

How Continuous Process Improvement Changed Culture and Reduced Lab Result Delivery Time by over 30% (and counting)

10/8/2019

Washington State Lean Conference



Fred Hutch · Seattle Children's · UW Medicine

Session Objectives

1. Describe the improvement method we used to build capability & deliver results
2. Understand that if you're not changing the work, you're not changing the value
3. Understand our story, including moments of courage & connection

Introduction & Background

Seattle Cancer Care Alliance

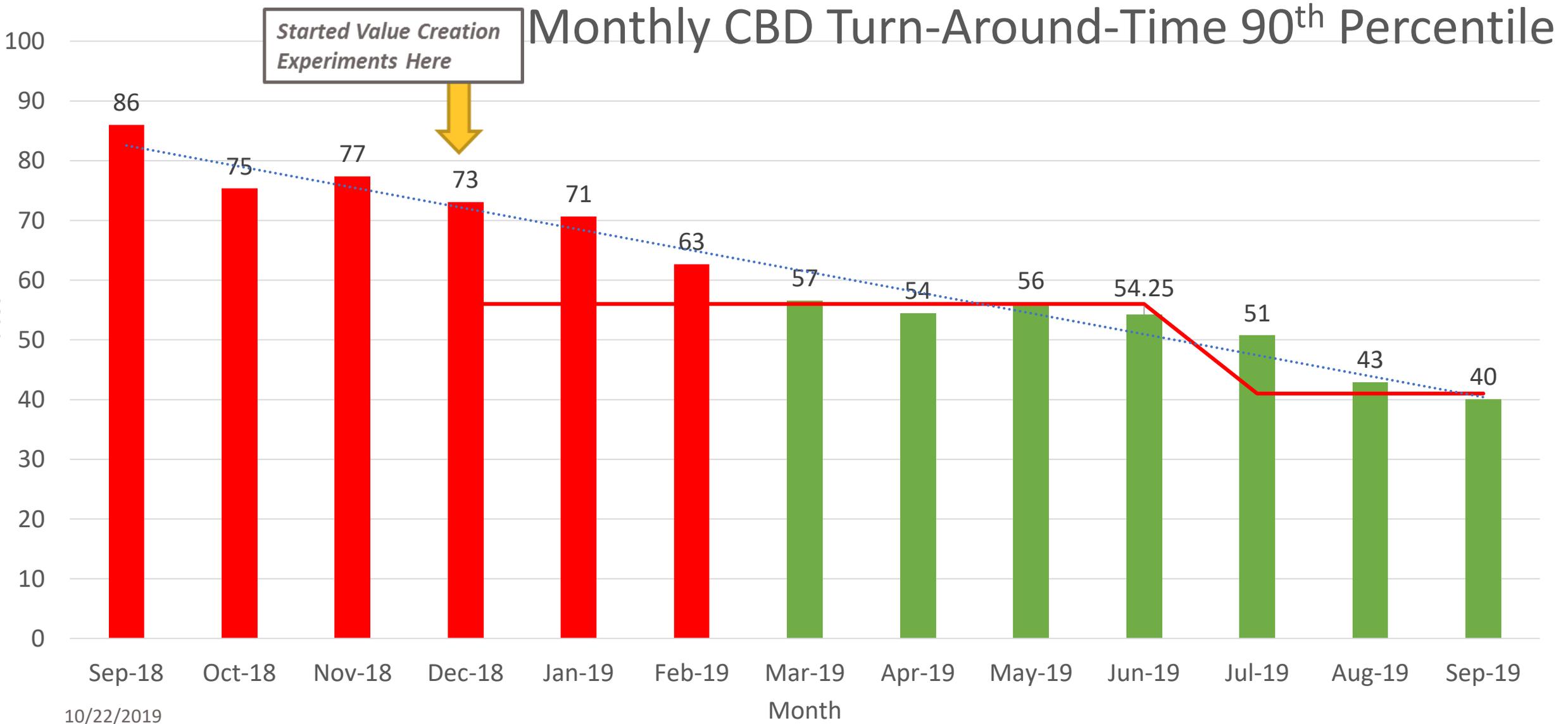
- Nationally ranked non-profit cancer center
- Serves 40,000 patients/year
- Most patients have lab tests run regularly

Alliance Lab

- Main blood draw & testing lab
- Runs ~30,000 tests/month
- Improvement focus: Hematology Testing

