

LEAN in the *LAB*

A continuous improvement activity
NH Public Health Labs
2010

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What is LEAN?

Dictionary:

adjective: spare, economical, lacking in fullness or quantity

The Lean Institute:

Lean means creating more value for customers with fewer resources.

Why Lean?

The core idea is to maximize **customer value** while minimizing waste.


To achieve this goal, a company must look at what processes create value and eliminate those that do not.

Lean Event Charter

Who's doing what?

- *Sponsor:* Christine Bean
- *Lean Project Manager:* Jill Power
- *Facilitators:* Jillian Schenck, Alice Leeming
- *Team Members:* Janice Gray, Hannah Doyle
- *Customer/Clients:* Lab units, Billing dept.
- *Stakeholders:* CR staff, Lab scientists, Public Health Dept, healthcare providers, external customers/clients

When & Why?

- Courier contract ended 6/31/10
- Decrease in staff
-  Specimen turnaround times
- Begin in CR "where it all begins"

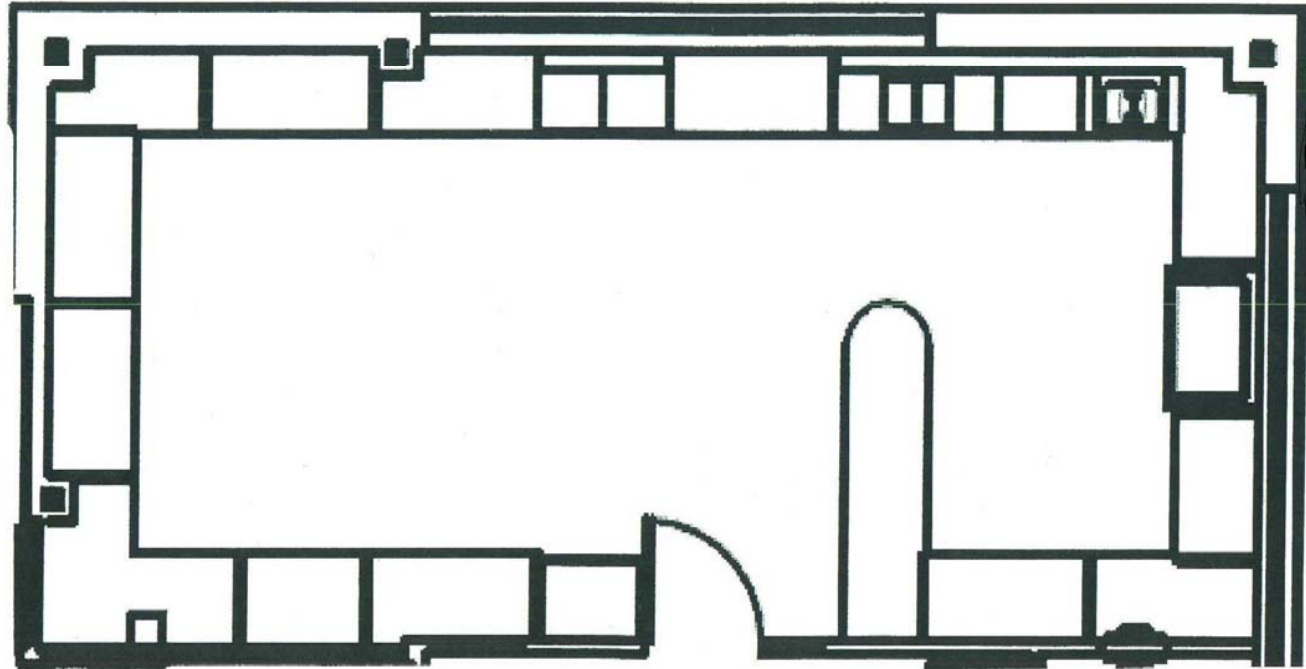
Measurements - Current State

- Time study: 50 specimens/staff=
225 minutes - 539 minutes (3'45" - 9' 0")
- Glove usage - for each CR staff -
10 pair per 50 specimens
- Foot traffic - receiving window - unknown;
phone calls - many; interruptions - unknown

