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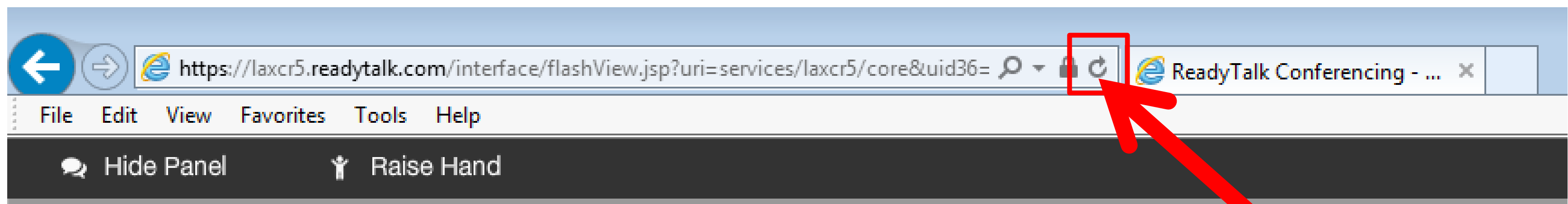
Audio from computer speakers breaking up?
Audio suddenly stop?

- **Click Refresh icon – or-**
  Click F5

F5 Key
Top row of Keyboard

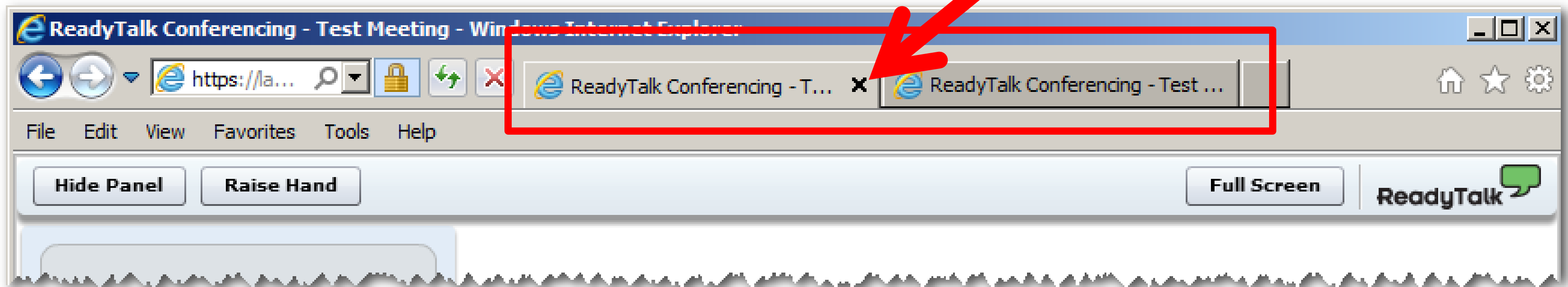


Location of Buttons

Refresh

Troubleshooting Echo

- Hear a bad echo on the call?
- Echo is caused by multiple browsers/tabs open to a single event – multiple audio feeds.
- Close all but one browser/tab and the echo will clear up.



Example of Two Browsers Tabs open in Same Event

Submitting Questions

Type questions in the “Chat with Presenter” section, located in the bottom-left corner of your screen.

Hospital Value-Based Purchasing (VBP) Program Patient Safety Series: MRSA/CDI

Michael S. Calderwood, MD MPH
Assistant Professor of Medicine, Harvard Medical School
Assistant Hospital Epidemiologist / Associate Director of Antimicrobial Stewardship, Brigham and Women's Hospital

Neil A. Zaboy, RN, BSN, CIC
Director Infection Prevention, Western Arizona Regional Medical Center

April 26, 2016
2 p.m. ET

Purpose

Provide hospitals with an understanding of how to improve Methicillin-Resistant *Staphylococcus aureus* (MRSA) and *Clostridium difficile* infection (CDI) rates within the Hospital VBP Program from hospitals who have improved their rates by implementing Healthcare-Associated Infection (HAI) prevention processes.

