



Frontline Nursing and Infection Prevention Engagement in Diagnostic Stewardship

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Objectives

- Identify background of multidisciplinary team approach to diagnostic stewardship
- Identify specific roles involved in diagnostic stewardship and their processes
- Identify tools used to support processes
- Review results of implementation of using a multidisciplinary team approach to diagnostic stewardship

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Clinical Infectious Diseases

VIEWPOINTS


Diagnostic Stewardship: Opportunity for a Laboratory–Infectious Diseases Partnership

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- Diagnostic stewardship refers to the appropriate use of laboratory testing to guide patient management, including treatment, in order to optimize clinical outcomes and limit the spread of antimicrobial resistance

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 **HHS Public Access**
Author manuscript
Infect Control Hosp Epidemiol. Author manuscript; available in PMC 2020 March 03.

Published in final edited form as:
Infect Control Hosp Epidemiol. 2018 February ; 39(2): 214–218. doi:10.1017/icc.2017.278.

Diagnostic Stewardship for Healthcare-Associated Infections: Opportunities and Challenges to Safely Reduce Test Use

Gregory R. Madden, MD¹, Robert A. Weinstein, MD², Costi D. Sifri, MD^{1,3}

- Diagnostic stewardship has a potentially important role in HAI surveillance
- The CDC through the National Healthcare Safety Network (NHSN), monitors >70% of all US hospitals for several hospital-related infections
 - SSI, CLABSI, CAUTI, ventilator-associated pneumonia (VAP) and health care facility-onset *C. diff* (HCDF)
- Surveillance-based definitions, such as those developed by the NHSN for HAI events
 - pragmatically designed for surveillance purposes and are not intended for use in the clinical evaluation

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**Diagnostic Stewardship for Healthcare-Associated Infections:
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C diff NHSN Definition

- For example, current NHSN surveillance definitions for HCDI
 - require only a positive test for *C. difficile* from an unformed stool specimen on or after hospital day 4
 - irrespective of patient symptoms, clinical condition, alternative diagnoses, or multistep testing laboratory algorithms
 - whereas clinical practice require clinical indications of disease
 - advocate that testing of asymptomatic patients is not clinically useful
 - many surveillance definitions cannot necessarily be used to distinguish true infections from false-positive tests

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Healthcare Acquired Infection (HAI) Impact and the Role of Diagnostic Stewardship


- On Dec. 9, 2019, a division of the CDC hosted a meeting to discuss improving patient safety through diagnostic stewardship
 - Diagnostic stewardship includes ordering the right test, for the right patient, at the right time, to provide the right treatment
 - Correctly diagnosing
 - CLABSI (central line associated bloodstream infection)
 - CAUTI (catheter associated urinary tract infection)
 - hospital onset C diff
 - Correct diagnosis has a direct impact on both the treatment of the patient as well as financial ramification for the healthcare facility

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MULTIDISCIPLINARY TEAM APPROACH


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Infection Prevention Team

- Infection Prevention Team
 - Core Infection Preventionists, Infectious Disease Physician, Quality Leader
 - Broader team
 - Unit directors for all units, nursing educators, CMO, CNO, hospital medicine physicians, ICU leaders, EVS
 - Ad hoc teams as needed
 - Close relationship with laboratory services
 - Implementation process such as 2 step C diff testing, Kurin use for blood draw
 - When orders are placed during working hours for Urine culture for patient with foley, blood culture for patient with central line or C diff
 - Orders are reviewed by IP team if appropriate
 - If there is concern for unnecessary orders then escalated to ID physician review and have discussion with ordering provider
 - Many times orders are deemed unnecessary
 - Non evidence based -Practice observed -pan-culturing and educating on appropriate culturing practices
 - ID physician take call at night for urine and blood culture ordered in the ICU if there is Foley or central line present
 - Data showed ICU higher blood draw at night


