Improvement Academy

Institute for Healthcare Quality,
Safety and Efficiency

SCHOOL OF MEDICINE

UNIVERSITY OF COLORADO **ANSCHUTZ MEDICAL CAMPUS**

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If you have not already done so, please complete the pre-assessment!

Agenda

1. Team Introductions
2. Introduction to QI: Why?
3. The 5 Steps of QI

LUNCH

4. Change Management
5. Creating your Action Plan

Introductions

Who are you?
Why are you here?
What improvement project are you working on?
What do you do to relieve stress?

Why are we here?

765 – 50 – 4

QI = Quality Improvement

Systematic and ***continuous*** actions that lead to ***measurable*** improvement in health care services and the health status of targeted patient groups.

Value

QI = ~~Quality~~ Improvement

Systematic and continuous actions that lead to measurable improvement in health care services and the health status of targeted patient groups.


Quality
Safety
Experience
VALUE =
Cost


CONVERSE
ALL STAR

Model of Quality Improvement

DMAIC

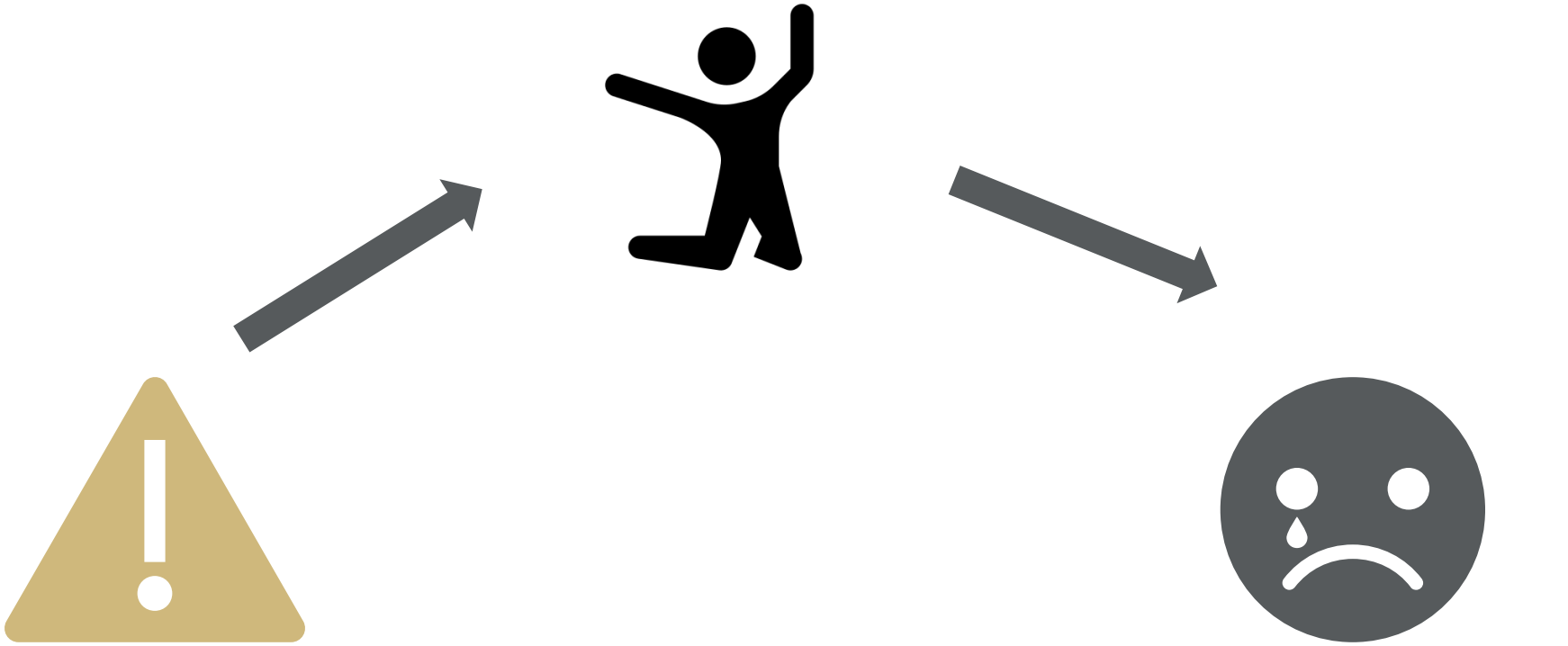
Define, Measure, Analyze, Improve, Control

Six Sigma

"six" standard deviations from mean
(error rate of one per 3.4 per million)

DMAIC

Define, Measure, Analyze, Improve, Control



Sense a problem

No improvement

DMAIC (*də-MAY-ick*)

Define, Measure, Analyze, Improve, Control

D – M – A – I - C

Sense a problem

Sustained improvement

Part 1: Defining the Problem

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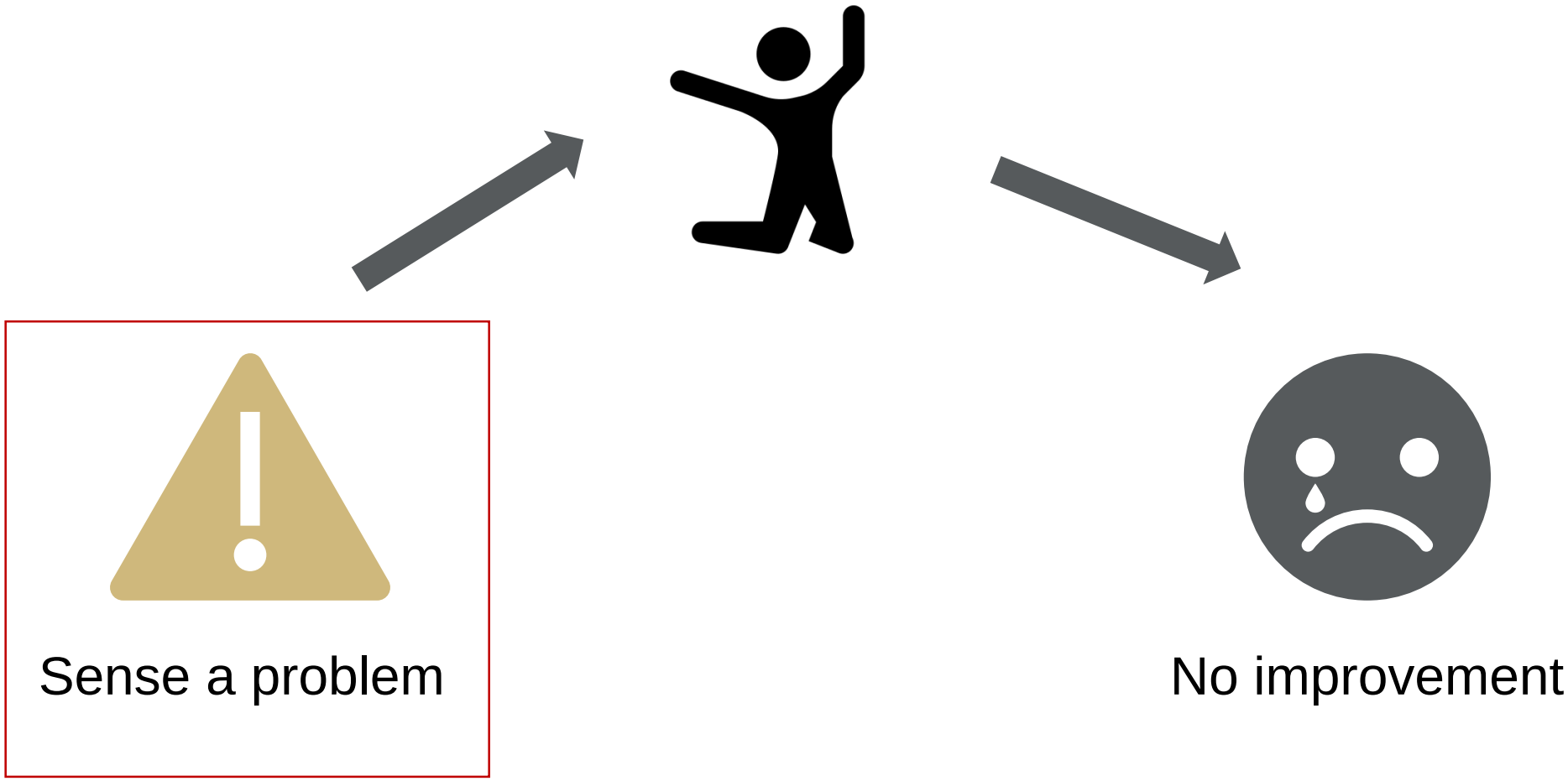
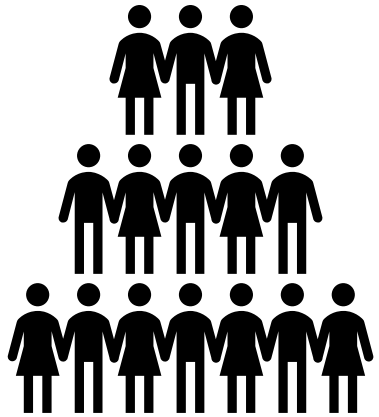

Sense a problem
No improvement

Define: So WHAT?

Sense a problem

Describe in detail



Understand stakeholders – Voice of Customer

Define Scope

Tool 1: The Problem Statement

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What is your Scope?

What are you fixing?

ER Triage Problem

Patients are not happy with their experience in the ED.

The ER Triage Problem

There have been several complaints regarding ER Triage

Data review shows excessive wait times at triage

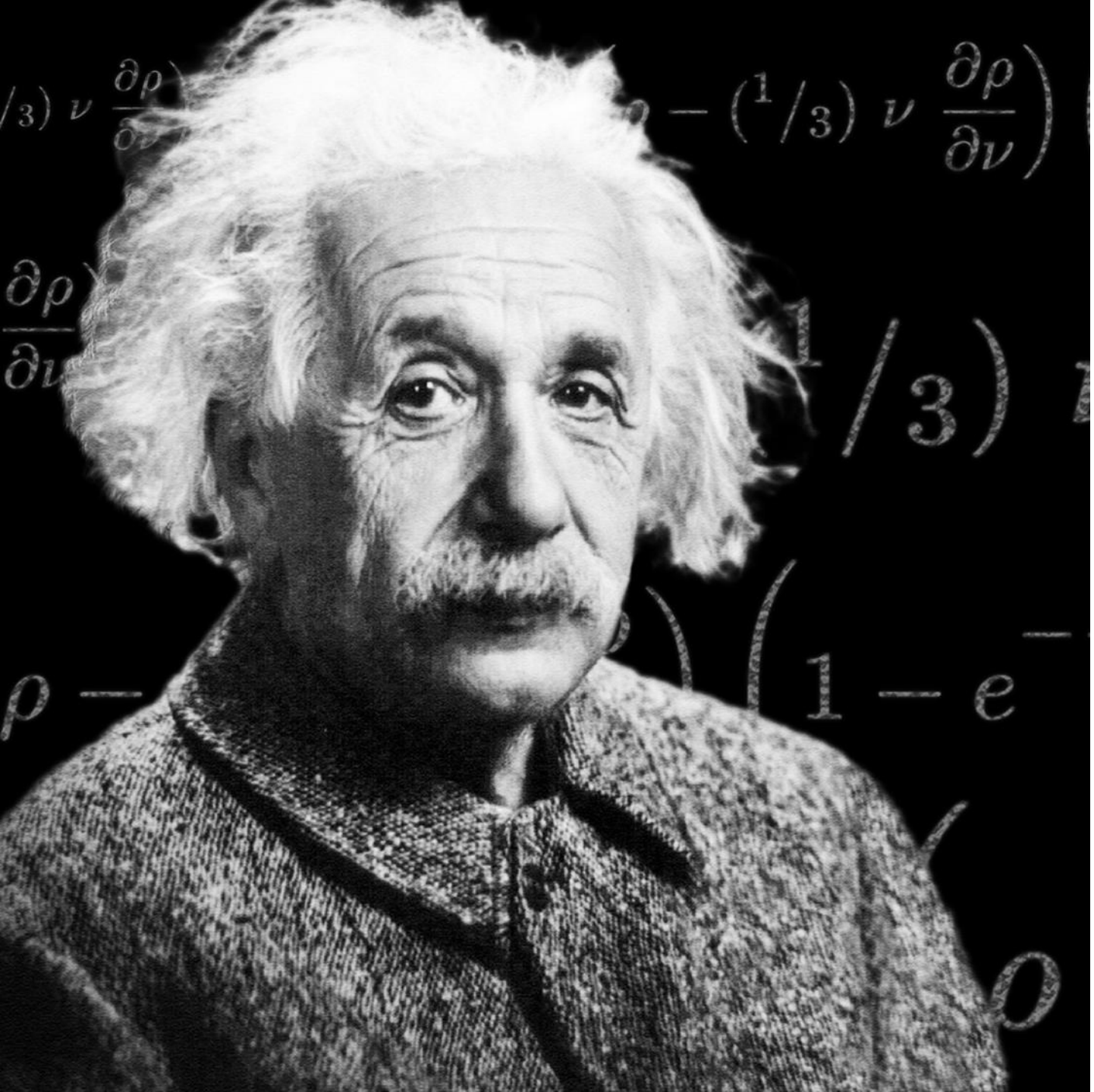
ER patient satisfaction in the 25th percentile

Excessive 'Left Without Being Seen' is leading to loss of patients and patient safety concerns

Door to Doctor time was nearly 80 minutes

Problem Statement

Our patients wait too long in the Emergency Room before they see a provider (an average of 80 minutes), as evidenced by recent complaints on HCAPHS surveys, poor satisfaction scores, excessive wait times and long Door to Doctor times, ultimately resulting in patients leaving the ER without being evaluated.



“If I had an hour to solve a problem, I'd spend 55 minutes thinking about the problem and five minutes thinking about solutions.”

Define the problem

How do you know it's a problem?

Who is affected?

By how much?

Are there guidelines / best practices to refer to?