Objectives

Participants will be able to:

- Cite some of the processes the presenting hospitals used to improve their patient safety
- Discuss how the implementation of the hospitals' processes improved patient safety

Reductions in MRSA: Multiple Strategies with a Common Goal

Michael S. Calderwood, MD, MPH
Assistant Professor of Medicine
Harvard Medical School
Assistant Hospital Epidemiologist/Associate Director of Antimicrobial Stewardship
Brigham and Women's Hospital

MRSA Reduction Requires a Multifaceted Approach

- <u>Stop transmission</u>
  - Focus on hand hygiene
  - Improve environmental cleaning
  - Isolate carriers (with active surveillance in high risk populations)
- <u>Reduce patient infections</u>
  - Decolonization of MRSA carriers
  - Central Line-Associated Blood Stream Infection (CLABSI) prevention practices
- <u>Target selective pressure</u>
  - Antimicrobial stewardship

Hand Hygiene

- The Pittet *et al. study of* 2000 showed that a 38% improvement in hand hygiene compliance led to a 68% reduction in MRSA bacteremia
- A 12 study literature review of published data through 2009 confirmed a positive correlation between hand hygiene compliance and reduction in MRSA cases

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Lancet 2000;356:1307-12.

J Hosp Infect 2010;74:204-11.

Hand Hygiene

Hand hygiene rates are tracked* monthly with unit level data shared with frontline providers to drive practice change

- 2014-2015 Average HH Compliance, Non-ICU = 88-91%
- 2014-2015 Average HH Compliance, ICU = 90-93%

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*One infection preventionist focused on hand hygiene with multiple "secret shoppers"

Get Creative

- Engage all providers with:
  - Buttons, posters
  - Awareness days
  - Hand hygiene “champions”
- Involve patients and their families
- Celebrate improvement

Environmental Cleaning

Contaminated surfaces increase cross-transmission of pathogens

Risk of getting MRSA if previous room occupant had MRSA?

Retrospective study of 11,528 admissions to ICUs at Brigham and Women's Hospital

	Risk of acquisition
Prior room occupant MRSA negative	2.9%
Prior room occupant MRSA positive	3.9%

Arch Intern Med 2006;166:1945-51.

Risk of getting MRSA if previous room occupant had MRSA?

- Improvements in environmental cleaning dropped MRSA acquisition in half (3% ≥ 1.5%)
- No difference in MRSA acquisition by status of prior room occupant (1.5% vs. 1.5%)
- Enhanced ICU cleaning associated with reduced transmission

Arch Intern Med 2011;171:491-4.

Ensuring adequate cleaning of the environment

- Provide housekeeping with written room cleaning guidelines (in different languages, if necessary
- Consider using checklists and periodic observations to ensure consistent good practice
- Educate and engage housekeeping staff

Consider creative ways to assess adherence and provide feedback

Fluorescent marker

- Glows under black light (UV flashlight) – an inert, non-toxic, invisible gel
- Used to mark surfaces prior to environmental cleaning (e.g., bedrails, toilet handle)
- Aids in assessing adequacy of cleaning and identify opportunities for improvement

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Clin Infect Dis 2006;42:385-8.

Isolation of Carriers

- Jernigan *et al.* showed, 20 years ago, a 16 fold reduction in MRSA transmission attributable to contact precautions in an outbreak setting.
- VA hospitals found similar impressive results when they implement universal nasal surveillance for MRSA with contact precautions for colonized/infected patients.

