

These materials are developed and created by IHQSE faculty and are the property of the Institute for Healthcare Quality, Safety and Efficiency (IHQSE).

Reproduction or use of these materials for anything other than personal education is strictly prohibited.

Please contact IHQSE@cuanschutz.edu for questions or requests for materials.

Quality Improvement & Change Management



Disclosures

NONE

Materials are developed and created by IHQSE faculty and are the property of the Institute for Healthcare Quality, Safety and Efficiency (IHQSE).

Reproduction or use of these materials for anything other than personal education is strictly prohibited.

Agenda

- 1) **Overview of QI Methodologies**
- 2) **Basics steps of ANY QI project**
- 3) **Change Management**
- 4) **Model for Change**

These materials are developed and created by IHQSE faculty and are the property of the Institute for Healthcare Quality, Safety and Efficiency (IHQSE).

Reproduction or use of these materials for anything other than personal education is strictly prohibited.





Session	2025-2026 Dates & Times* (All sessions are 1-4 p.m. MT)
Quality Improvement & Change Management	August 14, 2025 August 27, 2025 January 8, 2026 January 14, 2026
Applied Patient Safety	August 21, 2025 January 22, 2026
Acquiring Data to Drive Change	September 11, 2025 February 5, 2026
Designing for Change	September 25, 2025 February 12, 2026
Spreading Change Locally and Nationally	October 1, 2025 February 26, 2026
Coaching and Managing Quality Improvement	October 9, 2025 March 5, 2026

the property of the QSE).

ation is strictly prohibited.

***ALL sessions held virtually on Zoom**

Reprod





These materials are developed and created by IHQSE faculty and are the property of the Institute for Healthcare Quality, Safety and Efficiency (IHQSE).

Reproduction or use of these materials for anything other than personal education is strictly prohibited.

Please contact IHQSE@cuanschutz.edu for questions or requests for materials.

Quality Improvement



QI = Quality Improvement

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

These materials are developed and created by IHQSE faculty and are the property of the Institute for Healthcare Quality, Safety and Efficiency (IHQSE).

Reproduction or use of these materials for anything other than personal education is strictly prohibited.



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.

These materials are developed and created by IHQSE faculty and are the property of the Institute for Healthcare Quality, Safety and Efficiency (IHQSE).

Reproduction or use of these materials for anything other than personal education is strictly prohibited.



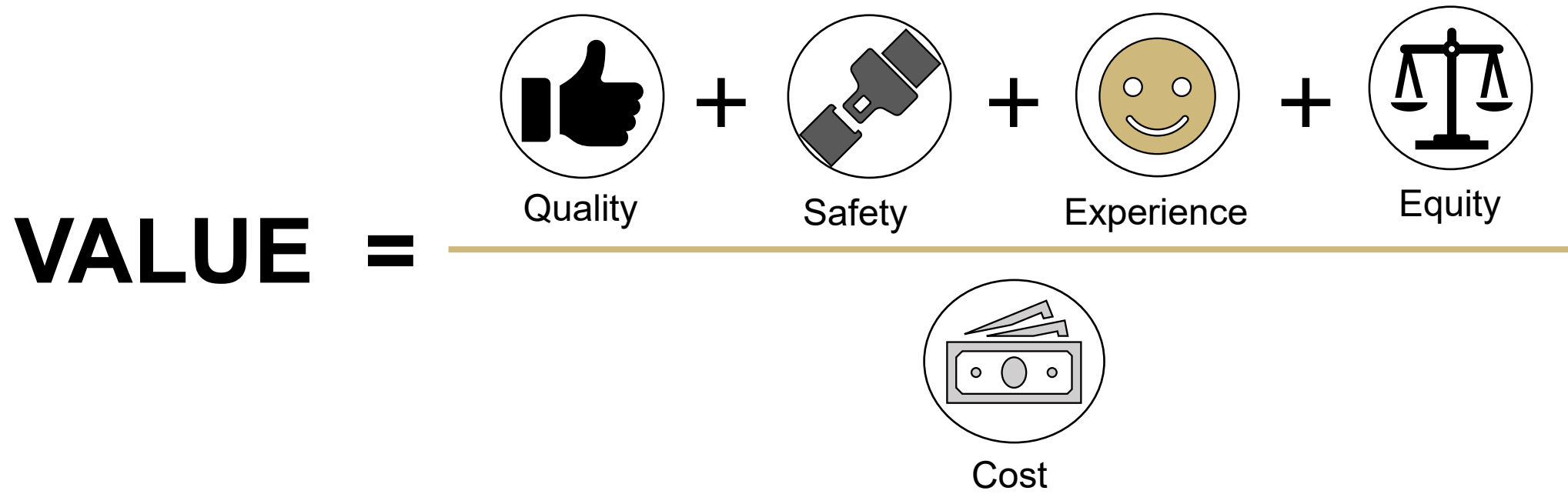
Institute for Healthcare Quality, Safety and Efficiency (IHQSE).

Reproduction or use of these materials for anything other than personal education is strictly prohibited.

University of Colorado **Anschutz Medical Campus** | **IHQSE**

Please contact IHQSE@cuanschutz.edu for questions or requests for materials.

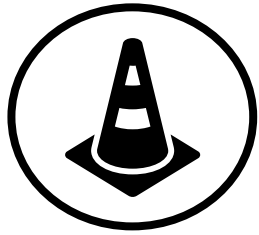




These materials are developed and created by IHQSE faculty and are the property of the Institute for Healthcare Quality, Safety and Efficiency (IHQSE).

Reproduction or use of these materials for anything other than personal education is strictly prohibited.

