Infection Prevention
Structure and Strategies in Long Term Care

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Article 28 Facility

Operates with a certificate granted under Article 28 of the New York State Public Health Law

Regulated by the NYSDOH:

- ❑ Must have an Infection Control Committee
- ❑ Must comply with reporting requirements
- ✓ Outbreaks
- ✓ Single cases of reportable communicable disease

Article 28 LTC Facilities

639 Article 28 LTC facilities in NY state

344 (54%) in MARO {Metropolitan Area Regional Office}

2% are Pediatric LTC

12 in NYS

8 in MARO

All follow same guidelines and reporting requirements

Hospitals and LTC Differ

☑ Payment systems- set rate, bedhold

☑ Availability of X-rays and lab tests

☑ Nurse-to-patient ratio

Focus is different:

☑ LTC carries out plan set by ACF

☑ Home for residents

Comfort, Dignity and Rights are Paramount

Infection Preventionist

Acute Care

- Dedicated role
- Nurse or Microbiologist
- Clerical Support
- Computerization
- Rapid patient turnover

Long Term Care

- Multiple roles
- Usually Nursing
- No clerical support
- Paper chart
- Stay for months or years

Barriers in LTC

- No Infectious Disease MD
- Limited laboratory services
- Lack of Long Term Care research
- Lack of Standardization
  - ✓ Surveillance techniques
  - ✓ Definitions
  - ✓ Benchmarking
- Lack of time/priority
- Fear of Department of Health

Lack of Communication between ACF and LTC

Necessary Infection Control information :

- Infection Status
- Organism
- Treatment Status
- Cognitive Abilities
- Colonization Status
- Reason for lines/devices

Become a member of the Admissions Team

Prevention

Set up a Infection Control Program that includes:

- Surveillance
- Consultation and Education
- Hand Hygiene
- Environmental Cleanliness
- PPE and Precautions
- Vaccination
- Employee Health

All mentioned in Interpretive Guideline F441

Surveillance

Surveillance of healthcare associated infections is an indispensable tool in infection control, and is used for detecting problem areas, defining residents who are at risk and evaluating intervention strategies.

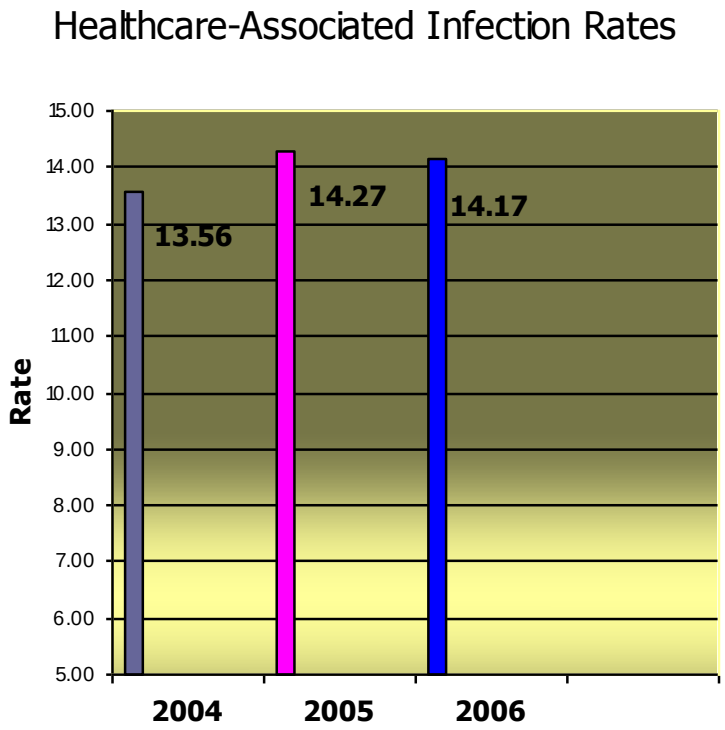
Interpretive Guideline F441: “Use records of infection incidents to improve infection control processes and take corrective action”

2006

HAI Rate = 14

- **No benchmarking for similar facilities**
- **Benchmark against self**
- ✓**QI Team-stay below 15 is acceptable**

Interpretive Guideline F441: "Use records of infection incidents to improve infection control processes and take corrective action"



Surveillance

Total House Surveillance

- ❑ Monitor all infections
- ❑ More accurate, more work

Targeted Surveillance

- ❑ One floor or unit
- ❑ One body sites- URI, UTI

Surveillance

Use whatever tools you have available to you:

