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Part 1 of 2

Innovation through Co-Location: A Pilot Model to Support Pediatric Cancer Research at Seattle Children's Research Institute

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Jenn Perez, Accountant, Office of Research Finance
Marisa Zaleski, Grants and Contracts Supervisor, Cancer Research

Agenda

- Seattle Children's Research Institute Lean Journey
- Lean Concepts
- AutoLiv
- System for Daily Improvement
- Problem Solving
- Key Learnings

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Seattle Children's Research Institute

- Seattle Children's has the largest pediatric oncology program in the Washington, Wyoming, Alaska, Montana, and Idaho (WWAMI) region
- Clinical research in oncology is handled through the Seattle Children's Research Institute (SCRI)
- A cornerstone of SCRI's structure is **Lean methodology**, which is adapted from the **Autoliv** model

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Seattle Children's Research Institute Lean Journey

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Lean Concepts

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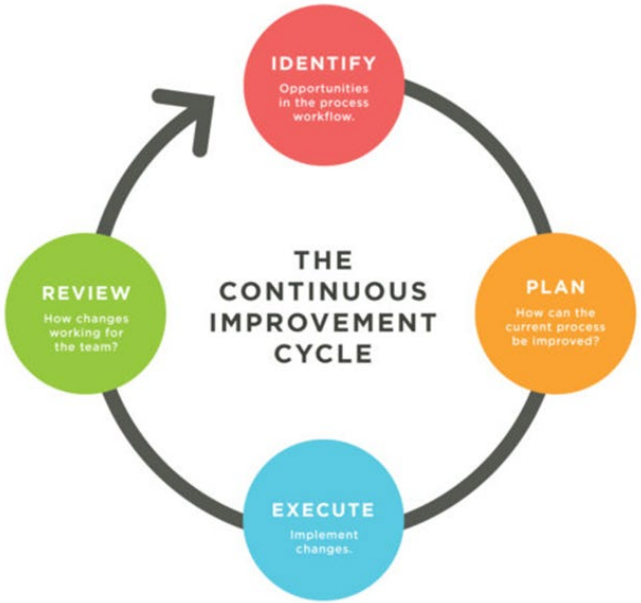
What is Lean?

- Deliver value from your customer's perspective
- Evaluating your value stream and eliminating waste
- Continuously improving your processes
- Involve and empower employees



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leankit

Lean in Administration

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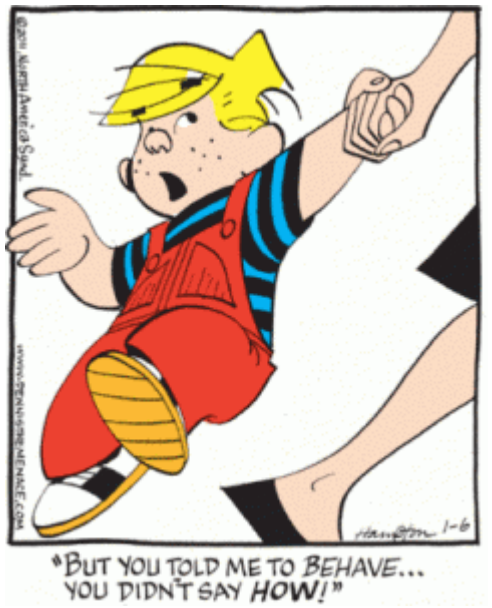
Lean Concept: Standard Work

Philosophy:

- Documenting best practices
- Create a baseline for future improvements

Benefits:

- Creates clear explanations
- Improves quality
- Reduce defects



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Lean Concept: Error Prevention

Philosophy:

- Create standardization for work
- Encourages a continuous improvement environment

Benefits:

- Decrease costs
- Eliminates defects later in the process

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Lean Concept: Value Stream

Philosophy:

- Examine the current state
- Construct a series of events to create the proposed product or service
- Focuses on value add

Benefits:

- Removes waste
- Increases efficiency and productivity
- Promotes process improvement

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Lean Concept: Kaizen

Philosophy:

- Gradual continuous incremental improvement
- Nothing is seen as status quo

Benefits:

- Everyone is actively engaged in problem solvir
- Impactful results in the long term
- Less waste

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Lean Concept: Waste Elimination

Philosophy:

- Removal of any steps or actions that is non-value added
- Ultimately, if it doesn’t provide value to the customer, it is waste

Benefits:

- Focus on creating value
- Involve the entire team
- Holistic view mindset of the entire process
- Opportunity to create cross-functional team

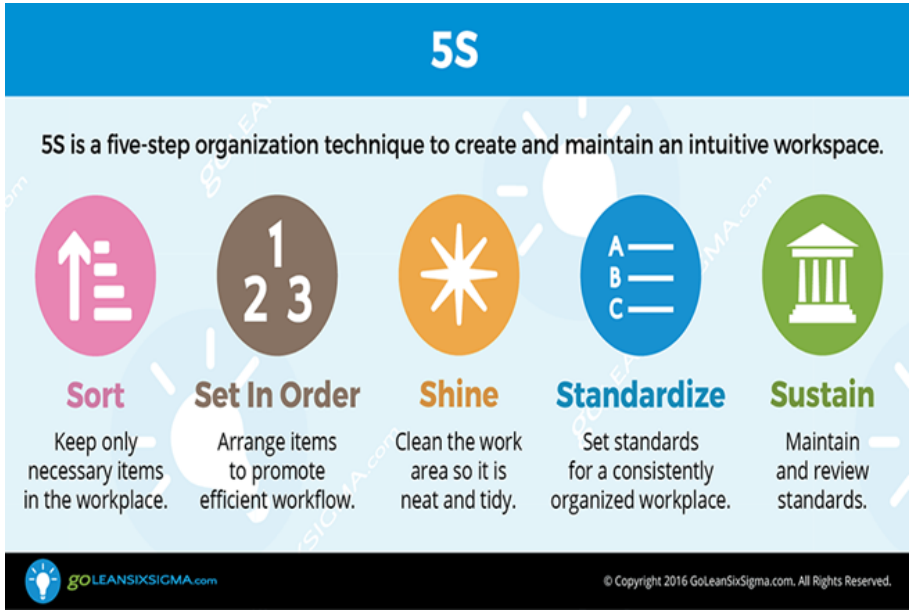
Lean Concept: 5S

Philosophy:

- Encourages organized, safe environment
- Promote less waste
- Assists with productivity and efficiency

Benefits:

- Improve safety
- Lower defects and costs
- Promotes flexibility and adaptability



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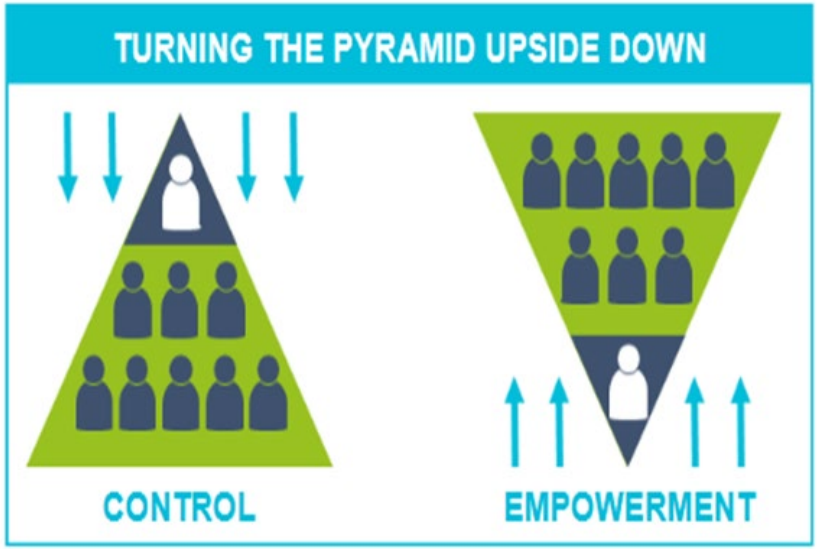
Lean Concept: Flipping the Pyramid

Philosophy:

- Senior management empower their employees
- Employees are leaders within the organization

Benefits:

- Less bureaucratic or hierarchical
- Increased engagement and retention



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Lean Concept: Develop Employees

Philosophy:

- Value and grow employee's skills, knowledge and talent
- Develop problem solvers

Benefits:

- Empower employees to make change
- Increased engagement and retention
- Increased gains in improvements
- Key to sustainable growth

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Lean Concept: Teamwork

Philosophy:

- Group of individuals working together towards a common purpose

Benefits:

- Collectively working together to identify best practices provides better opportunities for success and innovation

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Lean Concept: Huddle

Philosophy:

- Team meets at visual management board
- Short and brief discussion with the team

Benefits:

- Align the team for the day ahead
- Create resolutions to abnormalities
- Forum to escalate any critical issues

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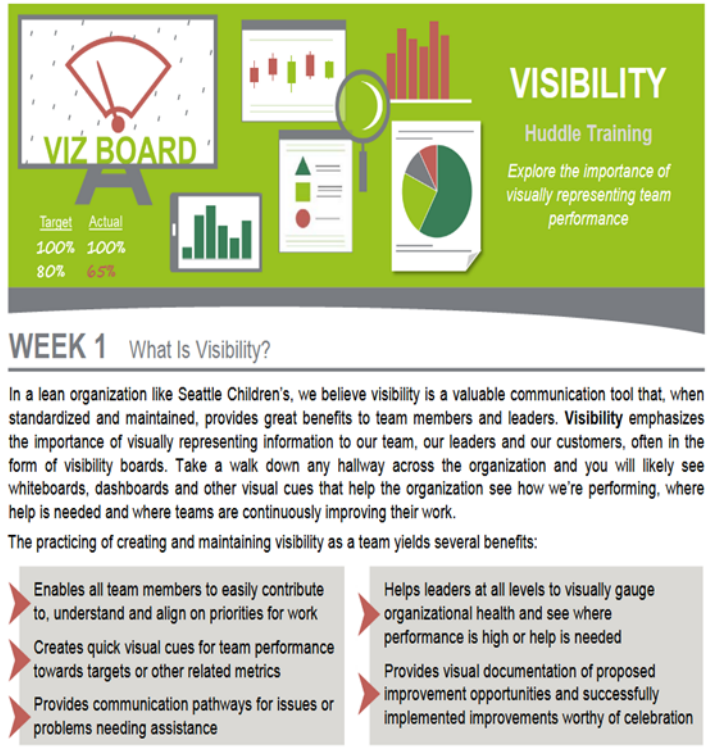
Lean Concept: Huddle Trainings

