Understanding Long-Term Care

- Varying terms and degrees of inclusiveness
- Difficult to have one definition
- Medicare definition:
  - “a variety of services that includes medical and non-medical care that supports both the health and personal care needs of individuals who may have a chronic illness or are living with a disability, either physical or intellectual. LTC services support individuals in their activities of daily living (ADLs), and provide assistance in typical tasks such as bathing, dressing and eating”
Demographics

- 2013 CMS reported (in CMS certified LTCGs) 85% of LTC residents were 65 years or older with 43% being 85 or older.
- Population aged 85 and older is expected to double by the year 2030
- One out of every four persons aged 65 will spend some time in a nursing home
- More people in long term care facilities than hospitals
Objectives

1. Describe the problem of healthcare associated infections in LTCFs
2. List the factors contributing to infections in the elderly
3. Describe regulatory factors impacting LTCFs
4. Describe the components of a LTCF infection prevention program
Healthcare associated infections (HAI)
Long Term Care Facilities (LTCFs)

• Limited data
• Published rates vary from 1.4 to 5.2 infections per 1,000 resident-care days
• Nationally a range of 765,000 to 2.8 million infections/annually
• Among the most frequent causes of transfer to acute care hospitals and 30-day hospital readmissions.
Healthcare associated infections (HAI) Long Term Care Facilities (LTCFs)

- Account for 26% of all serious adverse events
- 80% of infection-related adverse events result in acute care hospitalization
- 59% deemed preventable
- Cost of infection-related hospitalizations was estimated to be $83 million in single month
Healthcare-associated infections in U.S. nursing homes

- Pilot study done in nine (9) nursing homes
- Four (4) states
- Nursing homes >120 beds
- Findings presented at CSTE annual conference (6/16/2015)

<table>
<thead>
<tr>
<th></th>
<th>Prevalence Per 100 Residents</th>
<th># of Infections (N)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Overall</td>
<td>5.3</td>
<td>70</td>
</tr>
<tr>
<td>G.I</td>
<td>2.0</td>
<td>26</td>
</tr>
<tr>
<td>SST</td>
<td>1.7</td>
<td>21</td>
</tr>
<tr>
<td>Respiratory</td>
<td>1.3</td>
<td>16</td>
</tr>
<tr>
<td>UTI</td>
<td>0.5</td>
<td>6</td>
</tr>
<tr>
<td>Other</td>
<td>0.1</td>
<td>1</td>
</tr>
<tr>
<td>BSI</td>
<td>0</td>
<td>0</td>
</tr>
</tbody>
</table>
Prevalence survey of healthcare-associated infections and antimicrobial use in U.S. nursing homes

(Part B)

- Data collection begin spring/summer of 2017
- Goal is to recruit a random sample of 20 nursing homes in each of the 10 EIP states
- Nursing homes certified by CMS are eligible
- Nursing home participation is voluntary
- Based on the long-standing relationships that EIP sites have with their healthcare facilities, we (CDC) anticipate that we will meet our 2017 recruitment goals.
- Findings reported 2018
When a nursing home resident is hospitalized with a primary diagnosis of infection, the death rate can reach as high as 40 percent.
Transmission of Hepatitis B Virus Among Persons Undergoing Blood Glucose Monitoring in Long-Term--Care Facilities --- Mississippi, North Carolina, and Los Angeles County, California, 2003--2004

Regular monitoring of blood glucose levels is an important component of routine diabetes care (1). Capillary blood is typically sampled with the use of a fingerstick device and tested with a portable glucometer. Because of outbreaks of hepatitis B virus (HBV) infections associated with glucose monitoring, CDC and the Food and Drug Administration (FDA) have recommended since 1990 that fingerstick devices be restricted to individual use (2,3). This report describes three recent outbreaks of HBV infection among residents in long-term--care (LTC) facilities that were attributed to shared devices and other breaks in infection-control practices related to blood glucose monitoring. Findings from these investigations and previous reports suggest that recommendations concerning standard precautions and the reuse of fingerstick devices have not been adhered to or enforced consistently in LTC settings (2--5). The findings underscore the need for education, training, adherence to standard precautions, and specific infection-control recommendations targeting diabetes-care procedures in LTC settings (4--6) (Box 1).
Part of the Problem

- No SENIC (Study on the Efficacy of Nosocomial Infection Control)-equivalent study for LTCFs
- Few controlled studies have analyzed efficacy or cost-effectiveness of infection control measures in LTCFs
Objectives

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2. List the factors contributing to infections in the elderly
3. Describe the regulatory factors impact on LTCFs
4. Describe the components of a LTCF infection prevention program
Contributing Factors

- LCTFs are different from other healthcare settings in that elderly patients at increased risk for infection, are brought together in one setting and remain in the facility for extended periods of time; for most residents, it is their home.
Contributing factors

- An atmosphere of community is fostered and residents share common eating and living areas, and participate in various facility-sponsored activities.
- Since able residents interact freely with each other, controlling transmission of infection in this setting is challenging.
Contributing factors

- Residents who are colonized or infected with certain microorganisms are, in some cases, restricted to their room.