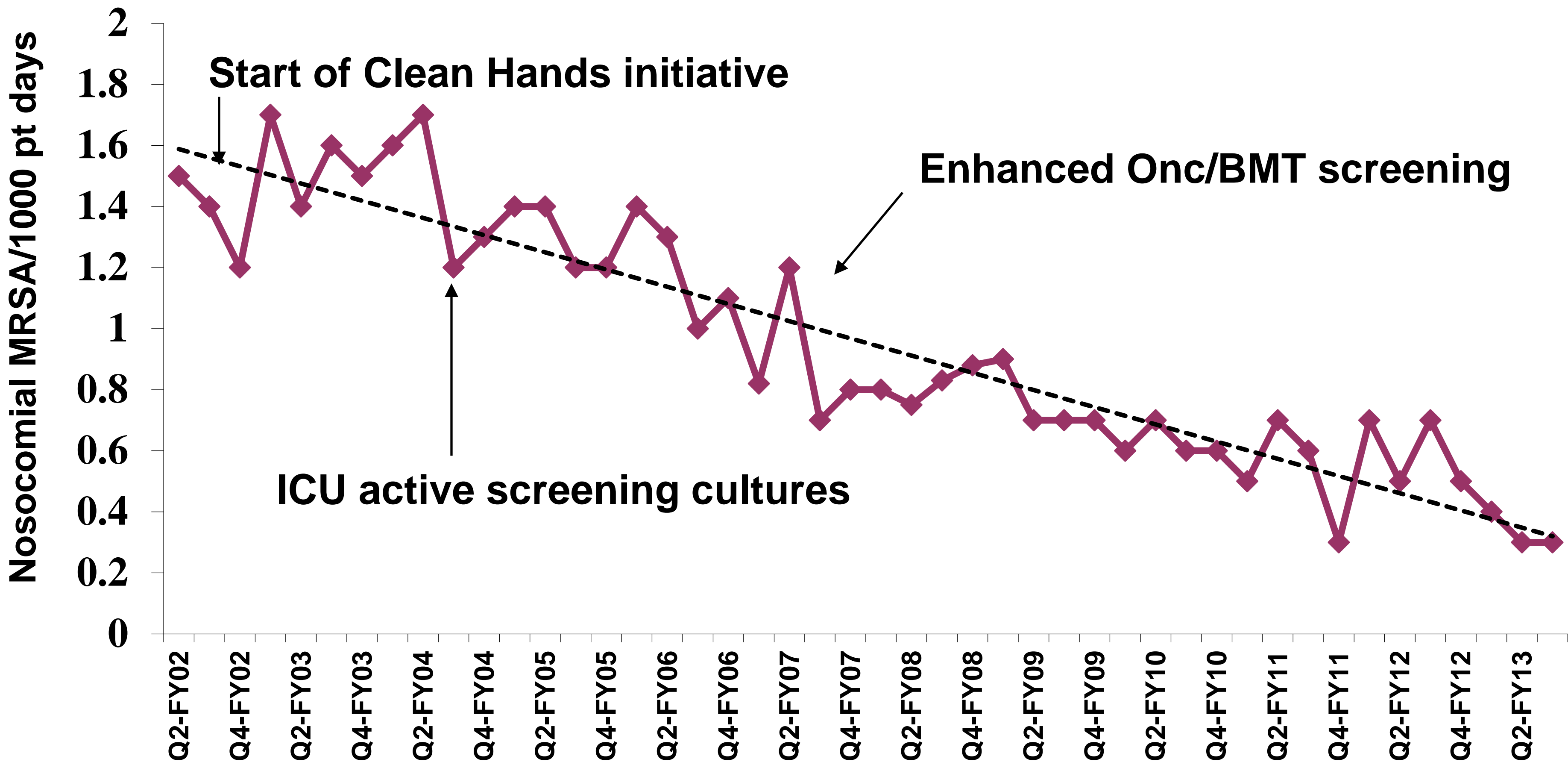
Am J Epidemiol 1996;143:496-504.

N Engl J Med 2011;364:1419-30.

Isolation of Carriers

- Perform admission and weekly nasal surveillance for MRSA on patients admitted to ICUs and BMT/ONC floors
- Place colonized and infected patients in a private room on contact isolation
- Continue precautions for all future hospitalizations until documentation of MRSA clearance