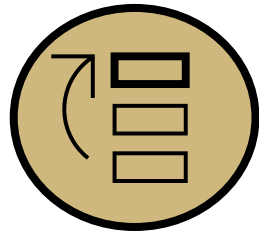




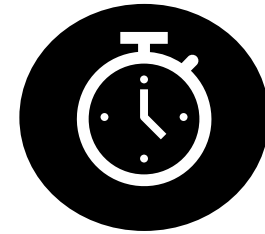
Safety Concerns



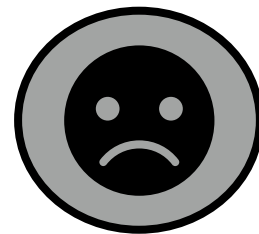
Waste



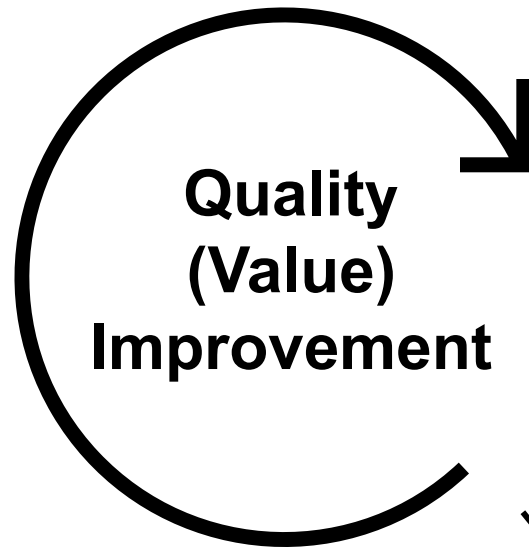
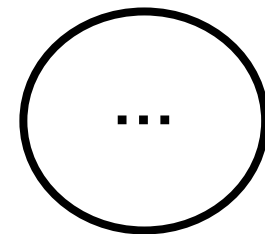
Low Ranking



Inefficiency



Poor Experience



These materials are developed and created by IHQSE faculty and are the property of the Institute for Healthcare Quality, Safety and Efficiency (IHQSE).

Reproduction or use of these materials for anything other than personal education is strictly prohibited.



Models of Quality Improvement

PDSA/Model for Improvement

Six sigma

Lean

Developed and created by IHQSE faculty and are the property of the
Healthcare Quality, Safety and Efficiency (IHQSE).

Reproduction or use of these materials for anything other than personal education is strictly prohibited.

University of Colorado **Anschutz Medical Campus** | **IHQSE**

Please contact IHQSE@cuanschutz.edu for questions or requests for materials.





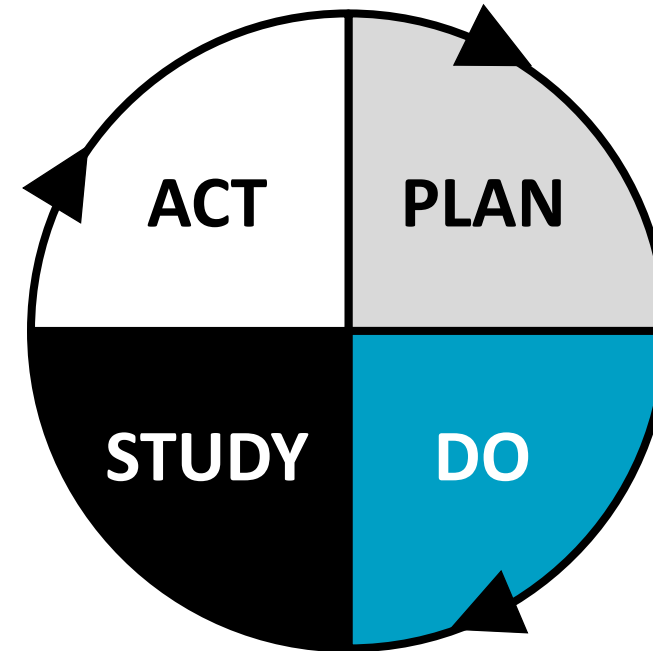
**Institute for
Healthcare
Improvement**

Model for Improvement

What are we trying to accomplish?

How will we know that change is an improvement?

What changes can we make that will result in an improvement?



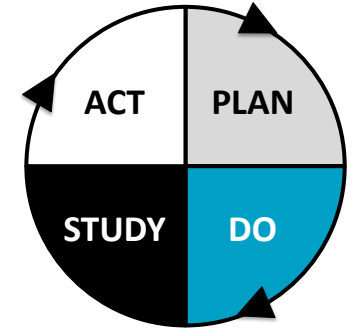
These materials are developed and created by IHQSE faculty and are the property of the Institute for Healthcare Quality, Safety and Efficiency (IHQSE).

Reproduction or use of these materials for anything other than personal education is strictly prohibited.

University of Colorado **Anschutz Medical Campus** | **IHQSE**

Please contact IHQSE@cuanschutz.edu for questions or requests for materials.





Plan: identify your problem, analyze contributing factors, and determine an intervention

Do: implement the intervention

Study: evaluate the results of the intervention

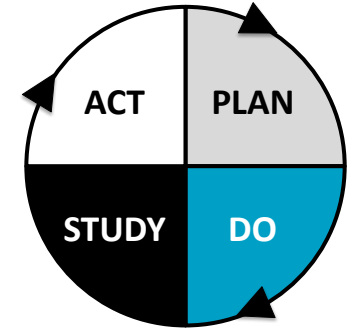
Act: determine what to do next to sustain or improve

These materials are developed and created by IHQSE faculty and are the property of the Institute for Healthcare Quality, Safety and Efficiency (IHQSE).

Reproduction or use of these materials for anything other than personal education is strictly prohibited.



Institute for
Healthcare
Improvement



Plan: identify your problem, analyze contributing factors, and determine an intervention

**UNDERSTAND YOUR
PROBLEM FIRST !!!**

INSTITUTE FOR HEALTHCARE QUALITY, SAFETY AND EFFICIENCY (IHQSE).

Reproduction or use of these materials for anything other than personal education is strictly prohibited.

University of Colorado | Anschutz Medical Campus | IHQSE

Please contact IHQSE@cuanschutz.edu for questions or requests for materials.