Breakout 1:
Problem Statement Workshop

- Work with your team
- Discuss your problem (come back to Value equation if needed)
- Write down a problem statement
- Identify missing information
- Report Out

Return in 20 minutes

Tool 2: Voice of the Customers

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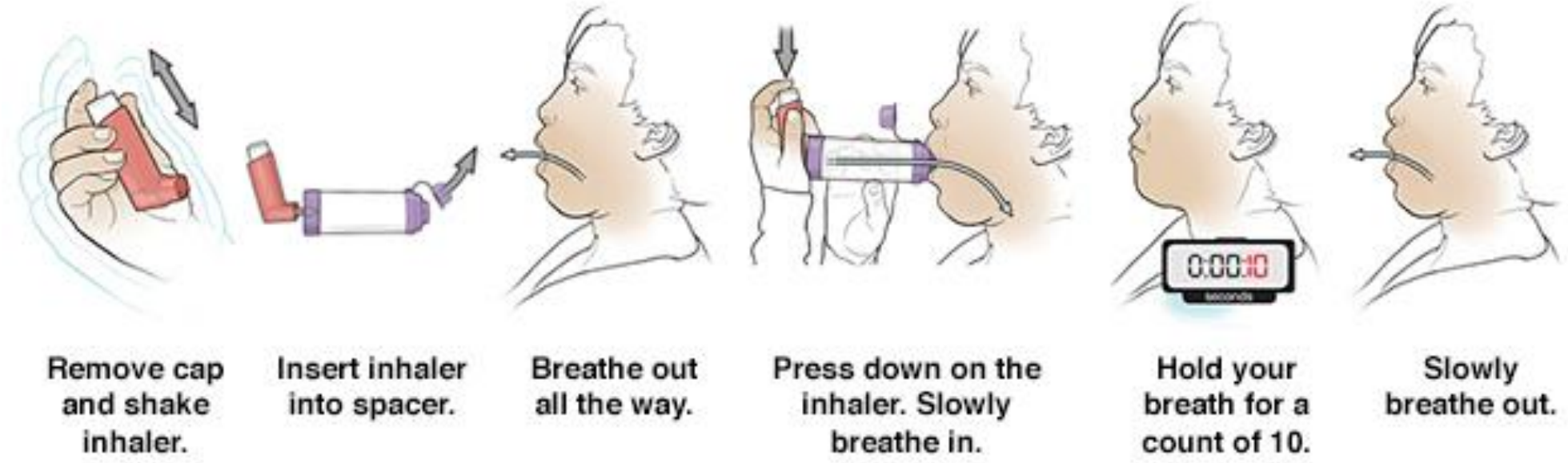
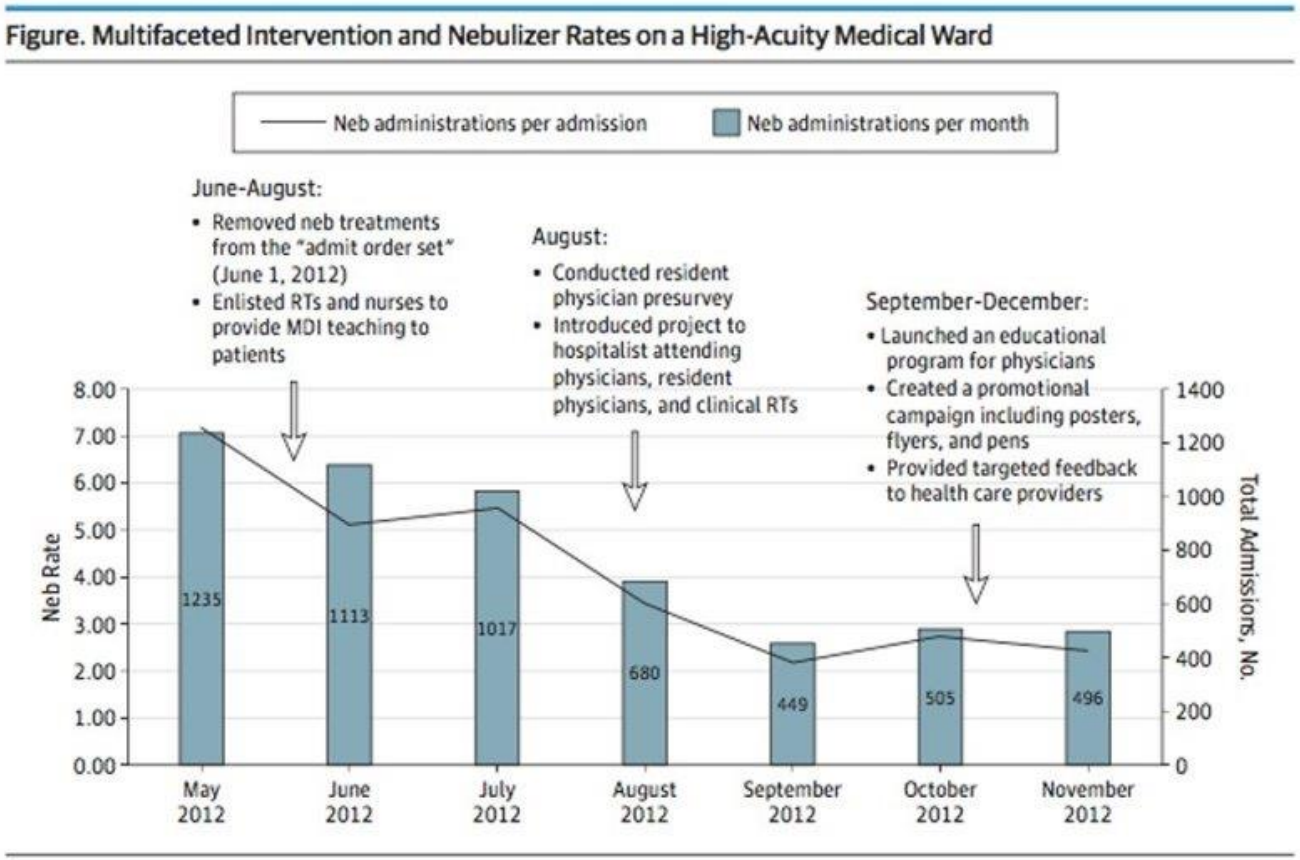
A Story


0:00:10
Remove cap and shake inhaler.
Insert inhaler into spacer.
Breathe out all the way.
Press down on the inhaler. Slowly breathe in.
Hold your breath for a count of 10.
Slowly breathe out.

A Story



Decreased labor cost

Fewer readmissions
- 20% of patients with COPD readmitted within 30 days

A Story

Who are your customers?

Voice of the Patient

Who are the patients?

What are their needs?

What are their perceptions of current state process?

Voice of the Provider & Staff

Who are the staff & providers?

What are their needs?

What are their perceptions of current state process?

Voice of the Business

Who represents the business?

What do they care about?

What are the financial implications?

The ER Triage Problem

There have been several complaints regarding ER Triage

Data review shows excessive wait times at triage

ER patient satisfaction in the 25th percentile

Excessive 'Left Without Being Seen' is leading to loss of patients and patient safety concerns

Door to Doctor time was nearly 80 minutes

Patients, Providers &Nurses

I get more worried the longer I wait to see a doctor – the reason I came here is to see a doc.

I just wanted some reassurance that I was OK – after 2 hours of waiting, I assumed I was and left.

It is so stressful to know that patients are waiting - and may be having heart attacks, strokes, or other life-threatening illnesses!

It's hard to be in pain, and in a noisy, crowded waiting room until help arrives.

I could easily triage within 5 minutes how sick my patients are!

The Business – Hospital Leadership

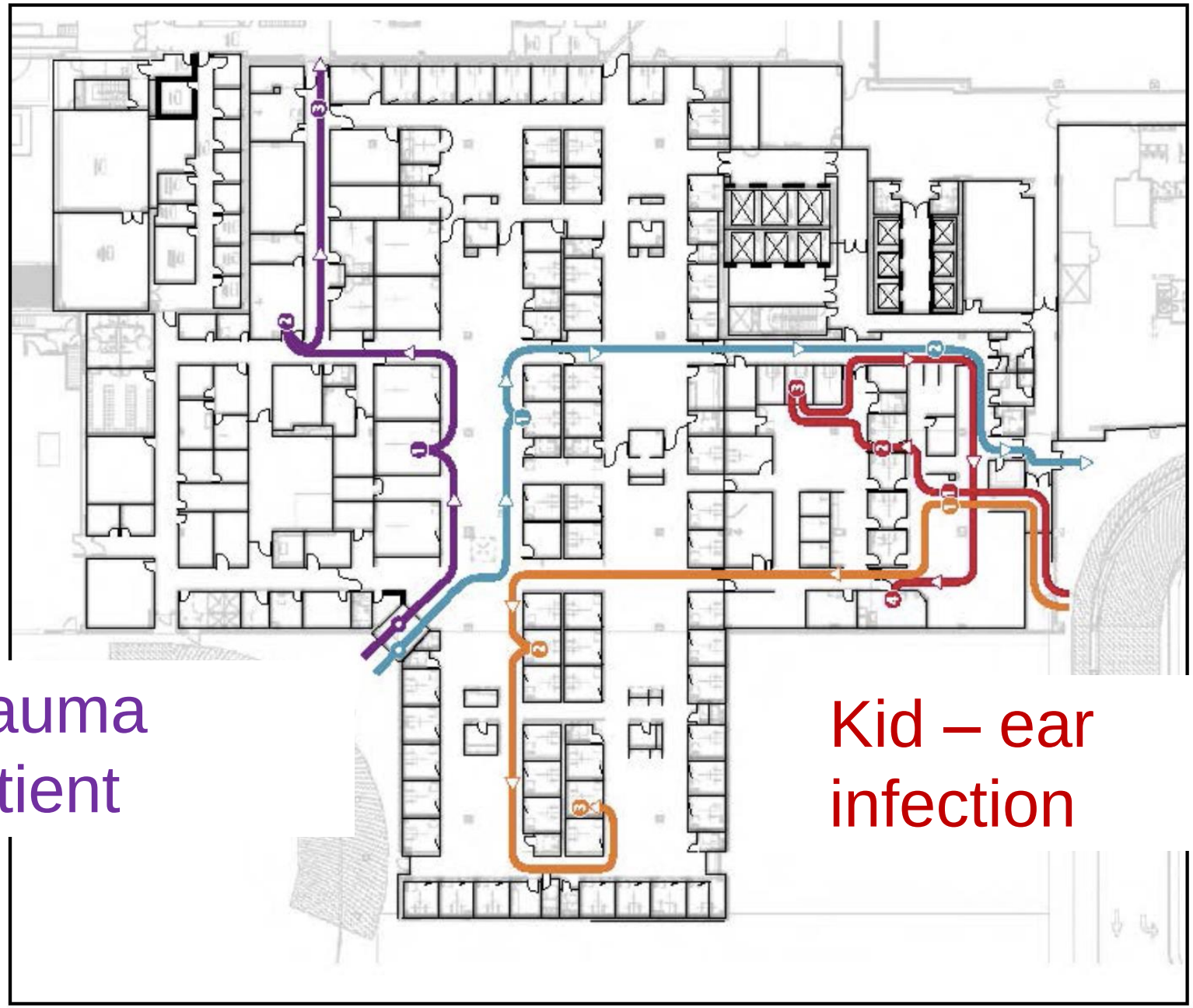
Other hospitals are marketing shorter wait times!

If we require EMS to go on divert, we will lose patients/customers.

We get dinged for high rates of 'left without being seen'

We won't achieve Level 1 Trauma accreditation.

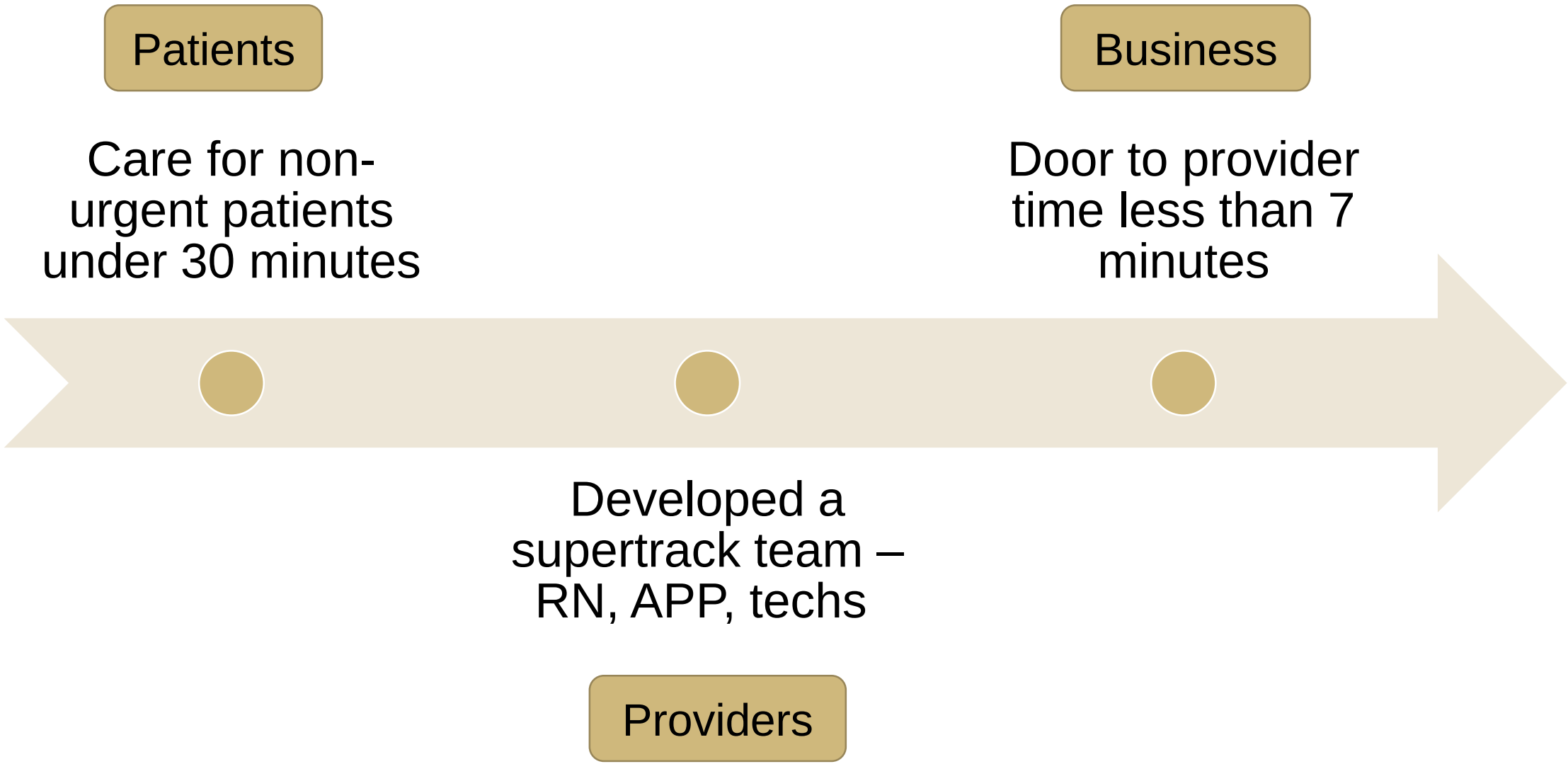
Redesign



Trauma patient

Kid – ear infection

The Outcome


Patients
Care for non-urgent patients under 30 minutes
Business
Door to provider time less than 7 minutes
Developed a supertrack team – RN, APP, techs
Providers

Breakout 2:
Voice of the Customers

Identify your Customers (Patients, Providers, Staff, Business)

Discuss how to facilitate a VOC for your project

Document your plan

Report Out

15 minutes

Part 2: Understanding your Problem

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DMAIC

Define, **Measure, Analyze,** Improve, Control

D – M – A – I - C

Sense a problem

Sustained improvement

37% of Physical Therapy Consults Are Inappropriate

10,000 hours of work (wasted) per year

Measure

現場

Gemba (the Actual Place, Walk)

WHAT is the problem

Process Map

Epic

Gemba 現場

Why do we order PT?