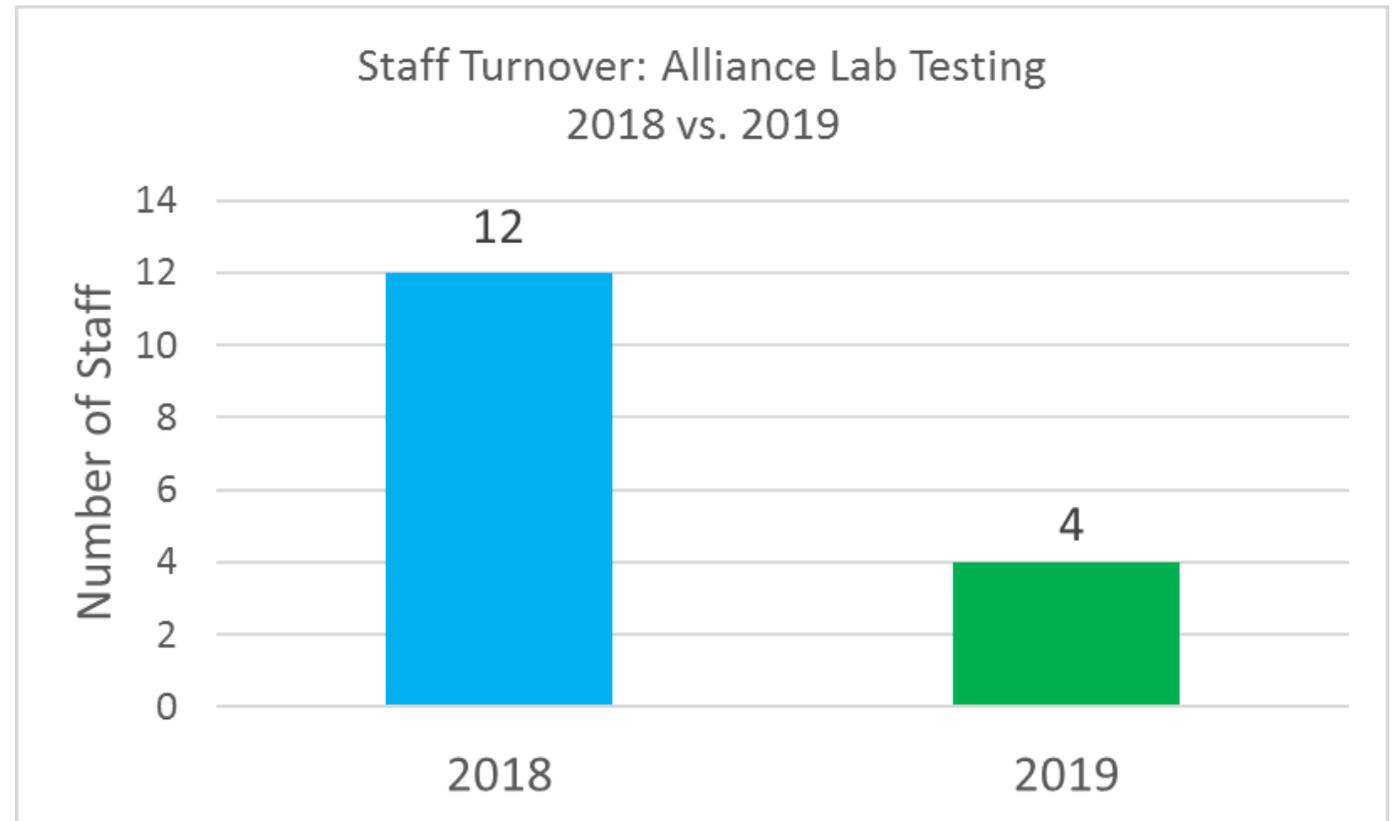


What We've Achieved

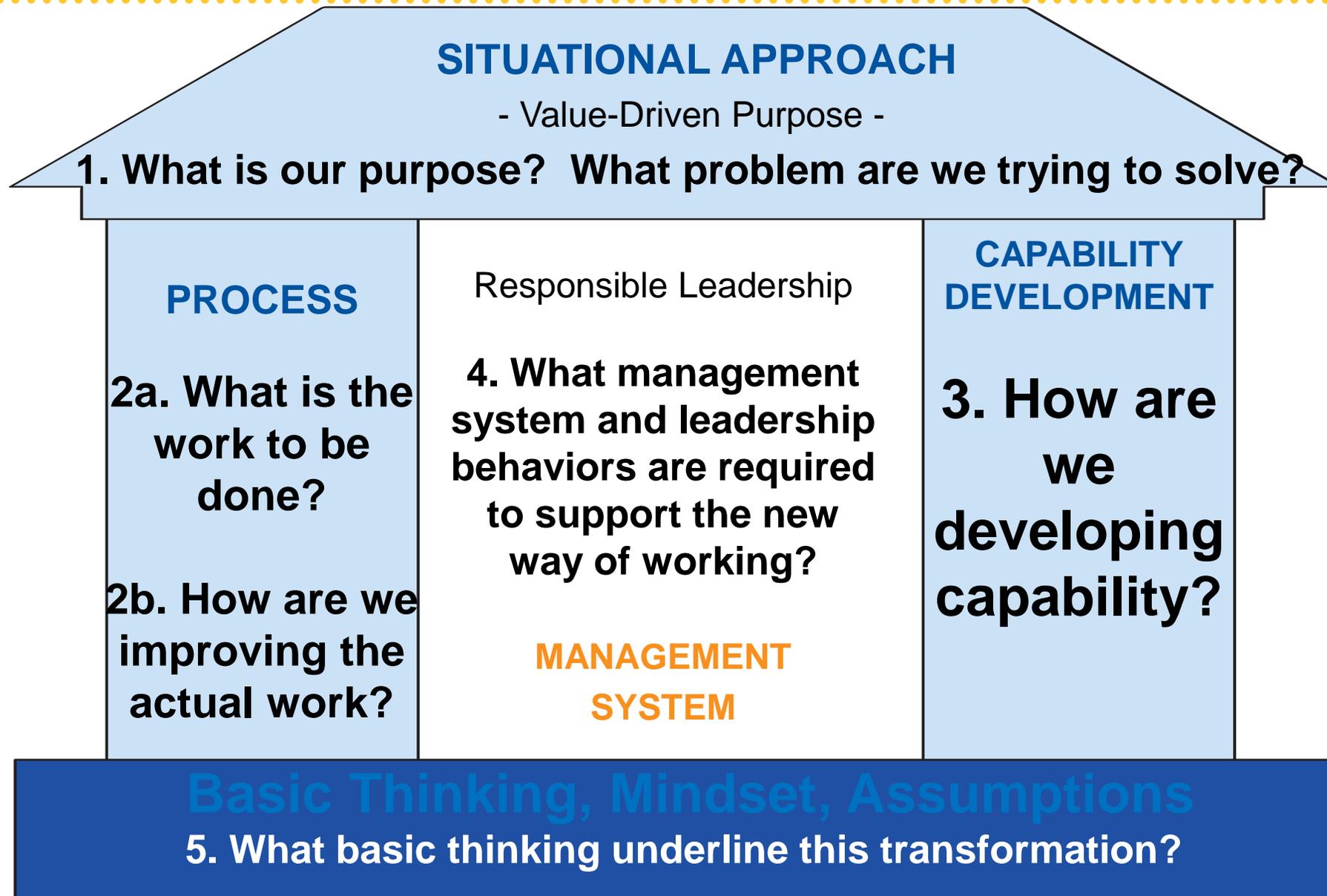


What We've Achieved

“ The work flow is better and less stressful for us and better for patients. ”



Lean Transformation House



Alliance Lab Testing Transformation House

SITUATIONAL APPROACH

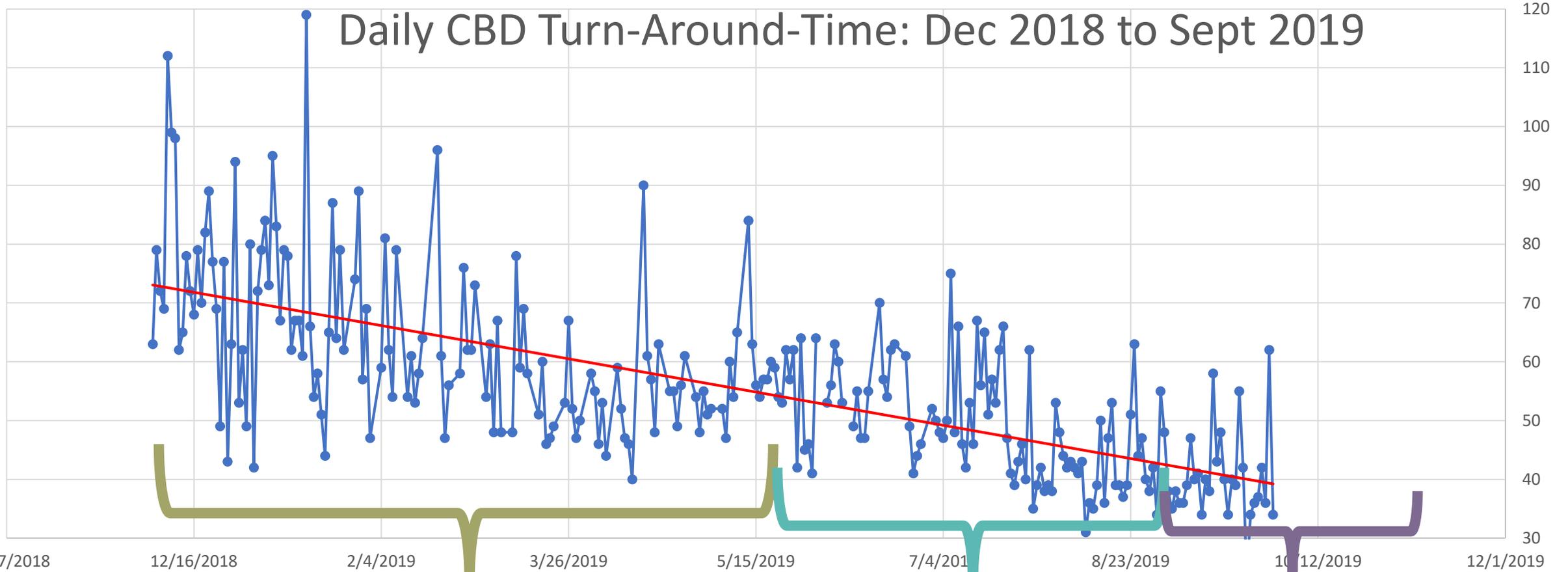
- Value-Driven Purpose -

1. What is our purpose? What problem are we trying to solve?

Our purpose is to produce accurate test results that allow providers to diagnose, measure, and monitor how well treatment is working, and to evaluate if patient is eligible for other treatments (dosage, trials, etc).

