Patient Centered Process Improvement

Pathology Department LEAN Journey

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Agenda

- About GRH & SMGH
- Change drivers
- Stretch Goals & deliverables
- Kaizen team improvement plans
- Outcomes achieved
- Lessons learned
- Q&A

Team Members

Clockwise , back row, left to right:

- Karen Schubert
- Kerry Lackie
- Kathy Smith
- Jill Brown
- Vince D'Mello

Clockwise, front row, left to right:

- Dr. D. Divaris
- Kelly Bartlett
- Shelley Owen
- Mike Boucher (LEAN advisor) – not present

Chart of GRH/ SMGH lab profile

2010/11	GRH	SMGH	TOTALS
# of Beds	573	149	**722**
# of Emergency Department visits	58,596	47,580	**106,176**
# of Hospital Staff	2,994	1,197	**4191**
# of Laboratory Staff	122	38	**160**
# of Laboratory Physicians	7	4	**11**
# of Pathology Cases			**25,250**
# of Cytology Cases			**7672**
HSMR (Benchmark <100) (from CIHI Web site)	80	76	

Today's Reality

- Do more with less resources
- Escalating clinical demands, volumes and case complexity
- Increasing regulatory and administrative burden
- Low staff morale
- Pressure to reduce costs and increase efficiencies
- Negative media attention with errors

Successful Change

- Leadership
- Engaging Vision
- Staff empowerment
- Patient Centered
- Sustainable
- Manages fears, resistance and sceptics
- Communicate, communicate, communicate

What is LEAN

- Strategy to eliminate waste and non value added activities to meet client/patient demand
- Opportunity to improve operational efficiencies and processing capacity

Purpose of LEAN

Optimize:

- Workflow to meet client needs
- Client/patient satisfaction
- Resource utilization
- Productivity
- Space
- Equipment

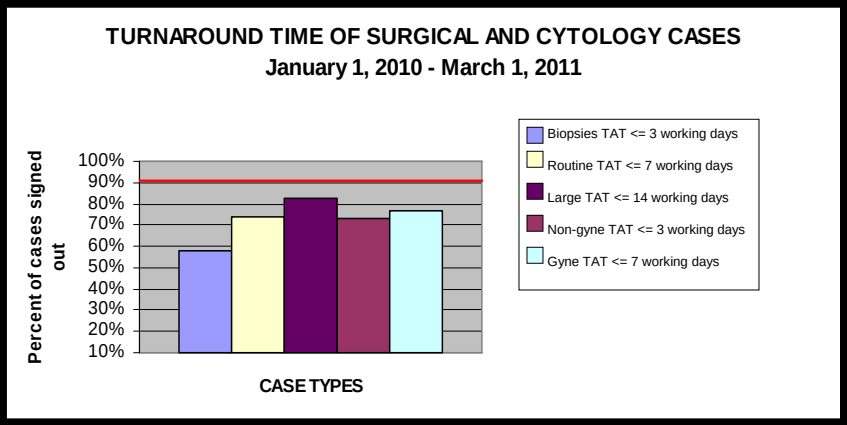
Why LEAN in Pathology?

- Standardize workflow processes from sample receipt to report sign out
- Improve TAT's, client satisfaction, operational efficiencies, workload distribution
- Reduce backlogs, processing delays & crises
- Educate and train staff about Lean
- Influence LEAN culture

Current State Issues

- Uncontrolled batch sizes
- Pre analytical, analytical, post analytical processes not integrated to meet clients needs
- Pre assignment of cases to Pathologists caused delays
- Unbalanced workflow and workload
- Constant Prioritization & Reprioritization
- Significant backlog of cases, not transparent
- TAT's not meeting clients needs

Pre Lean TAT for Surgical and Cytology Cases



External Reference: "Association of Directors of Anatomic and Surgical Pathology" (USA)