- ✓ 24 hour reports
- ✓ Microbiology lab reports
- ✓ Pharmacy antimicrobial reports
- ✓ Request faxes or calls from units when antibiotic are ordered
- ✓ Make rounds and talk to staff

Line Listing

Unit	Name	Infection	Treatment	Date
CUW	John James	R/O pneumo	zithromax	8/9/10
	Laura Moon	Urine Cx >100 gnr-Ecoli	ciprofloxacin	8/10/10
	Chris Mass	Thick yellow secretions	Tob nebs	8/9/10
	Ann Smith	Spt cx- mod Acinto baum	augmentin	8/10/10

Do I have a respiratory issue on this unit?

Outbreak
Unusual cluster of illness

http://www.health.state.ny.us/forms/doh-4018.pdf

- Must report 3 or case of a pathogenic organism to the NYSDOH
- 1 case of influenza is an outbreak and must be reported
- Any case of invasive Streptococcus (Group A, B or Streptococcus pneumonia)

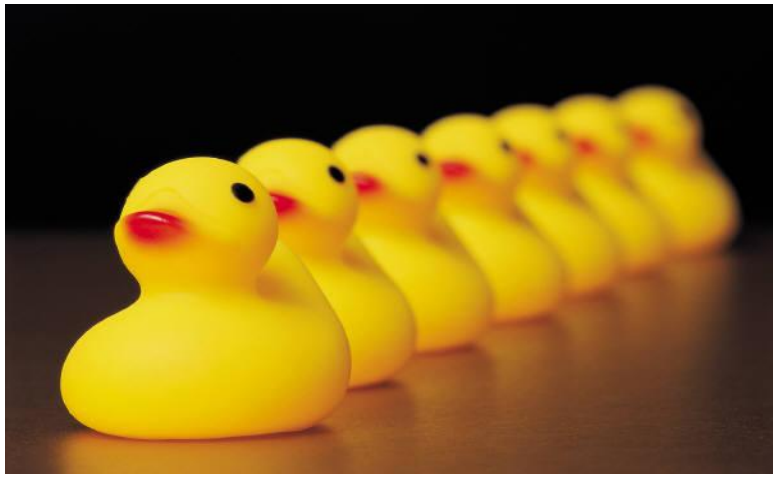
Outbreak investigation will HELP:

- What is the cause of the outbreak
- How is it transmitted
- How to prevent additional cases
- How to prevent future outbreaks

Team Work = Success

The NYSDOH is your FRIEND!!!

- ✧ Give recommendations
- ✧ What is going on in the community
- ✧ Expedite lab testing



Will ask you for:

- ✧ Line listing
- ✧ Date of onset, symptoms
- ✧ IC measures in place

Invasive Streptococcus pneumoniae Outbreak

RESIDENT	LOCATION/ROOM	DATE	SOURCE	TYPE	PFGE
GZ	Toddler Rm 125	1/14/09	Blood	19A	Related, common source
JG	Toddler Rm 125	2/2/09	Blood	nonviable	Assumed related, common source
OD	Nursery Rm 226	2/5/09	Blood	19A	Related, common source
AM	Toddler Rm 116	4/30/09	Blood	19A	Related, common source

All residents previously vaccinated with Prevnar 7 series and booster
Prevnar 13 approved by FDA Feb 2010- contains 19A- all residents vaccinated 5/10

NYS Health Care Epidemiology and Infection Control

- Separate fro the NYSDOH regulatory branch
- Do not license or survey facilities
- Do not cite deficiencies

Hand Hygiene

Surveyors shall observe staff hand hygiene practices during:

- Resident care- In and Out Campaign, FROG
- Medication administration
- Dressing changes –change gloves and perform hand hygiene when going from dirty to clean
- Resident dining- consider wipes for trays

Source:CMC F441 Guidance

Hand Hygiene

Alcohol Dispenser	No Alcohol Dispensers
❖In lobby ❖In hallways ❖Outside elevators ❖Outside/Inside resident rooms 	❖In bathrooms ❖At sinks Must wash with soap and water before : ✓Visibly soiled ✓eating ✓after using the bathroom ✓Caring for a resident with loose stools

Creative Hand Hygiene Programs

www.workingtowardszero.com

Social learning theories used to influence hand hygiene practices

We learn from others:

- ✓ Observational learning
- ✓ Imitation
- ✓ Modeling

To be successful:

- ◆ Need Infection Control Liaisons
- ◆ Consistent reinforcement and reminders

Seasonal Hand Hygiene Educational Campaigns

www.workingtowardszero.com

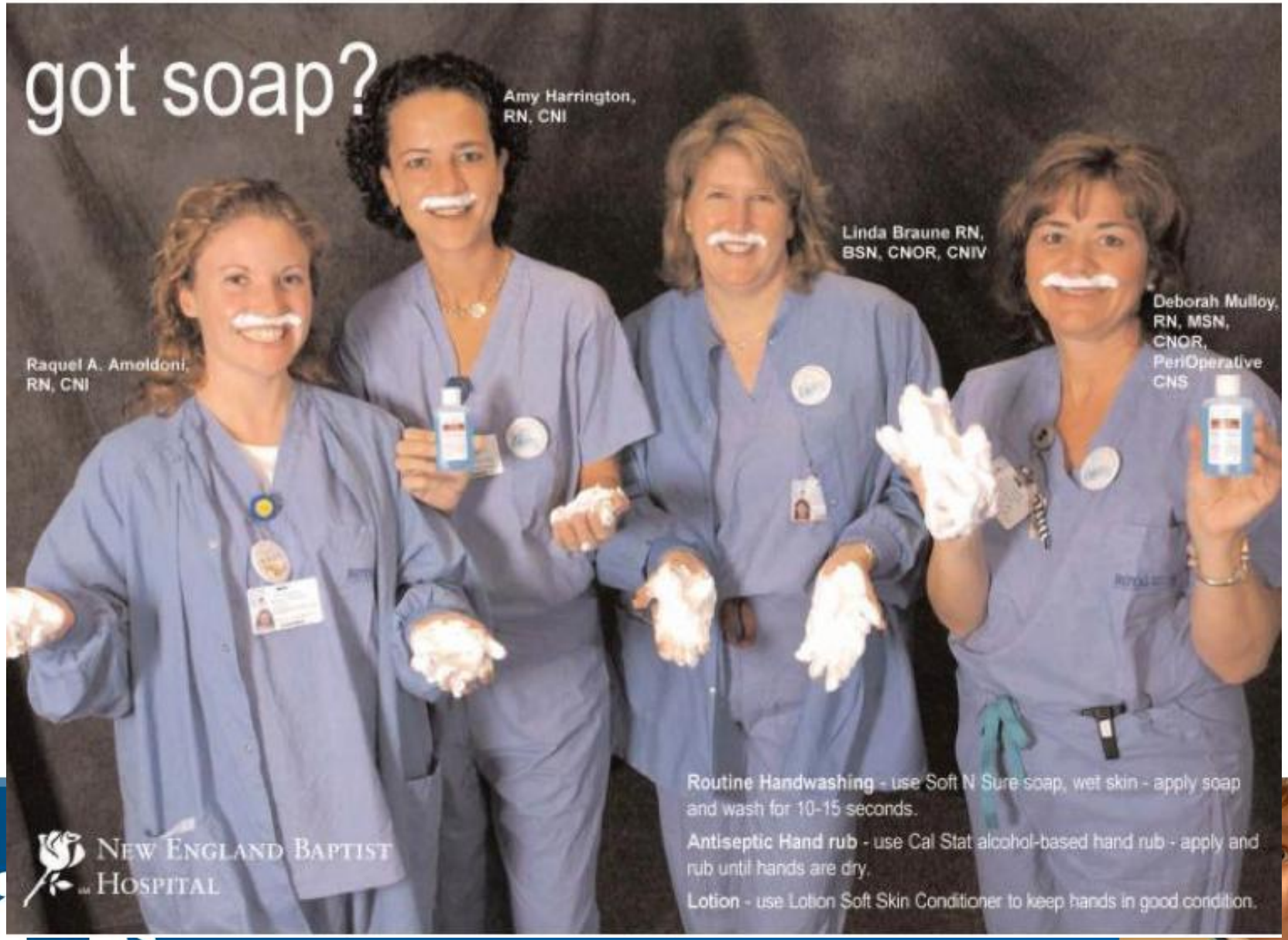
S.N.O.W.

Stop Nosocomial Organism by Washing

H.O.P.

Handwashing Offers Protection

Hand Hygiene Posters



Standard Precautions

The basic level of infection control precautions which are used, as a minimum, in the care of ALL patients.

