vast majority stated their preference for online and shorter versions of guidelines with more tables.
- William Baine, MD (Agency for Healthcare Research and Quality) (AHRQ). Dr. Baine reported that AHRQ is continuing its efforts to increase interest in VAP prevention.
- Richard Melchreit, MD (Alternate, Council of State and Territorial Epidemiologists) (CSTE). Dr. Melchreit reported that two HAI-related position statements were proposed during the CSTE annual meeting on June 12-16, 2011. The proposal for a CSTE HAI Standards Committee was passed. CSTE approved its interim position statement on HAIs and Meaningful Use criteria. CSTE wrote a letter to HHS and AHRQ leadership on June 9, 2011 expressing its strong concerns and objections to the report the agencies planned to release on state-level HAI rates based on Healthcare Cost and Utilization Project hospital administrative discharge data. CSTE’s position was that the methodology used to develop the report was flawed, including lack of surveillance definitions, validation and risk stratification.

- Gary Roselle, MD (Department of Veterans Affairs) (VA). Dr. Roselle reported that the VA published its results from two HAI studies in April 2011: (1) a MRSA intervention in the *New England Journal of Medicine* and (2) a CLABSI intervention in a British medical journal. The VA implemented HAI prevention pilot projects across the country focusing on *C. difficile*. The VA initiated CRE pilot projects, but data collected to date have not shown a significant problem. The VA formed the “National Antimicrobial Stewardship Steering Group” to gather national data on antimicrobial stewardship outcomes.
- Mark Russi, MD, MPH (American College of Occupational and Environmental Medicine) (ACOEM). Dr. Russi reported that ACOEM issued four position statements addressing pandemic planning for corporations, mold in indoor environments, scope of practice, and reproductive and developmental hazards in the workplace. ACOEM submitted public comments in response to several federal documents.
- Lisa McGiffert (Consumers Union). Ms. McGiffert reported that Consumers Union updated its CLABSI and SSI data. The Safe Patient Project produced a video with consumer advocates providing advice on staying safe in hospitals. Consumers Union released the results of a poll in March 2011 regarding consumer concerns about patient safety. A coalition of state and national patient safety advocates, including Consumers Union, wrote a letter to the Director of CDC to emphasize the important need to record the actual cause of death on death certificates by including information on medical errors or HAIs.
- Sheila Murphey, MD (Food and Drug Administration) (FDA). Dr. Murphey reported that FDA issued a guidance document targeted to industry on redesigning and reprocessing reusable medical devices. FDA invited its federal partners to make presentations during a public workshop on the guideline document on June 8-9, 2011. Presentations by healthcare user groups and patient representatives were extremely important and valuable to industry. FDA will continue this effort with additional activities over multiple years, including a public summit that will be held on October 11-12, 2011. FDA issued a final emergency labeling guidance document for blood lancets in November 2010. FDA now requires all blood lancets to be labeled for single-patient use only. Triad voluntarily recalled its alcohol swabs for skin antisepsis in January 2011. Hospitals were advised to use sterilized alcohol preparations for skin antisepsis.
- Mark Rupp, MD (Society of Healthcare Epidemiology of America) (SHEA). Dr. Rupp reported that SHEA is actively collaborating with partners to review and update the Compendium.
- Jeannie Miller, RN, MPH (Centers for Medicare and Medicaid Services) (CMS). Ms. Miller had no additional details to add to the CMS written report.
- William Brock, MD, FCCM, FCCP, FACP (Society of Critical Care Medicine) (SCCM). Dr. Brock reported that SCCM and its partners are continuing to place a strong focus on HAIs and VAP. The professional societies are interested in developing a common and

relevant guideline on the management of critically ill and ventilated patients and the definition of VAP.

- Beth Feldpush, PhD (American Hospital Association) (AHA). Dr. Feldpush reported that the AHA Board of Trustees formally adopted a position supporting hospital policies of mandatory HCP influenza vaccination. AHA will release an advisory document along with educational materials to help hospitals draft, develop and implement similar policies in their institutions.
- Rachel Stricof, MPH (Advisory Council for the Elimination of Tuberculosis) (ACET). Ms. Stricof reported that ACET formally approved the “Prevention Measures for Reduction of Multidrug Resistant and Extensively Drug Resistant TB Risk in U.S. Healthcare Workers and Volunteers Serving in High Risk International Settings” Guideline during its meeting on June 7-8, 2011.

