Using Henry Ford's Functional Kaizen to Re-Energize Your Labs Lean Momentum and Accomplish Improvement at the Level of the Work



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# **Learning Objectives**

- Implementing Kaizen in the current culture of continuous improvement
- How Kaizen creates a funnel for continuous PDCA cycles
- Sustaining improvement after the Kaizen event concludes
- Kaizen failure points and lessons learned over time

A Cultural Change to an Empowered Workforce, How Did We Get There?

- 1. Our Journey
- 2. Engagement of the Workforce
- 3. Kaizen Culture
- 4. Sustaining Mechanisms

## **Henry Ford Production System Influences**

#### A Blended Continuous Improvement Culture, since 2005









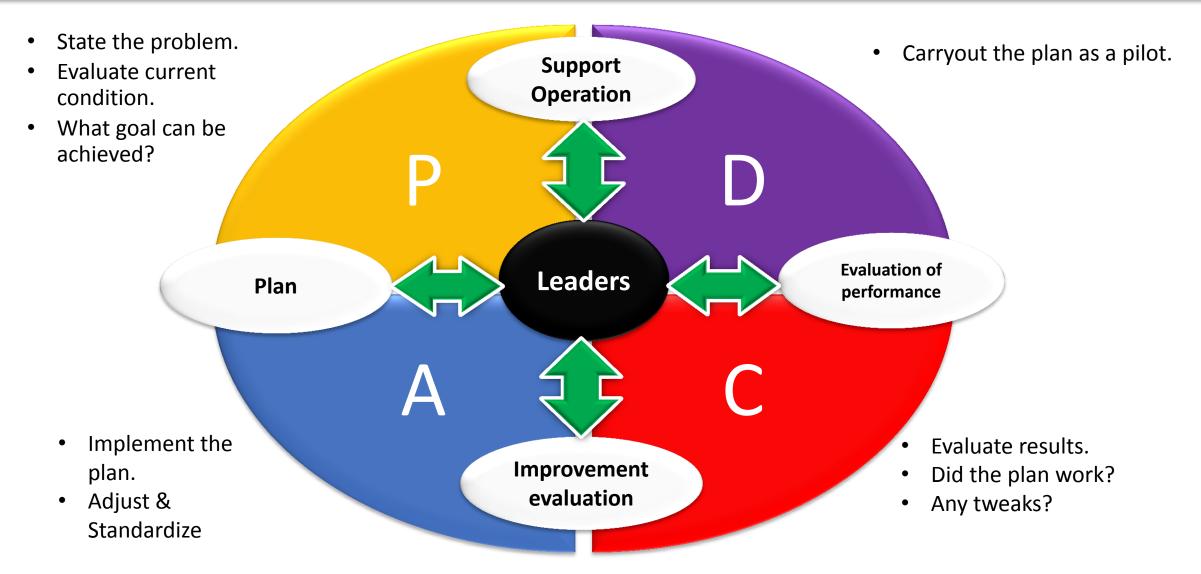
## **More Recently:**







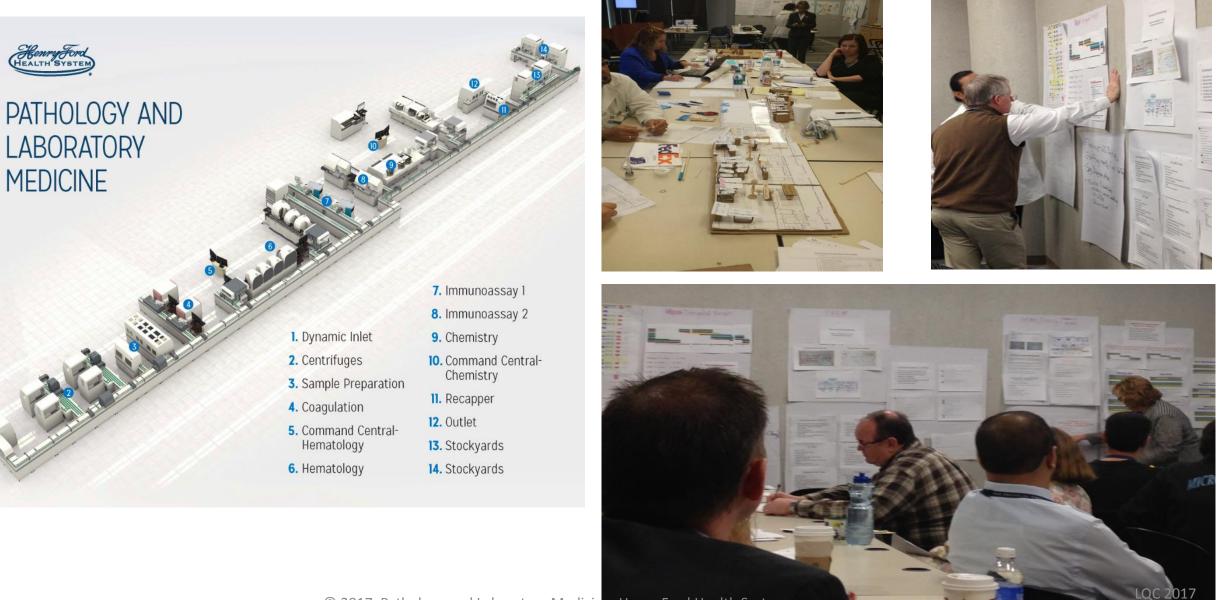
## **To Sustain – First Change Human Behavior**