Central Receiving Specimen Processing



Central Receiving Floor Plan



Data Entry Station - Current



Office Area - Current



Specimen processing area - Current



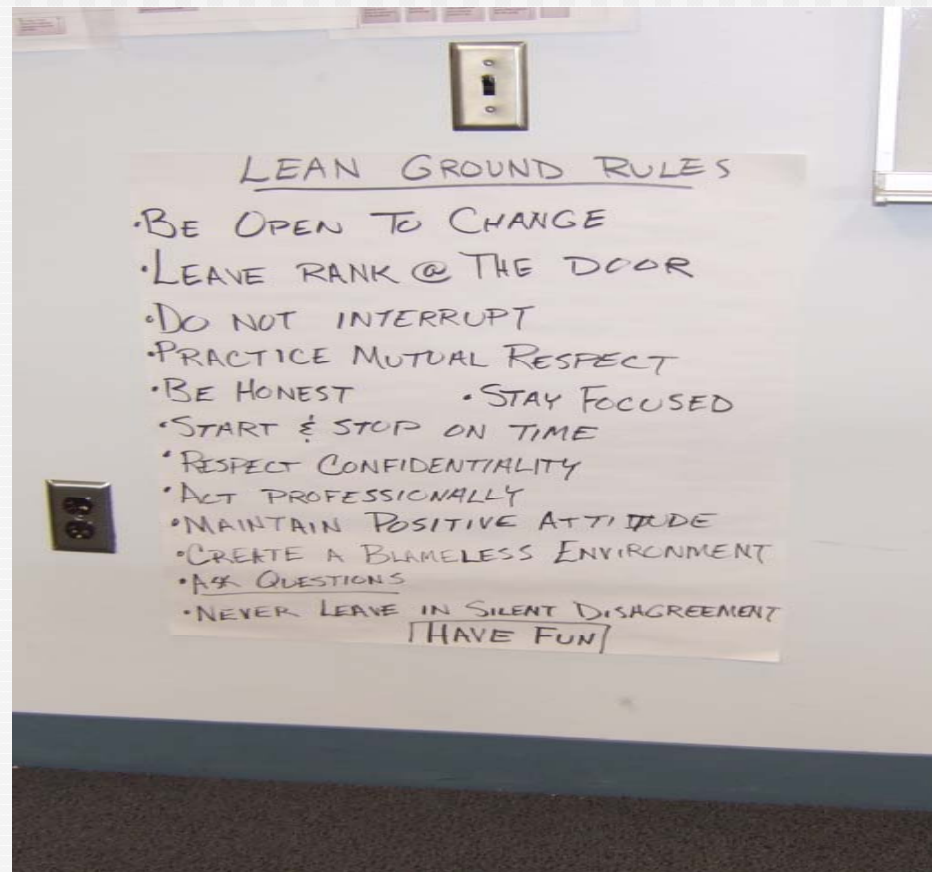
Behind specimen bench - Current



Beginning the process - DHHS Facilitators



Lean Ground Rules



Process

- Process from receipt of sample in CR until transferred to lab testing unit
- All participants asked to write each step, backwards
- 16 steps identified



Value Stream Map (VSM)