With no further discussion or business brought before HICPAC, Mr. Hageman recessed the meeting at 5:05 p.m. on June 16, 2011.

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| Opening Session: June 17, 2011 |
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Mr. Hageman opened the floor for introductions and confirmed the presence of a quorum with the HICPAC voting members and *ex-officio* members. He reconvened the HICPAC meeting at 9:04 a.m. on June 17, 2011 and announced that would preside over the meeting due to the absence of Dr. Fishman.

Dr. Beth Bell

Director, National Center for Emerging and Zoonotic Infectious Diseases
Centers for Disease Control and Prevention

Dr. Bell apologized for being unable to attend day 1 of the meeting to welcome the new HICPAC members. She thanked the HICPAC members for continuing to contribute their valuable expertise and provide sound guidance to CDC and the broader healthcare infection control practices community.

Update on the National Healthcare Safety Network

Daniel A. Pollock

Chief, Surveillance Branch, DHQP
Centers for Disease Control and Prevention

Dr. Pollock covered the following topics in his update on NHSN. NHSN is CDC's surveillance system to monitor HAIs and other adverse events in healthcare settings as well as adherence to prevention practices. The District of Columbia and 24 states and territories currently mandate use of the NHSN Patient Safety Component as their technical infrastructure for reporting mandates. CLABSI, SSI, MDRO and CDI are the top four mandated HAIs reported to NHSN.

CDC is currently conducting activities to increase access to NHSN. CDC revised the "NHSN Agreement to Participate and Consent Form" because states reported problems in invoking the voluntary use of the group function for data sharing. The new stated purposes for NHSN include extending data access to state health departments even in the absence of an HAI reporting mandate and enabling healthcare facilities to report data via NHSN to CMS in fulfillment of quality measurement reporting requirements.

The NHSN assurance of confidentiality states that voluntarily provided information obtained in the surveillance system will be used only for the purposes stated and will not otherwise be disclosed or released without the consent of the individual or institution. At this time, only ~65 of 4,500 hospitals enrolled in NHSN have not submitted their re-consent to the revised form.

Dr. Pollock summarized the sections of the "CDC-State Data Use Agreement Template. "Covered data" are defined as individual- and institution-identifiable data from the NHSN Patient Safety Component and Healthcare Personnel Safety Component that are voluntarily submitted to NHSN and for which no state mandate exists for reporting such individual- or institution-identifiable data.

States will agree to use covered data for surveillance or prevention purposes only (e.g., evaluating the impact of a targeted program to reduce CLABSI. States will specifically agree not to use covered data obtained under the Data Use Agreement for any regulatory or punitive actions against healthcare institutions or for public reporting of institution-identifiable data.

States will agree to the following data protections. States will acknowledge that federal statutes may be implicated if the state does not protect covered data from release pursuant to the Data Use Agreement. States will specify legal, administrative and technical safeguards that will be used to protect covered data. States will agree that to the extent permitted by state law, covered data requested under a state's open records law will not be released to media, for litigation purposes, or if data release could cause competitive harm. States will agree to inform CDC in advance of any changes to state laws that will reduce legal safeguards protecting against data releases.

States will agree to the requirements for the provision and management of data. States will acknowledge that their access to covered data will be for adverse healthcare events and/or processes of care occurring after signing the agreement, specifically three full months after the signing date. Covered data for prior events or processes of care will not be accessible. States will acknowledge that CDC/NHSN will provide a time-limited opportunity for institutions to opt-out of reporting covered data to NHSN. States will acknowledge that CDC/NHSN will notify newly enrolling institutions of the provisions of the agreement.

States will agree to requirements of the term and termination of the agreement. Agreement shall be effective for a period of 5 years and may be terminated before the 5-year period by either party. Upon CDC/NHSN's knowledge of a pattern or practice that constitutes material breach of the agreement by the state, CDC/NHSN may immediately and unilaterally terminate the agreement.

CDC is continuing to revise the draft Data Use Agreement based on input submitted by states, CSTE, AHA and other professional societies and expects to execute agreements with states beginning in the summer of 2011.

