

# Development and Implementation of a Quality Program in a Pediatric Emergency Setting

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# Introduction

- Tracy Hartman, MHA, CPHQ, ASQ SSSGB
  - Quality Improvement Coordinator, ED and Urgent Care Centers
  - Six Sigma Green Belt, Certified by The American Society for Quality
  - Experience in Strategic Planning and Process Improvement



# Introduction

- Stacy Doyle, RN, MBA HCA, CPN
  - Emergency Department Manager
  - MBA in Healthcare Administration
  - Six Sigma Greenbelt
  - Five years of ED management experience



# Children's Mercy Hospital

- 364 beds
- 5,500 Employees
- Expansion
  - East Tower
  - Additional Campus
  - New Clinic Building



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# Quality Department/ Hospital Department Structure

- Unique Structure
- Quality Coordinators assigned to different areas (Emergency, Inpatient, Ambulatory Services)
- Strategic Initiatives
  - Infection Prevention
  - Implementation of Technology
  - Access/Flow/Throughput
  - Appropriate Placement of Patients



# CMH Quality Structure



# Children's Mercy Hospital ED/UCC

- 3 campuses seeing 148,158 patient visits in 2009
- Main ED, South Campus UCC, North Campus UCC
- Shared Divisional Leadership



# Main ED

- Level 1 trauma center
- 70, 598 patients in 2009
- Tertiary pediatric referral center
- Undergoing construction- increasing from 29 beds to 39 beds
  - 10 Critical rooms (4 trauma, 3 ortho, 3 major med)
  - 19 Urgent rooms
  - 10 Minor Care rooms



# South Urgent Care

- 54,915 visits in 2009
- 24/7 operation in satellite hospital with 50 inpatient beds
- Conversion to ED expected November 2010 (will open to ambulance traffic)
- 22 Beds
  - 2 Critical
  - 17 Urgent
  - 3 Minor



# Northland Urgent Care

- 22,645 visits in 2009
- Open from noon – 10pm 7 days a week
- Newest site opening 2003
- 16 Beds
  - 4 Critical
  - 3 Urgent
  - 9 Minor



# EM Structure

## MDs

- Division Chief
- Medical Director
- PEMs
- Associates
- PEM Fellows
- Residents

## Nursing

- Director- Emergency Nursing
- ED Manager
- Education Coordinators
- Charge Nurses
- Staff RNs
- Follow-Up (Outreach) RNs



# Challenges with Quality in the ED

- Different Shifts
- Collaborative Practice
- ED touched by many areas
- ED operations effected by rest of hospital
- Legal and regulatory requirements
- Constant flux of volumes and acuity
- No defined diagnosis group



# ED Quality Markers

- Left Without Being Seen
- ED Return Visits
- Length of stay (arrival-to-discharge and arrival-to-admit)
- CHCA Collaborative (Whole System Measures)



# Other Metrics

- Acuity (Triage Levels)
- Volumes
- Number of Trauma Activations
- Percent patients admitted



# Common Quality Language

- Six Sigma and Lean
  - DMAIC
  - 5 S's (Sort, Straighten, Shine, Standardize, Sustain)
- Rapid Cycle Improvement
- PDCA



# ED Quality

- ED/UCC Services Committee
  - Co-Chairs- ED Nursing Director and Medical Director
  - Facilitator: QI Coordinator
  - Coordinates quality measures and progress across division



# ED Quality

- ED Leadership Meeting
  - Co-Chairs ED Director and ED Division Chief
  - Membership includes all ED/UCC Managers and Medical Directors, IS Director, Quality Coordinator
  - Discusses Divisional leadership and throughput issues.



# ED Quality

- Clinical Care Committee
  - Co-Chairs Stacy and ED Medical Director
  - Discusses clinical and operational issues related to main ED
  - Implements change related to process improvement, regulatory requirements and clinical improvement.