Local Impact on Nosocomial MRSA

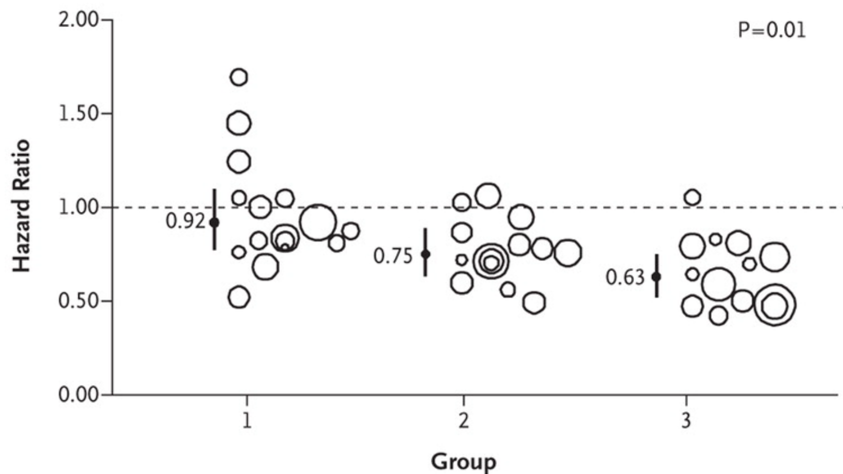


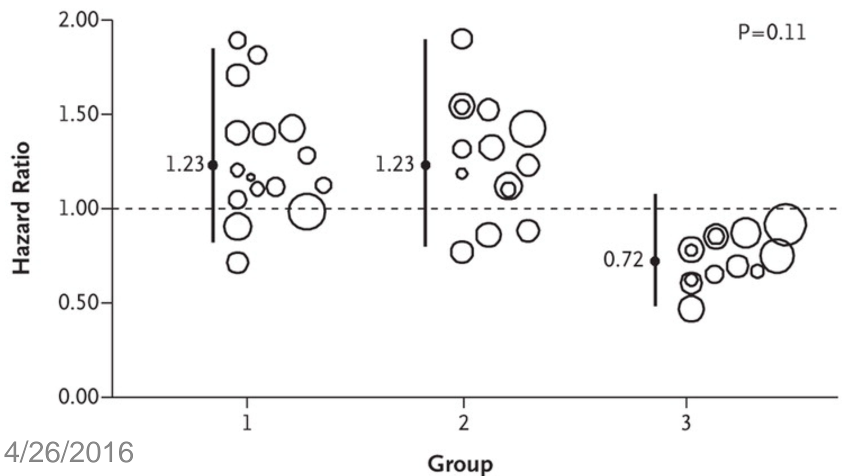
Why Does This Matter?

- What happens if you acquire MRSA in the hospital?
  - 33% develop invasive MRSA disease within one year
  - 9% die due to MRSA
- The risk of invasive disease extends beyond one year

Clin Infect Dis 2003; 36:281-5.
Clin Infect Dis 2008; 47:176-81.

