Update of the CDC/HICPAC Guideline: Infection Prevention in Healthcare Personnel

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HICPAC Meeting
March 31, 2016
Outline

- **Background**
- **Overall Update Plan**
  - Organization
  - Scope
  - Guideline Development Methods
  - Writing Group Members
- **Section 1**
  - Outline
  - Elements
- **Section 2**
  - Pathogens
  - Update methods
  - Outline
- **Features of a “Living” Guideline**
- **Input from HICPAC**
Background

- Guideline for Infection Control in Healthcare Personnel, 1998
  - Audience: aimed at occupational health providers working in healthcare facilities
  - Focused on epidemiology and prevention of infections known to be transmitted in healthcare settings
  - Provided methods for reducing transmission of infections among healthcare personnel (HCP) and patients, such as
    - immunizations
    - isolation precautions
    - management of HCP exposures to infections (e.g., postexposure prophylaxis)
    - work restrictions for HCP
General Topics Addressed-1998

Section 1:

- Infection prevention objectives for an occupational health service
- Elements of an occupational health service
  - Coordination with other departments
  - Medical evaluations
  - Personnel health and safety education
  - Immunization programs
  - Management of job-related illnesses and exposures
  - Health counselling
  - Maintenance of records, data management, and confidentiality
## General Topics Addressed-1998

### Section 2: Epidemiology and Control of Selected Infections Transmitted Among HCP and Patients

<table>
<thead>
<tr>
<th>Isolation Precautions</th>
<th>Mumps</th>
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<tbody>
<tr>
<td>Bloodborne Pathogens</td>
<td>Parvovirus</td>
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<td>HIV</td>
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<td>Group A <em>Streptococcus</em></td>
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<td>Meningococcal Disease</td>
<td>Viral Respiratory Infections</td>
</tr>
</tbody>
</table>
General Topics Addressed-1998

Section 3:

- Special Populations
  - Pregnant Personnel
  - Laboratory Personnel
  - Emergency-Response Personnel

- Latex Hypersensitivity

- The Americans with Disabilities Act
Update Plan

- Based on feedback on 1998 version
  - Useful in content and format
  - Favor update reminiscent of previous document

- “Living” Guideline
  - Electronic format
  - Sections published/posted online sequentially

- Update will have
  - Revised organization
  - Expanded scope
    - Healthcare settings and audiences
    - Pathogens
    - Range of interventions
Organization of Updated Guideline

Main Sections:

- **Section 1**: Baseline infrastructure and routine practices of occupational health service
  - Descriptive text plus hyperlinks to supplementary materials that can be updated over time (e.g., preplacement immunizations for HCP)
    - Will publish before section 2

- **Section 2**: Epidemiology, Prevention, and Control of Selected Infections Transmitted Among HCP and Patients
  - Will address special HCP populations (e.g., pregnant, immunodeficient, temporarily practice outside U.S.) as part of each pathogen subsection and/or in a separate Section 3
Section 1: Scope

- **Expanded healthcare settings, including**
  - **Outpatient settings**
    - Clinics
    - Ambulatory centers (surgery, cancer care, imaging)
    - Home health care
  - **Non-acute care inpatient facilities**
    - Long-term care

- **Considers on- and off-site occupational health services, including contracted services**

- **Audiences for recommendations**
  - Healthcare organization leaders who oversee OH services
  - Leaders and staff of OH services who serve HCP in these settings ("beneficiaries")
Section 1: “Hybrid” Guideline Development Methods

- Will use one of these two methods
  - Refer to latest, existing guidance from CDC (e.g., Immunization of Healthcare Personnel 2011, Isolation Precautions 2007), OR
  - Develop new recommendations based on
    - regulatory requirements (e.g., OSHA)
    - research studies
    - program evaluation
    - other guidelines
    - theoretical rational and expert opinion
    - Limited evidence

- Will categorize as IC (regulation) or “other” (based on research, program evaluation, other guidelines, theoretical rational, expert opinion)