Philosophy:

- Scripted training lessons that target lean methodology

Benefits:

- Increased engagement and retention
- Increased gains in improvements



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AutoLiv

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Airbags and the System for Daily Improvement

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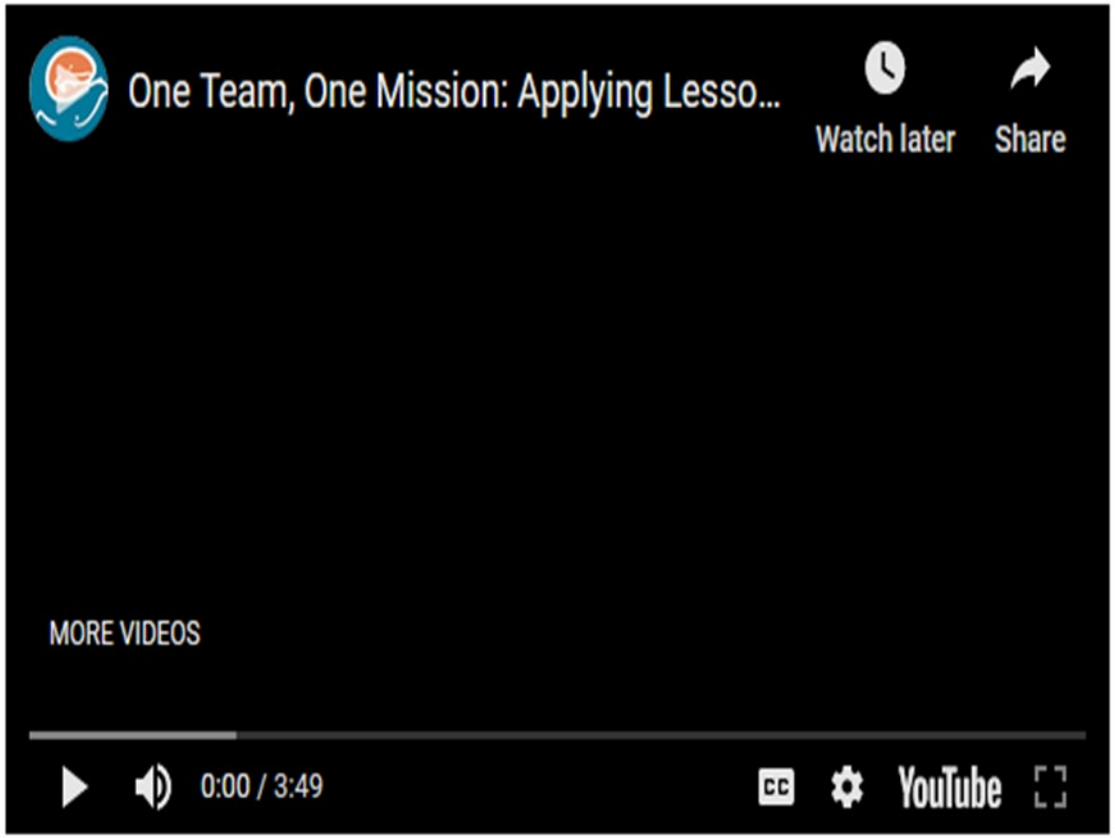
Applying Lessons Learned from Autoliv



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System for Daily Improvement

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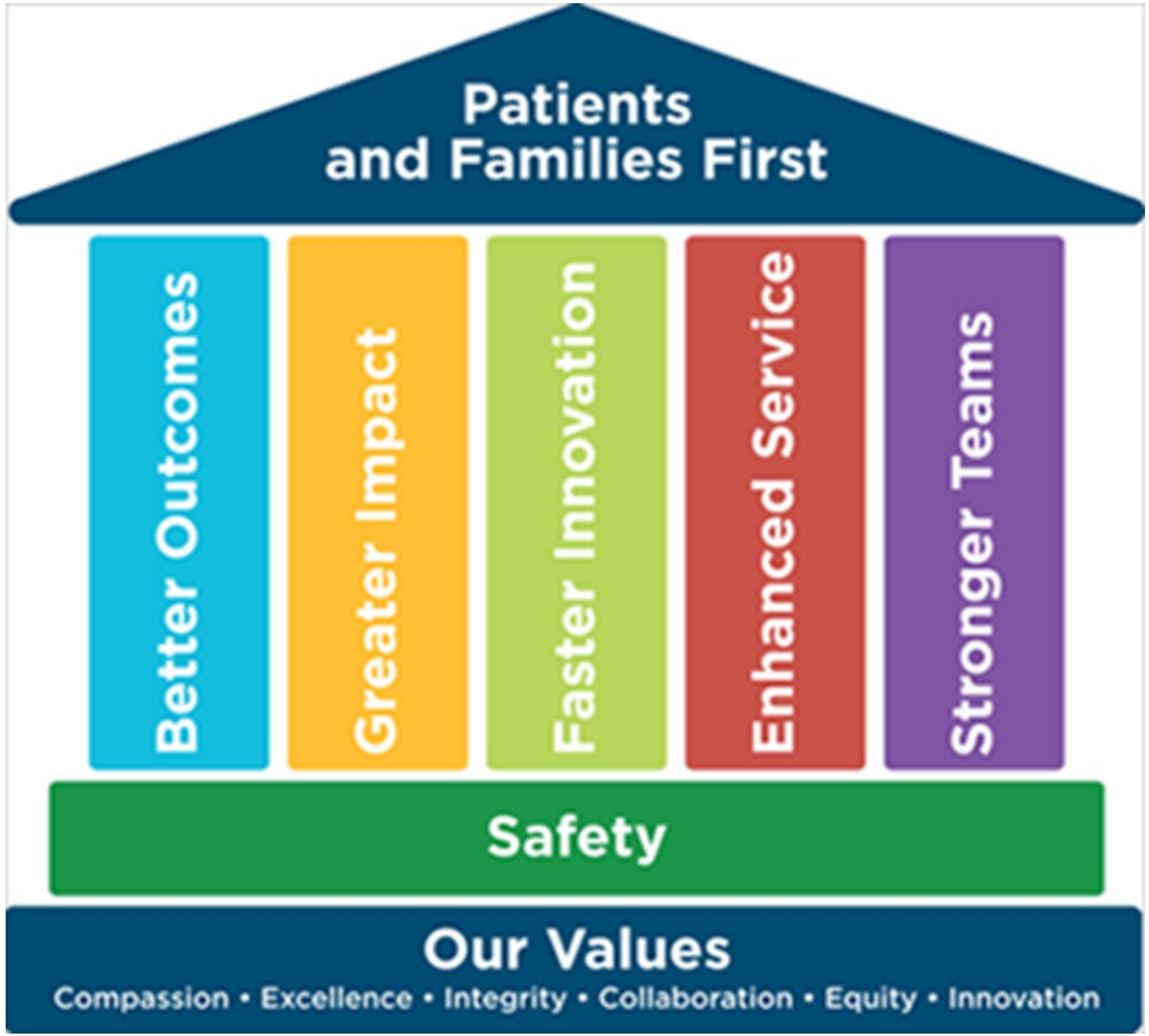
Patients
and Families First
Better Outcomes
Greater Impact
Faster Innovation
Enhanced Service
Stronger Teams
Safety
Our Values
Compassion • Excellence • Integrity • Collaboration • Equity • Innovation

The System for Daily Improvement (SDI)