Reason for PT? ??????

Comments: ✚ Add Comments

Tool 3: Process Map

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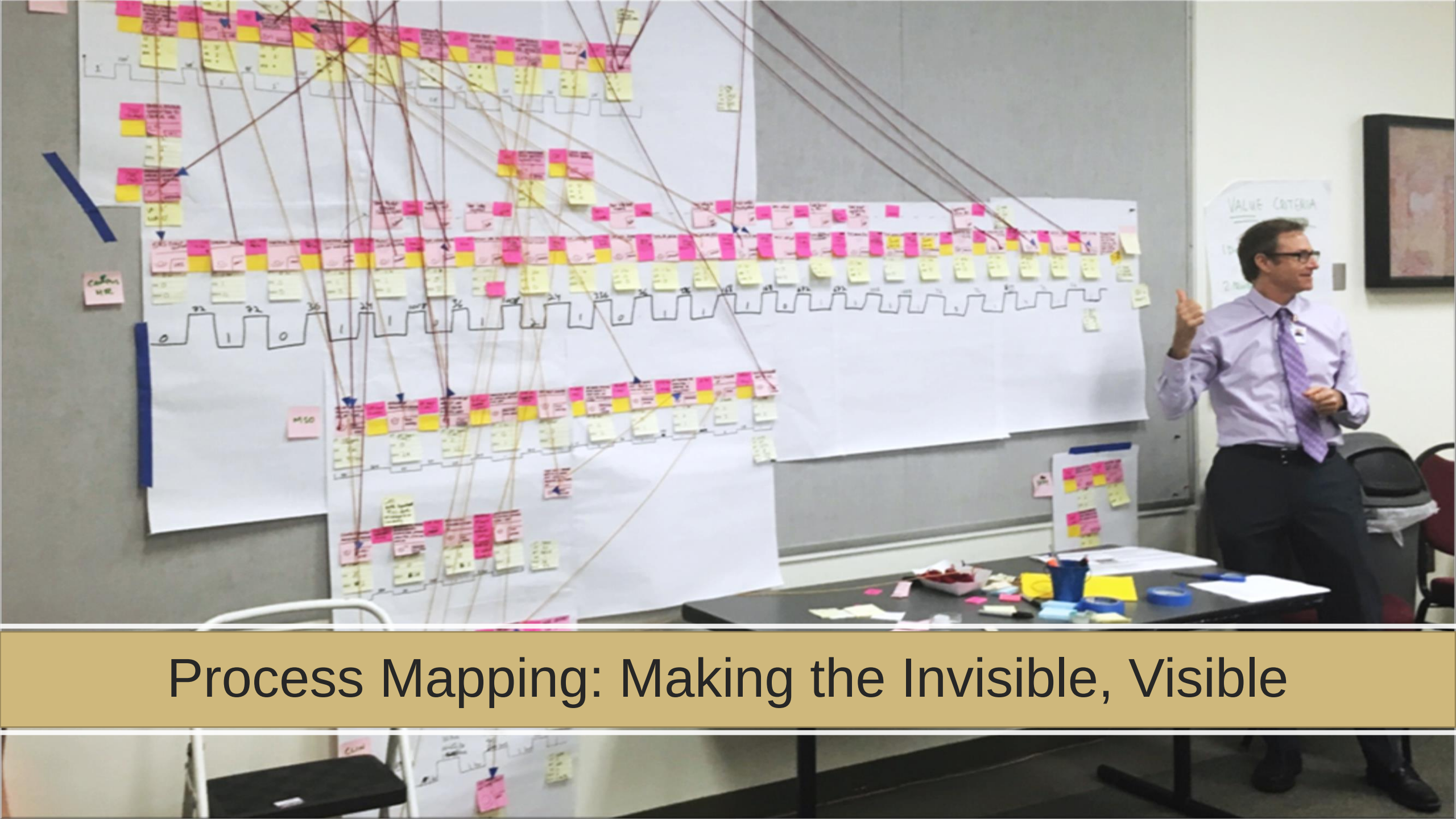
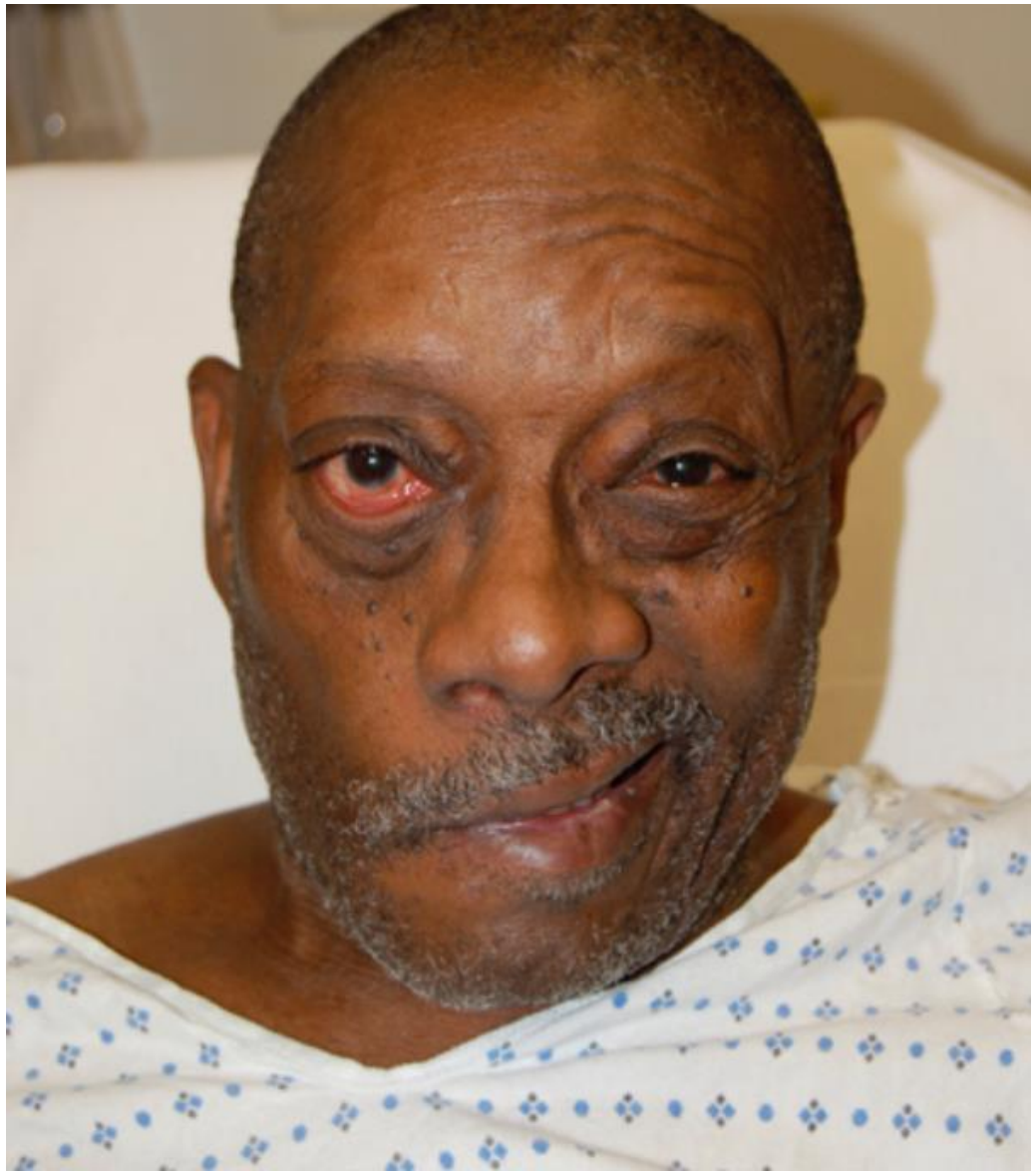


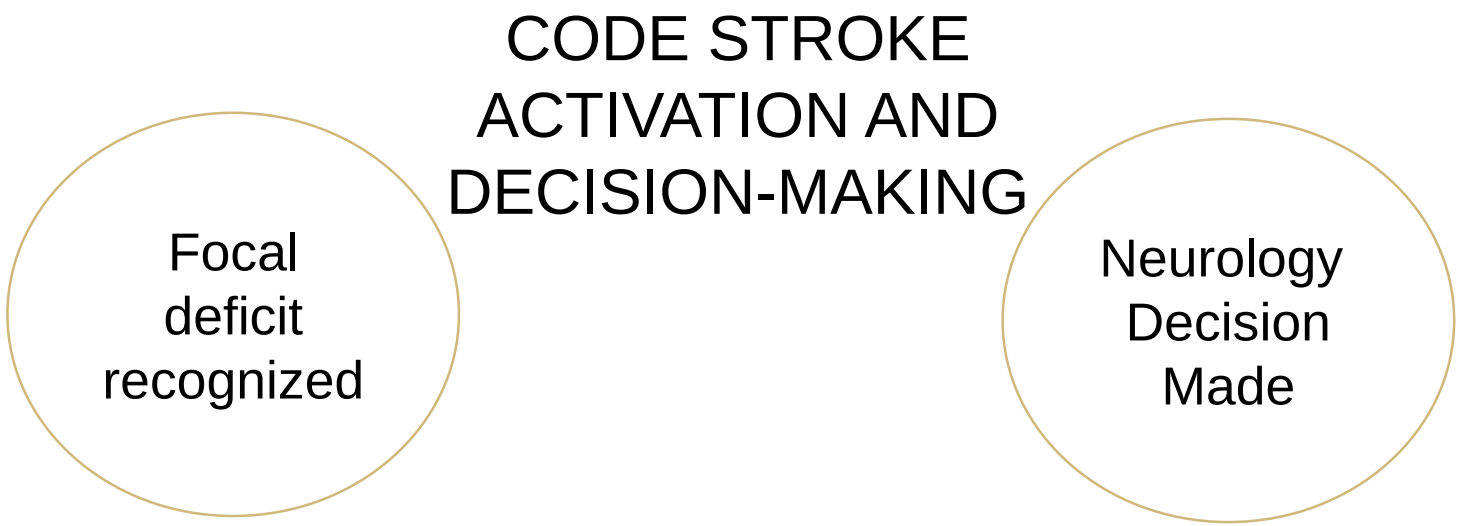
Process Mapping: Making the Invisible, Visible

Code Stroke: Satellite COVID Hospital



Step 1: Defining your Process

1. What is the name of this process?
2. What starts the process?
3. What ends the process?



Step 2: Determine your ‘Entity’