Our Improvement Story: PDSA Cycles

Daily CBD Turn-Around-Time: Dec 2018 to Sept 2019



Problem 1:
From 86 to 56 min

Problem 2:
From 54 to 41 min

Problem 3:
Meet 41 min DAILY

Alliance Lab Testing Transformation House

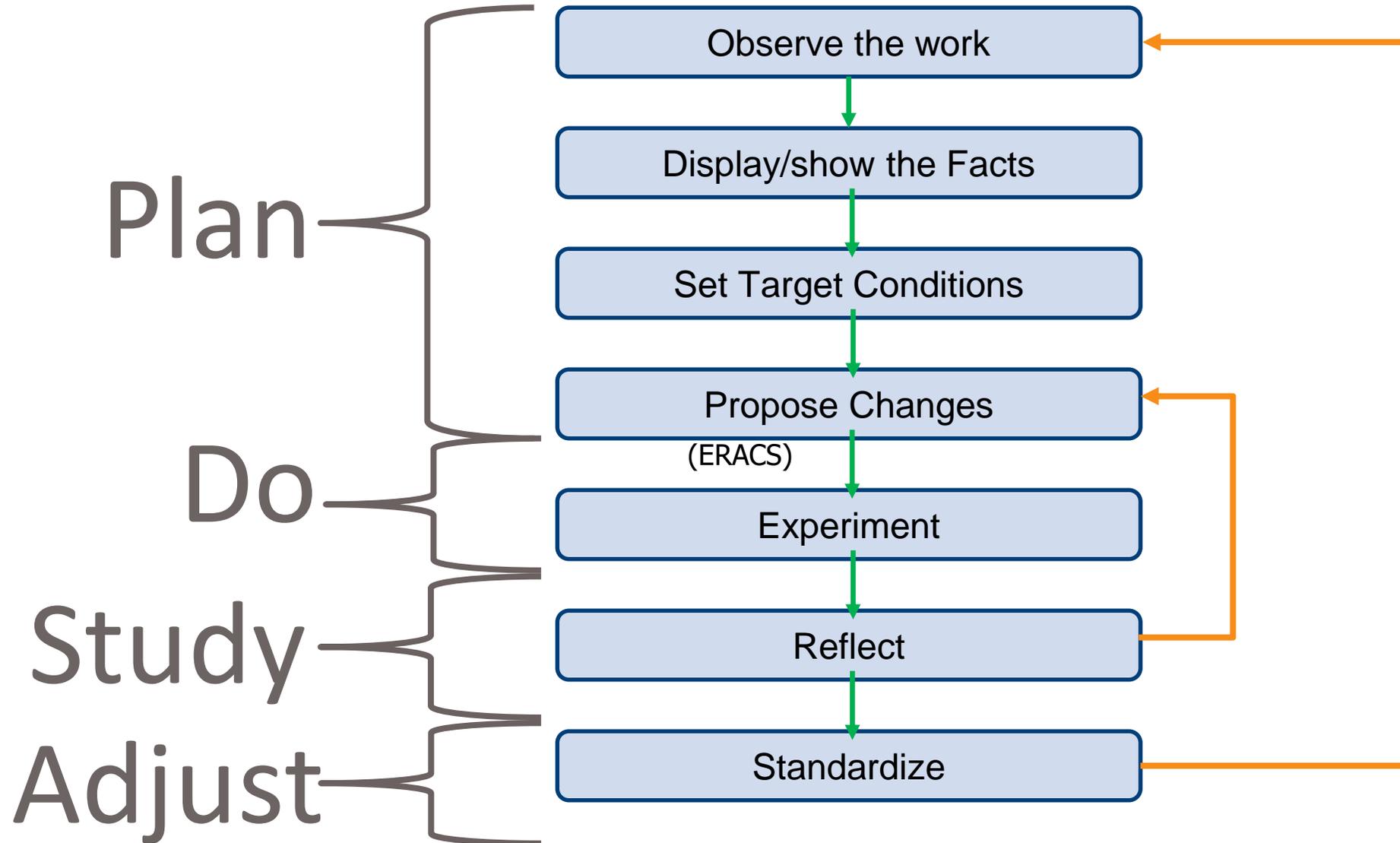
PROCESS

2a. What is the work to be done?

2b. How are we improving the actual work?



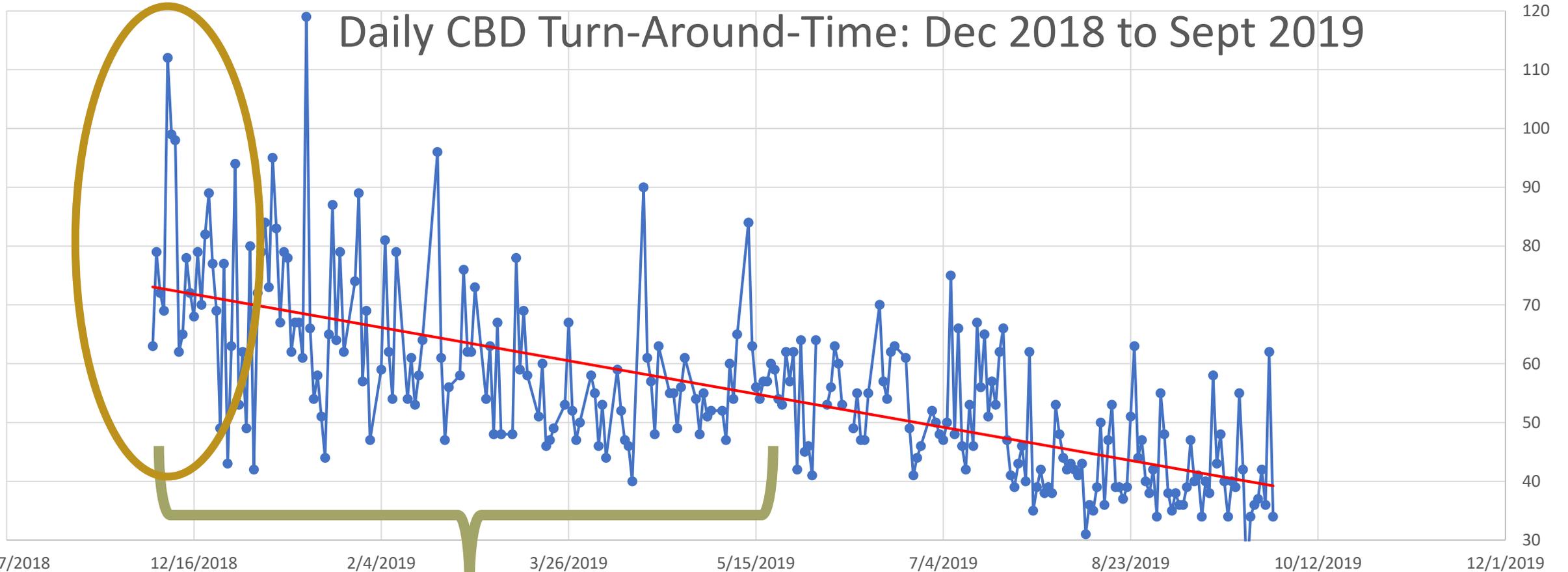
Improvement Process



Knowledge	Skill
Customer value is #1 priority and it is all centered around the WORK	See and Identify Value Creating Work
Difference between Value Creating Work, Essential Work and Waste	Observe and measure WORK (Timing)
	Visualize WORK Display/Show the Facts
	Improve work using ERACS