STABILIZE
What our team does on a day-to-day basis

MEASURE
How our team defines success

IMPROVE
Making the work better

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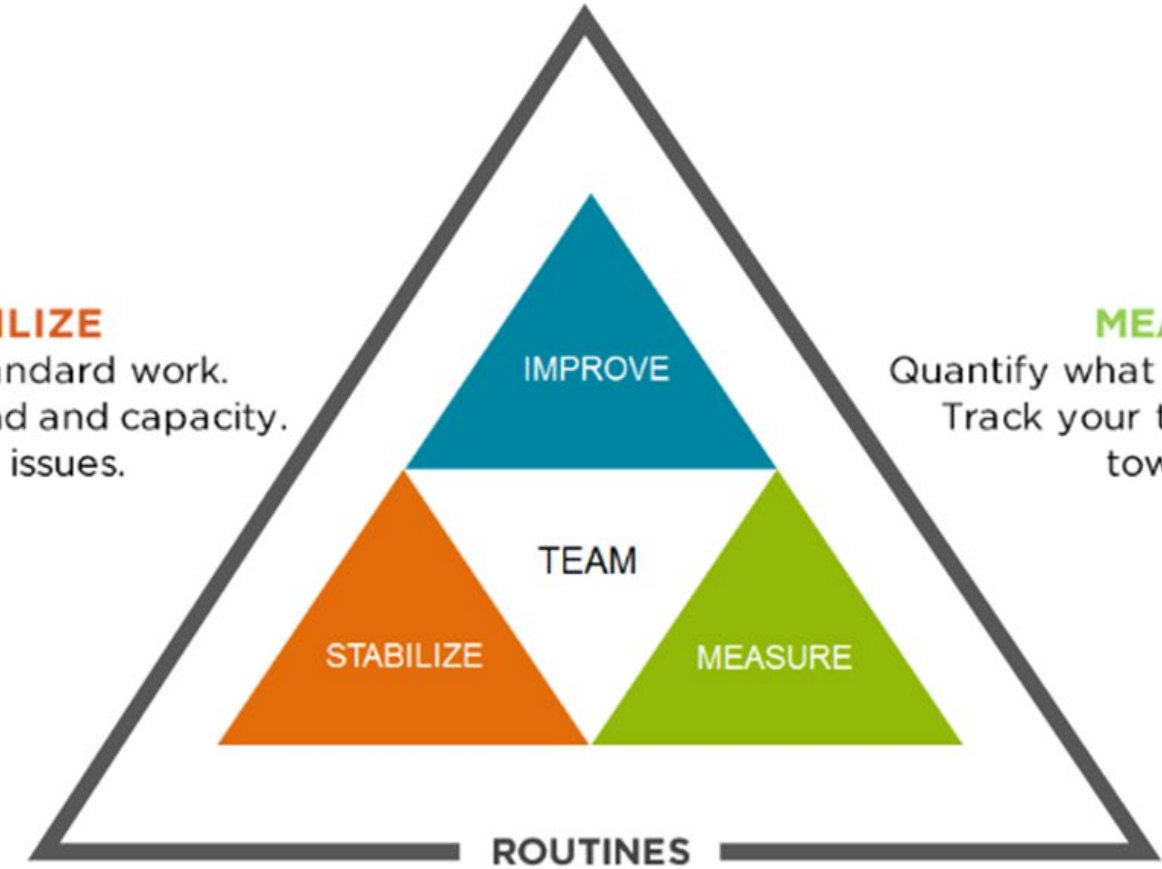
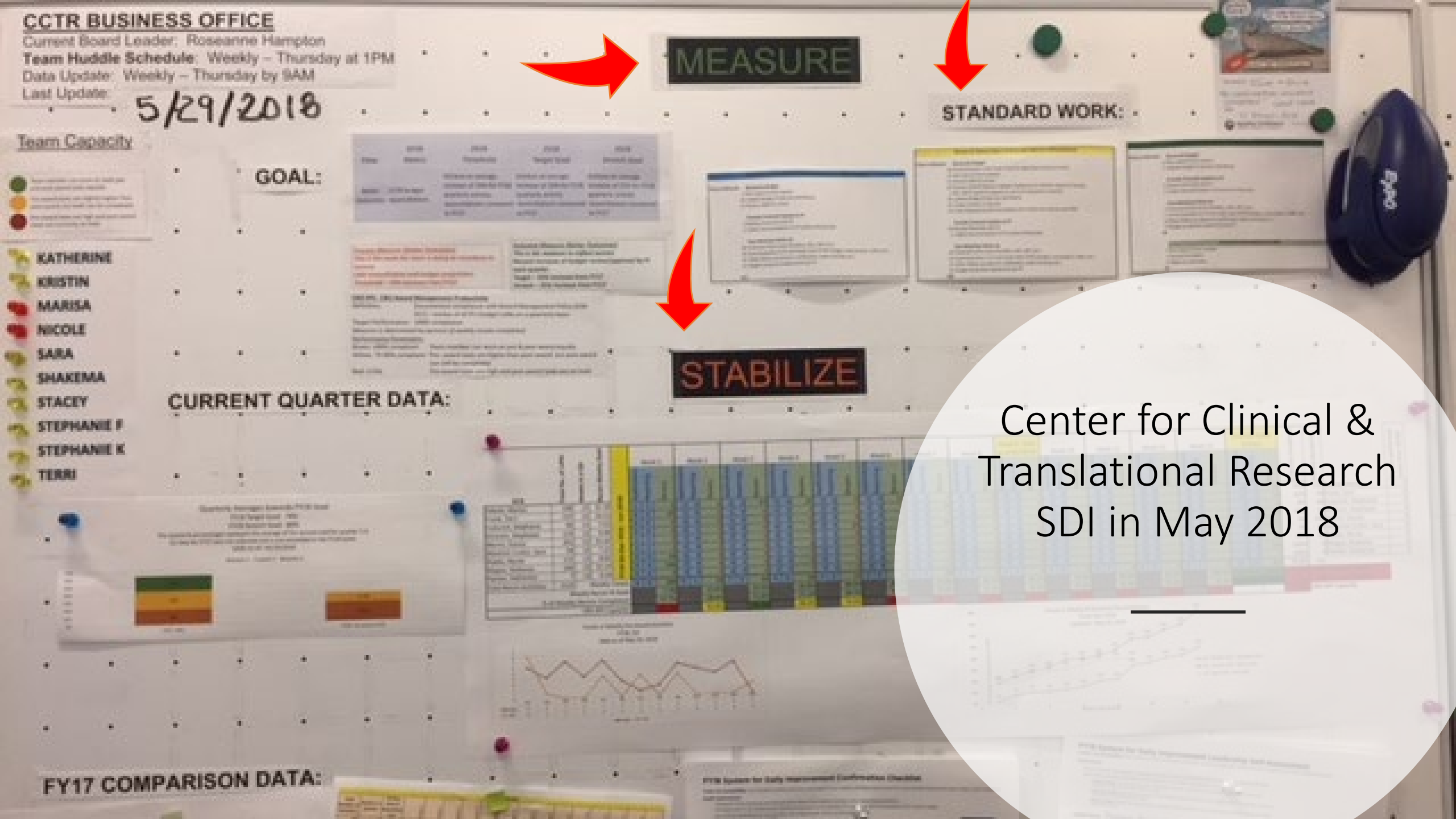
IMPROVE
Connect improvements to Stabilize and Measure. Get better every day.

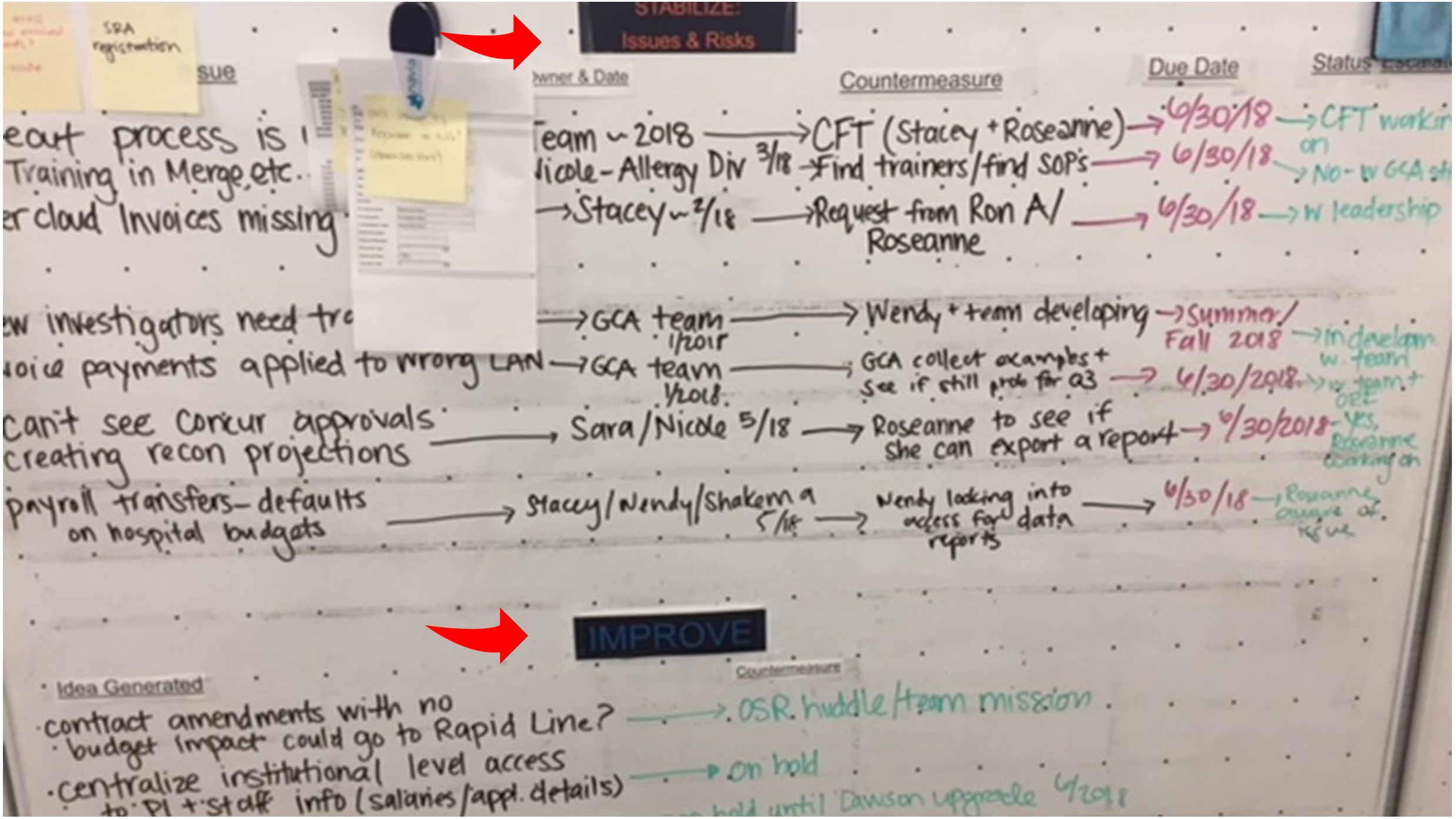
STABILIZE
Start with standard work. Visualize demand and capacity. Identify issues.



MEASURE
Quantify what success looks like. Track your team's progress toward it.

Establish valuable habits to sustain and maintain the system.


