Long Term Care: Infection Prevention Plan, Risk Assessment and Isolation Recommendations

Marianne Pavia MS, BS, MT(ASCP), CIC, FAPIC
CMS Final Rule Requirements for Long-Term Care Facilities

- Long-Term Care (LTC) Facilities have health and safety standards that facilities must meet in order to participate in the Medicare or Medicaid Programs.

<table>
<thead>
<tr>
<th>Regulatory Section</th>
<th>Phase</th>
<th>Implementation Deadline</th>
</tr>
</thead>
<tbody>
<tr>
<td>§483.80 Infection Prevention and Control (IPCP)</td>
<td>Phase 1</td>
<td>November 28, 2016</td>
</tr>
<tr>
<td>Antibiotic Stewardship Program</td>
<td>Phase 2</td>
<td>November 28, 2017</td>
</tr>
<tr>
<td>Infection Preventionist (IP)</td>
<td>Phase 3</td>
<td>November 28, 2019</td>
</tr>
<tr>
<td>IP participation on QAA committee</td>
<td>Phase 3</td>
<td>November 28, 2019</td>
</tr>
</tbody>
</table>
The Infection Prevention and Control (IPC) Program

It is a comprehensive, effective and supported program that is essential for reducing infection risk and increasing safety.
Effective IPC Program

- A clinically qualified, well-trained staff to oversee the program
- A risk assessment
- A surveillance program
  - A system for obtaining, managing, and reporting critical data and information
  - Use of surveillance findings in performance assessment and improvement activities

Arias KM, Soule BM, APIC/JCR Infection Prevention and Control Workbook, 2nd Edition 2010
Effective IPC Program

- A written, risk based plan with goals and measurable objectives, strategies and evaluation methods
- Relevant education and training programs
- Available resources to support the program
- Integration with emergency preparedness systems in the organization and community
- Collaboration with the health department

Arias KM, Soule BM, APIC/JCR Infection Prevention and Control Workbook, 2nd Edition 2010
Minimum LTC Assessment Domains

- Hand hygiene compliance
- Environmental control
- Outbreak control

Prevention of:

- Urinary tract infections (UTI)
- Respiratory tract infections
- Gastrointestinal
- Multidrug-resistant organism infections (MDROs)
- Skin and soft-tissue infections
The Infection Control Plan should contain 4 components:

1. A description of risks
2. A statement of goals
3. A description of strategies to address the risks
4. A description of how the strategies will be evaluated
Infection Control Plan Template

Administrative
- Authority statement
- Vision/mission statement
- Program goals and objectives
- Program assessment

Personnel Job Description
- Director/Coordinator/Manager
- Infection Control Practitioner

Clinical Infection Control Plan
- Surveillance strategy
- Environmental monitoring
- Antibiotic utilization studies

Investigations
- Outbreak management
- DOH Liaison

General Organizational Policies
- Occupational health
- Medical waste
- Post-exposure communicable disease management
The Infection Control Plan

SHEA/APIC Guideline: Infection prevention and control in the long-term care facility

Philip W. Smith, MD, a Gail Bennett, RN, MSN, CIC, b Suzanne Bradley, MD, c Paul Drinka, MD, d Ebbing Lautenbach, MD, e James Marx, RN, MS, CIC, f Lona Mody, MD, g Lindsay Nicolle, MD, h and Kurt Stevenson, MD i
July 2008

The Infection Control Plan: Administrative
IC Plan: Structure

Hospital Program

- Infection Control Team
- Infection Control Committee
- Infection Control Manual

<table>
<thead>
<tr>
<th>Leadership</th>
<th>Expertise/training</th>
<th>Role(s)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Infection Control Committee/Oversight Committee</td>
<td>Administration, Nursing Representative, Medical Director, ICP</td>
<td>Identifies areas of risk, Establishes priorities, Plans strategies to achieve goals, Implements plans, Develops policies/procedures, Allocates resources, Assesses program efficacy at least annually</td>
</tr>
<tr>
<td>Ad hoc members</td>
<td>Food Service, Maintenance, Housekeeping, Laundry Services, Clinical Services, Resident Activities, Employee Health</td>
<td></td>
</tr>
<tr>
<td>Infection Control Professional</td>
<td>Qualification via education, experience, certification</td>
<td>Surveillance, Data collection and analysis, Implementation of policies, procedures, Education, Reporting to oversight group/ICC, Communication to public health, Communication to other agencies, Communication to other facilities</td>
</tr>
</tbody>
</table>