Our Improvement Story: PDSA Cycles

Daily CBD Turn-Around-Time: Dec 2018 to Sept 2019



Problem 1:
From 86 to 56 min

Week 1 Experiment



Week 1 11.26 - 11.30

Plan

store	125
store	11
Manual	630
Diff	
Match	10
Prep	64
Sort	11
Prep	80
Prep	177

Slide 168 made

xN test 123

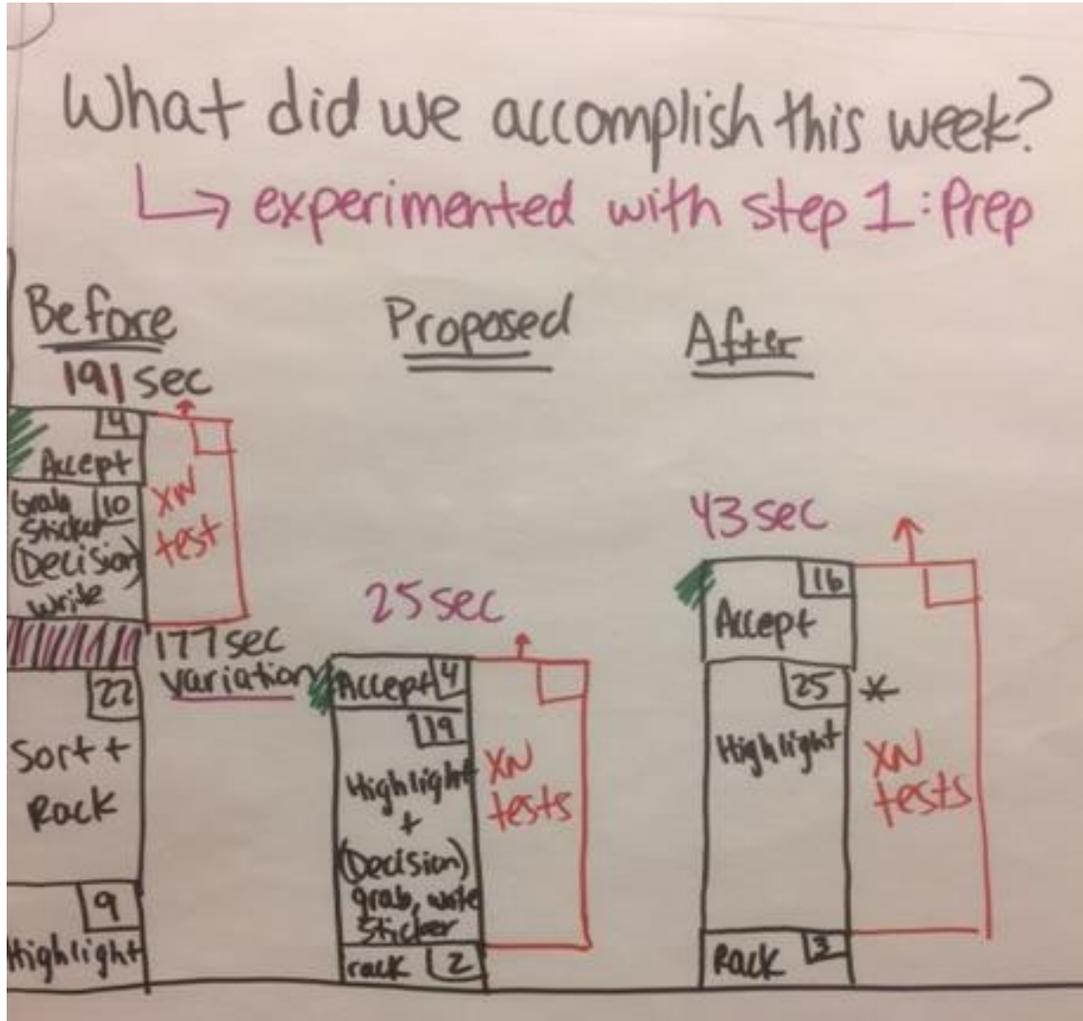
Goal = 56 min
Oct 2018 = 74 min

if this, then

\$ \$

Current Tasks

Week 1 Experiment



When: PM Mon 4/26, PM Wed 4/28, AM Thurs 4/29
 ~1 hour each time

Who: XN operators: Mason, Carlos, Kenna, Mary Rose

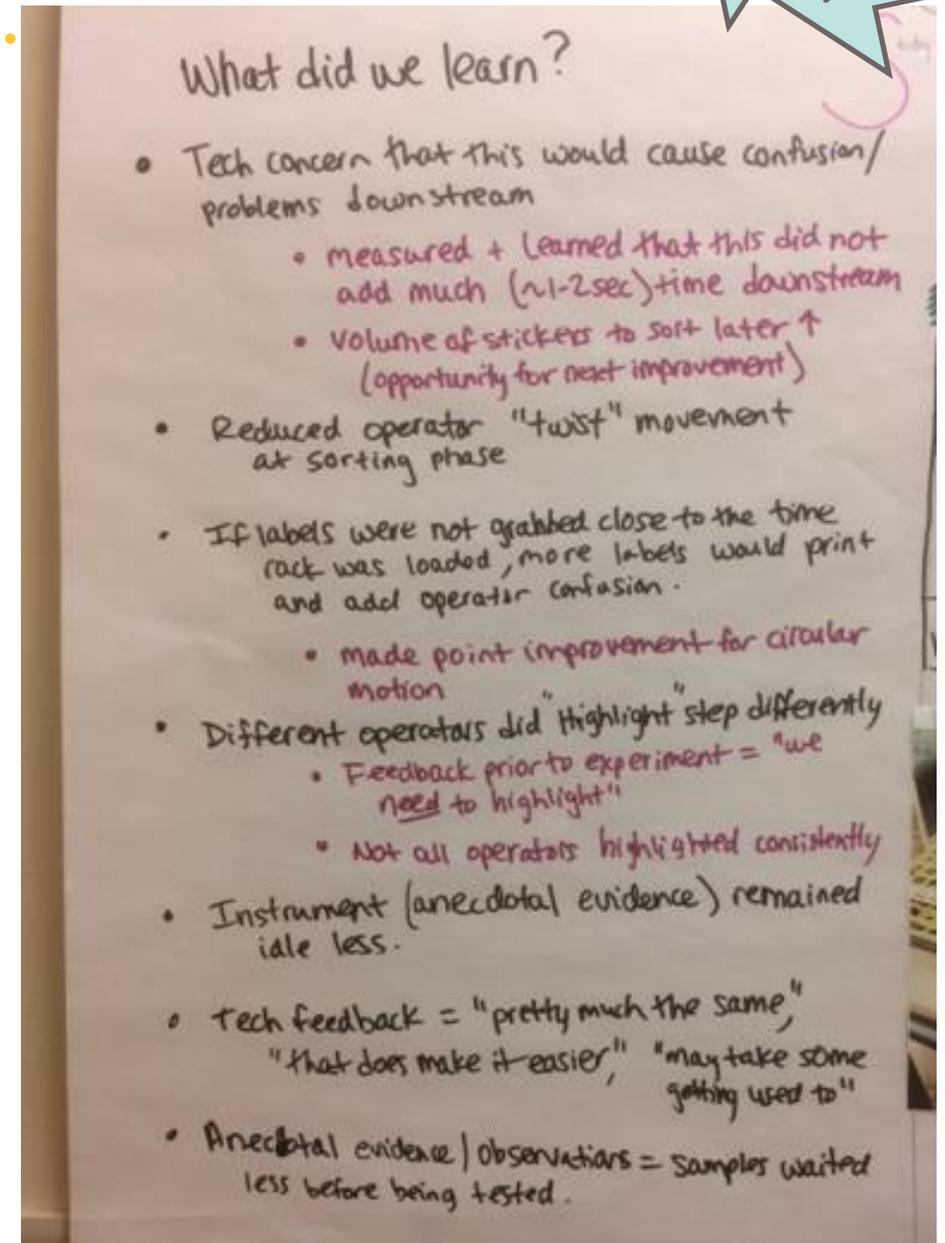
What: Eliminate sorting
Rearrange/Combine highlighting
Step with grab/sticker/write step.



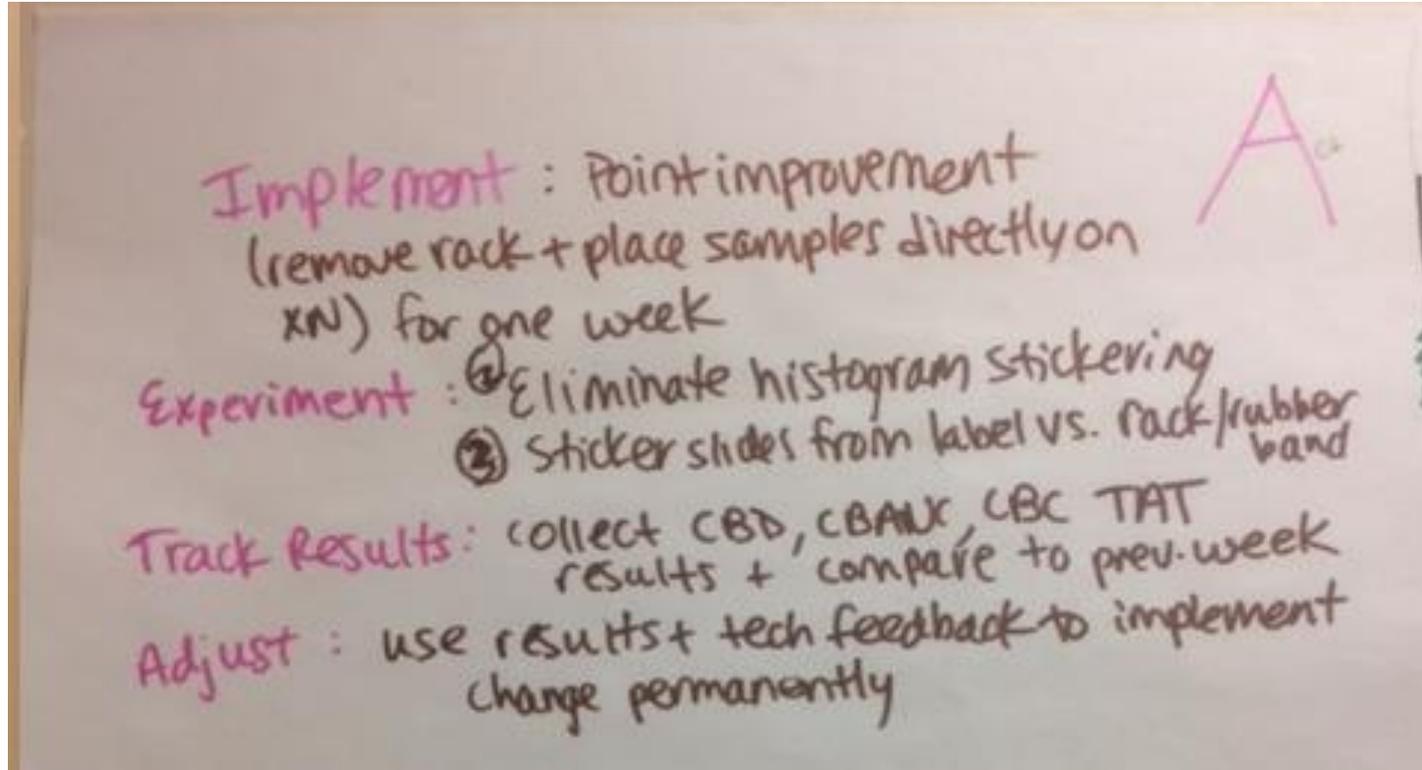
Week 1 Experiment

- Techs had concerns about work being added downstream
- Twisting motion reduced
- Observed inconsistent rules applied to "Highlighting" step