CCTR BUSINESS OFFICE
Current Board Leader: Roseanne Hampton
Team Huddle Schedule: Weekly – Thursday at 1PM
Data Update: Weekly – Thursday by 9AM
Last Update: 5/29/2018
MEASURE
STANDARD WORK:
Team Capacity
GOAL:
KATHERINE
KRISTIN
MARISA
NICOLE
SARA
SHAKEMA
STACEY
STEPHANIE F
STEPHANIE K
TERRI
STABILIZE
CURRENT QUARTER DATA:
FY17 COMPARISON DATA:
Center for Clinical & Translational Research SDI in May 2018


SRA registration
STABILIZE:
Issues & Risks
Countermeasure
Due Date
Status
Team ~ 2018
CFT (Stacey + Roseanne)
6/30/18
CFT workin
Nicole - Allergy Div 3/18
Find trainers/find SOPs
6/30/18
Stacey ~ 2/18
Request from Ron A/ Roseanne
6/30/18
GCA team 1/2018
Wendy + team developing
Summer/ Fall 2018
GCA team 1/2018
GCA collect examples + see if still prob for Q3
6/30/2018
Sara/Nicole 5/18
Roseanne to see if she can export a report
6/30/2018
Stacey/Wendy/Shakema 5/18
Wendy looking into access for data reports
6/30/18
IMPROVE
Idea Generated
Countermeasure
contract amendments with no budget impact could go to Rapid Line?
OSR huddle/team mission
centralize institutional level access to PI + staff info (salaries/appl. details)
on hold

System for Daily Improvement - Huddles

- Huddles are short meetings where teams discuss their SDI board briefly
- Huddle cadence determined by team and work needs
- Teams identify areas of risk and topics which require escalation
- Countermeasures are discussed when metrics are off target

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System for Daily Improvement - Huddles

- Sample Huddle Script – OSR
  - Daily roles
  - Kaizens – newly proposed or completed
  - Institutional knowledge
  - Oddities or abnormalities from the previous day
  - Discuss at risk or escalated items
  - Review team capacity
  - Emphasize department priorities

CONFIRMATION CHECKLIST

We use these elements...

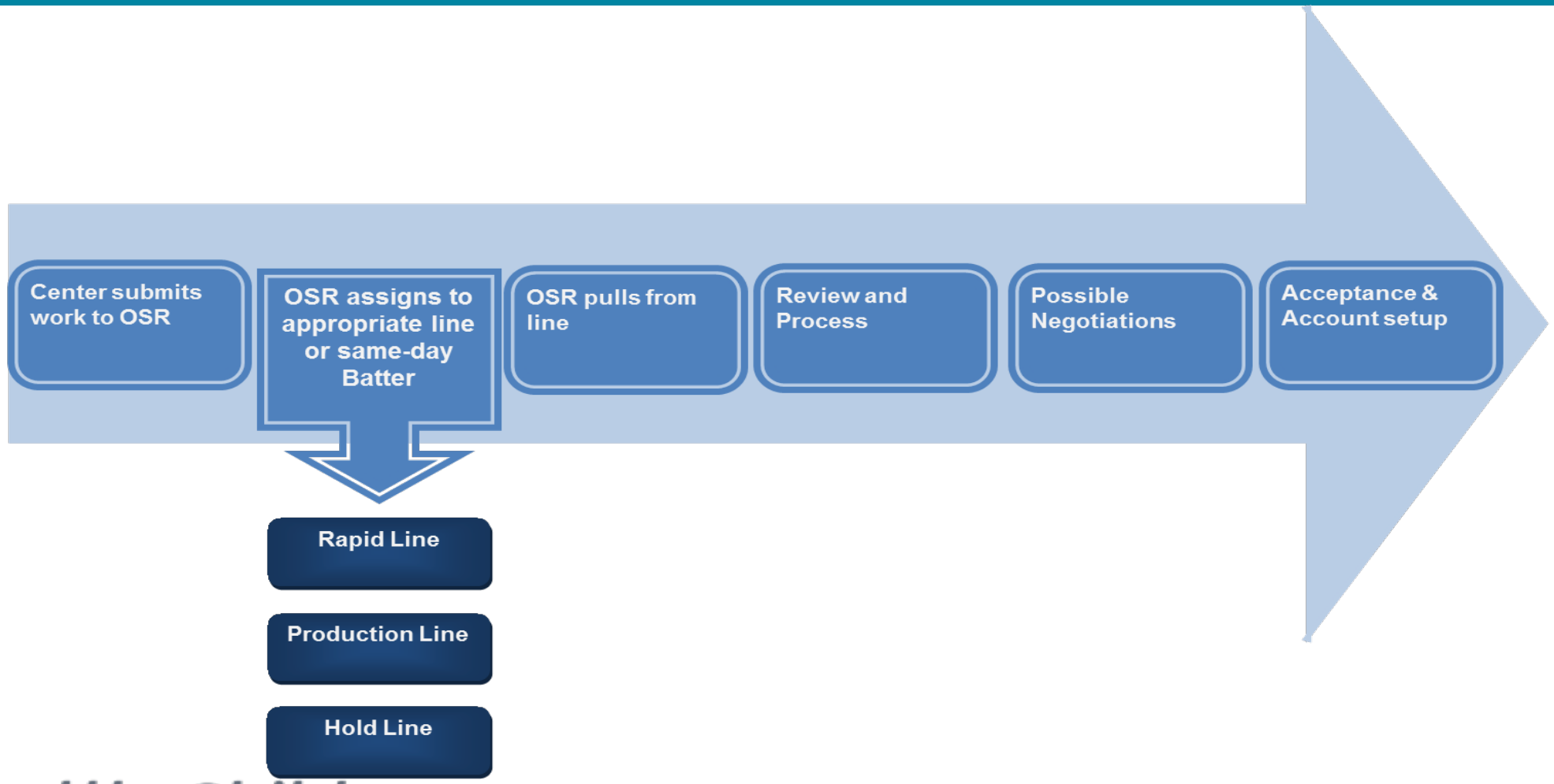
MEASURE	There is at least one outcome measure connected to a goal pillar.
	There is at least one process measure connected to each outcome measure.*
	All measures have defined target performance.
	All measures have status indicated.
	The Measure section has been updated within the last 30 days.
STABILIZE	The team has anticipated the operational work to be done for the next huddle cycle.
	The team has evaluated if they can complete the work in the next huddle cycle.
	There is a system to track issues and risks.
	All identified issues and risks have an owner, specified action, and current due date.
	The Stabilize section has been updated within the last seven days.
IMPROVE	All off-target measures have countermeasures (get back to green plan).
	Issues and risks are being analyzed to prevent reoccurrence.
	There is a system to submit improvement ideas.
	The team is implementing at least one improvement idea per month.

TEAM OBJECTIVES

in pursuit of these outcomes...

Our team measures the outcome of our work to know if we need to adjust our processes.
Our team standardizes our processes to provide consistent delivery to our customer.
Our team understands our demand, capacity, and other factors that impact our work so we can anticipate issues and adjust our plan.
Our team continuously removes waste from our processes to get better every day.
Our team understands the effect that our improvements have on our processes.

Seattle Children's OSR General Process Map



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OSR SDI Board - Intake Queue

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All Data Current as of 2/18/2019 12:03:39 PM

Intake Queue

Production Line					
	2/1/2019	17 days	Blume, Heidi	RES - New CTA (Lauren)	PT-18-1015
	1/31/2019	18 days	Opel, Doug	WIP - Provided Services Agreement	PT-19-0096
	2/1/2019	17 days	Leary, Sarah	WIP - Equipment Use Agr (Pilot)	PT-17-077
	2/1/2019	17 days	Sather, Noah	WIP - New Subaward	PT-18-628
	2/5/2019	13 days	Smith, Joe	WIP - CIDR Subaward	PT-18-626
	2/5/2019	13 days	Sather, Noah	WIP - Service Agr	PT-19-0118
	2/5/2019	13 days	Frenkel, Lisa	SUB - 12015SUB New	PT-15-500
	2/5/2019	13 days	Shic, Frederick	WIP - Outgoing DUA	PT-16-676
	2/6/2019	12 days	Mendoza, Jason	WIP - Subaward NCE	PT-17-412
	2/6/2019	12 days	Sathyanarayana, Sheela	WIP - Subaward Mod 5	PT-14-242
	2/6/2019	12 days	Sherman, David	WIP - New Subaward	PT-18-646
	2/6/2019	12 days	Qin, Xuan	WIP - Subaward NCE	PT-17-679
	2/7/2019	11 days	Hamblett, Nicole	SUB - 11998SUB Newq	PT-18-597
	2/7/2019	11 days	Hamblett, Nicole	SUB - 11997SUB New	PT-18-597
	2/7/2019	11 days	Stevens, Anne	SUB - 12006SUB New	PT-18-211-SG
	2/7/2019	11 days	Stevens, Anne	SUB - 12007SUB New	PT-18-211-SG
	2/7/2019	11 days	Stevens, Anne	SUB - 12012SUB New	PT-18-211-SG

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OSR SDI Board - Assigned Work in Process Tracking