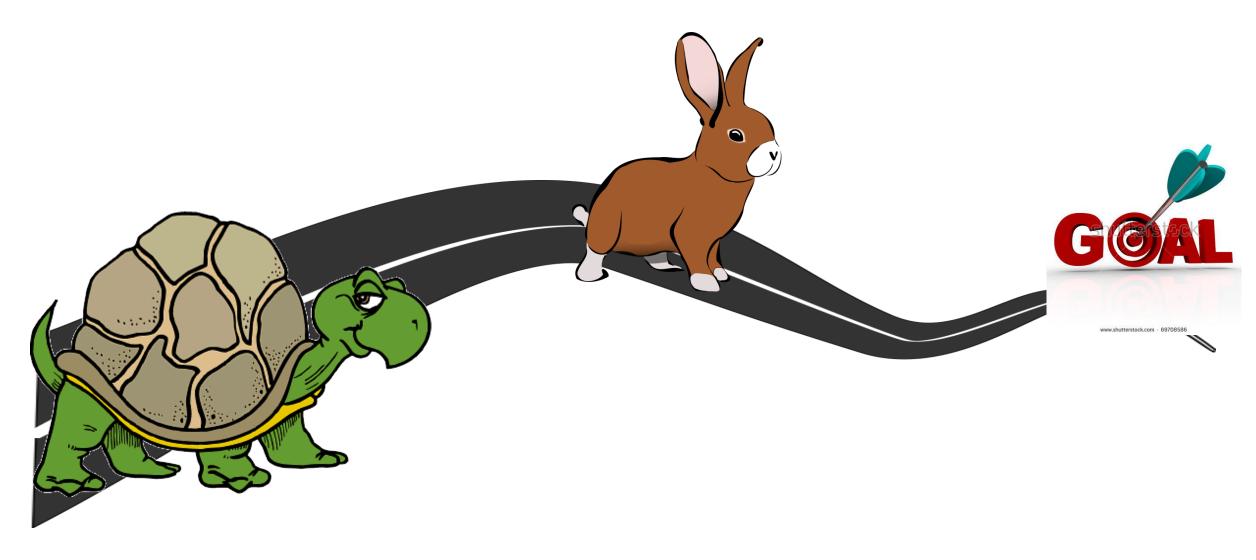
### Where Does Improvement Initiate From



## **New Technology**



### How Does Improvement Move in Your Area of Work?



### **Bottlenecks to Fast Improvement**

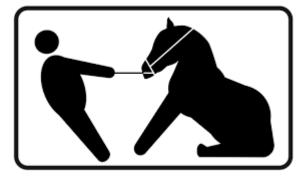
- No time off the bench for front line staff
- IT or department freeze
- Not all team members available
- Constantly pushing improvement off because the right person could not attend the improvement meeting
- No data to support improvement
- No defined goal
  - Team member resistance



## Why Do Team Members Resist

- The Negative 10% tail

   you say YES, I say
   NO!
- The Disengaged, Actively Disengaged, Late Adopters
- The fearful of you a lack of trust



The fearful of change

 satisfied with status
 quo

- Lack of clarity of vision – why am I doing this?
- Lack of educated know how – what do you want me to do and how)
- Lack of comfort with the unknowns of a new work system
- Lack of comfort calling out peers (blameless culture)

## Why Do Team Members Engage

- Peer pressure I don't want to stick out or disappoint my coworkers
- Job (in)security I don't wan take a chance...
- I have prior experience with an authoritarian work enviror

- This trusting, empowered work style resonates with me
- With low staffing levels I benefit from increased process efficiency
- I like and trust my manager I'm all in!
- My performance appraisal includes participation and contribution
- I want opportunities for professional development or team leader

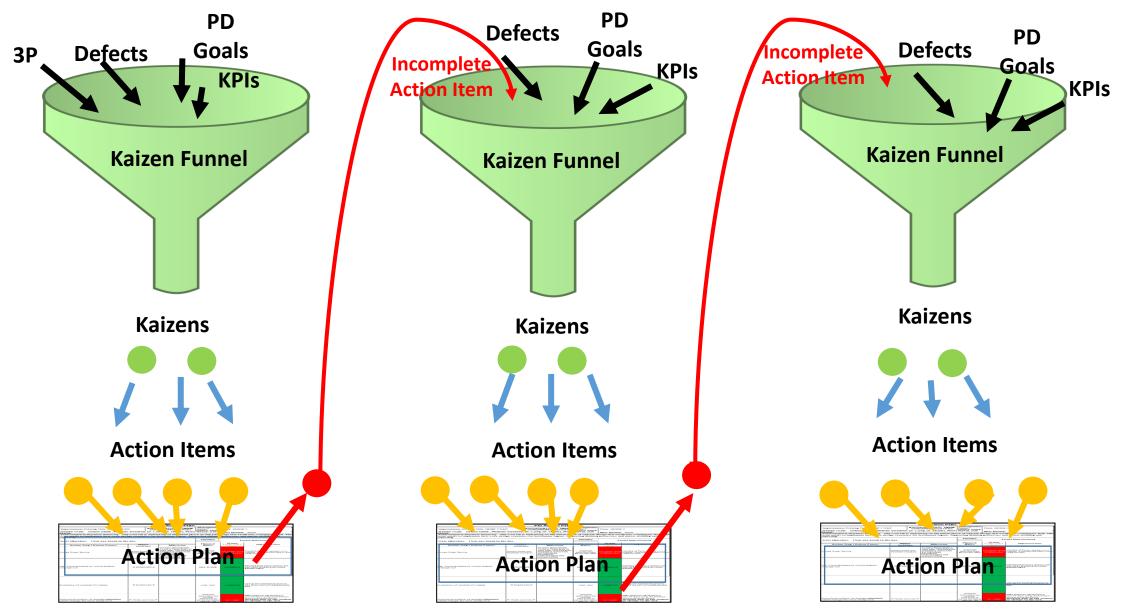
## Why a Kaizen?