The Infection Control Team

- Has the **authority** to manage an effective control program
- Reports directly with senior administration
- Responsible for day-to-day functions of IC program
- Prepares the yearly plan
- Has expertise in IC
- Creative in their job
- **Remains calm and professional**
Infection Control Manual

Every facility should have an infection prevention manual compiling evidence-based practices for patient care.

This manual should be developed and updated in a timely manner by the infection control team.

It is to be reviewed and accepted by infection control committee.
Where Is the Evidence?

2007 Guideline for Isolation Precautions Preventing Transmission of Infectious Agents in Healthcare Settings


SHEA/APIC Guideline: Infection Prevention and Control in the Long-Term Care Facility July 2008
IC Plan: Elements
Polices and Procedures

Policies and procedures

• Standard precautions
• Transmission-based precautions
• Specific Infections-MRSA, Scabies, Tinea
• Employee education
• Hand hygiene
• Central line maintenance
The Infection Control Plan: Clinical
Surveillance Strategies

- Assessing your population (risk assessment)
- Surveillance definitions (McGeer)
- Methods to collect data (EMR, AM report, labs, huddles)
- Outcome measurements (incidence of UTI)
- Performance improvement
- Next year’s goals
IC Plan: Clinical Disease Reporting

Dissemination information to:

- Staff
- Patient and family
- Receiving and transferring institutions
- Public health authorities
IC Plan: Clinical Antimicrobial Stewardship

- Committee or team
- Leadership support
- De-escalation of antibiotics
- Antibiotic “time-out”
- Standardization of length of treatments
- Work on “low hanging fruit”
IC Plan: Clinical Health Programs

<table>
<thead>
<tr>
<th>Residents</th>
<th>Staff</th>
</tr>
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<tbody>
<tr>
<td>• TB screening</td>
<td>• TB screening</td>
</tr>
<tr>
<td>• Immunization program</td>
<td>• Immunization program</td>
</tr>
<tr>
<td>• Risk assessments</td>
<td>• Risk assessments</td>
</tr>
<tr>
<td>• Aspiration</td>
<td>• Occupational exposures</td>
</tr>
<tr>
<td>• UTI</td>
<td></td>
</tr>
<tr>
<td>• Skin care</td>
<td></td>
</tr>
</tbody>
</table>
The Infection Control Plan: Outbreak Management
Clinical Infection Identification and Outbreak Management

Case definitions
Example: Respiratory viral infections
- Fever above 101°F with one of the following:
  - Chills
  - Headache or eye pain
  - Sore throat
  - Muscle ache
  - New or increased cough

Outbreak Threshold - Noso Outbreak Reporting Application (NORA)
- One case of influenza
- Three cases of other respiratory viruses
The Infection Control Plan: General
IC Plan: Education

- New Employee orientation programs including students and volunteers
- Re-orientation of new employee and volunteers
- Live programs as needed to address specific issues
  Example: Flu Adenovirus
- One-on-one staff education during isolation rounds/during problem solving activities utilizing verbal and printed material
- Support patient, family and visitor education via:
  - Individual consultation with patients and family
  - Various printed information on infection control related issues
IC Plan: General Facility Management Issue

- Food preparation/storage
- Laundry collection/cleaning
- Waste collection/disposal
- Housekeeping/cleaning - who cleans what?
- Disinfection/sterilization
- Plumbing/ventilation
Facilitators for Success

- Supportive/engaged leaders
- Education, checklists, monitoring
- Multidisciplinary teamwork
- Root-cause analysis for adverse infection events
- Administrative partnership with units
- Accessibility of supplies at point of care
- Sharing process outcome data with staff
Practice Barriers Identified