Includes:

- Hand Hygiene
- Personal Protective Equipment- do risk assessment before any patient-care activity
- Respiratory hygiene and cough etiquette

Standard precautions are the routine and does not mean “NO” precautions

History of MDRO

- No Signs or Symptoms of active infection
  - Standard Precautions
  - Modified Contact Precautions
- Active Infection
  - Contact Precautions

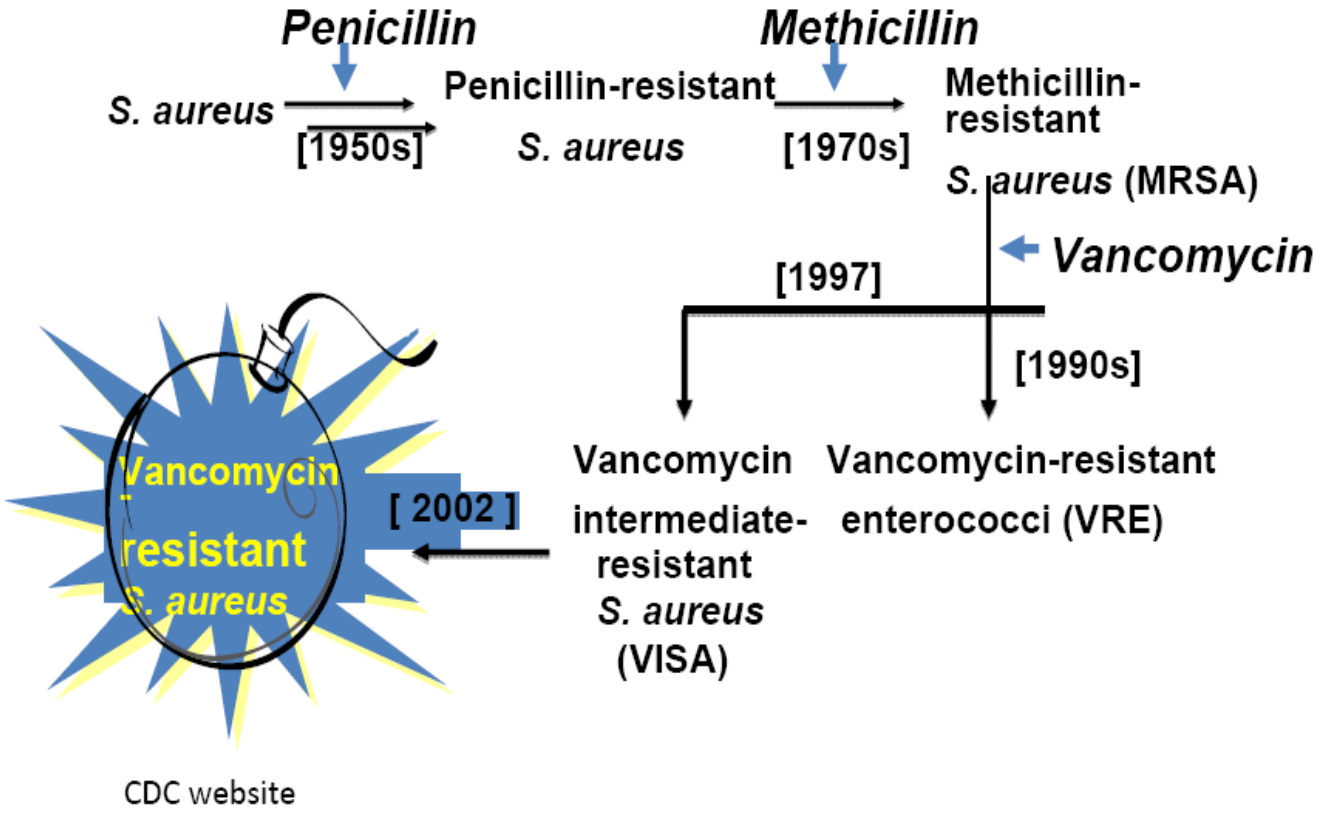
CDC Guidelines for Isolation Precautions 2007

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

The Evolution of MRSA= The Evolution of Infection Prevention



CDC website

Case Study

An 81 year old male returns to his LTC residence following an acute care stay for dehydration. As part of the hospital infection control protocol, the man had a nasal surveillance swab performed, which yielded MRSA. He had no signs or symptoms of a MRSA infection at the hospital or on return to the LTCF. The resident is otherwise healthy, continent of urine and stool, and requires minimal assistance with ADL.

