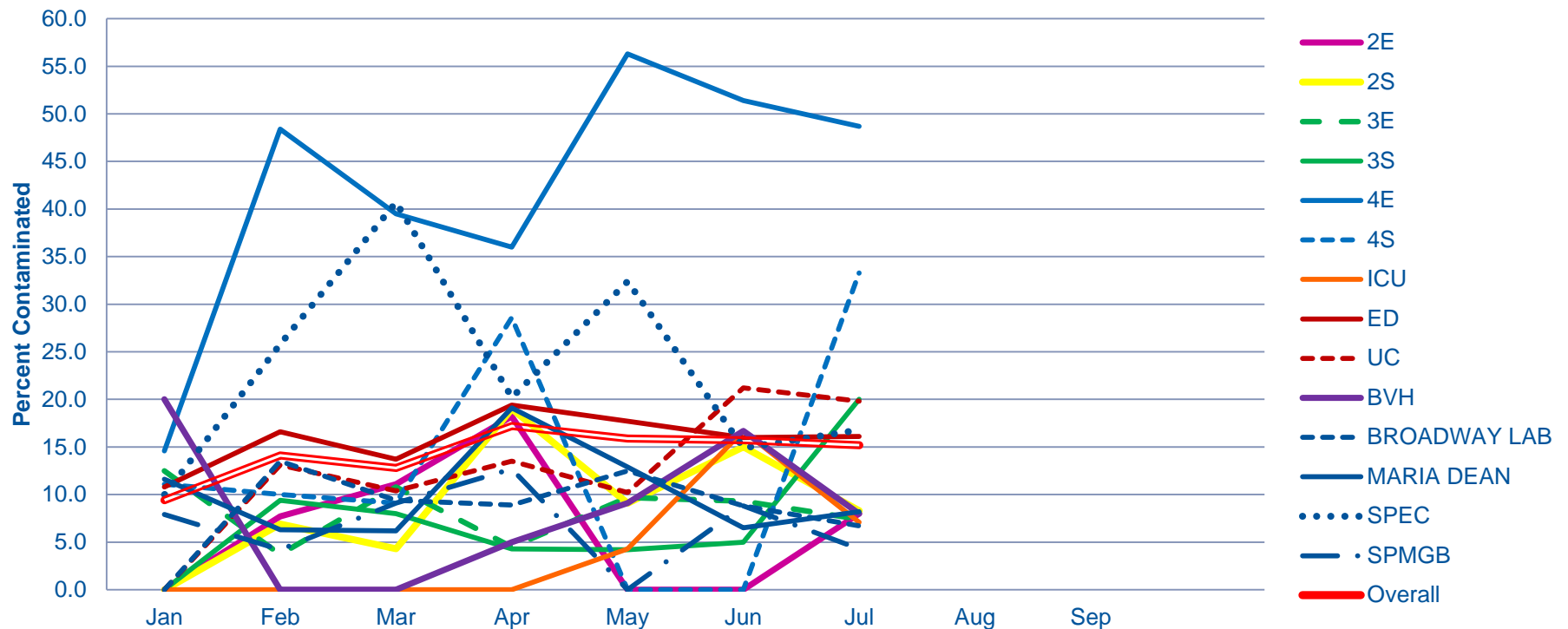


“Changing the Paradigm and Staff Thinking in Microbiology: Using Lean to Eliminate On-call Staff, Reduce Rework, and Improve Clinical Performance”

Never Start Your Talk With A Graph...

Urine Sample Contamination Rate Percentage by Floor



Alan's Giraffe



He's super friendly!

What I communicated to the team

“If all we get from this is getting you out of here on time and eliminate your weekend call, I will consider this a success.”

Update Procedures to Best Practice

- Effectively use Tech Time
- Needed to eliminate on call staff to prolong longevity of experienced team members
- Improve moral by eliminating non value adds

Cost Containment

- Reduce work up time
- Reduce material costs
- Eliminate OT
- Reduce patient Length of Stay through faster TAT
- Reduce antibiotic use or cost through faster TAT

Evaluating the Impact of Reduced Contaminations

In early 2011 (January to July), the mean BC contamination rates for Southcoast's ED was 2.22%. During the spike in contaminations between August and October, contamination rates dramatically increased to **3.34%**. Following the implementation of interventions, the mean ED BC contamination rate between November 2011 and June 2012 fell to **1.31%**.

According to the 2011 study *Clinical and Economic Impact of Contaminated Blood Cultures within the Hospital Setting* by Alahmadi, et al., each contaminated blood culture in the hospital setting results in an average increase of 5.4 days in length of stay and \$7,500. Likewise, the 2009 study *Impact of Blood Cultures Drawn by Phlebotomy on Contamination Rates and Health Care Costs in a Hospital Emergency Department* by Gander, et al., found that \$8,720 in additional charges result from each contamination event. The study also found length of stay to increase by one day. In short, these values allow Southcoast to extrapolate annual **cost avoidance savings of more than \$300,000 dollars within the ED and hospital-wide savings of more than \$600,000.**

- Are we over working cultures?
 - Mixed cultures
 - Anaerobes
 - Variability between techs
- Wrong orders
 - Causing delays
 - Interruptions
 - Unlabeled specimens
- Developing a program for lab assistants to cover non-technical tasks in microbiology
- Multiple receiving areas for specimens
- Space-planning for the next 3-5 years

Aggressively
Manage Costs Out of
The St. Peter's System to
Strengthen Our Foundation.
(High Priority Strategy IV.)

Aggressively Focus on Key Service Lines to
Strengthen Our Foundation. (High Priority
Strategy III: Oncology, Emergency, Physician Clinics)

“Manage Their Care. Care Coordination.”

Aggressively Develop Patient-Centric Models to Move
Upstream and Manage Health including Partnering with
Other Community Healthcare Organizations to Create
Systems Of Care. (High Priority Strategy II.)

“Maximize Customer Experience. Experience Customer Maximization.”

Create a Culture of Service Excellence and Convenience, Including an Unwavering
Commitment to Quality and Safety, by Providing Incredibly Great Service
that Results in Customers Choosing St. Peter's for Life to Strengthen Our
Foundation. (High Priority Strategy I: Physicians; Employees; Patient Guests)

High Priority Strategies to Maximize Customer Experience and Strengthen Our Foundation



High Priority Strategy IV:

Aggressively Manage Costs Out of the St. Peter's System to Strengthen Our Foundation.

Strategy IV.A: Aggressively apply process improvement techniques.

Strategy IV.B: Attain Medicare breakeven within 5 years.

Strategy IV.C: Maintain currency on new health management and payment methodologies.

Strategy IV.D: Aggressively implement strategies individualized to payers, insurers, and employers.

Strategy IV.E: Consider affiliation and alignment strategies as appropriate.

Aggressively
Manage Costs .

•**Micro LEAN**

improvements to
streamline and improve
culture processes.

- Expansion of Patient Portal and CPOE functions.
- Use Ancillary Customer Survey to guide lab process improvement.
- Education and control of unnecessary/non algorithmic/non best practice test ordering to curtail reference lab cost.

Aggressively focus on Key Service Lines to Strengthen Our Foundation.

- Continue to support the ED Process Improvement Efforts
- Clinic Lab Services optimization with the new Oncology module in CTC and Nursing use of Mobilab
- Implement Ventana Pathology system to better manage biopsies, transaction track samples and for our Oncology, Surgical and Outpatient tissues.

“Manage Their Care. Care Coordination.”

Develop Patient-Centric Models to Move Upstream and Manage Health including Partnering with Other Community Healthcare Organizations to Create Systems Of Care.