Visual Aids

- Yellow
- Green
- Pink
- White
- Blue
- Orange

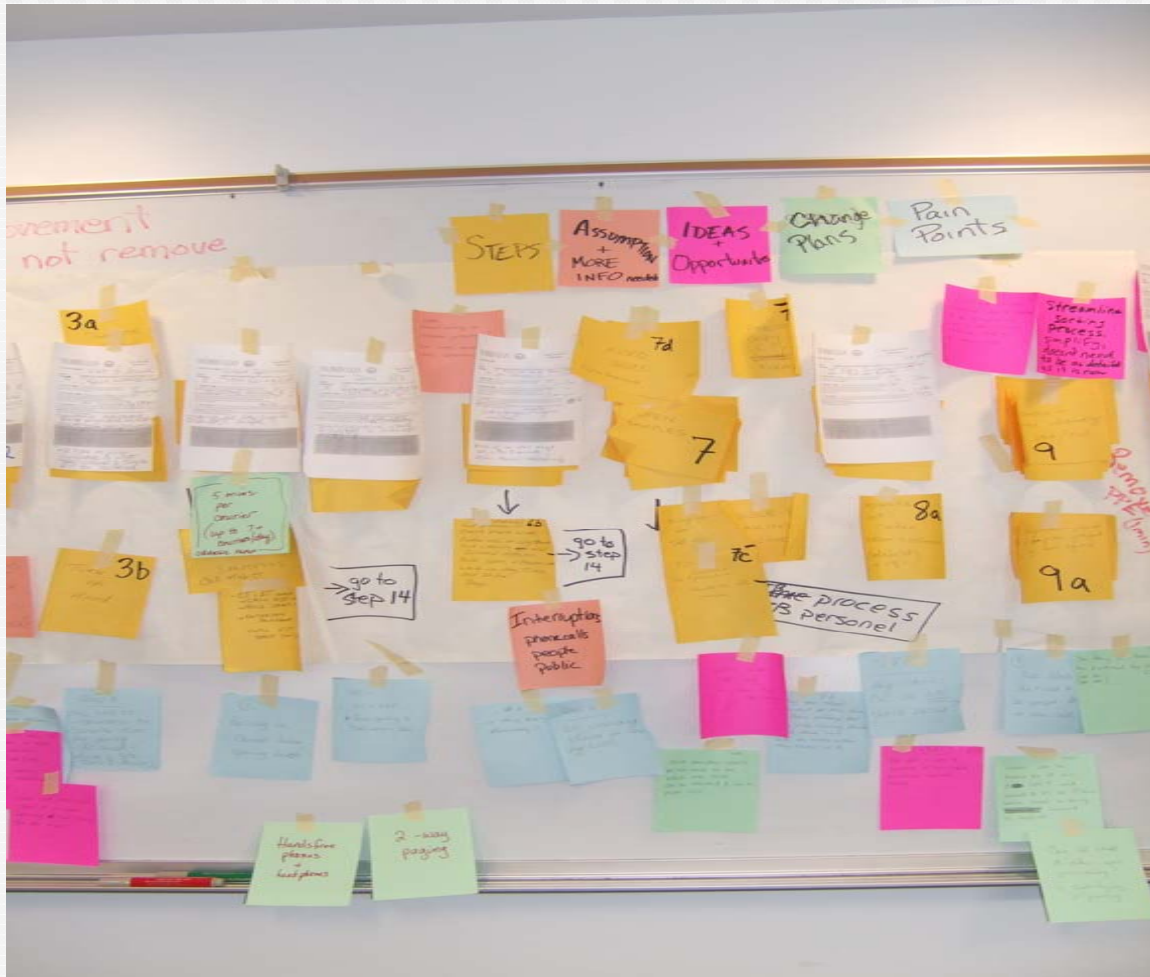
Help in creating ideas

Stimulate others

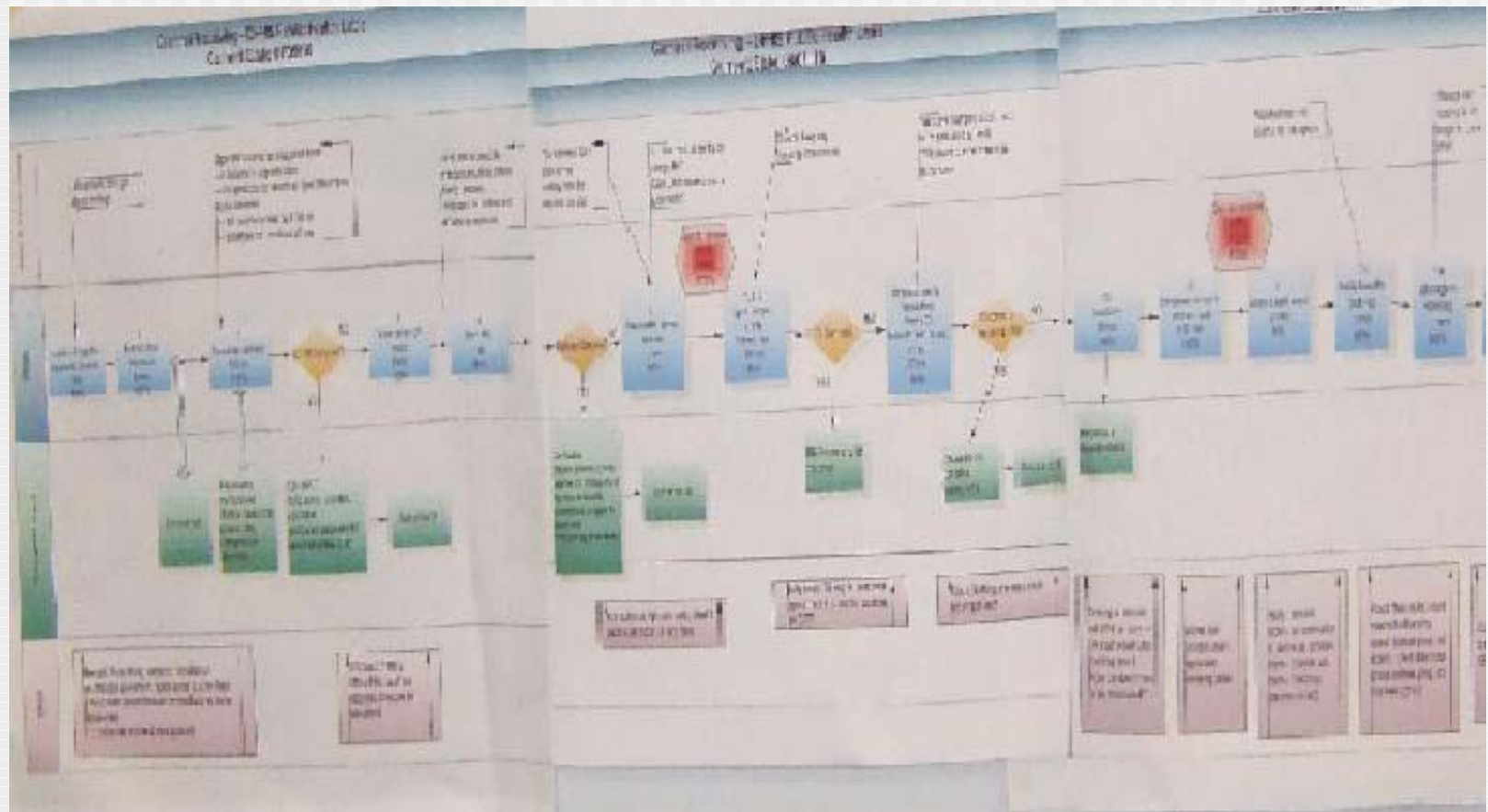
Maintain consistency

Identification

VSM Close up



VSM Electronic

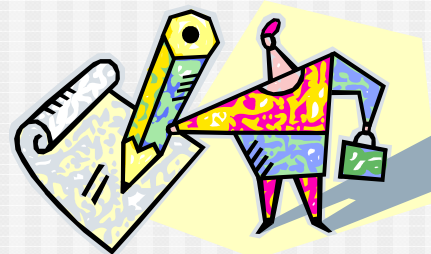


Time/steps involved

- **1st Session** - introduction, current process defined and initial plotting of VSM
- **2nd Session** - further plotting, assigned task completion times, suggest ideas & pain points
- **3rd Session** - realign current state by implementing ideas to create future state