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- Kaizen a Japanese term, for ongoing, continuous improvement strategy in all functions of an organization
- Kaizen focuses on creative solutions instead of capital expenditures
- Expedited planned improvement (1-5 consecutive days)

### Kaizen Funnel Process



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#### Kaizen Pre-work

#### 1. Goal and Scope of Kaizen

and the second s								
KICK-OFF DATE:	27-Jun-17	REPORT OUT DAT	E:	29-Ju	n-17			
PD / KPI OVNER: GEMBA: Core Lab	Dr. Carey				TEAM Dr. Cook			
Police Deployment	or Keu Performance Indica	tor (KPI) Impacted						
PD Goal 3: Create	best in class core laborato	rg						
<b>VHY IS THIS KAIZE</b>	EN NECESSARY :							
		s to improve TATí C	CTNI ~9	10% in 4	15 min and COAG *89% in 35),			
	d overall cycle time.				·····,			
<i>µ</i>	Integrated Receipt				Specimen processing in Micro, AP, Cuto, TRM, HLA, SERO			
	HFML, IPD, OPD and HF	MG specimens			Analytic and Post Analytic			
	once delivered to LSS				Phases			
[ In scope]	On and of line specimen l	lo <del>v</del>	(Ou sco		Problem solving for defects not pertaining to continuous flow th originate outside of HFH integrated receipts. Indication is ok and the team will place in a parking lot.			
	Pre-Analytic Phase (Cou inlet)	rier drop off to						
	Critical Value Reporting							
KEY DELIVERABLE	5 [GUALS]	G specimens on the	e autor	nation	line to improve TAT to >90%			

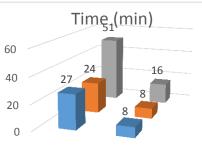
Improve continuous flow for COAG specimens on the automation line to improve TAT to >90% within 30 min

2. Improve continuous flow for CENTAUR specimens to consistently meet TAT to >90% within 30 min

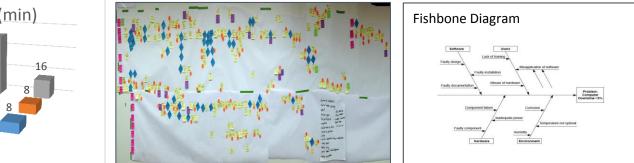
3. Improve continuous flow for samples within LSS prior to receipt on the automation line