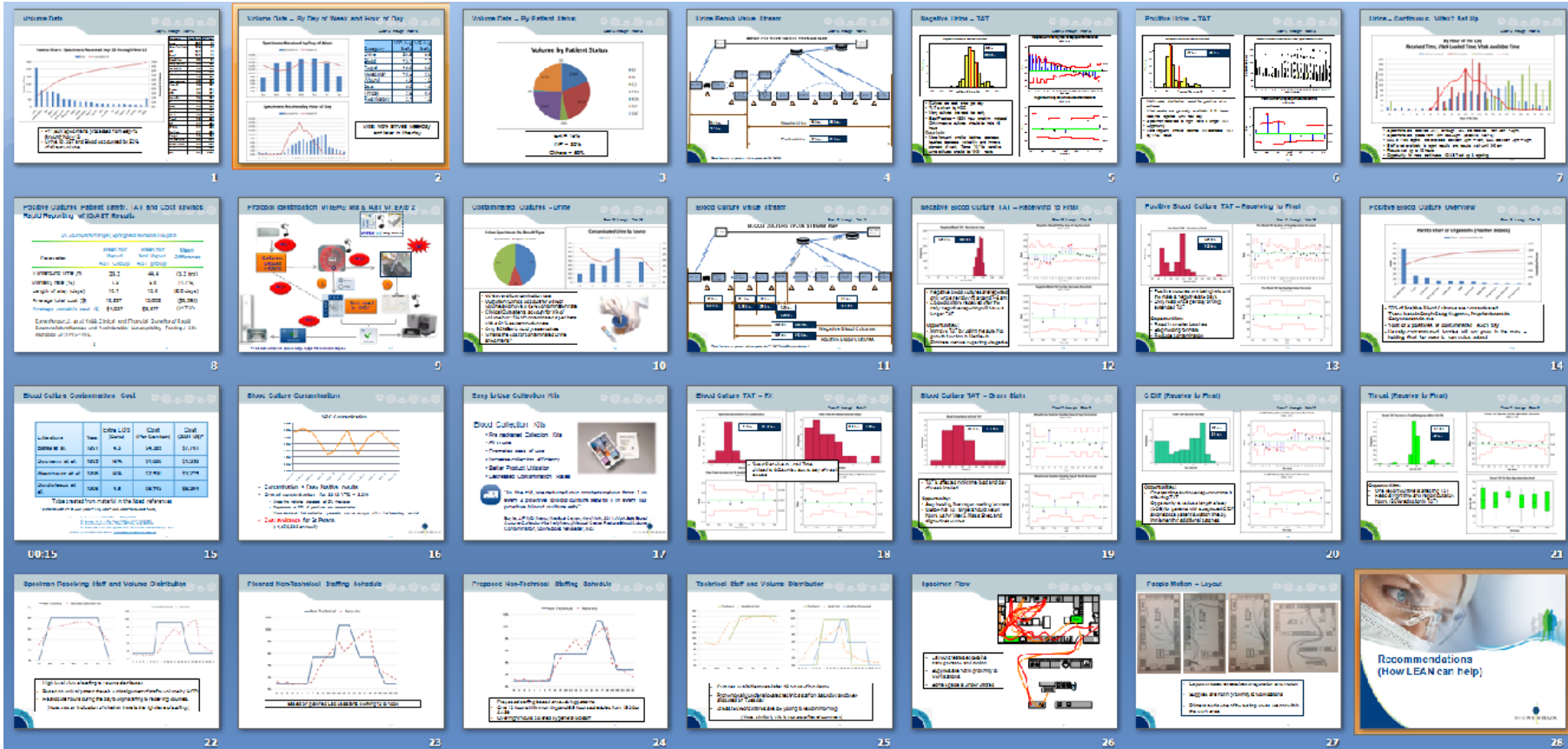
- DI / Lab procedure optimization to alleviate patient transport and delays.
- Continue hardwiring AIDET principles throughout Lab System
- Enhance Outreach services through development of Outreach EMR interface solution (CPOE) , expanded Web presence, online scheduling, implementation of Direct Access Testing (DAT) and enhanced Patient Portal reporting options.

“Maximize Customer Experience. Experience Customer Maximization.”

Create a Culture of Service Excellence and Convenience, Including an Unwavering Commitment to Quality and Safety, by Providing Incredibly Great Service that Results in Customers Choosing St. Peter's for Life to Strengthen Our Foundation.

- Maintain Marketing Strategies to maximize Outpatient Services revenue to a level of 60% or higher.
- Enhance Outreach services through development of Outreach EMR interface solution (CPOE) , expanded Web presence, online scheduling, implementation of Direct Access Testing (DAT) and enhanced Patient Portal reporting options.
- Achieve and Maintain Outpatient Satisfaction (OPS) @ 60% and expand surveys system wide to develop global strategy for Lab OPS
- Use small, engaged groups of frontline team members to drive decisions affecting team responsibilities and issues.

- Performed initial investigation into current practices in partnership with BioMeriueux
- Site Visit
 - Assessed pre data
 - Created a list of procedural Just do It
 - Began executed our list by priority
 - Identified Kaizen event for process improvement
- Executed Kaizen with BioMeriueux
- Changed processes and procedures in real time and following few months.



Just Do It Recommendations

- **Collection:**
 - Standardize to boric acid preservative for all urine collections
 - 50% come in cups and are unpreserved
 - Decrease contamination rates of Blood Cultures
 - Consider the use of “liquid” swab to improve quality of swab collection
 - Consider collecting stool samples in “EcoFix” pak – which allows for stools to be preserved at point of collection
- Pneumatic Tube System utilization – reconsider sending Urine, Blood Cultures etc...



Just Do It Recommendations



- Eliminate “Full Culture Workup” on throat cultures
 - Helps prevent overuse of antibiotics, screen only for Strep
- Reflex testing from a negative Strep Ag test – that is the general rule. However there are molecular tests available that would eliminate the Ag and the culture reflex
- Saving plates:
 - Urine tubes – 48 hours
 - Plates – only one representative of isolate
- Exhaustive workup of Anaerobic – 2 anaerobes at the most, look for B. frag and report mixed anaerobic flora when necessary
- Subcultures/Isolations 6 per plates – max should be 2 isolates per plate as per purity plates
- Report urine culture @ 24 hours
- Eliminate using BAP/STX on Throat cultures
- Eliminate BAP plates on MRSA screen Reagent savings of ~\$2000 annually

Just Do It Recommendations



- Eliminate GN subculture on stools
- Eliminate Brucella on aerobic blood culture bottles
- Eliminate the tube coag on all Staphs
- G. vag cultures – use the Affirm, better technology
- For timely negative blood culture reports, use auto-no growth function in Meditech. Report “real time” negative with daily updates
- Consider molecular method for GI pathogens. For example, Luminex GPP detects Campylobacter, Salmonella, Shigella, E. coli 0157, Enterotoxigenic E. coli (ETEC), Shiga Toxin producing E. coli (STEC), Giardia, Cryptosporidium, Rotavirus, Norovirus.
- Consider continuous temperature monitoring system for equipment

Meditech Opportunities



- **Reconfigure labels:**
 - Barcodes
 - 2 patient identifiers
 - Set up date
 - Media type
- Go paperless – stop using the outstanding reports as a work in process log
- Stop placing cultures in numerical order
- Antibiotic reporting suppression rules should be done in Vitek not Meditech (BMX to help with this)
- Documentation of media observation/growth is not necessary
- Reconfigure reports –
 - AST reporting comments
 - Organism comments (Methicillin Resistant No or Yes)
- Eliminate the Vitek cassette log

- Recommendation:
 - CPT code 87077 for definitive ID – defined as identification of genus to species level that requires additional test
 - CPT code 87088 for Presumptive ID – only for URINE and is defined as identification by colony morphology, growth on selective media, gram stain or up to 3 test:
 - CPT code 81747: Immunologic Method – all Strep typing

Opportunities



- **Consider using the following Urine Culture if indicated criteria**

Reflex will occur when Urinalysis equals the following:

- **If Nitrate = Positive**
- **If Leukocyte Esterase = Trace, Moderate or Large**
- **If WBC-HPF > 5**
- **If Bacteria = Moderate, or Large**

15 out of 24 JDI prior to Kaizen have been done

Not done include:

- Total change of methodologies (e.g.. PCR type testing for enterics and Group A streps like using Biofire or Nanogene technology)
- Changes that affect not just micro but other departments (e.g.. temperature monitoring system for whole lab)
- Procedural changes that require pathology input and approval which really just takes time
- Waiting for new instrumentation (Vitek 2)
- Some are in progress (e.g.. BC, urine and stool kits) which require hospital-wide education.

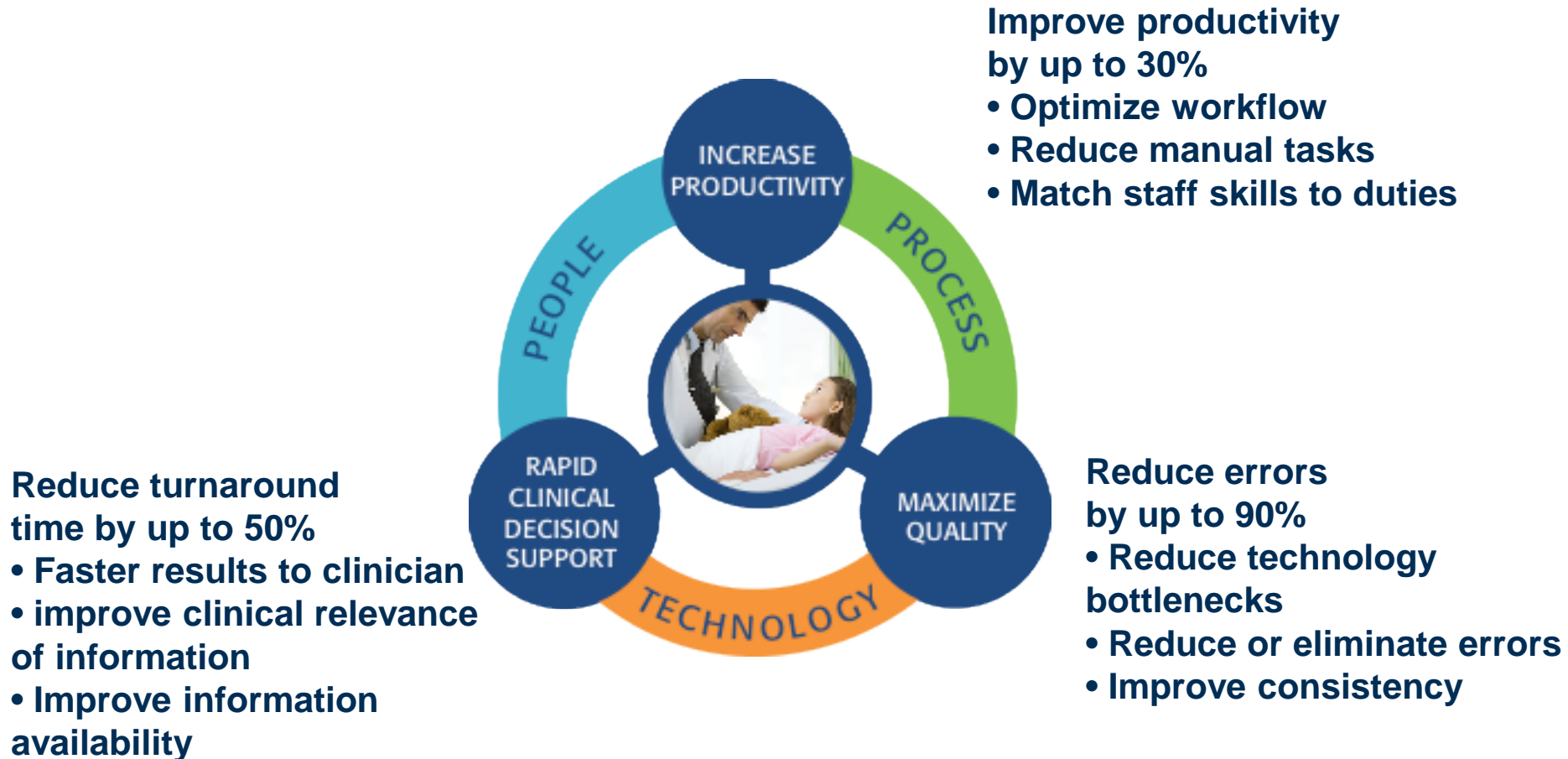
- **Change to UA with Culture Per Protocol**
- Starting 4/1/2014 the Urinalysis with Culture and Sensitivity per protocol test will change. We are making this change based on our evaluation of the literature, current best practices as well as SPH laboratory experience with current specimens received. **Lab previously would set up a culture if ANY bacteria were seen** during the microscopic exam. We will **now set up a culture if there are moderate or greater bacteria and less than 10 epithelial cells per high power field, the sample is positive for nitrite, leukocyte esterase or ≥ 5 WBC/hpf**. Even if the patient has urinalysis findings suspicious for a urinary tract infection (UTI), no urine culture will be performed if there is significant epithelial cell contamination. Best practice demonstrates that rejecting contaminated urines and recollection of a clean urine will provide faster, better and less expensive results.

