

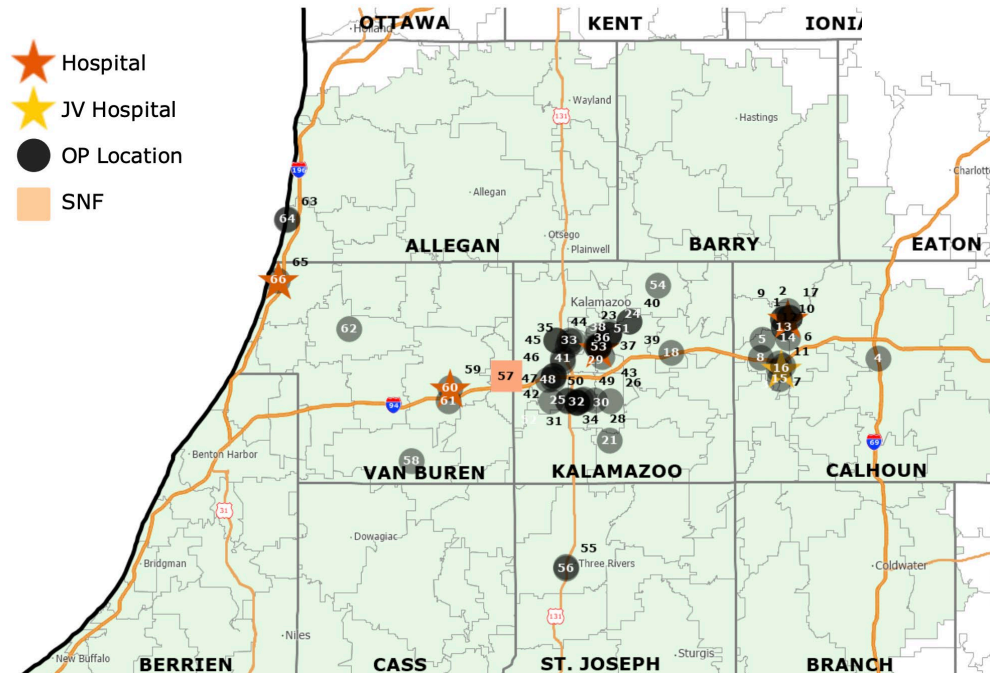
Why Lean Process Design Keeps Bronson Lab Buzzing

Executive War College 2024

Joe Seestadt
Lab Outreach Director
Bronson Healthcare Group
Kalamazoo, MI



Bronson Clinical Locations



- 4 hospitals in SW Michigan
- 9,000 employees
- 1,500 medical staff members
- 747 beds in system
- Largest employer and leading healthcare system in the region





