

Sliding to Success

Katie Sousa, Process Owner, Manager Histology

Poster Presenter:

Virginia Blake, Quality & Education Coordinator

Baystate  Reference Laboratories

Define: Project Charter

Business Case: Inefficient workflow and space constraints contribute to less than desirable through-put time and error rate.

Problem Statement: Current T.A.T. unknown, perception by Pathologists is unacceptable, expectation is undefined. Lack of Adequate space is chronically documented during CAP inspections. Error tracking system does not incorporate all mistakes.

Goal: Improve technical process through-put by 15%.

In Scope: Begins at time of accessioning, ends at delivery of slides to Pathologist shelf. Specimen type is DermPath. Error tracking of entire process.

Out of Scope: Other specimen types 'Non-Derm' and specimen receiving errors / errors found by Pathologists.

Define: The Histology Project Team

Team Members:

Champion: Glenn Surprenant / Mark Provost

Process Owner: Katie Sousa

Subject Matter Experts:

Pam Passidakis (Journalist), Jodi
Wesolowski (Photographer), Belinda Merrill
(Communications Specialist)

Ad Hoc: Rest of Histology Lab Employees

Estimated Timeline:

Project Start Date: June 27, 2007

Target End Date: August 31, 2007

Process Improvement Method:

Lean Six Sigma Kaizen Event



Define: Final Project Work Plan & Timeline (as of 11/15/07)

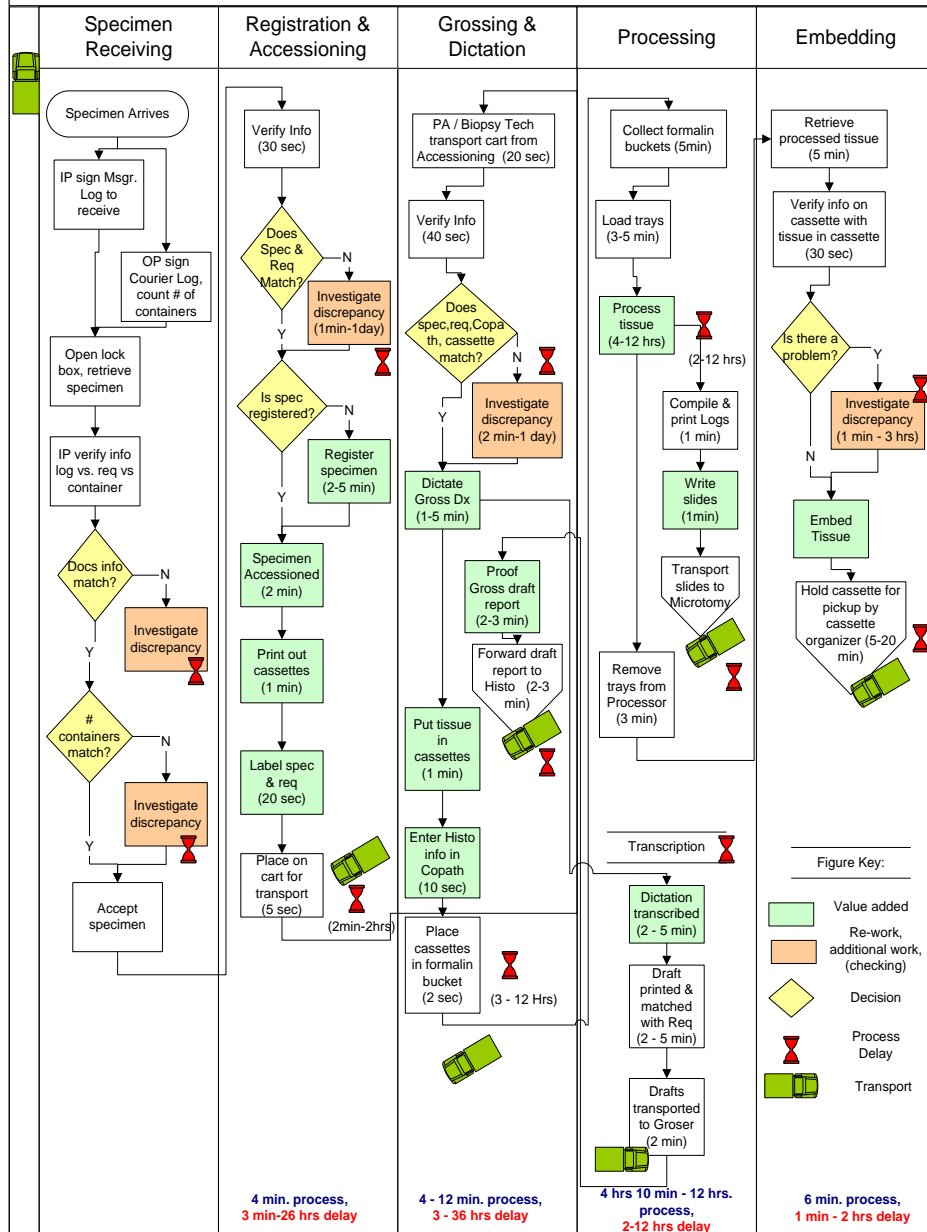
BRL Mission: To improve the health of the people in our communities every day, with quality and compassion.														
Ref. No	Project Milestones Critical to Success	Task Leader(s)	Comments	6/11	6/18	6/25	7/9	7/16	7/23	7/30 - 8/27	9/3	9/10 - 9/21	9/24 - 10/5	Later
					On Schedule / Activity Completed									
					Off Schedule - Should Not Impact Project Timeline									
					Off Schedule - Will Impact Project Timeline									
	HCS Lean Team Training & Kaizen Event		Anne Daley											
1	Develop Histo & Micro Project Charters	Daley	Constructed Day 2, Champions accepted Day 3			Done								
2	Training - Day 1	Ambrose, Daley	8 hour participant day, highly evaluated			27-Jun								
3	Define - Day 2	Daley	5 hour participant day, project charters drafted			28-Jun								
4	Define - Day 3	Daley	5 hour participant day, Included process flow mapping			29-Jun								
5	Measure/Analyze - Day 4	Daley	5 hour participant day, completed process mapping, determine information to measure or gather				12-Jul							
6	Improve - Day 5	Daley	5 hour participant day, brainstormed possible solutions				17-Jul							
7	Micro Improve - Day 6	Daley	5 hour participant day, focus was Micro, developed Implementation Plan					25-Jul						
8	Histo Improve - Day 7	Daley	5 hour participant day, focus was Histo, developed Implementation Plan					26-Jul						
9	Execute Implementation Plans	Process Owners & Team	Majority of Solutions planned to be implemented by 8/31/07											
9	Control - Day 8	Daley	Review of Implementation Plans with Process Owners on 11/15 discovered >80% completion, projects considered 'closed'								9/5 mtg - delayed			
10	Kaizen Event Coaching	Daley	Ongoing during project											15-Nov