Planning Future state

- Sponsor, project manager, team manager meet to discuss proposed state
- New process flow decided
- Rearrange work space
- Rework tasks



Lean

Concepts

Implemented



1. Eliminate activities, tasks, steps

- CR is moving a computer to the "dirty" bench
- With PPE, open specimen, log in, label, sort



2. Implement low-cost/no-cost solutions



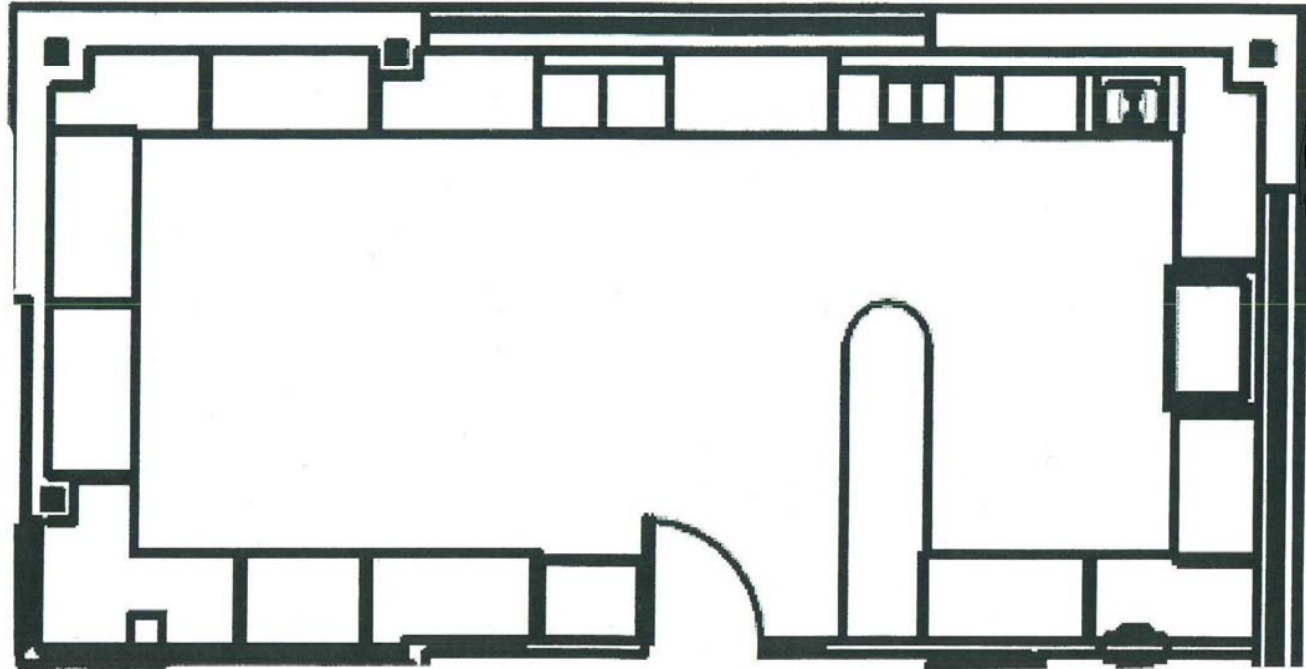
3. Implement visual systems

- Set up counter for completed specimen

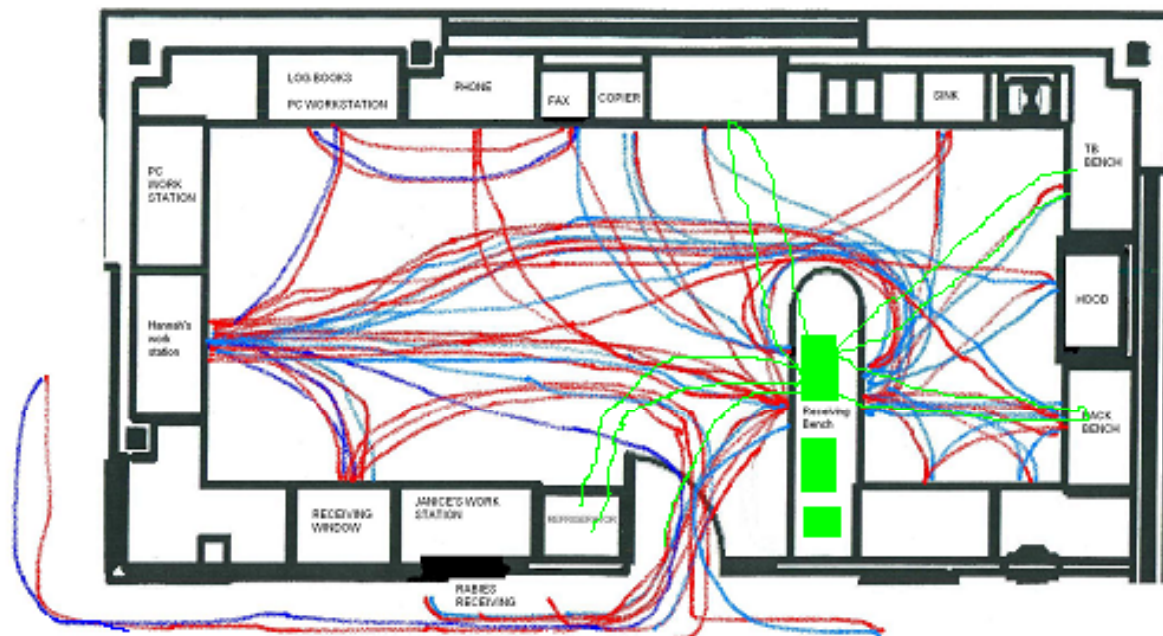


4. Reduce transportation

- Eliminate motion of personnel



Hannah's trail "All in a day" (Before Lean)



Hannah's trail "All in a day" (After Lean)



Future state of CR

- 16 steps trimmed to 8 steps
 - Multi-task
 - Eliminate the number of steps
- Implement ideas & recommendations
 - Additional buzzer
 - White board
 - Use intercom more
- Purchase/acquire items
 - Hands free phones
 - Date/time stamp machine



Comparison



Current state



Future state



Measurements - Future State

- Time study: 50 specimens/staff=
225 minutes - 539 minutes (3'45" - 9' 0")
Reduced minimum to 120 mins.
- Glove usage - for each CR staff
Reduced to 2 pair per 50 specimens
- Foot traffic - receiving window, phone calls, interruptions