*Techs
shaded out
for privacy*





Techs shaded out for privacy

Techs shaded out for privacy



Techs shaded out for privacy



Shaded out for privacy

Changing Dynamics for the Lab

Compliance

Careers

Capital

Competition



Consumerism

Complexity

C-Suite

Cost

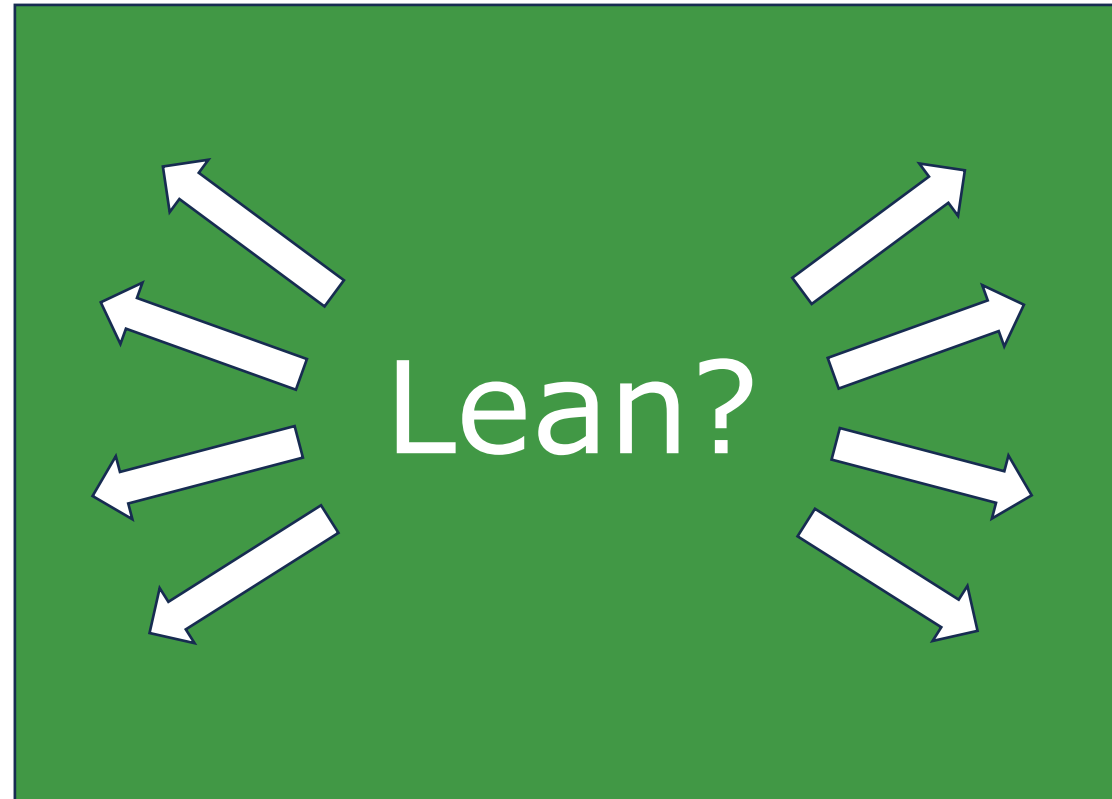
Changing Dynamics for the Lab

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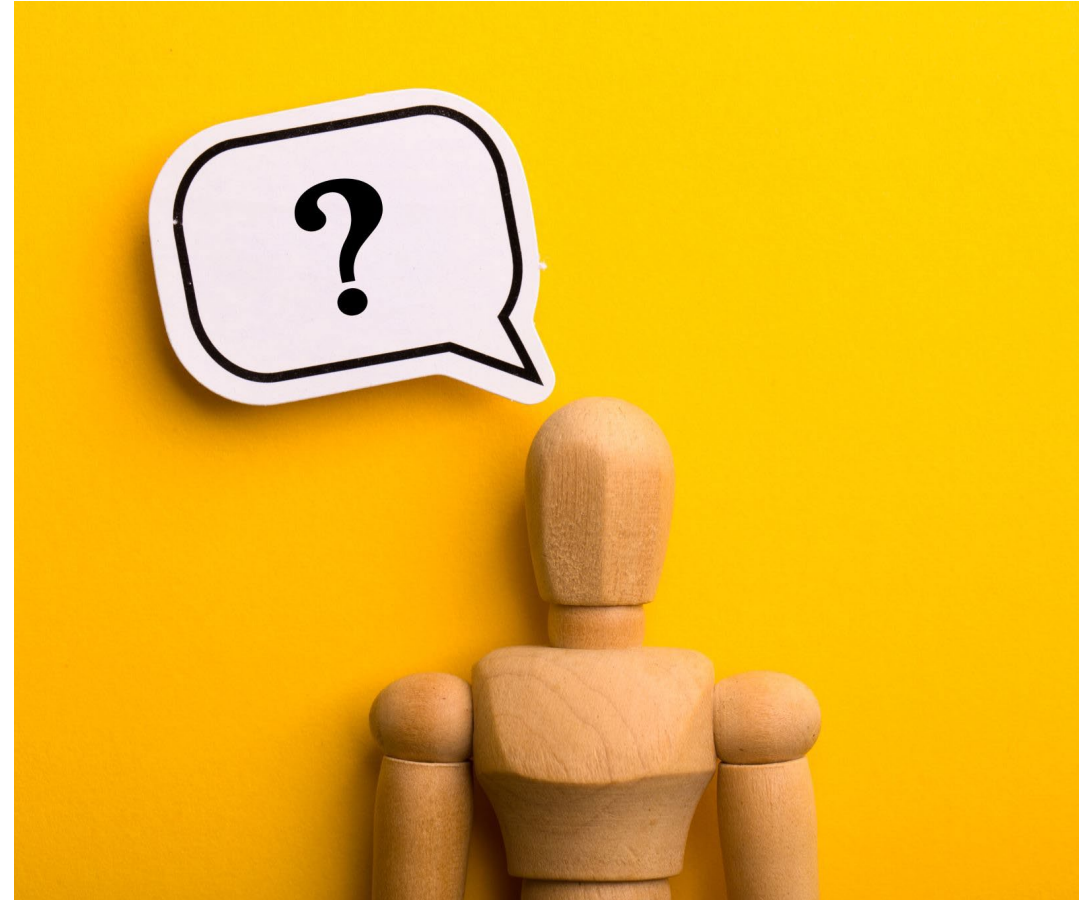
#1: Lean process design absorbs growth

What is Net Margin?

$(\text{Revenue} - \text{Cost}) / \text{Revenue}$

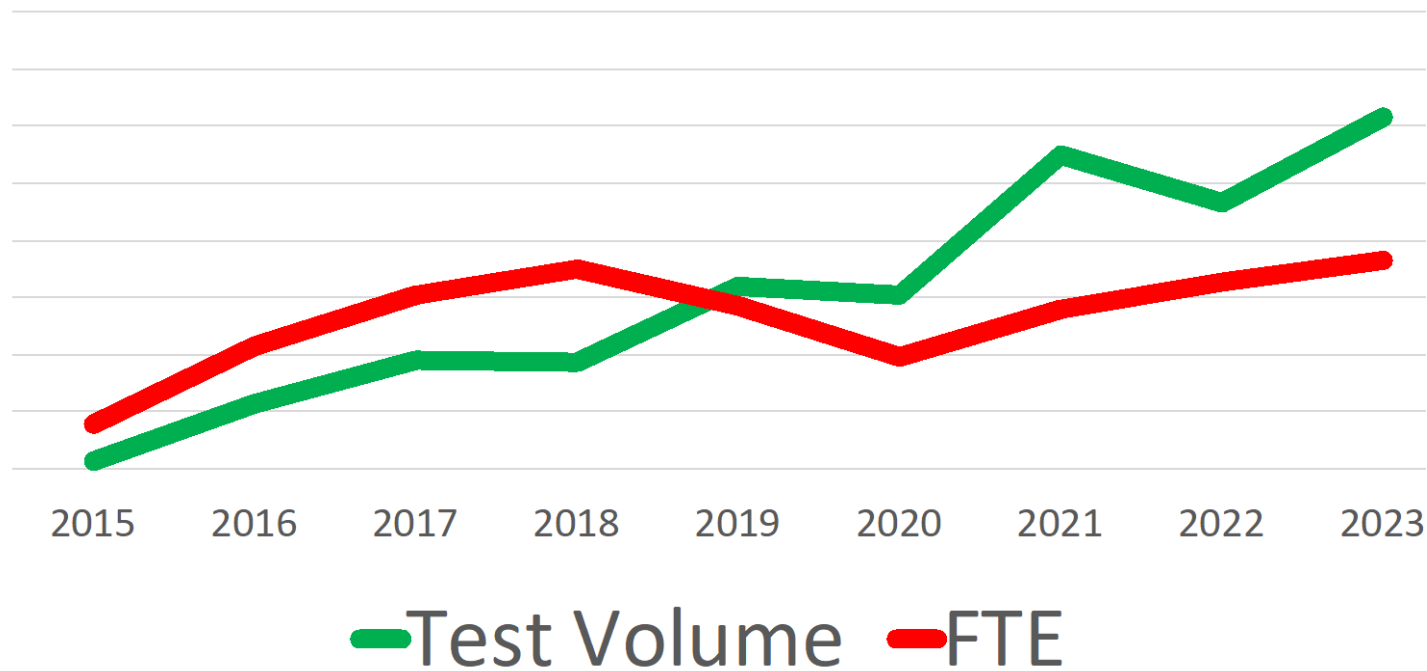
Our goal should always be:

ABSORB GROWTH



Lean Process Design Absorbs Growth

Test Volume vs. FTE Growth

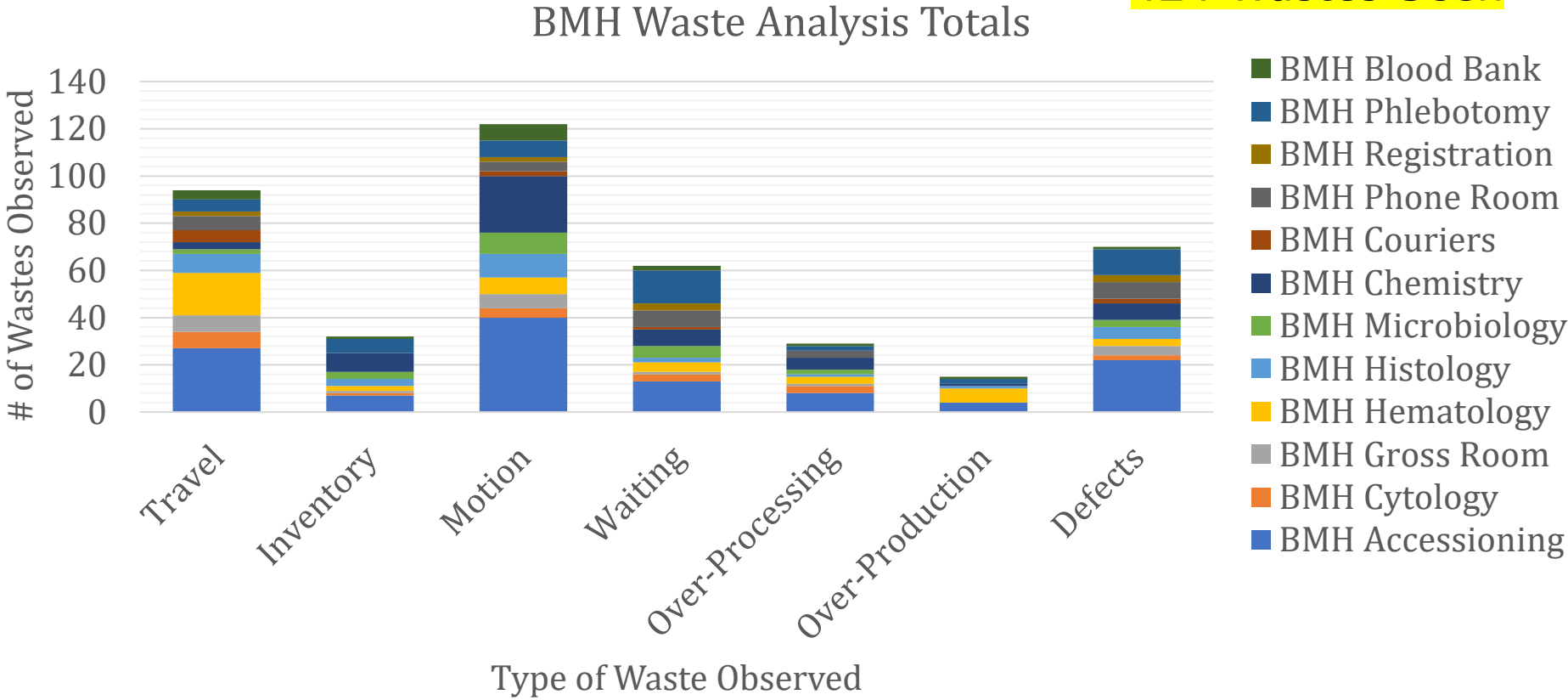


Volume up 42%

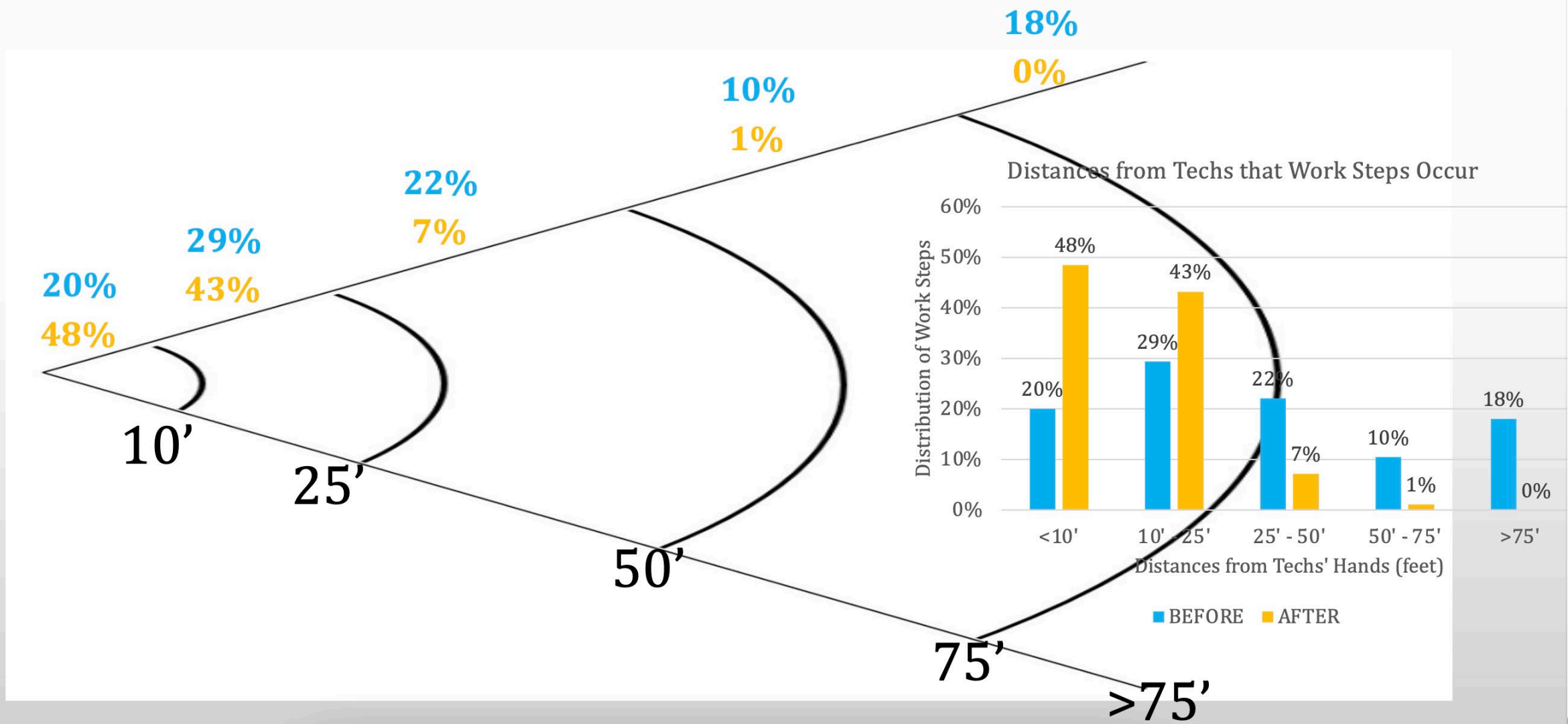
FTE up 21%

Waste Analysis

424 Wastes Seen