10/22/2019

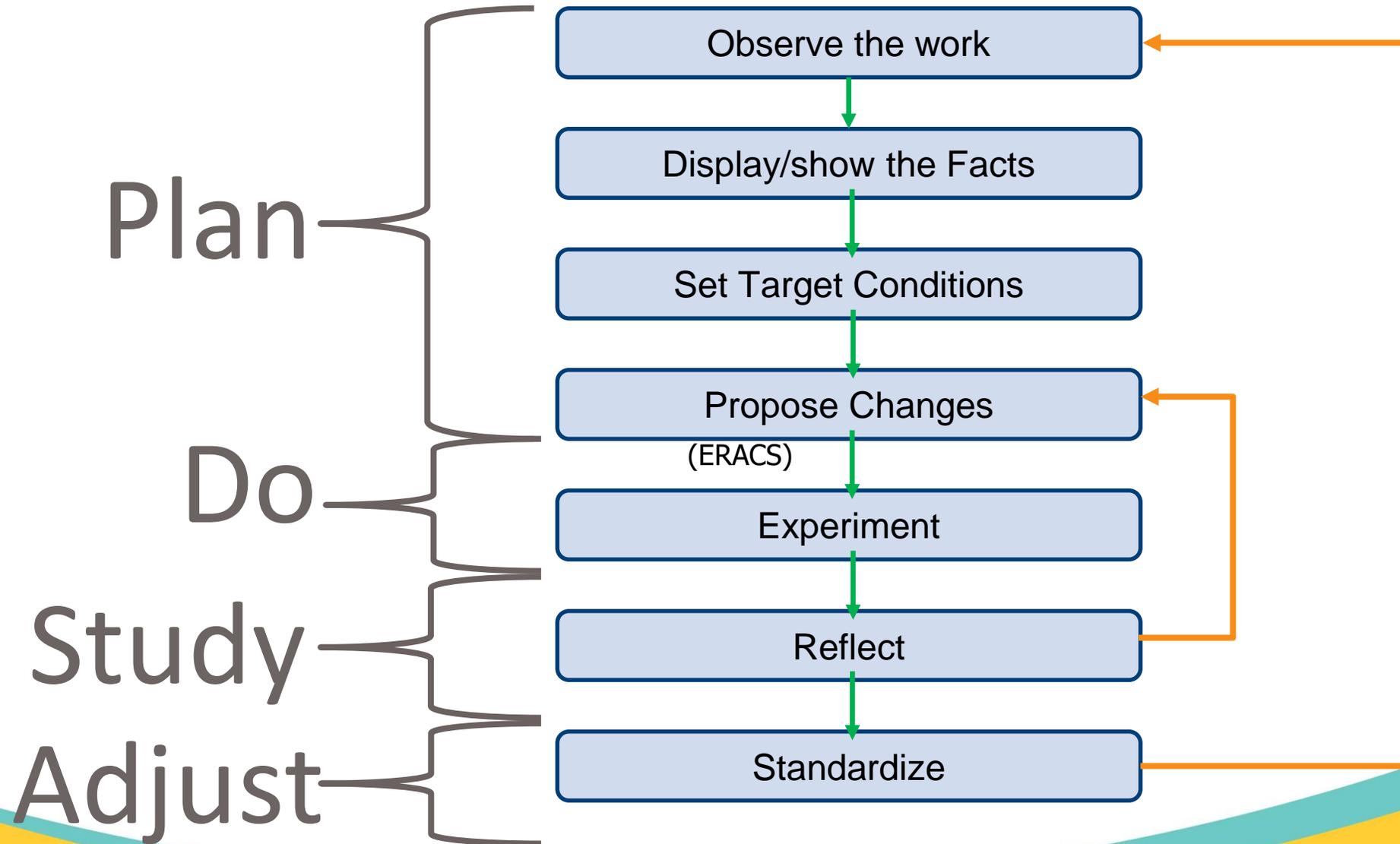


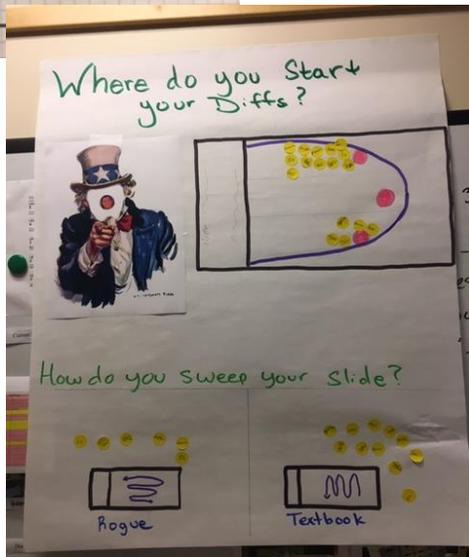
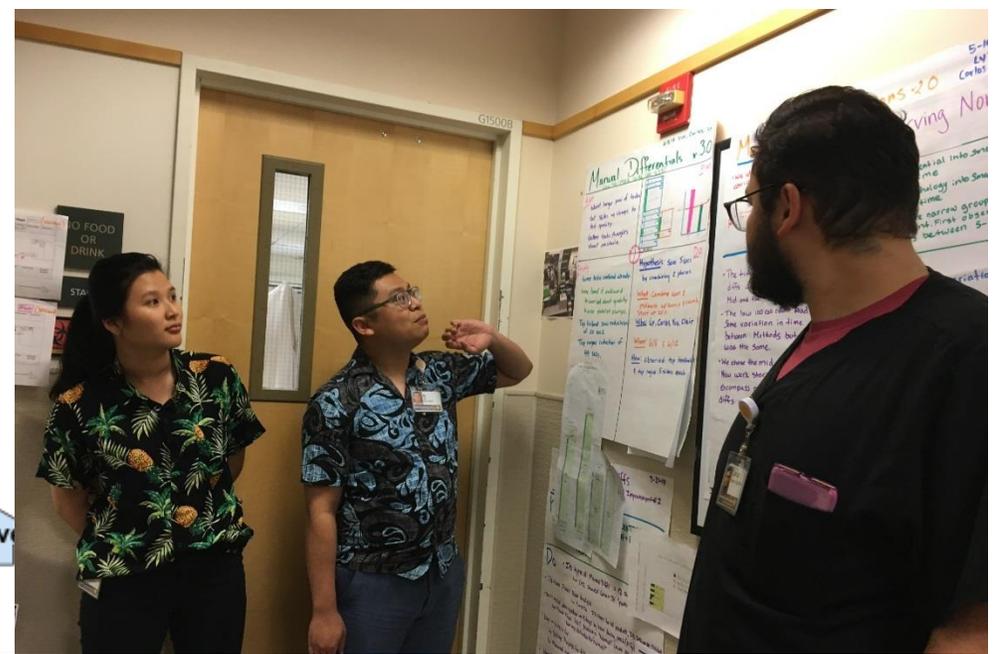
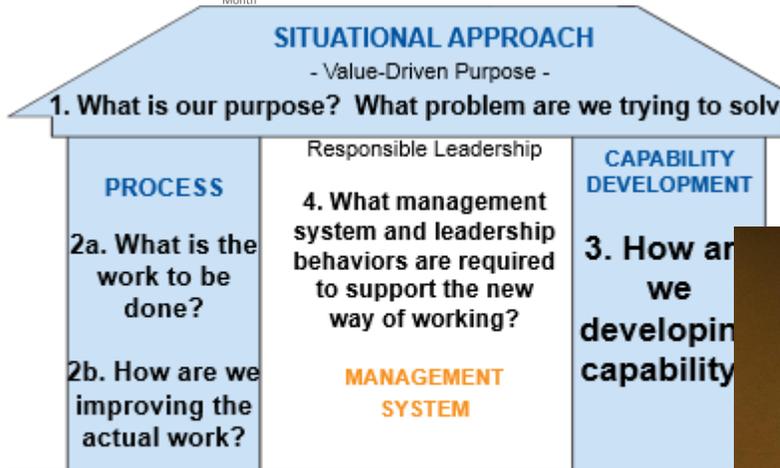
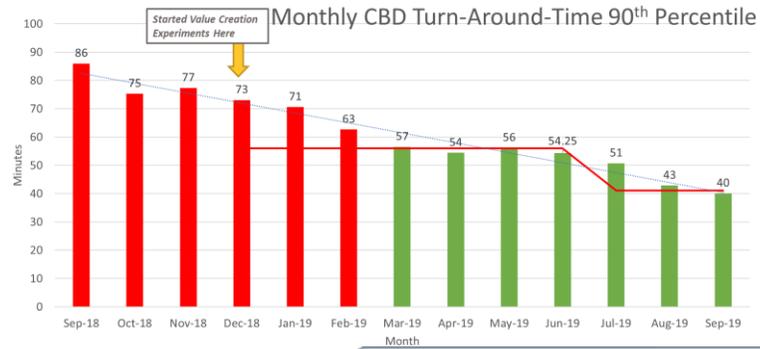
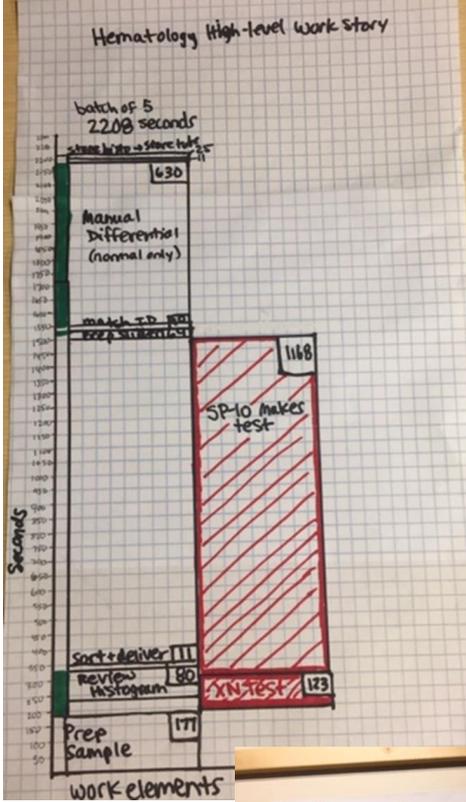
Week 1 Experiment



- Do experiment for 1 week
- Study & Adjust based on results
- Chose decision making method for adopting changes as new standard
- Adopted new process