Decolonization of Carriers

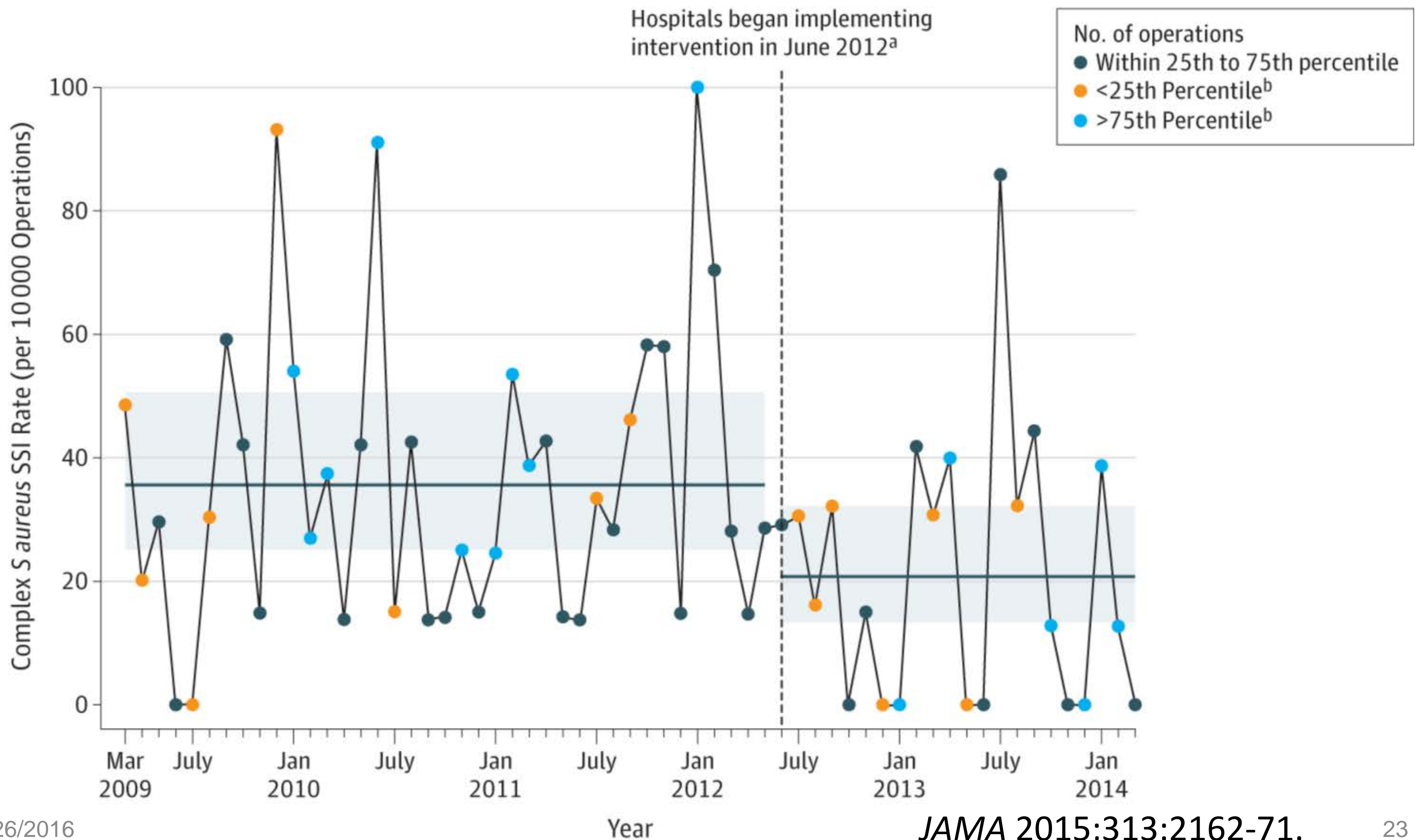




Universal decolonization of ICU patients with chlorhexidine plus mupirocin linked to significant reductions in MRSA clinical cultures (and similar declines in MRSA bacteremia)

N Engl J Med 2013;368:2255-65.

Decolonization of Carriers



JAMA 2015;313:2162-71.

Decolonization of Carriers

STOP-SSI trial showed a 42% risk reduction following arthroplasty/cardiac procedures with:

- Chlorhexidine bathing x5 days
- Mupirocin x5 days, if colonized in the nares with *Staphylococcus aureus*
- Addition of vancomycin, if MRSA colonized

JAMA 2015;313:2162-71.

Decolonization of Carriers

- Patients admitted to an ICU or to a BMT/ONC floor are given daily chlorhexidine bathing.
- Patients undergoing procedures with an implant are asked to perform pre-operative chlorhexidine showers with the addition of intranasal mupirocin, if positive for *Staphylococcus aureus* in their nares.

CLABSI Prevention

- Improved checklist (the original is from 2000, with the last revision in 2012)
  - Formal instructions on insertion technique
  - Use of U/S guidance for placement
  - Improved documentation of line care
    - "Scrub the hub"
    - Standardized dressing change practices
- Chlorhexidine sponge dressings (2010)
- Ethyl Alcohol (EtOH) line locks (2012)
- Improved securement devices (2013)
- Daily chlorhexidine bathing of ICU patients (2013-2014)

Antimicrobial Stewardship

- Antimicrobial stewardship interventions to reduce unnecessary use of antibiotics have beneficial impacts on local resistance, including MRSA prevalence.
- Comparing data from 2009-2010 to data from 2014-2015, Brigham and Women's Hospital had a 14% relative decline in the proportion *Staphylococcus aureus* that were MRSA.

Infect Control Hosp Epidemiol 2006;27:155-69.

Int J Antimicrob Agents 2013;41:137-42.