Lead SPO	Age	IntakeDate	PI	WIP Type	AgreementID	Other Party	Status Date	Current Status
Matt McElroy	49	12/31/2018	Leary, Sarah	MTA - Outbound	PT-18-1198-AGR001		2/6/2019	With internal party
	42	1/7/2019	Tarlock, Katherine	MTA - Outbound	PT-19-0011-AGR001		1/21/2019	With internal party
	41	1/8/2019	Leary, Sarah	Clinical Trial Agreement	PT-18-509-AGR001		1/30/2019	With internal party
	35	1/14/2019	Leary, Sarah	Other Agreement	PT-17-077-AGR012		2/4/2019	With external party
					PT-17-077-AGR013		2/8/2019	With external party
					PT-17-077-AGR014		2/8/2019	With external party
	32	1/17/2019	Leary, Sarah	Other Agreement	PT-17-077-AGR003		2/8/2019	With external party
					PT-17-077-AGR009		2/8/2019	With internal party
					PT-17-077-AGR011		2/8/2019	With external party
	30	1/19/2019	Torgerson, Troy	Award (NOGA, Subaward, ..	PT-19-0058-AGR001		2/14/2019	In process -- OSR
	24	1/25/2019	Albert, Katie	Clinical Trial Agreement	PT-19-0075-AGR001		2/6/2019	With external party
	19	1/30/2019	Rosenfeld, Margaret	Award (NOGA, Subaward, ..	PT-18-747-AGR001		2/13/2019	With external party
	18	1/31/2019	Horslen, Simon	Clinical Trial Agreement	PT-16-707-AGR001		1/31/2019	With internal party
			Orentas, Rimas	Other Agreement	PT-18-1002-AGR001		2/13/2019	With IPC
	17	2/1/2019	Pinto, Navin	Clinical Trial Agreement	PT-18-1080-AGR001		2/4/2019	With internal party
	11	2/7/2019	Hahn, Sihoun	Confidentiality Agreement	PT-19-0123-AGR001		2/7/2019	With external party
	7	2/11/2019	Nanda, Kabita	Clinical Trial Agreement	PT-18-818-AGR001		2/11/2019	With internal party
	4	2/14/2019	Rosenberg, Abby	Application / Progress Rep..	PT-17-328-APP		2/14/2019	WIP Assigned
			Sun, Angela	Confidentiality Agreement	PT-19-0136-AGR001		2/14/2019	With external party

OSR SDI Board - Process Measure (Leading Indicator)

(Process Measure)	Count	Age (cal. days)
Total Current Inventory	121	102
Unworked, On Hold	5	35
Unworked, In Queue	32	18
Currently In Process	84	102

	Count	Age (cal. days)
Adan	10	102
Kelly	11	81
Lauren	7	77
Mary	5	66
Matt	19	49
Michael	17	89
Una	15	77

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OSR SDI Board - Outcome Measure (Lagging Indicator)

Targeted Goal		Target	FYTD
Agreement Lead Time	(Outcome Measure)	22.7	25.2

Kaizen Implementations

FY 2019				
Feb	Jan	Dec	Nov	Oct
	1	1		2
		1	2	
	4	5		3
	2	2		2
	1		2	2
1		2		1
	2	2		3
		1		1
	2	3	1	1

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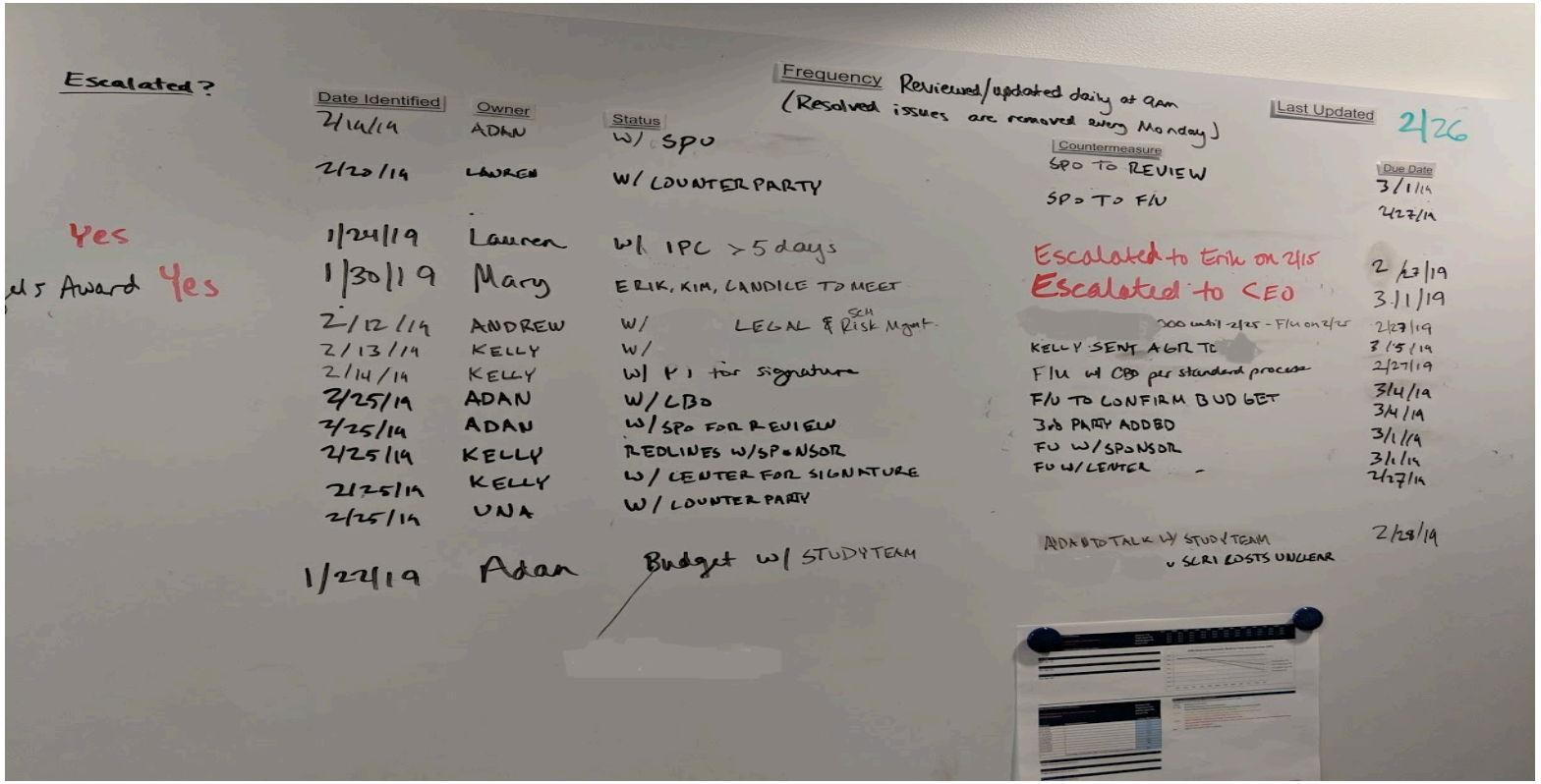
OSR SDI Board – Issues and Risks