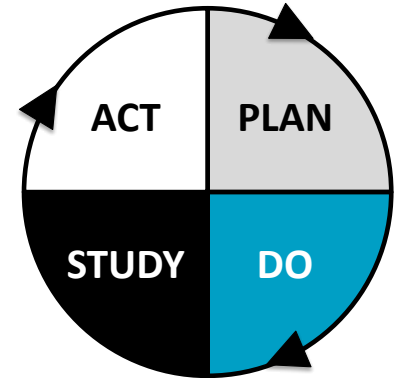
6σ

Six Sigma

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

DMAIC (*də-MAY-ick*)

Define, Measure, Analyze, Improve, Control



These materials are developed and created by IHQSE faculty and are the property of the Institute for Healthcare Quality, Safety and Efficiency (IHQSE).

Reproduction or use of these materials for anything other than personal education is strictly prohibited.

University of Colorado **Anschutz Medical Campus** | **IHQSE**

Please contact IHQSE@cuanschutz.edu for questions or requests for materials.



6σ

Six Sigma

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

**UNDERSTAND YOUR
PROBLEM FIRST !!!**

These materials are developed and created by IHQSE faculty and are the property of the Institute for Healthcare Quality, Safety and Efficiency (IHQSE).

Reproduction or use of these materials for anything other than personal education is strictly prohibited.

University of Colorado **Anschutz Medical Campus** | **IHQSE**

Please contact IHQSE@cuanschutz.edu for questions or requests for materials.



Lean

Maximize value while *through* minimizing waste.

改善

'improvement' or 'change for better' (from 改 kai - change, revision; and 善 zen - virtue, goodness) with the inherent meaning of either 'continuous' or 'philosophy'

Kaizen

These materials are developed and created by IHQSE faculty and are the property of the Institute for Healthcare Quality, Safety and Efficiency (IHQSE).

Reproduction or use of these materials for anything other than personal education is strictly prohibited.

University of Colorado Anschutz Medical Campus | IHQSE

Please contact IHQSE@cuanschutz.edu for questions or requests for materials.





Eight Forms of Waste in Healthcare



Underutilization



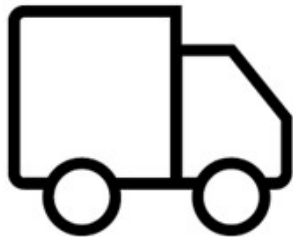
Inventory



Motion



Defects



Transportation



Waiting



Extra Processing



Overproduction

Institute for Healthcare Quality, Safety and Efficiency (IHQSE).

Reproduction or use of these materials for anything other than personal education is strictly prohibited.



6σ

Six Sigma

+

改善

Lean

=



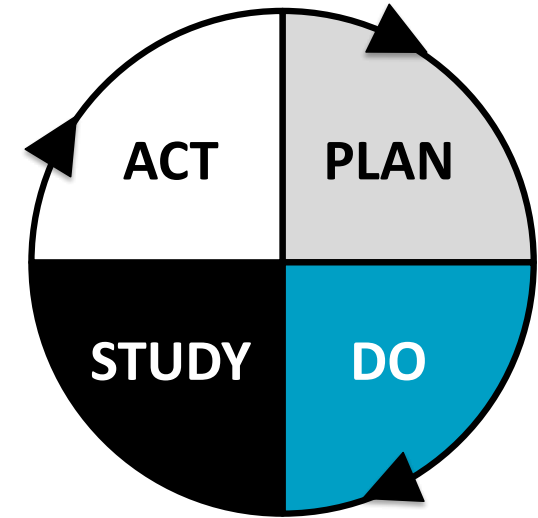
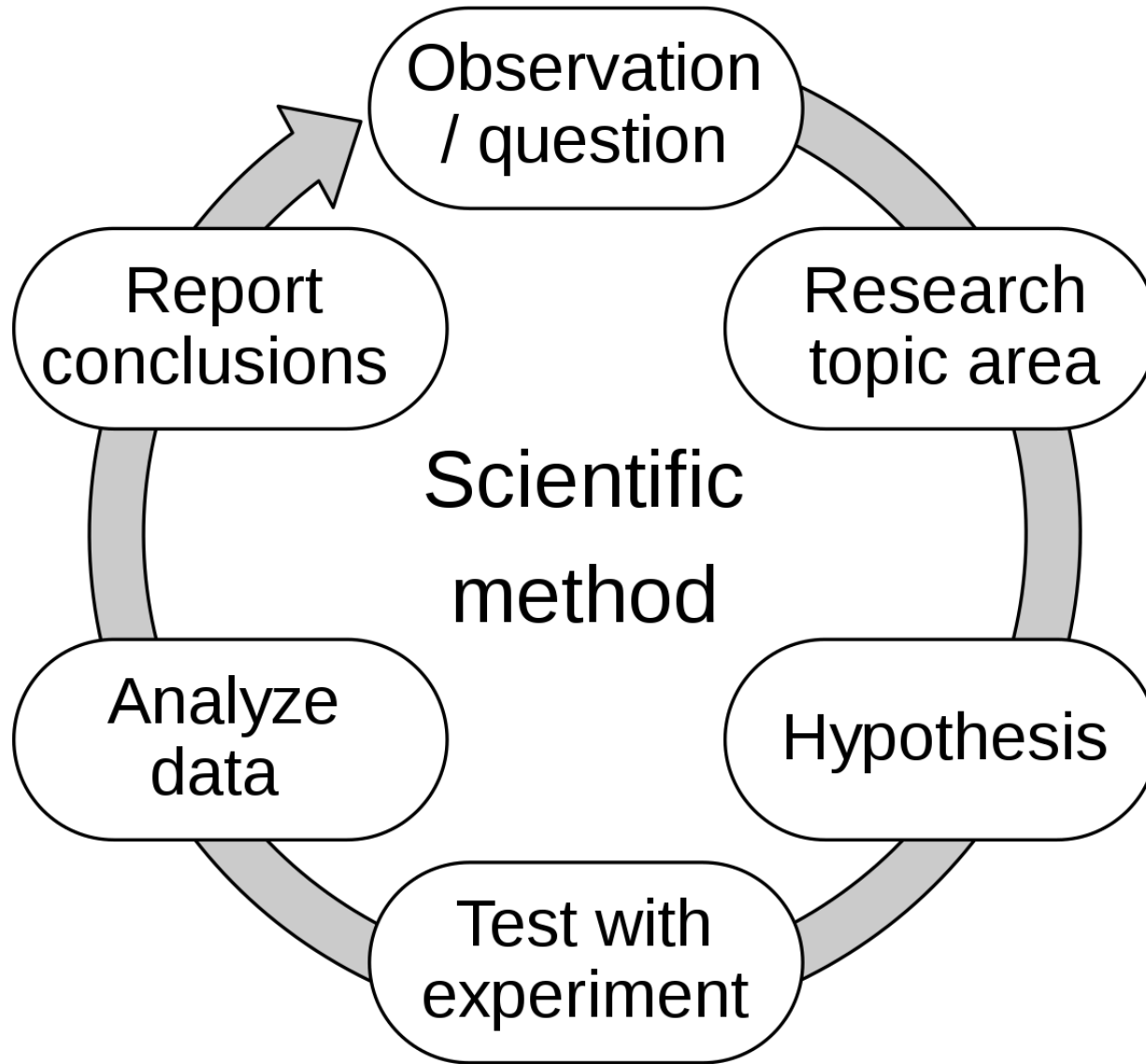
These materials are developed and created by IHQSE faculty and are the property of the Institute for Healthcare Quality, Safety and Efficiency (IHQSE).