- Unavailability of hand sanitizers
- Inconsistent antimicrobial monitoring
- Lack of prevention strategies
- Physician refusal to remove Foley
- Limited separation of clean/dirty workspace
- Lack of family/resident education
Organizational Barriers Identified

- Lack of trained infection preventionist (IP)
- IP has multiple roles/campuses
- High acuity, low staffing levels
- Lack of root-cause analysis (RCA)
- Lack of administrative support
- Reactive versus proactive response
- Absence of structured documentation process
- Inadequate communication protocols
From Risks to Priorities to Plan
Infection Control Program: Risk Assessment
Risk Assessment

- Risks are reviewed and identified at least annually and whenever significant changes occur.
- Risks are assessed with input from, at a minimum, infection control personnel, medical staff, nursing, and leadership.
- Risks that are identified as acquiring and transmitting infections are prioritized and documented!
- Objectives, milestones and process measures are developed and implemented to achieve specific goals and decrease risk.
# Infection Control Program Risk Assessment

<table>
<thead>
<tr>
<th></th>
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</thead>
<tbody>
<tr>
<td></td>
<td>Very Likely</td>
<td>Catastrophic Loss (life/limb/function/$$$)</td>
<td>None</td>
<td>5</td>
</tr>
<tr>
<td></td>
<td>Likely</td>
<td>Serious Loss (Fx, $$$, or Legal)</td>
<td>Poor</td>
<td>4</td>
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<tr>
<td></td>
<td>Potential</td>
<td>Risk of Re-admission or Transfer to High Acuity</td>
<td>Fair</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td>Rare</td>
<td>Mod. Clinical or $$$ Impact</td>
<td>Good</td>
<td>2</td>
</tr>
<tr>
<td></td>
<td>Never</td>
<td>Minimal Clinical of $$$ Impact</td>
<td>Very Good</td>
<td>1</td>
</tr>
<tr>
<td>Flu</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>CDI</td>
<td></td>
<td></td>
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</tr>
<tr>
<td>UTI</td>
<td></td>
<td></td>
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</tbody>
</table>

**Example Calculations:**

- **Flu:** Probability: 3
  - Impact: 3
  - Preparedness: 2
  - Score: 18

- **CDI:** Probability: 4
  - Impact: 3
  - Preparedness: 4
  - Score: 48

- **UTI:** Probability: 2
  - Impact: 2
  - Preparedness: 5
  - Score: 20
Why Perform An Annual Risk Assessment?

Helps focus our activities on essential tasks to reducing critical infection control risks

Constant changes to:
- External guidelines and regulations
- Technologies
- Policies and procedures
- Medications and vaccines
- Populations served
- Services provided
Why Perform An Annual Risk Assessment?

- Improves patient safety
- Improves staff safety
- Improves efficacy (desired results)
- Identifies training issues
- Personal health habits
- Cultural beliefs regarding disease transmission
- Understanding of disease transmission and prevention
- for implementing new interventions
- Avoids adverse events
Improves Efficacy

Examples:

- Staff believes that washing with soap and water is more effective than using an ABHS.
- Staff believes they are required to wash their hands with soap and water after using ABHS ten times.

Identify current processes not working  
“‘We’ve always done it that way’”  
Helps identify ineffective processes  
Determine ways to improve
Justify a Need

- Empower us to approach leadership for increase in resources
- New or increased staffing
- Increased training
- Block beds or increase isolation rooms
- Negative pressure room
- Focuses attention on a need
- Provides a solution to address that need
Performing the Infection Control Risk Assessment

1. Gather: Gather the leaders
2. Select: Select categories to assess
3. Identify: Identify internal and external risks
4. Develop: Develop methods and be consistent
5. Perform: Perform the assessment
6. Establish: Establish priorities
Step 1: Gather the Leaders

Include key staff:

- Environmental
- Pharmacy
- Lab
- Nursing
- Medicine
- Quality
- Opinion leaders
### Step 2: Select Categories for Risk Assessment

