WPSC Web Conference

A COLLABORATIVE SYSTEMS-LEVEL APPROACH

TO ELIMINATING HEALTHCARE-ASSOCIATED MRSA, CLABSI and RESPIRATORY VIRUS INFECTIONS

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University of Washington Medical Center
June 13, 2012
Presenters

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Quality Liaison / MD Coach
Medical Services Administration

Ellen Murphy, RN, MN
Manager, Employee Health and Infection Control Programs

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Medical-Surgical Vascular Access CNS

Katy Folk-Way
Patient & Family Advisor
UW Medicine System

- University of Washington Medical Center
- Harborview Medical Center
- Northwest Hospital & Medical Center
- 7 UW Medicine Neighborhood Clinics
- UW School of Medicine
- UW Physicians
- Airlift Northwest

Shares in the ownership & governance of

- Children’s University Medical Group
- Seattle Cancer Care Alliance

Serves the 5-state WWAMI Region

- Washington
- Wyoming
- Montana
- Alaska
- Idaho
# University of Washington Medical Center

## UW Medical Center
- 450-bed academic medical center
- Employees 4,300
- Faculty Physicians 1,800
- Residents & Fellows 1,180

## 2010 Census
- Hospital Admissions 19,300
- Surgery Cases 4,850
- Emergency Dept Visits 27,000
- Clinic Visits 333,600

## Areas of Specialization
- Cardiology
- Neurosurgery
- Oncology
- Orthopaedics
- Otolaryngology/Head & Neck Surgery
- Transplantation: heart, lung, liver, kidney/pancreas, & small intestine
- High Risk Pregnancy
- Level III Neonatal Intensive Care
High-risk Patient Population
Especially Vulnerable
To Healthcare-Associated Infections

• 86 oncology beds, including bone marrow transplantation
• 5 solid organ transplant programs
• 36 NICU beds—expanding to 50
<table>
<thead>
<tr>
<th>Number of Healthcare-Associated Cases</th>
<th>HA-MRSA</th>
<th>HA-CLABSI</th>
<th>HA-Resp. Virus</th>
</tr>
</thead>
<tbody>
<tr>
<td>HA- MRSA</td>
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<tr>
<td>HA- CLABSI</td>
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<tr>
<td>HA- Resp. Virus</td>
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</tr>
</tbody>
</table>
HA- MRSA, CLABSI, and Respiratory Virus

Number of Healthcare-Associated Cases

- MRSA
- CLABSI
- Respiratory Virus
Rates of Healthcare-Acquired Infections:

- **HA-CLABSI** per 1000 Line Days:
  - FY 2009: 1.295
  - FY 2010: 0.718
  - FY 2011: 0.633

- **HA-MRSA** per 1000 Patient Days:
  - FY 2009: 0.583
  - FY 2010: 0.376
  - FY 2011: 0.243

- **HA-Resp. Virus** per 1000 Patient Days:
  - FY 2009: 0.062
  - FY 2010: 0.166
  - FY 2011: 0.147
Eliminating Healthcare-Associated Infections

STRATEGIC PLANNING
Getting to Zero Targets

- **FY 2009** baseline
- **FY 2010** decrease HAIs 50% from baseline
- **FY 2011**
  - ✓ Decrease HAIs 50% from FY10 target
  - ✔ Added CAUTI
Key Drivers / Strategic Underpinnings

- Strong executive leadership
- Ownership by all
- No option to “opt-out”
- Partnership with patients/ families
- Realistic resource allocation
Key Drivers / Strategic Underpinnings

- Multidisciplinary teams
- Evidence-based solutions
- Transparent real-time data
- Robust communication strategy
- Standardized, accessible supplies
ICBG Leadership Team (meets monthly)

From Each Project Team
- Physician Champion
- Advanced Practice Nurse
- Infection Prevention Practitioner

UWMC Leadership
- Project Leader
- Project Manager
- Patient & Family Advisor
- CEO
- CNO
- UWMC Medical Director
- Medical Director, Healthcare Epidemiology & Infection Control

Associate Medical Directors
- Center for Clinical Excellence
- Inpatient Care
- Ambulatory Care

Directors/Managers
- Employee Health/Infection Control
- Laboratory
- Pharmacy
- Environmental Services
- Materials Management