Reduced foot traffic ∴ Increased work time

Cost Savings - Gloves

50 specimens/person/day
100 gloves/box
\$5/box

Current State

10 gloves/day/50 specs
1 box used/2 weeks
 $\$5 \times 26 \text{ wks} = \$130/\text{yr}$

Future State

2 gloves/day/50 specs
1 box used/10 wks
 $\$5 \times 5.2 \text{ wks} = \$26/\text{yr}$

Total savings = \$104/yr

Cost Savings - Salary

Average salary of staff = \$15/hr

Time saved processing specimens = 1.75 hrs

$\$15 \times 1.75 = \$26.25/\text{day}$

$\$131.25/\text{week}$

Total Savings = \$3412.50/year

Advantages of this Lean Process

- Time saved processing samples
- Money saved with decreased glove usage
- Environment – fewer gloves to landfill
- Employee morale – Increased due to less stress in processing specimens – visual when specs are ready, lessened interruptions, faster TAT for specimens, social responsibility
- Competency increased by scheduling tasks & rotating schedules

2010 Summary

- Recommendation is to carry out new process for three months, then re-evaluate
- Perform return on investment (repeat time studies)
- Can change back if not working
- Continuous improvement

Future *LEAN* projects

- 2011 TB Program – failure 😞
- 2012 Laboratory Merger
 - Support Duties
 - Media Prep
 - Dishwashing

Questions?