Question # 1

Does the resident require a private room , or does he need to share a room with another MRSA-positive resident?

SHEA/APIC guidelines suggest decisions should be made on resident's current clinical status.

Colonization does not require private room or shared room as resident is unlikely to transmit to other residents or the environment.

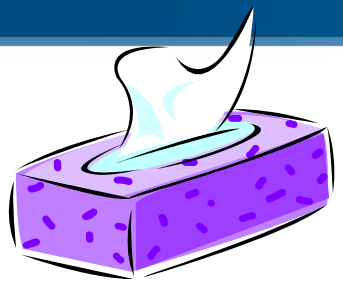
In most instances, STANDARD Precautions should suffice

Question # 2

Should the resident be allowed to attend communal meals and activities?

YES

So important to maintain his Quality of Life!!!



Modified Contact Precautions

Healthcare worker contact with this MRSA-colonized resident could increase possibility of transmission to other resident and environment…

Standard precautions should include gowns and gloves when dealing with infected area…..

Modified Contact Precautions

Change in Condition

The residence condition changes and he is no longer continent or otherwise unable to control bodily secretions……..

The potential for transmission to other residents and contamination of the environment has increased…..

Contact Precautions

Case Study # 2

A 78 year old woman returns to LTCF after a one week hospital stay for a broken hip and an additional 2 week stay in an acute rehabilitation center. At the rehab center, the woman had a urine culture sent for unclear reasons. The culture grew out Acinetobacter, sensitive only to imipenem. She was placed in a single room at the rehab center but was not placed on contact precautions. Upon return to the nursing home, she has no urinary catheter in place and has no fever or urinary symptoms.

Key Questions

The resident has no urinary symptoms, so is there a role for treatment or repeating the urine culture or performing urinalysis?

Any indications of at least 3 of the following:

- Fever (>38 degrees C)
- Chills
- New flank or suprapubic pain or tenderness
- Change in character of urine (pyuria)
- Worsening of mental or functioning status

Key Question

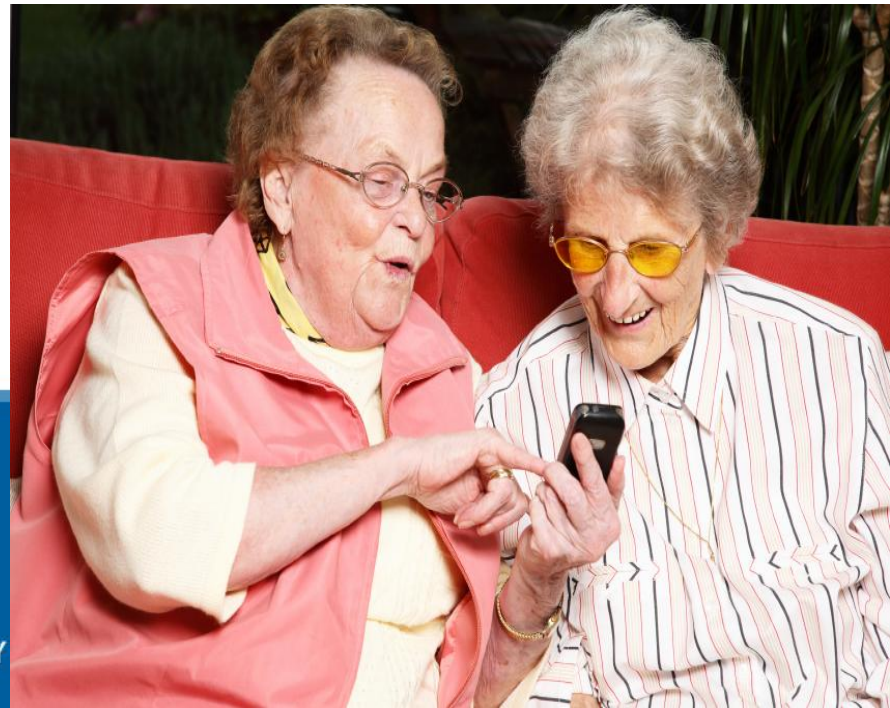
Should the resident be placed in a private room?

Resident is:
- Healthy
- Not totally dependent on staff for ADL

Standard Precautions apply

Should the resident be restricted from group activities and common areas?