HUMAN

INANIMATE OBJECT

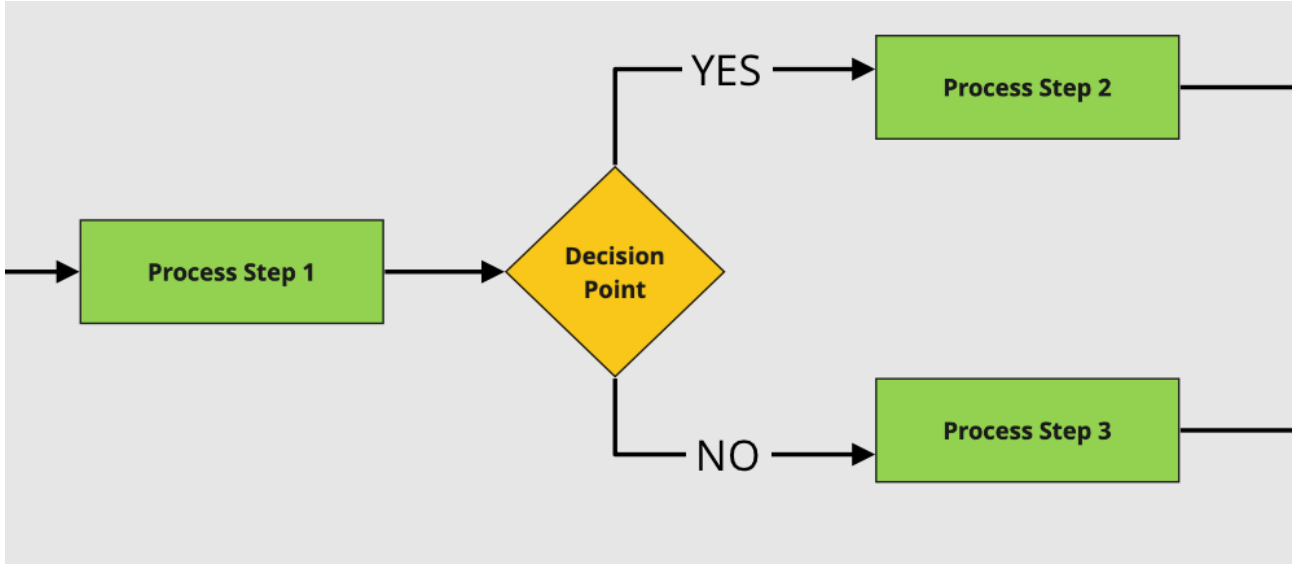
INFORMATION

Step 3: Add Process Steps

- Steps, Tasks, Operations
- Verb / Noun
- Granularity may vary

Step 3: Include Decision Points

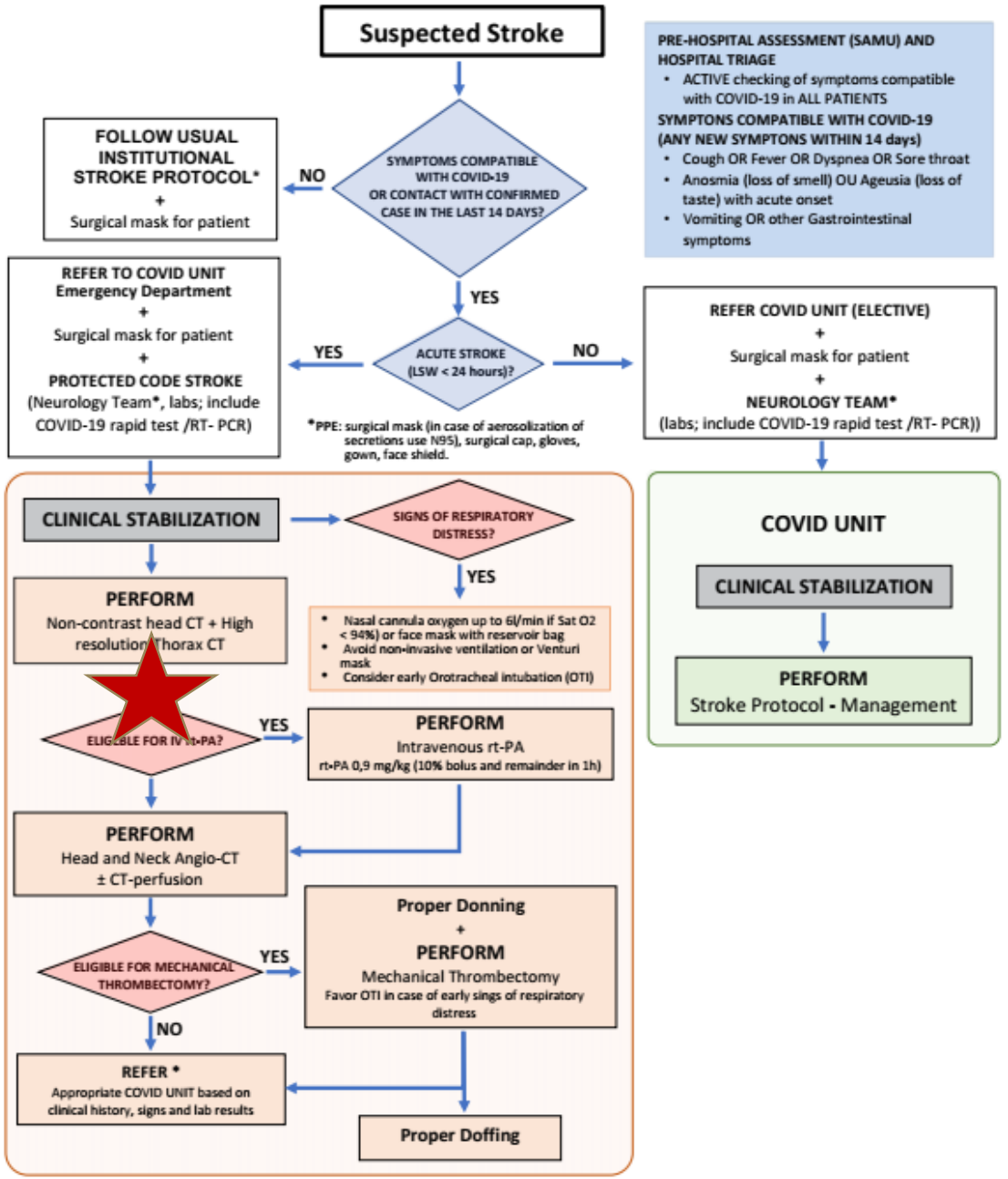
- A decision separates branches in the process flow map
- Label decisions as questions
- Each arrow is labeled as an answer to the question



Step 4: Identify Pain Points

- Confusion, variability
- Opportunities for improvement
- Waste, Inefficiency
  - Defects
  - Waiting times
  - Extra Motion
  - Over Processing
  - Underutilized talent
  - Transportation
  - Over production
  - Excess Inventory

Process Map

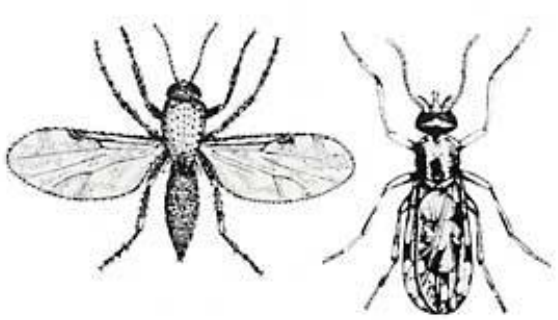

Suspected Stroke
PRE-HOSPITAL ASSESSMENT (SAMU) AND HOSPITAL TRIAGE
• ACTIVE checking of symptoms compatible with COVID-19 in ALL PATIENTS
SYMPTONS COMPATIBLE WITH COVID-19 (ANY NEW SYMPTONS WITHIN 14 days)
• Cough OR Fever OR Dyspnea OR Sore throat
• Anosmia (loss of smell) OU Ageusia (loss of taste) with acute onset
• Vomiting OR other Gastrointestinal symptoms
SYMPTOMS COMPATIBLE WITH COVID-19 OR CONTACT WITH CONFIRMED CASE IN THE LAST 14 DAYS?
NO
FOLLOW USUAL INSTITUTIONAL STROKE PROTOCOL*
+
Surgical mask for patient
YES
ACUTE STROKE (LSW < 24 hours)?
YES
NO
REFER TO COVID UNIT Emergency Department
+
Surgical mask for patient
+
PROTECTED CODE STROKE
(Neurology Team*, labs; include COVID-19 rapid test /RT- PCR)
REFER COVID UNIT (ELECTIVE)
+
Surgical mask for patient
+
NEUROLOGY TEAM*
(labs; include COVID-19 rapid test /RT- PCR))
*PPE: surgical mask (in case of aerosolization of secretions use N95), surgical cap, gloves, gown, face shield.
CLINICAL STABILIZATION
SIGNS OF RESPIRATORY DISTRESS?
YES
PERFORM
Non-contrast head CT + High resolution Thorax CT
• Nasal cannula oxygen up to 6l/min if Sat O2 < 94%) or face mask with reservoir bag
• Avoid non-invasive ventilation or Venturi mask
• Consider early Orotracheal intubation (OTI)
ELIGIBLE FOR IV rt-PA?
YES
PERFORM
Intravenous rt-PA
rt-PA 0,9 mg/kg (10% bolus and remainder in 1h)
PERFORM
Head and Neck Angio-CT
± CT-perfusion
ELIGIBLE FOR MECHANICAL THROMBECTOMY?
YES
Proper Donning
+
PERFORM
Mechanical Thrombectomy
Favor OTI in case of early sings of respiratory distress
NO
REFER *
Appropriate COVID UNIT based on clinical history, signs and lab results
Proper Doffing
COVID UNIT
CLINICAL STABILIZATION
PERFORM
Stroke Protocol - Management

Break-out 3: Process Map

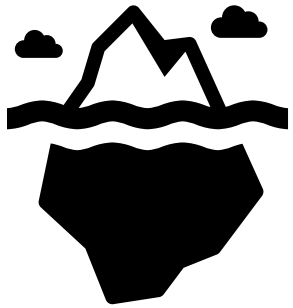
Name the process you want to map, identify start / stop
Name the entity you are following
Identify individuals you want engaged in this process – plan event
Begin to develop process map

10 minutes

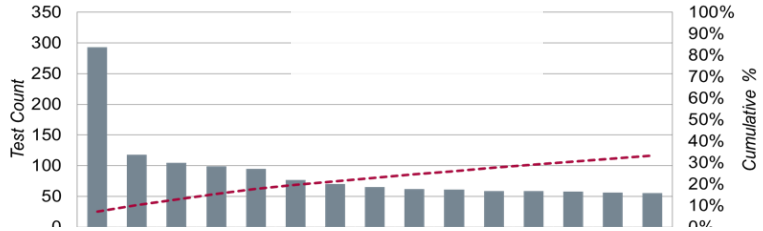
Analyze: WHY?



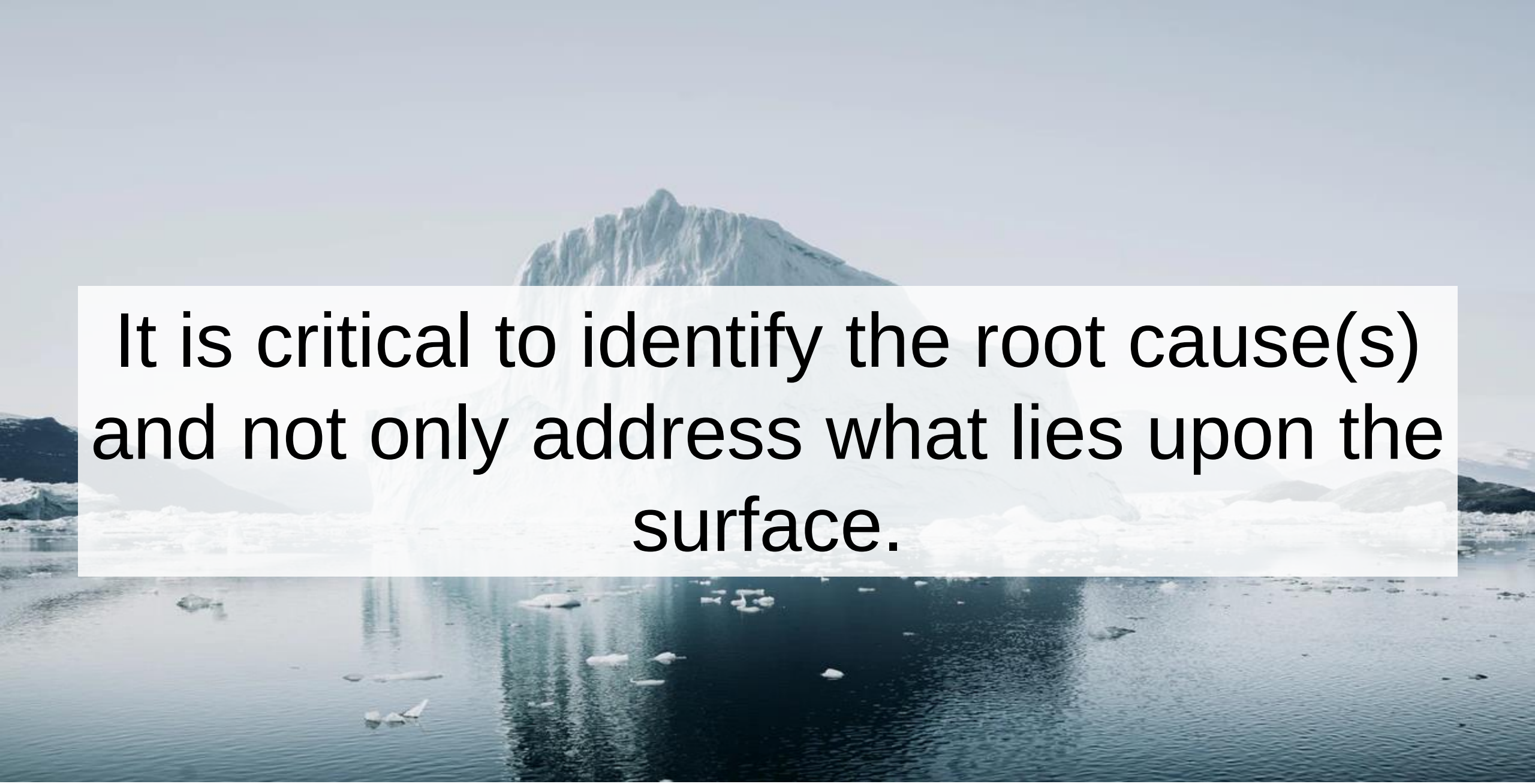
5-Why’s



Root Cause Analysis
Affinity Diagram



Pareto Chart


It is critical to identify the root cause(s) and not only address what lies upon the surface.

Tool 4: Understanding Root Causes

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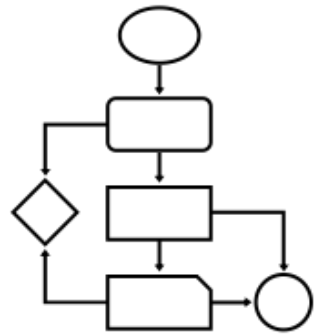
Voice of the customer

Epic

現場

Gemba (Walk)



Process Map

Step 1: Brainstorm

Step 2: Sort by Themes

Communication
Environment
Materials
Processes
EHR
Policies

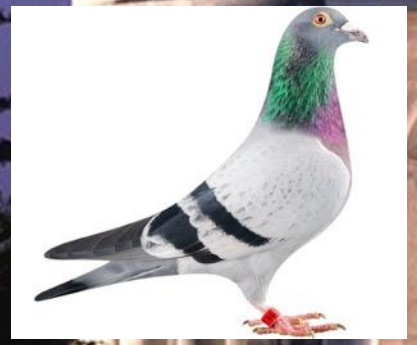
Step 3: Create Affinity Diagram

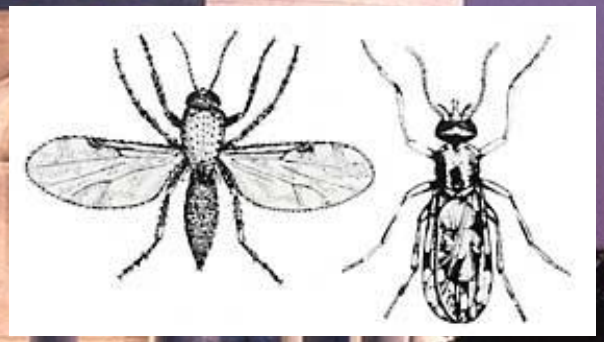
EHR	Communication	Process	Materials Environment	Knowledge
No Indications	RN/MD/PT Different language	not discussed in discharge rounds	Busy	Don't know indications for PT
RN assessment not included			x Geographic cohorting	
No feedback loop				

Step 4: Vote on Importance

EHR	Communication	Process	Materials Environment	Knowledge
No Indications	RN/MD/PT Different language	not discussed in discharge rounds	Busy	Don't know indications for PT
RN assessment not included	6	2	x Geographic cohorting	2
No feedback loop			1	
7				

Five Why's





5 WHYs?

Why don't providers order PT appropriately?
They don't know what is appropriate

Why don't they know the indications?
It is part of the nursing assessment. Epic doesn't guide them.