Dr. Pollock provided an update on the use of NHSN to report HAIs to CMS. CLABSI reporting via NHSN began in January 2011. SSI reporting will begin in January 2012 followed by additional HAI event reporting beginning in 2013. HAI reporting in 2011-2012 is part of the CMS pay-for-reporting program under the Hospital Inpatient Quality Reporting (IQR) Program. Pay-for-performance reporting that will begin in 2013 will be part of the Hospital Value Based Purchasing Program. CMS plans to publicly report hospital-specific CLABSI data beginning in 2012 with additional HAI public reporting to follow in subsequent years.

CDC will prepare hospital-specific HAI summary statistics that are submitted in monthly and quarterly files to CMS using a secure QualityNet exchange account. Hospitals will be able to view their individual HAI summary statistics at a secure CMS website that contains the APU dashboard. CMS will use hospital-specific statistics for payment and public reporting at the Hospital Compare website.

In preparation of 2012, CDC and the American College of Surgeons (ACS) submitted separate proposals to the National Quality Forum (NQF) to measure SSI. In response to CMS's request, CDC and ACS jointly developed a single proposal to measure SSI measure. NQF is currently reviewing the proposal. The scope of the single proposal to measure SSI reflects 2 of 10 NHSN operative procedure categories that CDC originally submitted to NQF: colon surgeries and abdominal hysterectomies. The proposed SSI measure is a prototype and will be followed by a more comprehensive measure or set of measures that add operative procedures and expand SSI risk adjustment.

ICUs in acute care hospitals are the only healthcare facilities reporting CLABSI to CMS via NHSN at this time, but additional HAI events have been proposed for the future (e.g., SSI, CAUTI, central-line insertion practices, MRSA bacteremia, *C. difficile* laboratory identification event and HCP influenza vaccination). Other types of healthcare facilities (e.g., LTCFs, acute care hospitals and inpatient rehabilitation facilities) have been proposed to report HAIs to CMS

via NHSN in the future.

Dr. Pollock concluded his update by reviewing the six-year evolution from purely voluntary and confidential HAI reporting to primarily mandatory and public HAI reporting. NHSN was launched in 2005 as a voluntary and confidential system with initial participation by ~300 hospitals. Vermont became the first state to mandate use of NHSN in 2006. The number of users has rapidly increased with >4,500 hospitals participating at this time. The District of Columbia and 24 states currently mandate use of NHSN for HAI reporting. CMS reporting requirements were introduced in 2011 and are likely to increase in 2012 and 2013.

HICPAC congratulated CDC on its success and tremendous progress with NHSN over the past 6 years. In response to HICPAC's questions, Dr. Pollock provided additional details on NHSN in the following areas:

- partnerships with other groups to facilitate more robust comparisons and stratifications of risk;
- development of a risk adjustment strategy within NHSN;
- efforts to simplify data collection for NHSN denominator data;
- engagement of vendors to assist in the design of front-line interfaces to capture NHSN data in a meaningful and discrete strategy; and
- development of data validation standards or guidance in the *de facto* federal mandatory reporting system.

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| Update by the HICPAC HAI Surveillance Workgroup |
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Scott Fridkin, MD

Deputy Chief, Surveillance Branch, DHQP
Centers for Disease Control and Prevention

Nicola Thompson, PhD

Epidemiologist, DHQP
Centers for Disease Control and Prevention

Drs. Fridkin and Thompson covered the following topics in their update on the HICPAC HAI Surveillance Workgroup. The purpose of the workgroup is to provide a structure for exploring implications of potential changes in surveillance methodology and reporting through NHSN with a focus on issues related to federal policy developments. The overarching goal of the workgroup is to provide input to CDC and HICPAC on potential implications (e.g., anticipated consequences of actions or changes) in periodic summary documents or presentations during HICPAC meetings.

The workgroup convenes monthly teleconferences to conduct its business under the following process. CDC identifies and prioritizes discussion items (e.g., operational changes). The workgroup sequentially addresses these items and develops a list of implications of potential

changes. CDC staff is designated to facilitate discussions, make presentations and summarize data for the workgroup. After its first year, the workgroup will reevaluate its charge, determine if the membership should be rotated, and consider whether the duration should be changed.