Hand Hygiene Nurse Coach/Mentor

Ad hoc members as needed
ICBG Project Teams: Structure

- Ambulatory Care Clinics
- Community Relations
- Data Analysts
- Emergency Dept.
- Employee Health
- Environmental Services
- Facilities / Operations
- Health Educators
- I.T. Experts
- ISIS Team
- Laboratory
- Materials Management
- Nurse Managers
- OR/PACU
- Patient Care Staff
- Pharmacy
- Pre-Anesthesia
- Staff Development

Each team meets twice per month
Communication and Documentation

Project Plan ------------------------------- weekly update
Team Charters (by the whole team) ---------------- annual update
Team Status Reports (by team leaders) ---------------- monthly
Data Collection & Reporting ------------------------------- monthly
  • Outcome Measures
  • Process Measures
  • Dashboard
Board Report ----------------------------------------- monthly
Team-specific data and reports ---------------------- as needed
ICBG Dashboard: Published Monthly

### UWMC FY 2012 Infection Control Breakthrough Goal Dashboard

**May 31, 2012**

<table>
<thead>
<tr>
<th>Metric</th>
<th>FY11 Actual</th>
<th>FY11 Target</th>
<th>FY12 Actual</th>
<th>FY12 Target</th>
<th>Jul-11</th>
<th>Aug-11</th>
<th>Sep-11</th>
<th>Oct-11</th>
<th>Nov-11</th>
<th>Dec-11</th>
<th>Jan-12</th>
<th>Feb-12</th>
<th>Mar-12</th>
<th>Apr-12</th>
<th>May-12</th>
<th>Jun-12</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Methicillin-Resistant Staphylococcus aureus (MRSA) Infections</strong> (includes readmits with MRSA SSIs)</td>
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<td>Number of healthcare-associated MRSA cases</td>
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<tr>
<td>MRSA rate (per 1,000 pt days)</td>
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<tr>
<td>HA-MRSA: infection</td>
<td>Red</td>
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<tr>
<td>HA-MRSA: readmission with a surgical site infection</td>
<td>Green</td>
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<tr>
<td>HA-MRSA: colonization</td>
<td>Yellow</td>
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<td>Adult ICU only</td>
<td>Red</td>
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<td>NICU only</td>
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<td>All other acute care units</td>
<td>Green</td>
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<td><strong>Compliance with hand hygiene: overall</strong></td>
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<td>May observations: 2,137</td>
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<tr>
<td><strong>Respiratory Virus Infections</strong></td>
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<tr>
<td>Number of healthcare-associated respiratory virus infections</td>
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<tr>
<td>Confirmed respiratory virus cases in which there was a delay in implementing Respiratory Precautions</td>
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<tr>
<td><strong>Compliance with influenza vaccination requirements:</strong> as of May 31, 2012</td>
<td>Vaccinations:</td>
<td>Declinations completed:</td>
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<td>Overall compliance with requirements</td>
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<td>Medical Center Staff</td>
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<td>Residents</td>
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<tr>
<td><strong>Percent of staff that have completed their annual respiratory protection training/N-95 mask fit testing</strong></td>
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<tr>
<td>Overall compliance with fit testing</td>
<td>May n</td>
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<tr>
<td>Patient Care Staff</td>
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<td>Residents</td>
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<tr>
<td>Medical Staff</td>
<td>May n</td>
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</tbody>
</table>

**Legend:**
- Green = Achieving 2012 target or better
- Yellow = At risk for not meeting 2012 target
- Red = Rate versus 2012 target
Full-Time Infection Prevention RN Coach-Mentor

- Comprehensive rounding schedule
  - All inpatient and onsite clinic locations
  - OR & PACU
  - All three shifts
  - 7 days per week

- Standardized assessment criteria
  - Hand hygiene
  - Correct use of PPE

- Monthly reports by service, unit, & role
Environmental Services PI Project

- Redesigned post-discharge room cleaning
  - Color-coded equipment
  - Room cleaning check-list
  - Quality auditing by supervisors
  - Glow-Germ monitoring
- Revised Environmental Services schedules
- Updated electronic room tracking system
- Involvement and recognition of staff
Coloring Coding

- 73 different pieces of furniture, equipment, and supplies in a patient’s room
- Color code = staff responsible for cleaning
Eliminating Healthcare-Associated Infections

PATIENTS & FAMILIES
Patient & Family Advisor Role

- Liaison with ICU patients & families
- ICBG Leadership Team member
- Representative / speaker
  - UWMC Leadership Council
  - Nursing Education classes
  - Washington State Hospital Association
  - UHC Conference
How many staff entered his room?