NO



Case Study # 3

An 87 year old man was recently transferred to a LTC after a prolonged stay in an ICU . His hospital course was complicated by Clostridium difficle infection. The patient responded well to a 10 – day course of oral vancomycin and is no longer having diarrhea.

Key Questions
What type of Precautions are required?

What do we know about C difficle infections?

- ✓ Residents with active diarrhea with C difficle require Contact Precautions
- ✓ Hand washing with soap and water is critical
- ✓ Bleach solutions for cleaning is recommended

Our patient is:

- Medically stable
- No symptoms suggesting treatment failure or relapse

Standard Precautions

Key Question
Is there a role for repeat stool testing to document clearance of toxin?

No need for repeating stool toxin testing at the end of therapy as long as the resident is doing well

As long as the resident is medically stable,
a stool toxin test is not necessary for admission to LTC.

Recommendations for Discontinuing Isolation

CDC does not have recommendations for MDRO's in LTCF

C difficle

24 hours after first formed stool

Do not re-culture if asymptomatic

MRSA/VRE

Use the 5 C's to assess resident, and/or

Three negative cultures, collected one week apart from original site and off antibiotics for 1 week

PPE : Donning PPE

Gown First

Mask or respirator

Goggles or face shield

Gloves

Sequence for Removing PPE

Gloves

Face shield or goggles

Gowns

Mask or respirator

What Type of PPE Would you Wear?

Giving a bath?

Suctioning oral secretions?

Transporting a resident in a wheel chair?

Drawing blood from a patient?

Taking vital signs?

Cleaning an incontinent resident with diarrhea?

Environmental Cleaning

Cleaning Principles

- Minimize dust
- Clean from least soiled to most soiled areas
- Clean from high to low (debris falls to floor)
- Friction
- High touch areas more frequently-doorknobs, elevator buttons, light switches

Proper cleaning solutions

- EPA registered disinfectant- quaternary ammonium compounds, bleach solutions
- contact time required

Environmental Cleaning

Terminal Cleaning-when a resident is moved or discharged from a room

All surfaces of the room cleaned, including:

✓Inside and bottom of drawer
✓Inside closets or lockers
✓Equipment cords
✓Soap and toilet paper dispensers
✓Discard opened rolls of toilet paper, hygiene products

✓Privacy curtains- terminally, quarterly and when visibly soiled

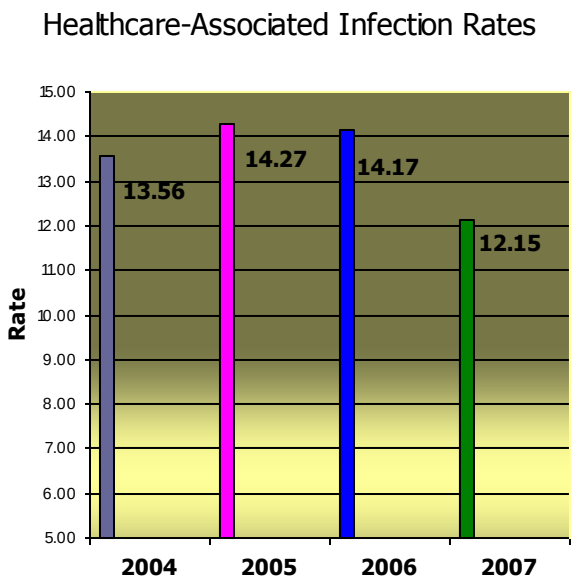
Monitor Cleaning

- EOC Rounds
- Fluorescent markers
- visitor and resident questionnaires

Cleaning Schedule

Patient Areas **Cleaning and Disinfecting**	**As needed**	**After use**	**Twice a day**	**Daily**	**When Soiled**	**Quarterly**	**Terminally**
Mattresses and pillows CNA				√ **quat**			
High-touch surfaces such as telephone headsets, doorknobs, bed rails, light switches	√ **quat**		√ **quat**				
Privacy curtains					√	√	√
Waste Removal	√		√				

2007



Hand Hygiene Observations

Surveillance

Education

Environmental Cleaning

15 % decrease in HAI rates

50% of infections were due to respiratory viruses

2007 Viral Respiratory Outbreaks

# of Outbreaks (3 or more cases)	6
Residents Infected	92 (3-19 per outbreak)
Length of Outbreak	192 days (17- 49 days)
Residents to ACF	29 (7 vented)
Days in ACF	245 days (1- 20 days)
RSV Parainfluenza 1	5 units, 36 residents 2 units, 33 residents

