

Environmental Cleaning and Disinfection

Environmental Cleaning and Disinfection

The Harrington Way

- **Two Step Cleaning Process**
 - Bleach Wipes on High Touch Surfaces
 - Routine Disinfectant
- **Two Step Always**
 - Patient Room Bathrooms – Daily
 - Commode

Harrington Hospital

Environmental Services Strategies

- Antimicrobial Cubicle Curtains
 - Contact Kill
 - Fabric Treated (guaranteed 25 – 30 washings)
 - Permanent (Silver)
- Microfiber Mops
 - Clean mop used in each room
 - Reduced chemical and water used and disposed of
 - Washing lifetime of 500+ uses
 - Light weight (lbs. less than used wet mop)
 - Ergonomic
 - Labor Saving

Reinforcement through Education and Measurement

- Training by Infection Preventionist
- Daily Rounding
- Discharge Monitoring with Glow Germ
- Room Inspection with HP iPAQ
- Patient Satisfaction – HCAHP & Press Ganey

High Touch Areas for Cleaning

Patient Room

- Bed Rails
- Over Bed Tray
- IV Pole
- Call Button
- Telephone
- Handles-Side Table & Chair
- Room Sink
- Room Light Switch
- Room Door Knob

Patient Bathroom

- Bathroom Light Switch & Door
- Bathroom Light Switch & Door
- Bathroom Handrails
- Bathroom Sink
- Toilet Seat
- Toilet Flush Handle
- Toilet Bed Pan Cleaner

Harrington Hospital: Cleaning & disinfection policies in action



Cape Cod Hospital *C. Difficile* Contamination of the Environment



| Environmental Sites Positive | Staff Hand Cultures Positive |
|------------------------------|------------------------------|
| 0-25% | 0% |
| 26-49% | 8% |
| > 50% | 36% |



Maintain Isolation for the Duration of Hospitalization

CCHC Combination Cleaning & Disinfectant Products

| Product Name | Type of Disinfectant | Contact Time Required | Examples of Use |
|----------------------------------|---|--|--|
| Virex 256 - liquid | 660 ppm Quaternary Ammonium Compound | Surface must remain wet for <u>10 minutes</u> | Floors, room surfaces, bathrooms, spills blood/body fluids |
| PDI Super Sani-Wipes | 5000 ppm Quaternary Ammonium Chlorides and 55% alcohol | Surface must remain wet for <u>2 minutes</u> | Wheelchairs, stretchers, desks, computer keyboard, over-bed tables, portable x-ray machines |
| Dispatch Wipes and Liquid | .525% sodium hypochlorite (bleach) = 5,500 ppm or 1:10 dilution | Surface must remain wet for <u>1 minute</u> | Enteric Contact Precautions – all surfaces and reusable equipment in contact with patient / patient environment Glucometers |
| Gluco Chlor Wipes | | | |

CCH Hospital Associated C. difficile Infection Incidence 2010 versus 2011

| CCH Year | Rate /10,000 Pt Days |
|-------------|------------------------|
| 2010 | 13.6 (90/66138) |
| 2011 | 5.7 (30/52,079) |

Environmental Services Staff take the initiative at Fairview Hospital



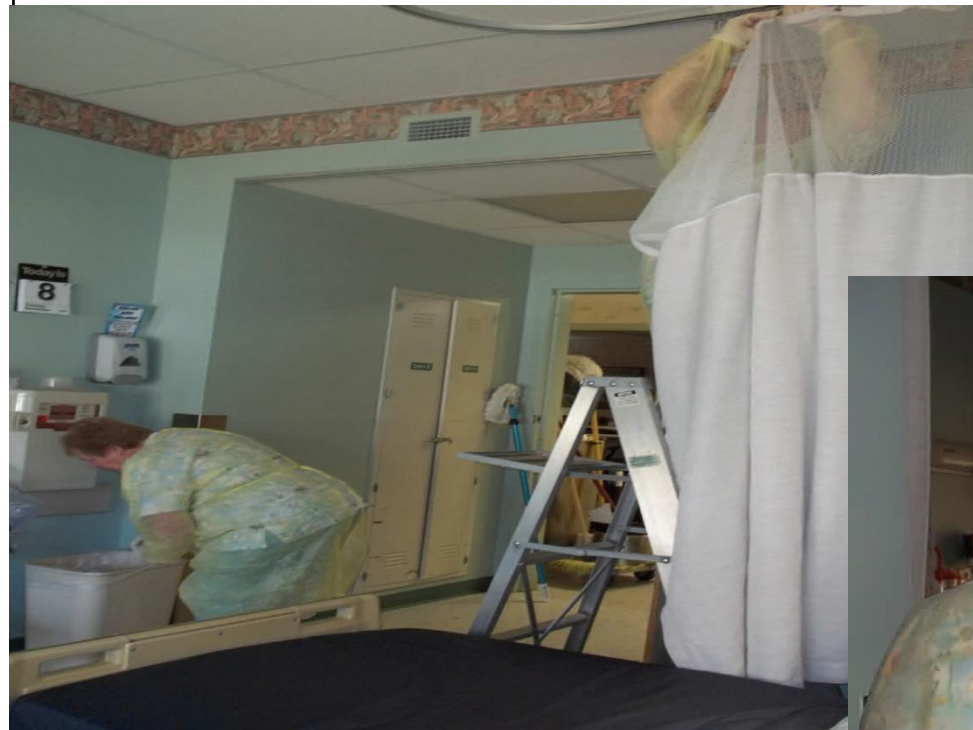
Evidence Based Quality Improvement at Fairview Hospital



Marlborough Hospital Improved Terminal Cleaning

| Sample Month | # of Sample days | % Patient Rooms Failing Audit |
|--------------|------------------|-------------------------------|
| June 2011 | 22 | 17% |
| Sep-Oct 2011 | 41 | 6% |

Noble Hospital: Environmental Services SWAT team!





Environmental Services

Cooley Dickinson Health Care



UV Disinfection System



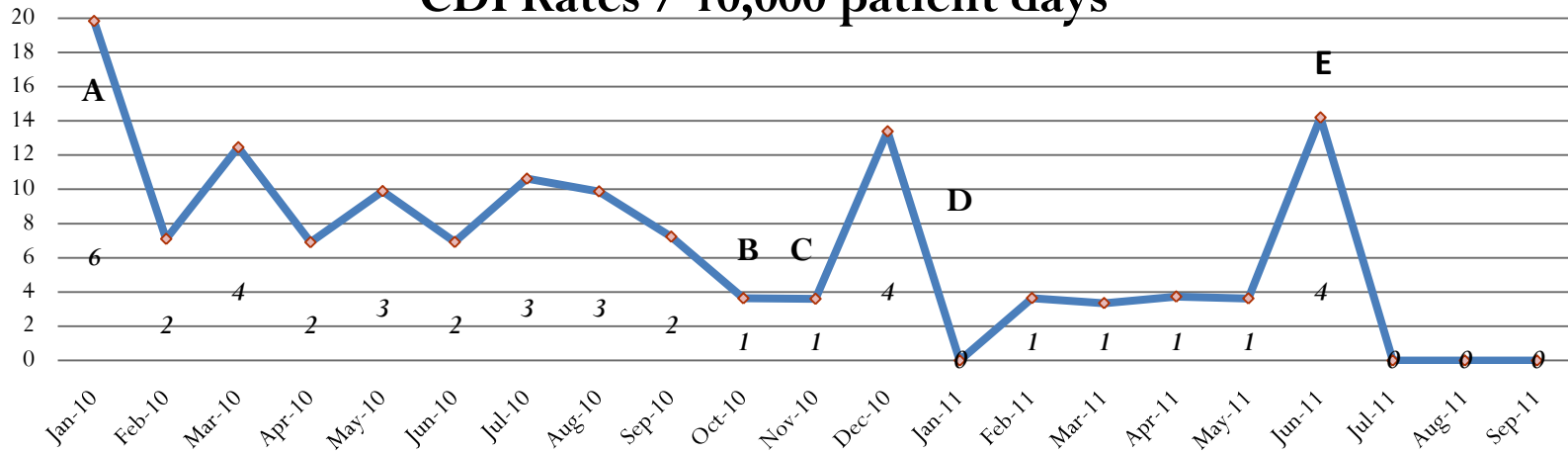
Cooley Dickinson Hospital started using 2 devices January, 2011 with a goal to reduce C-diff spores when cleaning all patient discharge rooms and eliminate HA-CDI

