



CleanSpaces
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Leaders in
infection prevention &
environmental services
working together
for better patient
outcomes

 **APIC**
Spreading knowledge.
Preventing infection.*

 **AHE**
Prevention. Education.
Standards. Management.
ASSOCIATION FOR THE
HEALTHCARE ENVIRONMENT

Knowledge to Action in the Healthcare Environment: *Critical* Competencies

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Objectives

1. Introduce and reinforce application of infection prevention competencies
2. Apply knowledge using case scenarios
3. Demonstrate the critical nature of transprofessional and interdisciplinary teams

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Factoids

- Every patient (and others!) brings their own ecology into the healthcare setting
- Patients colonized or infected with healthcare-associated pathogens frequently contaminate items in their immediate vicinity
- Pathogens may remain viable on surfaces for weeks
- Healthcare workers can contaminate their hands by touching contaminated surfaces
- These pathogens on HCW hands can be transmitted to other patients, surfaces, and themselves if hands are not cleansed properly

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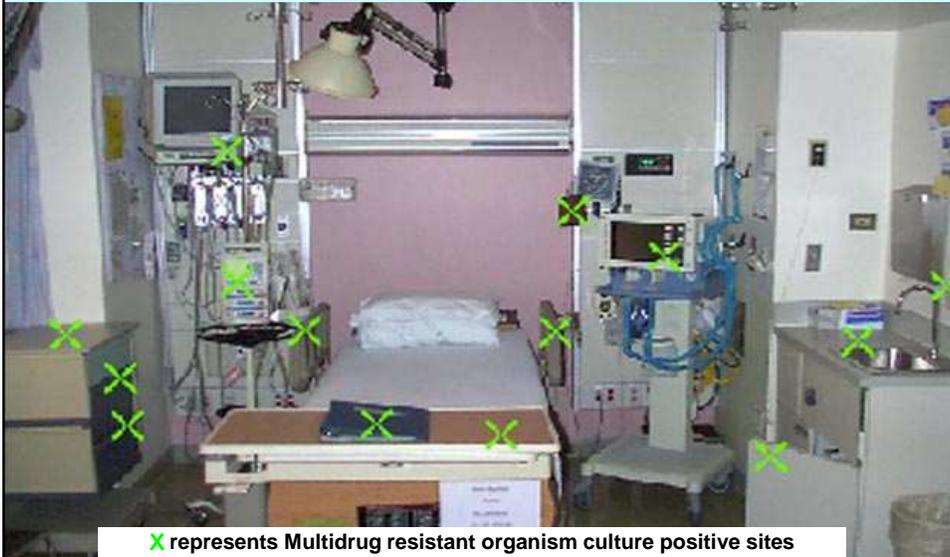
Factoids

- Routine cleaning of patient rooms may be suboptimal
- Inadequate cleaning of rooms after discharging a patient with MRSA or VRE puts subsequent patients admitted to that room at risk of acquisition of the organism
- Improved cleaning and disinfection of the environment can reduce the risk of patients acquiring multidrug-resistant pathogens
- Monitoring the effectiveness of environmental cleaning (process, practice and outcome) is necessary