Define/Measure: SIPOC

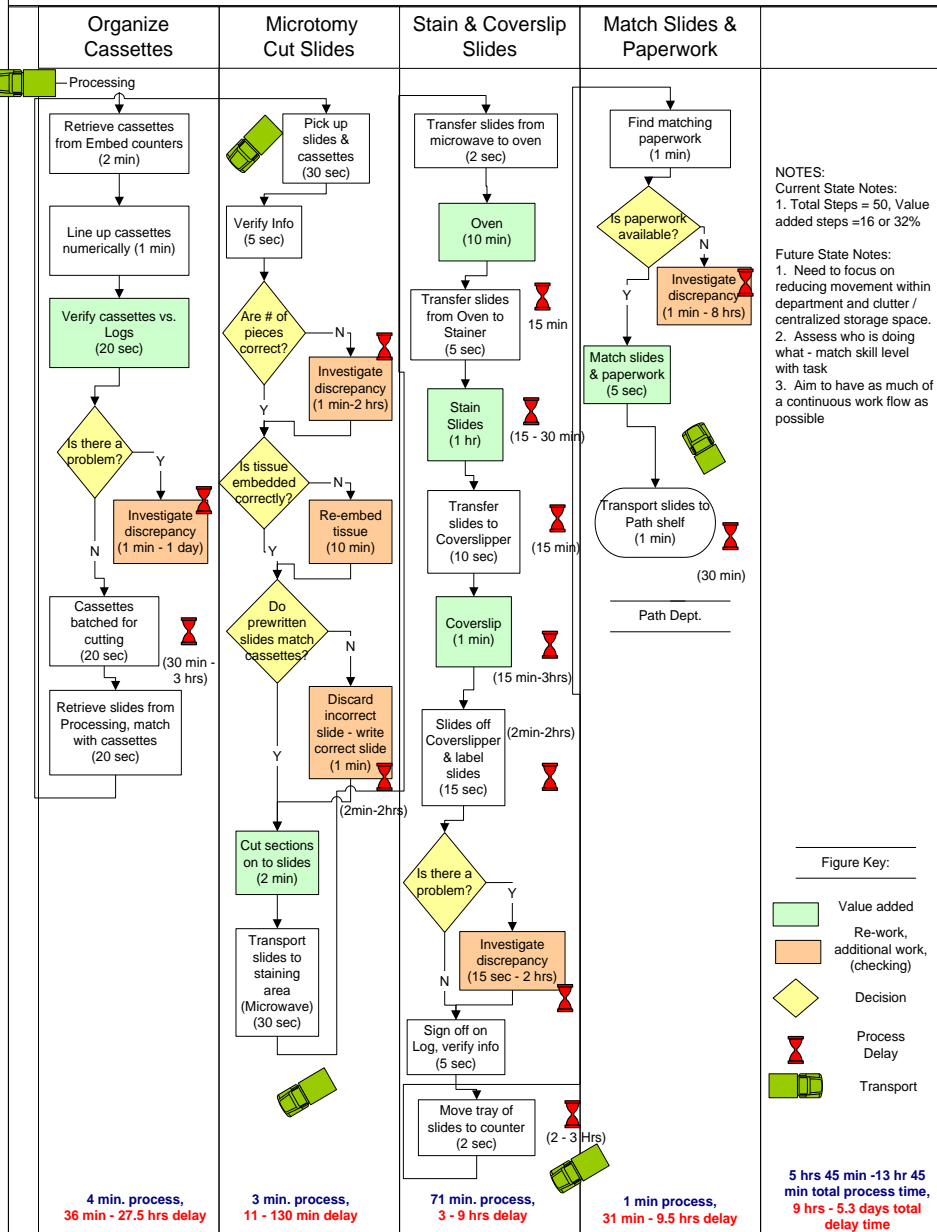
Supplier	Input	Process	Output	Customer	Critical to Quality (CTQ)
Physicians	Specimen	Receiving & Registration	Slide	Pathologist	Slide TAT, available for review
Vendor	Requisition		Requisition		
Pathologists	Cassette	Grossing	Working Draft Report		
	Slide				
		Processing			
		Embed			
		Organize Cassettes			
		Microtomy			
		Stain Slides			
		Match Slides & Paperwork			
		Slides to Path Shelf			