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Infection Preventionist

- Infection Perfectionists
 - Lead initiative, organize and direct meetings, supervise multidisciplinary team progress
 - Isolation compliance monitoring
 - Robust Hand Hygiene Program
 - Produce daily list of pending C. diff orders for review
 - Produce daily device list with cares and indications for review by bedside nursing and teams
 - Creation of dashboard for ongoing monitoring and quality initiative progression
 - Lead post HAIs event review for findings/opportunities
 - Held with in days of the event, multi-disciplinary approach and all bedside nursing and providers involved invited to debrief
 - Gaps discussed

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EMR development

- IT Infrastructure development with some examples below
 - Close working relationship and EMR ordering update
 - Hard stop for C diff testing if criteria are inappropriate
 - If order needed – discussion encouraged with IP and ID team – then can place order
 - Urine culture orders- indication, source hard stop

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CHI Health System Wide HAI Approach

- Monthly System Wide HAI meeting Held
 - Each hospital present their cases and discuss in boarder group
 - Lessons learned shared
 - Best practices discussed

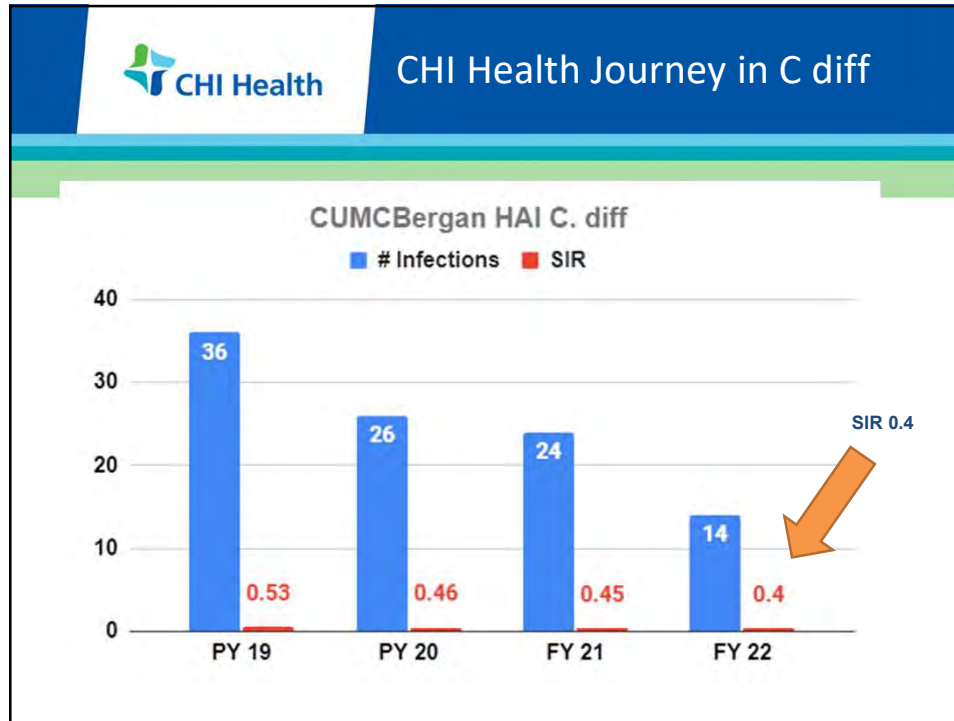


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Clostridioides difficile

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Nursing Driven C diff Initiatives

- Bedside nurses assess patients on admission and daily for diarrhea and possible C. diff
- Isolation placed by nursing immediately upon suspicion of C. difficile infection
- Initiate Code D Checklist for every patient with diarrhea present day 1, 2 and 3
- Initiate C diff Checklist after day 3
- Monitor isolation compliance with use of PPE and soap and water for hand hygiene
- Participate in HAI post event review


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Code D Checklist

- Encourage isolation and testing of all patients with diarrhea present on day 1, 2 or 3 of admission, where admit day is day 1
 - If there concern for infectious process
 - Bedside nursing and bedside providers make this collaborative decision when appropriate
- Prior to order being placed
 - C diff checklist completed
 - Check list not part of medical record
 - Completed and shared with IPs

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Code DIARRHEA Checklist

Complete this tool if diarrhea is present on day 1, 2 or 3 of admission

"Code D"

Bristol Stool Scale	
Specimens need to be a Bristol Type 6 or 7 to be accepted for C.diff testing	
Type 6	 Puffy pieces with ragged edges; a mushy stool that conforms to the container
Type 7	 Watery, no solid pieces. Entirely liquid.
Referral Review:	

Admit Date: _____
Specimen Date: _____

Step 1: Place patient in Modified (Enteric) Contact Isolation Precautions.