# ED Quality

- FirstNet Leadership
  - Chair: Informatics Director
  - Membership: all ED/UCC leadership- both medical and nursing, Education Coordinators, Nursing Systems representatives, Quality Coordinator
  - Evaluates care and documentation standards related to the EMR



# Project Examples

- H1N1 Preparedness
  - 30%-50% volume increase in each location
  - Surges in late spring and early fall
  - Majority of patients worried well or influenza-like illness
  - AVIC overflow clinic development
    - Flowchart patients visits
    - Evaluation of criteria appropriateness
    - Evaluation of criteria compliance



# Project Examples

- ED Move
  - Initial move involved move of Critical Rooms
  - Mock resuscitation observed to determine optimal equipment placement.
  - Facilitators during first week of service to evaluate operational issues (suggestion box/list, weekly meetings, etc)
  - Equipment Pyxis implementation to optimize PAR levels and improve equipment access.



# ED Move

## Visual Character - ER/OR/MRI Addition



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# Project Examples

- ESI Triage
  - 5 level triage system evaluating resource usage endorsed by ENA and ACEP
  - Conversion to ESI with Fast Track Guidelines
  - Eventual movement to Rapid Triage
  - QA group run by staff nurses with Quality Department facilitator
    - Certain % each level evaluated
    - Appropriate classification
    - Patient disposition and resources



# ED and Radiology Quality

- Background
- Gowning and X-ray Preparation
- Ordering Proper Tests
- Turnaround times



# Let's Walk Through a Quality Project!



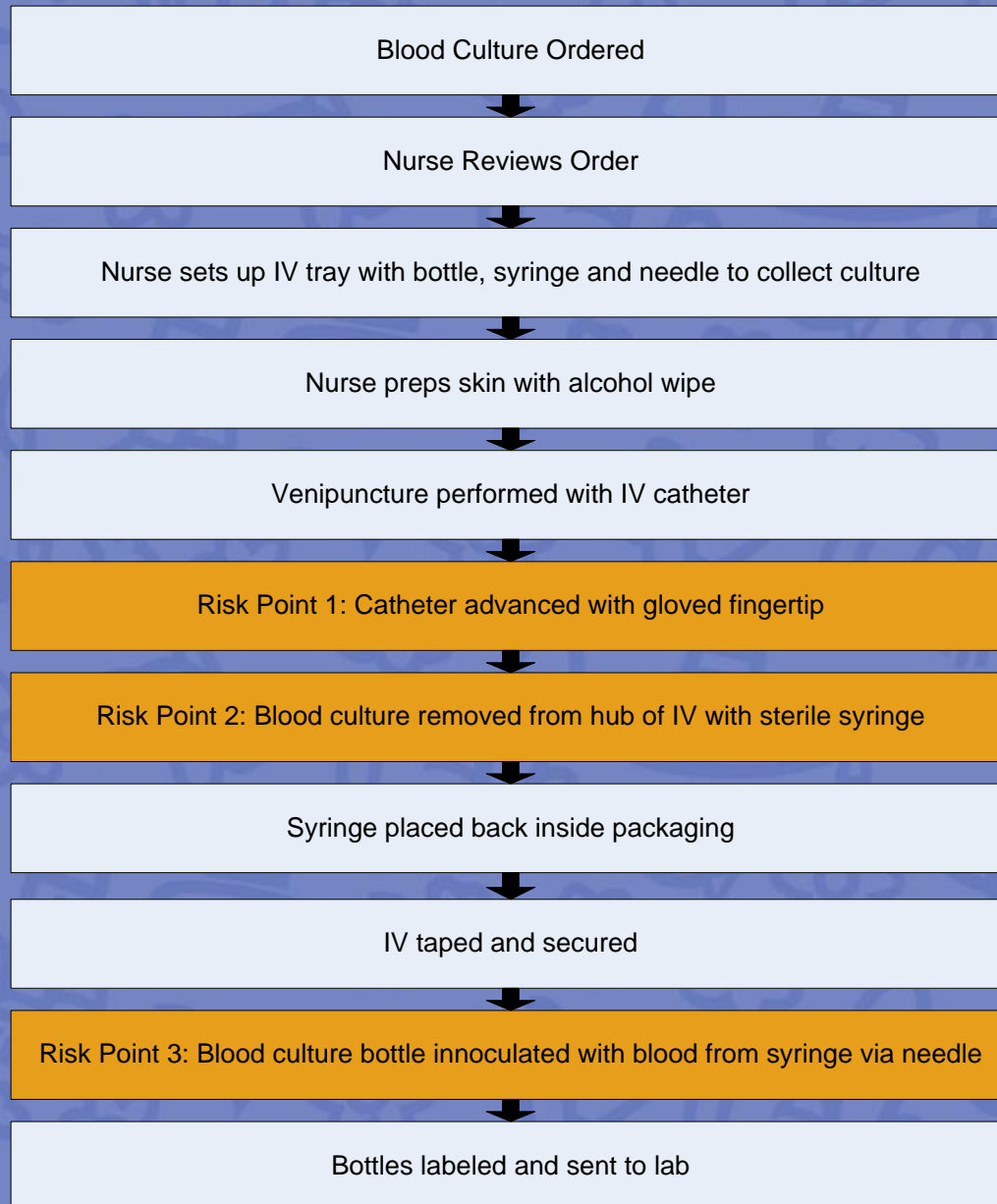
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# Blood Culture Contaminations