Stretch Goals

<u>Improve</u>

- TAT's (90% cases reported in 5 days)
- Workflow processes and standardization
- Staff productivity/utilization
- Workload distribution
- Operational efficiencies
- QA practices

Stretch Goals

Eliminate

- Backlogs
- Non value added processes

Educate

- Staff about Lean
- Transfer knowledge and skills

Inventory

		Pre Lean	Post Lean
Accessioning		20 cases/day	**0**
Grossing	**Large Cases**	10 – 14 days	**0 – 4 days**
	Placentas	20 – 40 days	**0 – 2 days**
	Bx/Routine	0-2 days	**0-1 day**
	Gyne Cytology	3 – 5 days	**0 – 2 days**
Report Sign outs		52% in 5 days	**88% in 5 days**
		30% > 10 days	**2% > 10 days**

Future State Vision

- It is all about the client / patient
- Supermarket concept "client pulls service"
- Sequence of events :
  - Client ⟸ Pathologist ⟸ Technical ⟸ Grossing ⟸ Accessioning ⟸ Specimen collection
- Pathologists set daily workflow "pace"
- Staffing schedules based on "continuous flow"
- Daily or weekly case input "Equals" reports signed out to achieve "steady state"
- FIFO (first in first out) workflow

Future State Vision

- Minimal batching
- Pre analytical, analytical, post analytical processes integrated to meet client demands
- Standardized workflow and processes
- Utilize visual management controls
- Maximum 2 days of backlogs/inventory
- Timely rapid response team huddles
- Proactive vs reactive management

PERFORMANCE EVALUATIONS

Performance Factor	Exceeds job requirements	Meets job requirements	Needs improvement	Does not meet job requirements
Communications	Argues with God	Argues with accreditation assessors and wins	Argues with self	Looses arguments with self
Quality	Obsessed with Quality	Tolerates Quality	Avoids Quality	Unable to recognize Quality
LEAN Principles	Applies LEAN consistently	Understands LEAN	Needs to attend LEAN boot camp	Confuses LEAN with being MEAN
Ability	Consistently walks on water	Walks on water in emergencies	Drinks water	Passes water in emergencies

Change Management Principles

- Learn, improve, move forward
- Zero tolerance for blame and shame tactics
- Transparency with communications
- Patient focused problem resolution
- Respectful interactions
- Adopt "Just do it" mindset
- Evidence based decisions

How We Implemented

- Kaizen team standardized project charter
- Invited volunteers
- Dedicated time to participate
- Strived for consensus
- Focused on "system" thinking