Step 2: Place "DO NOT USE" signage over hand sanitizer dispenser in the patient's room and begin using soap and water for hand hygiene.

Step 3: Begin using bleach for cleaning of items.

Step 4: Discuss placing a GI Pathogen Panel and C.diff order with Provider.

No Yes GI Pathogen Panel and C.diff order placed.

No Yes GI Pathogen Panel and C.diff order NOT placed.

Reason: _____

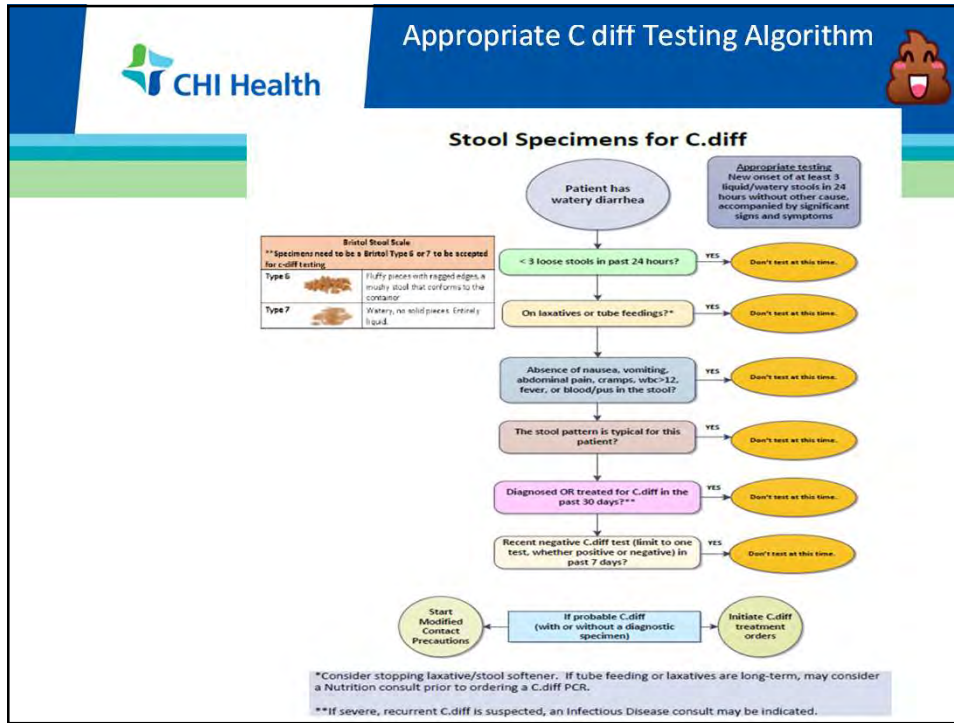
Provider Name: _____

Nurse Name: _____

CHECKLIST MUST BE FILED TO INFECTION PREVENTION AT 402-399-5638
NOT PART OF THE MEDICAL RECORD
5/4/23


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C Diff Checklist



Admit Date: _____
Specimen Date: _____

C Diff Checklist

Complete this tool to assess if it is appropriate to order a C.diff > 3 days after admission

Bristol Stool Scale	
Specimens need to be a Bristol Type 6 or 7 to be accepted for c-diff testing	
Type 6	Fluffy pieces with ragged edges, a mushy stool that conforms to the container.
Type 7	Watery, no solid pieces. Entirely liquid.