Reproduction or use of these materials for anything other than personal education is strictly prohibited.

University of Colorado **Anschutz Medical Campus** | **IHQSE**

Please contact IHQSE@cuanschutz.edu for questions or requests for materials.





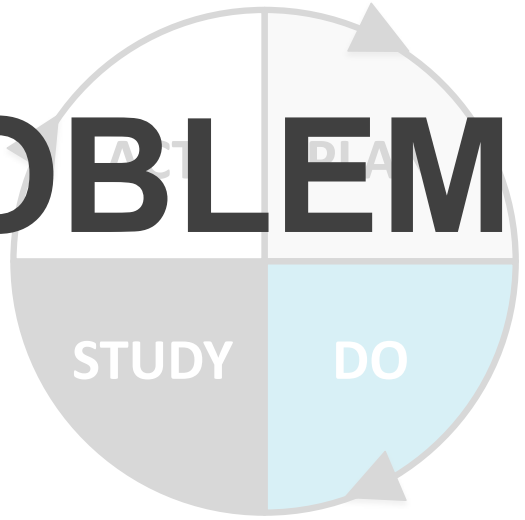
These materials are

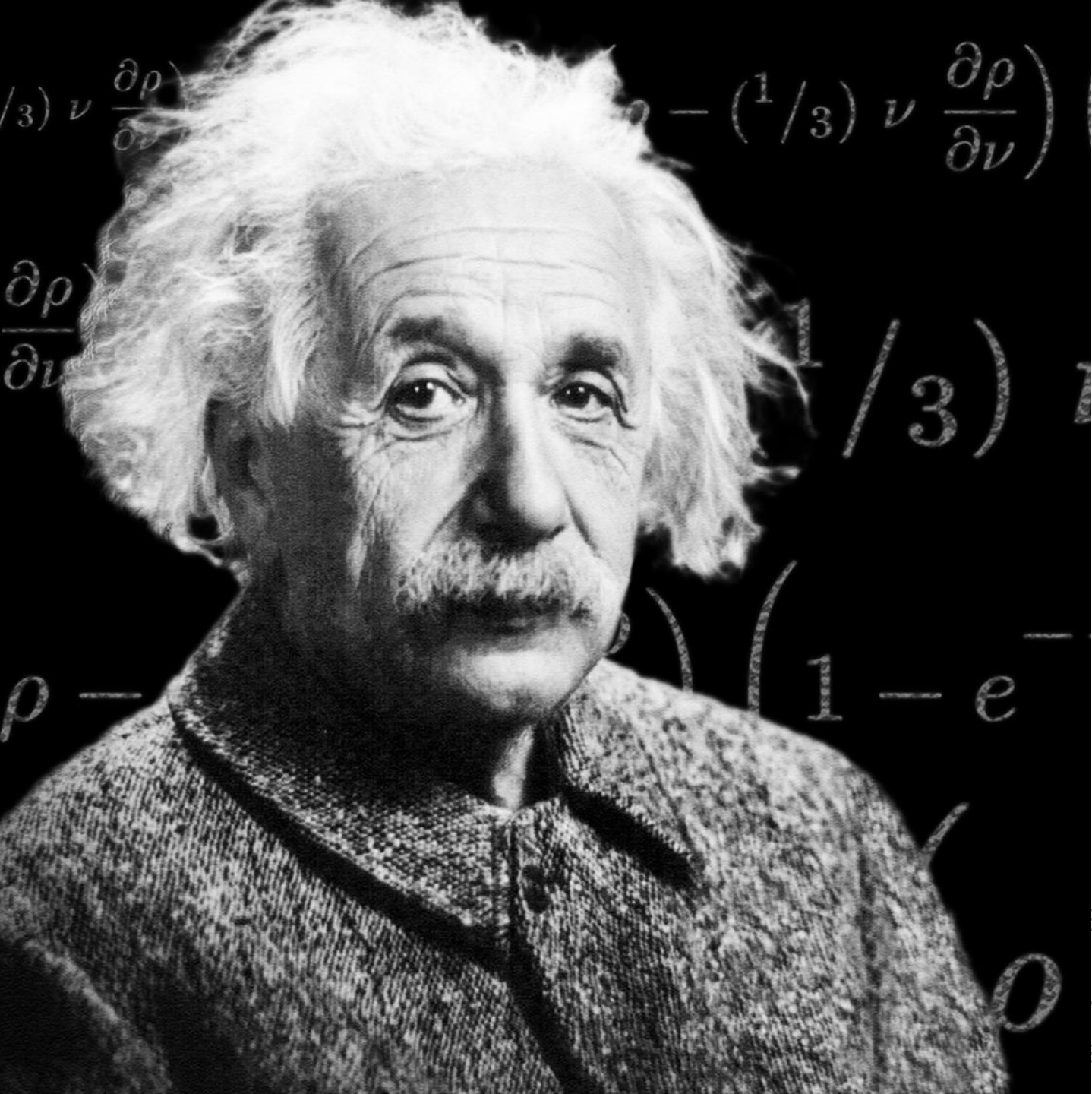
property of the

Reproduction or use of these materials for anything other than personal education is strictly prohibited.