- Due to sparse evidence and managerial focus, will not use GRADE
Evidence Base for Guideline

- **Systematic Literature Review**
  - Will yield Appendices that list interventions shown to improve delivery and quality of OH service elements (e.g., Leadership)
  - Guideline will advise consideration of past interventions, but not recommend specific strategies
  - ~ 310 articles identified

- **Related Guidelines (~ 30)**

- **Government and non-government websites (~ 25)**
Section 1: Style and Format

- Electronic format amenable to regular updates of small sub-sections and hyperlinks to external resources that may change frequently (e.g., HCP immunizations)

- Will iteratively develop consolidated tables that compile info on several pathogens over time (with alerts about date and source of latest update)

- Updated text and tables will be flagged with icons
Section 1: Writing Group Members

<table>
<thead>
<tr>
<th>CDC</th>
<th>HICPAC members</th>
<th>Other Experts</th>
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</thead>
<tbody>
<tr>
<td>David Kuhar (DHQP)</td>
<td>Hilary Babcock</td>
<td>Ruth Carrico</td>
</tr>
<tr>
<td>Kathleen Irwin (DHQP)</td>
<td>Tom Talbot</td>
<td>Tammy Lundstrom</td>
</tr>
<tr>
<td>Amanda Overholt (DHQP)</td>
<td>Michael Tapper</td>
<td>Mark Russi (ACOEM)</td>
</tr>
<tr>
<td>Kristin Roberts (DHQP)</td>
<td></td>
<td>Connie Steed (APIC)</td>
</tr>
<tr>
<td>Marie De Perio (NIOSH)</td>
<td></td>
<td>David Weber (SHEA)</td>
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</tbody>
</table>
Section I: Outline

- Introduction
- Methods for Developing the Recommendations
- Infection Prevention Objectives for Occupational Health Service
- Elements of Occupational Health Services for Infection Prevention
  - Leadership & Management (including performance measures & quality improvement)
  - Collaboration and Communication (within and outside health organization)
  - Risk Assessment in the Healthcare Facility
  - Medical Evaluations (preplacement, periodic, and episodic; including counseling)
  - Health and Safety Education and Training
  - Immunization Programs
  - Management of Potentially Infectious Illnesses and Exposures
  - Records, data management, confidentiality, and reporting
Elements of an Occupational Health Service for Infection Prevention

Updated Version

• Leadership and Management
• Collaboration and Communication
• Risk Assessment in the Healthcare Facility
• Medical Evaluations
• Health and Safety Education and Training
• Immunization Programs
• Management of Potentially Infectious Illnesses and Exposures
• Records, data management, confidentiality, and reporting

1998 Version

• Coordination with other departments
• Medical evaluations
• Personnel health and safety education
• Immunization programs
• Management of job-related illnesses and exposures
• Health counseling
• Maintenance of records, data management, and confidentiality
Elements of an Occupational Health Service

Outline for each element

- Definition
- Purpose
- Status of delivery and quality of element over the last decade
- Interventions that could improve delivery or quality of this element
- Recommendations, including “Design and implement interventions to meet quality improvement goals after considering past experience (Table).”

Table: Interventions that improved delivery or quality of records, data management, confidentiality & reporting in at least one healthcare setting

<table>
<thead>
<tr>
<th>Author, Year</th>
<th>Study location, setting and participants</th>
<th>Intervention design objectives</th>
<th>Intervention Description</th>
<th>Intervention Results</th>
</tr>
</thead>
<tbody>
<tr>
<td>Salazar, 2012</td>
<td>California, US Network of acute care hospitals and outpatient facilities, 3929 HCP in these facilities</td>
<td>Cross-sectional design To compare completeness of medical history documented by patients using web-based tool vs. traditional paper medical history form during vaccination campaign.</td>
<td>New web-based tool with pre-established response options to document medical history, including contraindications to influenza vaccination.</td>
<td>HCP who selected web-based tool • left 25.8% fewer questions blank (CI: 20.8%-30.7%) than HCP who used paper forms. • were less likely to leave one or more vaccine contraindication questions blank (14%) compared to HCP who used paper forms (85%)</td>
</tr>
</tbody>
</table>
Section 2: Epidemiology, Prevention, and Control of Selected Infections Transmitted Among HCP and Patients

