Our Lab’s Journey To One Piece Flow: Why it’s Important to Move Upstream to Specimen Collection

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Learning Objectives

- Empower you to impact change outside the traditional boundaries of your lab
- Invite you to engage your customers in helping you reduce lab TAT of results
- Help reduce your OT
- Build Stronger Customer Relationships
Franciscan Health System

- Part of CHI (Catholic Healthcare Initiatives)
  - St. Joseph Medical Center-Tacoma (our “HUB”)
  - St. Francis Hospital – Federal Way, WA
  - St. Clare Hospital – Lakewood, WA
  - Enumclaw Regional Hospital – Enumclaw, WA
  - St. Anthony Hospital – Gig Harbor, WA
- Member of PacLab Network Labs
  - Have 13 Patient Service Centers and 3 IOPs
  - Serve 17 LTC and ~700 Assisted Living facilities

My History with PI

- Trained as an RPI Facilitator about 5 yrs ago
- Trained as a Work-Out / Change Agent about 3 years ago (GE Model)
- Got my start conducting RPIs in preparation for a lab remodel and installation of Total Lab Automation (BCI) as we knew we had to clean up some processes or run the risk of automating “bad processes”
- I got the bug and have continued to find things that I felt we could do better so continued with more RPIs and Work-Outs
SJMC... Our story...

SJMC Demographics

- 340 acute care beds
- SJMC averages 55,000 ER visits/year (~150/day)
- Very busy Dialysis Center & Trauma Unit
- SJMC is core lab for 4 of the system’s hospitals and all of the Outreach work
  - 2.1 million billables / year
    - 55% of our volume is Outreach
- 14000 s.f. lab
Why am I here today?

- Want to share my passion for Process Improvement Initiatives and their impact on our lab
- To invite you to think beyond your normal scope and consider how your customers can help you serve them better
- My team and I have realized some great changes in our relationships with our customers and in the service we can offer
If you want lasting change

- When choosing PI initiatives:
  - Be deliberate in what you tackle first
  - Plan for a BIG win...everyone is watching
  - Suggest Big Bang or Low Hanging Fruit
- Use each successive initiative to gain momentum
  - Involve new members of your team on each initiative
  - Recruit new “Change Agents”
- Resolve to affect a culture change
  - You know you “have arrived” when...

A Culture is Born

- Your work groups beat your door down to beg you to fix X,Y,Z
- Your team wonders why other departments in the hospital don’t “get it”
- Your team expresses that if we don’t all work together to help the patient we aren’t doing our best work to serve them
  - “We can’t do it without their help, can’t you just make them change?”
  - My pat answer...we can’t tell other departments how to do their work...or can we?
An Intriguing Idea

- The questions my staff was asking got me thinking...
- Could I have been missing something all along?
- What if we engaged touch-points outside the lab and include our customers?
- Where is our greatest opportunity?

Lots of great data...now what?

- Labs excel at collecting data
- What are you doing with the data?
  - Use it or stop counting
- Go to GEMBA often and ask yourself what do you really see?
  - Bottlenecks?
  - Ringing phones?
  - Variation?
  - Stress?
What not to do with your data!

Our Plan

- Completed many RPIs to streamline processes in Specimen Center and the General Lab before TLA
- After TLA implementation it was time to go back to GEMBA
  - Do any processes need to be refined?
  - Are there new bottlenecks?
- Back to GEMBA and
  - A new bottleneck had emerged...
TLA is single piece flow…

- …yet we were feeding the line in batches
- Two very busy campus PSCs were delivering samples in big batches and dropping them off
- Samples sat in processing until someone had time to transfer samples to line racks
- Long Term Care Phlebotomists were dropping off about 120 draws every morning at about 0900 for Specimen Center to also put on the line
- Samples piling up waiting to be placed on the line

An idea is born…

- PSCs and Long Term Care Phlebotomists are given “line racks” and trained on loading the line
- The 2 large campus PSCs are asked to deliver samples on alternating 2-hour schedules; PSC A every odd hour and PSC B every even hour
- LTC phlebs each fill a separate “line” rack and feed the line as they come in
- Samples no longer go to Specimen Center and wait – TATs are dramatically reduced
- We now ship line racks to all of our large PSCs and our couriers deliver samples in those racks for immediate placement on the line
Let your data lead the way

- Allowed out data to point out next project
- A great “opportunity” is identified in the high # of hold overs we have every day
  - Number of samples not sent to reference lab day of collection but held over to next day
  - Need to compete with National Labs
- Associated with largest amount of OT by a single work group
  - Team of 5 with 50 hrs OT/pp

Can’t do it Alone!