No Yes Less than 3 loose/watery stools (Bristol 6 or Bristol 7) in past 24 hours
 No Yes Given laxatives, stool softeners, or tube feedings in past 48 hours
 No Yes Symptom free (No abd pain, cramping or nausea, wbc>12, T>38°C)
 No Yes Stool pattern is typical for this patient
 No Yes Diagnosed or treated for C.diff in past 30 days
 No Yes Negative C.diff test in the past 7 days

If ANY of the answers are "YES", do not send the specimen.
Test appropriate No Yes

If inappropriate, discuss and recommend the order be canceled.

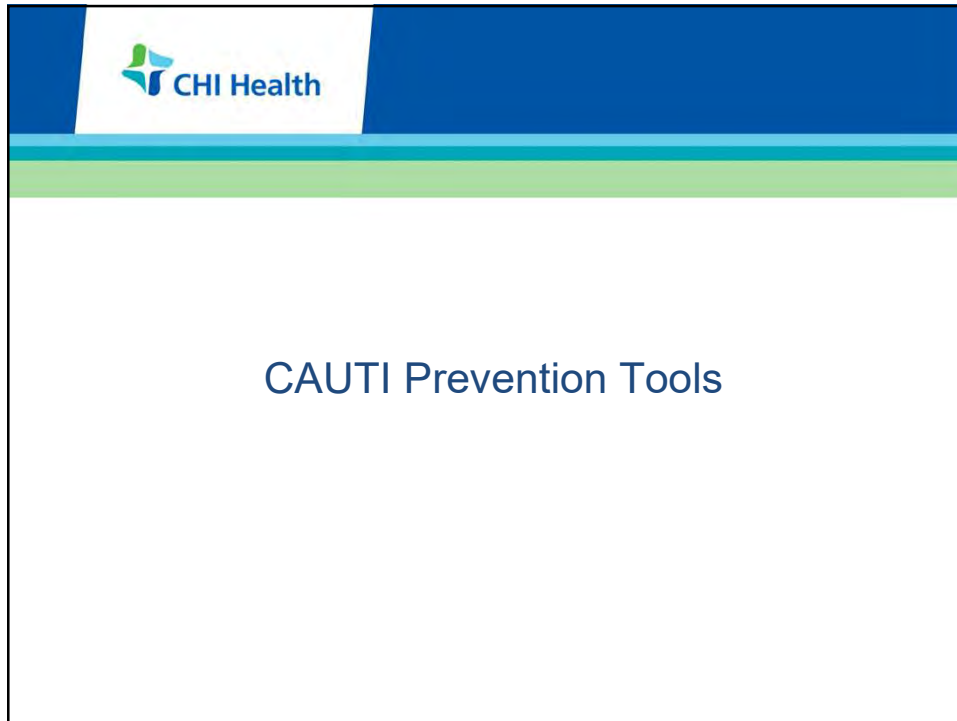
Name of Provider contacted: _____ Date/Time _____
Response: _____

If the provider still wants to proceed with testing of an inappropriate specimen > 3 days after admission contact: Charge RN, Manager or Infection Prevention - Angel Plueger (402-398-6877) or Becky Cook (402-398-6357)
Name: _____ Date/Time _____
Response: _____