To determine potential implications, the workgroup considers the strength of the evidence for making changes to specific NHSN definitions (e.g., CLABSI) and identifies potential advantages and disadvantages to making specific changes. During this process, the workgroup particularly considers potential implications for public reporting (e.g., reduce subjectivity, increase reliability or strengthen credibility) and NHSN participation and surveillance trends (e.g., data collection burden by users and CDC's ability to track and interpret HAI trends over time at the national level).

The workgroup represents persons with expertise in the fields of infection prevention, healthcare epidemiology and public health as well as surveillance and analytical experience focused on process improvement and public reporting. Drs. Dale Bratzler, Daniel Diekema and Stephen Ostroff represent HICPAC on the workgroup.

The workgroup has identified several priority issues. Changes to the CLABSI definition would increase credibility, maintain reliability and simplify denominator data collection. Changes to the SSI definition would address methodological and definitional issues and outline a method to standardize approaches to case finding (e.g., use of admission or discharge data for all or some procedures). Changes to the CAUTI definition would revise risk adjustment rates to account for the paradoxical increase in rates with a decrease in the device utilization ratio. The workgroup also has explored the possibility of changes to the VAP definition and reporting of HAI susceptibility data would.

The workgroup held three meetings in April-May 2011 and will convene its next teleconference on June 21, 2011 to review and discuss issues related to CLABSI and prepare for an upcoming discussion on SSI surveillance.

Dr. Thompson provided additional details on the workgroup's discussions to date. For issue 1, the workgroup discussed the implications of changes to the NHSN CLABSI definition that increase credibility while maintaining reliability of public reporting. This issue was separated into three sub-topics: contamination, CLABSI in subpopulations, and reliability in the application of the CLABSI definition.

CDC staff identified the three subtopics based on common complaints and questions by NHSN users, peer-reviewed literature, and meeting abstracts that highlight problems and concerns regarding the use of NHSN data for public reporting purposes. The workgroup used the peer-reviewed literature and meeting abstracts illustrate and provide examples of problems or concerns and develop potential solutions for discussion.

In its discussions on the subtopic of CLABSI in patient subpopulations, the workgroup acknowledged that NHSN infection-type definitions do not allow BSI in patients with mucositis, graft-versus-host disease (GVHD) or neutropenia to be classified as secondary BSI. NHSN counts these infections as CLABSI by default. The source of BSI is considered to be gut

translocation rather than the central line. Misclassification of secondary BSI due to translocation as CLABSI has inflated rates and resulted in reporting of CLABSIs that are not BSI associated with the central line.

Overall, the workgroup is aware of numerous operational changes to the NHSN surveillance methodology that are being considered in the current era of public reporting. The workgroup provides a platform to discuss and provide input on the potential impact of these changes, but the process is time consuming. Because insufficient data exist to make evidence-based decisions on many issues, the workgroup will rely on anecdotal information and expert opinion when necessary. Despite these challenges, the workgroup is making progress and will carefully consider the next issues for discussion based on its experience to date.

HICPAC viewed the HAI Surveillance Workgroup as another successful model of CDC's extensive outreach to address and respond to the concerns of constituents. HICPAC further commended CDC on engaging and truly representing hospitals in the important issue of public reporting.

The HICPAC members made several comments and suggestions for the workgroup to consider in its ongoing discussions and activities.

- A NICU representative should be represented on the workgroup to provide expertise on conducting a separate patient subpopulation analysis of necrotizing enterocolitis. NICU expertise also would help the workgroup to address organisms that may be vertically acquired (e.g., Group B streptococcus).
- The workgroup should establish a foundation to electronically capture and present HAI surveillance data on subpopulations in the future in preparation of Meaningful Use criteria.
- The workgroup should review the New York State model of using custom fields to address the CLABSI contamination subtopic. New York State has used custom fields for public reporting purposes to respond to the clinical significance of findings.
- The workgroup should include representatives from New York State and other states that have validated NHSN data. These representatives could inform the workgroup's discussions by providing data to answer key questions.
- The workgroup should promote the use of actual case-based scenarios to teach IPs and facilitate standardization of NHSN surveillance definitions.
- The workgroup should maintain a strong focus on blood culture contamination because this issue impacts antimicrobial stewardship and other important healthcare infection control practices beyond surveillance. Moreover, current practices and techniques that are implemented to obtain blood cultures widely vary across healthcare facilities.
- To address translocation issues, the workgroup should include the subpopulation of small bowel transplant patients, particularly those with organ rejection.
- The workgroup should the subpopulation of patients with multiple simultaneous central venous catheters in denominator data to advance risk stratification.
- The workgroup should explore the possibility of using differential time to positivity in HAI surveillance. Most laboratories continuously monitor blood culture systems and have the capability to include these data for surveillance purposes.