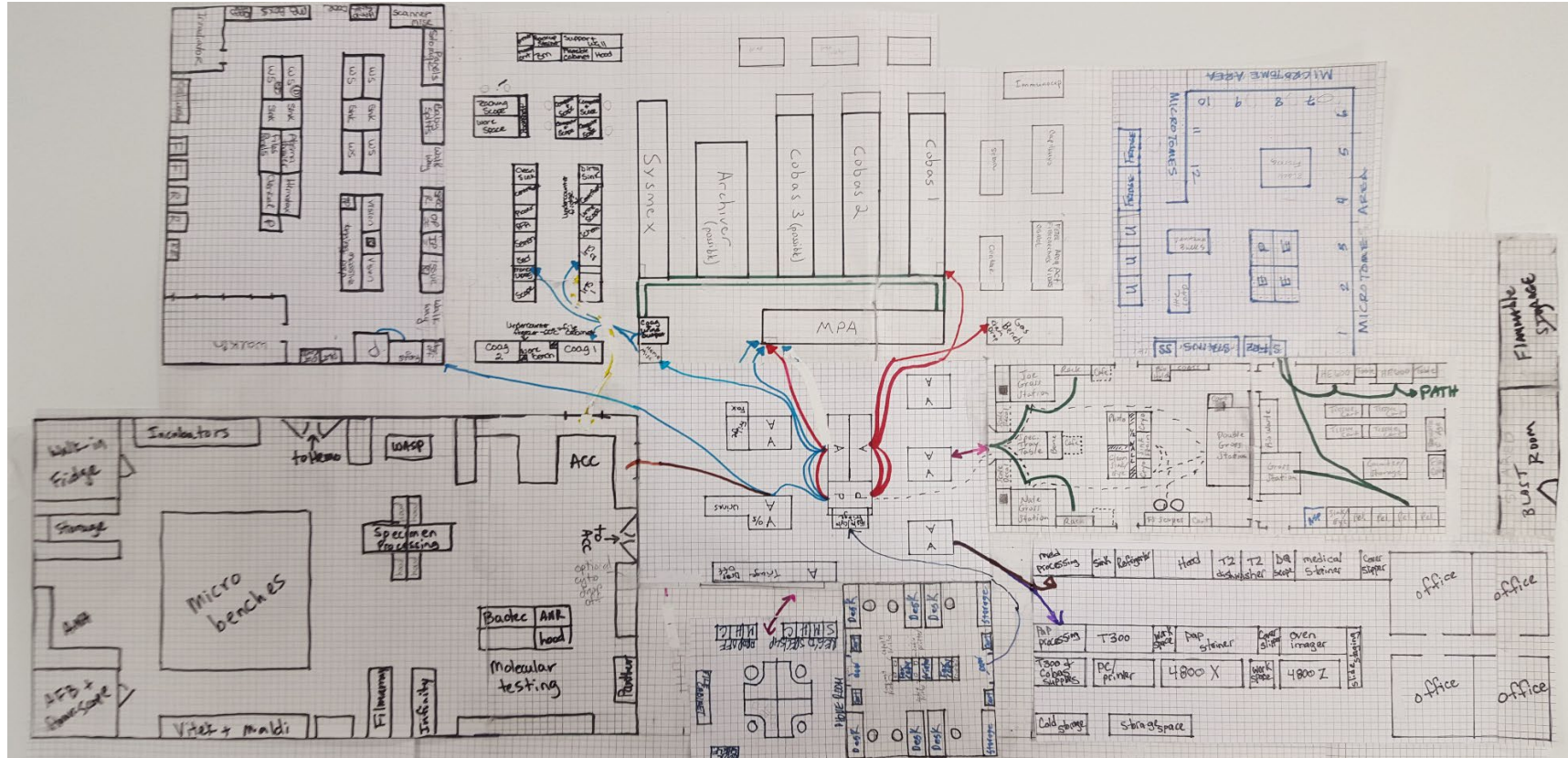
Motion Study



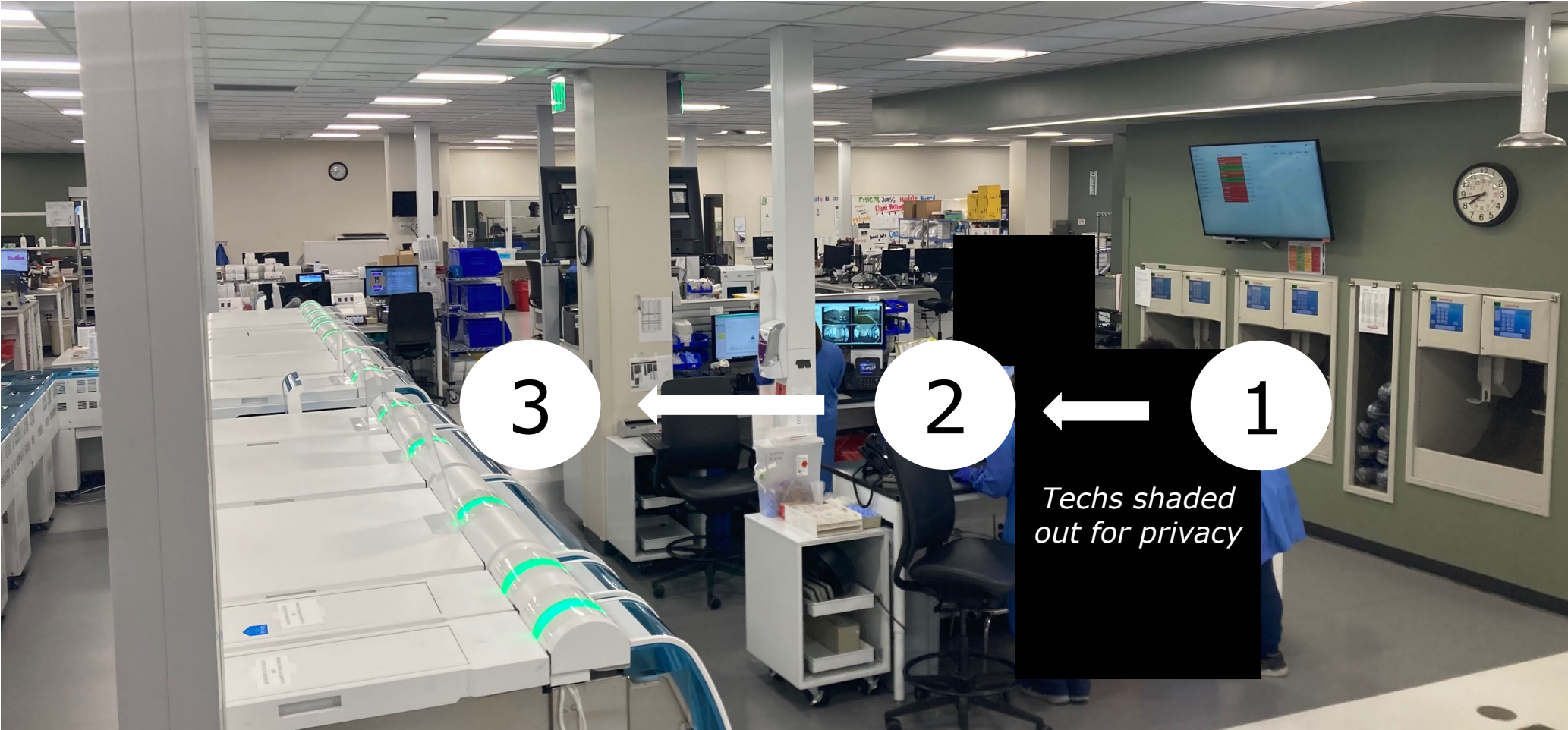
Mocking Up New Layout



Lean Layout to Architects



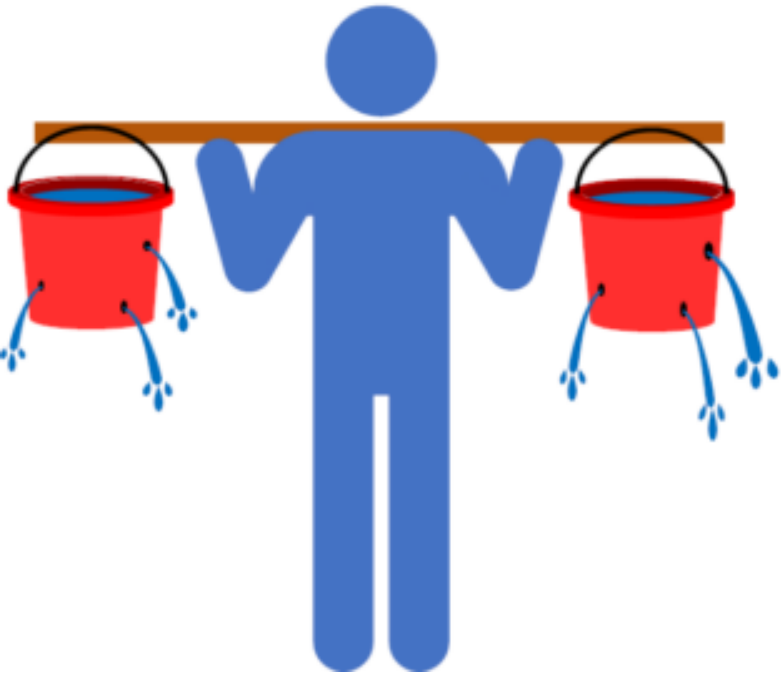
How Bronson Absorbs Growth



#2: Lean process steadies variation