Define/Measure: Current Histology Workflow

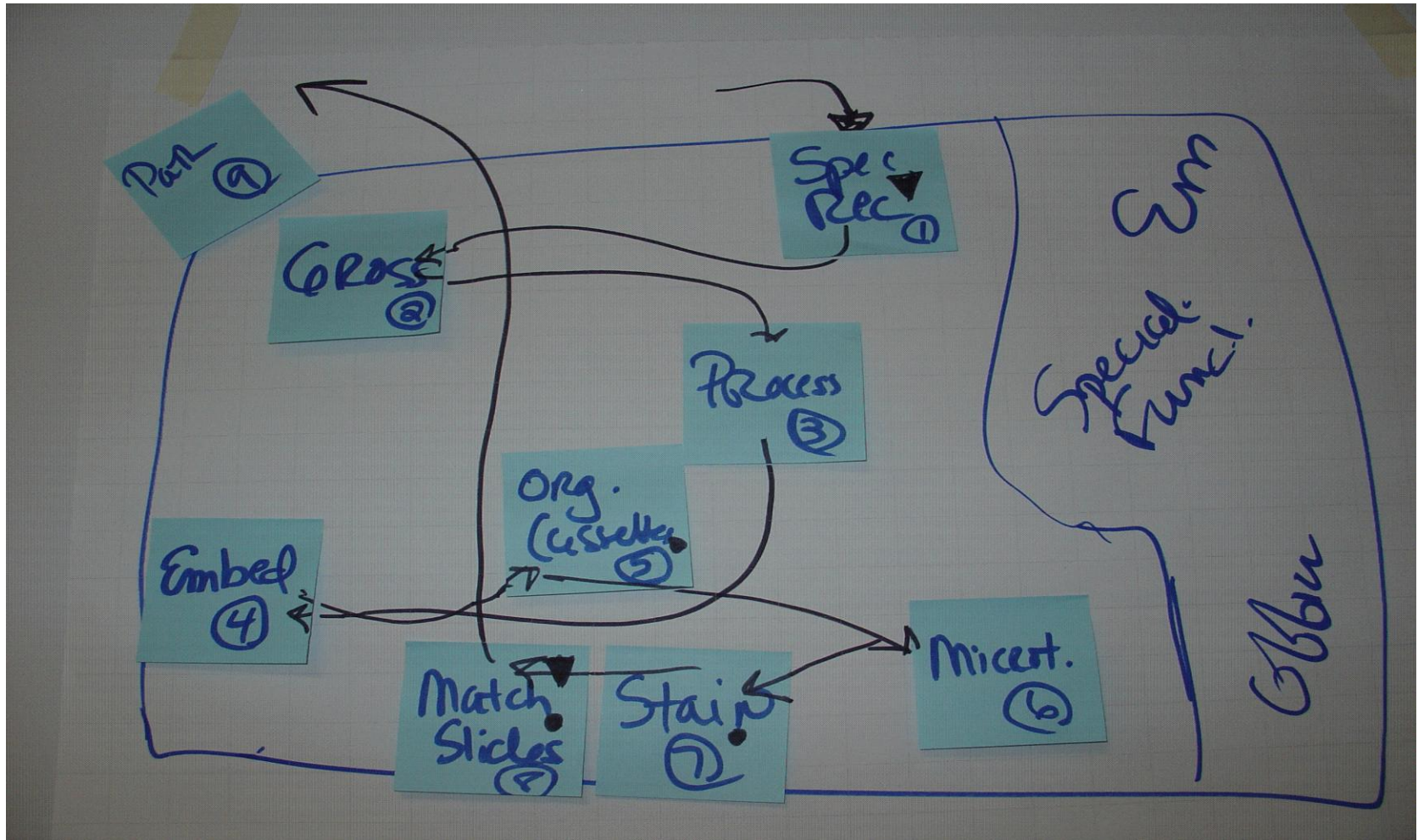
Current State Process Map: Histology - Part 1 (Finalized 7/26/07)



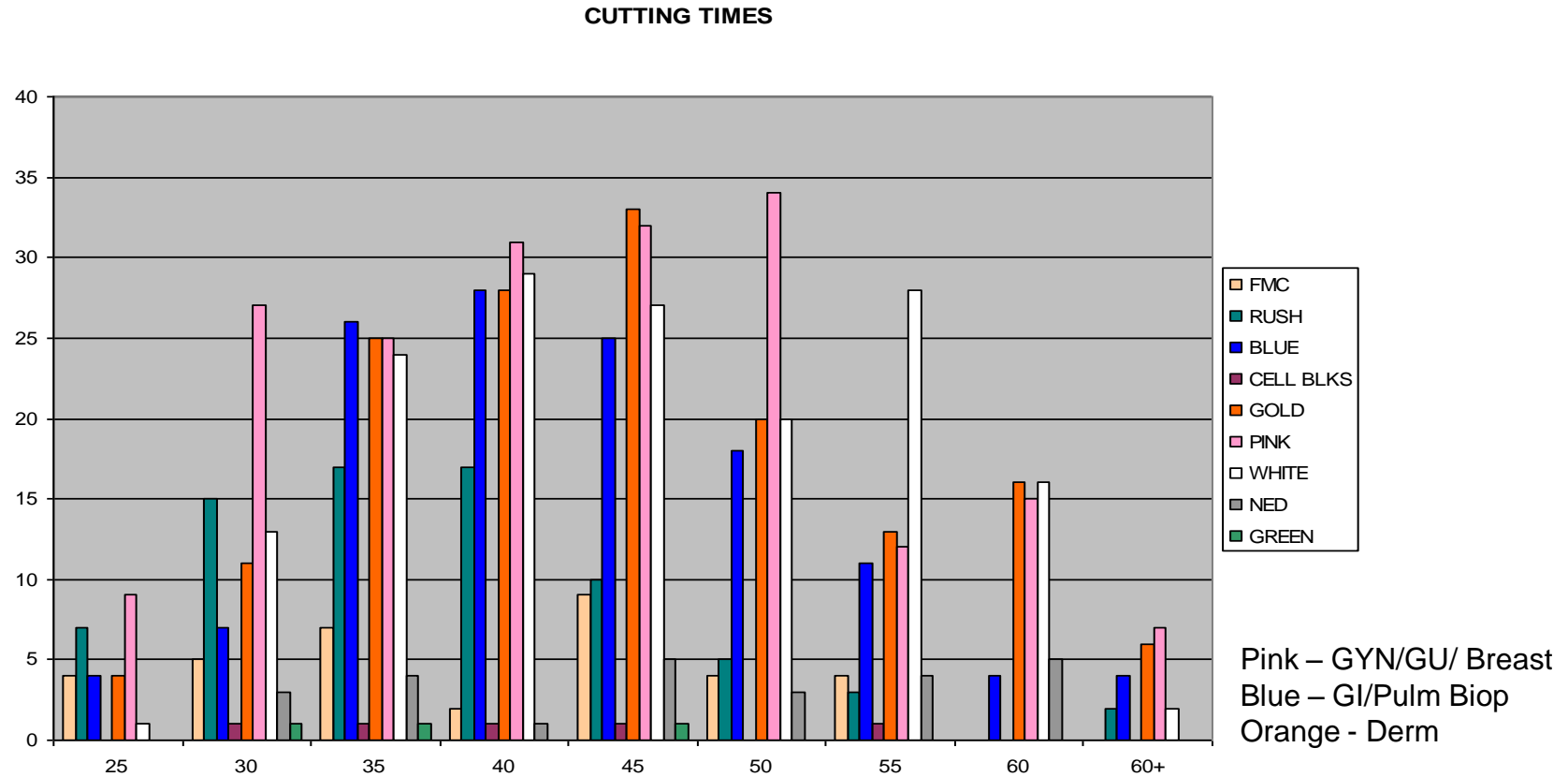
Current State Process Map: Histology - Part 2 (Finalized 7/26/07)