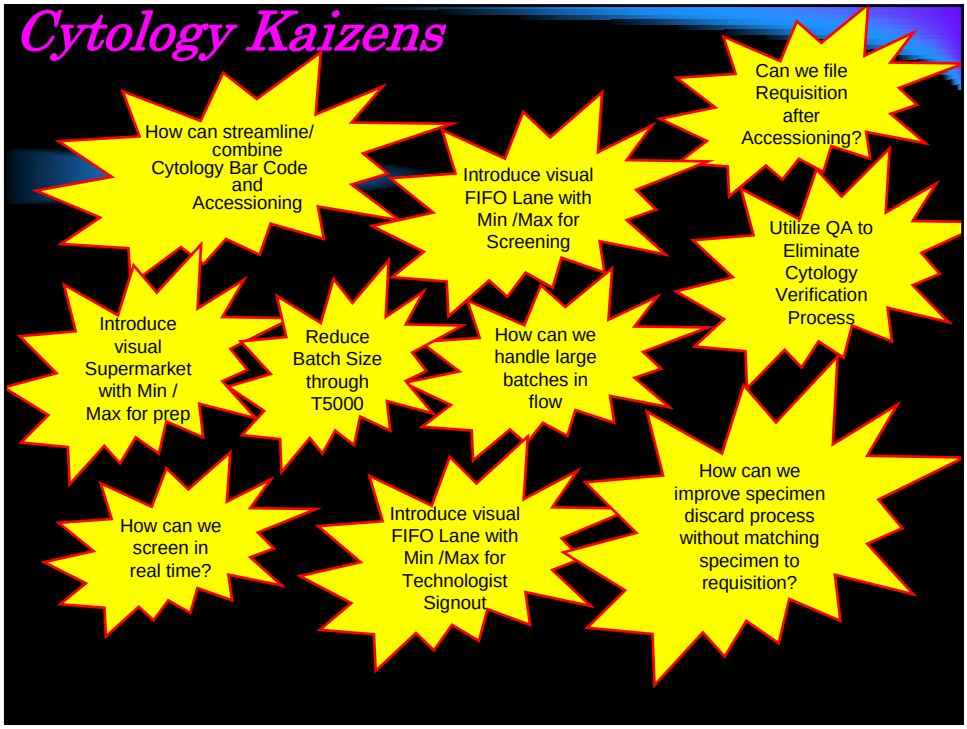
<u>Avoided</u>

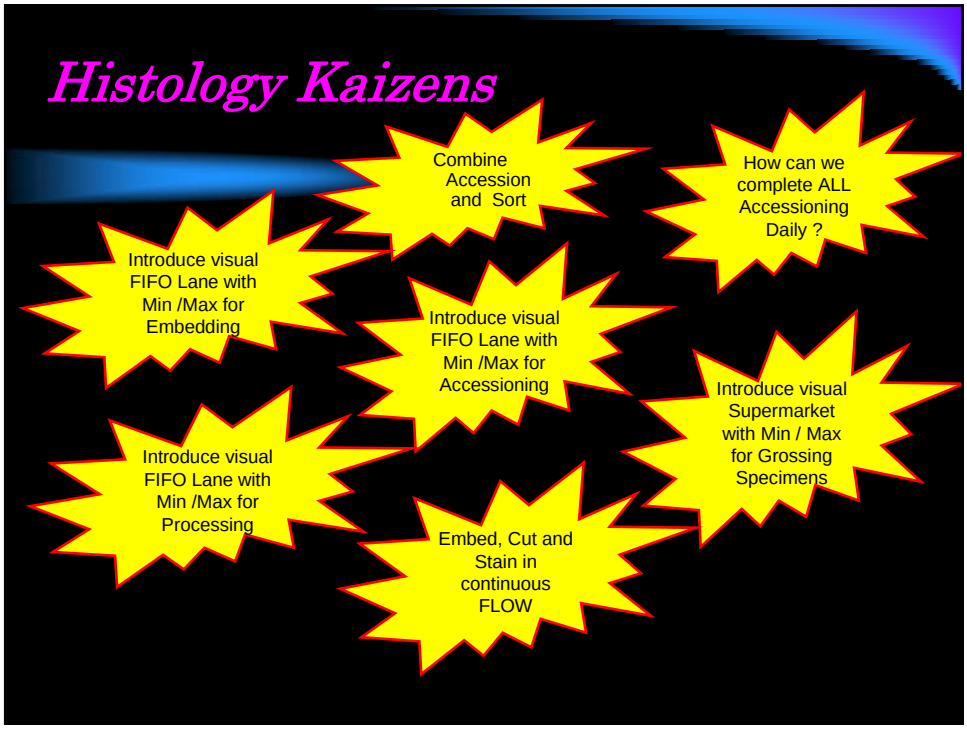
- Analysis paralysis
- Chasing the perfect solution
- Trials/pilots that support status quo

How We Accomplished Changes

- Project Charter
- Teamwork
- Mapped current and future state
- Provided Kaizen teams with objectives and success metrics, they determined "how to"
- Implemented FIFO and Supermarket model
- Created visual controls/dashboards
- Rapid Response Team (RRT) interventions