Why don't we understand the nursing assessment?
It's a different language and training than providers use.

Why doesn't Epic guide them?
No list of indications.

Why don't nurses place the PT orders?

Breakout 4:
5 Why's & Affinity Diagram

Consider WHY you have a problem

Perform 3-5 Why's to identify root causes

Create an Affinity Diagram

Report Out

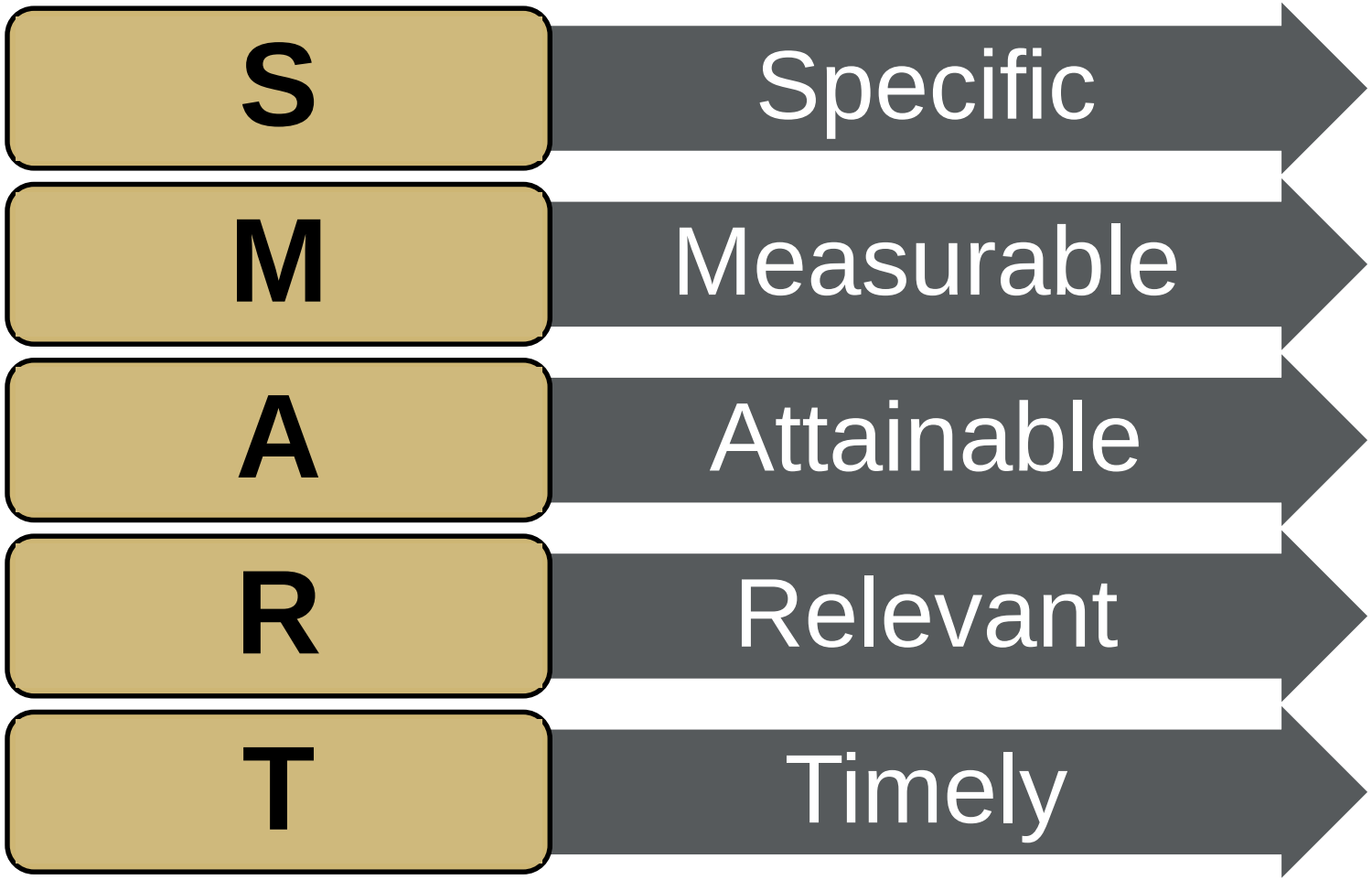
15 minutes

BREAK-TIME

Lunch

Analyze

Aim statement



Matter to Patients

OUTCOME

- Patient Satisfaction
- LOS
- Readmission Rate
- Throughput
- Adverse Events

Can act as proxy for outcomes

PROCESS

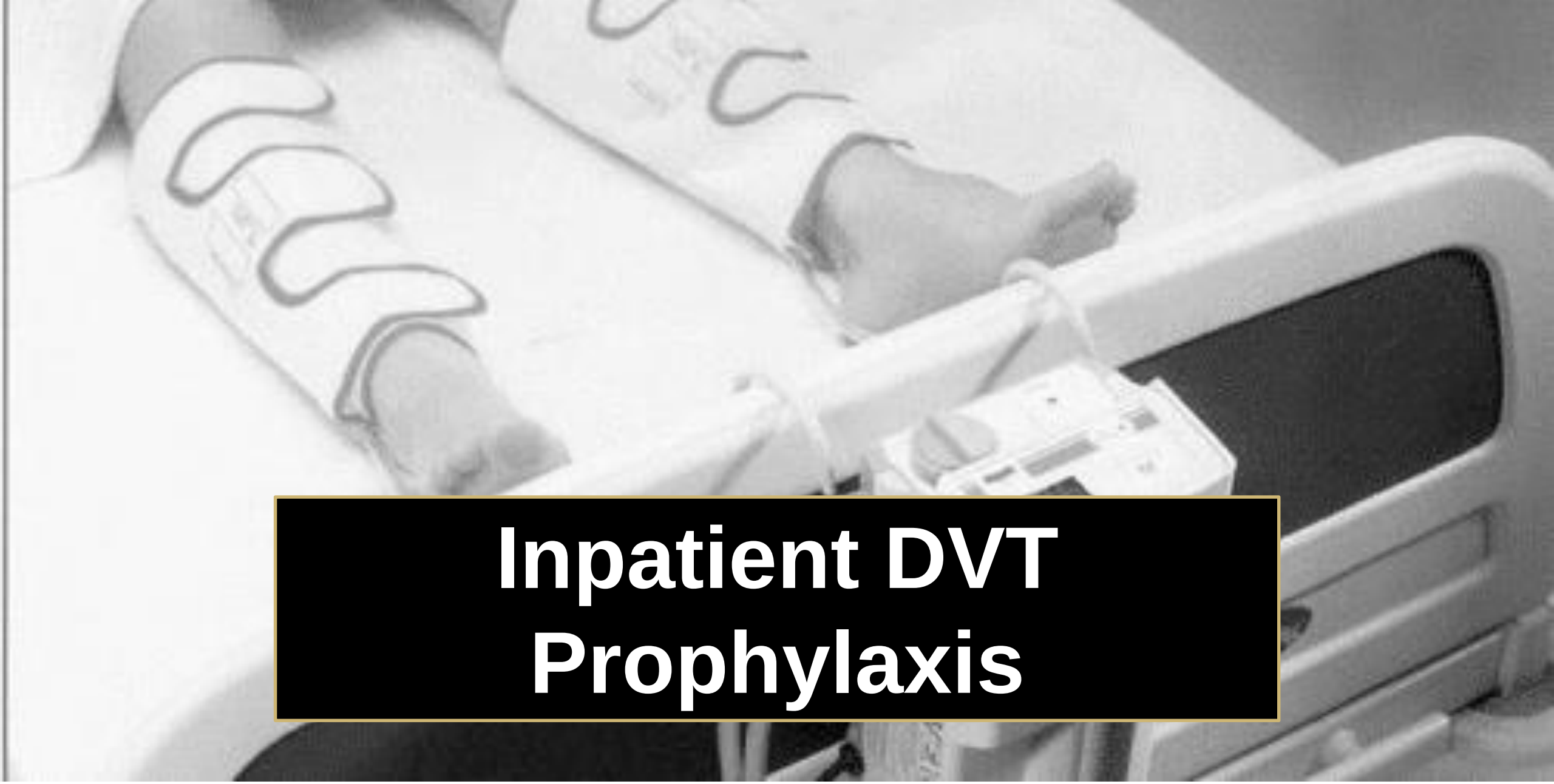
- Use of checklists
- Patient Centered Rounds
- Lab orders

STRUCTURE

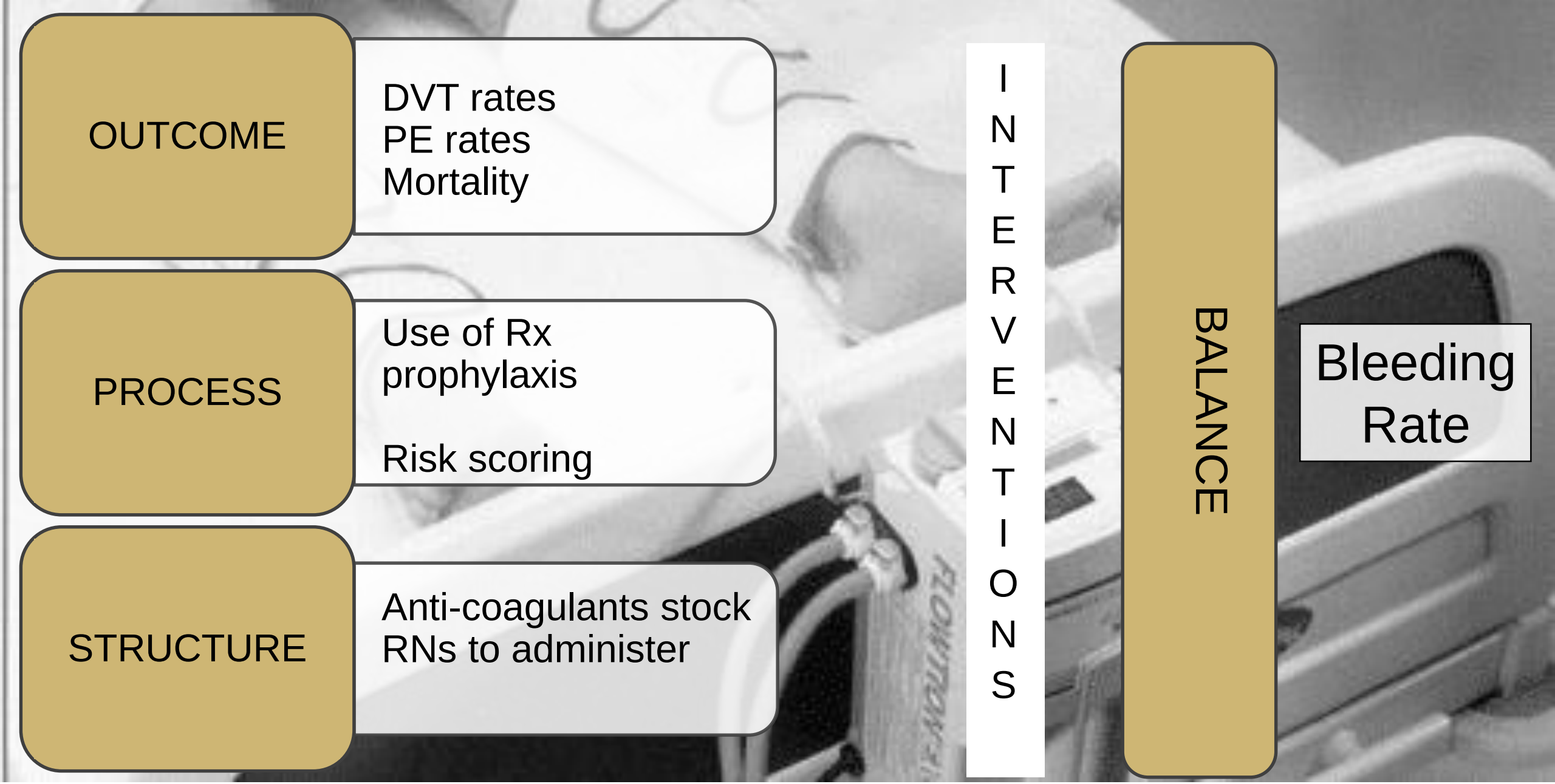
- Order Sets
- Regionalized
- Nurse:Patient ratio
- Discharge navigators

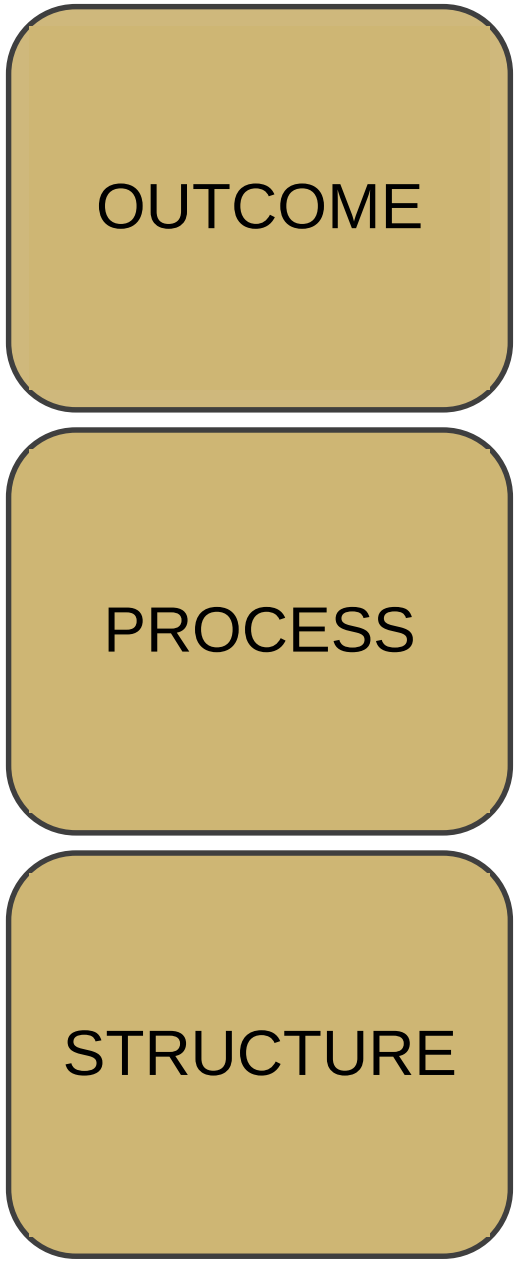
INTERVENTIONS

BALANCE



Inpatient DVT Prophylaxis


OUTCOME
DVT rates
PE rates
Mortality
PROCESS
Use of Rx prophylaxis
Risk scoring
STRUCTURE
Anti-coagulants stock
RNs to administer
INTERVENTIONS
BALANCE
Bleeding Rate