Overview of the Partnership for Patients Initiative

Mr. John Michael O'Brien

Field Director, Partnership for Patients
Centers for Medicare and Medicaid Services

Mr. O'Brien reported that the overarching purpose of PPACA is to improve flawed health insurance laws and help to cover millions of previously uninsured Americans. PPACA also is designed to reduce costs and improve experiences patients, caregivers and healthcare providers. The "Partnership for Patients: Better Care, Lower Costs" initiative is an example of President Obama's use of PPACA provisions to make health care in America safer, more efficient and less costly.

The HHS Secretary launched the Partnership for Patients initiative in 2010 as a new nationwide public-private partnership to address all forms of harm to patients. Hospitals, clinicians, patient advocacy organizations, employers, payers, unions, HCP at various levels, and state and federal governmental agencies at all levels are represented on Partnership for Patients.

The goals of this initiative are two-fold. First, efforts will be made to keep patients from becoming sicker and suffering injuries. Preventable HAIs will be reduced by 40%. If goal 1 is achieved, patients will sustain ~1.8 million fewer injuries and >60,000 lives will be saved over the next three years.

Second, efforts will be made to help patients heal without complications. Hospital readmissions will be reduced by 20% by decreasing the number of preventable complications during transitions between care settings. If goal 2 is achieved, >1.6 million patients will recover from illness without suffering a preventable complication that would require re-hospitalization within 30 days of discharge. For both goals, 2010 was identified as the comparison year and the end of 2013 was established as the timeline. Achievement of the two goals potentially could result in cost-savings over the next three years of >\$35 billion in Medicare and Medicaid.

The Partnership for Patients initiative will seek to improve hospital care. In the future hospital experience, boards will demand more attention to quality. Hospital administrators will review safety and quality data on a weekly basis. The organization will maintain a portfolio of 10-12 quality improvement projects. Major incentives will be offered to change outcomes (e.g., payment at risk, increased transparency and media scrutiny). Staff and programming will be dedicated to assure seamless transitions of care. Hospitals will use the Partnership for Patients infrastructure to interface with the patient and family movement.

The Partnership for Patients initiative was launched by building on the tremendous momentum and enthusiasm in the public and private sectors to obtain commitments from hundreds of hospitals, clinicians, employers, insurers, consumer groups, community organizations, unions

and health plans. To date, ~4,000 partners have signed the Partnership for Patients pledge on the www.healthcare.gov/partnershipforpatients website.

Mr. O'Brien concluded his overview by requesting HICPAC's ongoing expertise on the evidence- and science-based aspects of the Partnership for Patients initiative. HICPAC welcomed future opportunities to provide CMS with concrete recommendations and substantive feedback as efforts are made to further develop and launch the Partnership for Patients initiative. The HICPAC members made two key comments for CMS to consider in the interim.

First, CMS should identify a mechanism to formally engage and provide resources for state health departments to participate in the Partnership for Patients initiative. Second, CMS should allocate a portion of its PPACA dollars to CDC to assist in further developing, piloting and implementing the draft HAI prevention cost-effectiveness tool. The tool could serve as a valuable resource to present Patients for Partnership data in a format that would be more accessible and user-friendly to hospitals, payers and other groups.

Update on the Healthcare Personnel (HCP) Infection Prevention and Control Guideline

David Kuhar, MD

Medical Epidemiologist, DHQP
Centers for Disease Control and Prevention

Dr. Kuhar covered the following topics in his update on CDC's and HICPAC's HCP Infection Prevention and Control Guideline. The core writing group members are represented by HICPAC, CDC/DHQP, UPHS-CEP, ACOEM, APIC, SHEA, ACET, IDSA and the National Institute for Occupational Safety and Health.