UNDERSTAND YOUR PROBLEM FIRST !!!





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

E faculty and are the property of the
and Efficiency (IHQSE).

an personal education is strictly prohibited.
stions or requests for materials.



“Every system is perfectly designed to get the results it gets”

Paul Batalden, MD

IHI Senior Fellow

Professor Emeritus of Pediatrics, Community and Family Medicine and The Dartmouth Institute for Health Policy and Clinical Practice

These materials are developed and created by IHQSE faculty and are the property of the Institute for Healthcare Quality, Safety and Efficiency (IHQSE).

Reproduction or use of these materials for anything other than personal education is strictly prohibited.

University of Colorado | Anschutz Medical Campus | IHQSE

Please contact IHQSE@cuanschutz.edu for questions or requests for materials.

Source: <https://www.ihq.org/insights/magic-every-system-perfectly-designed>.





Sense a problem



No improvement

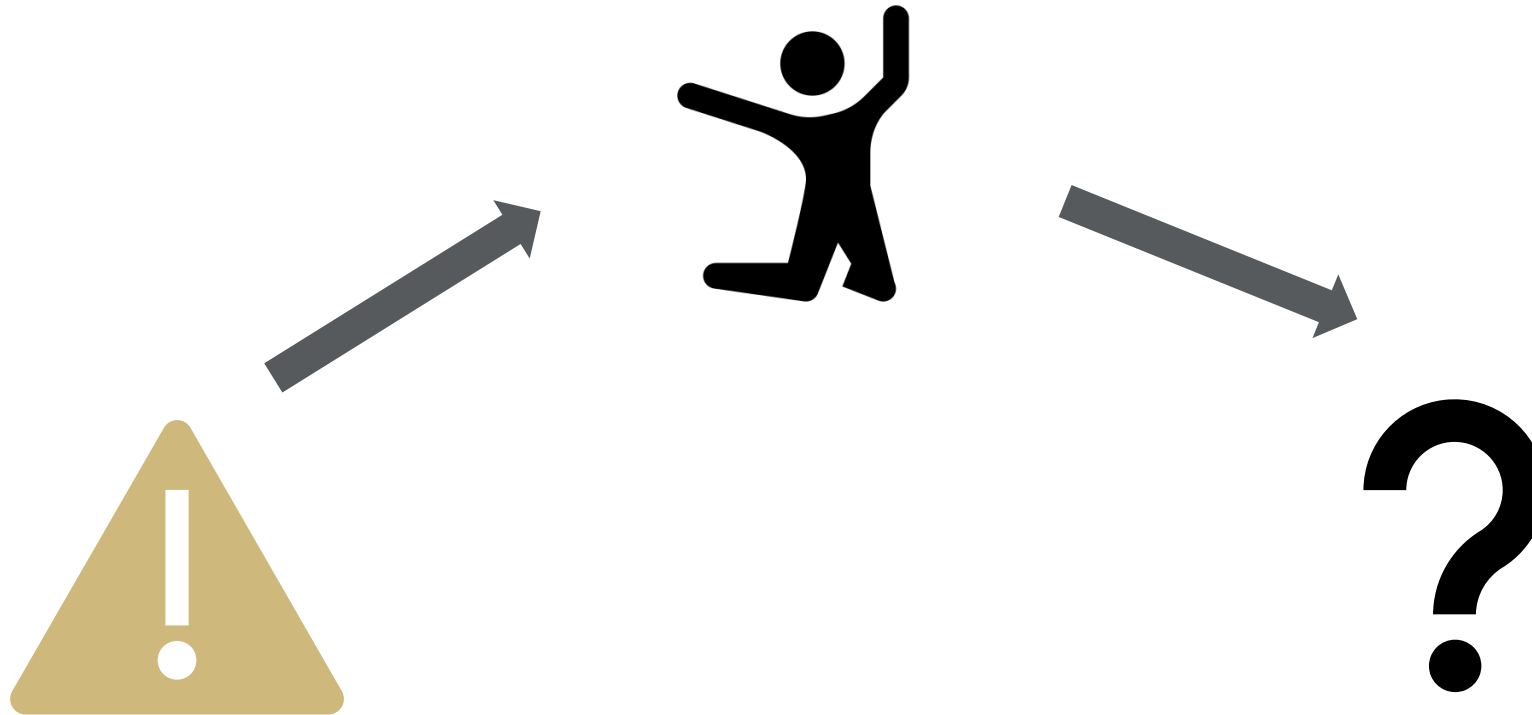
These materials are developed and created by IHQSE faculty and are the property of the Institute for Healthcare Quality, Safety and Efficiency (IHQSE).

Reproduction or use of these materials for anything other than personal education is strictly prohibited.

University of Colorado **Anschutz Medical Campus** | **IHQSE**

Please contact IHQSE@cuanschutz.edu for questions or requests for materials.





Sense a problem

These materials are developed and created by IHQSE faculty and are the property of the Institute for Healthcare Quality, Safety and Efficiency (IHQSE).

Reproduction or use of these materials for anything other than personal education is strictly prohibited.

University of Colorado **Anschutz Medical Campus** | **IHQSE**

Please contact IHQSE@cuanschutz.edu for questions or requests for materials.