- However, because of the psychosocial risks associated with such restriction, it has been recommended that psychosocial needs be balanced with infection control needs in the LTCF setting.
Individual Factors contributing to infections

- Medications affecting resistance to infection (corticosteroids and chemotherapy)
- Limited physiologic reserve
- Compromised host defenses (cough reflex, thinning skin, decreased tear production and immune dysfunction)
- Coexisting chronic diseases
- Complications from invasive diagnostic procedures
- Impaired responses to infection
- Increased frequency of therapeutic toxicity (declining liver and kidney function)
Additional Contributing Factors

- Nurse (staff turnover)

- “Published data on overall high employee turnover rates in LTC facilities; 2011 data from the Quality Long Term Care Commission showed the following turnover rates:
  - administrators, 3 percent;
  - director of nursing, 39 percent;
  - RNs, 50 percent;
  - LPNs, 49 percent; and
  - CNAs, 71 percent.”

_Infection Prevention in LTC: Emphasis Needed on Education, Evidence-Based Practices; Infection Control Today:_
_Gail Bennett, RN, MSN, CIC, Rome, GA ICP Associates, Inc._
Objectives

1. Describe the problem of healthcare associated infections in LTCFs
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Regulatory and/or Accrediting Agencies

- OSHA (Occupational Safety and Health Administration)
- OBRA (Omnibus Budget Reconciliation Act)
- CMS
- TJC (The Joint Commission)
DHHS Federal Amendments That Apply to Programs Title XVIII Medicare and XIX Medicaid (Interpretive Guidelines)

§F483.80 Infection Control F 880

Facility must establish and maintain an infection prevention and control program designed to provide a safe, sanitary, and comfortable environment and to help prevent the development and transmission of communicable diseases and infections.
§483.80(a) Infection Control Program

The facility must establish an Infection prevention and control program (IPCP) that must include, at a minimum, the following elements:

§483.80 Infection Control (F441)
F 880 - 883
Cindy Deporter DHSR
F880: High Level Overview of Changes to Regulatory Language
Infection Prevention and Control Program (IPCP) §483.80 (a)(e-f)

Specifies that policies and procedures must address:

- Surveillance
- Reporting
- Standard and Transmission-based Precautions
- Isolation (added emphasis on considering the appropriateness and least restrictive use)

Annual review of the IPCP and update as needed

§483.80 Infection Control (F441)
F 880 - 883
Cindy Deporter DHSR
Objectives

1. Describe the problem of healthcare associated infections in LTCFs
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SHEA/APIC guideline:
Infection prevention and control in the long-term care facility

- In this document, as in a number of published HICPAC, SHEA, and APIC guidelines, each recommendation is categorized on the basis of existing scientific evidence, theoretical rationale, applicability, and national or state regulations.
Categorization of Recommendations

- Category IA: Strongly recommended and strongly supported
- Category IB: Strongly recommended with some support
- Category IC: Required by law/regulation
- Category II: Recommended for implementation
- No Recommendation: Unresolved issues
LTCF Infection Prevention Program

- An active, effective, facility-wide infection prevention program should be established in the LTCF. The Purpose of the program is to reduce the risk of development and spread of infectious disease (Cat 1C)

- The IP Program must be in compliance with federal, state and local regulations (Cat 1C)
Program Elements

- Surveillance
- Outbreak Control
- Isolation
- Policies and procedures
- Education
- Resident Health Program
- Employee Health Program
- Antibiotic Stewardship
- Communicable disease reporting
- Facility Management
- PI/Safety
- Preparedness planning
Administrative Structure

- Oversight of the IP program should be defined and should include participation of the IP, administration, nursing staff, and physician staff (Category II)
  - Meet on regular basis
  - Written minutes with action plans and recommendations
  - Evaluate effectiveness
  - Review of IP data
  - Approve policies and procedures
Infection Preventionist