4. Improve continuous flow of Critical Value reporting and documentation.

1



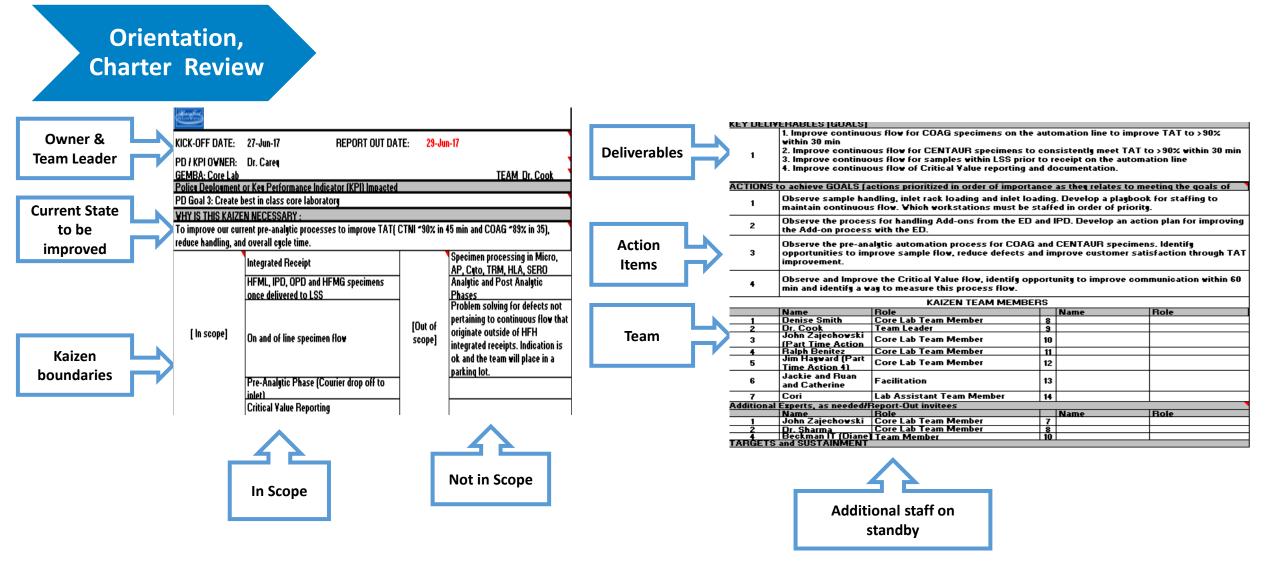
#### 2. Data Collection



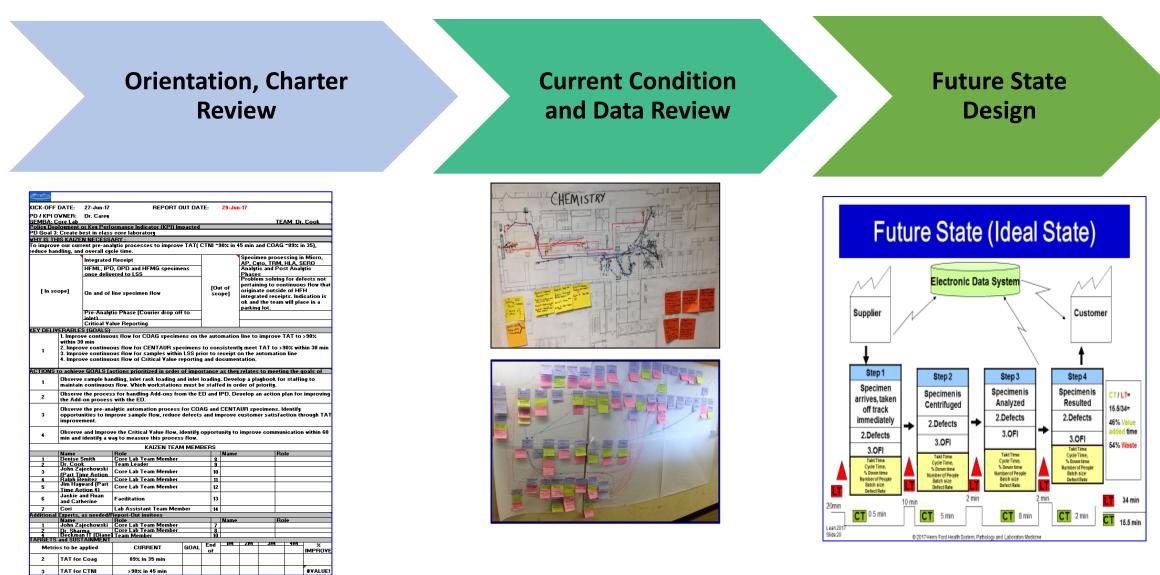
#### **3. Charter Actions Based on Pre- Work Data**

1	Observe sample handling, inlet rack loading and inlet loading. Develop a plagbook for staffing to maintain continuous flow. Which workstations must be staffed in order of priority.										
2	Observe the process for handling Add-ons from the ED and IPD. Develop an action plan for improving the Add-on process with the ED.										
3		alytic automation process for CO/ prove sample flow, reduce defects									
4		ve the Critical Value flow, identify ay to measure this process flow.	opport	unity to impro	ove communication within 60						
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	Name Role Name Role										
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1 2	Dr. Cook		8								
1 2 3		Core Lab Team Member									
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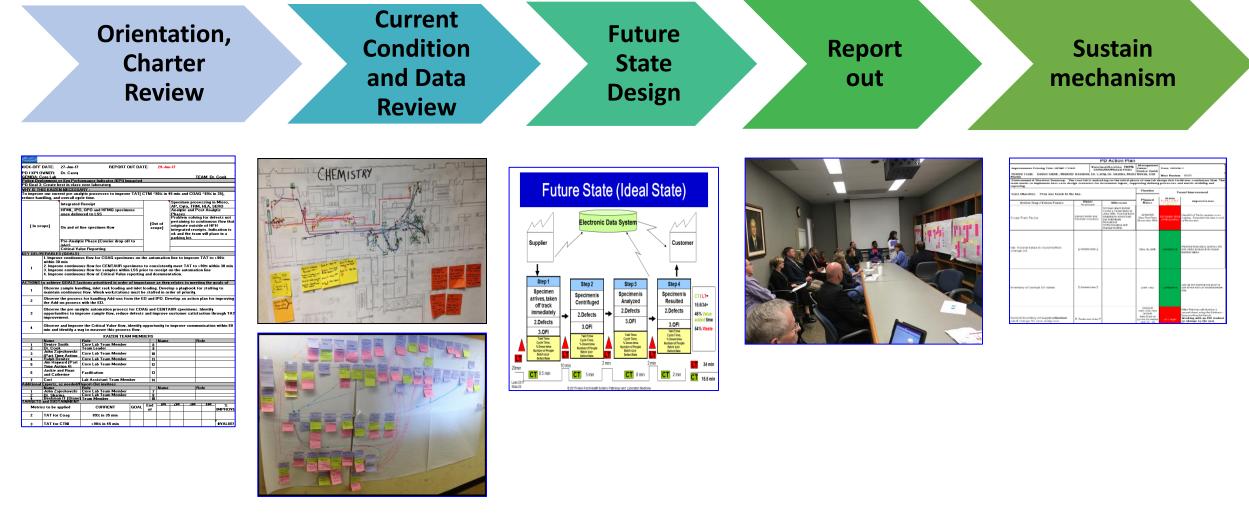
## **Kaizen Process**