Biggest Bang

1. CIP report which actually happened during the Kaizen. This involves entering a "Culture in Progress" result 2x/day for Blood Cultures. This, then, triggers Meditech to auto-report "no growth" on blood cultures at 1,2,3,4, and a final at 5 days. The initial CIP report shows up on the EMR side which allows the doctors to see that 1) the blood culture has been drawn and 2) daily updates. This was not available before. Doctors couldn't see that the culture had even been drawn before until we entered a "manual" no growth report at (or even after) 24-hours after collection. This has reduced the amount of phone calls immensely.
2. Going paperless and changing our protocol of placing cultures in accession number order. We now place them in order according to set up time which streamlines the process in many ways and cuts down time in many ways and results in better reports for patient care. (this happened on day 2 of the initial visit before Kaizen)
3. Holding urines only 18-24 hours if no growth or contaminated. AND
4. Changing the urine per protocol criteria for culture (micro was working up many contaminated specimens previous to this change). Major reduction in time spent on these cultures, better turn around times, and better results due to better specimens being set up for culture. Providers are getting better, more timely reports.

Kaizen

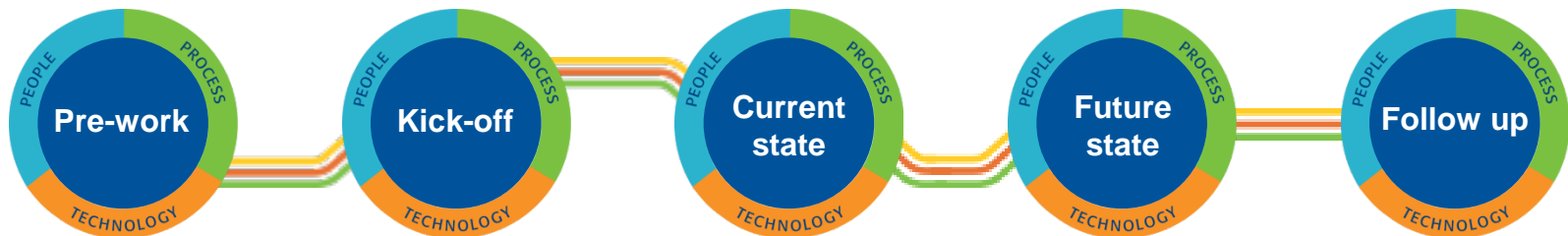
A 3-dimensional approach to optimize



- What is Kaizen –
 - A Kaizen Project Workshop is a self-learning activity aimed at dramatic and rapid performance improvement and waste reduction using Lean principles. While isolated Kaizen projects can be useful, they are most successful when they are part of an overall Lean transformation strategy.
 - Kaizen projects have a narrow focus, targeting, for example, specimen processing, Blood Culture, Urine Culture or 1 piece flow projects.
 - Kaizen projects are as much about hands-on learning and employee involvement as they are about raw implementation. Ideal kaizen projects involve employee teams that develop, test and implement their own high return, low cost solutions.

Kaizen

Agenda



- Review opportunities and next steps with stakeholders
- Pre-visit planning

- Collaborative group engagement
- Lean training

- Map the current state from specimen receipt to result
- Review the process for improved turnaround times, eliminate waste, reduce errors, minimize touches.

- Standardize the process
- Develop and map the new process
- Assign ownership of key tasks
- Training in change management
- Recommendations for improvement

- Prepare final report
- Follow up to measure improvements



- 4 days on site (Week 1)
- Mapping current process
- Review opportunities for eliminating waste and implement recommendations from assessment
- Implement “new” process

- Members
 - Technical Supervisor Microbiology
 - Generalist/Micro Specialist
 - Outpatient TLAP
 - In patient TLAP/Lab Assistant/Setup Person
 - Member of Quality/Organizational Excellence
 - Members from BioMeriuex and
- Add Hoc
 - Pharmacist
 - Director Organizational Excellence
 - Urologist
 - Infectious Disease/Hospitalist
 - Lab Director



TEAM MEMBERS:

- Cassie O'Bryant
- Kim Kurokawa
- Lauri Dalbec
- Susan Mitchell

SPONSOR:

- Steve Matthes

FACILITATION/SUPPORT:

- Anne Beall
- Sheila Meftah
- Craig Latham



Kaizen Agenda



Monday

- Project Review
- Lean Six Sigma Principles Training
- Project Boundaries reviewed – SIPOC
- Current state Process Walkthrough – 'waste walks'
- Start thinking alternatives

Tuesday

- Focus on Discovery
- Current State Process Maps
- Data Collection and Analysis
- Process Observations
- Summarize Current State Conditions
- Discuss Opportunities

Wednesday

- Create Future State Map
- Define Obstacles and Prioritize Solutions
- Create Implementation Plan
- Generate Standard Work Documentation

Thursday

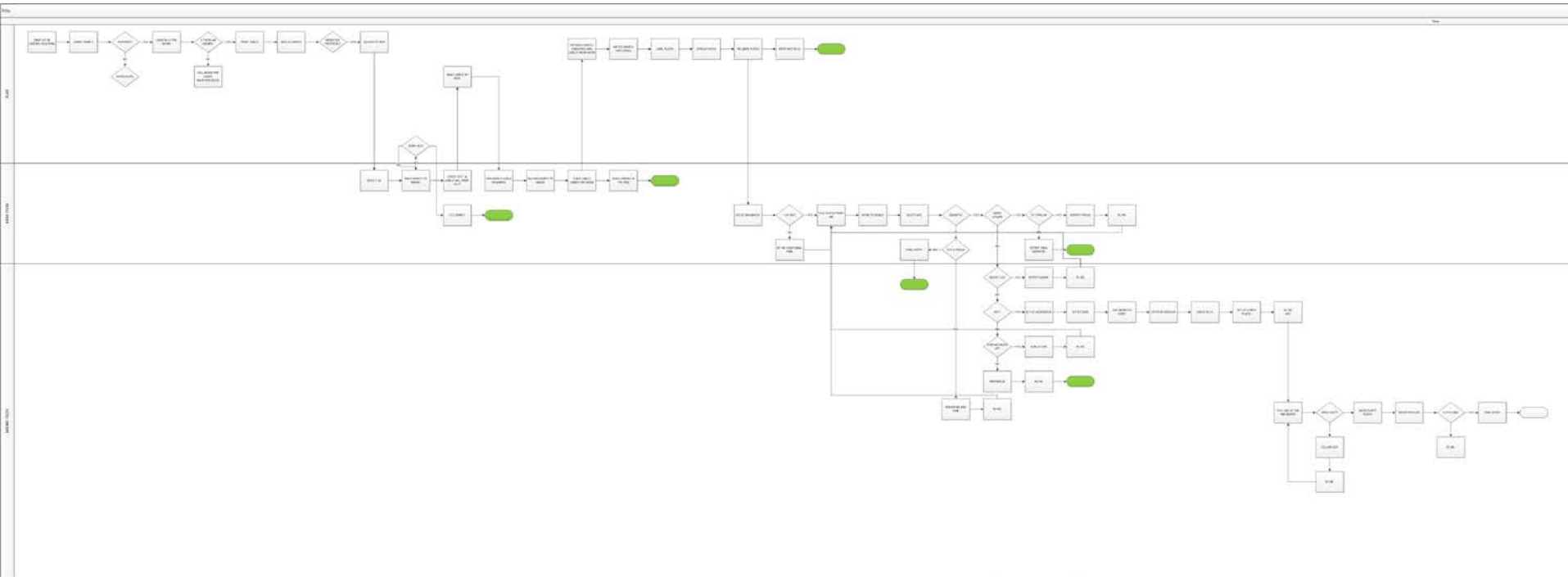
- Define Benefit of New Process
- Planning and Communication
- Create Action Register for Outstanding Actions
- Create Report Out of Key Messages
- Report Out

Project Goals



Objective	Current State	Future State Target
Urine Contamination	Overall 34% Outpatient 45%	15%
Urine TAT	Positive 47 hr. median Negative 46 hr. median	32 hrs. 24 hrs.
Blood Contamination	2.3%	1.1%
Blood TAT	Negative 125 hr. median Positive 126 hr. median	120 hrs. 63 hrs.