72 before lunch!
Eliminating Healthcare-Associated Infections

INTERVENTIONS & RESULTS: CLABSI
Outcome & Process Measures: CLABSI

- Numbers & rates of HA-CLABSI cases
- Rates of compliance with the CLABSI bundle
- Number of faculty physicians, residents, and nurses that have completed mandatory central line insertion training
**Interventions: CLABSI**

- Mandatory didactic and simulation training for all faculty physicians, residents, and nurses that insert central lines

- As of July 1, 2010: no line insertions without completion of the training

<table>
<thead>
<tr>
<th>Department (09-To Date)</th>
<th>Total to be Trained</th>
<th>Training Completed</th>
<th>Training Not Completed</th>
<th>Percent Trained</th>
</tr>
</thead>
<tbody>
<tr>
<td>Anesthesia</td>
<td>64</td>
<td>64</td>
<td>0</td>
<td>100%</td>
</tr>
<tr>
<td>Family Medicine</td>
<td>16</td>
<td>16</td>
<td>0</td>
<td>100%</td>
</tr>
<tr>
<td>Medicine</td>
<td>118</td>
<td>118</td>
<td>0</td>
<td>100%</td>
</tr>
<tr>
<td>Surgery</td>
<td>74</td>
<td>74</td>
<td>0</td>
<td>100%</td>
</tr>
<tr>
<td>Pulmonary &amp; Critical Care</td>
<td>14</td>
<td>14</td>
<td>0</td>
<td>100%</td>
</tr>
<tr>
<td>IM/Nephrology</td>
<td>5</td>
<td>5</td>
<td>0</td>
<td>100%</td>
</tr>
<tr>
<td><strong>Totals</strong></td>
<td><strong>291</strong></td>
<td><strong>291</strong></td>
<td><strong>0</strong></td>
<td><strong>100%</strong></td>
</tr>
</tbody>
</table>
Interventions: CLABSI

- FT Vascular Access Clinical Nurse Specialist (CNS)
- Standardized central line insertion cart
- Mandatory central line procedure checklist
- Empowered RNs to “stop the line”
- Multidisciplinary intensive reviews of each CLABSI case
- Daily automated report to identify and track all central lines
CVC Insertion Safety Checklist

Central Venous Catheter Standards and Safety Checklist

Pre-Procedure:
- Team members each confirm ISIS credentialing for CVC placement (UW Medicine required after July 1, 2010)
- Allergies to Heparin/Latex/Chlorhexidine/Lidocaine?
- Patient pain & anxiety addressed
- Consent form verified
- Test review
  - INR ≤ 1.5
  - Platelet ≥ 50,000 (recommended guidelines)
- Key Equipment/Supplies:
  - CVC cart present
  - Ultrasound present
- Confirm and agree on “Stop-the-Line” criteria (e.g. breaks in sterile technique or bundle elements, change in patient status)

Setup:
- All persons in room Cleansed Hands
- Monitor: ECG – SPO2 visible to operator
- Don cap/mask w eyeshield – sterile gown & gloves (operator(s))
- Don cap/mask w eyeshield (all other persons in room)
- Antiseptic application

Procedure:
- Cover patient with Large Drape
- Ultrasound guidance
- Catheter secured/dressed/flushed/capped/dated
- Chest X-ray ordered

Documentation:
- iVIEW Procedure Note: Inserting Provider & RN
- Provide Education to Patient and/or Family

Time Out/Final Verification:
- Check Patient ID with 2 identifiers (name, MRN, DOB)
- Announce procedure
- Patient positioned correctly for procedure (supine/trend?)
- Syringes/solutions labeled
HA-CLABSI Cases: CY 2010—CY 2011

- 82.2% of the HA-CLABSI cases occurred >7 days after insertion
- Which suggested that line maintenance was a key factor in acquiring a CLABSI

![Pie chart showing 82.2% and 17.8%]
HA-CLABSI Rates: CY 2010 & CY 2011

• CY 2010
  ✓ PICC rate: vs.
  ✓ Tunneled rate:

• Suggested that our focus needed to include tunneled lines
Maintenance Bundle: CLABSI

- Daily Evaluation of the CVC / Dressing Change
- Standardize Tubing Configuration & Change Protocol
- Standardize Needleless Access Device Care
- Bathing Protection Policies
- Gloving Policies
- Blood Culture Sampling
• Formed a tunneled line-specific CLABSI group to address issues unique to this population