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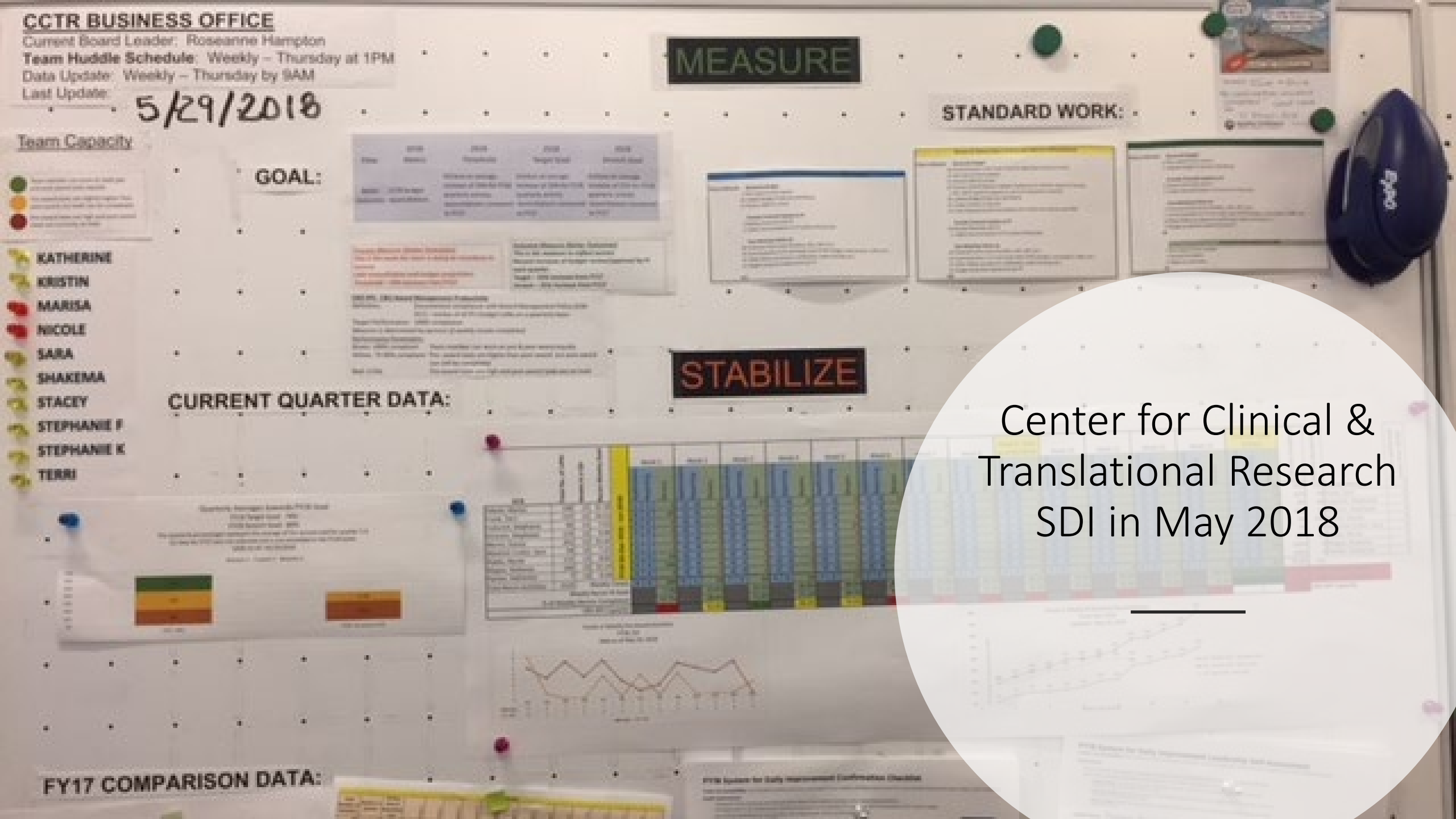
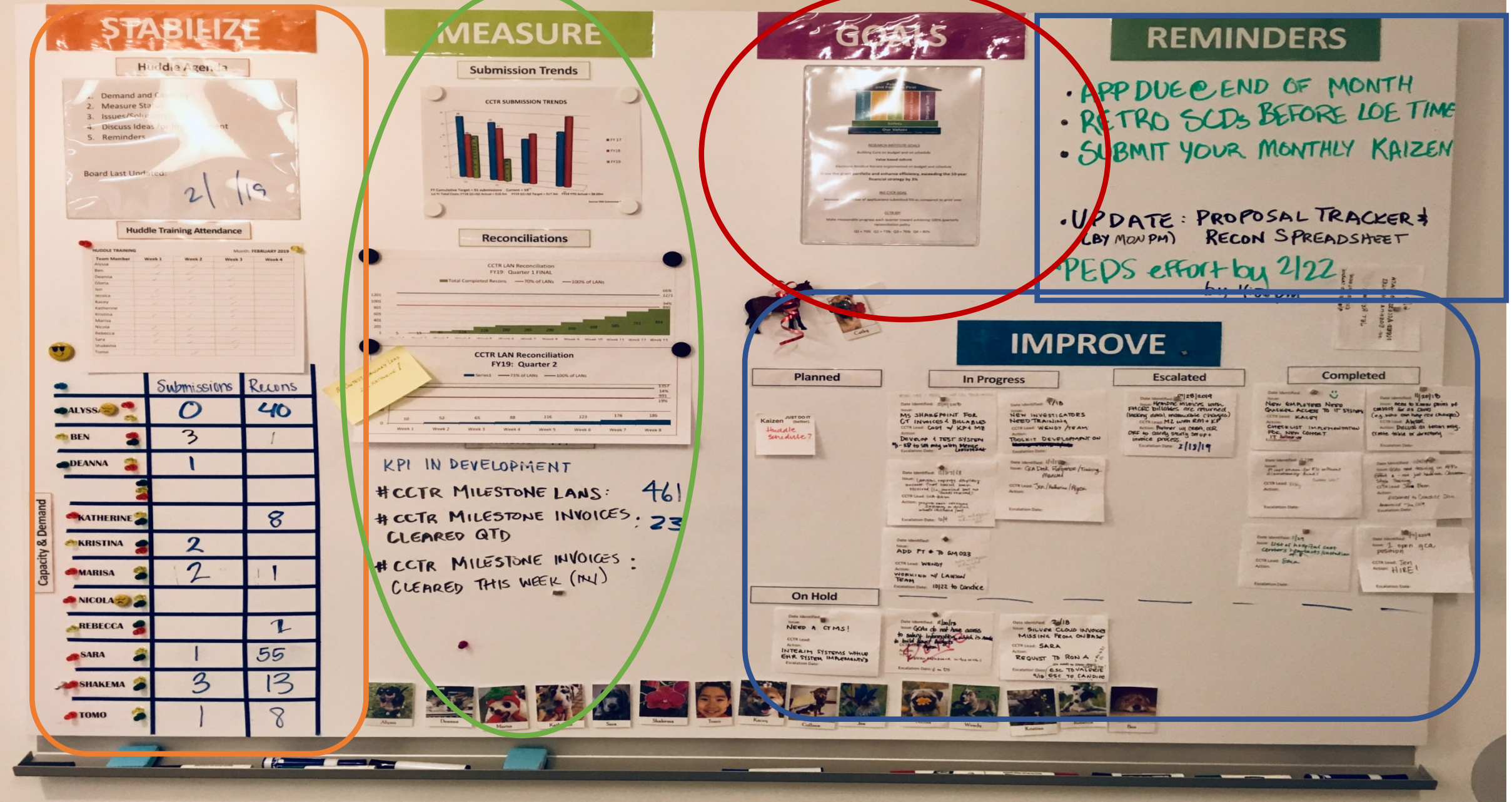
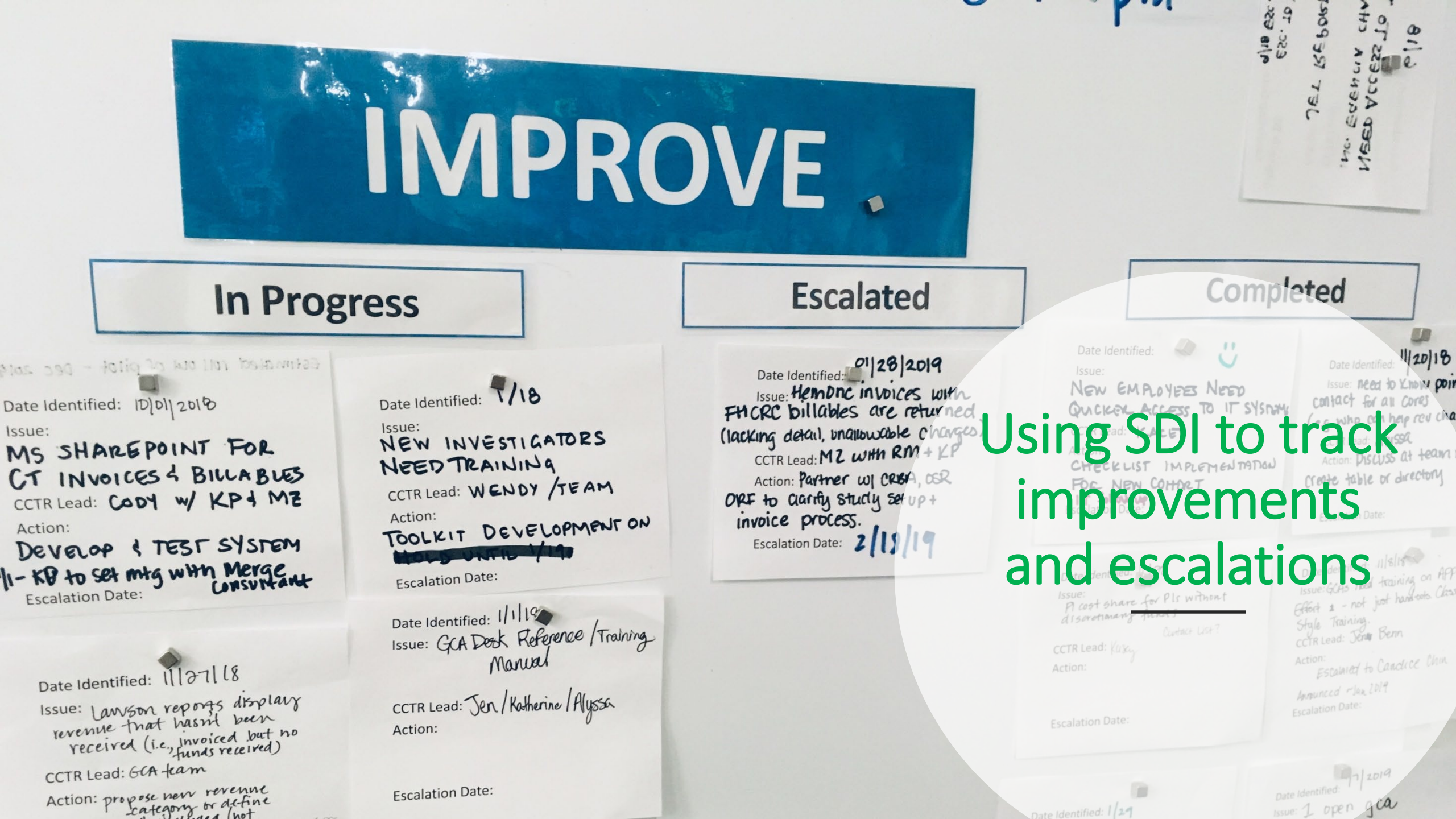


Center for Clinical & Translational Research SDI in May 2018


STABILIZE
Huddle Agenda
1. Demand and Capacity
2. Measure Status
3. Issues/Solutions
4. Discuss Ideas for Improvement
5. Reminders
Board Last Updated: 2/19
Huddle Training Attendance
HUDDLE TRAINING
Month: FEBRUARY 2019
Team Member
Week 1
Week 2
Week 3
Week 4
Alyssa
Ben
Deanna
Gloria
Ian
Jessica
Kacey
Katherine
Kristina
Marisa
Nicola
Rebecca
Sara
Shakema
Tomo
Capacity & Demand
Submissions
Recons
ALYSSA 0 40
BEN 3 1
DEANNA 1
KATHERINE 8
KRISTINA 2
MARISA 2 1
NICOLA
REBECCA 1
SARA 1 55
SHAKEMA 3 13
TOMO 1 8
MEASURE
Submission Trends
CCTR SUBMISSION TRENDS
FY 17
FY18
FY19
Reconciliations
CCTR LAN Reconciliation
FY19: Quarter 1 FINAL
Total Completed Recons
70% of LANs
100% of LANs
CCTR LAN Reconciliation
FY19: Quarter 2
Series1
75% of LANs
100% of LANs
Week 1
Week 2
Week 3
Week 4
Week 5
Week 6
Week 7
Week 8
KPI IN DEVELOPMENT
#CCTR MILESTONE LANS: 461
#CCTR MILESTONE INVOICES CLEARED QTD: 23
#CCTR MILESTONE INVOICES CLEARED THIS WEEK (M-W):
GOALS
REMINDERS
• APP DUE @ END OF MONTH
• RETRO SCDs BEFORE LOE TIME
• SUBMIT YOUR MONTHLY KAIZEN
• UPDATE: PROPOSAL TRACKER & RECON SPREADSHEET (BY MON PM)
• PEDS effort by 2/22
IMPROVE
Planned
Kaizen JUST DO IT (better).
Huddle Schedule?
In Progress
MS SHAREPOINT FOR CT INVOICES & BILLABLES
DEVELOP & TEST SYSTEM
NEW INVESTIGATORS NEED TRAINING
TOOLKIT DEVELOPMENT ON
ADD PT & TD GM 023
WORKING W/ LARSON TEAM
10/22 to Candice
Escalated
2/13/19
Completed
On Hold
NEED A CTMS!
INTERIM SYSTEMS WHILE EHR SYSTEM IMPLEMENTS
SILVER CLOUD INVOICES MISSING FROM ONBASE
REQUEST TO RON A
6.5c TO VALERIE
4/18 ESC TO CANDICE