Improvement Process

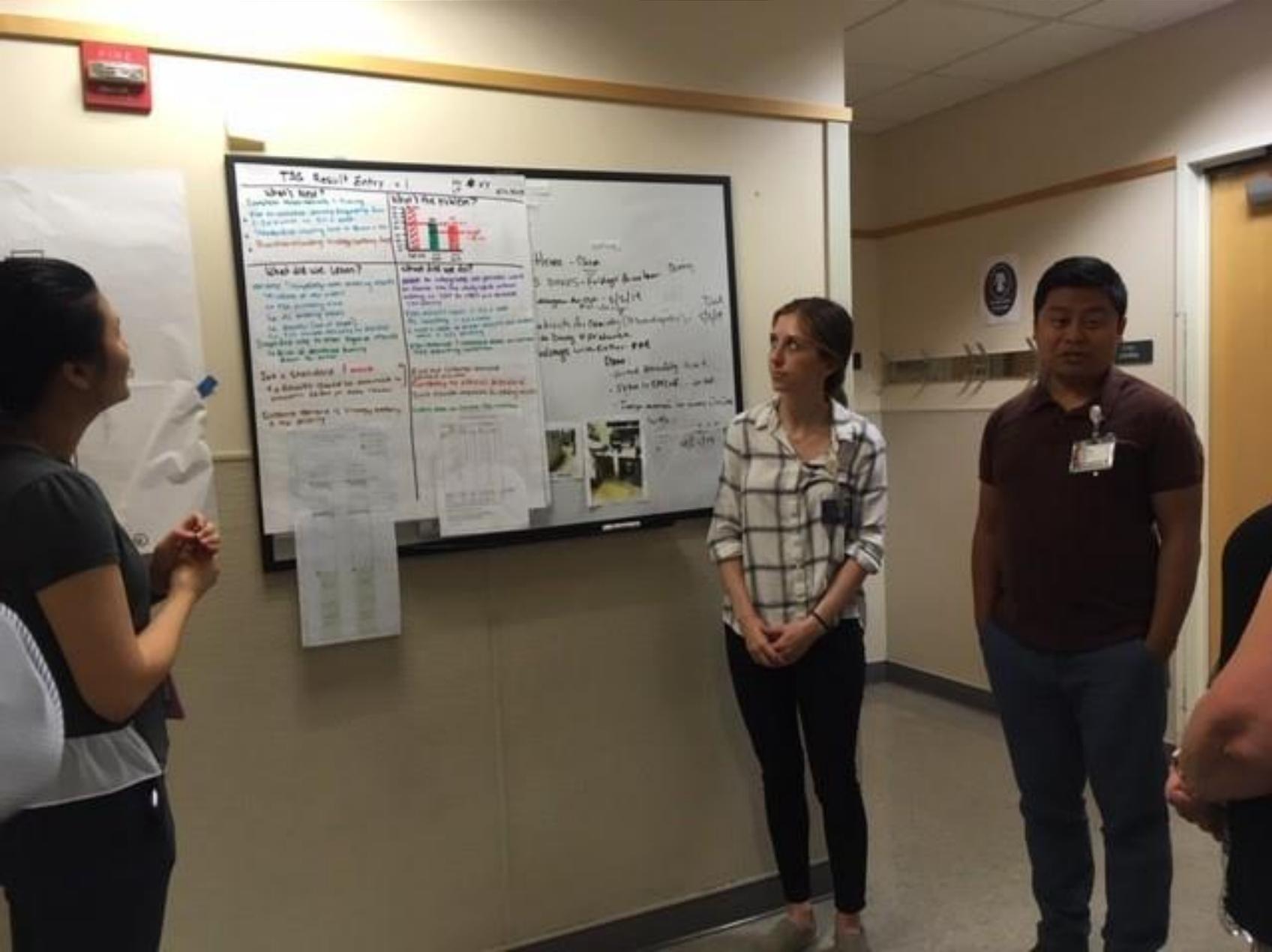




5. Mindset
Leaders as Teachers
Small changes
Lean is technical & social

1. NAME of area you observed
 2. PURPOSE: What was the purpose of the
 3. WORK ELEMENTS: List work elements of
 4. QUALITY: How does the Team Member d
 5. STRUGGLES for Team Members: Both rep
 6. TIME:
 - a) Total Time for Job:
 - b) % of Value Creating Work to Total Ti
 - c) TAKT: $\frac{\text{Minutes available}}{\text{Daily Demand}}$
 7. LEARN: What did you learn about observi
- Continuous Performance Improvement

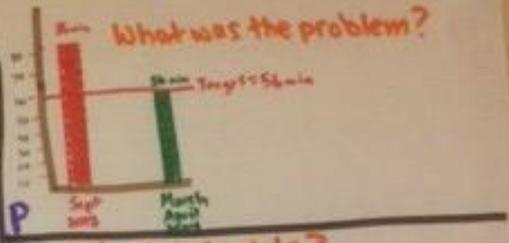
Questions & Discussion



Takt Time Flying Histograms

Metric: TIME

What will we do next?
 Experiment further with the work pattern
 to aid of waste
 to easier
 to meet takt
 Train the work pattern using TWI, once stabilized.



What did we learn?
 Even during high demand time, TAT was lower when Captran Triage role was in place.

What did we do?
 How can we meet demand during the highest demand time?
 What is the takt time?

	xx	SP/10/BS/Bench
Super Peak 9AM-12pm	58sec	116sec
Peak 2PM-2pm	77sec	154sec
Off Peak 6:30AM, 2-10pm	275sec	550sec



What are the work elements?
 How long do they take?



How can we arrange the work to meet takt time?
 We experimented!
 • pull tubes • sequencediff work
 • flying histograms



Yet, the work pattern was inconsistent.

Process Improvement
 do you start
 tffs?

Tech Cycle Training

Tackling TSS x 4

Tackling TSS x 5

Handwritten notes and diagrams detailing technical cycle training and TSS (Takt Time) calculations for different scenarios.

Handwritten notes and diagrams detailing work elements, takt time, and work pattern results. Includes photos of workers and equipment.

What did we accomplish this week?
 • ...

Before

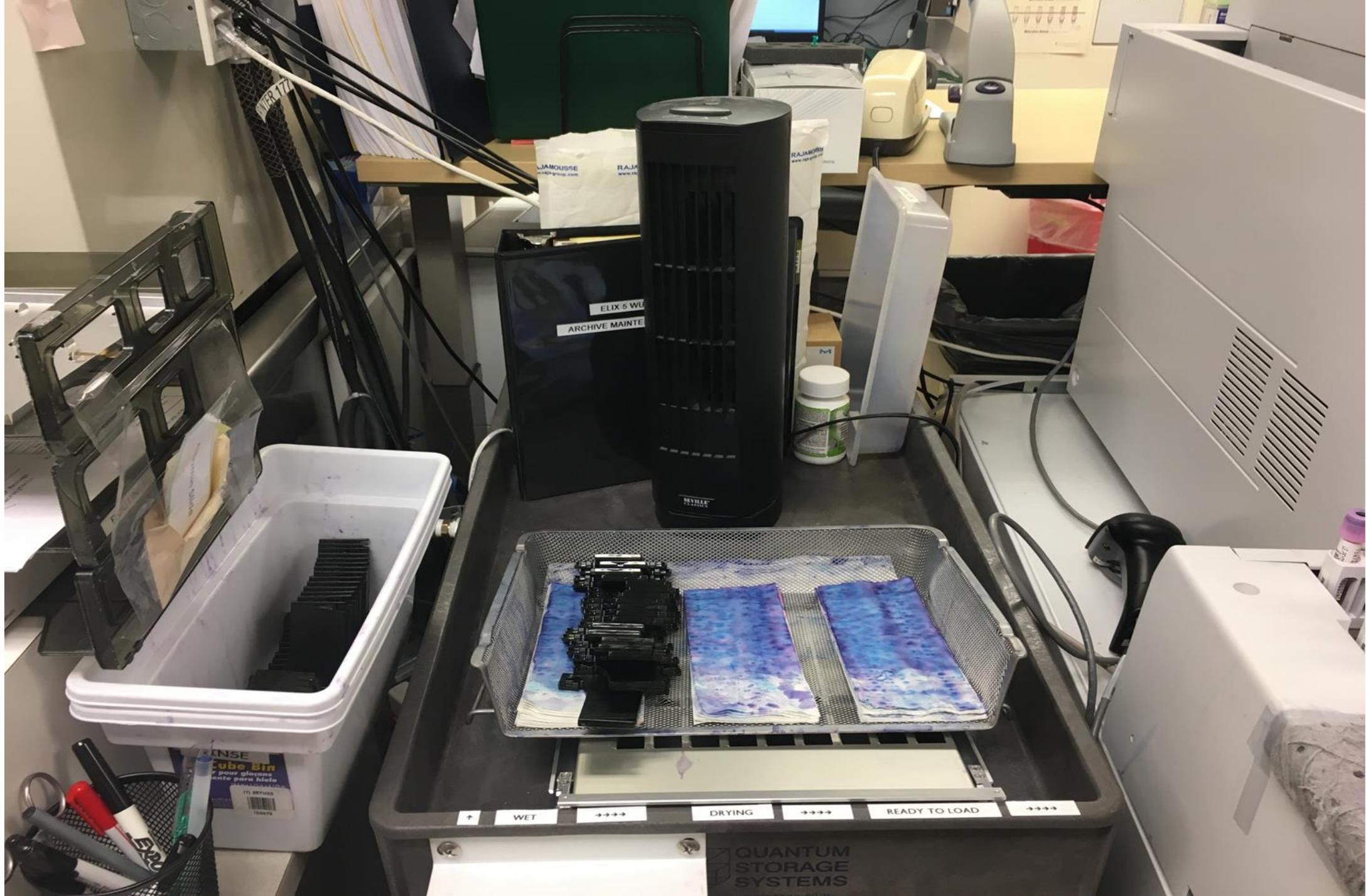
After

Who: ...