Urine - Current Process Map





Brainstormed Improvements



Improvement Themes

- Standards and Protocols
- Batching and Timing
- Pre-Micro
- Labels

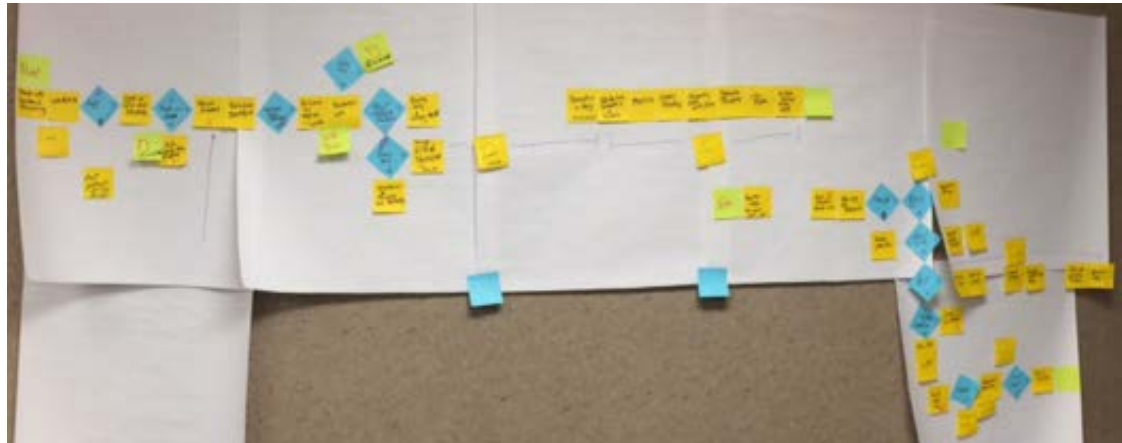
Future State Map – Urine Example



Before



Future State Vision



Future State Targets and Results



Metrics	Before		After		Improvement	
	Urine	Blood	Urine	Blood	Urine	Blood
TAT (hrs.)	POS: 47 NEG: 46	POS: 126 NEG: 135	POS: 35-45 NEG: 24-30	POS: 60 NEG: 120	POS: up to 16% NEG: 35%- 48%	POS: 53% NEG: 12%
Total Cycle Time (Mins.)	37	90	33	37	11%	59%
Contamination	Overall: 34% Outpatient: 45%	2.3%	Overall: 15% Outpatient: 15%	1.1%	Overall: 56% Outpatient: 67%	52%
Steps	50	57	40	29	20%	50%
Delays	6	8	2*	1	67%	88%
Decisions	16	15	13	10	19%	33%
Touches	POS: 7-9 NEG: 7	NOS 6-17 POS: 6-12 NEG: 5	POS: 4-8 NEG: 4	NOS 4-8 POS: 5 NEG: 4	POS: 11%-43% NEG: 43%	NOS: 33%-53% POS: 17%-58% NEG: 20%

* Delays 100% minimized

Key Changes



Findings

Collection Standards

- Multiple collection methods and containers being used
- Kit is available, but not readily available or utilized
- 43% urine contamination rate for January 2014
- 2.3% blood contamination rate for 2013

Urine TAT

- Only one reading per day causing a majority of the urine to be held an unnecessary 16 hours
- SOPs needed to be refreshed
- Extra Work in Process (WIP) causes overproduction

Urine culture per protocol

- Over processing on urine cultures

Blood TAT

- One read per day creating longer TAT
- No auto no growth utilized current state
- Only 1 preliminary report today

Micro barcodes

- Partial barcodes in Micro. Standardization required
- Over processing time spent looking for bottles

Improvement Benefits

- Decrease contamination rate
- Decrease in antibiotic cost and LOS
 - 73% of patients with unconfirmed UTIs have prolonged hospital stays
- \$1.4 MM annual cost avoidance opportunity for St. Peters on BC contamination

- 48% decrease in Negative Urine TAT
- 16% decrease in Positive Urine TAT

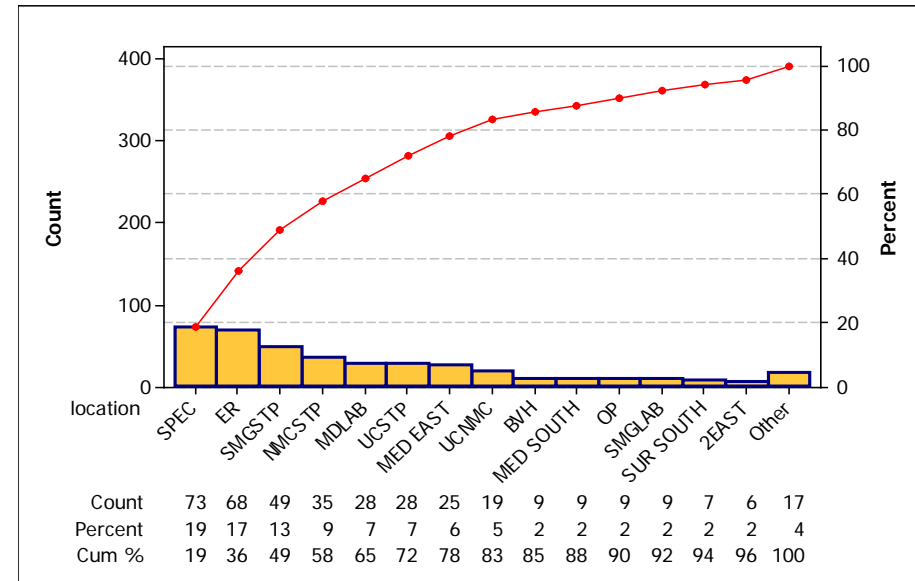
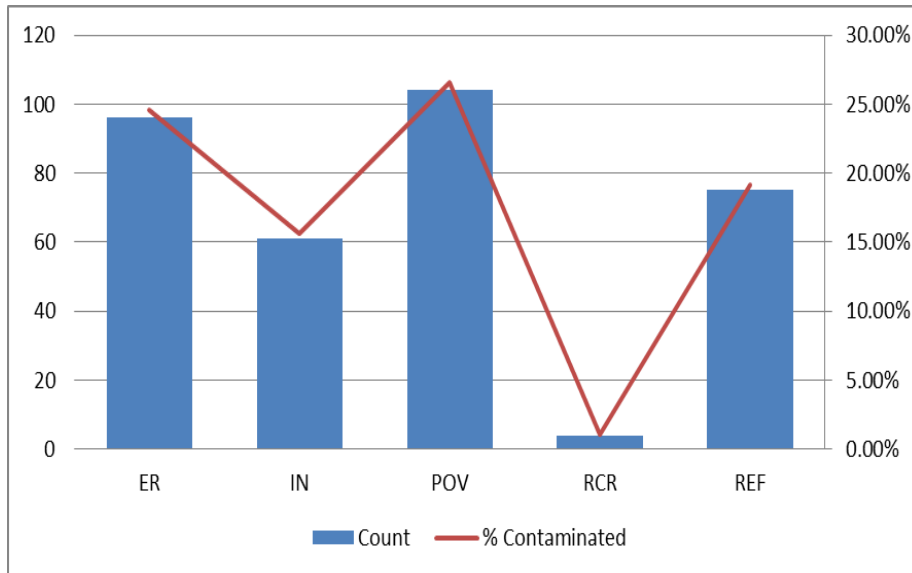
- ~75% in overall Urine WIP

- Increased frequency of preliminary reports to 6
- Decrease TAT for positives and negative blood
 - Holding final report for mate