IMPROVE
In Progress
Escalated
Completed
Date Identified: 10/01/2018
Issue:
MS SHAREPOINT FOR CT INVOICES & BILLABLES
CCTR Lead: CODY w/ KP & MZ
Action:
DEVELOP & TEST SYSTEM
11- KB to set mtg with Merge Consultant
Escalation Date:
Date Identified: 1/18
Issue:
NEW INVESTIGATORS NEED TRAINING
CCTR Lead: WENDY /TEAM
Action:
TOOLKIT DEVELOPMENT ON
Escalation Date:
Date Identified: 11/27/18
Issue: Lawson reports display revenue that hasn't been received (i.e., invoiced but no funds received)
CCTR Lead: GCA team
Action: propose new revenue category or define
Date Identified: 1/1/19
Issue: GCA Desk Reference /Training Manual
CCTR Lead: Jen / Katherine / Alyssa
Action:
Escalation Date:
Date Identified: 01/28/2019
Issue: Hemonc invoices with FHCRC billables are returned (lacking detail, unallowable charges)
CCTR Lead: MZ with RM + KP
Action: Partner w/ CRSR ORF to clarify study set up + invoice process.
Escalation Date: 2/15/19
Using SDI to track improvements and escalations

Evidence-Based Problem Solving

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Understand The Problem

1. UNDERSTAND THE PROBLEM

Begin the process by identifying the gap between where you are and where you want to be. During this step, determine your current condition and your target condition and define the measurable performance gap between the two.

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Analyze Root Cause

2. ANALYZE ROOT CAUSE

The process continues by determining WHY the gap exists. In this step, identify the barriers hindering you from achieving your target condition.

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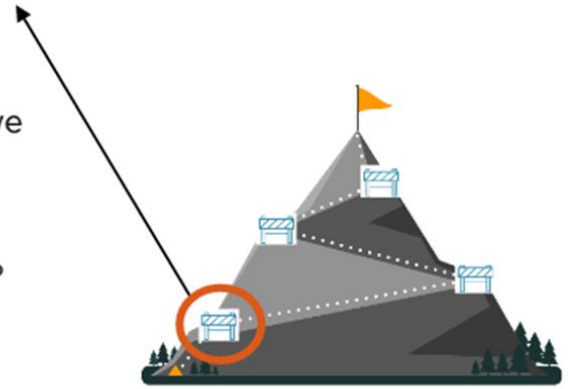
Design Countermeasures

3. DESIGN COUNTERMEASURES

Once you understand the reasons behind the gap in performance, you can brainstorm, select, and test countermeasures to remove those barriers. In this step, you are identifying and testing changes that you believe will help progress toward your target performance goals.

HOW CAN WE REMOVE THIS BARRIER?



a. Set a hypothesis

Hypothesis: If we try _____, then we will achieve _____ result.

b. Create a plan

- How are we going to test this?
- Who will be involved?
- What data will we gather?
- How long will we test?
- How will we check our results?

c. Implement the plan

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Reflect and Adjust

4. REFLECT & ADJUST

In the fourth step of the process, analyze the results of your countermeasure tests to determine if they were successful. Did you achieve your intended result? Did your gap get smaller? Based on these reflections, you can adjust your process accordingly or return to Step 3 and test countermeasures to continue moving toward your goal.

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EVIDENCE-BASED PROBLEM SOLVING

Title: Biking to Work Owner: A. Hermosilla Sponsor: E. Hermosilla Date: 09/01/18

Use this tool when:

☐ the cause of the problem is not totally clear ☐ improving the problem requires team collaboration ☐ the problem or improvement impacts multiple teams or processes

THE PROBLEM

1. Understand the Problem

Describe Current State:

Andres would like to save some money and get healthier by reducing parking and bike to work more. He currently does not bike any days to work.

Describe Target State:

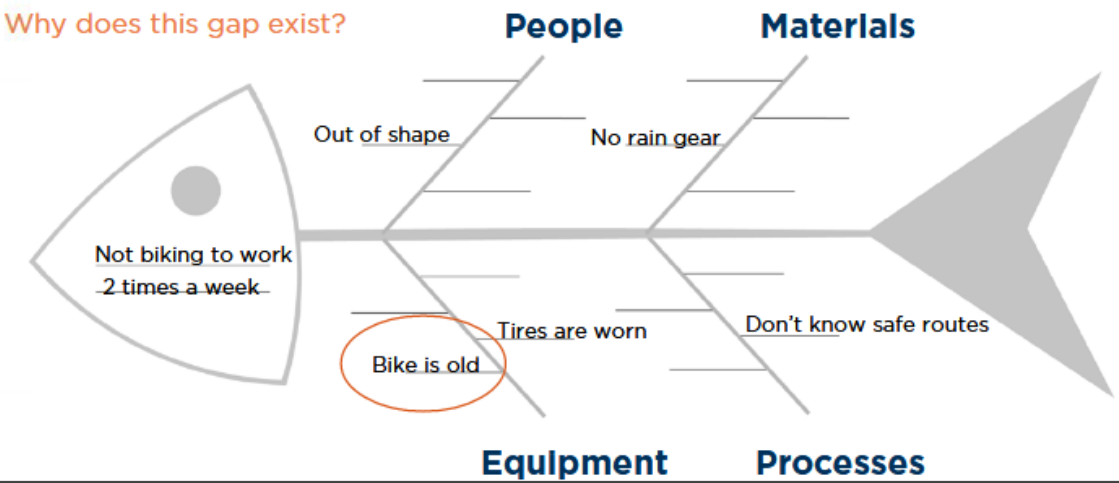
With his family commitments, Andres would like to start by setting a goal of biking to work 2 times a week.

What is the measurable gap between the current state and target state?

To save money, Andres would like to go from biking to work zero times a week to 2 times a week by November 1, 2018.

2. Analyze Root Cause

Why does this gap exist?



THE IMPROVEMENT

3. Design Countermeasures

What we will try:

Andres has decided to prioritize the condition of the bike. He heard of the tune-up program that Seattle Children's has to get his bike in working condition.

What we expect to happen:

If Andres gets his bike tuned up, then we will be willing to ride 2 times/week.

Action Plan:

Actions	Resources/Support Required	Owner	Due Date
Get bike tuned up	Tune-up program	Andres	10/01/18
Start riding!	Tuned-up bike	Andres	10/02/18

4. Reflect and Adjust

Reflection Date: 10/09/18

What happened? What did we learn?

Andres rode once in the last week. He didn't reach his goal of riding twice. He learned that rain can be a real barrier to getting to work dry and warm.

What's next?

Andres would like to try to take down the barrier of having no rain gear and try a different countermeasure next week to be able to ride in all weather and reach his target.

EVIDENCE-BASED PROBLEM SOLVING

Title:_____ Owner:_____ Sponsor:_____ Date:_____

Use this tool when:

☐ the cause of the problem is not totally clear ☐ improving the problem requires team collaboration ☐ the problem or improvement impacts multiple teams or processes

THE PROBLEM

1. Understand the Problem

Describe Current State:

Describe Target State:

What is the measurable gap between the current state and target state?

2. Analyze Root Cause

Why does this gap exist?

THE IMPROVEMENT

3. Design Countermeasures

What we will try:

What we expect to happen:

Action Plan:

Actions	Resources/Support Required	Owner	Due Date

4. Reflect and Adjust

Reflection Date:_____

What happened? What did we learn?

What's next?

Determining Root Cause

5 WHYS

5 WHYS IN ACTION

Problem Hey! There's no cheese on my burger!

Why? Because the cook didn't put cheese on it.
If you were the manager and stopped here, you would be jumping to a solution if you fired or retrained the cook.

Why? Because he ran out of cheese.

Why? Because the supplier didn't bring any cheese.
If you stopped here, you might think the countermeasure would be to change suppliers.

Why? Because we didn't ask the supplier to.

Why? Because we didn't know we were out of cheese.

Why? Because tracking supplies is supposed to be done by everyone, but it is not done consistently.
Congratulations! Asking why multiple times led you to the root cause of the issue, not the assumed solution.