What: ...

Why: ...

How: ...



ELIX 5 WU
ARCHIVE MAINTENANCE

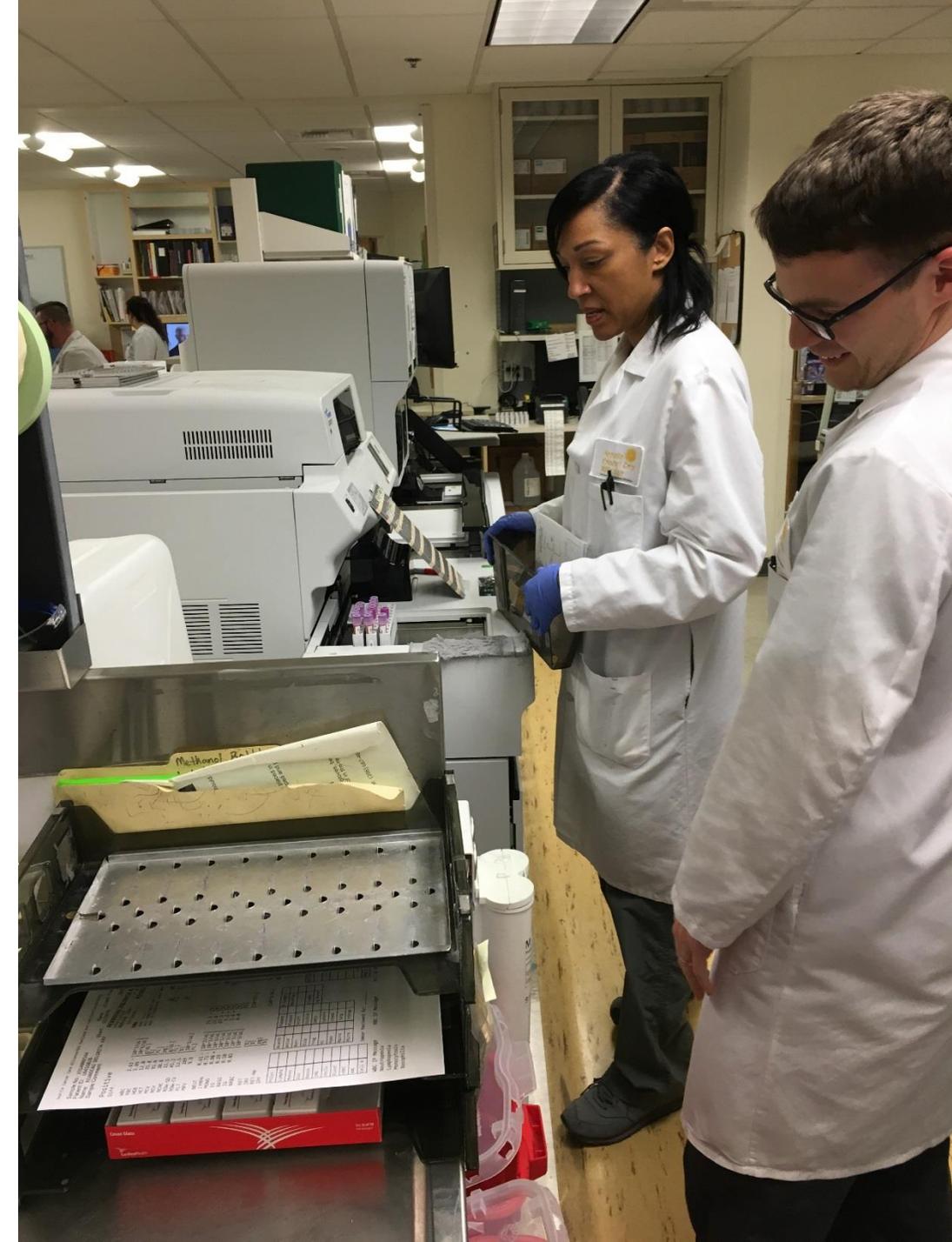
SEVILLE

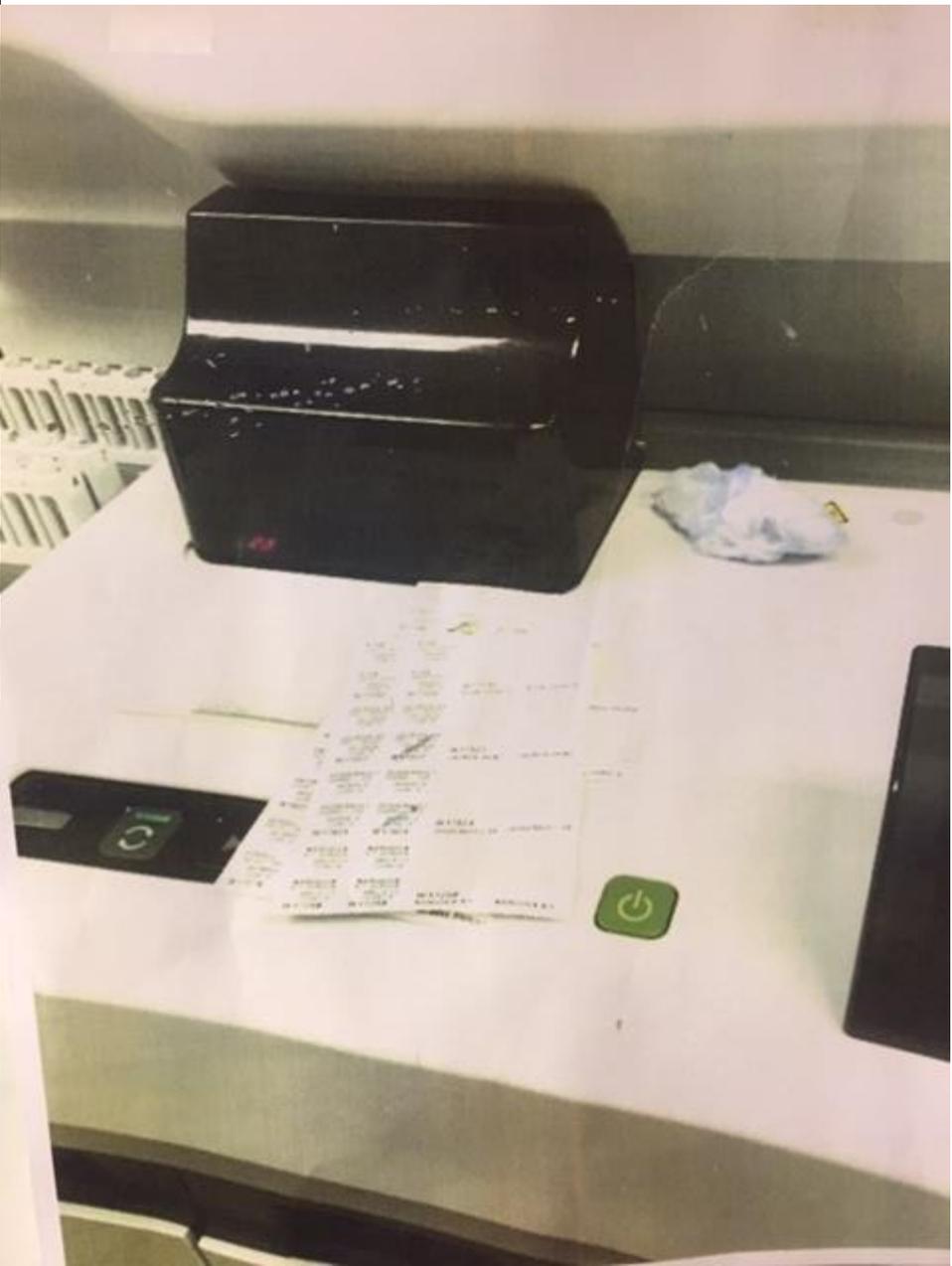
↑ WET →→→→ DRYING →→→→ READY TO LOAD →→→→