Muda, Mura, and Muri

**Waste
(Muda)**



**Unevenness
(Mura)**



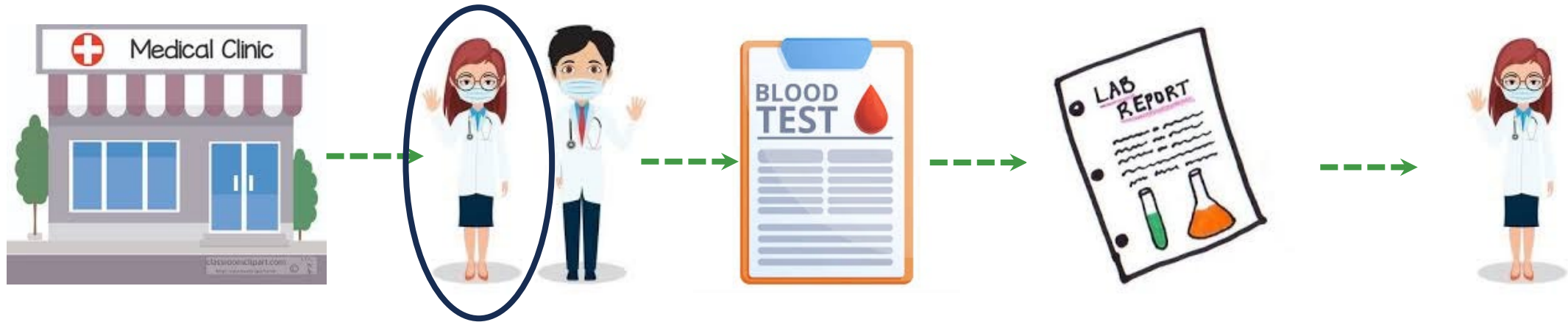
**Overburden
(Muri)**



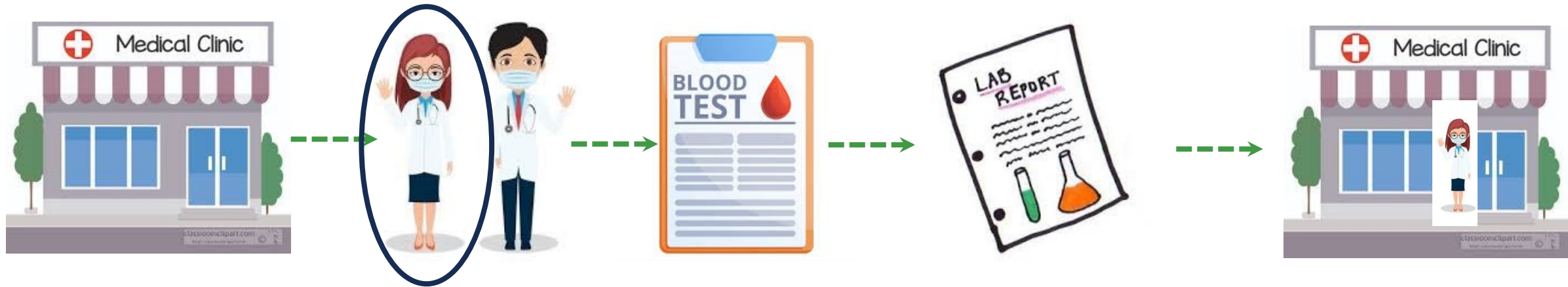
Variation with Epic-Beaker



Our Problem (at least one of them...)