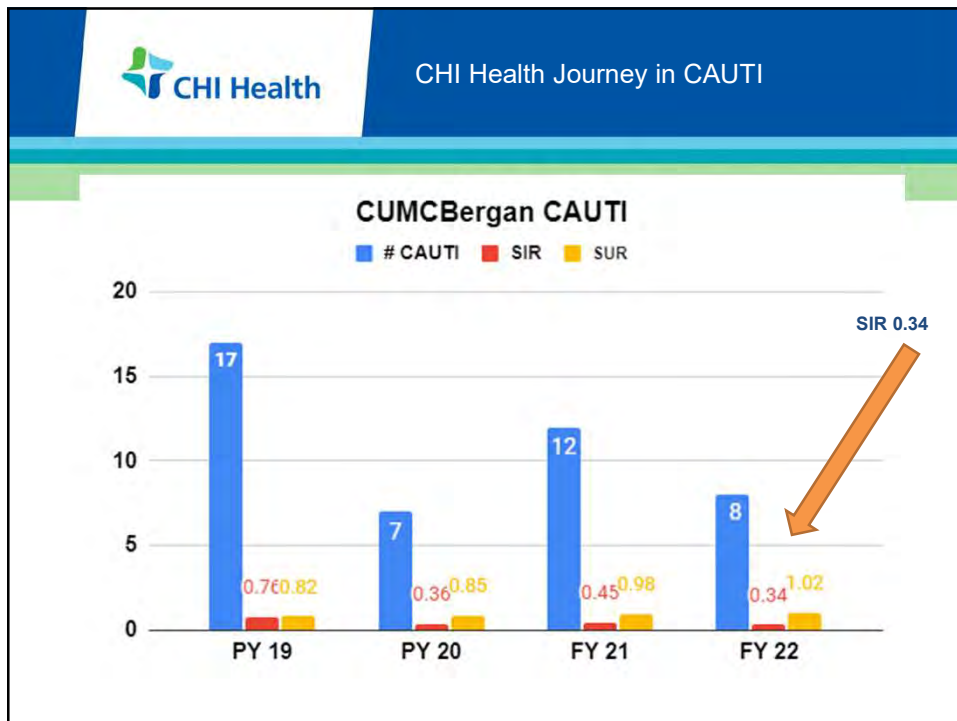
Name of staff member completing the form: _____

CHECKLIST MUST BE KEPT TO INFECTION PREVENTION AT 802 JAB 1818
NOT PART OF THE MEDICAL RECORD
5/4/23


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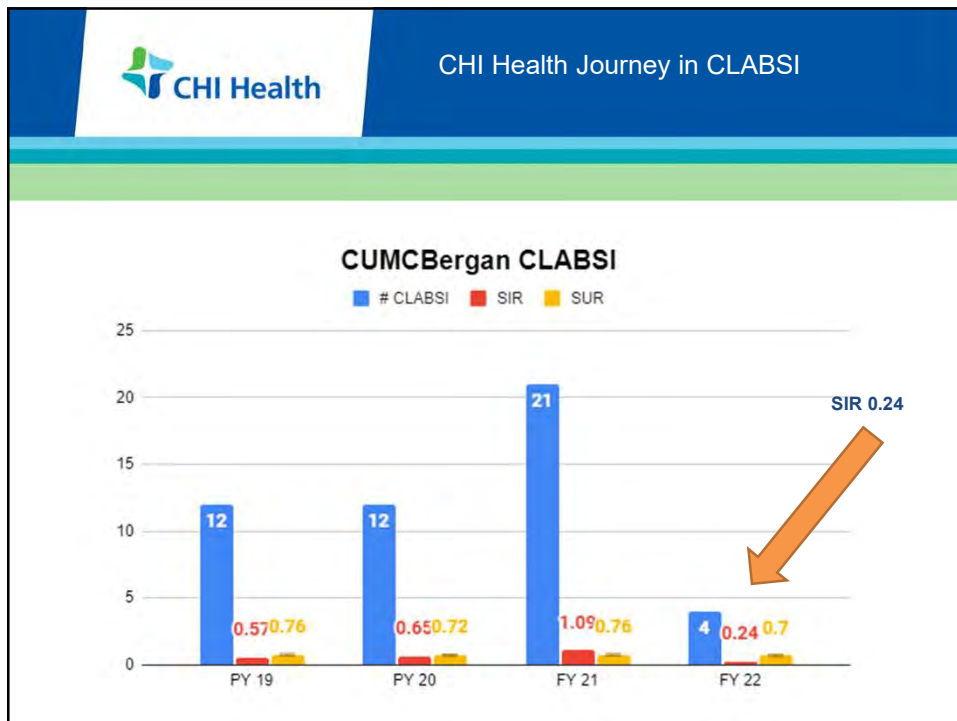


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CLABSI Prevention Tools

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Blood Culture Checklist

Patient Sicker: _____ Admit Date: _____
Specimen Date: _____

Blood Cultures

Yes No - Patient Has Central Line in place **currently** or removed in the past day.
 Yes No - Patient has had a Port accessed for > 2 days at any time during the current admission.

