Environmental Cleaning Collaborative

Best Practices and Implementation Toolkit
Outline

- Overview (review) of environmental cleaning

- Overview of new environmental cleaning resources
  - CDC and ICAN collaborative

- Questions and Discussion
  - Gaps, challenges, experiences
Overview of environmental cleaning
Definitions

- Environmental cleaning
  - cleaning and disinfection (when indicated) of environmental surfaces and surfaces of noncritical patient care equipment
  - one of the Standard Precautions for IPC
    - Should be practiced universally in health care

- Environmental surfaces
  - the surfaces of every *fixed* item in the patient care environment
    - *Examples:* tables, chairs, floors, walls, bedrails, light switches, privacy curtains, etc
  - the surfaces of noncritical patient care equipment
    - Non-critical equipment: come in contact with intact skin only (i.e., *not* mucous membranes, *not* sterile spaces)
    - *Examples:* IV poles, stethoscopes, surfaces of incubators
Why is environmental cleaning important in HCFs?

- Maintain a hygienic environment
  - People-centered care
  - Staff morale and performance
  - Model for the community

- Prevent infections
  - How exactly can the environment contribute to transmission of pathogens?
  - What are the main types of infections that can result?
  - What health care facilities are most at risk for these types of infections?
What are healthcare associated infections (HAI)?

- Any infection that was not present at the time that the patient was admitted to the healthcare facility (HCF)
- Infections acquired by patients in the HCF but appearing after discharge
- Occupational infections among staff
How are HAIs transmitted?

- **Chain of Infection**
- For infections to spread, all the steps **must be connected**
How are HAIs transmitted via the environment?

**SOURCE**

**CONTACT TRANSMISSION**

- Indirect via environment
- Indirect via hands (of HCWs)

**SUSCEPTIBLE HOST**

Direct patient to patient
How can we prevent these HAIs?

**SOURCE**

**CONTACT TRANSMISSION**
- Indirect via environment
- Indirect via hands

**SUSCEPTIBLE HOST**
- Direct patient to patient
What are the pathogens that can be transmitted via the environment?

- Germs that are transmitted by contact
  - Not airborne or droplet (e.g., TB, measles)

- They can cause a variety of infections:
  - Enteric infections (*via mouth*)
  - Urinary tract infections (UTI), Ventilator-associated pneumonia (VAP), surgical site infections (SSI) (*via devices*)

<table>
<thead>
<tr>
<th>Organism</th>
<th>Survival time</th>
</tr>
</thead>
<tbody>
<tr>
<td>Methicillin-resistant <em>Staphylococcus aureus</em></td>
<td>7 days–&gt;7 mo</td>
</tr>
<tr>
<td><em>Acinetobacter</em></td>
<td>3 days–&gt;5 mo</td>
</tr>
<tr>
<td><em>Clostridium difficile</em></td>
<td>&gt;5 mo</td>
</tr>
<tr>
<td>Vancomycin-resistant <em>Enterococcus</em></td>
<td>5 days–&gt;4 mo</td>
</tr>
<tr>
<td><em>Escherichia coli</em></td>
<td>2 h–16 mo</td>
</tr>
<tr>
<td><em>Klebsiella</em></td>
<td>2 h–&gt;30 mo</td>
</tr>
<tr>
<td><em>Norovirus</em></td>
<td>8 h–7 days</td>
</tr>
</tbody>
</table>
Summary

- The environment can be a source/reservoir for germs that are transmitted by touch (contact)
  - The environment can contaminate the hands of health care workers

- The infections that can result can occur through the mouth (enteric infections), but most occur when the germs enter the body via devices
  - Risk from contaminated environment is highest where invasive procedures are conducted and patients are vulnerable

- Environmental cleaning is important for maintaining a hygienic environment in all healthcare settings, but it is most important for preventing infections that occur during procedures
  - Examples: vaginal delivery, caesarean section, other surgery, intubation in ICU
Overview of new environmental cleaning resources
Concept Development

- Conducted informal landscape and gap analysis
  - Training materials being piloted for general cleaning activities (TEACH CLEAN / Soapbox Collaborative)
  - Lack of comprehensive, standardized guidance
  - Lack of implementation tools for cleaning programs in resource-limited settings (RLS)

- Partnership established with ICAN and CDC
  - Aim to develop needs-based, practical materials to improve program implementation
CDC and ICAN Collaborative

- Overall goal: develop practical resources to improve the effectiveness of environmental cleaning and environmental cleaning programs at healthcare facilities in ICAN countries and other RLS

- Objectives:
  1. Summarize the current best practices for environmental cleaning that are feasible and relevant in RLS
  2. Develop a structured approach for cleaning program assessment and improvement
  3. Develop and compile practical tools for implementing effective cleaning programs
IICP and ICAN Collaborative

- **Best Practices Manual**

  Best Practices for Environmental Cleaning in Healthcare Facilities in Resource-Limited Settings

- **Program Implementation Toolkit**

  - Prepare for Action
  - Baseline assessment
  - Sustain improvement
  - Assess impact
  - Develop and implement action plan
Best Practices for Environmental Cleaning

- Based on high-income setting guidance documents
  - US (HICPAC), Canada (Ontario, British Columbia), Australia, UK (England and Scotland)

- Expert committee developed the content
  - International technical experts
  - Practitioners and experts from resource-limited settings

- Tailored to include aspects most actionable and relevant for resource-limited settings
  - Disinfectant types
  - Mention of water, wastewater services (i.e., WASH)
  - More focus on key high-risk areas
    - HAI rates (e.g., OR)
Best Practices for Environmental Cleaning

▪ **Purpose:**
  - Serve as a standard reference and resource to supplement existing guidelines
  - Inform the development of guidelines where needed
  - Elevate the awareness and attention to this topic as a core infection prevention and control intervention

▪ **Scope:**
  - Environmental cleaning in *health care areas* (i.e., patient care areas)
    - Excludes administrative areas, service areas outside the facility (e.g., waste storage areas)
  - *All facilities:* out- and inpatient setting, services at all tiers of healthcare from primary to tertiary care
    - Both in-house and externally managed (contracted cleaning services)
    - Most relevant for acute care facilities
Best Practices for Environmental Cleaning

- **Target audience:**
  - *Primary*: full- or part-time cleaning managers and/or cleaning supervisors or other clinical staff appointed to assist with environmental cleaning program development and implementation (e.g., IPC committee member)
  - *Secondary*: other staff as implicated, such as supervisors of wards or departments, midwives, nursing staff, administrators, procurement staff, facilities management and any others responsible for WASH and/or IPC services at the healthcare facility.