Our Problem (at least one of them...)

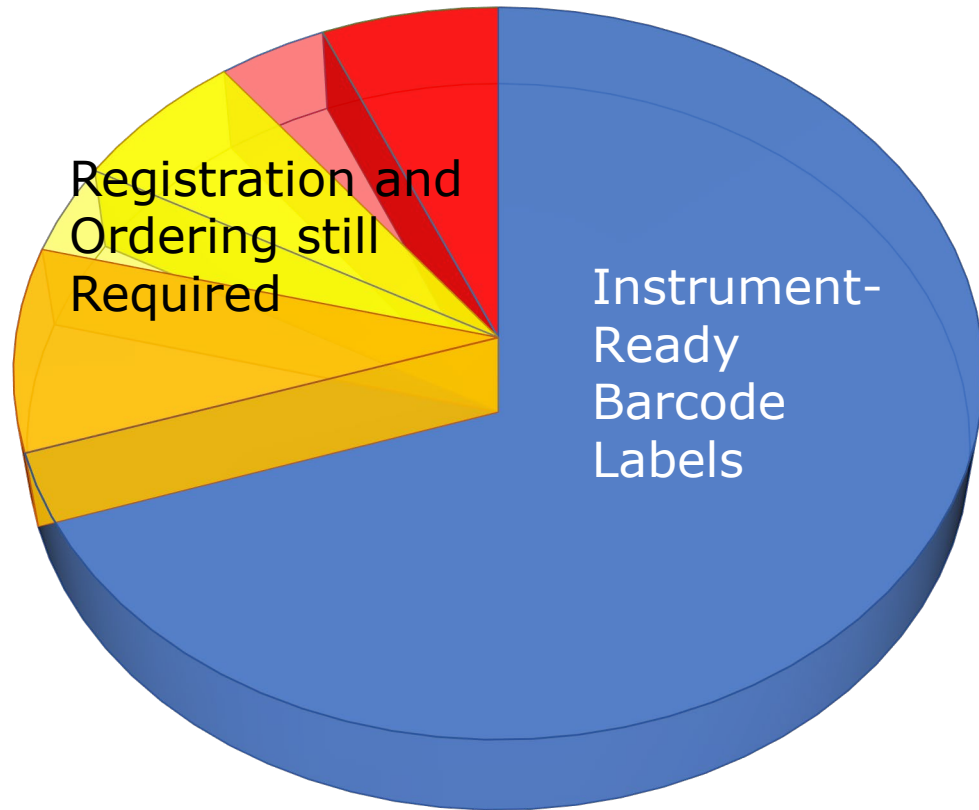


Muda, Mura, and Muri

Unevenness
(Mura)



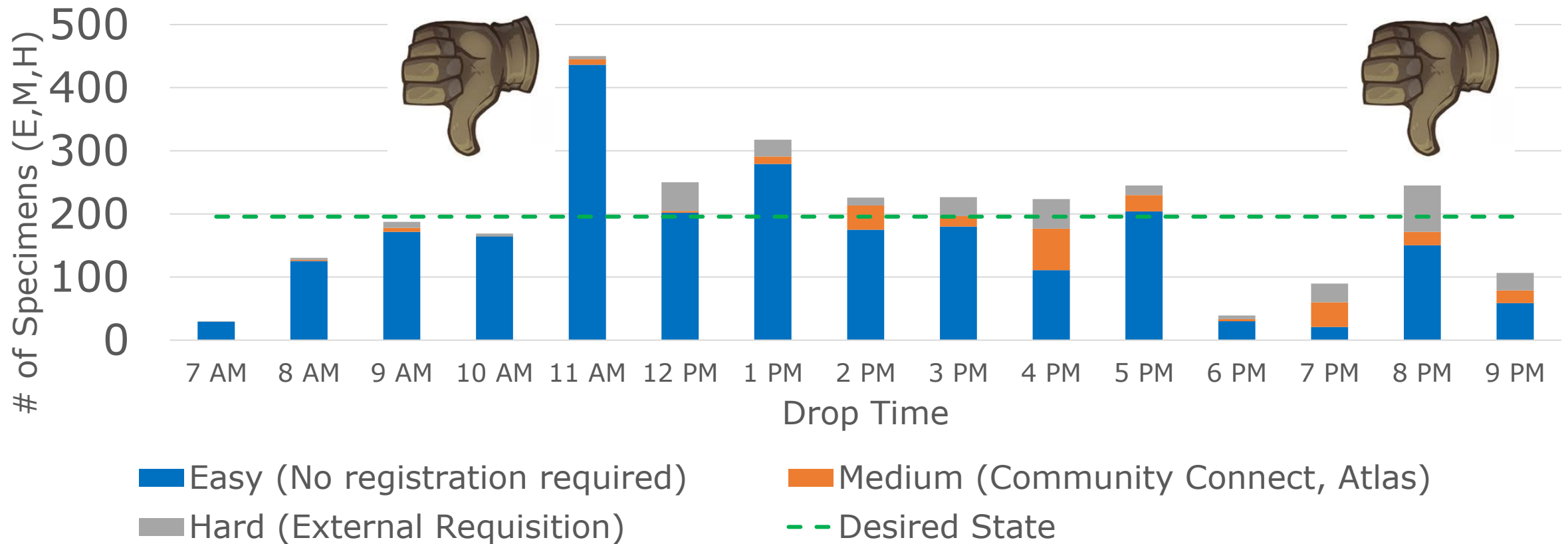
How Lean Steadies Variation



- $\frac{3}{4}$ of specimens dropped off by couriers are now ready for the instrument upon arrival
- $\frac{1}{4}$ are more complex to handle than ever --- we are working to standardize and shift

Unevenness of Courier Drop Offs

11/9 and 11/10/23 Average Daily Specimens by Process (Easy, Medium, Hard)



PDCA Cycles



Hourly routes
(group 1)



Pathology
routes



Visual controls



System routes
(group 1)



Process
samples in lab



Hourly routes
(group 2)



System routes
(group 2)