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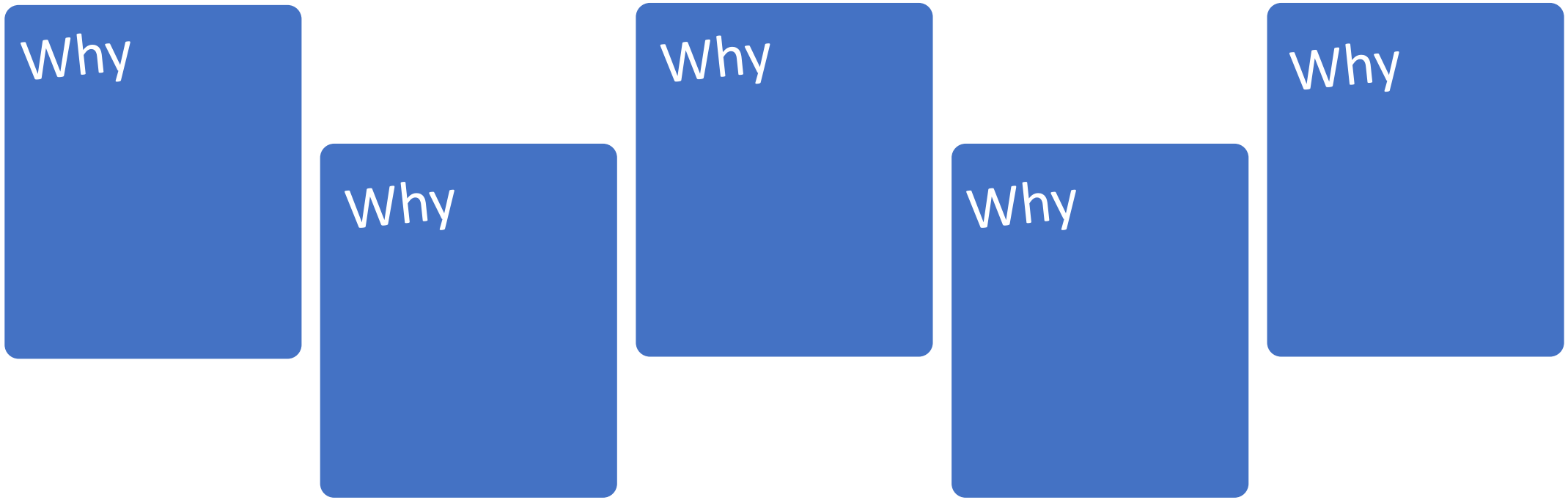
Practice: The 5 WHYS in Action

Problem Statement



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Example: It takes a long time to route our internal application form for signatures

Why

Why

Why

different depts

regulatory finding

Countermeasure: Reduction from 10 to 8 required signatures, 4 most common

Lessons Learned (So Far)

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What Works Well with Lean at SCRI

- Improvements are deliberately and actively discussed
- Front line staff empowered to make changes to accomplish their work
- Visibility and transparency
- Documentation of standard work and reliable methods

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Areas for Improvement at SCRI

- The structure of our teams and processes has created silos
- Yokoten not widely implemented
- Greater specialization will be needed as we grow
- Difficulty representing the work of your group if you have varying roles (e.g. business office with grants administrators and program coordinators)

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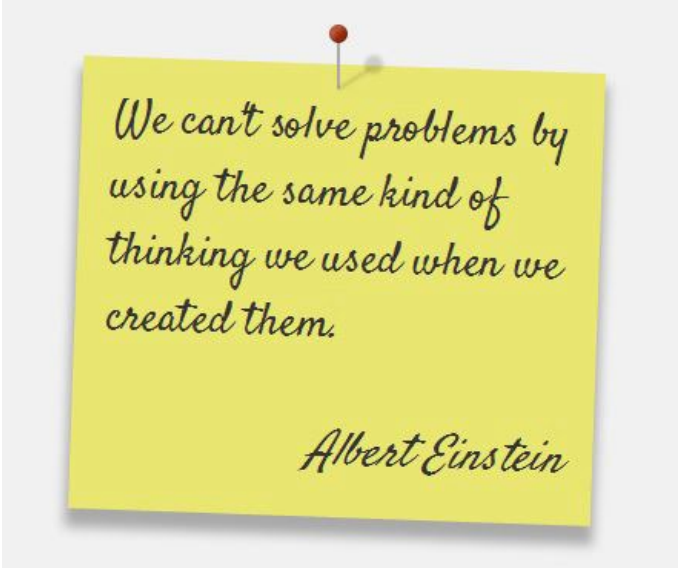
Practical Application of Lean in Research Administration

- Lean Methodology was developed for manufacturing – concepts not clones
- SCRI has implemented a generalist, line based model for central services but this is not required
- Personalities and leadership styles can have a big impact on implementation



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Questions?

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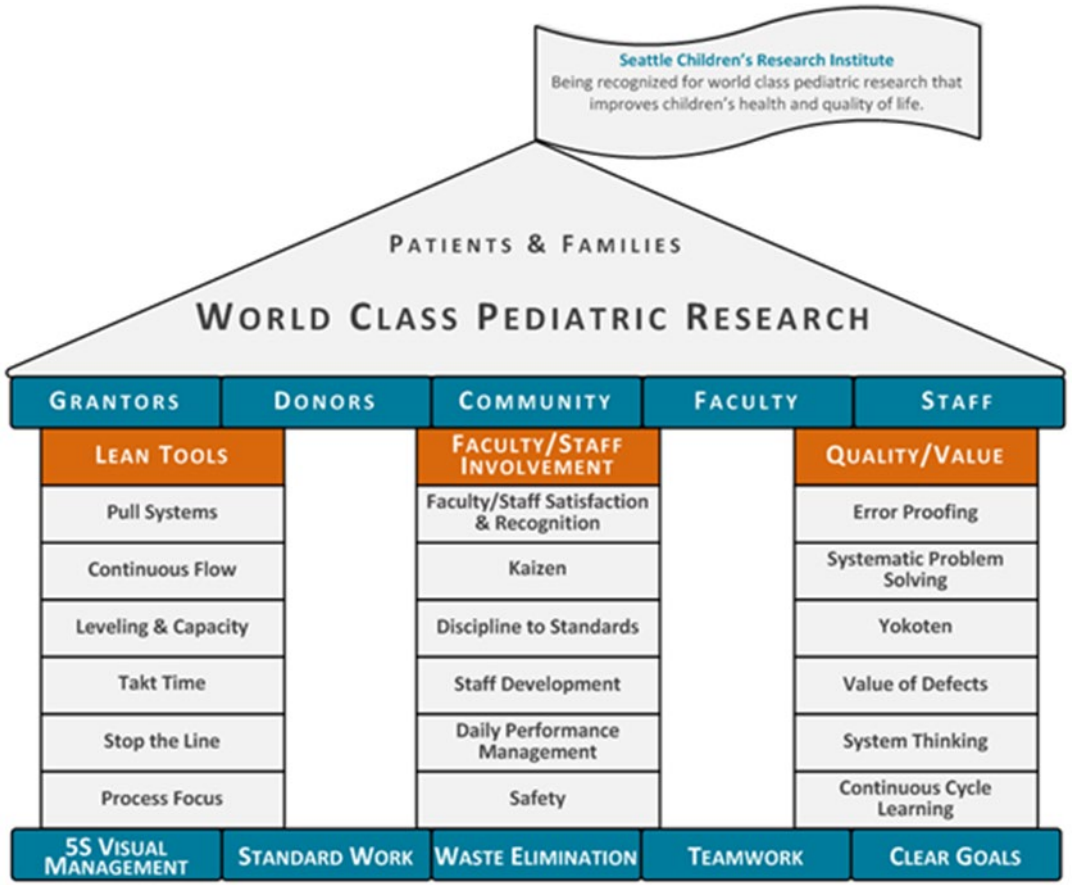

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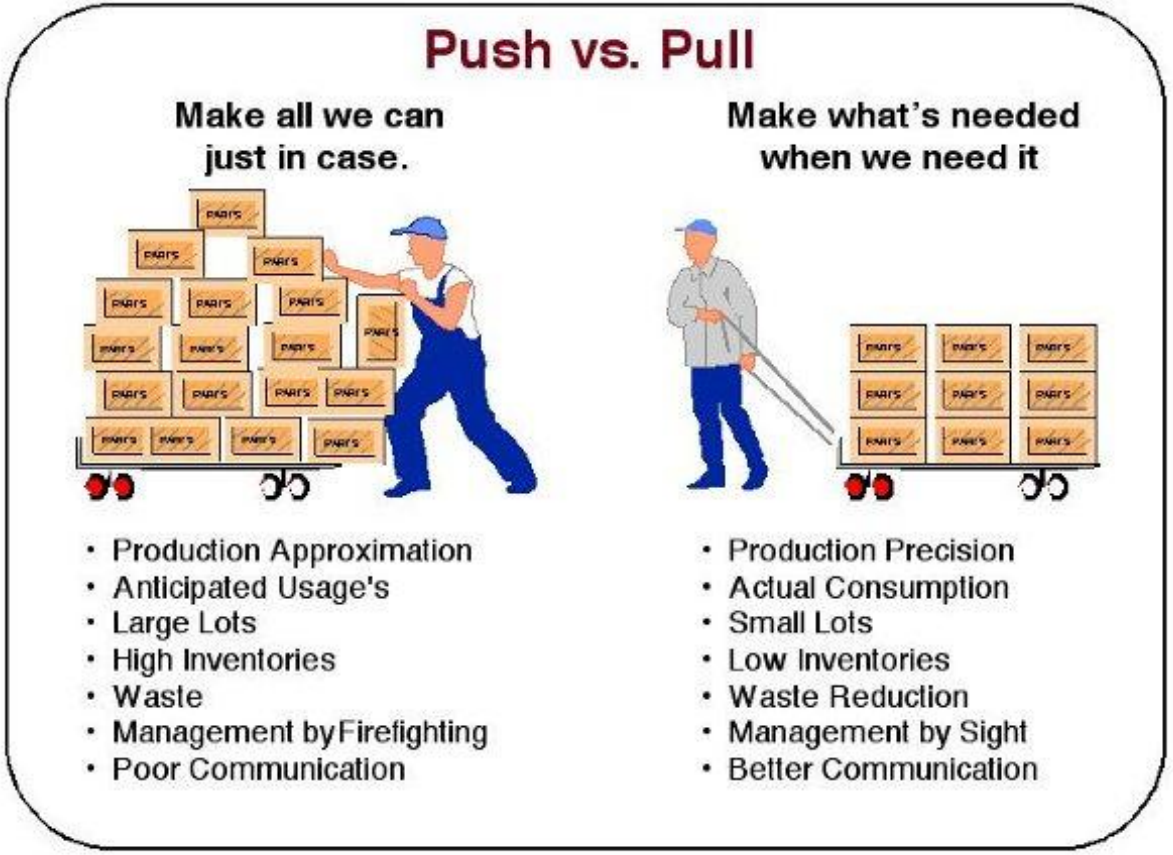
Lean Concept: Push/Pull Systems



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Lean Concept: Defects

Philosophy:

- Design a process to identify abnormalities
- Standardization of work will eliminate defects

Benefits:

- Improve profit through waste reduction
- Better product or service to the customer

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