- Decrease errors
- Reduced keystrokes

Urine Culture Contamination

January 2014

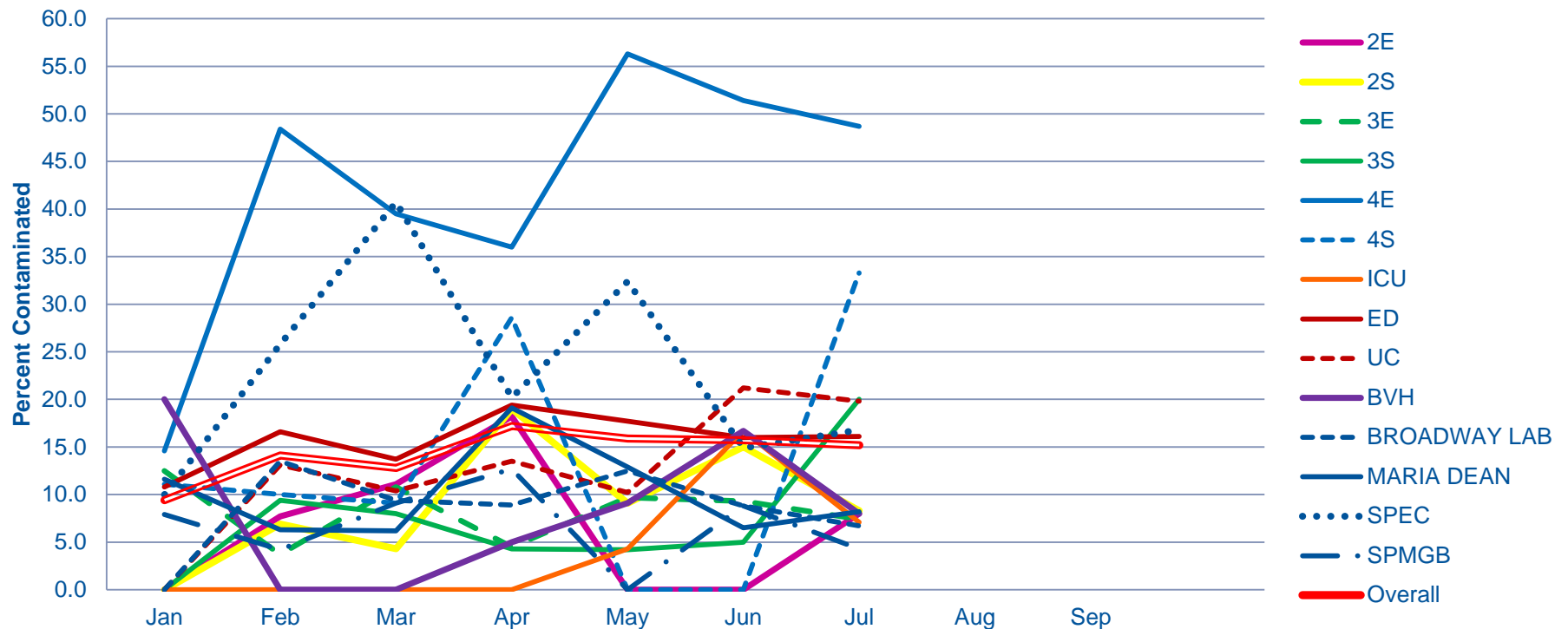


- 901 Total Urines in January 2014. 391 (43%) overall contamination
- Outpatient Clinics account for 34% of volume and have a 45% contamination rate

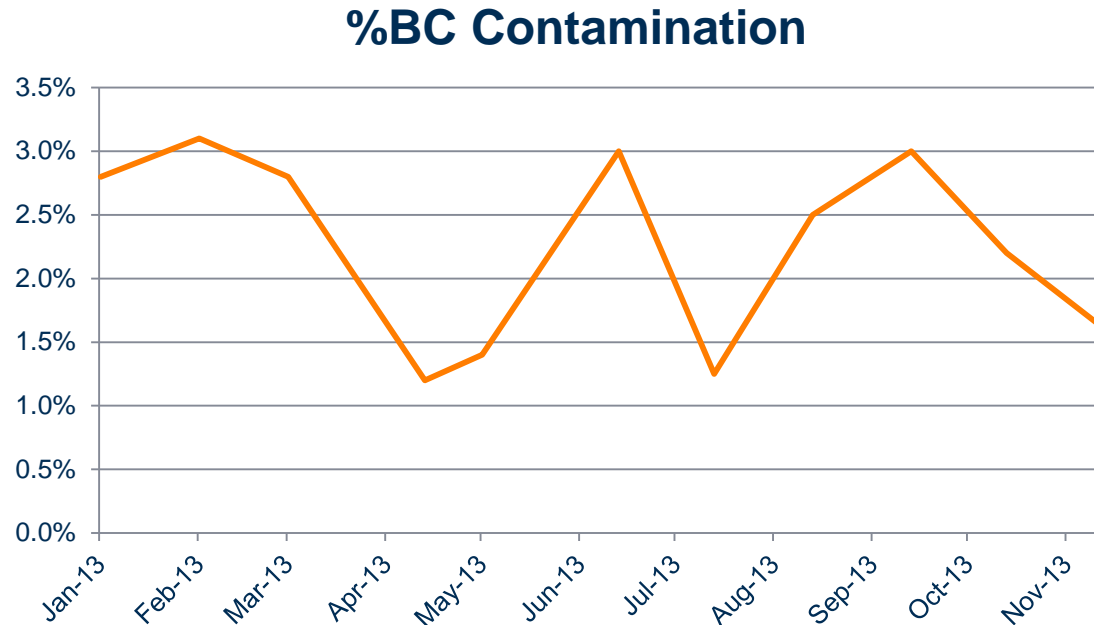


Here's That Graph Again...

Urine Sample Contamination Rate Percentage by Floor



Blood Culture Contamination



- Contamination = False Positive results
- Overall contamination for 2013 YTD = 2.3%
 - Under the national standard of 3% - however:
 - Represents ~ 55% of positives are contaminated
 - We understand that collection protocols are not always within the laboratory control
- Cost avoidance for St Peter's
 - \$ 1,450,000 annually

Incubator – Before and After



Before

All plates to be read at one time for the day



After

Plates sorted by time
plated into racks,
color coded for read
times

Blood

Others

“New” Incubator



“Old” Incubator



Loading and Reading Schedules

February 2014

Sunday ▾	Monday ▾	Tuesday ▾	Wednesday ▾	Thursday ▾	Friday ▾	Saturday ▾
						1
						0:00 - 11:59 Load
						12:00 - 23:59 Load
						7:00 Read
						2:00 Read
2	3	4	5	6	7	8
0:00 - 11:59 Load	0:00 - 11:59 Load	0:00 - 11:59 Load	0:00 - 11:59 Load	0:00 - 11:59 Load	0:00 - 11:59 Load	0:00 - 11:59 Load
12:00 - 23:59 Load	12:00 - 23:59 Load	12:00 - 23:59 Load	12:00 - 23:59 Load	12:00 - 23:59 Load	12:00 - 23:59 Load	12:00 - 23:59 Load
7:00 Read	7:00 Read	7:00 Read	7:00 Read	7:00 Read	7:00 Read	7:00 Read
2:00 Read	2:00 Read	2:00 Read	2:00 Read	2:00 Read	2:00 Read	2:00 Read
9	10	11	12	13	14	15
0:00 - 11:59 Load	0:00 - 11:59 Load	0:00 - 11:59 Load	0:00 - 11:59 Load	0:00 - 11:59 Load	0:00 - 11:59 Load	0:00 - 11:59 Load
12:00 - 23:59 Load	12:00 - 23:59 Load	12:00 - 23:59 Load	12:00 - 23:59 Load	12:00 - 23:59 Load	12:00 - 23:59 Load	12:00 - 23:59 Load
7:00 Read	7:00 Read	7:00 Read	7:00 Read	7:00 Read	7:00 Read	7:00 Read
2:00 Read	2:00 Read	2:00 Read	2:00 Read	2:00 Read	2:00 Read	2:00 Read
16	17	18	19	20	21	22
0:00 - 11:59 Load	0:00 - 11:59 Load	0:00 - 11:59 Load	0:00 - 11:59 Load	0:00 - 11:59 Load	0:00 - 11:59 Load	0:00 - 11:59 Load
12:00 - 23:59 Load	12:00 - 23:59 Load	12:00 - 23:59 Load	12:00 - 23:59 Load	12:00 - 23:59 Load	12:00 - 23:59 Load	12:00 - 23:59 Load
7:00 Read	7:00 Read	7:00 Read	7:00 Read	7:00 Read	7:00 Read	7:00 Read
2:00 Read	2:00 Read	2:00 Read	2:00 Read	2:00 Read	2:00 Read	2:00 Read
23	24	25	26	27	28	
0:00 - 11:59 Load	0:00 - 11:59 Load	0:00 - 11:59 Load	0:00 - 11:59 Load	0:00 - 11:59 Load	0:00 - 11:59 Load	
12:00 - 23:59 Load	12:00 - 23:59 Load	12:00 - 23:59 Load	12:00 - 23:59 Load	12:00 - 23:59 Load	12:00 - 23:59 Load	
7:00 Read	7:00 Read	7:00 Read	7:00 Read	7:00 Read	7:00 Read	
2:00 Read	2:00 Read	2:00 Read	2:00 Read	2:00 Read	2:00 Read	

Loading and reading schedule posted to the front of the incubators

Cultures are set up more timely upon arrival due to process streamlining.

THEN: We would read cultures multiple times per day whether they were ready or not => Multiple Unnecessary touches.

NOW: With streamlined set up processes cultures can be read the next day at the appropriate incubation time (at least 18 hours).

Example

Urine cultures can be reported as final reports at 18 hours, unless the urine is collected by an invasive technique (cath, suprapubic, etc.)