## **Kaizen Process**

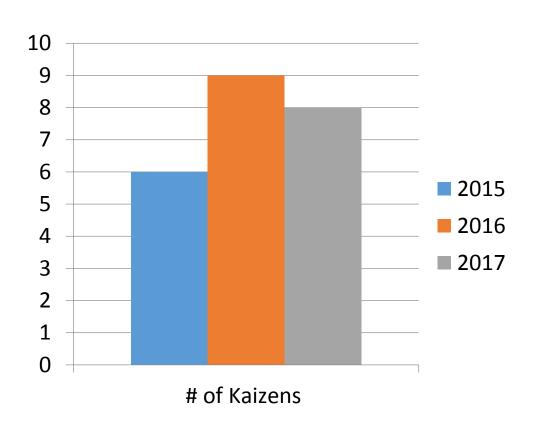


## **Kaizen Process**



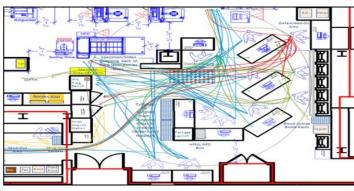
## What Did This Look Like For Henry Ford Pathology?

- On average 1 major Kaizen every 6 weeks
- 3 weeks to prep for a Kaizen
  - Pre-work, charter creation, arranging team members
- 1 week dedicated to the Kaizen
- Weekly meeting following each kaizen to ensure action plan follow through



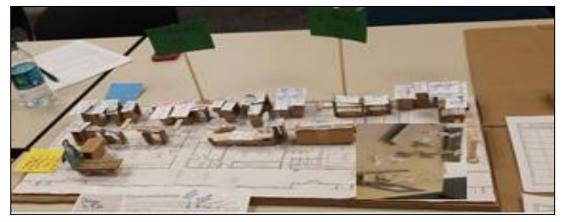
### Kaizen

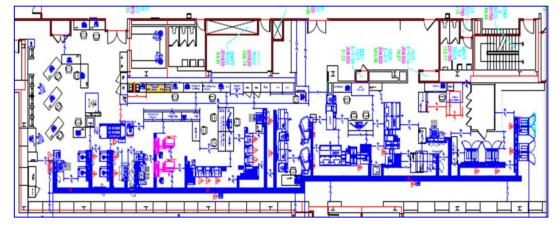
"...breakthrough or transformational changes in production process using unique problem solving approaches." -Shingijutsu USA

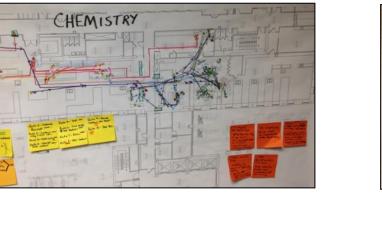


Benefits of 3P

- Cross functional team approach
- Rapid testing of ideas
- Uses multiple Lean manufacturing principles in both the process and product design