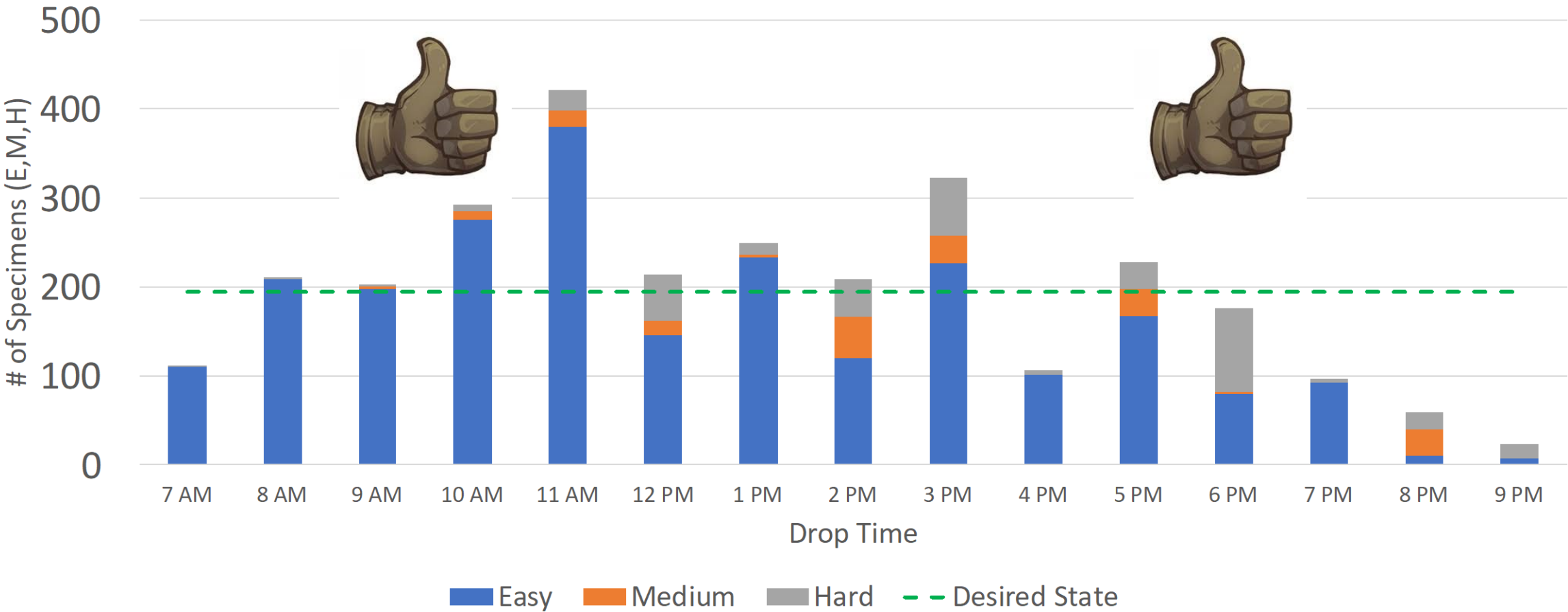
Expedite urine
samples

7 PDCA loops completed
1 in process
5 months




Reducing Mura...

4/09 to 4/10/24 Average Daily Specimens by Process (Easy, Medium, Hard)



#3: Lean process promotes innovation

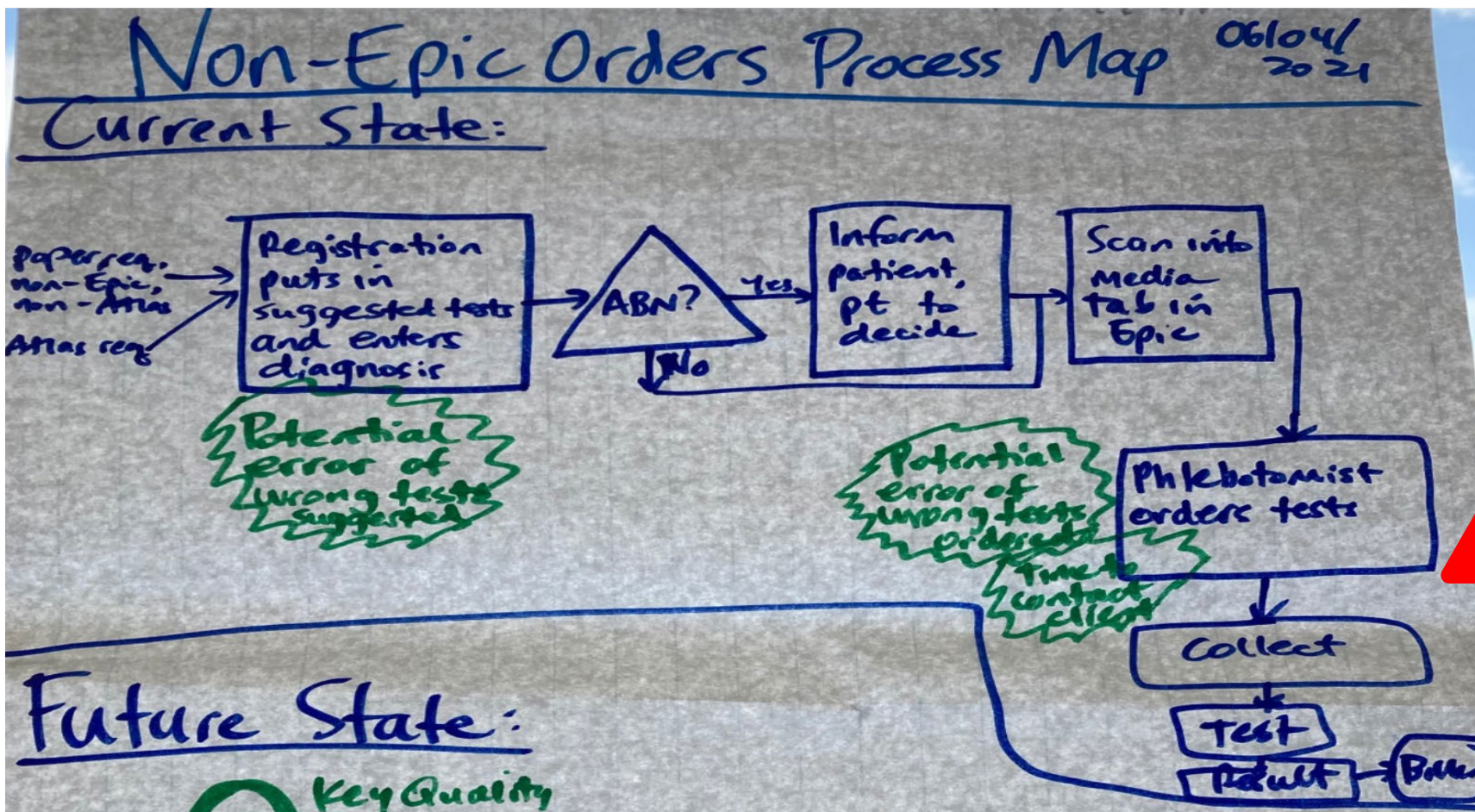
The Struggle of Getting Clean Orders



Innovation is not born from
the dream, innovation is
born from the struggle.