Result:

- Better turn around times and a stop to unnecessary work on day two of holding urine cultures 48 hours without any benefit to the report and providers are getting better "preliminary" reports.
- Sensitivities can be set up the next day and not reisolated so as to hit the appropriate incubation time (this would delay results by an entire day as sensitivities require organisms to be 18-24 hours old and this used to happen very often)

*

What We Have Done

Cultures are set up more timely upon arrival due to process streamlining.

THEN: We would spend valuable tech time working up contaminated samples even after Microscopic and Chemical analysis performed during the UA clearly demonstrate contamination.

NOW: The urine "per protocol" criteria to "reflex" to culture was altered according to industry standards with pathology and nephrology oversight.

Result:

- Decrease of contaminated cultures which means techs are not working up "dirty" cultures which means a tech time savings
- Patients are not being treated unnecessarily based on contaminated specimens
- This leaves CLS time to focus on more difficult analysis and problem solving.

Recent work with TLAPS

- TLAPS have timers on their trays to time cleaning/drying times
- TLAPS are being "re-educated"
- Collection process chart posted.

Blood Cultures

THEN: Only a 24-hour report was generated so providers couldn't tell if blood cultures were actually drawn or not.

NOW: A "culture in progress" report showing that a blood culture has been drawn is generated 2x/day (to catch all drawn blood cultures) and shows up on the EMR.

RESULT: Reduced phone calls appreciably and reduced duplicate orders.

THEN: Only a 24-hour report and a final report were generated manually and positive cultures were held in the preliminary status until both bottles were complete.

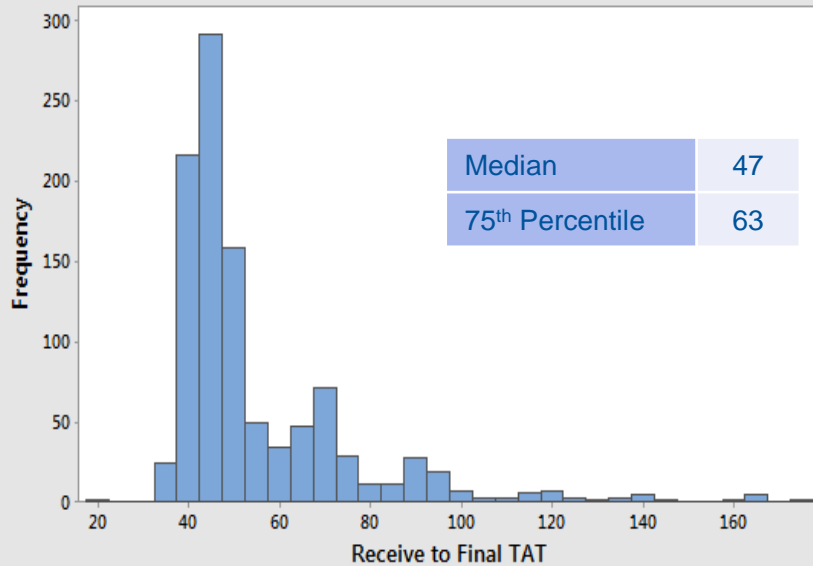
NOW:

- "No growth" reports on blood cultures are generated automatically every day for 5 days until completion.
- Positive cultures are finalized upon organism ID and AST.

Positive Urine TAT Comparison

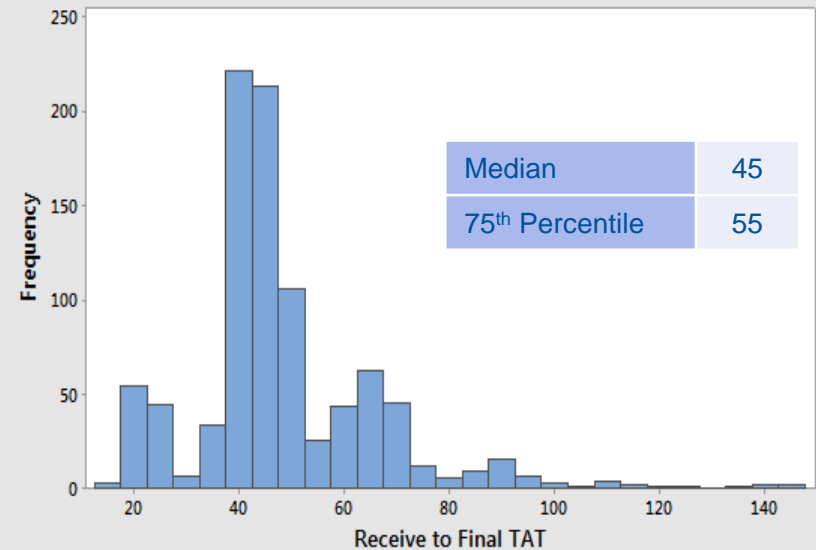
Pre Kaizen Data Period: Dec'13-Feb'14

Histogram of Receive to Final TAT

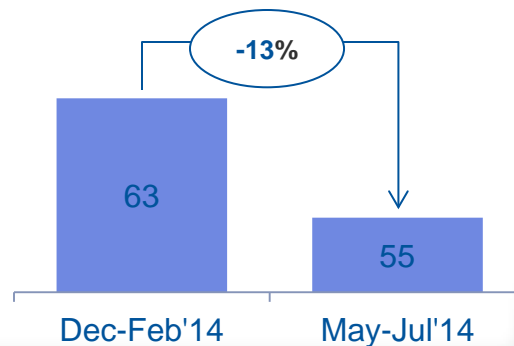


Post Kaizen Data Period: May-Jul'14

Histogram of Receive to Final TAT



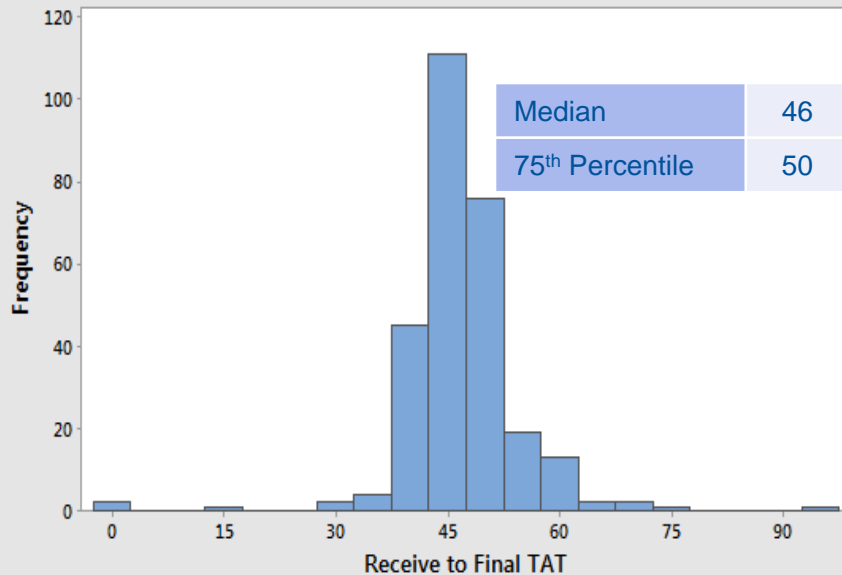
**% Change in Q3
TAT (Receive to
Final)**