Yes, see below. No – draw blood cultures peripherally using Kurin and send to lab.

Rationale for Blood Culture
*** Blood cultures can only be drawn from the central line if lab is unable to get a peripheral draw OR the Provider suspects the line as a source of infection AND specifically order to draw from the line***

If Yes: **Nursing**-Notify Charge nurse, Manager AND Infection Prevention
 Infection Prevention: Angel 402-398-6877 or Becky 402-398-6357

Charge Nurse Notified: Date/Time _____
 Manager Notified: Date/Time _____
 Infection Prevention Contacted: Date/Time _____


Collected peripherally by RN using proper technique and the Kurin
(Do not draw specimens from the central line)

Lab collected using the Kurin
 Lab unable to draw
 Drawn from the central line
 Order in EPIC to draw from the line

Name of staff member completing form: _____ Date/Time _____
 Name of Leader verifying appropriateness: _____ Date/Time _____


CHECKLIST MUST BE FAXED TO INFECTION PREVENTION AT 402-398-5838
 NOT PART OF THE MEDICAL RECORD
 2/8/23

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Nursing Driven CLABSI Prevention

- Bedside nursing review blood culture order
- Complete Checklist
- When drawing blood culture
 - implemented peripheral draw
 - only access line if unable to draw peripheral
 - Using Kurin device on blood draw to decrease contamination
- Discuss with ordering provider if not appropriate
- If order not appropriate escalated to unit supervisor or IP team
 - Review appropriateness of order
 - If there are question then reach back to ordering provider to discuss patient care




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Key Partnership for Success

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Housekeeping Services

- Monthly report of ATP testing for cleaning compliance in all contact isolation patient rooms
- Cleaning process utilizing bleach for terminal cleans
- Ongoing education and competency monitoring
- Participate in HAI post event review


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Physicians

- EMR optimization:
 - Hard stops on order entry for C. diff testing
 - Isolation order attached to C. diff order
- Infectious Disease faculty available to review orders as needed
- Physician from other disciplines actively involved
 - Hospital medicine, Critical care, Urology, Surgery
- Participate in HAI post event reviews

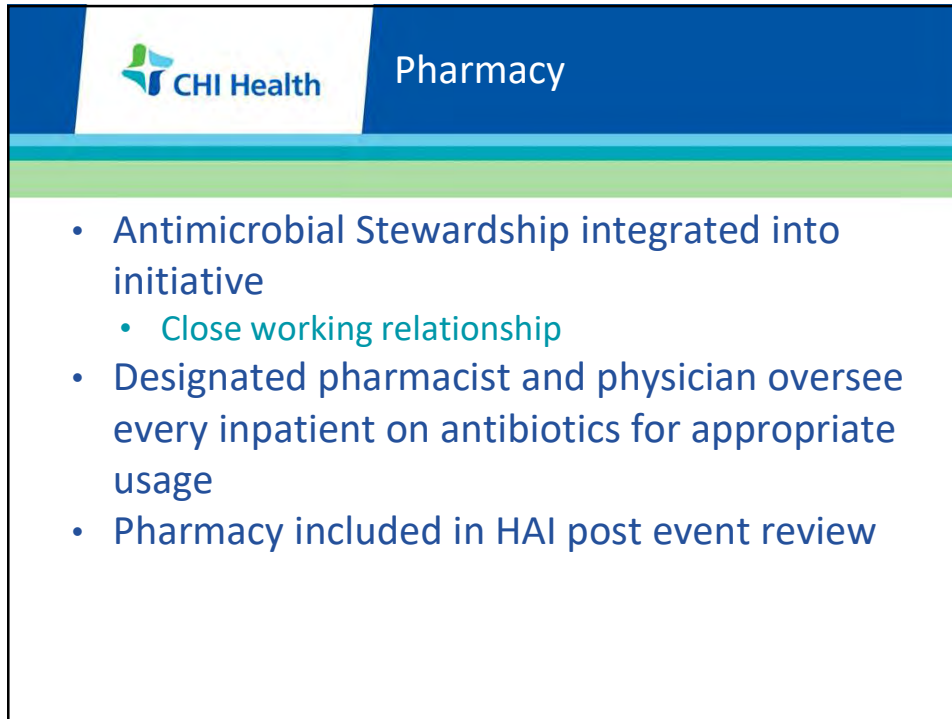
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Lab Services