PX-UV Light



Cooley Dickinson Hospital

Cooley Dickinson Hospital CDI Rates / 10,000 patient days



Pre Collaborative: Comprehensive Environmental Services overhaul including additional FTE, mapping whole hospital for cleaning, changing shift hours; Changed isolation policy (in place until discharge); Switch to microfiber mops and Cloths

- A. Added PCR testing option
- B. Cleaning ED stretchers and all bathrooms with bleach
- C. Rapid communication to ES with patients' positive CDI status so they could begin daily cleaning with bleach solution
- D. Leased 2 ultraviolet light cleaning machines for terminal room cleaning
- E. Increased use of ultraviolet light cleaning in discharge rooms to 90% of daytime discharges and 45% of evening discharges

Cooley Dickinson Environmental Services staff - recognized for *C.diff* rate reduction

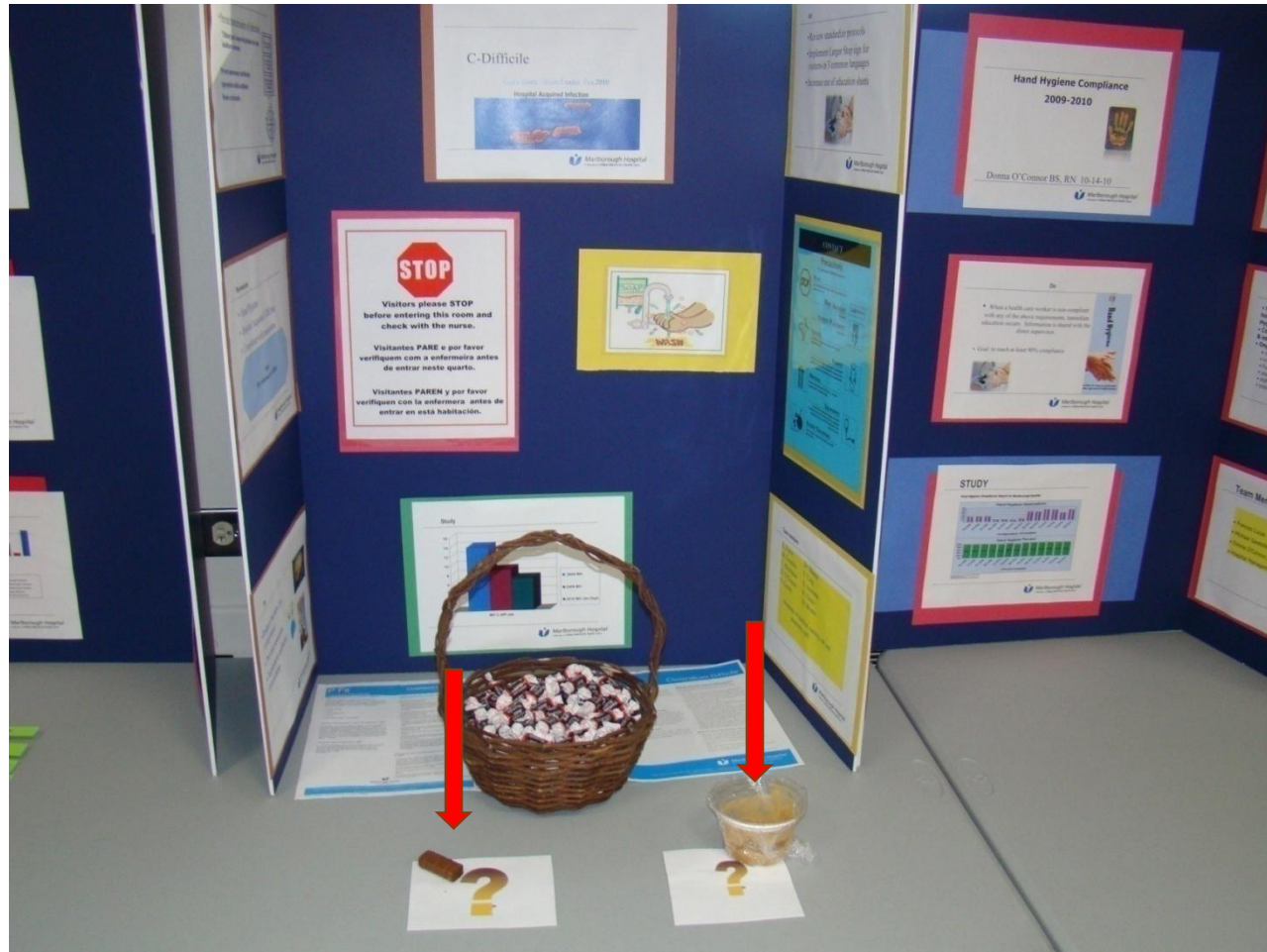


Operation Wipe out at Tewksbury Hospital

<http://youtube.com/watch?v=psa9wNYMl4Q>

Engaging Staff in CDI Prevention

Marlborough Hospital uses humor to make a point!



Three Women of Harrington Hospital



Harrington in the press!

Southbridge Evening News ►

Hospital's war on infection goes viral

Harrington seeks votes to turn video into grant

by Ryan Grannan-Doll [write the author](#)

October 06, 2010

SOUTHBRIDGE — YouTube has been used to promote music, television and funny video clips, but Harrington Memorial Hospital has taken a different tack with it.

As part of a contest, the hospital has created a three-minute YouTube video to educate the public on preventing the spread of several infectious diseases, according to Harrington's infection prevention director, Sue Valentine.

The video is part of 3M's "Innovation Award YouTube Video Contest" competition in which entrants produced similar videos on disease prevention. Voting to determine the finalists ends tomorrow, Friday, Oct. 8. A panel of 3M judges will evaluate whichever videos are voted as finalists, and the winner will be announced, Monday, Oct. 18, the beginning of International Infection Prevention Week, according to a 3M press release.

"The contest will identify innovative approaches to address a wide variety of challenges and also serve as an educational tool for those facilities in the fight against rising infection rates," said 3M's president and general manager of its Infection Prevention Division, Debra Rectenwald.

The hospital is hoping the video provides viewers with the tools to avoid several different viruses, including clostridium difficile, which has recently resurged in this country, according to Valentine. If the hospital is voted at least as one of the runners up, Harrington would receive a \$1,000 grant to visit local health care facilities to spread the educational message, Valentine said. Should they win, they would receive \$5,000 and an all-expenses-paid trip to tour 3M's Infection Prevention Division.



In this still from their YouTube video, Harrington staffers are disguised as drug-resistant infections. From left: VRE, C.diff and MRSA, as the film depicts the hospital's infection-fighting measures. Residents may cast their ballots for the best disease prevention video with the winning facility receiving a \$5,000 grant from 3M. *(click for larger version)*

Harrington staff step up the fight against hospital acquired infections



[Harrington Hospital- Kill the Bugs - YouTube](#)

Northeast /Beverly takes a page from
the Harrington Playbook

Share the risk.....