- OT and hold-overs due to late delivery schedule of couriers
- Couriers pick up according to schedule established by marketing at account setup
- Facilitated an Out Patient Processing RPI and invited
  - Processors
  - Couriers
  - Marketing
OPP RPI / Scope & Target

- **SCOPE:** From specimen pick up to sample delivery at bench or line for testing

- **TARGET:**
  - Decrease number of hold overs
  - Decrease overtime
  - Level the workload

Pre-RPI Scan Reveals

- Workload studies show that there are many peaks and valleys and that lab’s activity very directed by drop off schedule of couriers
- Couriers are on the road for many hours holding many samples while continuing to pick up more
  - Lab staff sit idle waiting for big drop off
- Couriers are frequently within a few minutes of the hospital and yet drive by without dropping off
- Many clients have scheduled pick ups for after 2000 hrs yet offices closed with samples sitting in a locked box for hours
- When marketing asked about this we are told, “well, couriers can be everywhere at 5, right?”
- Late box is picked up at 2200 for a midnight flight to PAML
Immediate Changes Implemented

- Courier schedules are revamped so that
  - Samples delivered to the lab every hour – no more big "down time"
  - Courier is never out holding samples for more than 2 hours without dropping off at lab
  - Last sample drop off target of 2100 established
- Late box pick up for shipment to reference lab is changed to 2300 giving us an extra hour to process samples and add them to the box
- Oh yeah, couriers no longer report to Security; They report to the lab 😊

What we accomplish

- Holdovers reduced to from >100/day to <20/day
- OT drops from 50 hrs/pp to less than 3
- Accountability
  - Hand held devices for courier to track each requisition
  - Accountability Stamp – we know who touched every sample through every step of the process
- FIFO
- Establish One Piece Flow for Outreach samples avoiding back-ups so IP and STATs are never delayed
  - "Feed the line" every 15 minutes
Unanticipated benefits...

- With couriers reporting to the lab we now are more in control of their interactions with our customers
- Critical Values can be called at a more reasonable hour
  - No more 0100 critical fasting glucoses to call...
- Have capacity to add another quality step – reviewing a pending report before OP Processors clock out so follow up can be started right away if needed

A move to engage customers in Quality Initiative

- Roll out education for our clients with help of marketing so that:
  - Every sample has 2 patient identifiers
    - Went from 277 month with single identifier to less than 13
  - Worked with Client on how to fold requisition so couriers don’t have rework to unfold and refold requisitions to scan barcode
    - From 310 failures month to 20
- Have engaged our clients in providing quality step in exchange for great tracking ability and decreased phone calls to verify patient demographics
  - All win-win initiatives
Next great opportunity…ER

- Our data reveals that the greatest number of complaints come from Emergency Department.
  - How can this be? They have the most closely monitored TAT.
  - Our perception is that we meet established targets greater than 95% of time.
  - How could something so good be so wrong.

A closer look reveals

- Classic debate: When does the clock start?
  - Sample receipt in lab versus test order time?
- The Process:
  - ER staff collect sample and drop them off in the StatLab which is in the ED.
  - Lab Processor logs samples as received, labels the samples, and sends them to main lab for testing via PTS.
  - Main lab Processors removed from PTS, place in Stat basket where they sit until samples retrieved from basket to be placed on the line or delivered for testing.
Wait Back Up the slide..

Did I really just say…

… oh my, YES I did!