Define/Measure: Histology High Level Workflow

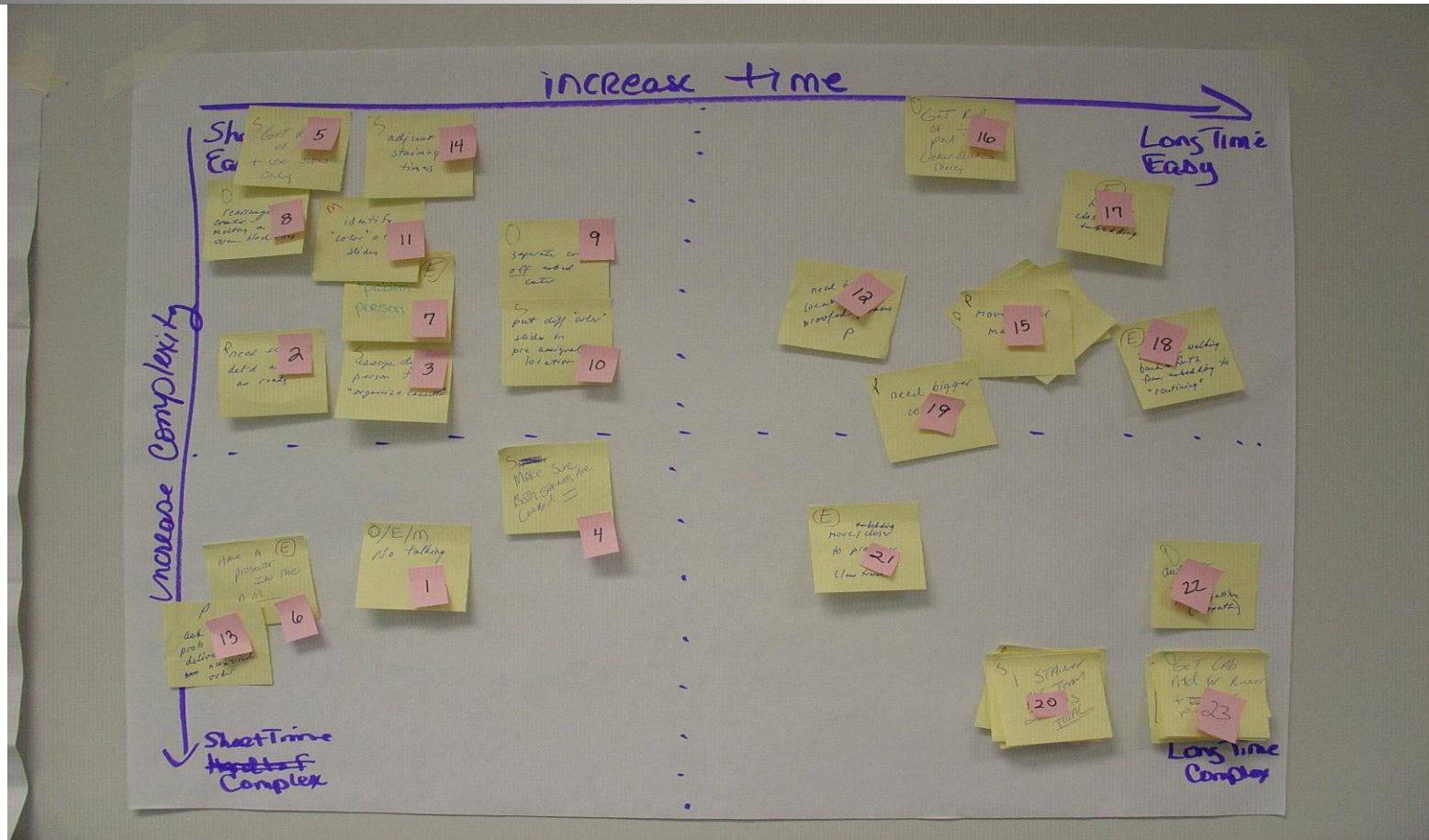


Analyze: Microtome Productivity



Average time of cutting a dish/racks 35 - 45 minutes, information to be used to evaluate productivity.

Improve: Time & Complexity Analysis



Potential solutions shared with department, feedback gained and used to assist in prioritization of actions to be taken.