The updated guideline will be reminiscent of the original 1998 document, but two major changes will be the combination of summary and review information in the written text and key questions to guide new recommendations. However, summary tables will be retained based on feedback from users in the occupational health and epidemiology communities.

The updated guideline will be streamlined by focusing on specific infection prevention topics and avoiding duplication of recommendations in other CDC guidelines. For example, ACIP's updated guideline on HCP immunization is currently in the CDC clearance process and will be referenced in CDC's HCP guideline. The CDC and HICPAC guideline also will reference links to the norovirus, bloodborne pathogens and TB guidelines.

The guideline will be organized in three main sections. Section 1, "Baseline Infrastructure and Routine Practices," will contain an introduction along with guidance on pre-employment immunization, annual testing, booster and annual immunizations, and education.

Infection prevention objectives for HCP health service programs will be described (e.g., collaborations between infection prevention programs and occupational health and other

departments). The elements of a successful HCP health service program for infection prevention will be outlined (e.g., coordinated planning and administration, HCP medical evaluations, pre-placement immunization, HCP health and safety education, management of job-related illnesses and exposures, and maintenance of records, data management and confidentiality).

Section 2, "Specific Infectious Diseases," will provide guidance on the epidemiology, prevention and control of the following selected infections transmitted between HCP and patients:

- isolation precautions;
- bloodborne pathogens (e.g. HIV, hepatitis B virus and HCV);
- conjunctivitis;
- cytomegalovirus disease;
- diphtheria;
- acute gastrointestinal infections (e.g., norovirus and *C. difficile*);
- hepatitis A virus;
- herpes simplex;
- influenza;
- measles
- meningococcal disease;
- multidrug-resistant gram-negative bacteria;
- mumps;
- parvovirus;
- pertussis;
- poliomyelitis;
- rabies;
- rubella;
- scabies and pediculosis;
- *S. aureas* (e.g., MRSA and MSSA);
- Group A streptococcus (GAS);
- tuberculosis;
- vaccinia;
- varicella;
- viral respiratory infections (e.g., RSV and severe acute respiratory syndrome); and
- potential agents of bioterrorism.

Section 3, "Special HCP Populations," will provide guidance on infection prevention for the following HCP subgroups: pregnant HCP, immunocompromised HCP (e.g., HIV-positive HCP and transplant recipients), laboratory personnel, emergency response employees, HCP with disabilities based on the Americans with Disabilities Act, HCP linked to infectious disease outbreaks, and traveling HCP). Section 3 also will include an introduction and describe privacy and related issues.

HICPAC Business Session

Mr. Hageman and Dr. Bell explained that because the current meeting served as an orientation for the new members, HICPAC would not vote on any documents or issues during the business session.

In preparation of the next meeting, Mr. Hageman and Dr. Bell asked the HICPAC members to review these materials to become more familiar with ongoing and future healthcare infection control activities (e.g., the CDC and HICPAC guideline development process, current status of guidelines, CDC HAI prevention research agenda, NHSN, and efforts by the HAI Surveillance Workgroup).

Mr. Hageman asked for volunteers to serve on the CDC/HICPAC guideline writing groups. Drs. Ruth Carrico and Thomas Talbot volunteered to represent HICPAC on the HCP Infection Prevention and Control Guideline core writing group. Dr. Elward clarified that HICPAC members are needed for the expert review panel rather than the core writing group for the NICU Guideline. The HICPAC members would be charged with reviewing the bibliography and draft narrative summaries and would not need any specific pediatric expertise in this capacity. Dr. Daniel Diekema volunteered to serve on the expert review panel for the NICU Guideline.

Closing Session

Mr. Hageman thanked the CDC staff and the CMS guest speakers for preparing comprehensive and thoughtful presentations to orient the new HICPAC members. He also thanked the liaison representatives and members of the public for taking time from their busy schedules to attend the meeting and provide valuable input to CDC and HICPAC.

Mr. Hageman announced that the next HICPAC meeting would be held on November 3-4, 2011 in Washington, DC. With no further discussion or business brought before HICPAC, Mr. Hageman adjourned the meeting at 11:23 a.m. on June 17, 2011.

I hereby certify that to the best of my knowledge, the foregoing Minutes of the proceedings are accurate and complete.

Date

Neil O. Fishman, M.D.
Chair, Healthcare Infection Control
Practices Advisory Committee