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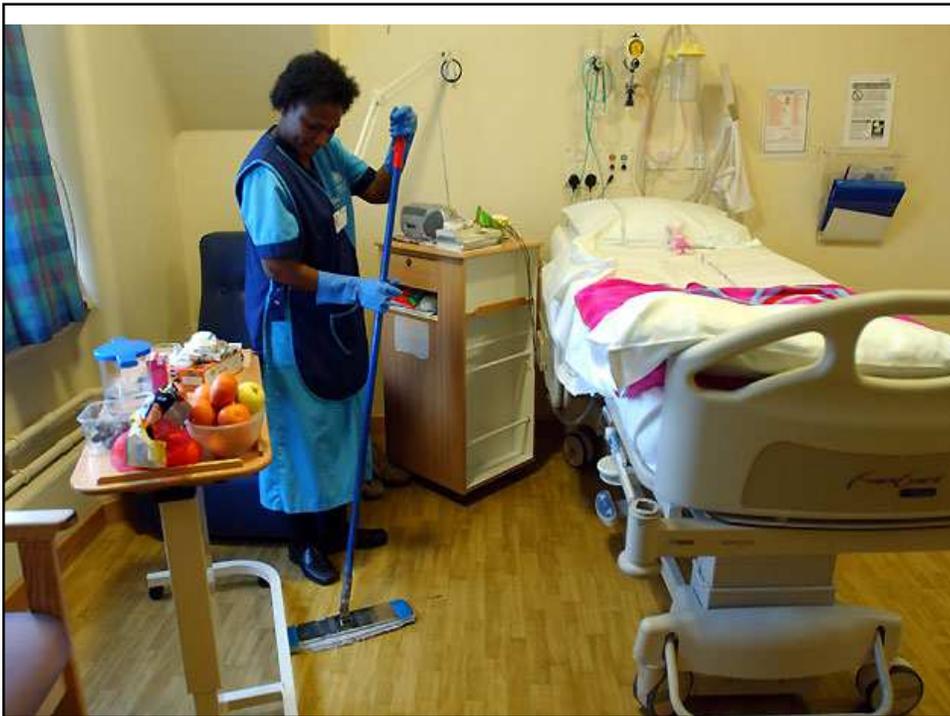
The Inanimate Environment Can Facilitate Transmission



X represents Multidrug resistant organism culture positive sites

~ Contaminated surfaces increase cross-transmission ~

Abstract: The Risk of Hand and Glove Contamination after Contact with a VRE (+) Patient Environment. Hayden M, ICAAC, 2001, Chicago, IL.



What is Competence?

- Competence is the acquisition of knowledge skills and abilities at a level of expertise sufficient to be able to perform in an appropriate work setting
- In healthcare and in the realm of infection prevention, it means that the worker can perform their job responsibilities in a manner that prevents transmission of infection
- Competence is putting knowledge, skill and ability into action

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Practice Competencies

- Focuses on what is required of personnel in the workplace
 - Embodies the ability to transfer and apply skills and knowledge to new situations and environments
 - Integrates knowledge, skills, attitude, and judgment expected of the worker
- Should be measurable and action oriented

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Practice Competencies for Infection Prevention

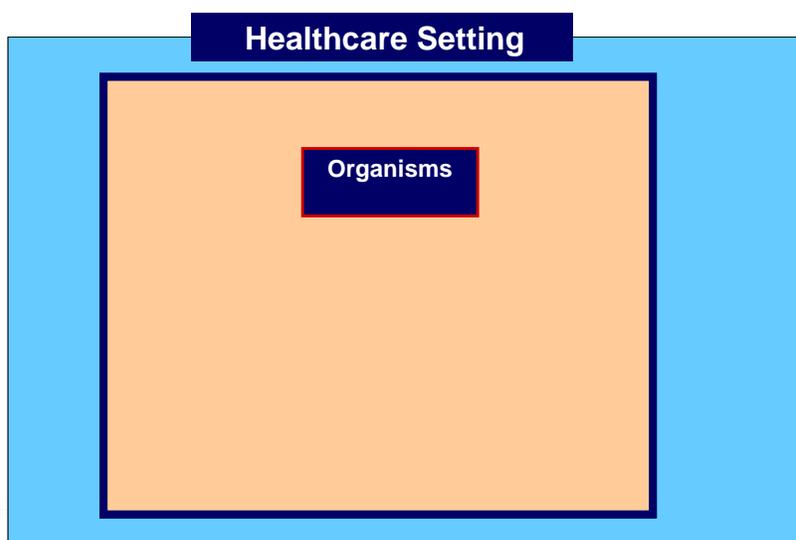
- Role of microbes in disease
- Transmission
- Precautions
- Occupational/Employee health-protecting patient
- Occupational/Employee health-protecting HCW
- Problem solving
- Preparedness

Carrico RM, Rebmann T, English J. Infection Prevention and Control Competencies for Hospital-based Healthcare Personnel, AJIC 2008 36(10):691-701