- Lab Processor logs samples as received, labels the samples, and sends them to main lab for testing via PTS
- Main lab Processors removed from PTS, place in Stat basket where they sit until samples are retrieved from basket to be placed on the line or delivered for testing
- Processing time from drop off in StatLab to delivery for testing…7 - 15 minutes 90% of the time (and as much as 30+ minutes also noted!)
ED Pushes for POCT

- ED wants to be able to control TATs and approaches Lab Management for POCT for TNI
- Negotiate a deal in which we ask for an opportunity to fix the issue and promise to decrease TAT for all labs
  - Reveal that we need their help to do what needs to be done
- Invite the ED to join us in an RPI
- Dr Giao Kaplan, ED Medical Director wants to be on the RPI Team
- A blended ED/Lab team is selected and dates confirmed

The Team
Scope and Target of RPI

Scope
- From the time of test “order” until the time the sample is on the line or delivered to the testing bench for testing

Target
- To reduce the time from order to delivery to bench / line for testing
  - NIO to draw time under 15 minutes
  - Draw time to receipt in lab under 5 minutes
  - Lab receipt to delivery for testing under 2 minutes

Bottlenecks-ED
- # of patient draws in the triage queue
- No visual to get help for ordering and drawing
- Patients needing EKG and blood draw tie up the one draw station for long time
- No consistent communication to MD/RN about when draw was actually done, or if unable to obtain sample
- Delivery of samples to stat lab
- Timely ordering – often samples in the lab without orders so testing does not begin
Bottlenecks-Lab

- Stat Lab- Logging all samples for tracking
- Holding samples and labels and tracking TATs
- Stat lab staffing – Short notice sick calls
  - At times had no replacement to cover StatLab
  - No good back up processes in place
- Bottleneck of samples waiting in Stat Lab
- Delivery time from PTS to testing bench

Pre-RPI Scan Variability Cerne r
Order/Draw/Receipt

![Graph showing Troponin TAT Variability Cerner Order to Receipt]

- Average Order to Draw: 10 min
- Draw to Receipt: 12 min
Pre-RPI Attention to PTS

*Variation* in sample time to bench

- 3 separate days, 36 carriers total
  - 4/17/09: Average 6.25 min
  - 4/24/09: Average 2.25 min
  - 4/27/09: Average 4.34

Attention to PTS- Specimen Delivery

![Graph showing variation in carrier delivery time]
What did this team accomplish?

- Leveled the workload in both ED and Lab
- Closed the StatLab and consolidated workforce in the lab; able to level workload
- Established visual controls for bottlenecks
- Gave lab access to ED’s “white board” so we could enter comments about labs that need to be redrawn eliminating phone calls saving time for Lab and ED staff alike

Post-RPI Monitoring

- Overall lab has been able to shave an average of 8 minutes
- ED still has work to do but at least now they are aware and have committed to an RPI
- On-going monitoring in place
- Data shared with ED and Lab Staff now monthly
Biggest Pay Off?

- The mutual understanding we gained for each others’ departments
- To hear Dr Kaplan say that they won’t need POCT in the ED after all
- To have the ED acknowledge their role in lab TAT and to commit to making the necessary changes
- My team feels validated and renew their commitment to best TATs possible

The Lab is on the map…
A Call from Hospital CEO

- She’d heard a few grumblings from one provider about morning rounds and she wanted to know if I felt sure we were doing the best we could... all the time
- I remind her that we’d done an AM rounds RPI a few years ago and felt confident that my phlebs were drawing patients in an about 3 minutes
- I round with my early morning phlebs and learn that we are still completing draws in 3 minutes but yes we have opportunity
- Work with the Director Of Med-Surg (unit that was getting the most complaints) and assemble an RPI team

Team Gains Momentum before it starts.... others beg to join

- The Lab/MedSurg RPI grows to include Critical Care and Rehab services
- Others want to join but the team is already too large
  - We get all nursing units to commit to implement all changes the RPI team suggests
- Pre-RPI scan is conducted and I go on a few more AM rounds
A single barrier to success

- In the pre-scan a single barrier is identified
- When AM phlebs come to the units to draw blood 10 - 15 minutes is used to find the nurse draw log and reconcile the orders with the nurses at each station
  - Each phlebotomist is dispatched to 3-4 different units every morning and repeat this at each unit
  - There is 30-60 minutes wasted verifying orders every day by each of 5 phlebs!
  - With each unit a phleb stopped at s/he got further and further behind so that by the time they got to Med/Surg they were 30-60 minutes late