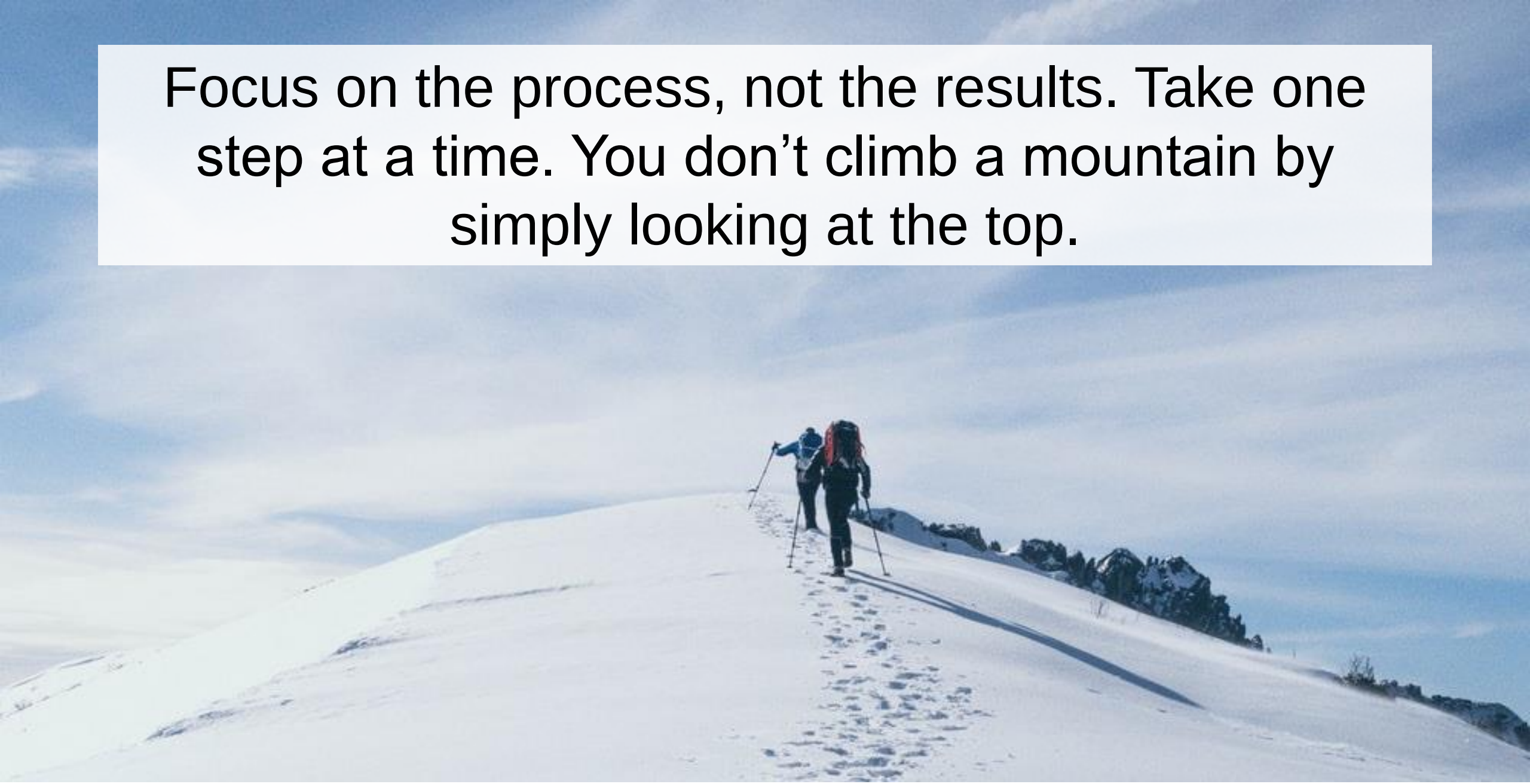
The thing you want to affect = PROJECT GOAL

10,000 hours of PT work (wasted) per year

The things you think contribute to the outcome
= AIM STATEMENT

Inappropriate orders (37% of consults)
+/- Order Set Creation

Focus on the process, not the results. Take one step at a time. You don't climb a mountain by simply looking at the top.



By the end of Measure & Analyze....

SMART AIM:

Our AIM is to reduce inappropriate consults to Physical Therapy for medicine inpatients from **37%** to **10%** by May, 2021.

A note on data...

“In God we trust. All others must bring data.”

- W. Edwards Deming

“The goal is to turn data into information, and information into insight.”

- Carly Fiorina, former executive, president, and chair of Hewlett-Packard Co.

Data Collection Plan

Key Question	Data Element Name	Operational Definition	Parameters	Source	Who	Frequency
What is the length of stay?	Length of stay (LOS)	LOS = Admit time to Discharge time	• Date range: 1/1/2020 - 12/31/2020 • One listed for every patient by CSN • Format: time in hours	EHR -- ADT	Which team member is in charge of collecting?	Monthly data pull, 1st of month

Breakout 5:
Create an AIM Statement, Data Plan

Identify your process, outcome measures

Create or Refine a SMART AIM Statement

Data Collection Plan

Report Out

10 minutes

Part 3: Making Improvements

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Tool 5: The Pareto Principle

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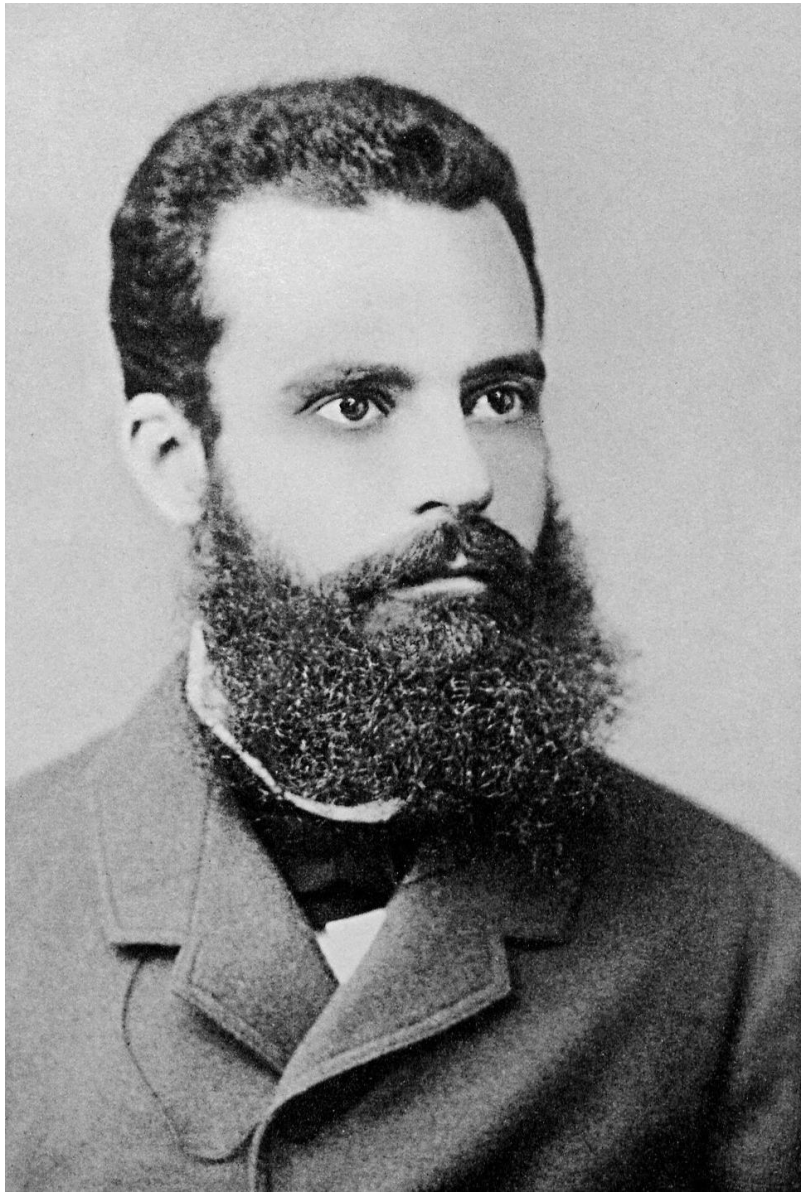
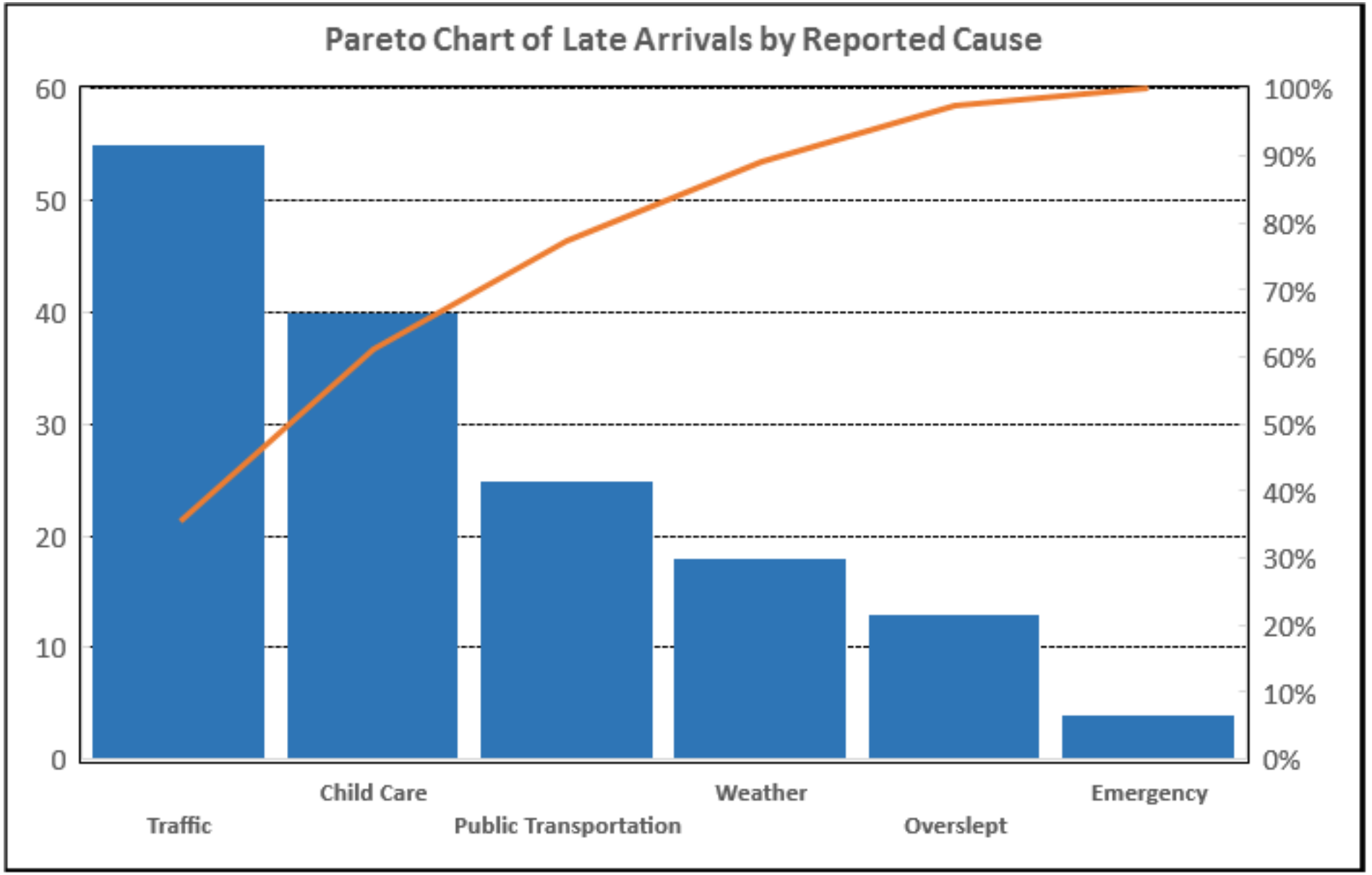


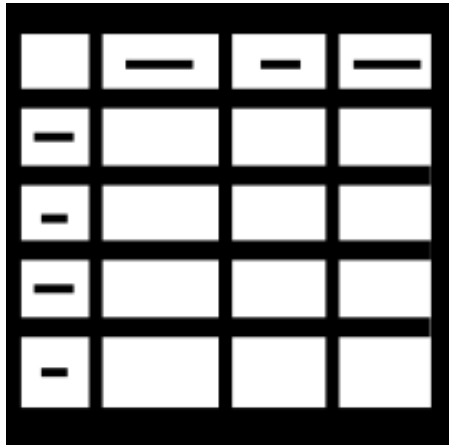
80/20

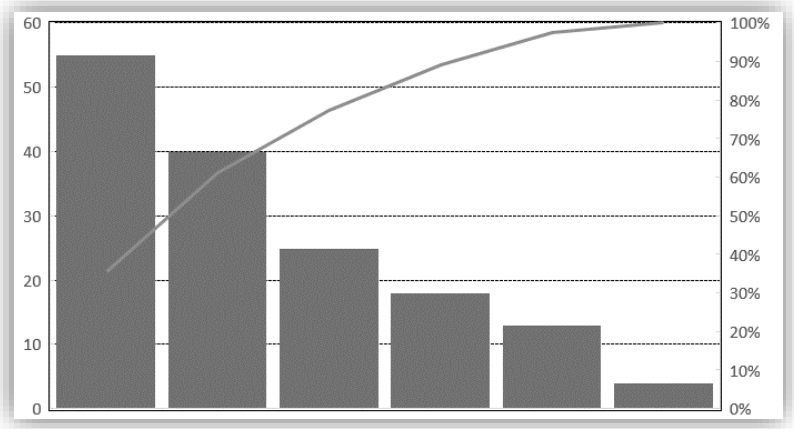

Pareto Chart of Late Arrivals by Reported Cause
60
50
40
30
20
10
0
100%
90%
80%
70%
60%
50%
40%
30%
20%
10%
0%
Traffic
Child Care
Public Transportation
Weather
Overslept
Emergency