QUANTUM STORAGE SYSTEMS

INSE
Cube Bin
pour glaces
para hielo

EXTRA





TARGET = 53 min

July 2019						
Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday
	1 52	2 50	3 48	4 47	5 50	6 75
7 48	8 66	9 46	10 42	11 53	12 46	13 67
14 50	15 65	16 51	17 57	18 53	19 7	20 66
21 47	22 41	23 39	24 43	25 4		
26 42	27 38	28 35	29 39	30 42	31 38	

July Actual = 53

Goal = 41 min

September 2019						
Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday
1 48	2 38	3 35	4 38	5 36	6 36	7 39
8 47	9 40	10 41	11 34	12 40	13 38	14 58
15 43	16 48	17 40	18 34	19 40	20 39	21 55
22 42	23 40	24 34	25 36	26 37	27 42	28 36
29 62	30 34					

Sept Av = 40 min

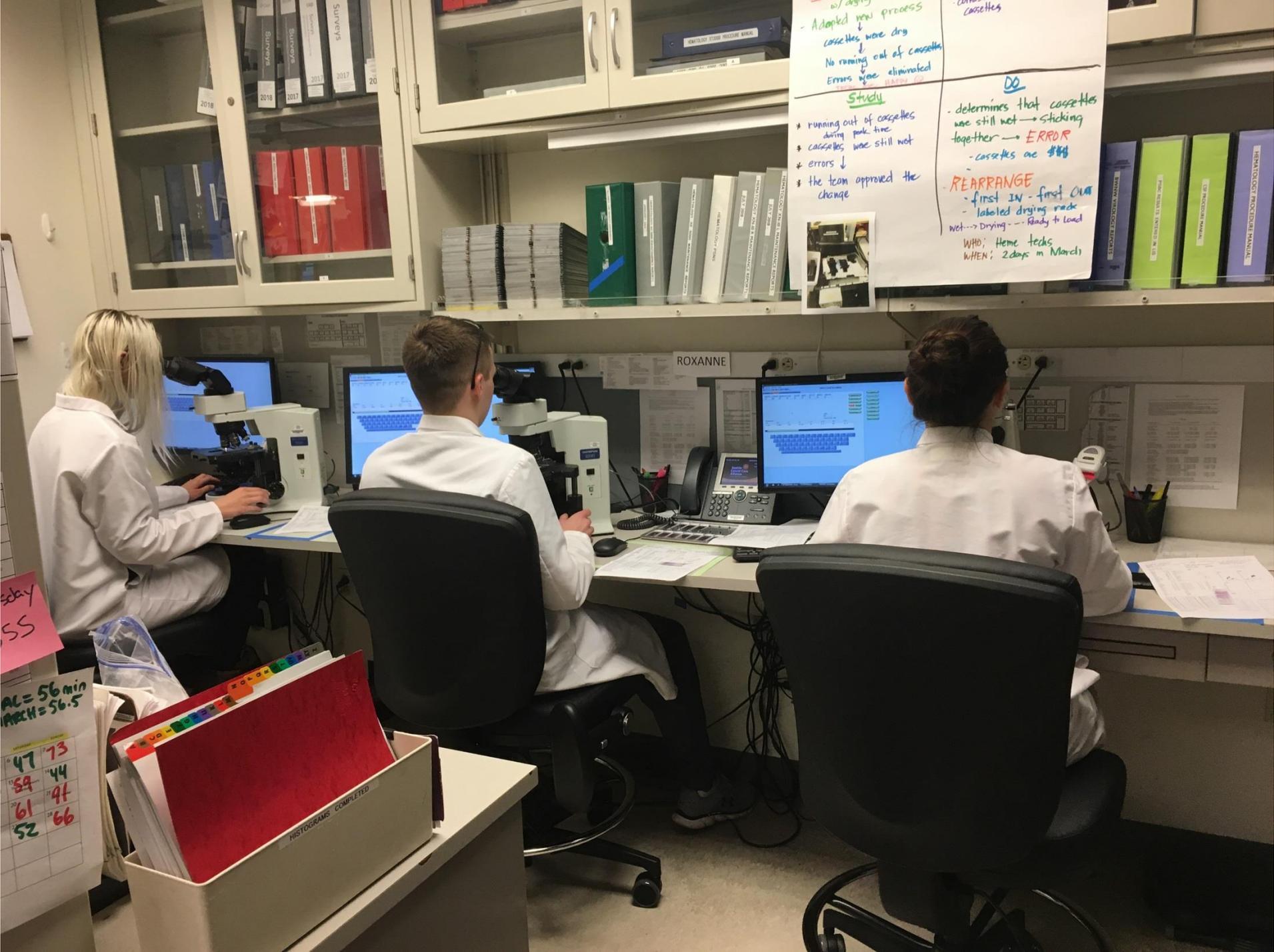
Great work!!!

Let's go for the Dec goal! 41 min

August 2019						
Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday
4 48	5 44	6 47	7 43	8 39	9 38	10 53
11 31	12 36	13 36	14 42	15 41	16 43	17 53
18 31	19 36	20 34	21 50	22 36	23 47	24 43
25 39	26 51	27 63	28 34	29 55	30 55	31 55

high = 66
low = 34

Template © calendartabs.com



- Adapted new process
cassettes were dry
No running out of cassettes
Errors were eliminated

Study

- * running out of cassettes during peak time
- * cassettes were still not
- * errors
- ↓
- * the team approved the change

DO

- determines that cassettes were still wet → sticking together → **ERROR**
- cassettes are **dry**

REARRANGE

- first IN - first OUT
- labeled drying rack
- Wet → Drying → Ready to Load

WHO: Home techs
WHEN: 2 days in March

Today
55

AL = 56 min
ARCH = 56.5

47	73
59	44
61	41
52	66

HISTOGRAMS COMPLETED

ROXANNE

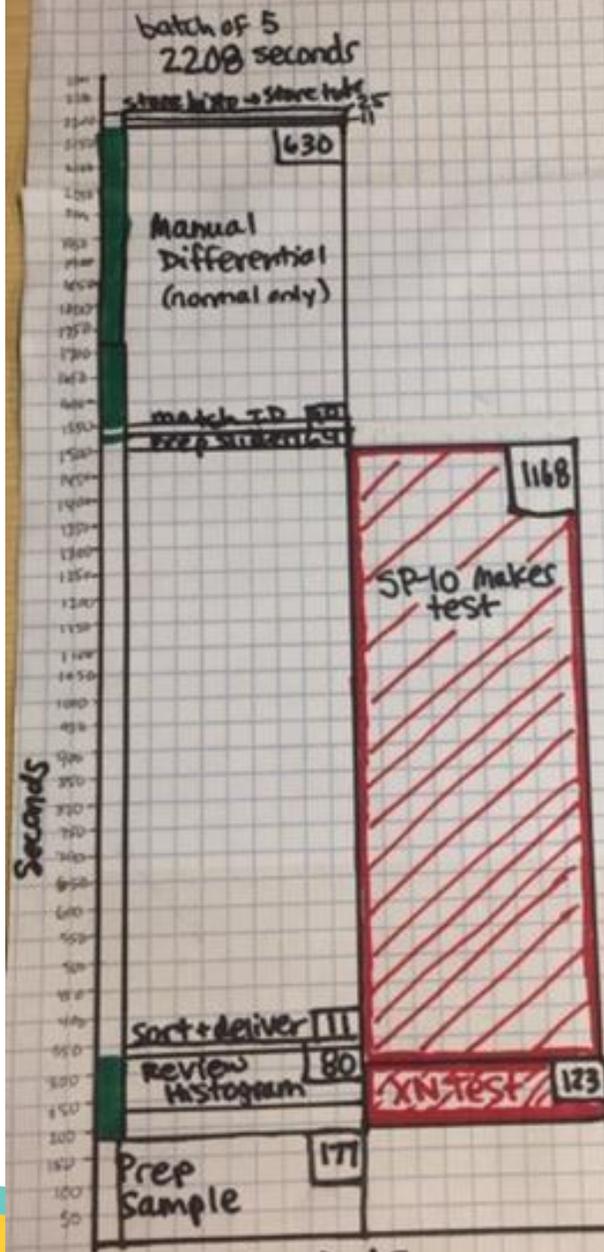


PLATELET MONITORING PLATFORM

DATE	TIME	TEST	RESULT
		WHITE CELL	
		RED CELL	
		PLATELET	
		HAEMOGLOBIN	
		HAEMATOCRIT	
		MCV	
		MCH	
		MCHC	
		RDW	
		PLT	
		MPV	
		PDW	
		P-LCR	
		P-CC	
		P-CC2	
		P-CC3	
		P-CC4	
		P-CC5	
		P-CC6	
		P-CC7	
		P-CC8	
		P-CC9	
		P-CC10	
		P-CC11	
		P-CC12	
		P-CC13	
		P-CC14	
		P-CC15	
		P-CC16	
		P-CC17	
		P-CC18	
		P-CC19	
		P-CC20	



Hematology High-level work story



Collaboration & Connection