Cytology Kaizens




Histology Kaizens
Combine Accession and Sort
How can we complete ALL Accessioning Daily ?
Introduce visual FIFO Lane with Min /Max for Embedding
Introduce visual FIFO Lane with Min /Max for Accessioning
Introduce visual Supermarket with Min / Max for Grossing Specimens
Introduce visual FIFO Lane with Min /Max for Processing
Embed, Cut and Stain in continuous FLOW


Pathologist's Kaizens
Introduce visual Supermarket with Min / Max for Slides
Pull cases based on time mixing Histology and Cytology
SET PACE OF REVIEW TO MEET DAILY DEMAND
Supermarket size must be set at a maximum of 2 days
Introduce visual FIFO Lane with Min /Max for Pathologist Review after cases pulled
Pathologists to set standardized criteria to send reports to Quality
Set up Audit process to ensure standardized Quality Process is used

Proof of Concept

DATE (2011)	CYTOLOGY CASES	SURGICAL CASES	WEEKLY TOTAL	AVERAGE DAILY PACE
Feb. 28 – Mar. 4 (5 days)	63	553	616	123
Mar. 7 – Mar. 11 (5 days)	138	630	768	154
Mar.14 – Mar. 18 (5 days)	155	716	871	174
Total Cases signed out in 3 weeks	**356**	**1899**	**2255**	**150**

Pre-analytical – Key Changes

- Eliminated pre-assignment of cases to Pathologists
- Clerical staff now accession instead of MLT's or TA's
- Stopped front end case sorting/separation
- Implemented "E" vs manual logs
- Specimens grossed in FIFO/max batch N=20

Analytical – Key Changes

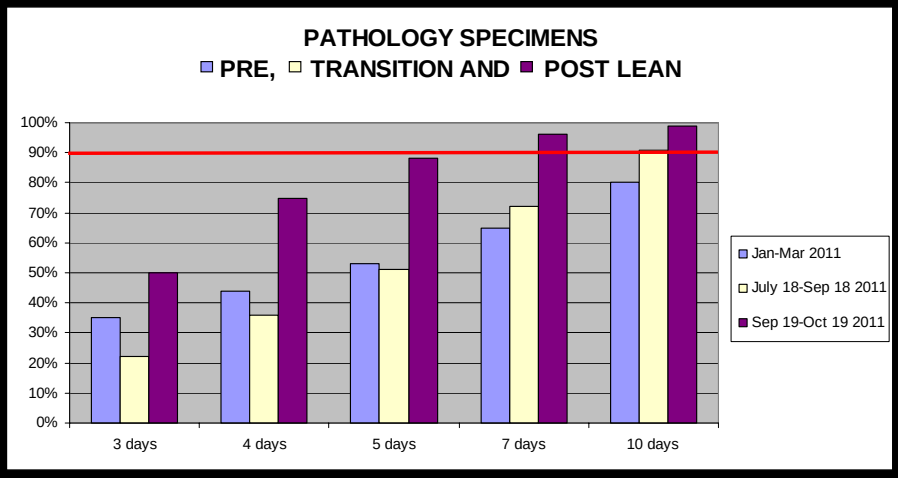
- Created work cell model (embed/cut/stain)
- Reduced re-screens of Gyne cases by 30%
- Adopted FIFO workflow from sample receipt to report sign out