Note: TAT in hours

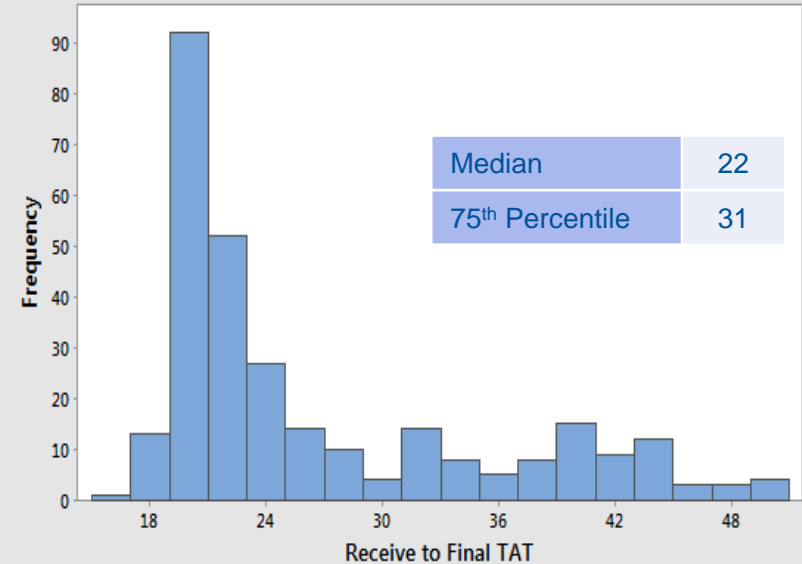
Pre Kaizen Data Period: Dec'13-Feb'14

Histogram of Receive to Final TAT

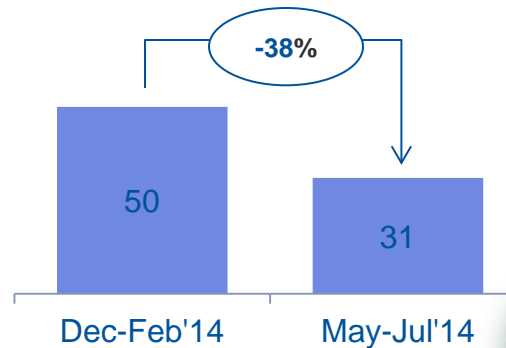


Post Kaizen Data Period: May-Jul'14

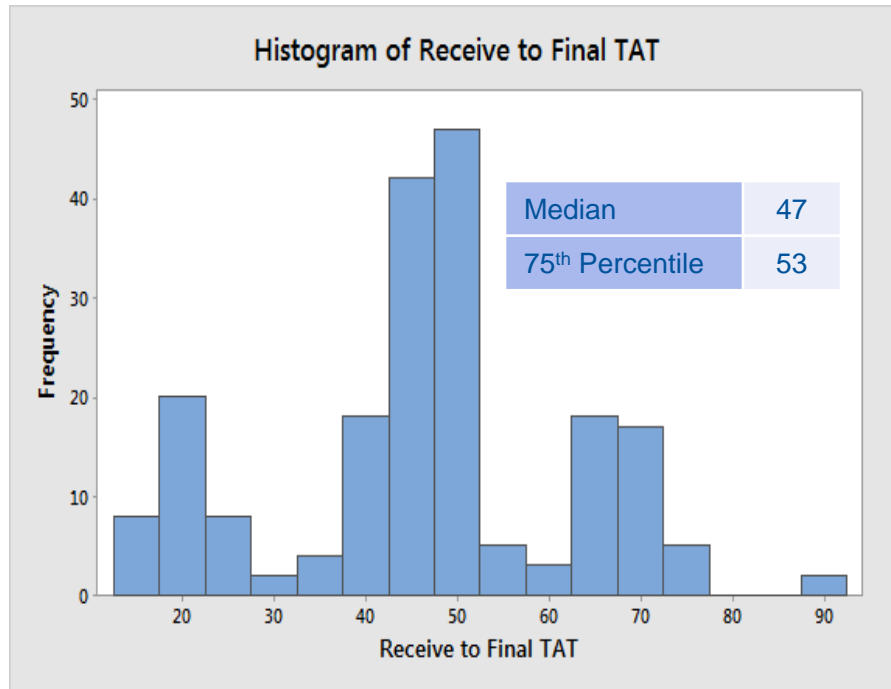
Histogram of Receive to Final TAT



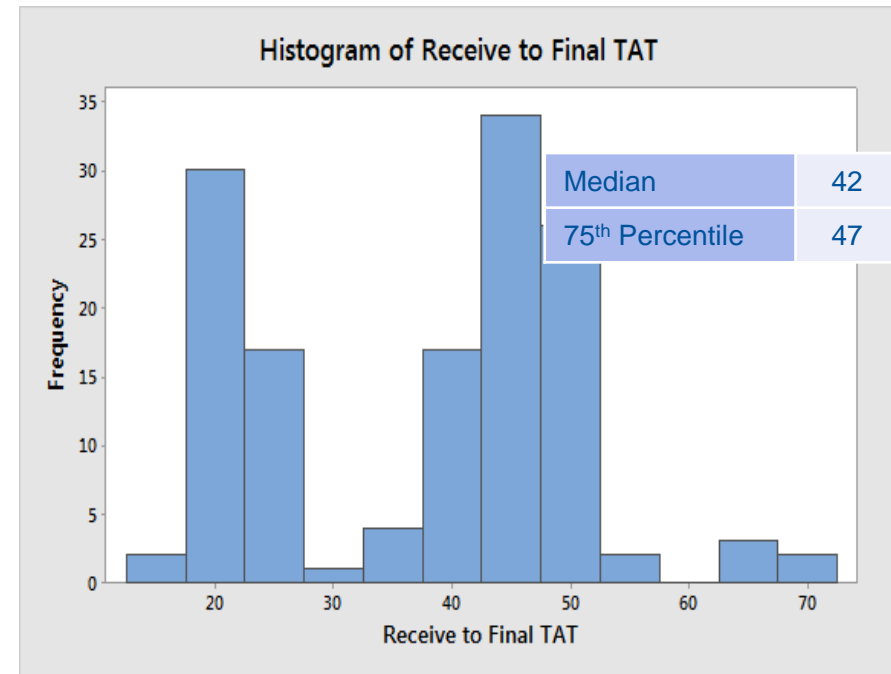
**% Change in Q3 TAT
(Receive to Final)**



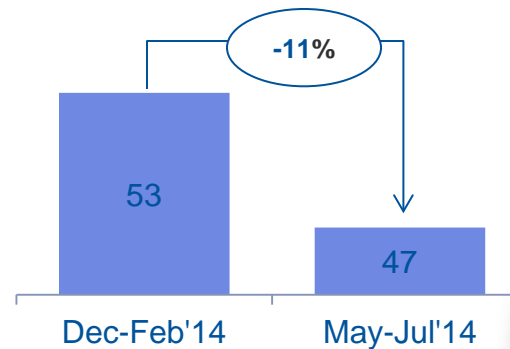
Pre Kaizen Data Period: Dec'13-Feb'14



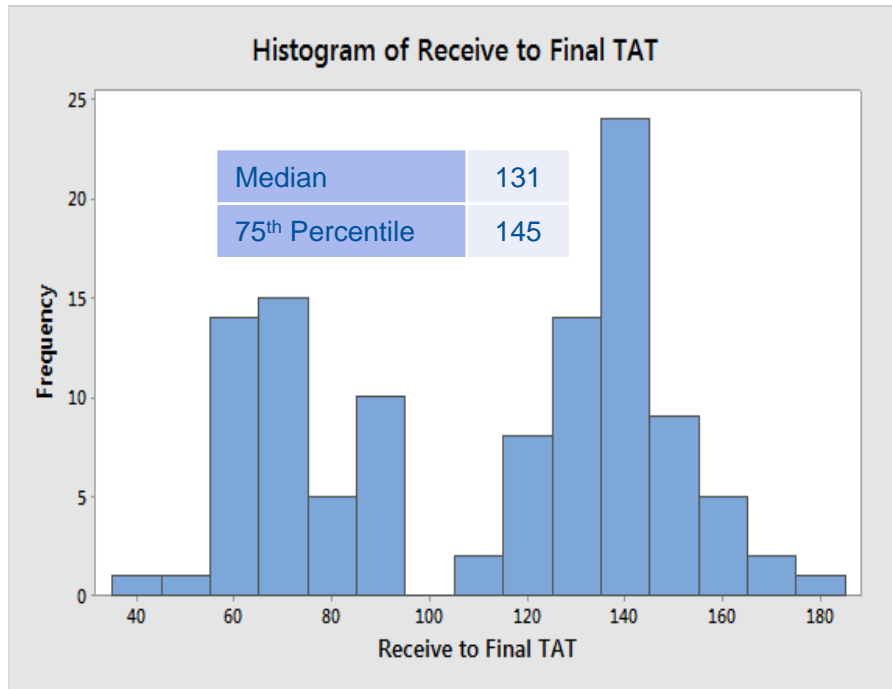
Post Kaizen Data Period: May-Jul'14



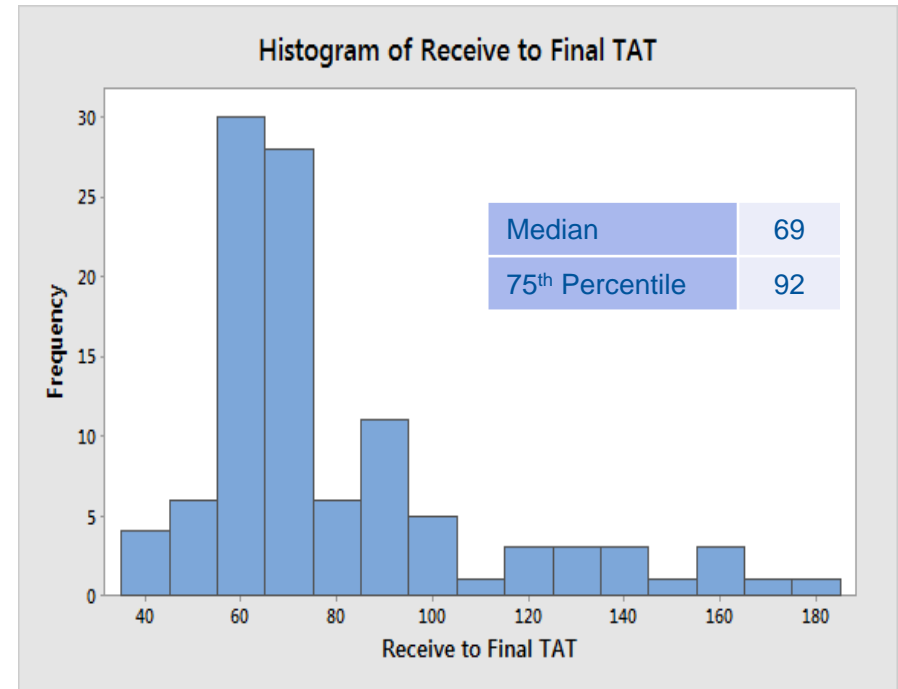
**% Change in Q3 TAT
(Receive to Final)**