- **Layout:**
  - Best practices for cleaning programs
    - *Standardized program elements*
  - Best practices for cleaning supplies and equipment (e.g., selection, use)
  - Best practices for cleaning procedures (e.g., method, frequency)
    - *General and specialized areas (e.g., OR, ICU)*
Best Practices for Programs

3 Cleaning Programs

3.1 Organizational elements
3.1.1 Administrative support
3.1.2 Communication
3.1.3 Management and supervision

3.2 Staffing elements
3.2.1 Staffing levels
3.2.2 Training and education

3.3 Policies and procedural elements
3.3.1 Cleaning policies
3.3.2 Standard operating procedures
3.3.3 Cleaning checklists, logs, and job aids

3.4 Monitoring, feedback and audit elements
3.4.1 Routine monitoring
3.4.2 Feedback mechanisms
3.4.3 Program audits

3.5 Supporting infrastructure and supply elements
3.5.1 Designated space
3.5.2 Basic water and wastewater services
3.5.3 Supplies and equipment procurement and management
3.5.4 Finishes, furnishings and other considerations
Best Practices for Supplies and Equipment

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Best Practices for Procedures and Protocols

5. Environmental Cleaning Procedures

5.1. General environmental cleaning techniques

5.2. General patient areas

5.2.1. Outpatient wards

5.2.2. Routine cleaning of inpatient wards

5.2.3. Terminal or discharge cleaning of inpatient wards

5.2.4. Scheduled cleaning

5.3. Patient area toilets

5.4. Patient care area floors

5.5. Spills of blood or body fluids

5.6. Specialized patient areas

5.6.1. Operating rooms

5.6.2. Medication preparation areas

5.6.3. Sterile service departments (SSD)

5.6.4. Intensive care units

5.6.5. Emergency departments

5.6.6. Labor and delivery wards

5.6.7. Other specialty areas

5.6.8. Transmission-based precaution / Isolation wards

5.7 Noncritical patient care equipment

5.7.1. Material compatibility considerations

5.7.2. Sluice rooms

5.8 Methods for assessment of cleaning and cleanliness
Timeline for Best Practices

- Version 1 published by late September / early October 2019
  - As downloadable PDF

- Available on both CDC and ICAN websites:

- Summary as html late 2019
  - CDC website

- Review/feedback collected
  - Revisions as needed 2020
Implementation Toolkit

Prepare for Action

- Sustain improvement
- Baseline assessment

- Assess impact (repeat assessment)
- Develop and implement action plan

Part A: Screening questions
- Y
- N

Part B: Advanced
- N

Foundational Program Tools
Full Program Tools
Foundational Cleaning Program

1. Organizational elements
   – Dedicated budget for cleaning activities (staffing, supplies)
   – Focal point with dedicated time (%) for overseeing cleaning activities

2. Policy and procedural elements
   – Facility-level cleaning policy
   – Basic SOPs, at least in high-risk/priority wards

3. Staffing elements
   – Full-time cleaning staff, at least in high-risk/priority wards
   – Training for cleaning staff

4. Supporting infrastructure and supply elements
   – Basic access to water and wastewater systems
   – Availability of basic cleaning products, supplies and equipment

5. Monitor, audit and feedback elements
   – Basic monitoring, at least in high-risk/priority wards
Full Cleaning Program (examples of indicators)

- **Organizational elements**
  - EC focal point/manager is integrated with IPC program/structure
  - Staffing organizational chart, reporting structure

- **Policy and procedural elements**
  - SOPs are developed for cleaning patient-care areas (specifying responsible staff, product, frequency and technique)

- **Staffing elements**
  - # of cleaning staff to allow adherence to policy
  - Structured training program for EC staff (at least annual)

- **Supporting infrastructure and supply elements**
  - Procurement system in place; storage, supply rooms (utility rooms/clean rooms)

- **Monitoring, audit and feedback elements**
  - Operational system for routine monitoring and feedback
Implementation Toolkit (examples of tools)

- Foundational program tools:
  - Identifying a focal point and planning committee (ToR template)
  - Infrastructure/facility assessment tool
  - Staffing and supply needs calculator/tool
  - Policy development template + examples
  - Reference other resources (e.g., WASH FIT, TEACH CLEAN)

- Full program tools:
  - ToRs of multi-disciplinary team, organizational chart template
  - Templates for cleaning SOPs
  - Checklists, job aids
  - Training program considerations and recommended topics, frequency
  - Monitoring tools (methods, checklists, feedback mechanisms)
  - Reference other resources (e.g., CDC Monitoring Toolkit)
Timeline for Toolkit

- Pilot in Jan – June 2020
- Revisions summer 2020
- Version 1 published fall 2020
  - Additional piloting welcome
Questions and Discussion

For more information, contact CDC
1-800-CDC-INFO (232-4636)

The findings and conclusions in this report are those of the authors and do not necessarily represent the official position of the Centers for Disease Control and Prevention.