Personalize the message



Contact Precautions

Contact Precautions at MetroWest Medical Center

One size does NOT fit all

Precautions at MWHMC Framingham



How it works at MWMC Leonard Morse Hospital



Noble Hospital: magnets on the door frame



Noble Hospital Precuations Setup



A picture is worth 1000 Words

How to Remove PPE

Training slide from an unnamed hospital

Sequence for removing personal protective equipment (PPE)

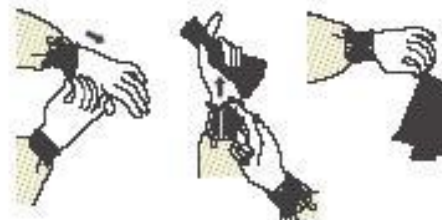
- ▶ First remember the outside and front of the gowns, gloves, and masks are contaminated.
- ▶ Start with the gloves, remembering not to touch the outside of the gloves
- ▶ Remove goggles or face shield by the head band or ear pieces.
- ▶ Next remove the gown, keeping in mind that the front of the gown is contaminated. Roll the gown inside out into a bundle and discard..
- ▶ Finally remembering the front of the mask is contaminated, untie the bottom then the top ties and discard.

CDC Guidance: How to remove PPE

Remove PPE at doorway before leaving patient room or in anteroom

GLOVES

- Outside of gloves are contaminated!
- Grasp outside of glove with opposite gloved hand; peel off
- Hold removed glove in gloved hand
- Slide fingers of ungloved hand under remaining glove at wrist



GOGGLES/FACE SHIELD

- Outside of goggles or face shield are contaminated!
- To remove, handle by “clean” head band or ear pieces
- Place in designated receptacle for reprocessing or in waste container



GOWN

- Gown front and sleeves are contaminated!
- Unfasten neck, then waist ties
- Remove gown using a peeling motion; pull gown from each shoulder toward the same hand
- Gown will turn inside out
- Hold removed gown away from body, roll into a bundle and discard into waste or linen receptacle



MASK OR RESPIRATOR








- Front of mask/respirator is contaminated – DO NOT TOUCH!
- Grasp ONLY bottom then top ties/earpieces and remove
- Discard in waste container




NE Baptist: combining the power of pictures and words

bat

CONTACT PRECAUTIONS INSTRUCTIONS FOR VISITORS

| Before Entering Room | Before Leaving Room |
|---|--|
| <p>1 HAND HYGIENE</p>  <ul style="list-style-type: none">• Perform hand hygiene before putting on the gown and gloves• Wash hands with soap and water or use an alcohol-based hand rub | <p>1 REMOVE ISOLATION GOWN</p>  <ul style="list-style-type: none">• Unfasten ties• Peel gown away from neck and shoulder• Turn contaminated outside toward the inside• Fold or roll into a bundle• Discard into blue hamper bag |
| <p>2 PUT ON A GOWN</p>  <ul style="list-style-type: none">• Opening is in the back• Secure at neck and waist• If gown is too small, use two gowns• Gown #1 ties in front• Gown #2 ties in back | <p>2 REMOVE GLOVES</p>   <ul style="list-style-type: none">• Grasp outside edge near wrist• Peel away from hand, turning glove inside-out• Hold in opposite gloved hand• Slide ungloved finger under the wrist of the remaining glove• Peel off from inside, creating a bag for both gloves• Discard in red trash bag in room |
| <p>3 PUT ON GLOVES</p>  <ul style="list-style-type: none">• Put on gloves last• Select correct type and size• Insert hands into gloves• Extend gloves over isolation gown cuffs | <p>3 HAND HYGIENE</p>  <ul style="list-style-type: none">• Perform hand hygiene immediately after removing gown and gloves• Wash hands with soap and water or use an alcohol-based hand rub |

 NEW ENGLAND BAPTIST HOSPITAL

Windows taskbar icons: Internet Explorer, Google, Outlook, iTunes, Adobe Reader, Firefox, and a red icon.

Great ideas:
coming from the frontline up!

[Jasper Palmer - YouTube](#)

Jasper Palmer

Transport services

Einstein Hospital, Philadelphia PA

Laboratory Testing

WITH THANKS TO
Alfred DeMaria, Jr., M.D.
Medical Director
Bureau of Infectious Disease
Prevention, Response and Services
State Epidemiologist

C. difficile Testing Recommendations

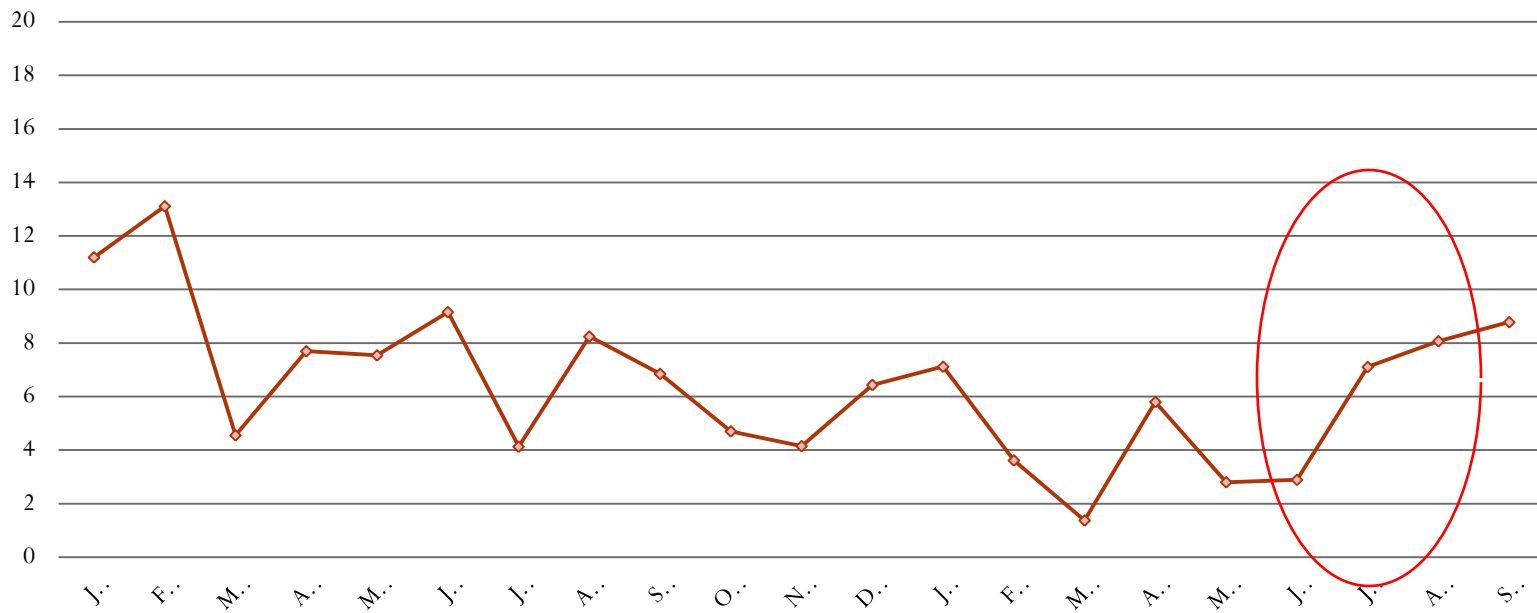
- Culture and toxin neutralization not practical in most laboratories (but gold standard)
- EIA for toxins A and/or B is easy to do, but not very sensitive (giving false negatives)
- GDH tells you *C. difficile* is present, but doesn't tell you if it is toxin-producing
- GDH+ plus EIA+ = toxigenic *C. difficile*, but still have sensitivity problem related to EIA
- PCR more sensitive and as specific, and it identifies A&B toxin gene