Improve: Implementation Plan / Technical Area

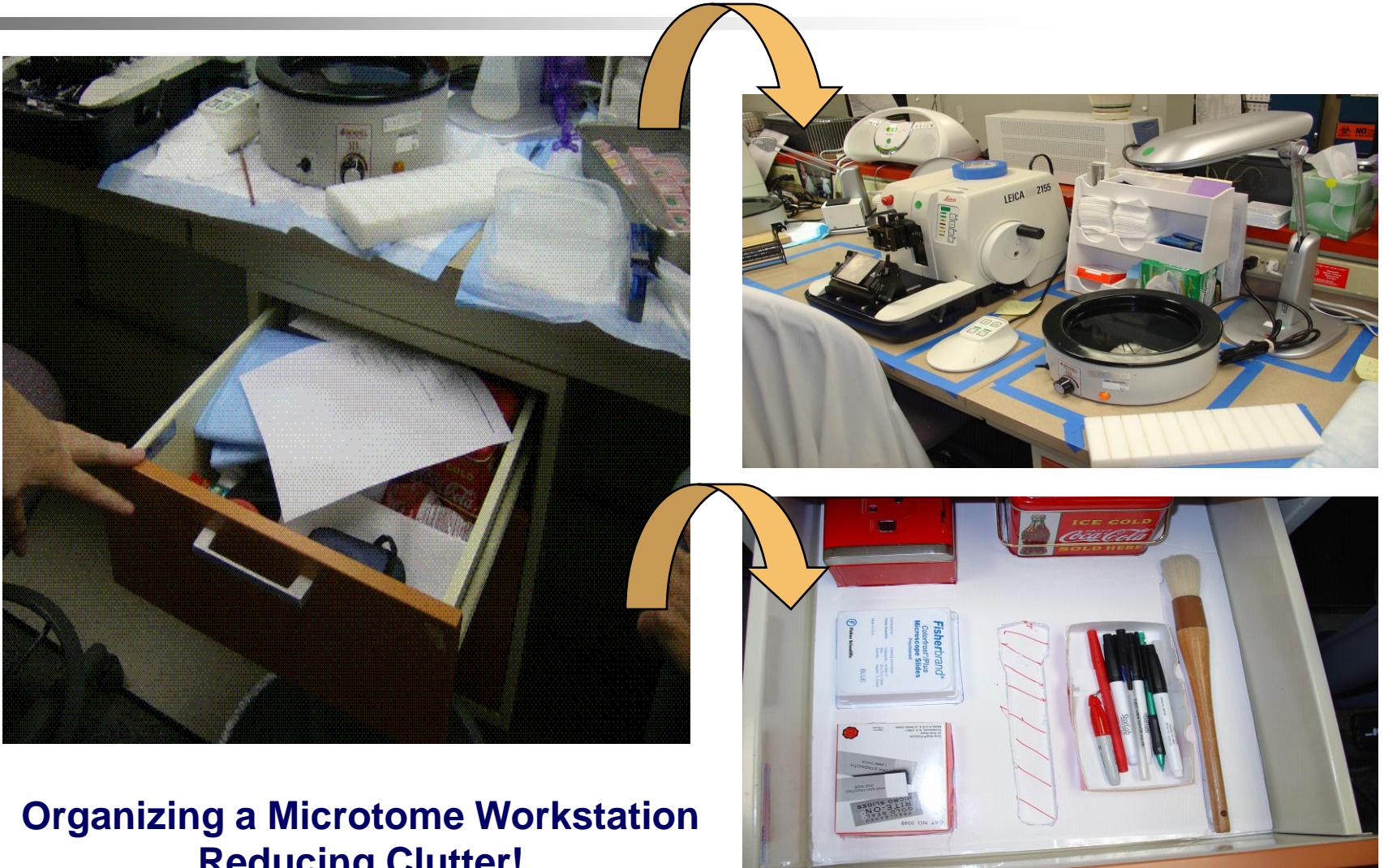
Item #	Solution Description	Task Leader(s)	Comments	7/23 Week	7/30 Week	8/6 Week	8/13 Week	8/20 Week	8/27 Week	9/3 Week	9/10-9/21 Weeks	<3 mos.	>3 mos.
	Technical Area Solutions:												
8	Develop Action Plan to implement CoPath interface for cassette & slide engravers	Katie, Pam	In Process / Technology & Space - design drafted, need to determine action steps with timeline (involve IT and Facilities)									In Process	
9	Investigate PC in Gross Station installation timeline	Glenn	In process / Technology & Space - finalizing action steps with timeline (involve IT and Facilities)									In Process	
10	Rearrange counter, put melting on left	Katie	Deleted - During organization of cassettes, staff did not accept idea			Deleted							
11	Separate colors post melting	Belinda	Done - During organization of cassettes			Done							
12	Reorganize Routining area and work flow:	Katie	On Hold / Space Glenn working with facilities to finalize plans									On Hold	
12a	Move the desk (PC/phone/label print)												
12b	Eliminate dividing into pod / blocks (??), clean blocks there												
12c	Have PC closer to embedding												
12d	Reduce amount of walking between embedding and routining												
12e	Need bigger counter												
13	Use oven only (get rid of microwave)	Katie	Done		Done								
14	Balance stainer workloads	Belinda	Done - Magnet on machine used to direct loading					Done					
15	Adjust staining times	Katie	Deleted - Determined not enough added value									Deleted	
16	Identifying stained slides by service / color	Belinda	Done					Done					
17	Assign different person to stain/coverslip than Routiner who Org. Cassettes	Katie	Done - Tried idea, use back up person if workload demands				Done						
18	Better location for proofed grosses	Katie	On Hold / Space - Ongoing discussions, space issues need to be resolved and decision made									On Hold	
19	Prots when delivered are placed in numerical order	Jodi	On Hold / Space & Technology									On Hold	
20	Deliver slides ASAP	Belinda	On Hold / Technology - Initial discussions created heightened awareness, awaiting technology decision, may need to purchase timestamp									On Hold	
21	Redesign the Histology technical workflow areas	Katie	Done - Redesigned space plan completed, Mark working with facilities to determine available funding and timeline										
21a	Visit 1-2 large, efficient Histology Operations		On Hold / Space - Awaiting finalization of internal plans before scheduling									On Hold	
21b	Develop optimal workflow (for potential remodeled or new space)		Done - Included in redesign plan									Done	
21c	Determine immediate opportunities to implement		Done - Implemented 'Just Do Its' as discovered									Done	
22	Increase efficiency in IHC:	Katie											
22a	Separate phone for IHC	Mark	Deleted - Determined not enough added value									Deleted	
22b	Lower counter	Katie	Done - Work order submitted		Done								

Improve: Implementation Plan / Overall Department, Needs Investigation

Item #	Solution Description	Task Leader(s)	Comments	7/23 Week	7/30 Week	8/6 Week	8/13 Week	8/20 Week	8/27 Week	9/3 Week	9/10-9/21 Weeks	<3 mos.	>3 mos.
Overall Department Solutions													
1	Reduce distractions in workplace	Katie	On Hold / Space - talking, phone calls, non-department visitors, initial discussions started, logging in coming phone calls, talked about a 'safe word' and physical changes									On Hold	
2	Separate out identified problems, forward to 7am Prosector	Pam	Done - During organization of cassettes, working well to allow all problems to be centralized to one person (Pam), next step is to focus on error reduction						Done				
3	Have Prosector in the a.m.	Pam	Done - Decision to start at 7 am						Done				
4	Review usage of staff (match task with position)	Katie	In Process - Goal is to keep HT in high technical skill tasks, will review in Sept.									In Process	
4a	Assess Lab Asst as runner and problem checker instead of HT												
4b	Assess Lab Asst to organize slide/req instead of HT												
5	Review office space usage within department - reallocate when possible	Glenn	On Hold / Space - In discussion, no action to report									On Hold	
6	Review personal storage space allocation	Mark	On Hold / Space - Overall lab issue									On Hold	
7	Automate episode investigation	Katie, Glenn	Done - common issues log by month being tracked in Histo & Access, to be expanded to include Gross									Done	
Need to Investigate Further													
A	Create teams to move work along	Katie, Belinda	Review idea once initial Lean changes are implemented										
B	Use disposable molds for plac & autopsies (for BLM only)	Katie	Deleted - Idea trialed, decision to not utilize at this time			Deleted							

= Proposed timeline
 = In process or finished
 = Minor timeline delay
 = Major timeline delay

Improve: Reducing Waste (5S) – Before & After



**Organizing a Microtome Workstation
Reducing Clutter!**

Improve: Quick Hits Accomplished

1. Sign off on meeting minutes
2. Attendance list for meetings
3. Use of Bulletin Board(s)
4. Organized drawers
5. Organized special stain solutions
6. Organized flammable cabinet
7. Clean out unwanted junk in Grossing areas
8. Cleaned and organized Accessioning area
9. Awaiting removal of Sonicator Pressure Cooker, Water Bath
10. Organized special stain solutions, utilized baskets
11. Standardized slide type (from 3 to 1)
12. Removed extra step – no gelatin in water bath
13. Removed Bio Tech, Embedder, Coverslipper, some Microtomes, Microwave
14. Revised H&E stainer usage: continue to use 2 stainers on high workload days
15. Moved kodachrome files to Whitney