Band-Aid Solution

Contact/Droplet Precautions

Education

Reinforced Hand Hygiene

Cohorted staff

Lockdown units

Limited and restricted visitors

Increased environmental cleaning

Minimized floating

“Reactive more than Proactive”

Standardized Case Definition

Fever above 101˚ F with one of the following:

- Chills
- Headache or eye pain
- Sore throat
- Muscle ache
- New or increased cough
- Increased secretions

Definition Met

Contact/Droplet precautions initiated

Nasopharyngeal swab for Viral PCR:

- ✓ Quick turn around time - 24hrs
- ✓ If results are negative, resident removed from isolation
- ✓ and precautions are discontinued.
- ✓ No need for prolonged isolations

Positive Viral Swab

Resident remains on contact/droplet precautions

All roommates placed on contact/droplet precautions for the incubation period of the virus isolated

- Parainfluenza – 6 days
- RSV- 8 days

Removal of Isolation Precautions

- Positive resident re-swabbed after sign and symptoms diminish
- Negative culture report required to discontinue isolation
- Roommates come off of isolation after incubation period ends
- If roommate become positive, isolation extended for incubation period yet again

Outcomes

	# of Outbreaks	Children Infected	Length of Outbreak	Children to ACF	Days in ACF
2007	**6**	**92**	**192**	**29**	**245**
2008	**5**	**33**	**75**	**4**	**14**
2009	**5**	**22**	**58**	**4**	**23**

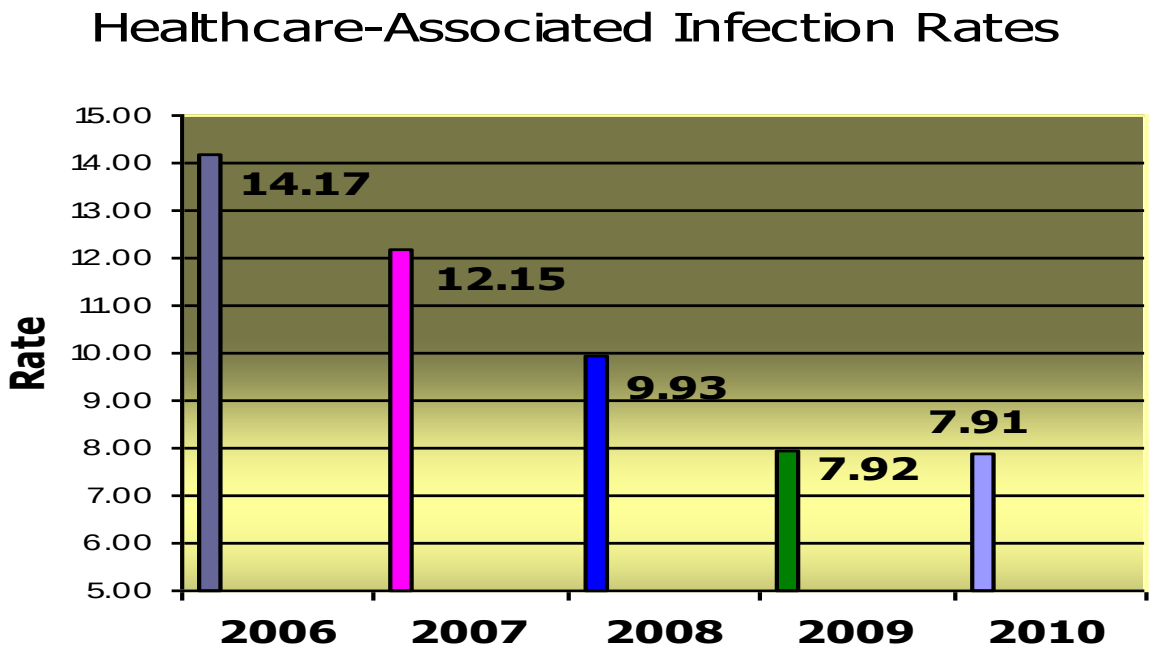
SUCCESS

Proactive Team Approach

Standardized Case Definition

Earlier isolation and earlier identification

Surveillance and Outcome



Questions about Reporting?

Metropolitan Area Regional Office

Eleanor Adams, MD, MPH, (914)-654-7149

Capital District Regional Office

Deb Simmerly, RN, (607)-432-2892

Western Regional Office

Ann Sullivan-Frohm, (716)-847-4323

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