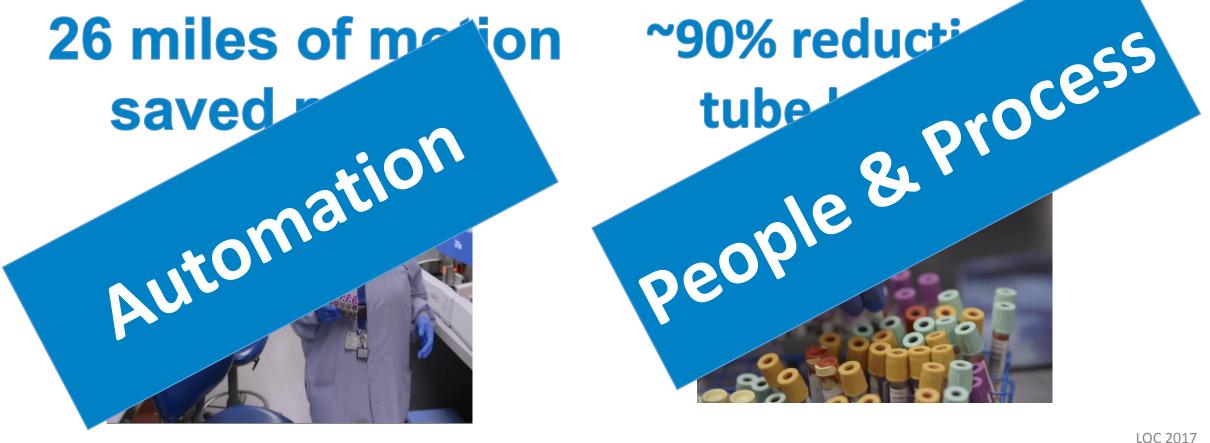


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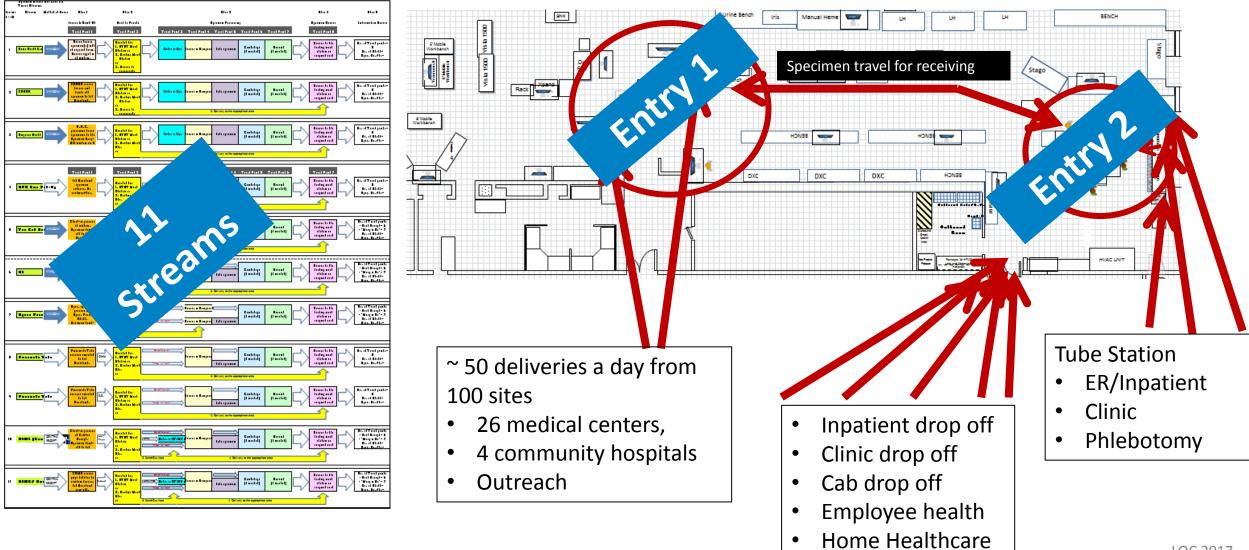
## Automation Line: Waste Reduction 2015-2016

#### **GOAL = One-touch to the line**

- Integrate specimen receiving to one location
- Design new process from the level of the work
- Connect all automated disciplines Hematology, Coagulation and Chemistry



## Original Specimen Receiving Condition 2 points of receipt & 11 processing streams



## **Newly Designed Specimen Receiving 1** point of receipt & 2 processing streams



#### Slow

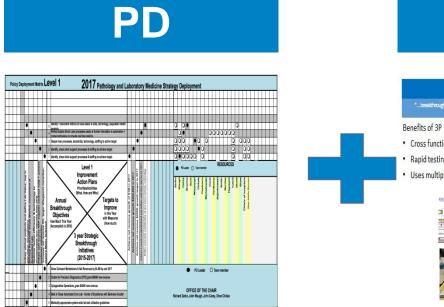
- Clinic drop off
- Clinic Collect medical centers
- 2 Outreach sites ٠
- Clinic drop off .
- Cab drop off
- **Employee health**
- Home Healthcare
- 2 streams Collect medical Inters Community hospitals Labeled Out reach Inpatient drop off
  - **Tube Station**
  - ER/Inpatient Phlebotomy

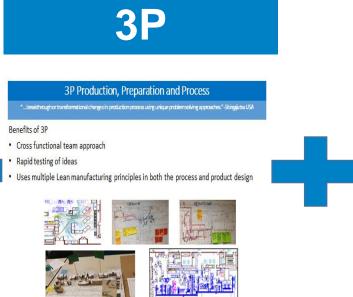






## **Management Systems for Continuous Improvement**





#### Kaizens, Weekly Meetings and Project Planning

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28 28 32	Move CRC reaper/relegention or out CR areano center space to CRC work station on alle space in CRC relegentor to consolidate contents of under-counter relig	N Anini	05/215			
00 04	Mose CFC Resource rear to IT sicces-seed 220 lise responsibly	2 Zajeskowski & DeMaria	85/215			
8	More CFC supplies out of long Diventising bench	2 Zájechovski IL NJ Aznini	05/21/5			
	Instal D1008	Deckman Service	05/215			
All Propert ID-14	CERT Validation through 6C216	Beckman TSS	009215			
42	CRI Valdalor-Novaj/30295	Beoliman TSS	909215			
64 45	Damo of long Chemisty banch Mose supplies out of short Directiony basch	DeMaria 6 IT 2 Zejeskovski 6 N.Azsini 6 D'Smit	9/W215			
0						



# TRANSFORMATION

# **Weekly Cadence Meeting**

The process of turning a Strategic Vision from a plan to actionable tasks

- Through Action Plan
   refinement
- Multidisciplinary team engagement
- Continual process improvements and execution from the level of the work