Using a Pareto Chart

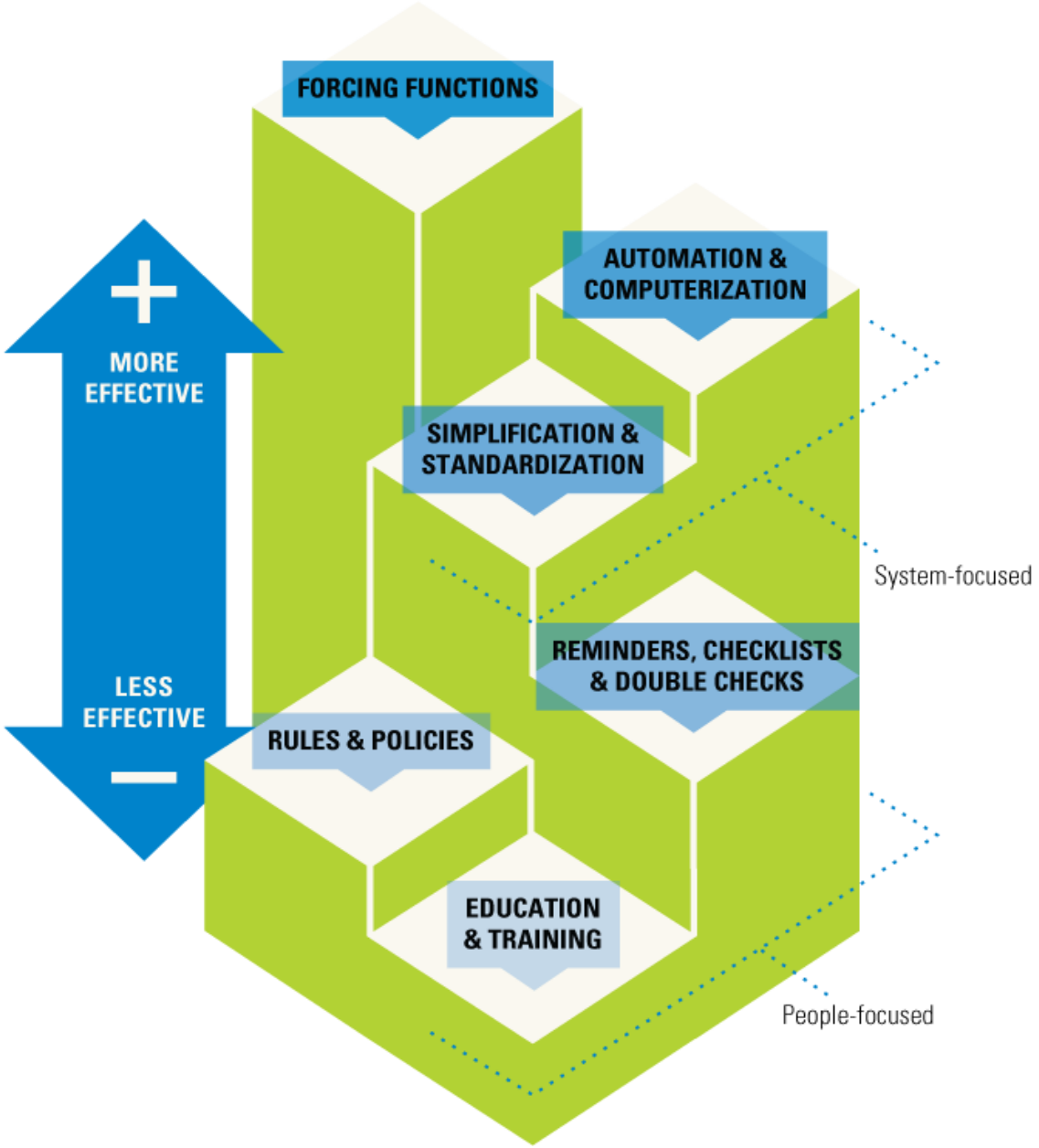
List of Reasons for Problem or areas where problems is occurring

Gather data on these reasons → **Create** Pareto Chart → Use to **Target** Interventions

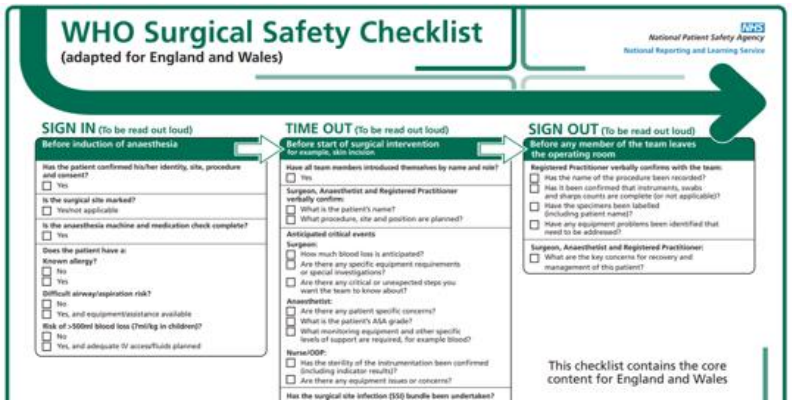




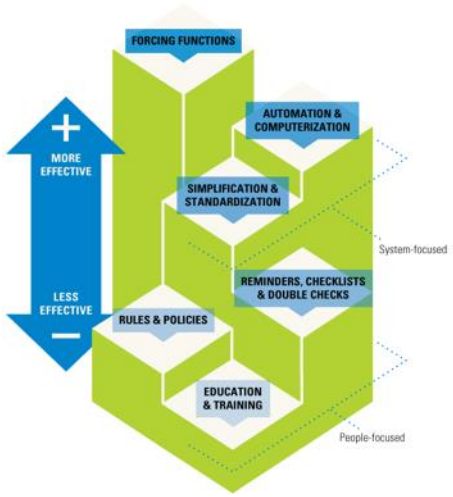
Designing Interventions

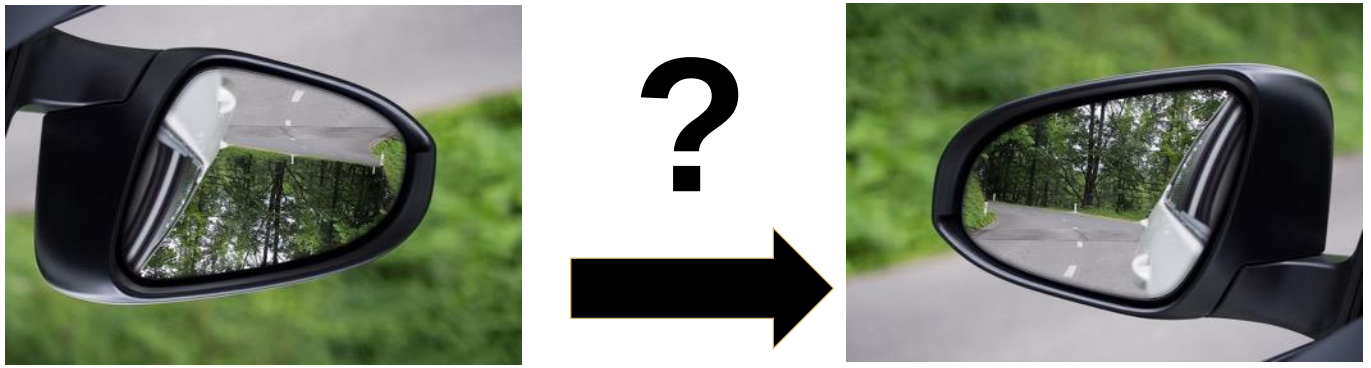

FORCING FUNCTIONS
AUTOMATION & COMPUTERIZATION
SIMPLIFICATION & STANDARDIZATION
REMINDERS, CHECKLISTS & DOUBLE CHECKS
RULES & POLICIES
EDUCATION & TRAINING
MORE EFFECTIVE
LESS EFFECTIVE
System-focused
People-focused


Please order contact precautions (BPA# 1183)
Infection Prevention and Control
Contact precautions until result is negative, if result is positive precautions will continue for duration of therapy.
Please refer to Gastroenteritis table on the Infection Control page on The Source for more information.
If you have questions regarding isolation precautions, please contact Infection Control at 720-848-6978.
Order
Do Not Order
Special contact isolation status
Acknowledge Reason
Isolation not required
Deferred at this time


WHO Surgical Safety Checklist
(adapted for England and Wales)
National Patient Safety Agency
National Reporting and Learning Service
SIGN IN (To be read out loud)
Before induction of anaesthesia
TIME OUT (To be read out loud)
Before start of surgical intervention
for example, skin incision
SIGN OUT (To be read out loud)
Before any member of the team leaves the operating room
This checklist contains the core content for England and Wales


Body Planes
MDpocket.com


FORCING FUNCTIONS
AUTOMATION & COMPUTERIZATION
SIMPLIFICATION & STANDARDIZATION
REMINDERS, CHECKLISTS & DOUBLE CHECKS
RULES & POLICIES
EDUCATION & TRAINING
MORE EFFECTIVE
LESS EFFECTIVE
System-focused
People-focused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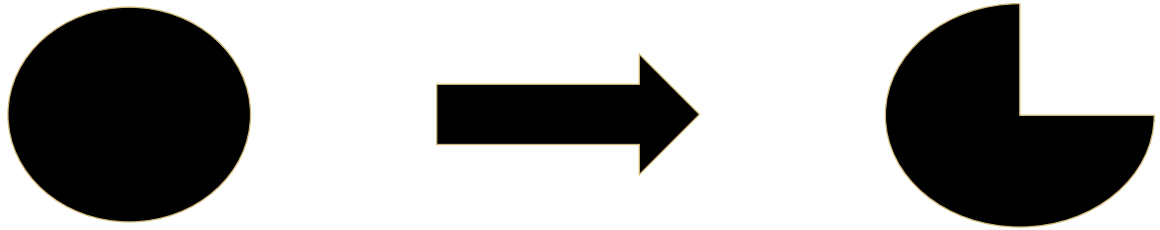
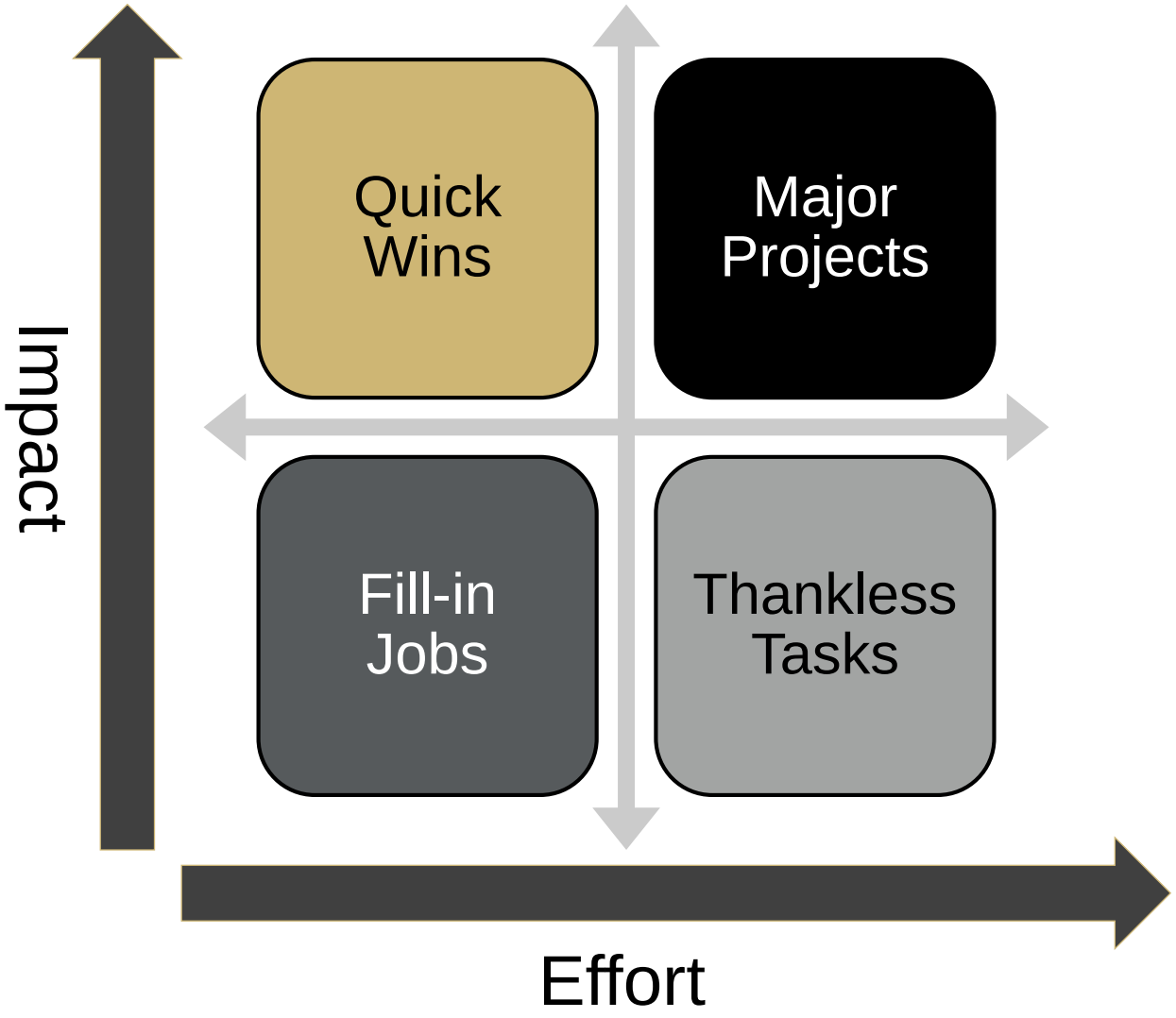


”What would this look like if it were easy?”