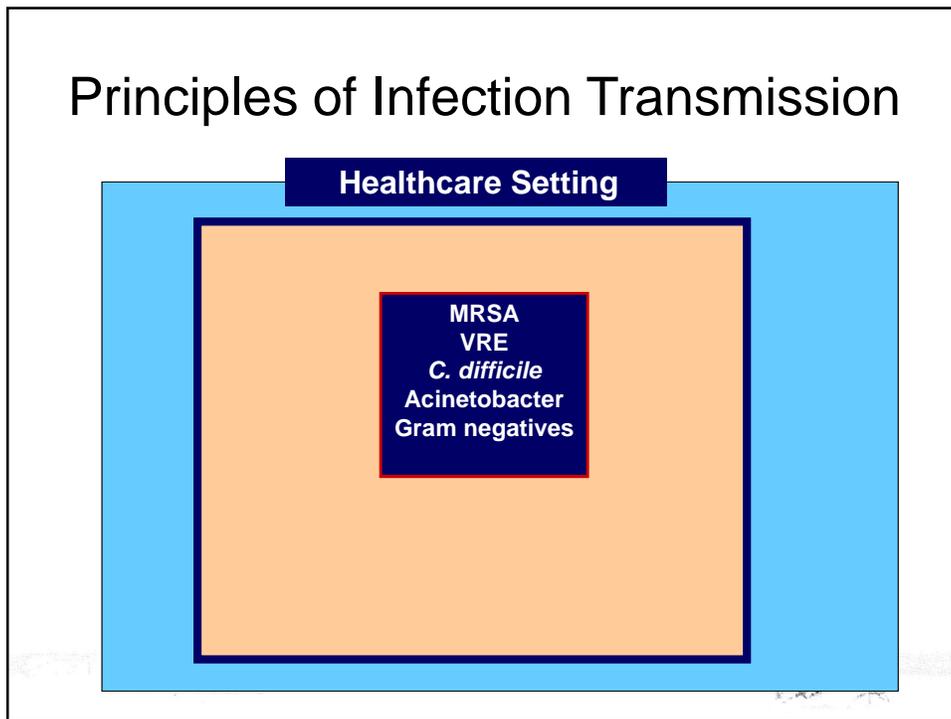
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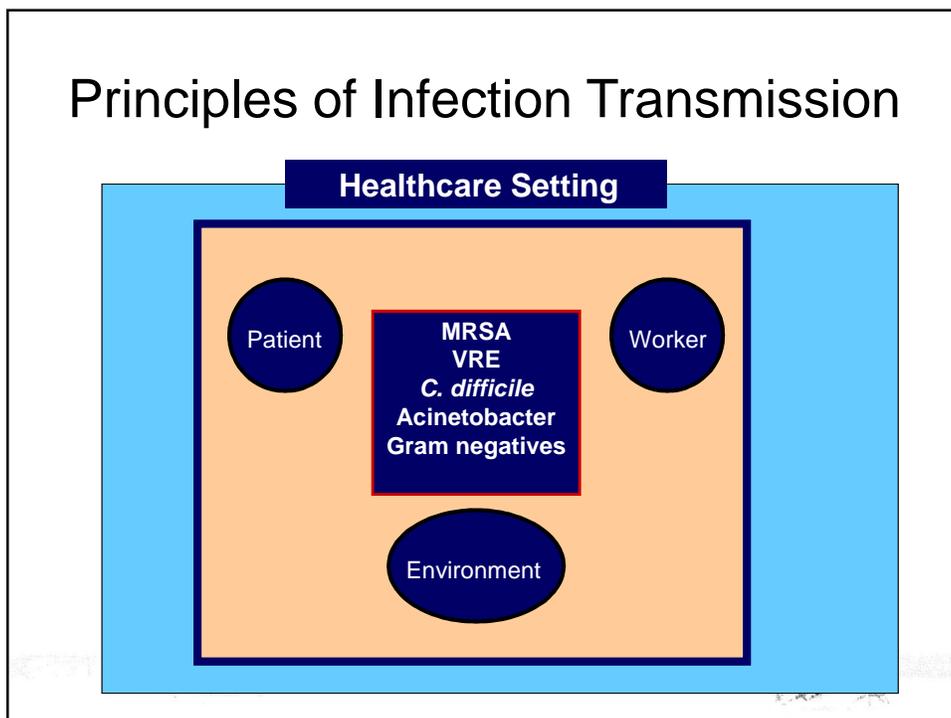
Principles of Infection Transmission