C. Difficile Test “Rules”

- Only test unformed diarrheal stools
- Do not do repeat testing
- Do not test for “cure”

Baystate Medical Center Began using PCR July 2011

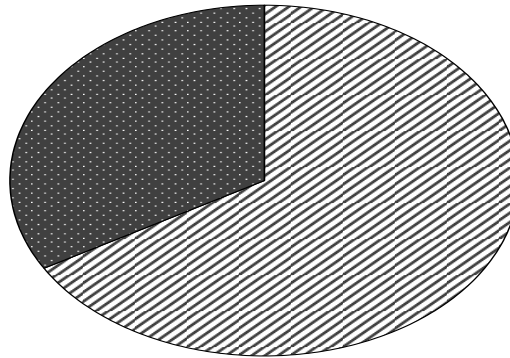
Baystate Medical Center
HA-CDI / 10,000 Patient days



Exploring the cause

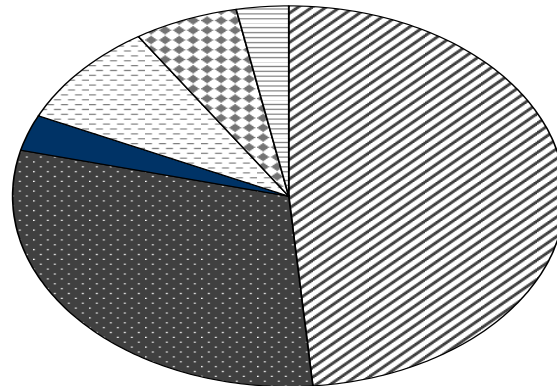
CDI testing methods Q3/2011

PCR Toxin

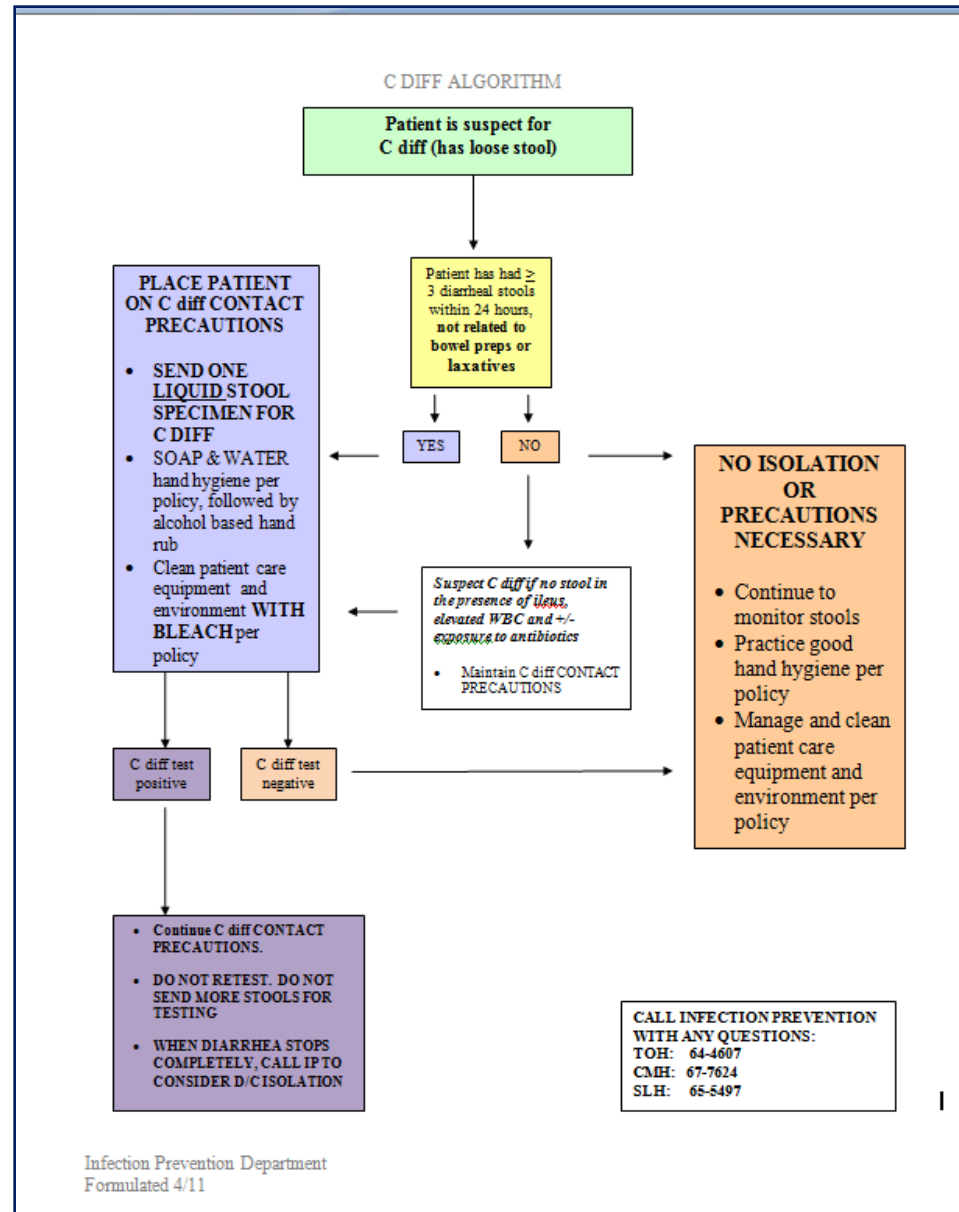


HCW ordering CDI stool testing Q3/2011

MD RN II RN III PA PG II DO



Southcoast Hospitals Decision Support Tool



Southcoast Hospitals: Pocket Card

C diff Testing and Patient Management



- All patients with **suspected** C diff are placed on C diff precautions until C diff is ruled out with a negative test
- MAINTAIN ISOLATION UNTIL ALL FINAL TESTING COMPLETED
- Follow C diff algorithm for testing stool
- Every specimen is tested for BOTH C diff ANTIGEN AND C diff TOXIN
- POSSIBLE TEST RESULTS:

| INTERPRETATION & TYPE OF ISOLATION REQUIRED | POSSIBLE RESULTS | | | | |
|--|--|--|--------------------------------------|--|--------------------------------------|
| | C diff antigen positive/toxin negative | C diff antigen negative/toxin negative | C diff negative by Nucleic Acid Test | C diff antigen positive/toxin positive | C diff positive by Nucleic Acid Test |
| <i>C diff not detected; precautions and isolation not necessary (see algorithm!)</i> | Maintain isolation pending confirmation by Nucleic Acid Test | X | X | | |
| <i>Patient is C diff positive, patient requires C diff precautions and isolation</i> | | | | X | X |

If C diff is not detected and patient does not have diarrhea C diff Contact Precautions and isolation are NOT necessary (see algorithm!)