Agency for Healthcare Research and Quality

Order and Order Set Search

DELIRIUM

Browse Preference List Facility List

Order Sets & Panels

Search order sets by user (Alt+Shift+1)

Name	User Version Name	Type
UCHS IP Delirium Assessment and Management		Order Set

...ed and created by IHQSE faculty and are the property of the healthcare Quality, Safety and Efficiency (IHQSE).

Reproduction or use of these materials for anything other than personal education is strictly prohibited.



Outcomes Following Implementation of a Hospital-Wide, Multicomponent Delirium Care Pathway

TABLE 3. **Unadjusted and Adjusted Clinical Outcomes for All Patients Combined and Medicine Unit Patients**

Clinical outcome	Unadjusted model result (95% CI)	P value	Adjusted model result (95% CI)	P value
All patients				
Length of stay proportional change ^a	1.00 (0.97-1.05)	.65	0.98 (0.92-0.99)	.0087
Total direct cost proportional change ^a	0.98 (0.96-1.00)	.17	0.99 (0.97-1.01)	.12
30-Day hospital readmission odds ratio	0.93 (0.86-1.00)	.039	0.86 (0.80-0.93)	.0002
Restraint rate ratio	0.83 (0.76-0.91)	<.0001	0.91 (0.71-1.16)	.45
Safety attendant rate ratio	0.51 (0.48-0.54)	<.0001	0.63 (0.41-0.97)	.034

These materials are developed and created by IHQSE faculty and are the property of the Institute for Healthcare Quality, Safety and Efficiency (IHQSE).

Reproduction or use of these materials for anything other than personal education is strictly prohibited.





Sense a problem



Sustained improvement

These materials are developed and created by IHQSE faculty and are the property of the Institute for Healthcare Quality, Safety and Efficiency (IHQSE).

Reproduction or use of these materials for anything other than personal education is strictly prohibited.

University of Colorado **Anschutz Medical Campus** | **IHQSE**

Please contact IHQSE@cuanschutz.edu for questions or requests for materials.



Steps for a Successful QI Project

1. Identify that you have a problem.
2. Understand the problem.
3. Define success.
4. Develop and Implement solutions: track and observe.
5. Build upon success and sustain the process.

These materials are developed and created by IHQSE faculty and are the property of the Institute for Healthcare Quality, Safety and Efficiency (IHQSE).

Reproduction or use of these materials for anything other than personal education is strictly prohibited.

University of Colorado **Anschutz Medical Campus** | **IHQSE**

Please contact IHQSE@cuanschutz.edu for questions or requests for materials.



Steps for a Successful QI Project

1. Identify that you have a problem.
 2. Understand the problem.
 3. Define success.
 4. Develop and Implement solutions: track and observe.
 5. Build upon success and sustain the process.
- Understand your problem FIRST!!!

These materials are developed and created by IHQSE faculty and are the property of the Institute for Healthcare Quality, Safety and Efficiency (IHQSE).

Reproduction or use of these materials for anything other than personal education is strictly prohibited.



Steps for a Successful QI Project

1. Identify that you have a problem.

2. Understand the problem.

3. Define success.

4. Develop and Implement solutions: track and observe.

5. Build upon success and sustain the process.



Understand your
problem FIRST!!!



Fix your
problem



These materials are developed and created by IHQSE faculty and are the property of the Institute for Healthcare Quality, Safety and Efficiency (IHQSE).

Reproduction or use of these materials for anything other than personal education is strictly prohibited.



Steps for a Successful QI Project

1. Identify that you have a problem.
 2. Understand the problem.
 3. Define success.
 4. Develop and Implement solutions: track and observe.
 5. Build upon success and sustain the process.
- Understand your problem FIRST!!!
- Fix your problem
- Embed into the culture
-

These materials are developed and created by IHQSE faculty and are the property of the Institute for Healthcare Quality, Safety and Efficiency (IHQSE).

Reproduction or use of these materials for anything other than personal education is strictly prohibited.



Steps for a Successful QI Project

- 1. Identify that you have a problem.**
2. Understand the problem.
3. Define success.
4. Develop and Implement solutions: track and observe.
5. Build upon success and sustain the process.

These materials are developed and created by IHQSE faculty and are the property of the Institute for Healthcare Quality, Safety and Efficiency (IHQSE).

Reproduction or use of these materials for anything other than personal education is strictly prohibited.

University of Colorado **Anschutz Medical Campus** | **IHQSE**

Please contact IHQSE@cuanschutz.edu for questions or requests for materials.





George: 69-Year-old man presents with acute onset chest pain.



69-Year-old man presents with acute onset chest pain.

HD 0: presents with STEMI

Taken emergently to cath lab – **stent placed to LAD**

HD 1: Echo reveals **reduced ejection fraction of 35%**

HD 2: started on **diuretics**

HD 4: doing well, preparing for hospital discharge

HD 5: discharged home on **5 new medications**

Instructed to “**follow-up**” with Cardiology

2 weeks later: found down at home suffering **cardiac arrest.**

On admission: critical hypokalemia to **1.8**

Prolonged hospitalization but eventually discharged to SNF for rehab therapy.

1. Identify that you have a problem.



Who is affected? By how much?

Are there guidelines to refer to?

These materials are developed and created by IHQSE faculty and are the property of the Institute for Healthcare Quality, Safety and Efficiency (IHQSE).

Reproduction or use of these materials for anything other than personal education is strictly prohibited.

University of Colorado **Anschutz Medical Campus** | **IHQSE**

Please contact IHQSE@cuanschutz.edu for questions or requests for materials.



1. Identify that you have a problem.

Frequency: Count, Percent, Frequency

Vaccination rates

CAUTIs

Wrong-site surgeries

Central Tendency: Mean, Median, and Mode

Mean and median length-of-stay

Dispersion/Variation: Range, Variance, Std. Deviation

a1c measures in a clinic population, amount of blood loss after surgery

Position: Percentile Ranks, Quartile Ranks

vizient.