# **Action Plan Tracker**

#### Why weekly meetings to review open action items?

- Keep the cadence to close action items
- Discuss progress and obstacles
- Document progress and process changes
- Identify new resources that are needed
- Recalibrate when due date needs to change
- Develop new action items to overcome obstacles
- Identify the next Kaizen opportunity

ition plan . Feldkamp. D pre lab is emi best case de	Department General C	Ion Plan	Manageme	nt Owner:								
. Feldkamp. (	General C	t/Location:	Manageme	nt Owner:								
			John Z.		Date: 3/30/	/15						
ore lab is emi best case de	n: John Z, Deb, Lori, Nancy, Dr. Feldkamp, Dr. Cook, Dr. Carey, Mark hsner, Jackie, Ruan				Next Review: 11/2/15		16					
	barking on t	he initial pha tios for instru	se of new la iment layou	b design that t, supporting	t facilitates o delivery pro	continu	ious flow for					
			Timeline		Target	t Impro	vement					
n Events Owner Milestone			Planned Dates		Green -		)act/Status					
Past Due in Red												
<sup>9</sup> John Z. and	Jim		New Due	5								
				PD A	ction Pla	in						
provement	Briority Tit	lo: Intograte	d Resolut	Departm	Managem	nent	Data: 9/24/45					
				ent/Locat	Owner: De	enise					1	
ckie C., Ruar	n V. John W	, Dr. Zarbo,	Chris D.									
ore Objectiv	e: one to	uch to the li	ne.		Timelii	ne		Target Ir	nprovemer	nt		
tion Stan J.F	sizen Euente				Planned D	ates	Red= past due. Green = Complete		Impa	ct/Status		
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			Ralph	and Jackie								
		-			New Due I	Date						
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					New Due Date					lew the contrac		
Cems and A1 Courier route for drop off at Ki		r drop off at Ké	6,					3. Judy to file				
		Ralph and Judy-> Cems		s still rem	ain							
, ly is arranging	a meeting wi	ith Doug	Leadership(Doug)							ave a standard		
Jenwald to rev	riew STW for (	CEM Courier			from 10		Wannest transfer 601 and the		I			
			Improvement Priority Title: HEME COAG			COA	AG/UA/Manual Heme Denise Smith arey, Dr. Sharma, Marta Novak, Dan					
duce cycle tim d roll, HH, EM,	Chass, Manu	ial HFML)	team needs to implement best case design scenarios for reporting.				instrumen	t layout, supp	porting delivery	processes a	nd metric visibility and	
Chass			Core Obje	one touch to the line.				Timeline	Target Improvement			
			Actio	n Step / Kaiz	zen Events					Planned Dates	Paul Par in Brd Completed in	Impact/Status
			Cross Train Techs					Ve have given Senior Techs a Target Date of June 20th, This has been orgoing to cross train our individuals throughout Hermirlooghus and manual testing.		6/30/2015 New Due Date November 30th	On target End of November	Handful of Techs require cross training. Estended the date to end of November
			UA: Conical change out	tubes to roun	d bottom		D Smith/John Z			Nov. 16, 2015	Completed	Meeting took place and new UA kits will be prepared for round bottom tubez
			Inventory of	conical UA to	ibes		D SmithiUohn Z			Date TBD	Completed	Use up the existing kits prior to use of the new UA round bottom kits.
			Current Inve card chang	ntory of supp e for new and	iles/Kanban alyzers.	0.	Smith and John 2			5/19/2015 New Date Date 19/30/15. New Date of 12/7/15 for Heme and UA. All	On Target	Mike Flahman vill develop a spread sheet using the Kanbans- bury working the bench. Working with an OU student to change to the new
	Loss 2 and provement inter Ca, Rasa were Team recover the Carnol to the Ca, Rasa the Ca, Rasa the Ca, Rasa the Ca, Rasa the Ca, Rasa the Ca, Rasa the Carnol to the Carnol	(Lust build John Z. and Jim provement Priority TI rew Tarm Denice C. Can D. John S. droomental Situation trices. The Denice Section Section Section trices. 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# **To Sustain – First Change Human Behavior**

Framework of processes and procedures

- Ensure that people do the right and expected thing in performing tasks consistently
  - 1. Fulfill or exceed customer expectations
  - 2. Fulfill or exceed regulatory standards
  - 3. Driving toward action plan
  - 4. Continually seek improvements

#### PRC-PALM-5.9-pol: QUALITY ASSURANCE & IMPROVEMENTS POLICY



Pathology & Laboratory Medicine

#### Title: PRC-PALM--5.9-pol: QUALITY ASSURANCE & IMPROVEMENTS POLICY

#### Purpose:

The purpose of this policy is to communicate a defined process to ensure the quality of Pathology and Laboratory Medicine Services, to support the ongoing improvement of quality and to specify a process for communicating concerns about test quality and laboratory safety.

#### Scope:

This policy is effective at all Pathology and Laboratory Medicine testing sites that comprise the system-wide corporate level Service-line.

# **Action Plan Follow Through**

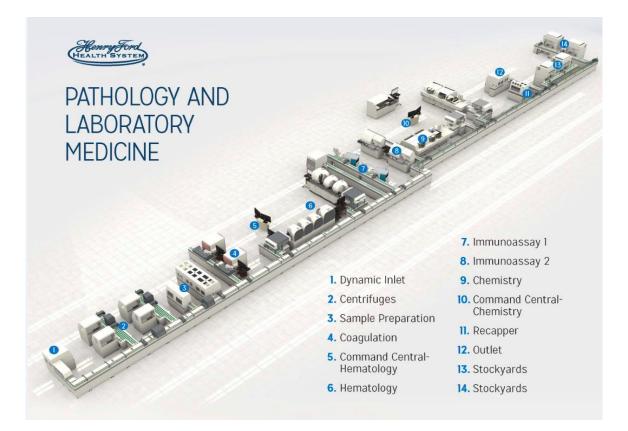
Why daily huddles to review progress?