Post-analytical – Key Changes

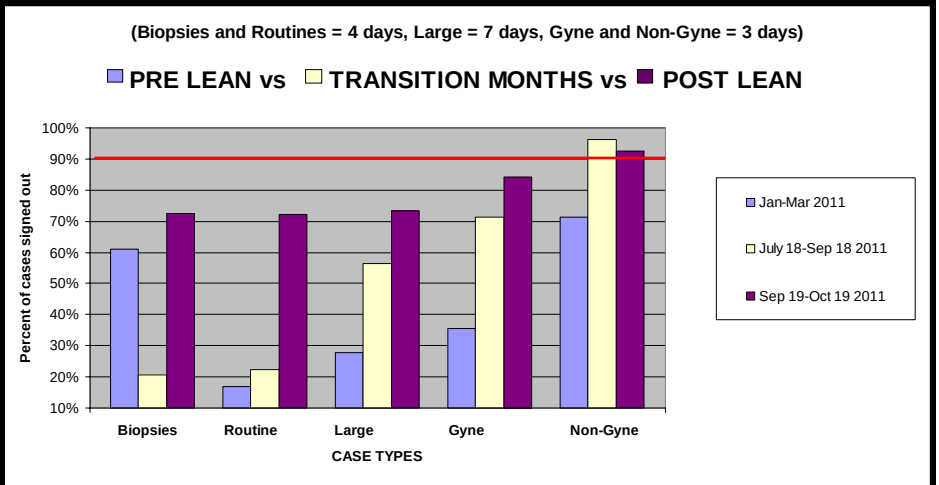
- Pathologists pull cases from centralized "supermarket" in standardized manner
- Pull vs Push workflow model
- Blocks and slides filed in FIFO (no re-shuffling)
- Eliminated duplicate printing and filing of departmental reports
- TA assigned to conduct daily/weekly equipment maintenance of processors/stainers

Turnaround Time Outcomes

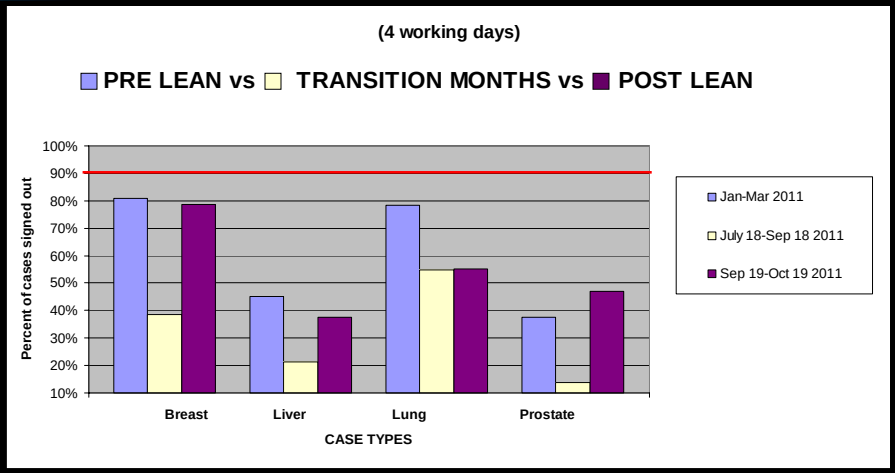
(From Accessioning to Sign out)