Improve: Chemical Fume Hood Clean Up



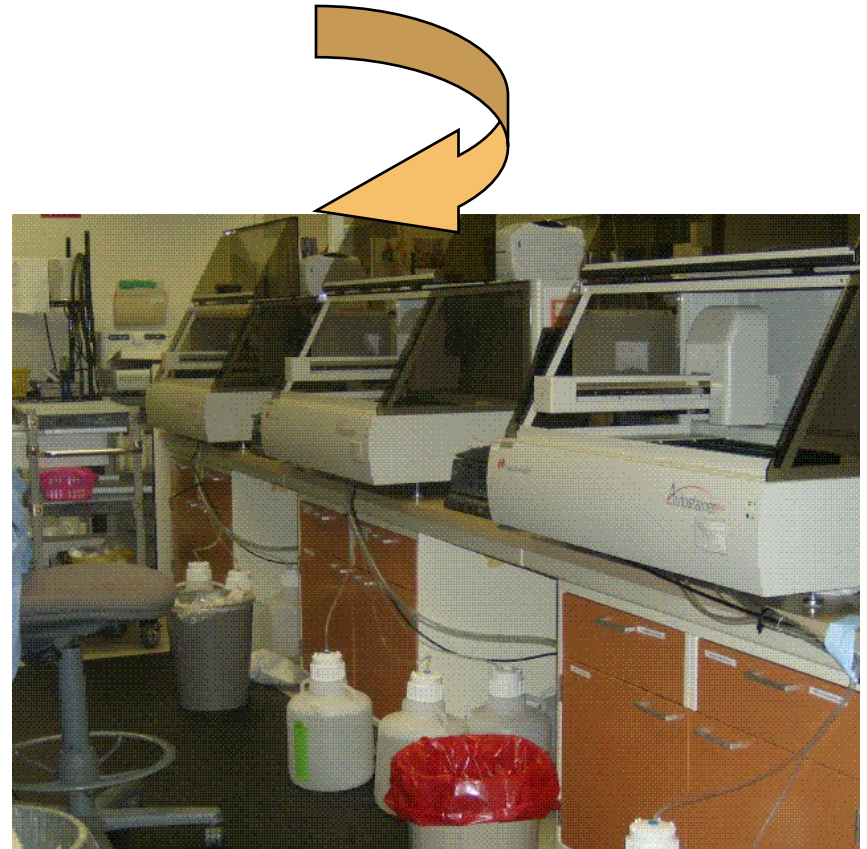
**Organized chemical safety cabinet
Assured proper chemical storage**



Improve: Lowered Slide Stainer Counter Height



Increased workspace efficiency



Improve:

Redesigned Workspace to Increase Efficiencies



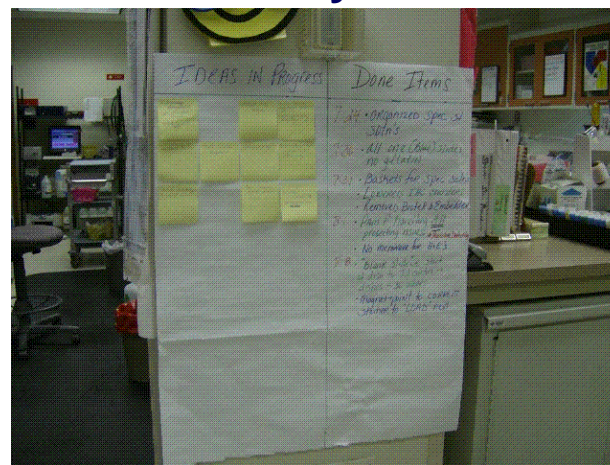
Organized Chemicals



Removed Doors for Easy Access

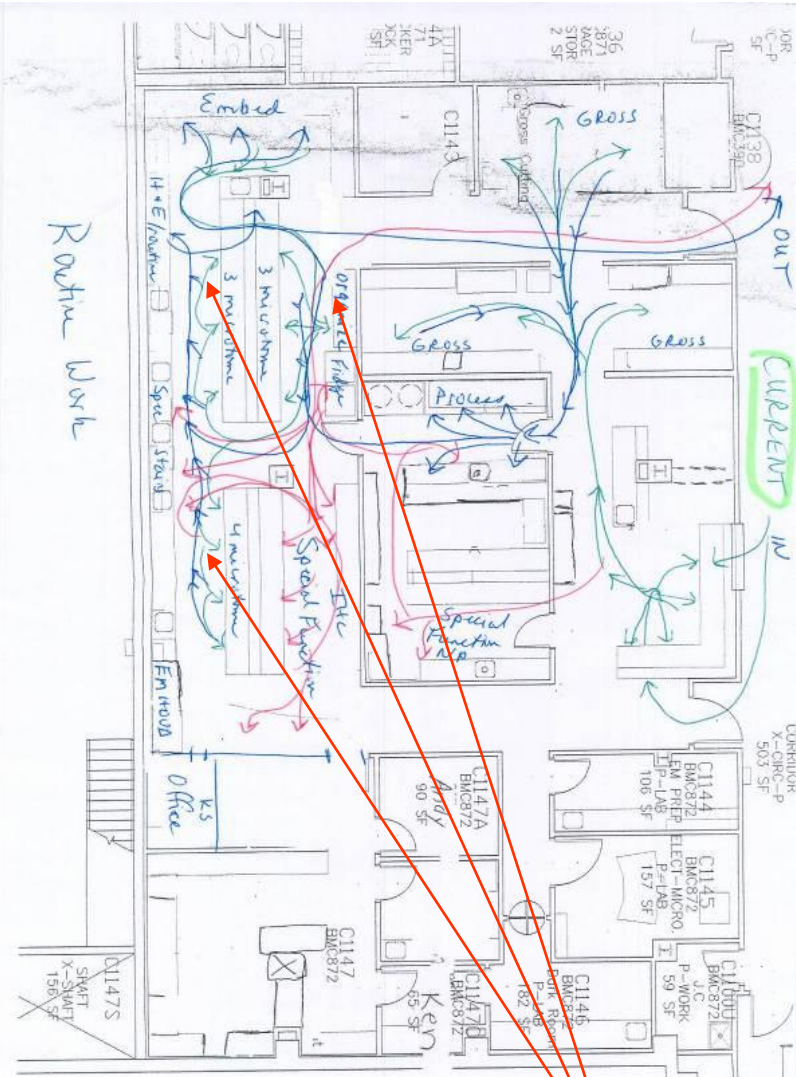


Discarded unused equipment

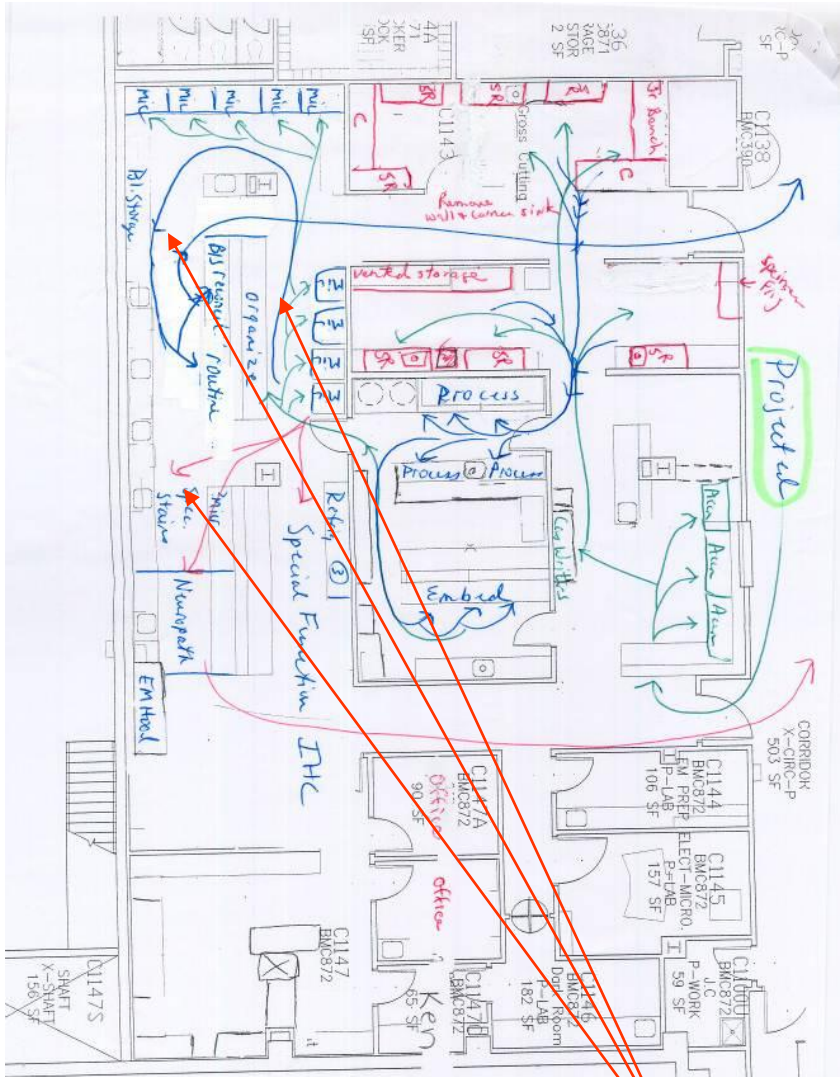


Engaged Employees

Improve: Redesigned Workspace



Current Workspace:
Heavy Congestion



Projected Workspace:
Reduced Congestion

Control: Implementation Plan Outcome

- 26 Total number of solutions identified
 - 6 Number planned to implement post project
 - 3 Number cancelled upon further investigation
- 12 Number of 'General' solutions to implement
- 11 Number completed within project timeline
- 8 Number of 'Space' solutions placed on hold

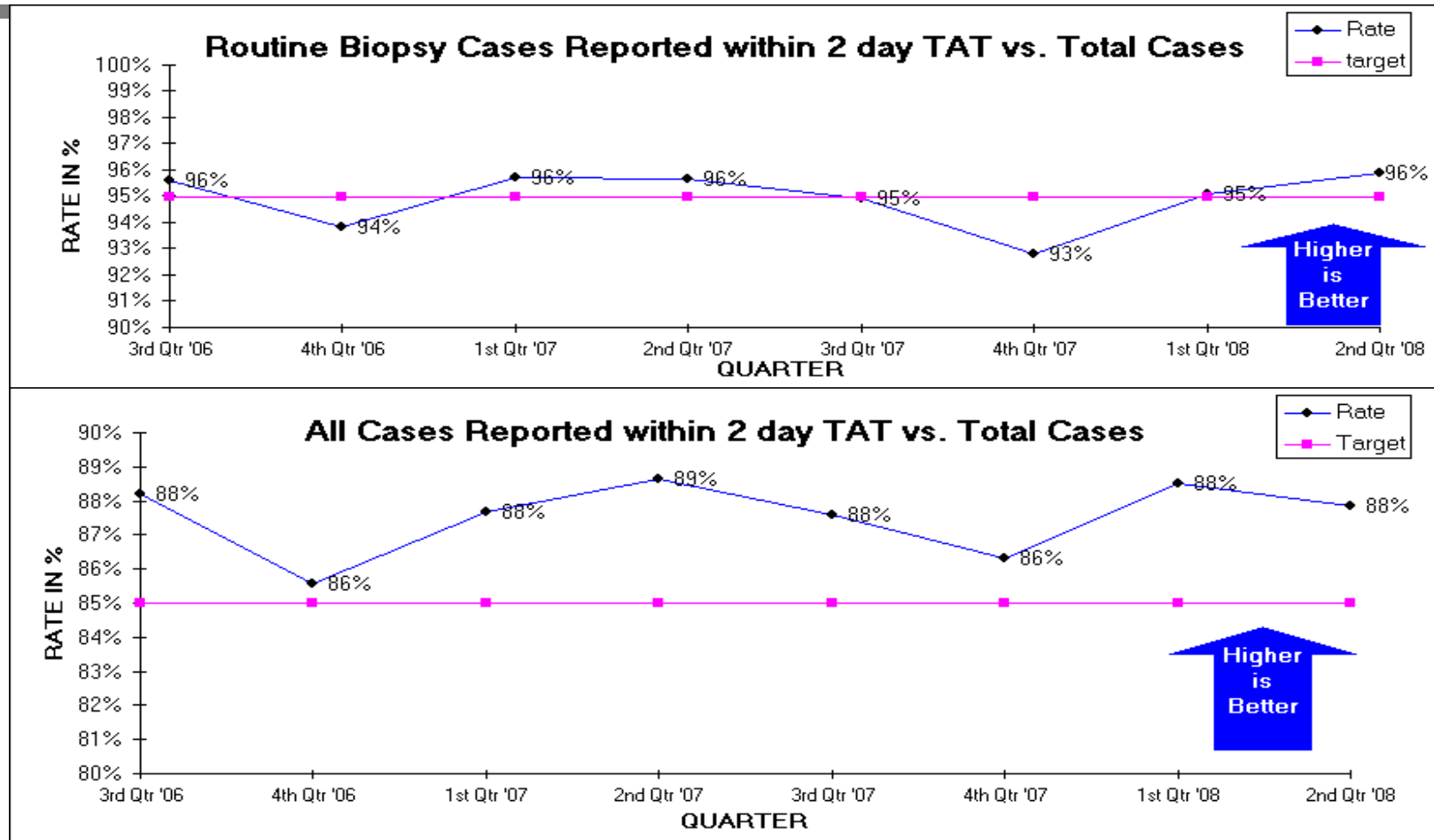
92% of planned 'General' solutions implemented within project timeline, 'Space' solutions on hold pending capital funding determination.