- Visual, at-a-glance status assessments
- Involves staff at the level of the work
  - Is standard work being followed?
  - Are we tracking toward goals?
  - When should we take new action?
  - What new action should we take?



# **Automation Implementation Action Items**

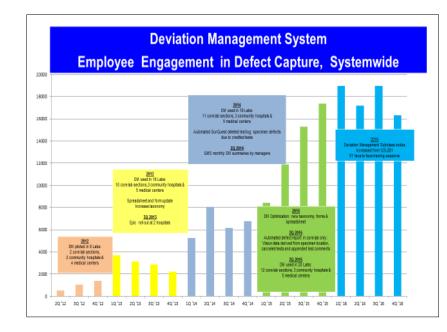
- October 2014 September 2017
- 220 action items
- 197 complete (90%)
- 23 open
  - 9 open (past due)
  - 14 upcoming due date

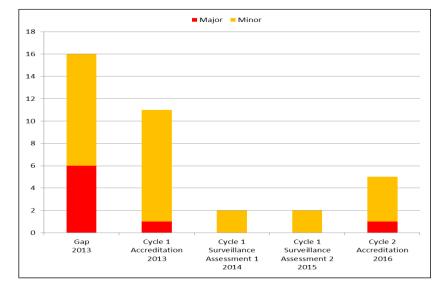


# **Annual Refresher (Re-)Training**

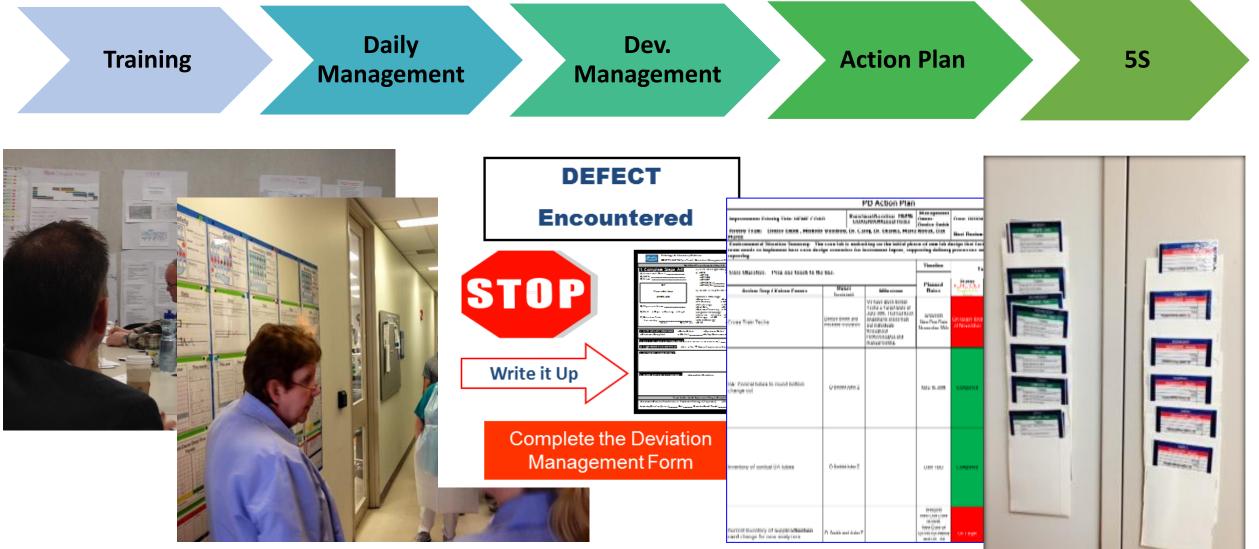
#### >50 face to face training sessions annually

- Continual staff engagement
- Consistent empowerment culture
- Defect management documented
- Participation with root cause and corrective action
- Standard work compliance
- Regulatory compliance
- Staff engagement in process improvement (A3)
- Front line involvement in "Share the Gain"





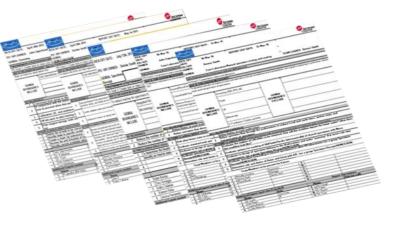
## **Summary – Tools to Sustain**



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## **Lessons Learned**

- Must have <u>leadership support</u>
- Have the <u>right people</u> (those who do the work)
- Full participation needed from each team member
- Interruptions (meetings, phone calls, etc.) hinder progress
- Stick to the scope of the process improvement project
- Team <u>must have data</u> to move forward
- "No" is not an option be <u>open minded</u>, try-storm how to overcome the obstacle
- <u>Try something new</u> and try it right away in a monitored environment – look for <u>data-driven</u> process changes





# **Take Home Messages**

#### **Our Goal: Best-in-Class Laboratory and Center of Excellence**

- Lean Culture driven from the level of the work
- Implementing tools to sustain the management systems
- Continually innovating new tools and systems to our quality management systems led to our continued success
- Sustaining tools for surveillance and constant improvements

#### "Relentlessly Pursuing Perfection"