- One person should be assigned the responsibility of directing IP activities (usually the IP). Should be someone familiar with LTCF resident care problems (Category IC)
  - Responsible for implementing, monitoring and evaluating the infection control program
  - Requires specific training
  - Well-defined support from administration (education and resources)
  - Ability to interact tactfully with personnel, physician, and residents
§483.80 (b) Infection Preventionist 
(November 28, 2019)

The facility must designate one or more individual(s) as the infection preventionist(s) (IP) (s) who is responsible for the facility's IPCP. The IP must:

- Primary professional training in nursing, med tech, microbiology or epidemiology (CMS)
- Works at least part time
- Qualified by education, training, experience and
- Completed specialized training in infection prevention and control
The IP (or another appropriate individual such as the medical director) should have written authority to institute infection prevention measures in emergency situations (Category IB)

Examples: Isolate residents, limit visitation, not allow employees to work if sick etc.
Infection Control Hours

Is the time given to the IP adequate for the size of the facility, acuity of the residents, and types of procedures and treatment?

No specific amount of time has been researched to be ideal; the following guideline has been developed based on experience.
# Infection Control Hours

<table>
<thead>
<tr>
<th>No of beds</th>
<th>Hours per week for IC</th>
</tr>
</thead>
<tbody>
<tr>
<td>1-50</td>
<td>8</td>
</tr>
<tr>
<td>51-100</td>
<td>16</td>
</tr>
<tr>
<td>101-150</td>
<td>24</td>
</tr>
<tr>
<td>151-200</td>
<td>32</td>
</tr>
<tr>
<td>more than 200</td>
<td>40</td>
</tr>
</tbody>
</table>

Ref: Mark JF, APIC LTCF Newsletter, 1995, vol 6, no 1
Surveillance in LTCF

The LTCF should have a system for ongoing collection of data on infections in the institution (Cat IC)
- Process and/or Outcome Surveillance
- Standardized Definitions
- Surveillance tools
- Analyzing those healthcare associated (facility-acquired)
- Data Presentation
Surveillance in LTCF

• Outcome Measures
  ➢ Infection rates should be calculated:
    ✓ Calculated preferably as infections per 1000 resident days
    ✓ \( \frac{\text{# of infections}}{\text{# of resident days}} \times 1000 = \frac{\text{rate of infections}}{1000 \text{ resident days}} \)
    ✓ Reported out: monthly, quarterly and annually

• Process Measures
  ➢ Monitor healthcare personal compliance:
    ✓ Hand hygiene
    ✓ Appropriate use of PPE
    ✓ Care and maintenance of indwelling urinary catheters
    ✓ Environmental Cleaning
    ✓ Point of Care Testing

Develop a plan of action for improvement
Facility Assessment

(F838):
The facility must conduct and document a facility-wide assessment to determine what resources are necessary to care for its residents competently during both day-to-day operations and emergencies. The facility must review and update that assessment, as necessary, and at least annually. The facility must also review and update this assessment whenever there is, or the facility plans for, any change that would require a substantial modification to any part of this assessment.
Infection Prevention Risk Assessment

Components:

- Risk Event
  - Geographic location
  - Infections
  - Environmental issues
- Probability risk will occur
  - High, Medium, Low or None
- Severity if the risk occurs
  - Life threatening, Permanent harm, Temporary harm, none
Infection Control risk assessment

- How well prepared is the organization if the risk occurs
  - Poorly
  - Fairly well
  - Well

- Risk Score
  - Assign a numerical value to each of the above
  - Add or multiply
  - Scores with highest number is prioritized.
<table>
<thead>
<tr>
<th>Event</th>
<th>Probability of Occurrence</th>
<th>Risk of Event</th>
<th>Preparedness</th>
<th>Score</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>H</td>
<td>M</td>
<td>L</td>
<td>N</td>
</tr>
<tr>
<td>Staff Not Trained</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Sterile Supply Not Avail</td>
<td>X</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Isol Areas Limited</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**Legend:**
- **LT** = Life Threatening
- **H&S Health and Safety**
- **HD** = High Disruption
- **MD** = Moderate Disruption
- **LD** = Low Disruption