Cochrane Database of Syst Rev 2013;4:CD003543

Conclusion

The lower rates of MRSA infection (specifically MRSA bacteremia) at Brigham and Women's Hospital are due to multifaceted efforts to:

- Stop transmission
- Reduce patient infections
- Target selective pressure

Decreasing the Incidence of Lab ID *Clostridium difficile*

Neil A. Zaboy RN, BSN, CIC
Director Infection Prevention
Western Arizona Regional Medical Center

2013 through 2015 NHSN

orgID	location	summaryYQ	months	CDIF_facIncHOCount	numExpCDI	numpatdays	SIR	SIR_pval	sir95ci
	FACWIDEIN	2013Q1	3	6	4.356	8275	1.377	0.4237	0.558, 2.865
	FACWIDEIN	2013Q2	3	6	3.830	7263	1.567	0.2826	0.635, 3.259
	FACWIDEIN	2013Q3	3	6	3.230	6466	1.858	0.1553	0.753, 3.864
	FACWIDEIN	2013Q4	3	3	3.423	6706	0.876	0.8885	0.223, 2.385
	FACWIDEIN	2014Q1	3	0	3.357	7012	0.000	0.0348	, 0.892
	FACWIDEIN	2014Q2	3	2	3.314	6922	0.603	0.5134	0.101, 1.994
	FACWIDEIN	2014Q3	3	1	3.935	6566	0.254	0.1160	0.013, 1.253
	FACWIDEIN	2014Q4	3	0	3.821	6376	0.000	0.0219	, 0.784
	FACWIDEIN	2015Q1	3	1	0.031	51	.	.	
	FACWIDEIN	2015Q2	3	3	3.656	6100	0.821	0.7965	0.209, 2.234
	FACWIDEIN	2015Q3	3	2	3.336	5567	0.599	0.5065	0.101, 1.981
	FACWIDEIN	2015Q4	3	0	3.156	5267	0.000	0.0426	, 0.949

Strengths

- Multiple unit managers trained on NHSN, definitions and Sentri 7
- Concurrent Community Health System SEPSIS Collaborative during 2014
- Dynamic "Director - culture of responsibility"
  - "CEO of Directorate"
- Bristol Scale is CHS Corporate Standard
- Collaborative definitions and specifications
- Diagnostic imaging used by Radiologists, Hospitalists and ER physicians as diagnostic tool
- EHR facilitated look backs for history and patterns
- Post Discharge Surveillance through phone calls and office visits

Definitions and Specifications

- Manufacturer: watery without any solid particles
  - Tests for Clostridia spp.
  - Tests to identify growing CDIF is available
- CDC-3 or more watery, conformable stools within 12 hours
- Consecutive watery stools
- No GI motility, PEG, laxatives/softeners, purgatives, etcetera within 24 hours

Weakness

- Lack of peer review (e.g., directors review their own unit incidents)
- Want of a strong poop guru
- Absence of routine determination review meetings
- Need for articulated recordkeeping (e.g., not all directors are trained in the use of Sentri 7 – commissioned in late 2012)
- Misattribution of locations inadvertently aided by Billing (e.g., some OP locations appeared as IP (Observation) on lab requisition locations)

Opportunities

- Antibiotic Stewardship
- Pharmacist consult on all CDIF and Sepsis
- Documentation and recordkeeping improvements
- Infection determination script
- Laboratory script
- Both scripts accessible in Sentri 7
- Unit and Facility Wide reports development
- Community and other HCF contributions tracking
- NAAT-PCR conversion
- Different specimen, collection requirements and interpretation of results
- Marketing upgrade
- PCR technology education and up-management
- Biomarker use for increased medical decision accuracy
- Lactate and Procalcitonin

Threats

- Toxin assay used initially
- Diffuse requirements for specimen quality acceptance
- Multiple definitions of Diarrhea in play (Required Special High Intensity Training on diarrhea and related conditions conducted at orientation, safety huddles, Just-in-Time-Training and Restroom Education)
- Inappropriate stool specimens (did not conform to CDC or manufacturer's recommendations, much less to the container)
- Outside Agencies – Laboratory Clientele, Congregant Living Facilities, and community-at-large perceptions