<table>
<thead>
<tr>
<th>Category</th>
<th>Examples</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Geographic Location</strong></td>
<td>Natural disasters (Probability)</td>
</tr>
<tr>
<td></td>
<td>Water services</td>
</tr>
<tr>
<td></td>
<td>Bioterrorism</td>
</tr>
<tr>
<td><strong>Community</strong></td>
<td>Community outbreaks</td>
</tr>
<tr>
<td></td>
<td>Migratory population</td>
</tr>
<tr>
<td></td>
<td>Incidence of TB</td>
</tr>
<tr>
<td><strong>Organizational Programs</strong></td>
<td>Sub acute</td>
</tr>
<tr>
<td></td>
<td>Rehab</td>
</tr>
<tr>
<td></td>
<td>LTC</td>
</tr>
<tr>
<td><strong>Equipment and Devices</strong></td>
<td>Scopes</td>
</tr>
<tr>
<td></td>
<td>Instruments- Dental/Podiatry</td>
</tr>
<tr>
<td></td>
<td>New Devices</td>
</tr>
<tr>
<td><strong>Environmental Issues</strong></td>
<td>Construction</td>
</tr>
<tr>
<td></td>
<td>Isolation rooms</td>
</tr>
<tr>
<td><strong>Employee</strong></td>
<td>Needlesticks</td>
</tr>
<tr>
<td></td>
<td>Vaccinations</td>
</tr>
</tbody>
</table>
Step 3: External Risks

- **Accidents**
  - Mass transit (i.e., airplane, train, bus)
  - Fires involving mass casualties

- **Disasters**
  - Tornadoes, Floods, Hurricanes, Earthquakes
  - Breakdown of municipal services (broken water main, strike by sanitation employees)

- **Intentional Acts**
  - Bioterrorism
  - “Dirty Bomb”
  - Contamination of food and water supplies
Step 3: External Risks

- Community outbreaks of transmissible infectious diseases
  - May be linked to vaccine-preventable illness in unvaccinated population
  - Work with local or county health departments
  - Know local prevalence

7 children dead in virus outbreak at New Jersey facility

By Laura Ly and Susan Scutti, CNN
Updated 9:13 AM ET, Wed October 24, 2018
Important Considerations: Possible but not Probable

- Threat to life or health
- Disruption of services
- Loss of function
- Loss of community trust
- Financial impact
- Legal issues
- Regulatory impact
- Standards/requirements
### Step 3: External Risks
#### Regulatory and Accreditation Requirements

<table>
<thead>
<tr>
<th>Federal</th>
<th>State</th>
<th>Others</th>
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<tbody>
<tr>
<td>Occupational Safety and Health Administration</td>
<td>Department of Health</td>
<td>TJC</td>
</tr>
<tr>
<td>CDC</td>
<td>State Education Department</td>
<td>APIC, SHEA</td>
</tr>
<tr>
<td>FDA</td>
<td>Department of Sanitation</td>
<td>AHA</td>
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<td></td>
<td></td>
<td>AORN</td>
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<td></td>
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<td>CLIS</td>
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</tbody>
</table>
Step 3: Internal Risks
The Patient

Demographics of the Patient Population

Location

Community

Population Served

Medical history

Race and ethnicity

Immune status

Age

Infections

ADL - eat, bathe, dress, toilet

Special needs populations
- Behavioral Health
- Long-Term Care
- Rehabilitation
Step 3: Internal Risks
Employee-Related

- General health
- TST conversions
- Flu vaccination/declination
- Immunocompromised
- Pregnancy
- Presenteeism
- Personal health habits
- Cultural beliefs
- Understanding of disease transmission and prevention
Step 3: Internal Risks Equipment/Device-Related

- Central lines
- Urinary catheters
- Radiology services
  - Need for High-level disinfection
  - Laryngoscopes
  - Vaginal and rectal probes
- Need for sterilization
  - Podiatry
  - Dental
Step 3: Internal Risks
Environmental-Related

- Construction
- Limited sink/dispensers
- Limited single rooms
- Limited housekeeping
- Confined spaces
- Joint events:
  - The dining experience
  - The great room
  - Music therapy
Step 4: Develop Method