**Scores:**
- **P** = Poor
- **F** = Fair
- **G** = Good

**Notes:**
- **H** = High
- **M** = Med
- **L** = Low
- **N** = None
<table>
<thead>
<tr>
<th>Event</th>
<th>Probability of Event Occurrence</th>
<th>Potential Severity/Risk Level of Failure</th>
<th>Organizational Response</th>
<th>Current State of Preparedness</th>
<th>Risk Level For Org</th>
</tr>
</thead>
<tbody>
<tr>
<td>Emergency preparedness</td>
<td>H 3 M 2 L 1 N 0</td>
<td>Life Threatening 3</td>
<td>P 3 2 1</td>
<td>N 0</td>
<td></td>
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<tr>
<td>Water Supply Unavailable</td>
<td>X</td>
<td></td>
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<td>X</td>
<td>8</td>
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<tr>
<td>Patient Care Supplies Unavailable</td>
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<td></td>
<td>X</td>
<td>X</td>
<td>9</td>
</tr>
<tr>
<td>Evacuation Required</td>
<td>X</td>
<td></td>
<td>X</td>
<td>X</td>
<td>8</td>
</tr>
<tr>
<td>HI Risk Procedures and Processes</td>
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<td>Life Threatening 3</td>
<td>P 3 2 1</td>
<td>N 0</td>
<td></td>
</tr>
<tr>
<td>Hand Hygiene Compliance &gt;90%</td>
<td>X</td>
<td></td>
<td>X</td>
<td>X</td>
<td>8</td>
</tr>
<tr>
<td>Endoscope Contamination</td>
<td>X</td>
<td></td>
<td>X</td>
<td>X</td>
<td>6</td>
</tr>
<tr>
<td>Unauthorized Use of SUDs</td>
<td>X</td>
<td></td>
<td>X</td>
<td>X</td>
<td>6</td>
</tr>
<tr>
<td>Inadequate Cleaning/Disinfection of patient care equipment</td>
<td>X</td>
<td></td>
<td>X</td>
<td>X</td>
<td>5</td>
</tr>
<tr>
<td>Inappropriate use of isolation</td>
<td>X</td>
<td></td>
<td>X</td>
<td>X</td>
<td>10</td>
</tr>
</tbody>
</table>
Recognizing and containing outbreaks

- An outbreak is typically one or more of the following:
  - One case of an infection that is highly communicable
  - Trends that are 10% higher than the historical rate of infection for the facility
  - Occurrence of three or more cases of the same infection over a specified length of time on the same unit or other defined areas

*Guidance to Surveyors: Long-Term Facilities*
Outbreak Control

- Surveillance data should be used to detect and prevent outbreaks in the LTCF (Cat IB/IC)
- State health departments offer guidance and regulations regarding responding to and reporting outbreaks
- Policies and protocols for prevention and investigation need to be in place
- Prevent further transmission while considering the needs of all residents and staff
Key Components of Infection Prevention/Control Program

• Policies and procedures for standard and transmission based precautions should be developed, evaluated, and updated in accordance with most recent CDC/HICPAC guidance (Cat IC)

• Policy on how to deal with MDROs

• Policies should be developed for each department and service in the facility (employee health, housekeeping, physical therapy, respiratory care, dietary, laundry, wound care, pet therapy)
  
  – Use professional and published guidelines, review per facility or regulatory requirements
Asepsis and Hand Hygiene

- Hands should be washed before and after any patient contact, after removing gloves, when soiled and when otherwise indicated (Cat IA)
  - Unless hands are visible soiled, use of alcohol-based hand gels is encouraged
- Policy in accordance with CDC guidelines
- Compliance monitored
- Data and findings reported to staff
§483.80(d) influenza and pneumococcal immunizations

• Influenza: Facility must develop policies and procedures to ensure that:
  – Before offering, education provided
  – Offered between October 1-March 31 annually
  – Right to refuse
  – Documentation

• Pneumococcal disease: Facility must develop policies and procedures to ensure that:
  – Before offering, education provided
  – Offered unless already immunized or medically contraindicated
  – Right to refuse
  – Documentation
Written Health Occupational Policies that must cover...

- Reporting of staff illnesses and following work restrictions per nationally recognized standards and guidelines;
- Prohibiting contact with residents or their food when staff have potentially communicable diseases or infected skin lesions;
- Assessing risks for tuberculosis (TB) based on regional/community data and screening staff to the extent permitted under applicable federal guidelines and state law;
- Monitoring and evaluating for clusters or outbreaks of illness among staff;
- Implementing an exposure control plan in order to address potential hazards posed by blood and body fluids, from dialysis, glucose monitoring or any other point of care testing; and

§483.80 Infection Control (F441)
F 880 - 883
Cindy Deporter DHSR
Healthcare Worker Education

- Infection prevention education should be provided at the time of employment and regularly thereafter (no less than annually) (Cat IC)