Reproduction or use of these materials for anything other than personal education is prohibited.



1. Identify that you have a problem.

Frequency: Count, Percent, Frequency

Vaccination rates

CAUTIs

Wrong-site surgeries

Central Tendency: Mean, Median, and Mode

Mean and median length-of-stay

AKA Baseline data!

Dispersion/Variation: Range, Variance, Std. Deviation

a1c measures in a clinic population, amount of blood loss after surgery

Position: Percentile Ranks, Quartile Ranks

vizient.



Institute for Healthcare Quality, Safety and Efficiency (IHQSE)

Reproduction or use of these materials for anything other than personal education is prohibited.

University of Colorado Anschutz Medical Campus | IHQSE

Please contact IHQSE@cuanschutz.edu for questions or requests for materials.



1. Identify that you have a problem.

Consider the heterogeneity of your population....
Are some groups affected differently than others?

Patients with HbA1c > 8% are more likely to experience complications and comorbidities. At X clinic...

35% of ALL patients with diabetes are not under glycemic control as defined by an A1c < 8%.

40% of Hispanic and Latino patients with diabetes have not achieved glycemic control.

These materials are developed and created by IHQSE faculty and are the property of the Institute for Healthcare Quality, Safety and Efficiency (IHQSE).

Reproduction or use of these materials for anything other than personal education is strictly prohibited.

University of Colorado | **Anschutz Medical Campus** | **IHQSE**
Please contact IHQSE@cuanschutz.edu for questions or requests for materials.





The American College of Cardiology (ACC) advocates patients with AMI schedule an initial outpatient cardiac rehabilitation appointment within 7 days of hospital discharge.

- In the past 4 months, 1/38 (2%) patients with MI were scheduled and seen within one week of discharge.
- The average duration of time from discharge to first appointment is 18.9 days.

Batten A, Jaeger C, Griffen D, Harwood P, Baur K. See You in 7: improving acute myocardial infarction follow-up care. *BMJ Open Qual.* 2018 Jun;7(2):e000296.

King M. Hospital-to-Home "See You in 7" Tools Updated for Cardiac Rehab Awareness Week. American College of Cardiology. 2013 <http://blog.acc.post/h2h-seeyou-in-7-tools-updated-for-cardiac-rehab-awareness-week/>



Steps for a Successful QI Project

1. Identify that you have a problem.
- 2. Understand the problem.**
3. Define success.
4. Develop and Implement solutions: track and observe.
5. Build upon success and sustain the process.

These materials are developed and created by IHQSE faculty and are the property of the Institute for Healthcare Quality, Safety and Efficiency (IHQSE).

Reproduction or use of these materials for anything other than personal education is strictly prohibited.

Please contact IHQSE@cuanschutz.edu for questions or requests for materials.



2. Understand the problem



“Every system is perfectly designed to get the results it gets”

Paul Batalden, MD

IHI Senior Fellow

Professor Emeritus of Pediatrics, Community and Family Medicine and The Dartmouth Institute for Health Policy and Clinical Practice

These materials are developed and created by IHQSE faculty and are the property of the Institute for Healthcare Quality, Safety and Efficiency (IHQSE).

Reproduction or use of these materials for anything other than personal education is strictly prohibited.

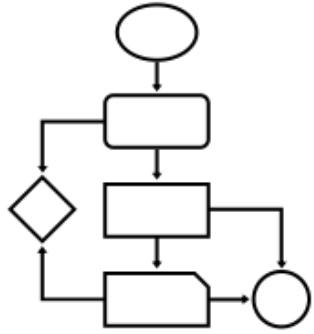
University of Colorado Anschutz Medical Campus | IHQSE

Please contact IHQSE@cuanschutz.edu for questions or requests for materials.

Source: <https://www.ihqse.org/insights/magic-every-system-perfectly-designed>.



2. Understand the problem



Process Map

現場

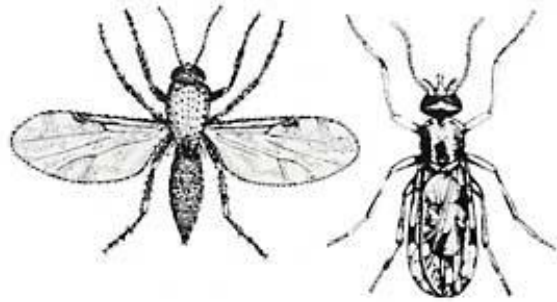
Gemba (Walk)



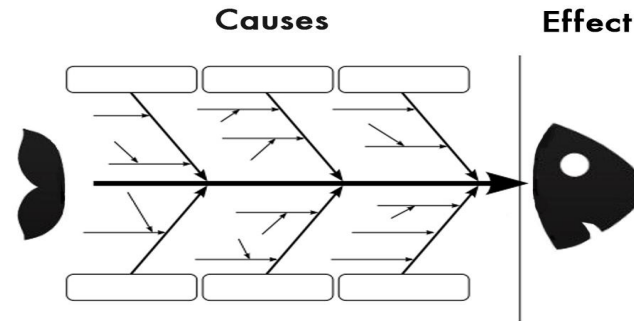
Voice of the patient /
customer

Epic

EHR



5-Why's



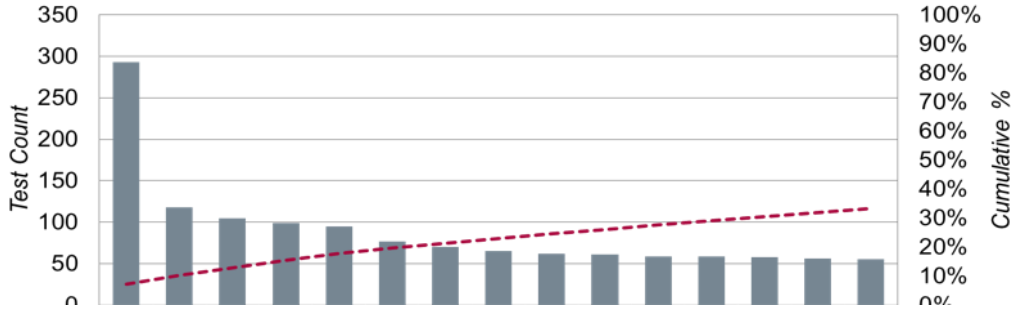
Root Cause Analysis

These materials are developed and created by IHQSE faculty and are the property of the Institute for Healthcare Quality, Safety and Efficiency (IHQSE).