Simon Sinek

Process Map



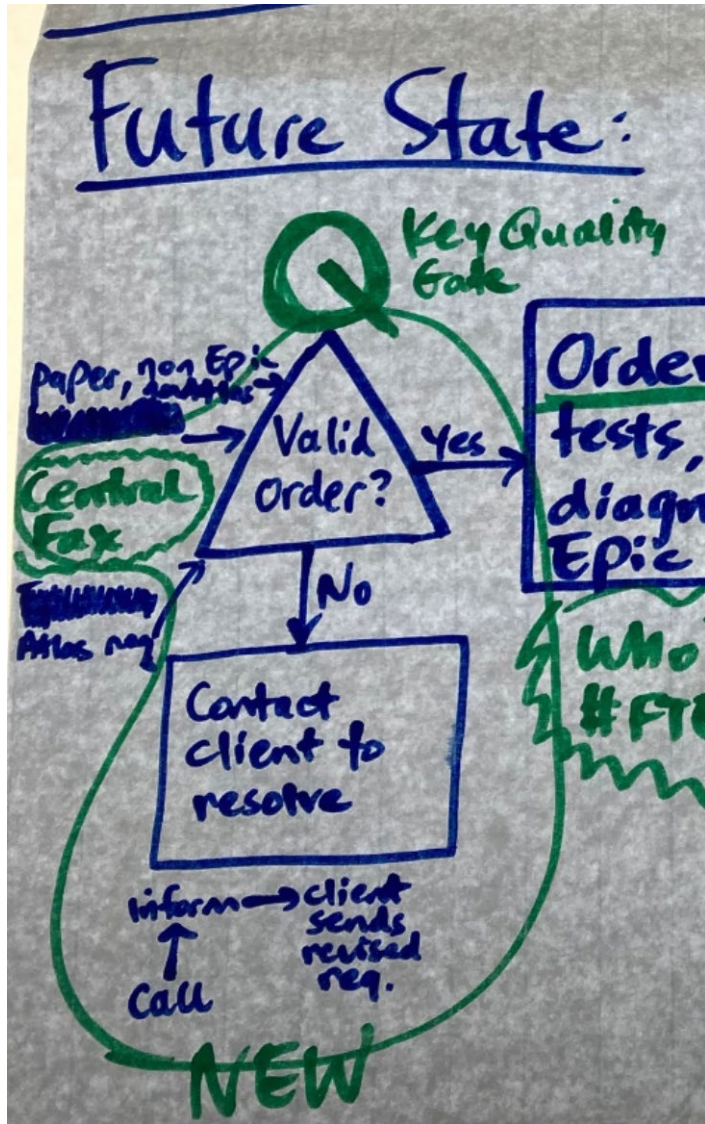
Struggle:

Our process depended on phlebotomists to place the correct order



Complexity of testing and submitter

Process Map



PDCA #1:

Plan:

"Let's get clients to send in their orders ahead of time"

Do:

Notified clients of central fax, reassigned 1 reg FTE

Check:

"Whoops – we just made it worse!"

a) Offices not using central fax

b) Patients showing up too soon

c) Patient not in front of you

* waste of overprocessing & defects



Act: PDCA #2

Process Map

Plan:

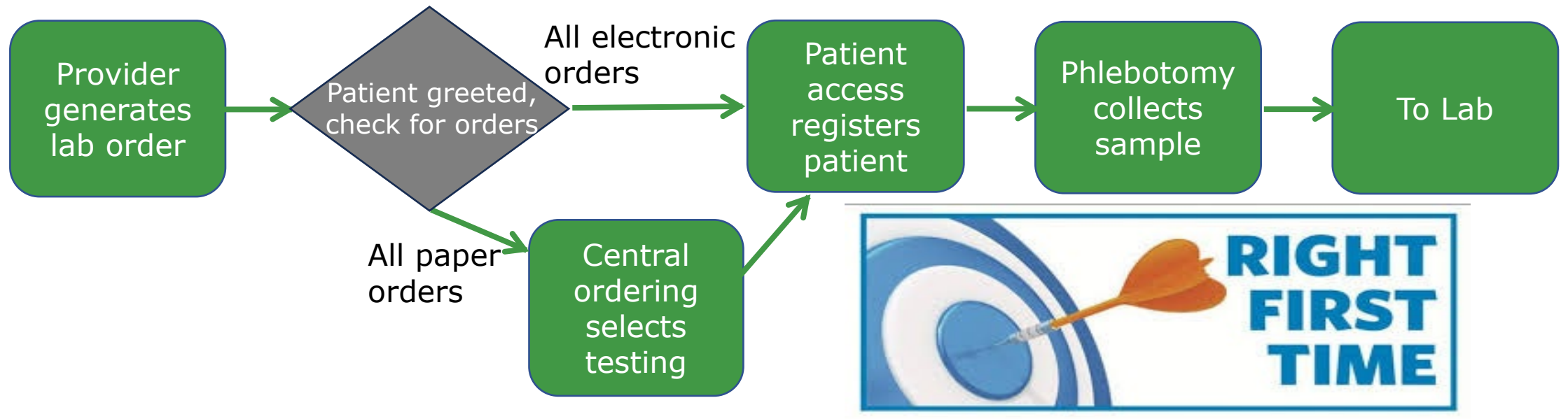
Pilot 4 draw sites with central ordering process

Do:

Client services expert places all paper orders to LIS

Check:

Submitter errors? Wait time for patients? Flow?



PDCA Cycles



Orders in Advance



Central ordering at patient arrival



Expand from 2 to 4 draw sites



Expand from 4 to 8 sites



Expand to 12 sites



Ticket scheduling in Epic

- 5 PDCA loops completed,
- 1 in process
- 12 months



Summary

- Lean workstation design to simplify the work
- Variation is just as problematic as other forms of waste
- PDCA loops to get it right
- Innovation prompts lean to kick into gear
- Process mapping complex processes

What's the next step you can take in the lean journey?

THANK YOU

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