Elements

- Review of isolation precautions
- Specific pathogens

| Bloodborne Pathogens (HIV, HBV, HCV) | Acute GI Infections (Norovirus, C. difficile, others) |
| Conjunctivitis | Hepatitis A |
| CMV Disease | Herpes Simplex |
| Diphtheria | Measles |
|  | Meningococcal Disease |
|  | Multidrug-Resistant Gram Negative Bacteria |
Section 2: Pathogens (continued)

Mumps
Parvovirus
Pertussis
Poliomyelitis
Rabies
Rubella
Scabies and Pediculosis

*Staphylococcus Aureus (MSSA, MRSA)*

Streptococcus (group A)
Tuberculosis
Vaccinia
Varicella
Viral Respiratory Infections
(Influenza, RSV, others)
Potential Agents of Bioterrorism
Section 2: Hybrid Methods to Update Recommendations

- **Pathogens assigned to DHQP**
  - Writing group drawn from DHQP experts and external experts
  - Conduct literature review, emphasizing new issues
  - Apply standard outline amenable to future updates
  - Standard categorization of recommendations (e.g., IA, IB, IC (regulation), II)
  - Hyperlink to supplemental documents (especially those that change often)
  - Vet with HICPAC and public

- **Pathogens assigned to other Divisions (e.g., TB, HBV, influenza)**
  - Writing group drawn from Divisions’ experts and external experts
  - Hyperlink to webpage for Divisions’ latest guideline and implementation resources
  - Hyperlink paired with alert that non-DHQP guidelines use different development methods, evidence base, recommendation categories, and stakeholder vetting
Section 2: Outline for each Pathogen Subsection

- Overview: pathogen, clinical manifestations
- Epidemiology: disease burden, risk groups, transmission in healthcare settings, incubation period, period of communicability
- Methods to prevent and control transmission and acquisition (e.g., contact precautions, vaccination)
- Individual risk assessment, screening, and diagnosis
- Post-exposure management (e.g., prophylaxis, duty restrictions)
- Illness management (e.g., advice to treat, f/up, vaccination, duty restrictions, managing contacts)
- Management of outbreaks involving HCP
- Hyperlinks to implementation resources
- References
Features of a “Living” Guideline

- **Advantages**
  - Provides latest federal guidance on topic
  - Exploits web format (e.g., hyperlinks for “stand alone” documents that can be updated more easily than full guideline)
  - Reduces DHQP burden to update, reformat, and clear a series of large, complete guidelines with fully updated components
  - Relies on experts, external stakeholders and guideline development methods of other Divisions
  - Format used by other federal agencies (e.g., HHS HIV Treatment guidelines)

- **Resources to support this format**
  - Prominently post dates for each version in the series
  - DHQP staff will regularly
    - update hyperlinks to non-DHQP guidelines
    - update compiled tables that include more than one pathogen (e.g., summary of recommended work restrictions by pathogen)
Section 1: Feedback

Should other elements of occupational health service be added to this list?

- Leadership and Management (including performance measurement and quality improvement)
- Collaboration and Communication
- Risk Assessment in the Healthcare Facility
- Medical Evaluations
- Health and Safety Education and Training
- Immunization Programs
- Management of Potentially Infectious Illnesses and Exposures
- Records, data management, confidentiality, and reporting
# Section 2: Feedback on Pathogens

<table>
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<tr>
<th>Category</th>
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<td>(e.g., Anthrax)</td>
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Section 2: Other issues?
Thank you!

For more information, please contact
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The findings and conclusions in this presentation are those of the authors and do not necessarily represent the official position of the Centers for Disease Control and Prevention.