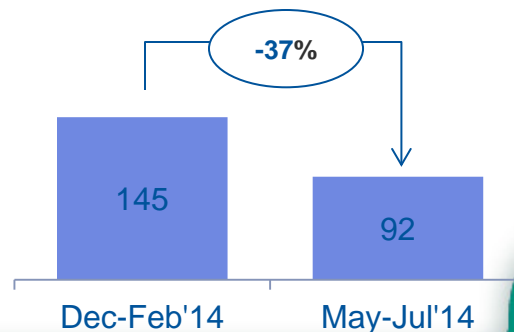
Pre Kaizen Data Period: Dec'13-Feb'14



Post Kaizen Data Period: May-Jul'14

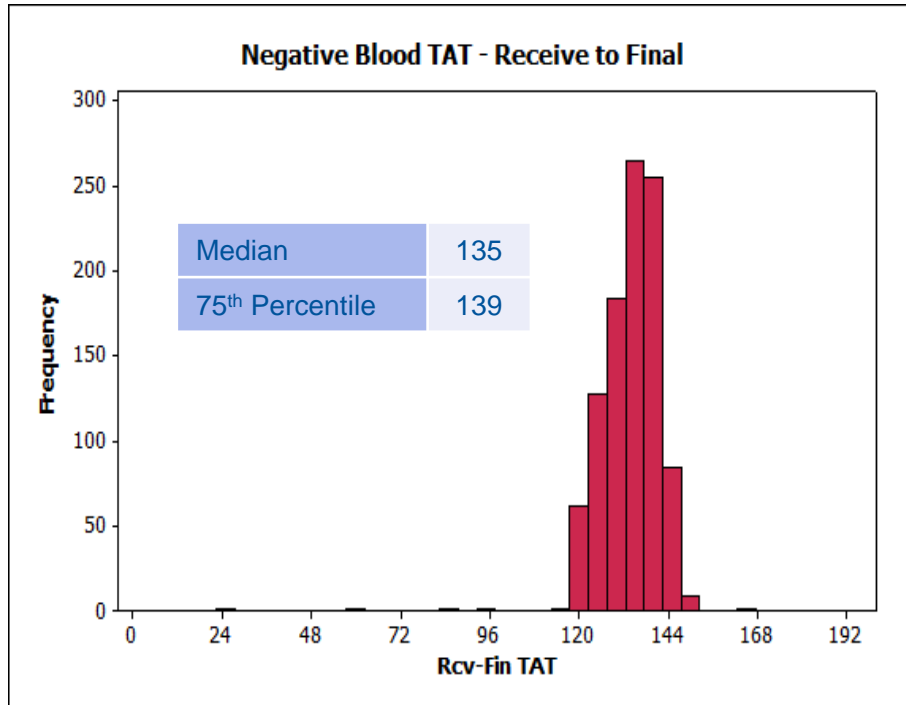


**% Change in Q3 TAT
(Receive to Final)**

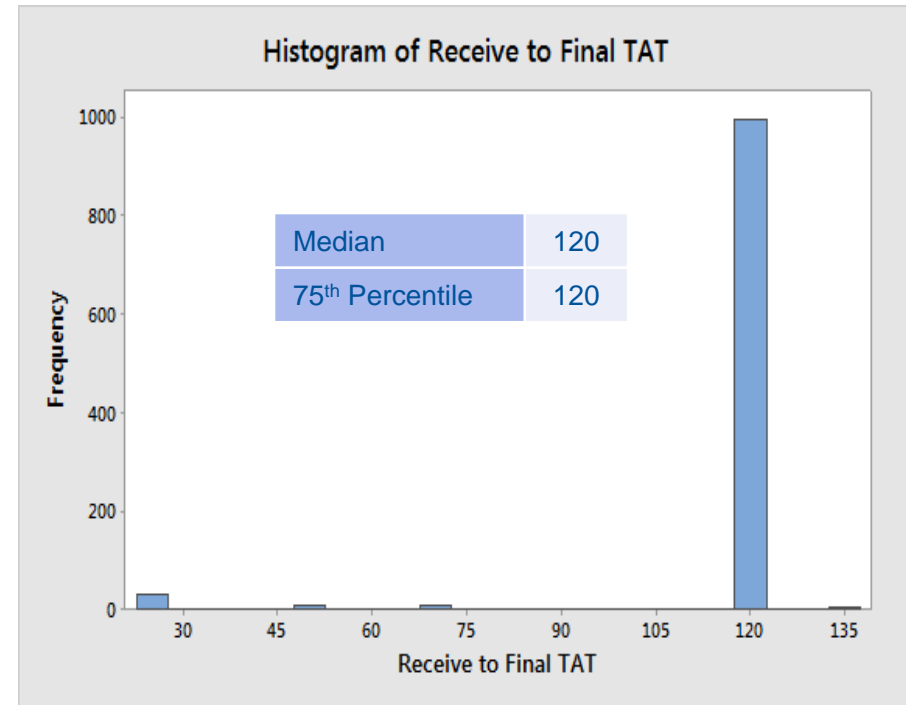


Note: TAT in hours

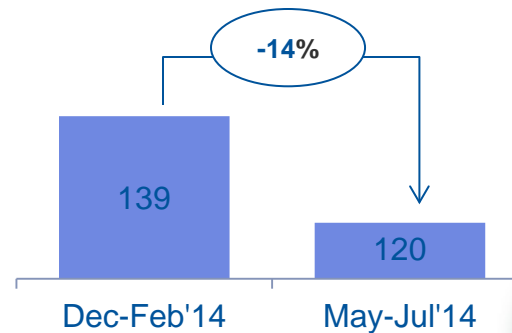
Pre Kaizen Data Period: Dec'13-Feb'14



Post Kaizen Data Period: May-Jul'14

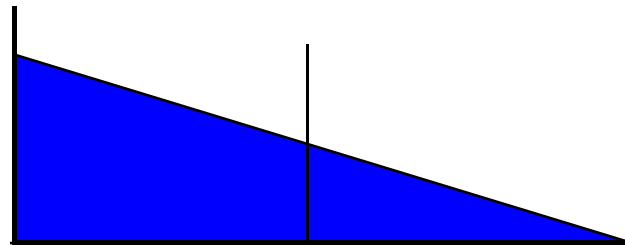
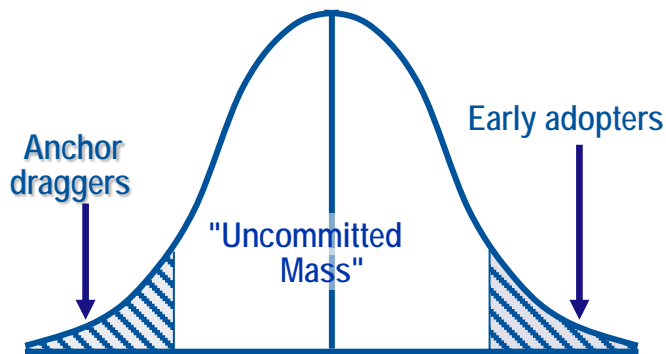


**% Change in Q3 TAT
(Receive to Final)**



Traditional Situation

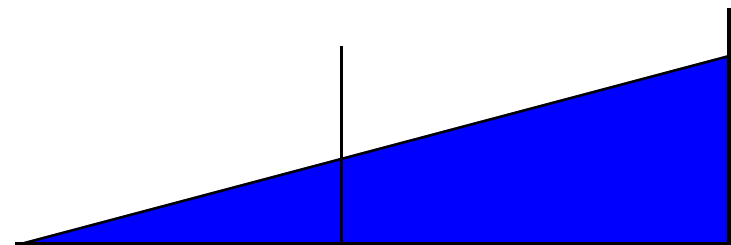
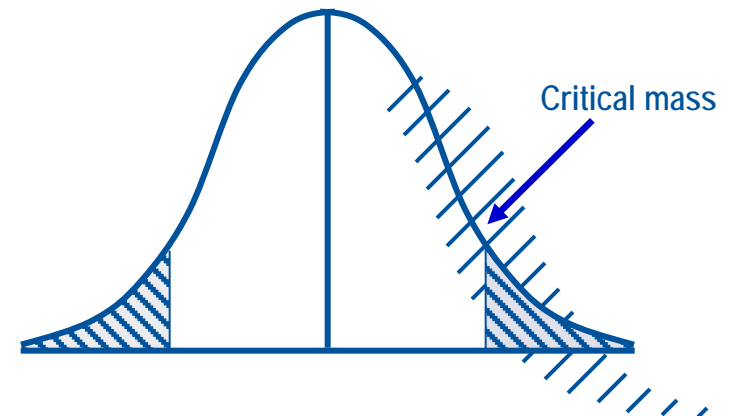
Increasing resistance ← Neutral → Increasing cooperation



Management attention

Leading Change

Increasing resistance ← Neutral → Increasing cooperation



Management attention

- This was exclusively a process/people driven change.
- We had no CAVE dwellers (Citizen's Against Virtually Everything)
- Eliminated On Call Staff
 - Micro Staff now committed to one weekend/month not two
 - Happier team by far
- Reduced OT by half
 - Overtime expenses down 49.5% through first quarter FY2015
 - Translates to \$45,000/year savings
- Decreased TAT
 - + Blood Cultures TAT down 2.5 days
 - - Blood Cultures TAT down 15 hours
 - + Urine Cultures TAT down 8 hours
 - - Urine Cultures TAT down 19 hours