Qualitative Risk Assessment
• Non-numeric scoring system based upon the probability of an event occurring
• Assess risk using **written descriptions**
• Examples: Gap analysis and Strengths, Weakness, Opportunities, Threats (SWOT)

Quantitative Risk Assessment
• Numeric scoring system based upon probability of event occurring
Example: Resident with a Multidrug-Resistant Organisms (MDRO)

- **Likelihood**
  - Likely 66-100%
  - Possible 33-66%
  - Unlikely 0-33%

- **Consequences**
  - Minor → can be managed without medical treatment
  - Moderate → requires medical treatment
  - Major → transfer to hospital or death
Qualitative Risk Assessment

Simple Risk Matrix

<table>
<thead>
<tr>
<th>Likelihood</th>
<th>Minor</th>
<th>Moderate</th>
<th>Major</th>
</tr>
</thead>
<tbody>
<tr>
<td>Likely</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Possible</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Unlikely</td>
<td></td>
<td></td>
<td></td>
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Risk Treatment Key

- **Intolerable Risk Level**: Immediate action is required
- **Tolerable Risk Level**: Risks must be reduced so far as is practicable.
- **Broadly Accepted Risk Level**: Monitor and further reduce where practicable.
Example 1: Resident with a Multidrug-Resistant Organisms (MDRO)

- Likelihood
  - Likely 66-100%
  - Possible 33-66%
  - Unlikely 0-33%

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  - Minor → can be managed without medical treatment
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### Simple Risk Matrix

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</thead>
<tbody>
<tr>
<td>Likely</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Possible</td>
<td>X</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Unlikely</td>
<td></td>
<td></td>
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### Risk Treatment Key

- **Intolerable Risk Level**: Immediate action is required
- **Tolerable Risk Level**: Risks must be reduced so far as is practicable.
- **Broadly Accepted Risk Level**: Monitor and further reduce where practicable
Quantitative Risk Assessment

Assign values to each risk:

- **Probability**: known risks, historical data, literature
- **Impact/severity**
- **Preparedness**: current systems in place

<table>
<thead>
<tr>
<th>Risk</th>
<th>Specific Issues</th>
<th>Probability</th>
<th>Severity</th>
<th>Risk Reduction Initiatives</th>
<th>Preparedness</th>
<th>Risk Score Range</th>
</tr>
</thead>
<tbody>
<tr>
<td>High 3</td>
<td>Life threatening; major impact on organization = 3</td>
<td>Poor = 3</td>
<td>Possible 1 - 27</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Moderate 2</td>
<td>Moderate harm to patient or organization = 2</td>
<td>Fair = 2</td>
<td>Actual 1 - 18</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Low 1</td>
<td>Minimal impact = 1</td>
<td>Good = 1</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>None 0</td>
<td>None = 0</td>
<td>None = 0</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
Quantitative Risk Assessment
How to Assign Values

- There are no right or wrong answers
- Allow discussion
- Promote consensus
- Each organization’s priorities will be different
- Once decided, be consistent
The Infection Prevention Team will revise the risk assessment and the Infection Prevention Committee will review and approve it annually.

**Scoring Process**

Probability x Severity x Preparedness = Risk Score

The probability of occurrence, multiplied by the severity of the risk, multiplied by the organization's preparedness to deal with the risk = the organization's risk level for each item.

<table>
<thead>
<tr>
<th>RISK</th>
<th>Specific Issues</th>
<th>Probability High = 3, Moderate = 2, Low = 1, None = 0</th>
<th>Severity Life threatening, major impact on organization = 3, Moderate harm to patient or organization = 2, Minimal impact = 1, None = 0</th>
<th>Risk Reduction Initiatives</th>
<th>Preparedness Poor = 3, Fair = 2, Good = 1</th>
<th>RISK SCORE Range: Poss 1-27, Actual 1-18</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Clostridium difficile (C.diff)</strong></td>
<td>3</td>
<td>3</td>
<td>- Pt equipment labeling protocol (Patient Ready)</td>
<td>2</td>
<td>18</td>
<td></td>
</tr>
</tbody>
</table>
• Include both actual and potential risks

• Clearly identify priority ranking. If numerical: identify how points are allocated

• If qualitative: articulate high, medium, low, etc., (How is this determined?)