If patient is C diff positive and has diarrhea, patient requires C diff precautions and isolation. Please CONTINUE ISOLATION!!

|

- Call Infection Prevention (X 65-5497 or 67-7624) with any questions

Communication within and between organizations

Communicating Isolation Status

- Enter/update isolation precaution status in “Precaution” field in Administrative Data Screen
 - **Populates electronic order and diet requests**
 - **Creates an electronic isolation list**
 - **Populates Ticket to Ride**
- Ticket to Ride
- Verbally notify receiving department (including surgery) prior to transporting patient on Precautions
- Discuss specific Precautions requirements with patient and visitors
- Know reason for Precautions and communicate same to attending MD and consultants

CAPE COD HOSPITAL

RADIOLOGY REQUISITION



NAME: TEST, PATIENT
MEDREC #: 0004449 ACCT#: 000000025916
DOB: 08/26/1907 AGE: 102 SEX: F HT: 5/1 WT: 102/
EXAM DATE: 10/19/2009 PREV EXAM: RAD/CERVICAL SPINE 2 OR 3 VIEW 09/21/2009 1450
LOCATION: MB4 ROOM/BED: MB4.410 A
INSURANCE: BLUE CROSS MASS

ALLERGIES and PRECAUTIONS

Latex Allergy? N
Food Allergies: PEANUTS
Other Allergies: PENICILLIN
Drug Allergies: Penicillins
PRECAUTIONS: Enteric Contact
RESISTANT ORGANISMS: MRSA? Y VRE? Y

ATTENDING: PROVIDER, ATTEND MD
ORDERING: PROVIDER, ORDERING MD (REPRINT)

EXAM TYPE: RADIOLOGY

HOW TRANSPORTED: A - AMBULATORY
REASON FOR EXAM: TESTING CO-SIGNER ON RAD REPORT
SIGNS & SX: SG/SX
ORDERING FACILITY: CCH

Exam: 000003355 LEFT KNEE 3 VIEWS R (10/19/2009)

Comment:
BAR MODIFIER 1?
BAR MODIFIER 2?
BAR MODIFIER 3?



PREGNANCY STATEMENT (Radiology)


My last period began ____ days ago.

- There is NO possibility I could be pregnant.
 There is a possibility I could be pregnant.

Date _____

Signature _____

Merrimack Valley Hospital: Sends information with CDI Patients being transferred to other facilities



FAQs
(frequently asked questions)

about
“Clostridium Difficile”

What is Clostridium difficile infection?

Clostridium difficile [pronounced Klo-STRID-ee-um dif-uh-SEEL], also known as “*C. diff*” [See-dif], is a germ that can cause diarrhea. Most cases of *C. diff* infection occur in patients taking antibiotics. The most common symptoms of a *C. diff* infection include:

- Watery diarrhea
- Fever
- Loss of appetite
- Nausea
- Belly pain and tenderness

Who is most likely to get C. diff infection?

The elderly and people with certain medical problems have the greatest chance of getting *C. diff*. *C. diff* spores can live outside the human body for a very long time and may be found on things in the environment such as bed linens, bed rails, bathroom fixtures, and medical equipment. *C. diff* infection can spread from person-to-person on contaminated equipment and on the hands of doctors, nurses, other healthcare providers and visitors.

Can C. diff infection be treated?

- o Patients on Contact Precautions are asked to stay in their hospital rooms as much as possible. They should not go to common areas, such as the gift shop or cafeteria. They can go to other areas of the hospital for treatments and tests.
- Only give patients antibiotics when it is necessary.

What can I do to help prevent C. diff infections?

- Make sure that all doctors, nurses, and other healthcare providers clean their hands with soap and water or an alcohol-based hand rub before and after caring for you.

If you do not see your providers clean their hands, please ask them to do so.

- Only take antibiotics as prescribed by your doctor.
- Be sure to clean your own hands often, especially after using the bathroom and before eating.

Can my friends and family get C. diff when they visit me?



**SIGN UP
NOW**
for a **FREE**
Special Report

“Get the Picture”

Communication with referring facilities at Tewksbury Hospital

- History of CDIFF, MRSA, VRE, ESBL, Multi drug resistant gram-negative bacilli ?
- Patient on precautions during current hospitalization?
 - Type, reason
- Is the patient on antibiotics?
 - What, why?
- Any surveillance cultures from admission?
 - Ask for one when referral is made – get a baseline
- Culture reports from current hospitalization?



Collaboration Across the Continuum of Care

Acute Care / Long Term Care Collaboration at Fairview Hospital

- We share the same patients
- Increase the standard of care across the continuum
- Consistency of care across the continuum
- Improved relationships lead to improved communication at all points of service
- Walking a mile in each other shoes, it's not always easy

Doreen Hutchinson RN, BSN, MBA, CNAA
Vice President of Operations and Acute Care Services, Chief Nurse Executive

Fairview Hospital

Great Barrington, Massachusetts



*“ We can’t do this alone
it takes a village ”*

Kim Knox Milford Hospital Oct. 2011

Harrington Hospital pays it forward

Who Should attend:

Anyone who is involved in patient care should be aware of the threat of *C. difficile* infections and the emerging new super strains.

- Directors of Nursing
- Infection Preventionists
- Educators
- Unit Managers
- Environmental Services

Our Partners

Mass Coalition for the Prevention of Medical Errors and the CDI collaborative that includes 27 Massachusetts hospitals.

Funding provided by 3M Healthcare. Harrington's award winning YouTube Video on *C. diff* was the recipient of a 3M educational grant.



JOIN OUR TEAM!

FREE - *C. diff* Tool Kit !

Includes:

Sample policies

PowerPoint Presentation

Educational Video

Mass DPH Guidelines

Signs

Checklists



Harrington
HOSPITAL
Total Local Care

Please register by September 7th

Phone: 508-765-3010

Email: svalenti@harringtonhospital.org

Clostridium difficile *It Takes a Village*



Learn new
strategies for
prevention and
early identification
of *C. diff*

Three Women of Harrington Hospital

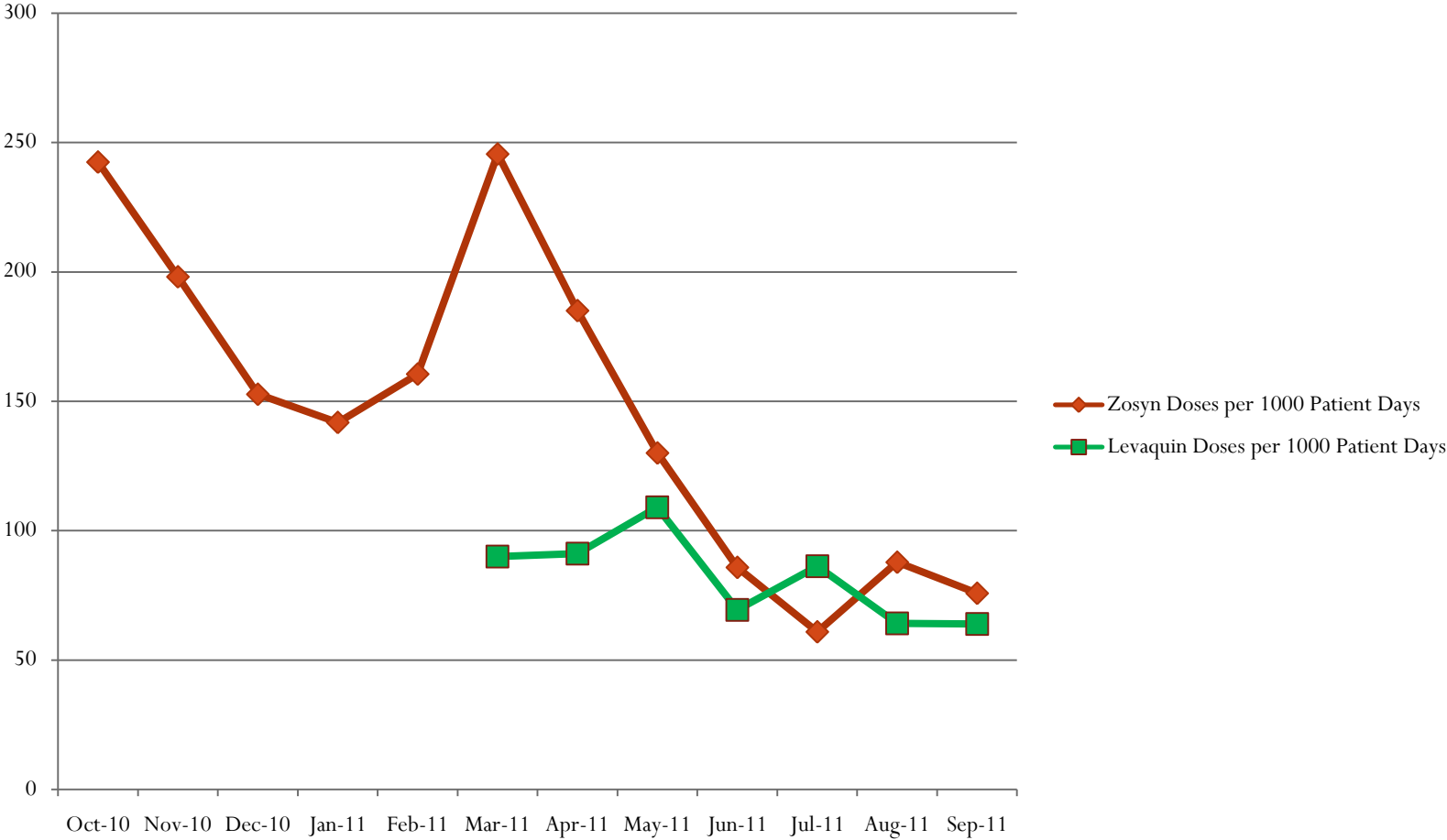


Leadership engagement and Support

- Northeast Hospitals /Beverly
- Southcoast Hospitals
- NE Sinai

Antibiotic Stewardship

Antibiotic Stewardship at Milford Regional Medical Center



Antibiotic Stewardship at New England Sinai

The program

- 2 ID physicians, off-site
- M-F review electronic medical record of patients on antibiotics more than 6 days
- Recommendations made by email
- End date and indication required by pharmacy for all antimicrobials
- Clinical pathways

NE Sinai: Sample Antibiotic Review emails

John Doe

Pip-Tazo 2.25g IV Q6 ordered 10/20-11/4

Fluconazole 150mg Po Qd ordered 10/20-11/11

Empyema, fungal rash

Recommendations: the fluconazole was to continue through 11/4 per the H&P but is ordered through the 11th. In fact, the duration of therapy should be until the rash resolves. If it has resolved, would d/c. It would help to know the organism that grew from the empyema fluid. If a narrower agent could be used it would cause less collateral damage in terms of the promotion of resistance.

James Doe

Vanco 1g IV Q24 ordered 8/13-8/19

Doripenem 500mg IV Q8 ordered 8/10-8/20

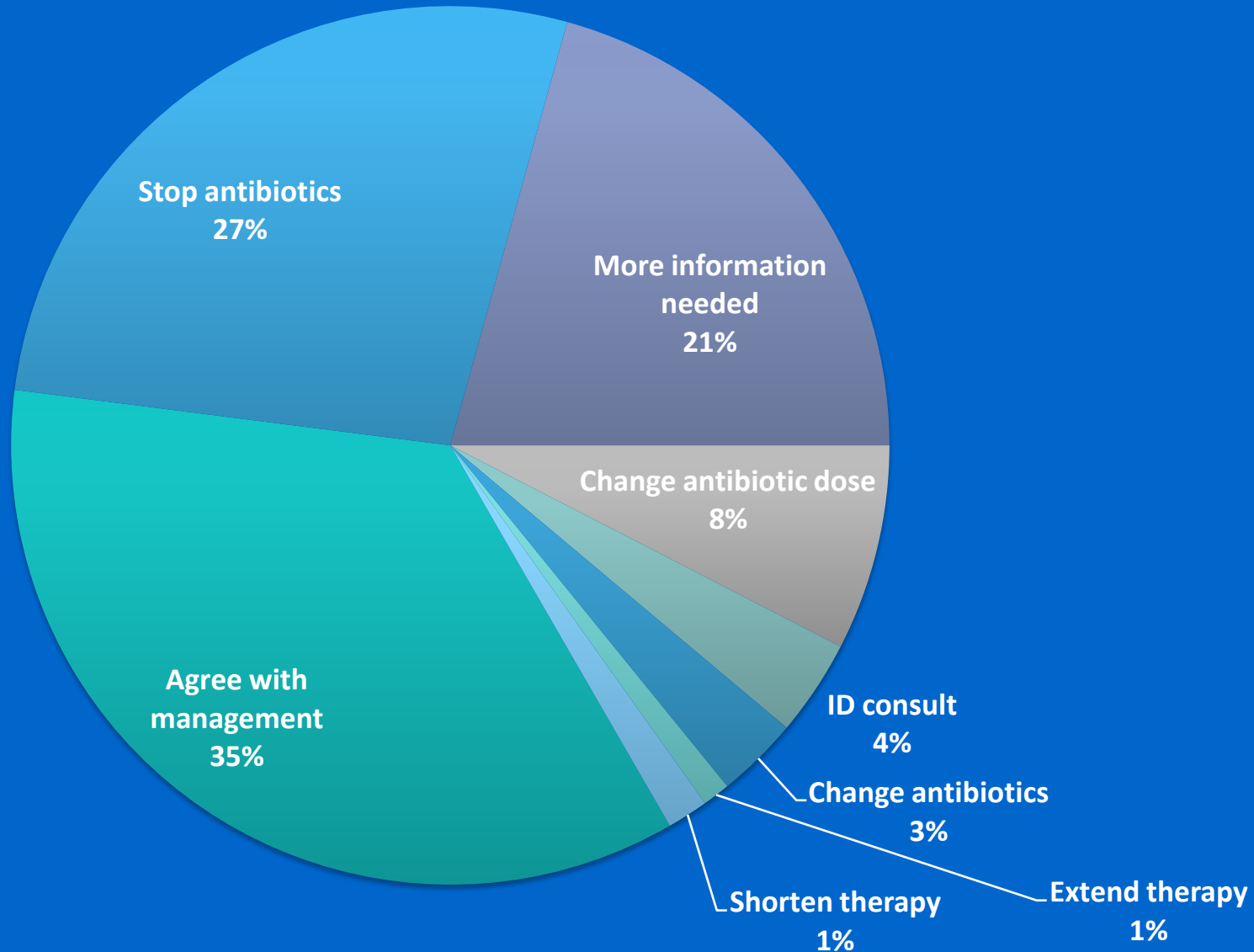
Sputum cx 8/10: moderate MRSA, moderate Group B Strep