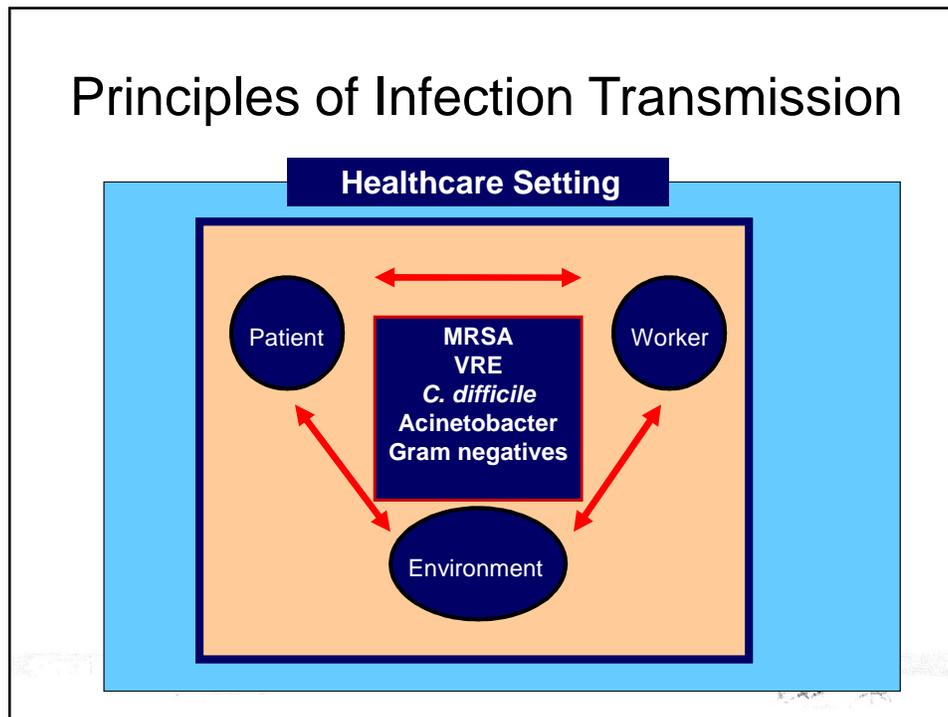
Principles of Infection Transmission



Principles of Infection Transmission



Principles of Infection Transmission



Viability in the Environment

- MRSA 2-9 weeks
- VRE 1-12 weeks
- *C. difficile* spores days to 5 months to 1 year
- Acinetobacter 3-5 months
- *Serratia marcescens* 3 days- 2 months
- Hepatitis B virus > 1 week
- HIV 3-4 days
- Norovirus hours to 7 days

Hota B et al CID 2004; 39:1182; Kramer A et al BMC Infect Dis 2006; 2:130;
McFarland D et al AJIC 2007

Germicides

- No one germicide is capable of addressing all needs, at all times, with uniform effectiveness, and without impact on some surfaces and equipment
- No magic bullet
- Selection is part of an individual facility risk assessment
- Adequate use necessitates close work between leadership and staff
- Staff must be enabled to do their jobs

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Scenario 1

An active 30 bed patient care area generally has 5 discharges and 5 admissions each day. 10 of those patients are on telemetry. Eight of the 30 beds are private and are almost exclusively used for isolation. A single environmental services worker is assigned to that area.

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Scenario 2

One floor in a long term care facility has three separate resident care areas consisting of 25 rooms in three separate units. Some of the rooms are private and some are not. All patients are up out of bed at least three times a day and most are in wheel chairs or recliners. Some patients help others since about 50% are ambulatory. A common area is used to bring all residents together as often as possible.

Two environmental services workers are assigned to that floor.