Involved Departments

- Inpatient nursing (Surgical, Medical, Intensive Care, Obstetrics)
- Emergency Services
- Laboratory
- Infection Prevention
- Pharmacy
- Case Management
- Diagnostic Imaging
- Environmental Services
- Emergency Medical Service
- Health Information Management
- Preadmission and emergent surgery
- Rehabilitation, including Speech
- Clinics, Dialysis, WCC and Urgent Care

Data Entry

orgID	location	summaryYQ	months	CDIF_facIncHOCount	numExpCDI	numpatdays	SIR	SIR_pval	sir95ci
	FACWIDEIN	2013Q1	3	6	4.356	8275	1.377	0.4237	0.558, 2.865
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Data entry into the National Healthcare Safety Network (NHSN) on select forms required switching browser versions. Solution was not found until after data “locked.”

Continuing Education Approval

This program has been approved for 1.0 continuing education (CE) unit for the following professional boards:

- Florida Board of Clinical Social Work, Marriage and Family Therapy and Mental Health Counseling
- Florida Board of Nursing Home Administrators
- Florida Council of Dietetics
- Florida Board of Pharmacy
- Board of Registered Nursing (Provider #16578)
  - It is your responsibility to submit this form to your accrediting body for credit.

CE Credit Process

- Complete the ReadyTalk® survey that will pop up after the webinar, or wait for the survey that will be sent to all registrants within the next 48 hours.
- After completion of the survey, click “Done” at the bottom of the screen.
- Another page will open that asks you to register in HSAG’s Learning Management Center.
  - This is a separate registration from ReadyTalk®.
  - Please use your PERSONAL email so you can receive your certificate.
  - Healthcare facilities have firewalls up that block our certificates.

CE Certificate Problems?

- If you do not immediately receive a response to the email that you signed up with in the Learning Management Center, you have a firewall up that is blocking the link that is sent out.
- Please go back to the **New User** link and register your personal email account.
  - Personal emails do not have firewalls.

CE Credit Process: Survey

No

Please provide any additional comments

10. What is your overall level of satisfaction with this presentation?

- Very satisfied
- Somewhat satisfied
- Neutral
- Somewhat dissatisfied
- Very dissatisfied

If you answered "very dissatisfied", please explain

11. What topics would be of interest to you for future presentations?

12. If you have questions or concerns, please feel free to leave your name and phone number or email address and we will contact you.

Done

Powered by SurveyMonkey
Check out our sample surveys and create your own now!

CE Credit Process

Thank you for completing our survey!

Please click on one of the links below to obtain your certificate for your state licensure.

You must be registered with the learning management site.

New User Link:
https://lmc.hshapps.com/register/default.aspx?ID=da0a12bc-db39-408f-b429-d6f6b9ccb1ae