Note on Project Goals:

2007: Original goal of Improve technical process through-put by 15% not possible to determine since the project team did not develop a method to monitor. Project focus became reduction of department clutter and redesign workspace to increase workflow efficiency. A redesign floor space plan was completed, currently under Administrative review. Multiple identified Solutions for implementation are awaiting Administration's decision since it will have a significant impact on the timing of implementation. Department staffing during the project was also a major challenge, especially in the Team's ability to develop a slide through-put tracking system.

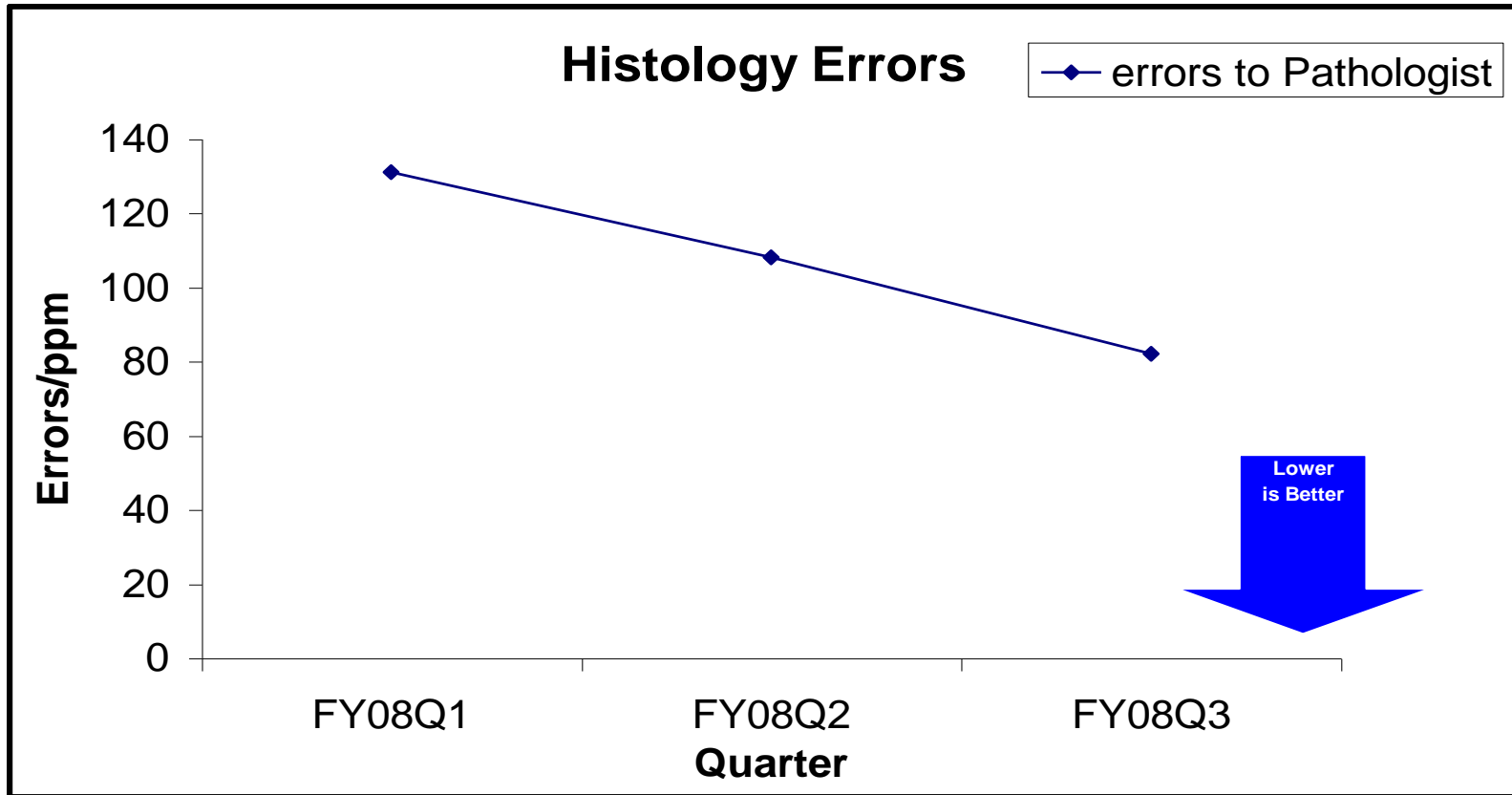
2008 Update: Significant progress made in reducing errors and changing pathologist perception of unacceptable TAT's to acceptable due to the implementation of a slide through-put tracking system

Control Phase: Sustaining the Gains & Continuous Improvement



2007 3rd and 4th Quarter negative trending of TAT significantly improved in 2008
Pathologist expectations defined, TAT within Histology Lab not primary issue.

Control Phase: Sustaining the Gains & Continuous Improvement



37% Reduction in Histology Errors to Pathologists in 2008

Lessons Learned

- The DMAIC methodology forces a focus on the real issues, defining the problems and generating prioritized solutions
- Use of Post it notes gives flexibility in capturing discussions
- Limited team member availability significantly impacts timeline progress
- Staff involvement is tremendous and change in attitude was noticeable – people were engaged
- Physical changes needed within department take longer than planned!!
- Flip charts a useful medium to communicate with staff and gather feedback

Value of Project

- Increased Staff Engagement and Satisfaction - Forced a change in thought process from 'complaining' to 'how can I make this better?'
- Successful implementation of long and short term ideas
- Problem solving process used is excellent at identifying and prioritizing issues
- Increased understanding of overall work flow and process times