- Standardized method of testing to two-step method
- Heightened awareness of collecting blood peripherally, and use of Kurin device
- Participate in HAI post event reviews
- Participated in new quality improvement project

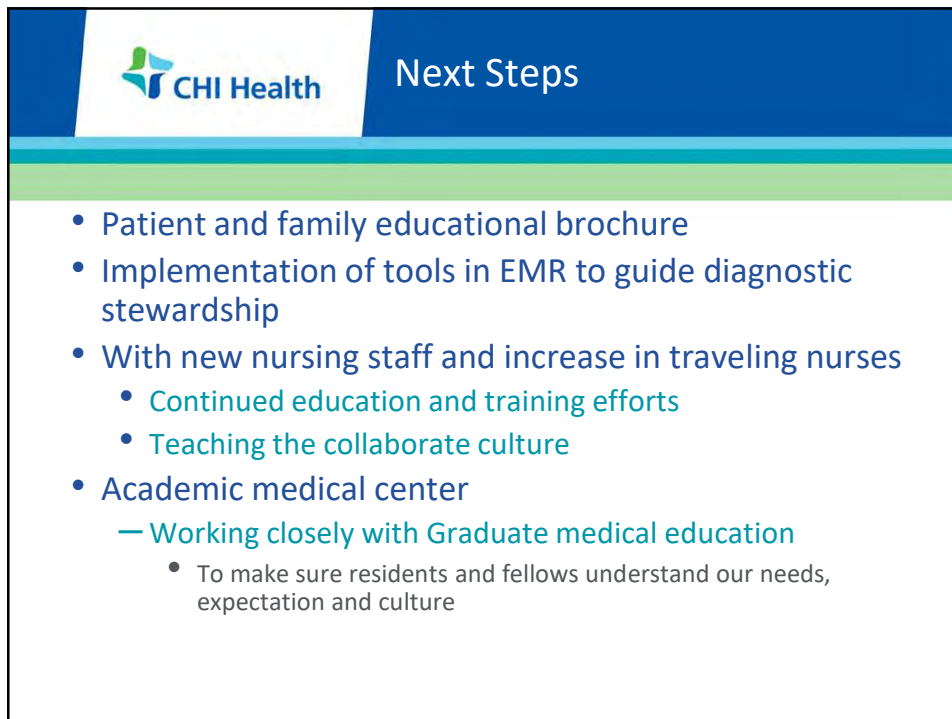
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CHI Health Pharmacy

- Antimicrobial Stewardship integrated into initiative
 - Close working relationship
- Designated pharmacist and physician oversee every inpatient on antibiotics for appropriate usage
- Pharmacy included in HAI post event review


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CHI Health Next Steps

- Patient and family educational brochure
- Implementation of tools in EMR to guide diagnostic stewardship
- With new nursing staff and increase in traveling nurses
 - Continued education and training efforts
 - Teaching the collaborate culture
- Academic medical center
 - Working closely with Graduate medical education
 - To make sure residents and fellows understand our needs, expectation and culture

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Summary

- Diagnostic Stewardship
 - Can reduced unnecessary orders
 - Unnecessary antibiotics use
 - Creates a collaborative culture
 - Increase patient safety and outcomes
 - We have seen improvement in CAUTI, CLABSI and C diff rates

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QUESTIONS?

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