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Scenario 3

An ambulatory surgery center has a case load of 80 cases per day. The focus has been on performance of clean cases.

Patients with known MDROs or infected wounds are seen in other facilities.

Unexpectedly, the medical director has been notified by the local hospital that one of the post-op patients has been admitted with an MDRO infection

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Common Problems

- High census
- Broad scope of responsibility
- Personnel vary (numbers and capabilities)
- Activity levels of staff and patients/residents
- Routine activities incongruent with risks
- MDROs are present in patient population
- Environmental contamination

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Bundle Element Domains for Environmental Infection Prevention

- Select, mix and use correct germicide according to facility policy
- Identify surfaces and items that are in need of cleaning and disinfection
- Select and use PPE according to facility policy
- Clean and disinfect surfaces using correct techniques
- Identify and report breaches in infection prevention
- Prevent infection in self and others
- Monitor effectiveness of interventions

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Transprofessional and Interdisciplinary Approaches

- Recognition that implementation of best practices requires attention across all levels of healthcare professionals (nurses, physicians, therapists, pharmacists...)
- Also requires that all healthcare disciplines be involved in the process (service areas such as EVS, materials management, food and nutrition....)
- Goal is implementation of best practices

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Leadership Integration

- Infection prevention and control
- Environmental Services
- Patient care departments
- Ancillary departments
- Executive leadership (C-suite)
- Medical Staff

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Bundle Elements

- Select, mix and use correct germicide according to facility policy
 - Right bug: right product
 - Right mixing/dilution process
 - Right preparation: cleaning prior to disinfection
 - Right product: right application method
 - Right product: right contact time

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Bundle Elements

- Identify surfaces and items that are in need of cleaning and disinfection
 - High touch
 - Frequent touch
 - Critical items (e.g., bedside commode)
 - Or, are they all equally as important
 - Daily v. “when visibly soiled” v. outbreak
 - Clear delineation of responsibility (nursing responsibility v. environmental services responsibility)
 - Teamwork and shared responsibility

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Bundle Elements

- Select and use PPE according to facility policy
 - Types of gloves and when to use
 - Gowns/aprons
 - Barriers (e.g., masks)
 - Respiratory protection (e.g., respirators)
 - Eye protection/face shield
 - Processes for putting on and taking off
 - Disposal
 - Restocking/resupplying

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Bundle Elements

- Clean and disinfect surfaces using correct techniques
 - Clean to dirty
 - Preventing contamination of solutions
 - Pre-cleaning prior to disinfection
 - Physical removal of soil (elbow grease)
 - Contact time
 - Correct type of cleaning materials including products (microfiber, routine germicide, sporicide), equipment (UV, HP vapor)
 - Routine, terminal, outbreak situation

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Bundle Elements

- Identify and report breaches in infection prevention
 - Can't versus Won't
 - Interference with capabilities
 - Identification of incorrect or inadequate practice
 - Not sure what is wrong, but something is not right
 - Shared knowledge
 - Shared training
 - Shared accountability
 - Shared responsibility
 - Clear process

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Bundle Elements

- Prevent infection in self and others
 - Immunization
 - When to stay home
 - Use of standard precautions
 - When to ask for information
 - When to ask for help and/or when to contact employee health
 - Open communication
 - Privacy protection

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Leadership Responsibilities

- Must have an awareness regarding the front line jobs and job responsibilities
- Your role includes:
 - Enabling workers to do their jobs
 - Identifying barriers
 - Evaluating
 - Promoting a standard of cleanliness
 - Promoting individual accountability
 - Providing feedback
 - Enabling improvement

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Shared Responsibilities

- Identify who is cleaning what (as well as who isn't and what isn't)
- Have shared responsibilities really been shared?
- Cleaning and disinfection of high-tech equipment
- Areas that may be perceived as “off limits” (medication room)
- Cultural competence in training materials and instructions
- Enabling ideas and innovation

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Tools and Resources

- AHE Practice Guidance for Healthcare Environmental Cleaning
- Checklists
- Graphics
- Electronic media
- <http://www.cdc.gov/HAI/toolkits/evaluating-environmental-cleaning.html>

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