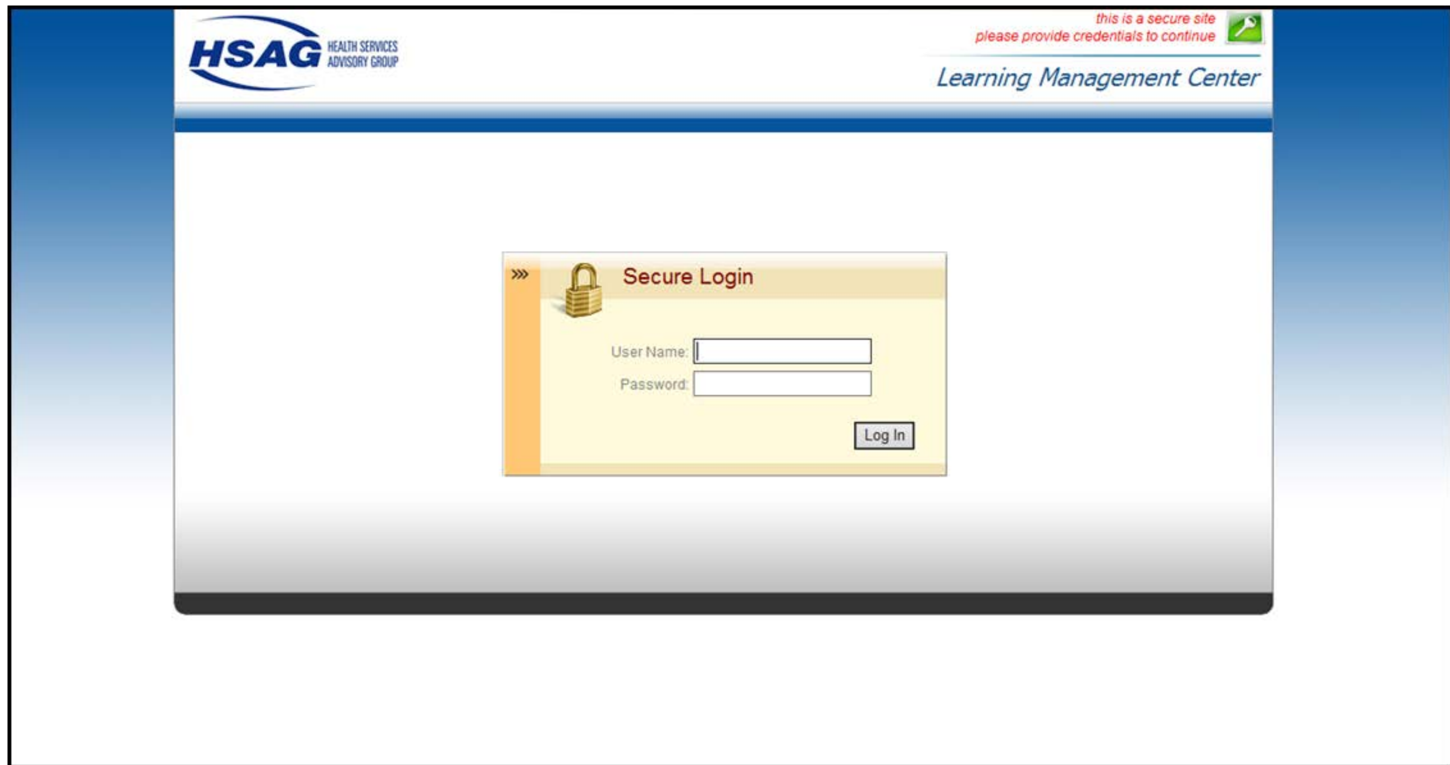
Existing User Link:
https://lmc.hshapps.com/test/adduser.aspx?ID=da0a12bc-db39-408f-b429-d6f6b9ccb1ae

Note: If you click the 'Done' button below, you will not have the opportunity to receive your certificate without participating in a longer survey.

Done

CE Credit Process: New User

CE Credit Process: Existing User



Resources

Hospital VBP Program section of CMS website:

http://cms.gov/Medicare/Quality-Initiatives-Patient-Assessment-Instruments/hospital-value-based-purchasing/index.html?redirect=/Hospital-Value-Based-Purchasing/

Hospital VBP Program Payment Adjustment Factor Table:

https://www.cms.gov/Medicare/Medicare-Fee-for-Service-Payment/AcuteInpatientPPS/Downloads/FY2016-CMS-1632-FR-Table-16.zip

Section 1886 of the Social Security Act:

http://www.ssa.gov/OP_Home/ssact/title18/1886.htm

Hospital VBP Program pages of *QualityNet*:

https://www.qualitynet.org/dcs/ContentServer?c=Page&pagename=QnetPublic%2FPage%2FQnetTier2&cid=1228772039937

Hospital VBP Program Scoring on *Hospital Compare*:

http://www.medicare.gov/hospitalcompare/data/hospital-vbp.html

Hospital VBP Program Aggregate Payments on *Hospital Compare*:

http://www.medicare.gov/hospitalcompare/data/payment-adjustments.html

Contact Us

Q & A Tool: https://cms-ip.custhelp.com

Email Support: InpatientSupport@viqrc1.hcqis.org

Phone Support: 844.472.4477 or 866.800.8765

Inpatient Live Chat: www.qualityreportingcenter.com/inpatient

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QUESTIONS?