Not every job requires a hammer

- RPI not needed for this issue
  - With experience you will be able to determine which tool is best in each case. The key is *do something!*
- Decision is made to use Work-Out Model
  - This is based on the fact that we had good processes in place that if followed we know would eliminate the problem
  - Greatest gain would come from focusing energy on retraining and accountability
  - Entire house could standardize practices and all our patients / MDs would benefit
    - A “call to arms” – Lab is invited to present to every unit’s team meeting and a “Nurse’s Guide to the Lab” is created
Nurse’s Guide to the Lab

Presented by:
FHS Laboratory Team
2009
Worst Dressed Tubes

Place label directly under cap
NAME at the TOP
Barcode straight
Collector’s USER ID

Best Dressed Tube

Get it Straight
Reduce the Wait

Lab Tube Reference Guide

Tubes are listed in order of draw. Tumor blood cultures are ALWAYS first and gray tops are ALWAYS last when requested.

**Blue Top**
- DD
- HB
- REF
- UR
- ET
- REF LAVAGE
- REF LAVAGE ET (INF)

**Red Top or Gold Top**
- DTH
- (Coly Red)
- RBC
- MONS

**Green or Gold Top**
- BMP
- CMP
- REF
- GLUCOSE
- K
- AMY
- PHIL
- CREAT
- ACUT PHIL
- TIPS
- INFAL
- ANEM
- CORT AM/
- CORT PM
- Depazot
- Therapeutic
- Drug

**Dark Green or Green Top**
- RBC
- WBC
- BOD
- PHIL
- LAC
- ADT

**Pink Top**
- TS or TK
- (Type Screen and/or
- (Dvorak Test)
- NOTE:
- Blood
- Must be on
- Refer and
- Delivered
- within 15
- mins.
- HEMOLYSIS

**Lavender Top**
- CBC
- HGB
- MCV

**Gray Top**
- LAC

**Notes**
- Tubes must be labeled with patient NAME, SSN, DATE/TIME draw & INITIALS of phlebotomist.
- Mix all tubes after collection by gently inverting 6-8 times.
- Blood Cultures are always drawn FIRST, when requested.
You can Help with AM Draws

- Draw logs sent to floors at 1930
  - Are all orders entered?
  - Are the right tests ordered?
  - Is it a Lab or Nurse draw?
  - Cancel all duplicate orders
- Corrected draw logs sent to floors at midnight
  - Any new admits need orders?
  - Have any orders changed?
  - Cut Off for all orders 0200
    - Anything ordered after 0200 will be collected at 0700
  - Leave copy nun designated area at the nurse’s station for AM Phleb
  - Implement lime green “Lab Communication” baskets

Did you know…

- Order of draw matters! Must be:
  - Blood Cultures, blue, red, gold, green, pink, purple, and gray
- Labeling tubes at the bedside by the person drawing the blood is a best practice
- Have you ever considered comparing STAR label to patient’s armband before a blood draw?
What we’ve accomplished

- Increased awareness on everyone’s role in lab TAT
- Increased buy in from nurses to help by carefully placing labels
- Increased monitoring of orders by NS
- Better hand-off communication process between each unit and the lab
- Standing invite to quarterly nursing staff meetings to discuss lab issues

I hope I have convinced you - Change is Good: You go first

- Want to share a great little video with you and then end with a few closing remarks that I hope will help you in your journey to continued improvement
- I also hope you’ve connected with the possibilities available to you when you involve your customers
Video Presentation
Change is Good: You go first

Available for free at:
www.simpletruths.com

Closing Thoughts

- When you get home take time to
  - Go to GEMBA
  - Stop and Watch and

- I am sure you will uncover...
  - Once valid beliefs and practices that have outlived their usefulness
  - Misinformation that is “out there”
  - Misconceptions that are accepted without much thought or questioning
Each of you is likely collecting lots of data.
  • What is it telling you?
  • What are you doing about it?

As leaders we need to remove barriers as quickly as we can so that our people will become convinced that great things are happening.

“On the road to lasting change, there will be many tempting places to pull over and park.” Don’t! Keep the momentum going!
  • Author unknown