- Project Background
  - Lab results
  - National Benchmark
- **Define:** ED and Urgent Rate Rates of BCC > national benchmark
- **Measure:** % of contaminated cultures
- **Analyze:** Flowcharts Created



# Blood Culture Draw Process



# Blood Culture Project

- **Improve:**
  - Leadership Meetings
  - Decision Process
  - Education
  - Staff Involvement

## Risk Point Responses

Risk Point 1: Use separate needle sticks when obtaining a blood culture

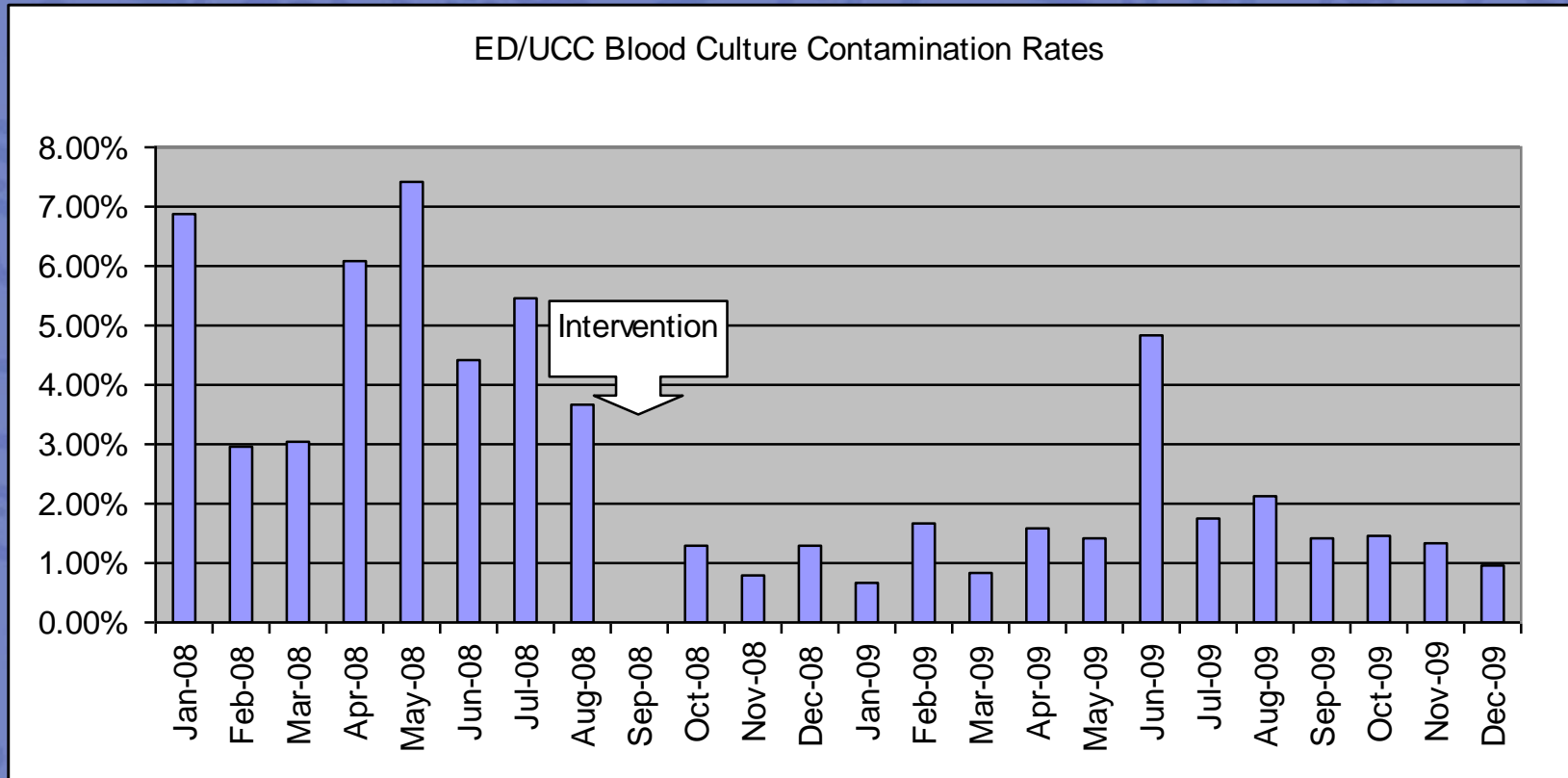
Risk Point 2: Use closed system; no longer collect blood from hub, instead draw directly from vein.

