



Florida Hospital System Central Florida - 7 Hospitals Part of Adventist Health Systems

• Altamonte

- Apopka
- Celebration
- East Orlando
- Kissimmee
- Orlando
- Winter Park



Where are we?

- Familiar with LEAN, DMAIC, 6 Sigma?
- LEAN Project (Ongoing or complete)
 - Core Lab
 - Pathology
 - Micro
- Thinking about Micro LEAN?
- Micro primary staffing
 - Day Shift?
 - 24/7?





























Improvement Element	Impact	Next Step
Engage Team to Design new Blood, Urine, and Wound Processes, workstations, and workflow	Improve positive TAT by 4-16 hours Improve negative TAT by 4-8 hours Free up 2+ FTE capacity	Waste Elimination Events • Blood Kaizen • Urine Kaizen • Wound Point-Kaizen
Engage Team to design and <u>pilot</u> new daily staff priorities and "pull" approach	Improve overall positive TAT by 12-24 hours Free up 2+ FTE capacity	 Daily Management and Overall Workflow Kaizen with Visual Management; purchase Incubato Pilot Workflow & Metrics Adjust schedules and mix
Train Leadership Team on CI Tools and Practices		Managing for Daily Improvement Workshop
Engage Team to Design new Respiratory, Genital, Stool, processes, workstations, and workflow	Improve TAT by 4-12 hours	Point Kaizen Events • Respiratory • Genital/Stool
Evaluate distributed vs. consolidated specimen processing model	TBD – contamination rate reduction, rework, and plate streaking labor	Track contamination rates, quality, and cost. Evalulate Previ Isola
Implement a monthly operational review practice	Sustainment and Continuous Improvement practice beyond initial transformation.	Develop lab scorecard and operational review practice



Two Approaches

- Urine Culture Pilot
- DMAIC/LEAN Project
 - > Blood Culture
 - Structured approach (includes Green Belt certification)
 - LEAN tools
 - Measurements
 - Implementation
 - > Sets foundation for future projects









Blood Culture Proc	ess Improvement		
Problem/Opportunity_statement 63.5% of all positive Blood Culture on a daily basis are reported beyond 80 hours at FH Microbiology, resulting in increased TAT and increased labor.	 Project Business Case: Elevate patient safety and clinical excellence by improving product through timely and consistent results for Blood Cultures that will allow accurate antibiotic therapy for the patient. This project is based on fiscal responsibility and reducing labor costs. It is important to do this now to gain efficiencies and expand capacity for future growth. Pharmacy may be able to change antibiotic therapy to reduce costs. 		
Proposed Project Scope (Identify What is out of scope)			
In Scope:Blood Cultures arrive in Microbiology, processed, resulted. Out of scope: Anything prior to specimen arrival, false positive contamination.	Customers (Prioritized list) Categivers Infectious Disease Physicians Nursing Infection Prevention (Claudette Johnson) Micro staff		
Team Members (Identify team leader)			
Sponsor: Patrick O'Sullivan Team Leader: Sandy Hernandez Scribe: Jaison Abraham Timekeeper: Maryanne Ciullo Process Change: Mary Ann Womack Ad Hoc: Angela Charles	<u>Additional Resources (</u> people / systems) LIS (Marty Gardner) Finance (Cecil Lowry)		

Analyze								
Blood Culture Process Improvement								
CTQ's - Goal(s) Create a standardized process and balance workload with labor for blood cultures by December 2010.	What risks of harrians do we have?. Current Project Risks : 1. Financial constraints (Funds not allocated for environmental changes) 2. Environmental constraints (lack of space, etc.) 3. Staff Buy-In.							
Microbiology will be final resulted in less than 80 hours.	Strategies to address above risks:1.Sponsor support to understand financial limitations.2.Use lean tools to maximize space (5S, workstation design).3.Early involvement of the staff.							
BC TAT (Rec. to Final)63.5%<80 Hours90%<80 Hours	 What are the key findings to date?: 1. UR Culture PI Project/Engaged Staff 2. Staffing concerns dues to absenteeism/LOA 3. Lack of standard work 4. Paperwork Intensive 5. No best practices available to benchmark. 							





Materials	Machines equipmen	
e located nearby The S specimens from Specimen Processing is not timely	6.1 Location/Quantity of Microscopes 6.2 Equipment not located in the same room	
i not parting ly earling things ending t or Frizing the more more more ending t or ending t ending t endi	Delay in charging co Londing battles charging co under under to doors	B Nul sching Record putes PEA touch Showing Micro- Scope with FD blood Cultures Offing "Ist" in whiching Ordered Winnighty







	Analyze				
X's	Metric used	Baseline	Baseline Capability Z score or % defects	Current	Target (Defect definition)
90% of all blood cultures received by Microbiology will be final resulted in less than 80 hours.	Median Cycl e time in Hours	Mean = 80.69 Median = 68.4 Hr St Dev =47.36 Hr (+ BC received June/July 2010 Removed outliers Out of Control)	Z(st) =1.95 DPMO = 365,805	Mean = 80.69 Median = 68.4 Hr St Dev =47.36	Defect is Cycle time >80 hr
X1: cycle time from arrival in Micro to MST	Median cycle time in Hours	<5 minutes, minimal impact		<5 minutes, minimal impact	
X2: cycle time from Incubation 1 to unload from Instrument.	Median cycle time in Hours	Mean = .04 Median = .027 St Dev = .04 Minimal Impact		Mean = .04 Median = .027 St Dev = .04 Minimal Impage	ant Step
X3: cycle time from unload to Incubation 2.	Median cycle time in Hours	Mean = 1.36 Median = 0.67 St Dev= 2.24 Minimal Impact		Mean = 1.67 Media = 0.67 Media = 2.24 Minimal Impact	
X4: cycle time from Incubation 2 to Incubation 3.	Median cycle time in Hours	Mean = 1.46 Median = 0.78 St Dev = 3.59		Mean = 1.46 Median = 0.78 St Dev = 3.59	
X5: cycle time from sensitivity results to final report	Median cycle time in Hours	Mean = 25.49 Median = 14.98 St Dev = 21.45		Mean = 25.49 Median = 14.98 St Dev = 21.45	













Lessons Learned

• Urine Culture Pilot

- > Single Piece Workflow the way to go!
- Next step is Big Bang implementation to all culture types (wounds, respiratory...)
- > Quick project may not have pre metrics
- > Very apparent this <u>Needs</u> to be done
- Requires staffing adjustments for 24/7 optimal culture reading
 - New workflow
 - New schedule



Challenges remain

- Finish Blood Culture Process
- Next step implementation
 - > All benches to "Urine/BC model"
 - > Requires staffing reallignment