- Topics should include, but are not limited to:
  - Routes of disease transmission
  - Hand Hygiene
  - Sanitation procedures
  - MDROs
  - Transmission-based precautions
  - OSHA required education
• Furthermore, residents and their representatives should receive education on the facility’s IPCP as it relates to them (e.g., hand hygiene, cough etiquette) and to the degree possible/consistent with the resident’s capacity. For example, residents should be advised of the IPCP’s standards, policies and procedures regarding hand hygiene before eating and after using the restroom.
Communicable Disease Reporting

- State health departments provide a list of reportable diseases (Communicable Disease Report Cards)
ICAR Findings for LTCF

• Public health officials reported at the Association for Professionals in Infection Control and Epidemiology annual conference that long-term care facilities in Tennessee and Washington state continue to lack resources needed to adequately prevent health care-associated infections, which result in approximately 400,000 deaths among residents each year.

• Among the facilities in Tennessee:
  – 56% had infection control programs overseen by a staff member with no additional training in infection control, and
  – 12.5 staff hours were dedicated to infection prevention activities each week.
  – Although the majority of facilities implemented an online competency-based training program for hand hygiene (72%) and proper use of PPE (67%), about half provided feedback to assess performance.
  – Overall, 94% of LTCFs failed to meet the necessary requirements for antibiotic stewardship.
<table>
<thead>
<tr>
<th>Common Themes for Areas of Improvement</th>
<th>Compliance rate</th>
<th>Common findings</th>
</tr>
</thead>
</table>
| Trained person overseeing IC program  | 30%             | • IP wearing multiple hats  
• High turnover rate                     |
| Met all core elements of antibiotic stewardship | 7%             | • Unrealistic expectations placed on person in IP role to manage/oversee AS program |
| Environmental cleaning competency     | 67%             | • No policies for EVS  
• Lack of knowledge on contact times by all staff |
| Injection safety competency          | 77%             | • Minimal incorporation of safe injection practices  
• Improper glucose monitor cleaning     |
| PPE competency                       | 67%             | • Lack of training/return demo on PPE donning/doffing  
• No audits on PPE use                  |
| Hand hygiene competency              | 80%             | • Lack of annual training w/inclusion of return demo  
• Lack of auditing                      |
In Conclusion

✓ One person, the IP, should be assigned the responsibility of directing, infection control activities in LTCF
✓ The IP should have a written job description of infection control activities
✓ The IP requires the support of administration in order to function effectively
✓ The IP needs to be guaranteed sufficient time to direct the infection control program
✓ The IP should have written authority to institute infection control measures.
In Conclusion

The trained competent LTCF IP shall be able to establish an active, effective, facility-wide infection control program in the LTCF to help prevent the development and spread of infections and infectious diseases.
RESOURCES
The *Infection Preventionists Guide to Long-Term Care* is accompanied by a CD-ROM with customizable forms, tools, and resources. Developed by a team of infection prevention experts, the book presents topic-specific information in a user-friendly format that includes numerous examples, visuals, checklists, and references to help increase the understanding of:

- Regulatory requirements
- Comprehensive infection prevention risk assessment and program development
- Surveillance and reporting
- Nursing assessment and interventions to prevent the most commonly occurring infections in long-term care
- Environmental cleaning and disinfection
- Unique long-term care issues such as care transitions and life enrichment activities
- Occupational health, immunization programs and staff education
- Disaster and pandemic preparedness
CDC Guidelines

Healthcare Infection Control Practices Advisory Committee (HICPAC)

- Guideline for Hand Hygiene in Healthcare Settings, 2002
- Guideline for Prevention of Intravascular Catheter-Related Infections, 2011
- Guideline for Environmental Infection Control in Healthcare Facilities, 2003

AND...
CDC Guidelines

- Guideline for Management of Multidrug-Resistant Organisms in Healthcare Settings, 2006
- Guideline for Disinfection and Sterilization in Health-Care Facilities, 2008
- Guideline for the Prevention of CAUTIs, 2009
- Guidance for Control of Carbapenem-resistantEnterobacteriaceae (CRE)
  - 2012 CRE Toolkit
- Guideline for the Prevention and Control of Norovirus Gastroenteritis Outbreaks in Healthcare Settings

https://www.cdc.gov/
References


» CMS Manual System; Subject: State Operations Manual Appendix PP- Guidance to Surveyors for Long Term Care Facilities, Tag F483.80

» Council of State and Territorial Epidemiologists; “Recommendations for Surveillance and Reporting of Healthcare Associated Infections in Long Term Care Facilities”

» CDC Prevalence Project: Healthcare-Associated Infections and Antimicrobial Use in Nursing Homes and Skilled Nursing Facilities