Hospital-acquired Pnuemonia

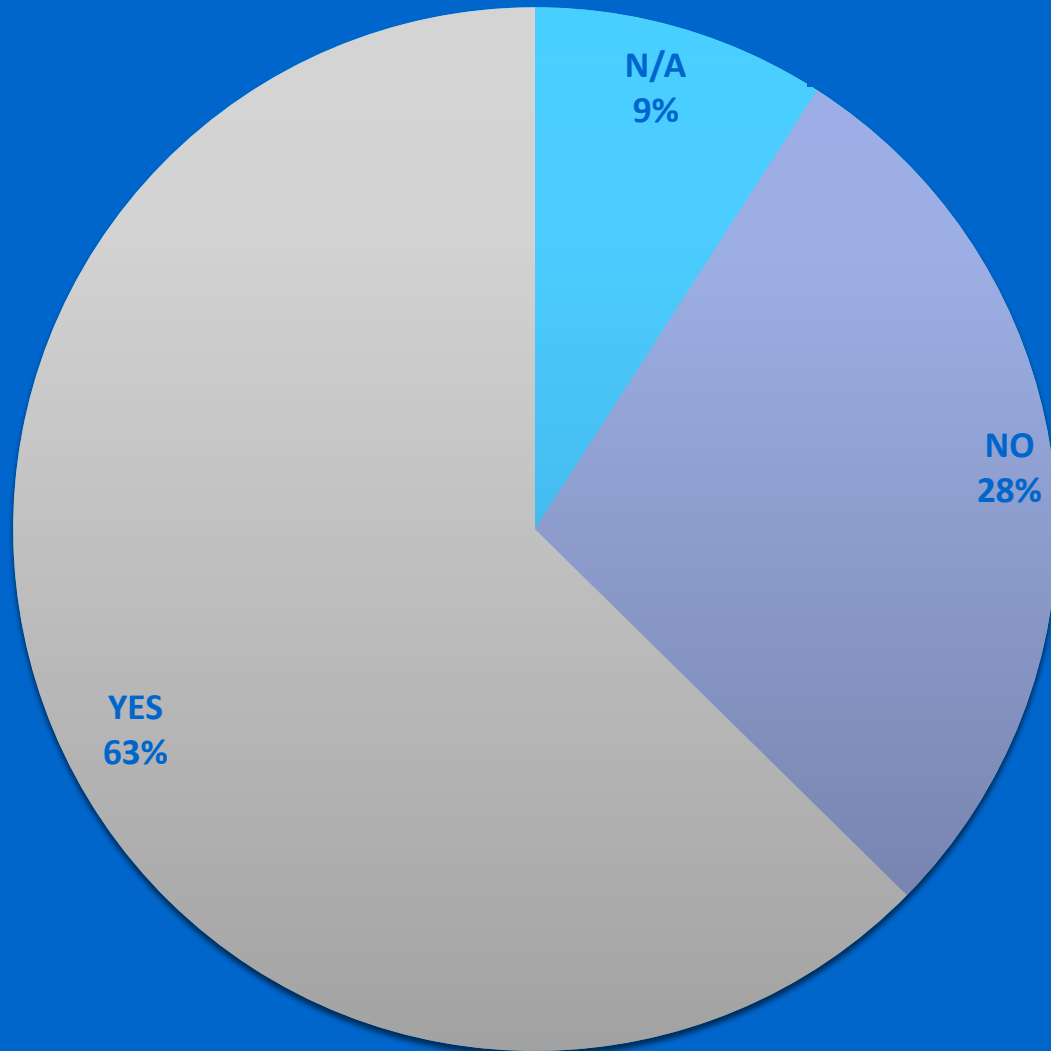
Recommendations: D/c doripenem as patient has grown staph and strep, both of which are covered by vanco

Types of Recommendations

April - August, 2011



Percentage of Recommendations Followed by Clinicians April-August, 2011



Antibiotic Stewardship

MetroWest Medical Center

.Vibha Sharma, M.D.

Infectious disease consultant and Medical director, infection control,
Marlborough hospital

Zsusun Timothy Yang, Rph

Pharmacy director
Marlborough hospital

MetroWest Medical Center Antibiotic Stewardship Committee

- Components of MWMC AS program
 - Development of guidelines, clinical pathways, standard order forms
 - Formulary restriction recommendations
 - Parenteral to oral therapy conversions
 - Clinical interventions (i.e., de-escalation)
 - Staff education
 - Monitor outcomes (i.e., C. difficile rate)

Antibiotic Stewardship Focus on C.diff Infections

- Fluoroquinolone Restriction
 - Recommendations for alternative treatment
 - In Collaborative Toolkit
 - Education for physicians
 - Tracking fluoroquinolone use
 - 2010 vs 2009
 - Levofloxacin tablet usage decreased by 18%
 - Levofloxacin IV usage decreased by 27%

Antibiotic Stewardship Focus on C.Diff Infections

- Clostridium difficile surveillance letter to physicians
 - Developed as a means to educate about appropriate antibiotic use
- Reinforce use of bleach disinfectant in environmental cleaning and bedside curtain change at discharge of C. diff patients
- Reinforce hand hygiene with soap and water in addition to the hand sanitizer

Memo

To:

From: Chinhak Chun MD., Karin Hjalmarson MD.
Co-Chairs, Infection Control Committee

Date:

Re: *Clostridium difficile* Surveillance

We are alerting you that your patient , **MRN:** _____ was diagnosed with ***C. difficile*** associated disease on _____.

The Infection Control Department has determined that it was most likely associated with the antibiotic(s) treatment / prophylaxis administered on _____.

This information is being shared in hopes of providing a learning experience in prescribing antibiotics as well as an opportunity to improve our practices. Using antibiotics only when indicated and choosing narrow spectrum agents in as short a course as possible can minimize the risk of ***C. difficile*** associated disease.

Please do not hesitate to contact us for any question or suggestions.

Antibiotic Stewardship at Marlborough Hospital

.Vibha Sharma, M.D.

Infectious disease consultant and Medical director, infection control,
Marlborough hospital

Zsusun Timothy Yang, Rph

Pharmacy director
Marlborough hospital

FLOUROQUINOLONE RESTRICTIONS

- As of 12/1/10 FQ restriction to ID.
- 24 hour supply allowed.
- Pharmacy contacts via communication sheet/paging MD.
- ID contacted via email.
- Further supply restricted to ID approval.

COMMUNICATION SHEET USED

From: Pharmacy To:
Flouroquinolone restriction

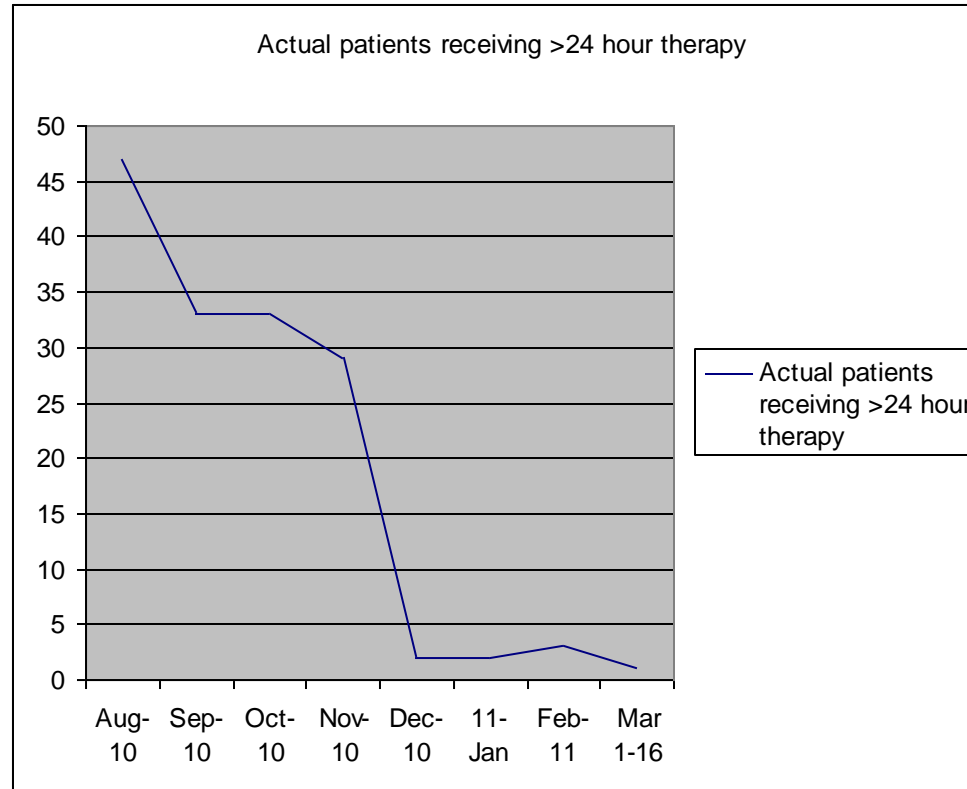
Dear doctor

A flouroquinolone has been ordered for this patient. Due to the increasing rate of resistant bacteria and C. diff colitis, flouroquinolones are now restricted (exception-CAP with PCN allergy). This antibiotic will be discontinued in 24 hours from the time of the order. Continuation of flouroquinolones requires ID approval. (Dr. Sharma) Restricted antibiotic ordered:

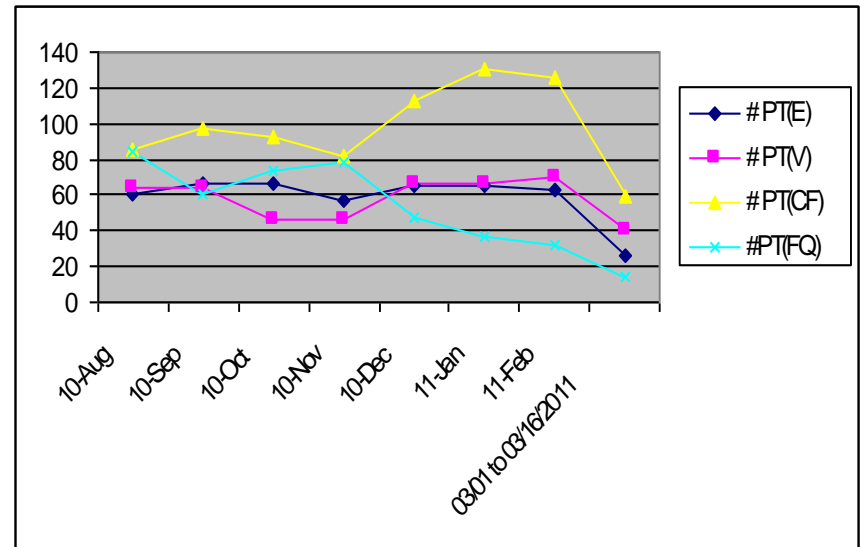
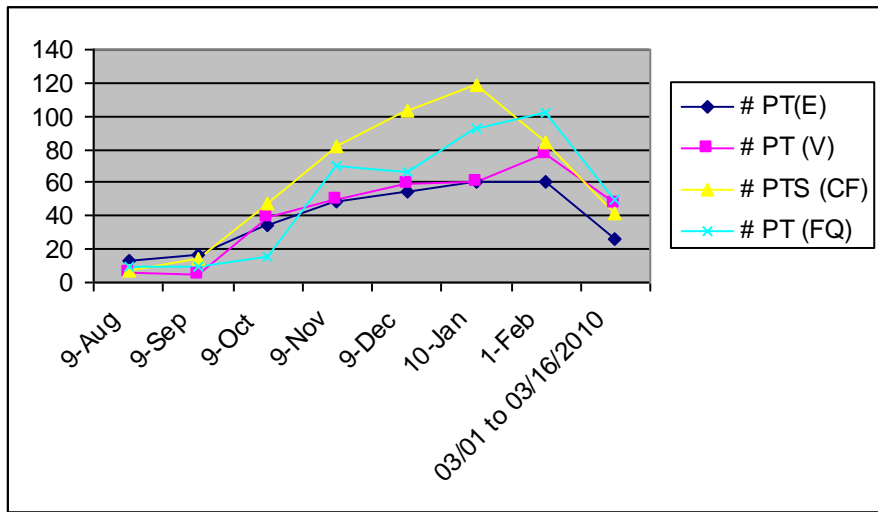
Pharmacist Signature:
Response:Message:

MD Signature:

Actual patients receiving > 24 hr Quinolone therapy

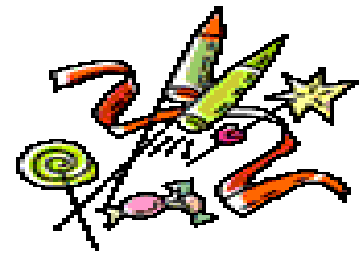


#PTS ABX DATA

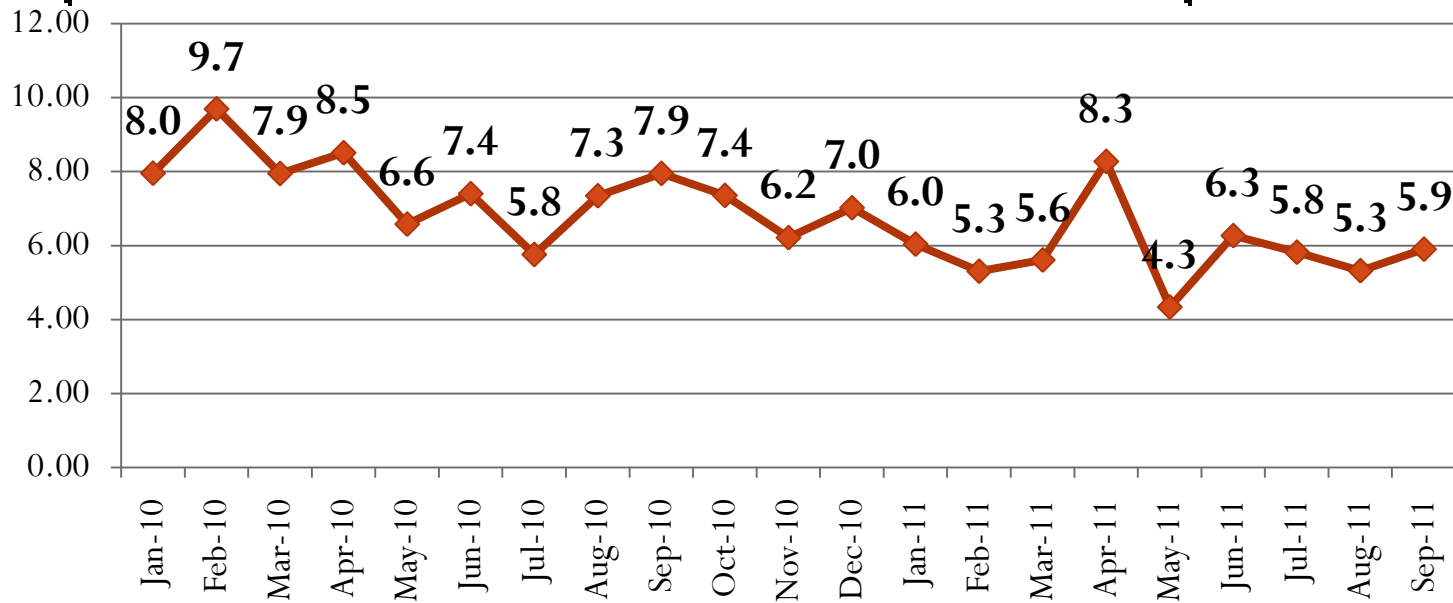


- Decline of patients on quinolones since December 2010.
- Does not take account if patient switches antibiotic or has multiple drug therapy.

THANK YOU!



MA HAI-CDI HA-CDI / 10,000 Patient Days NHSN Lab-ID Definition



Next Steps

If you are *not* continuing in the Partnership Collaborative:

- Rolling over the listserve
- Continue measurement and reporting through March 2011
- Keep in touch!

If you *are* joining the CDI Prevention Partnership Collaborative:

- Make sure you have given team list to Susanne or Sharon
- Enjoy lunch, next session starts at 12:15