Risk Point 3: Staff were taught to properly prepare blood culture bottle by wiping the top with alcohol wipes (these were previously assumed to be sterile, but were not).



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# Blood Culture Project



# Blood Culture Project

- Pre-Intervention Average: 4.99%
- Post-Intervention Average: 1.47%
- Equates to:
  - 124 patients per month without contamination
  - 82.6 hours monthly of lab staff time
  - \$12,772 cost savings to the hospital per month



# Blood Culture Project

- **Controlling Gains**
  - Data monitored monthly
  - Spikes over 4% investigated by ED Leadership
  - Annual staff education



# Blood Culture Project

- Next Steps in Blood Culture Contamination
  - New group of staff nurses developing plan
  - Sterile IV starts for Blood Culture draws
  - Procedure performed by dedicated group of RNs with follow up on 100% of draws



# What's Next?



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# Suicide Screen

- Developed documentation with Nursing and IT
- Re-education MD & RN staff
- Track Daily
- Follow up with MD & RN for each case
- Public recognition of correct completion



# Medication Reconciliation

- Regulatory Requirement
- Cerner FirstNet System
- Difficult in ED due to unidentified population with little follow-up
- Collaborative Process Development
- Breakdown of Steps
- Assignment of Responsibility
- Tracking Compliance on Each Step



# Newborn Screening

- Screening of patients 31 days of age and under for appropriate state lab tests at birth
  - Screening done at triage
  - Follow up done by PCC on all negative and unknown
  - 100% chart audit done for compliance
  - Study being performed by staff RN and MD



# Horizontal Violence

- Developed to evaluate multidisciplinary professionalism and culture in the Peds ED
  - Service Excellence Committee has been meeting for 1 year
  - Developing a survey and focus groups for IRB approval
  - Run by ED Director, Manager, Medical Director, Division Chief and staff RN



# Weight Estimates

- Evaluation of weight estimation in the pediatric trauma patient
  - Study just starting
  - Submitting to IRB
  - Run by RN, MD, Trauma Services, Quality



# Tips and Tricks



# Q & A



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