- Tim Ferris

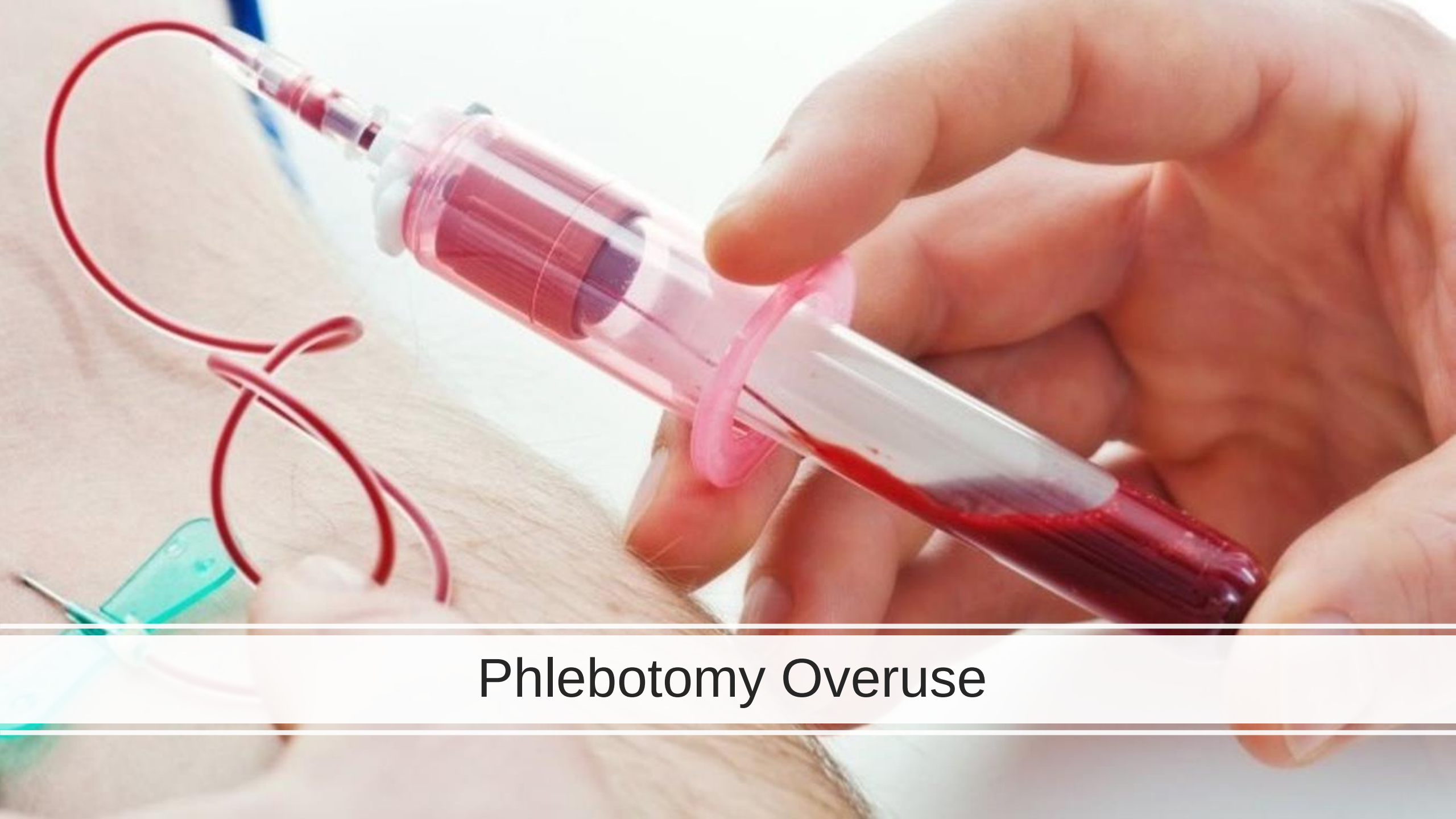
“Perfection is achieved, not when there is nothing more to add, but when there is nothing left to take away.”

- Antoine de Saint-Exupéry, French pioneering aviator, poet, aristocrat



Epic

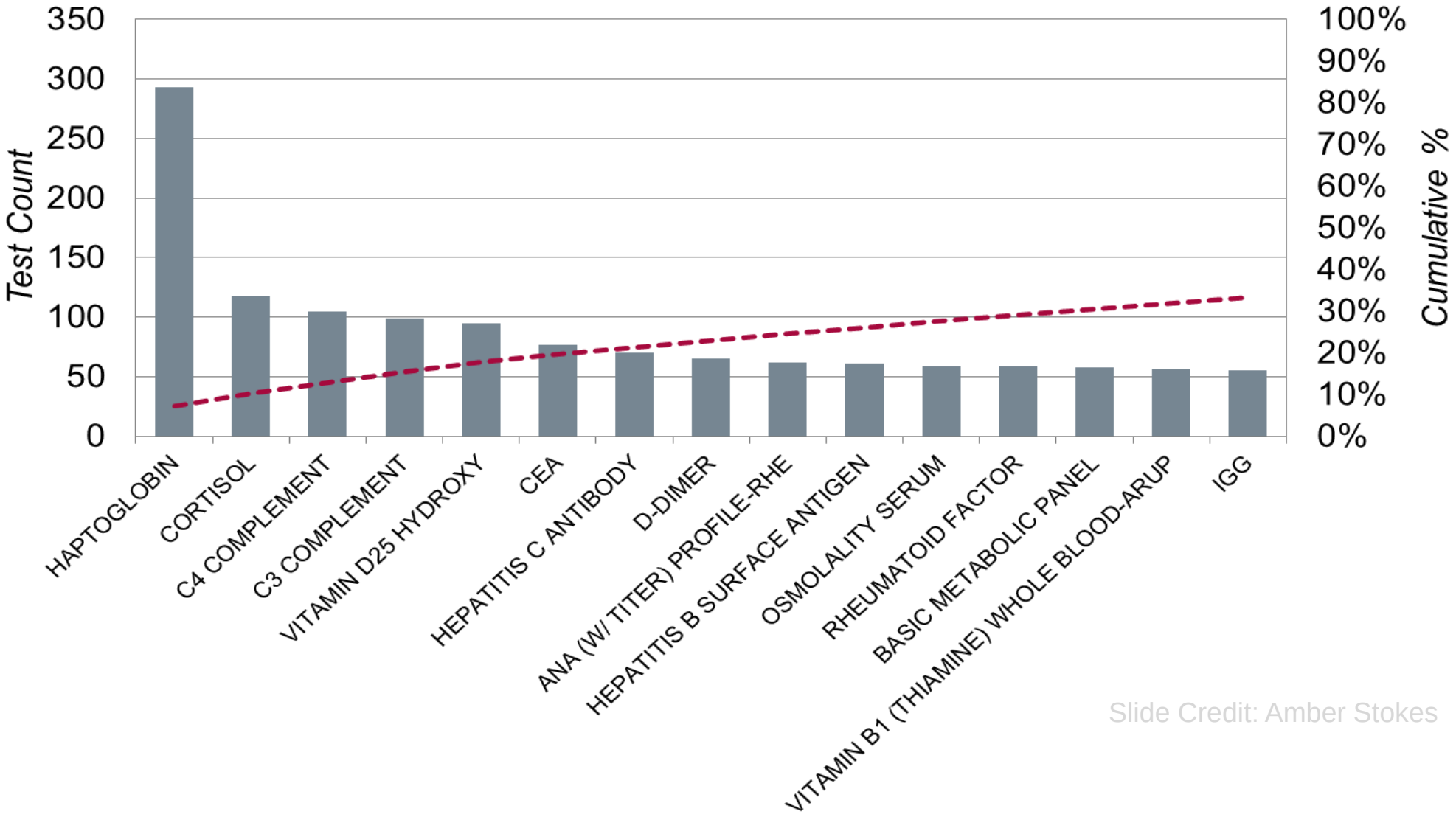
Education



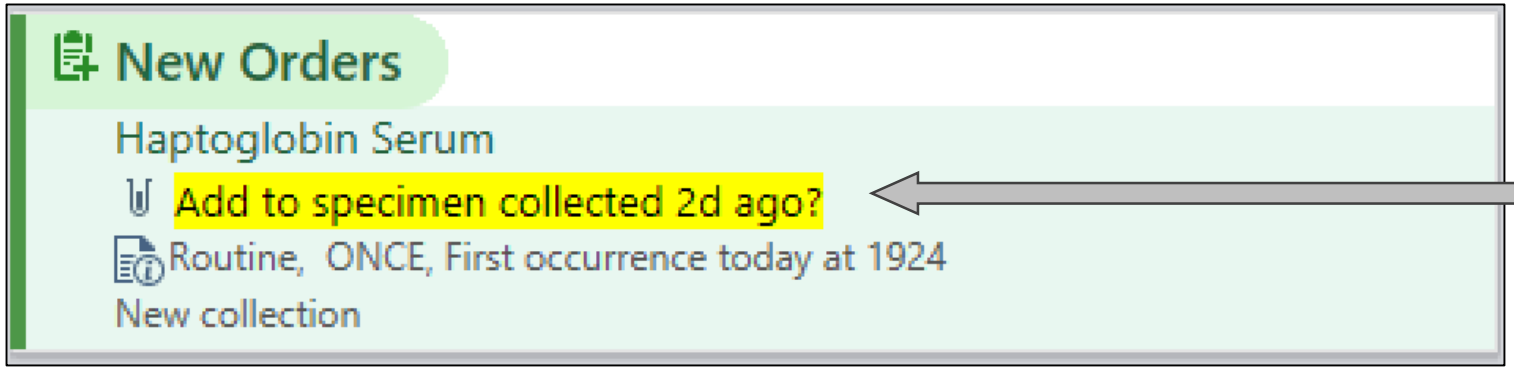
Phlebotomy Overuse

80/20

Top 15 Add-On Failures: UCH Inpatient January – August 2017



Slide Credit: Amber Stokes



University (Anschutz) Hospital

Poudre Valley Hospital

Memorial Hospital

New Orders

Haptoglobin Serum

Routine, ONCE, First occurrence today at 1924

New collection

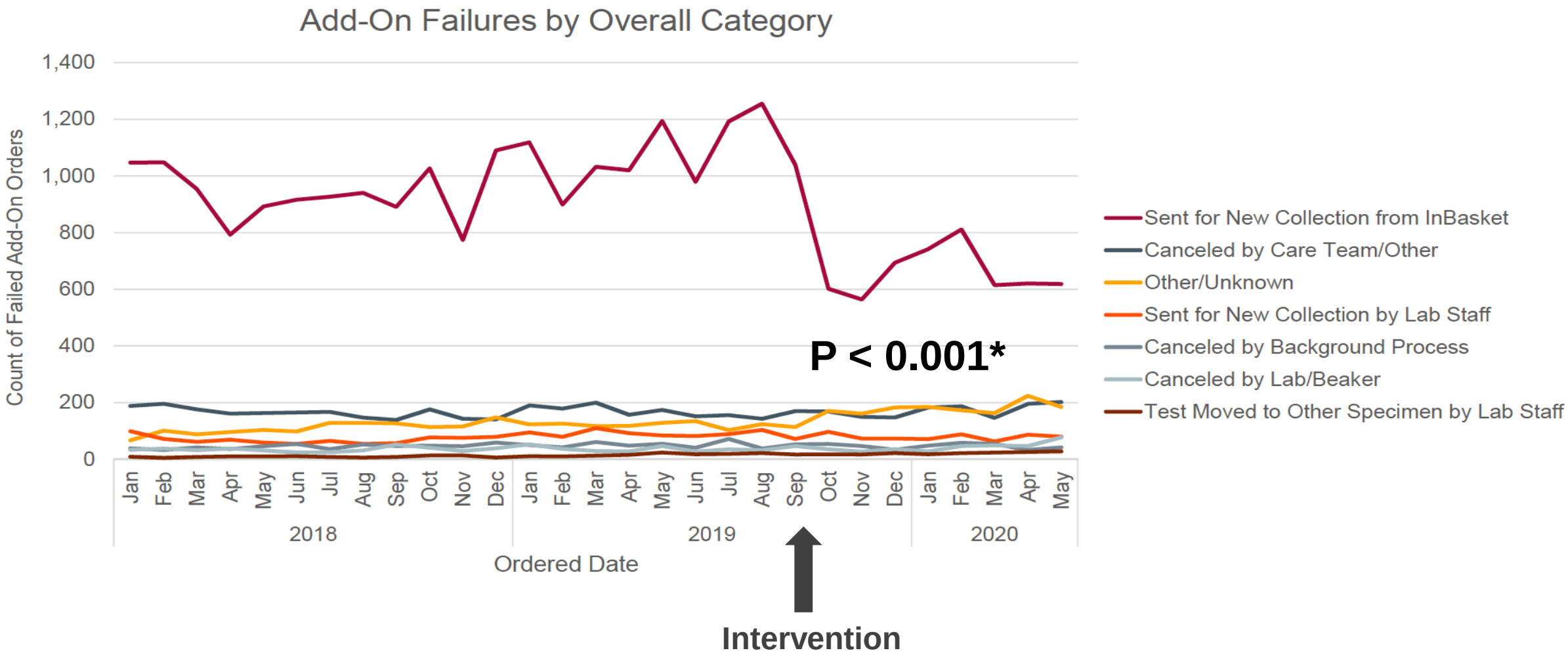
STOP

University (Anschutz) Hospital

Poudre Valley Hospital

Memorial Hospital

Add-On Failures Over Time



Slide Credit: Amber Stoke

What if I could draw blood without poking the patient?

Positive Deviance

Brainwriting Pre - Mortem

The Program has been running for 1 year.

It has failed miserably.

What went wrong?

Breakout 6: Interventions

Brainstorm THREE possible interventions.

- Based on your D-M-A work
- Consider who does this THE BEST
- One must ”defy gravity”
- What could go wrong

10 minutes

Part 4: Sustaining Improvements

Institute for Healthcare Quality,
Safety and Efficiency
SCHOOL OF MEDICINE
UNIVERSITY OF COLORADO **ANSCHUTZ MEDICAL CAMPUS**

Define, Measure, Analyze, Improve, Control

Understand your problem

Fix it

Sustain


BREAK-TIME

You've designed the PERFECT Intervention.

What next?

Make Others Jump.

Next Steps

Second session April 28th

Biweekly coaching meetings

Set a timeline for success (6 months)

Deliverables: Presentation to stakeholders

- *September 12th presentation*

Improvement is continuous...

Action Plan

1. Communication plan (set biweekly meetings)

2. Building your team (who else needs to be engaged)

3. Where are you in DMAIC (look at project charter together)

4. Create agenda for first meeting

5. Discuss data collection plan

Session Evaluation


Anschutz
IHQSE