• Include data from rounds and observations

• Identify potential risks from the current world threats
The assessment should address 3 questions:

1. What is the probability that a risk event will occur?

2. If it occurs, how severe will it be?

3. What have we done to decrease the risk?
Consequences of Not Performing Risk Assessment

- Center for Medicare and Medicaid Services violations
- Joint Commission accreditation problems
- Adverse events for our residents:
  - More illnesses
  - Longer hospital stays
  - Increased antibiotic use
  - Increased acuity needs
  - Death
Isolation Precautions
Preparations for Precautions

- Inform resident, family and visitors about PPE and hand hygiene
- Display appropriate signage
- Review the policy and procedure
- Observe and audit for compliance (donning and doffing of PPE, hand hygiene)
- Supplies available and replenished regularly
- Increased environmental services
  - Garbage pick-up
  - High touch area cleaning
Patient Placement Before Admission

- Be represented on the Admissions Committee
- Perform an individual risk assessment

Determine isolation needs as to:

1. Medical needs
2. History MDROs
3. Secretions, wounds, devices, immune status, immunization history, personal hygiene
4. Psychological risks of depression, anxiety, fear
Transmission-based Precautions: Patient Placement

- If possible, place resident in a private room.
- If not possible, resident should be cohorted with another resident with the same organism.
- If neither option is possible, the resident should be placed in a room with another resident who is considered at low risk for acquisition of a MDRO.

Examples include: no wounds, no invasive devices, not immunocompromised
Discontinuation of Precautions

Phase 1
483.80 Infection control

When and how isolation should be used for a resident, *including but not limited to*:

- The type and duration of the isolation depending upon the infectious agent or organism involved
- A requirement that the isolation should be the least restrictive possible for the resident under the circumstances
Use precautions on a case by case basis in LTCFs

5 C’s to assess residents need for addition to Standard Precautions
1. Colonized
2. Cognizant
3. Compliant
4. Catheterized (device)
5. Continent/Wound
Transmission-based precautions maintained for the duration of illness

It is not necessary to do a test of cure or clearance cultures after treatment complete and resident has no S&S

S&S resolved, discontinue isolation

Following resolution of active infection, the resident may remain colonized. Need to monitor, as colonization increases the risk of future infection
References

- Principles of Epidemiology in public health practice, 3rd edition
References

  http://patientsafetyauthority.org/ADVISORIES/AdvisoryLibrary/2012/Sep;9(3)/Pages/89.aspx.


  http://www.cdc.gov/mmwr/preview/mmwrhtml/rr5303a1.htm.

- Centers for Medicare and Medicaid Services (CMS). Revisions to appendix PP—“Interpretive Guidelines for Long-Term Care Facilities,” Tag F441” [transmittal 55 online]. 2009 Dec 2 [cited 2013 Apr 24].


- 2007 Guideline for isolation precautions: preventing transmission of infectious agents in healthcare settings:

- CDC guidelines for isolation precautions in hospitals 1996. Hospital Infection Control Practices Advisory Committee (HICPAC):
  http://wonder.cdc.gov/wonder/prevguid/p0000419/p0000419.asp
Questions?

You are an important part of patient safety!

1. Wash or clean your hands before and after you provide care to a patient.
2. Use gloves the right way.
3. Get your shots— including your annual flu shot— and make sure everyone in your family does too.
4. Follow the rules of isolation for the patient’s protection, your protection, and everyone else’s protection.
5. Follow safe injection practices – remember One needle, One syringe, Only one time.
6. Make patient identification a priority: right drug, right time, right dose.
7. Keep the patient’s room and equipment clean.
8. Know when antibiotics are appropriate... and when they are NOT.
9. What you wear matters! Make sure your attire does not become a source of infection.
10. Know about the infection preventionist.