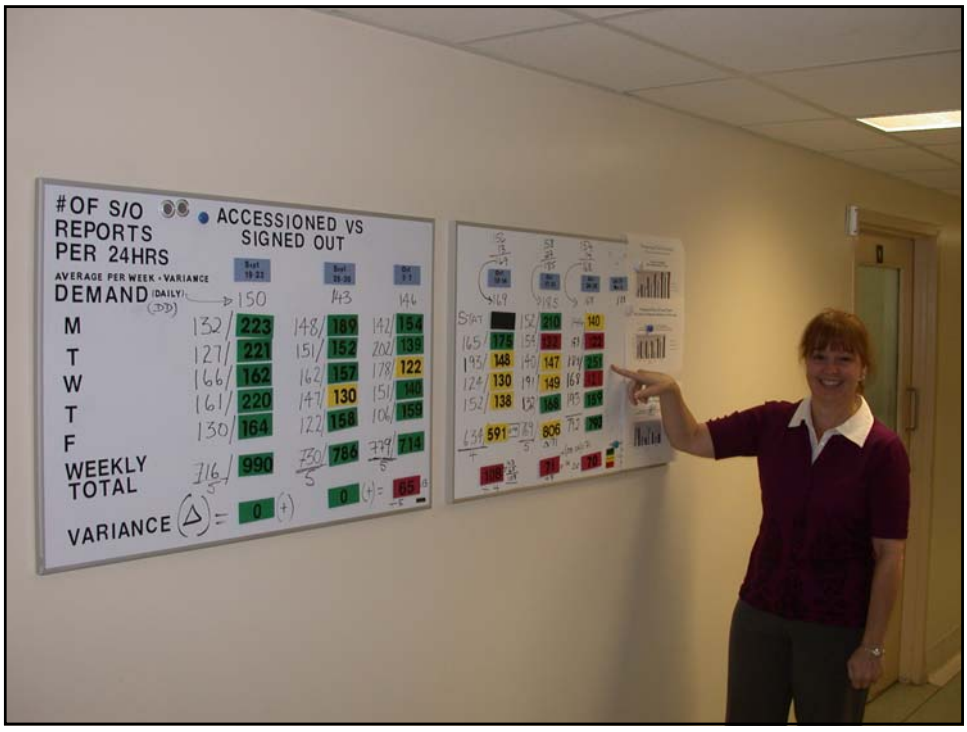


Turnaround Time All Case Types



Turnaround Time For Core Biopsy Specimens





Return on Investment

Project Expenses		
Project Expenses = (Staff time, 200 hours @ $45/hour + Advisor Fees)	$45,000	
Annual Project Savings		
Elimination of Non Valued added (NVA) processes = 18.25/hours/day (@$45.00/hour)		$213,525
Projected reduction in overtime = 79 hours/month		$63,990
Less additional costs		
Added 2.5 FTE's (1 TA, 1 Clerical, 0.5 PA) = $/year		$160,000
Anticipated savings per year		**$ 117,515**
Return on Investment		**261.14%**
Payback = $117,515/$45,000		**4.59 Months**

Pathology Staff Engagement Survey

60% Response Rate to Survey *October 2011*

Comparing Pre & Post How would you rate	Improved Significantly	Improved Marginally	Remained the Same	Got Worse	Don't Know
What do you think our clients/patients would say about overall service delivery?	**58%**	38%	4%	0	0
Impacts on overall TAT's	**75%**	25%	0	0	0
Reduction in processing bottlenecks and backlogs?	**50%**	38%	4%	4%	4%
How has implementation of FIFO and the supermarket model helped with integration of workflow?	**79%**	13%	4%	0	4%
Productivity?	33%	**38%**	21%	4%	4%
Operational efficiencies	**63%**	29%	4%	0	4%
Use of visual management tools/dashboards to manage workflow and address backlogs?	**63%**	29%	0	0	8%
Overall job satisfaction?	25%	**58%**	8%	0	8%

What Worked Well?

- Eliminated SILO culture
- FIFO, supermarket
- Staff are putting in fewer hours of overtime, and the work is getting done quicker
- Not pre assigning cases
- The Kaizen events worked well to engage front line staff to contribute
- Advisory committee members training and engagement and transparency with implementation

What We Could Have Done Better

- Too much change at once
- Basic understanding of the process (how & why) was not communicated well
- Having too many pathologists/technologists/Pas take time off at the same time
- Managing expectations and the sceptics
- Communications and knowledge transfer

What Lessons Did We Learn

- Communication is key, keeping the staff informed
- Equal commitment from physician and technical staff. Solidified team and system concept and not individuals
- It is an ongoing learning process that keeps evolving
- Have an open mind
- Improvements that are evidence based and focused on the client/patient are helpful with getting success
- You have to bite the bullet and muddle through rather than refining the processes to perfection

Our Future Plans

- Daily Monitoring of workload and sign outs
- RRT Identification of Recurrent Themes
- Escalation to Senior Management for Strategic considerations
- Improve Lung/Liver/Breast biopsy TAT's
- Communicate progress/outcomes regularly
- Real Time electronic dashboard development (Viewics Inc.)

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Thank you

Q & A