• **Subgroups include:**
  ✓ Insertion techniques: Interventional Radiology
  ✓ Infection Control: Oncology
  ✓ Infection Control: Non-Oncology
CLABSI: Accomplishments

- Medical Unit: CLABSI-free for 2+ years
- Med/Surg ICU: CLABSI-free for 2 years
- CT ICU: CLABSI-free for 1 year
- BMT ICU: CLABSI-free for 1 year
- Ortho Unit: CLABSI-free for 1 year
- Oncology Unit: CLABSI-free for 1 year

**Going Forward:** Maintenance & Tunneled Lines (e.g. Oncology Population)
Eliminating Healthcare-Associated Infections

INTERVENTIONS & RESULTS: MRSA
Outcome & Process Measures: MRSA

- Numbers & rates of HA-MRSA cases
- Hand hygiene compliance rates reported by:
  - ✔️ Unit
  - ✔️ Service
  - ✔️ Professional Role
- Compliance with personal protective equipment (PPE) procedures
Outcome and Performance Measures: MRSA

Hand Hygiene Compliance Rates

Performance target
Compliance rates
HA-MRSA: Infections vs. Colonization
Interventions: MRSA

- Executive-level Expanded MRSA Team based on a Hospital Incident Command System (HICS) model

- Infection prevention training:
  - Faculty physicians
  - Residents
  - Staff

- Contact Precautions for high-risk patients
Interventions: MRSA

- Multidisciplinary intensive reviews of each HA-MRSA case
- Daily “Patients in Precautions Report”
- Dedicated stethoscopes in patients’ rooms
- Nurses’ SpectraLink phones left outside of patient rooms
- Hand gel products trials
Expanded MRSA Surveillance

• Universal active MRSA surveillance
  ✔ Designated units (ICU, NICU, General Medicine)
  ✔ High-risk patients (inpatient & preop screening)

• Added throat culture to R/O MRSA cultures

• History of MRSA Alert in the EMR

• Changed OR/PACU protocols for patients with a history of MRSA
Eliminating Healthcare-Associated Infections

INTERVENTIONS & RESULTS: RESPIRATORY VIRUS
**Outcome & Process Measures: Resp. Virus**

- Number of HA-respiratory virus cases
- Number of confirmed respiratory virus cases in which there was a delay in implementing Respiratory Precautions:

<table>
<thead>
<tr>
<th></th>
<th>FY 2010</th>
<th>FY 2011</th>
<th>FYTD 2012</th>
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<tbody>
<tr>
<td>Total Number of Resp. Virus Cases</td>
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<tr>
<td>No. of Resp. Virus Cases with a Delay in Implementing Precautions</td>
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<tr>
<td>% of Resp. Virus Cases with a Delay in Implementing Precautions</td>
<td>4.3%</td>
<td>3.4%</td>
<td>1.5%</td>
</tr>
</tbody>
</table>
• Rates of compliance with mandatory annual respiratory protection training / N-95 mask fit testing

• Rates of compliance with influenza vaccination recommendations

<table>
<thead>
<tr>
<th></th>
<th>Faculty Physicians</th>
<th>Residents</th>
<th>Staff</th>
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<tbody>
<tr>
<td>FY 2011</td>
<td>100%</td>
<td>91%</td>
<td>99%</td>
</tr>
<tr>
<td>FY 2012</td>
<td>100%</td>
<td>100%</td>
<td>99.8%</td>
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</tbody>
</table>
Interventions: Respiratory Viruses

• Converted the medical center from PAPRs to N-95 masks for Airborne precautions

• Respiratory protection training and fit testing of >4,400 faculty physicians, residents, and patient care staff
Interventions: Respiratory Viruses

- Deployed signage and kiosks with hand hygiene products & information to over 100 locations and 30 entrances, passageways and elevators

- Influenza vaccinations for over 6,500 staff, providers, and volunteers annually

- Implemented mandatory respiratory symptom screening for staff and visitors on patient units

I was screened on: [date]
Eliminating Healthcare-Associated Infections

COMMUNICATION PLAN
We all help keep patients safe. Please clean your hands.

Stephen P. Zieniewicz, FACHE
Executive Director

Preventing infections is in our hands.

University of Washington Medical Center
UW Medicine

Katy Folk-Way
Volunteer Patient
& Family Advisor

Preventing infections is in our hands.

University of Washington Medical Center
UW Medicine
Preventing infections is in our hands.
Questions?

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Medical Services Administration  
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