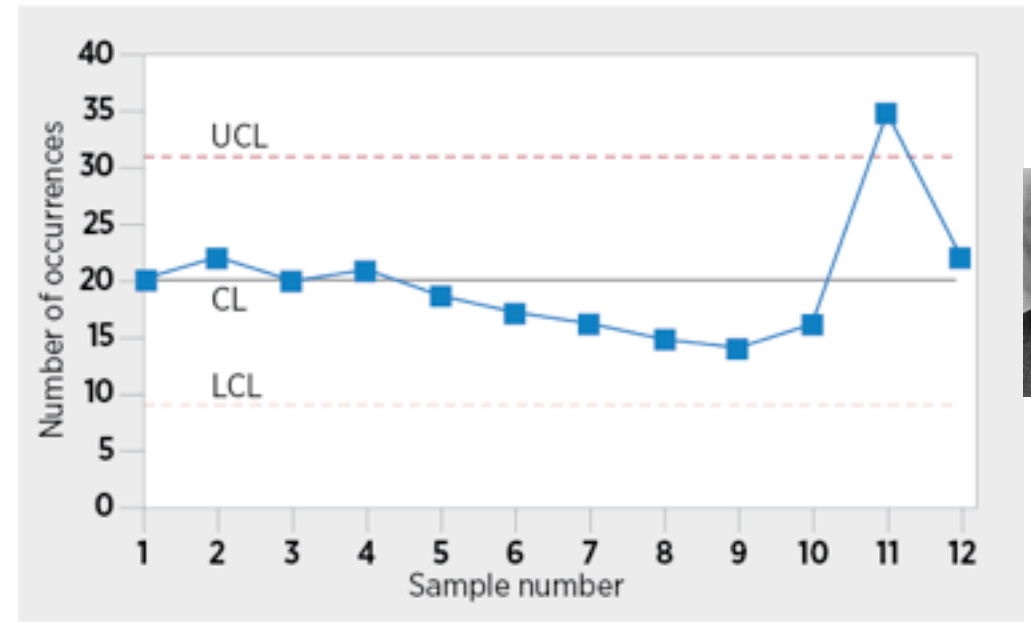
Reproduction or use of these materials for anything other than personal education is strictly prohibited.



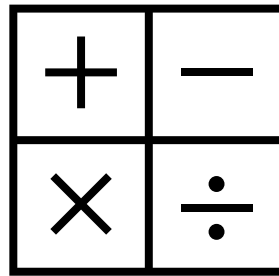
2. Understand the problem



Pareto Chart



SPC Charts



Descriptive Statistics

These materials are developed by the University of Colorado Health Science Center and are the property of the Institute for Healthcare Quality, Safety and Efficiency (IHQSE).

Reproduction or use of these materials for anything other than personal education is strictly prohibited.



2. Understand the problem

Gemba 現場 "the actual place"



These materials are developed and created by IHQSE faculty and are the property of the Institute for Healthcare Quality, Safety and Efficiency (IHQSE).

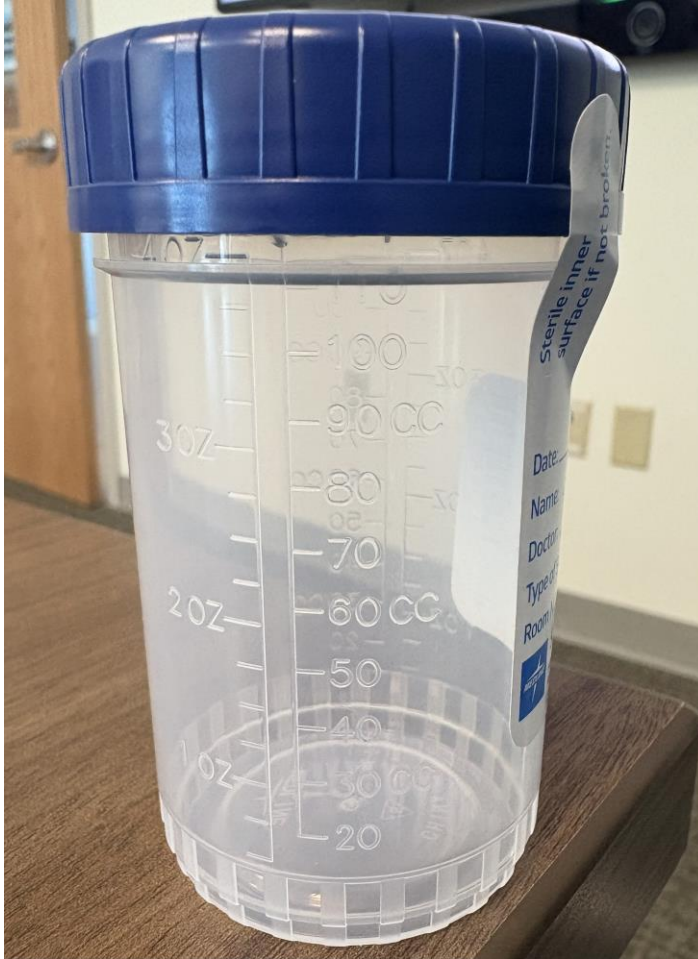
Reproduction or use of these materials for anything other than personal education is strictly prohibited.

University of Colorado | Anschutz Medical Campus | IHQSE

Please contact IHQSE@cuanschutz.edu for questions or requests for materials.



2. Understand the problem



For TB sputum collection: collect a minimum of **5mLs**

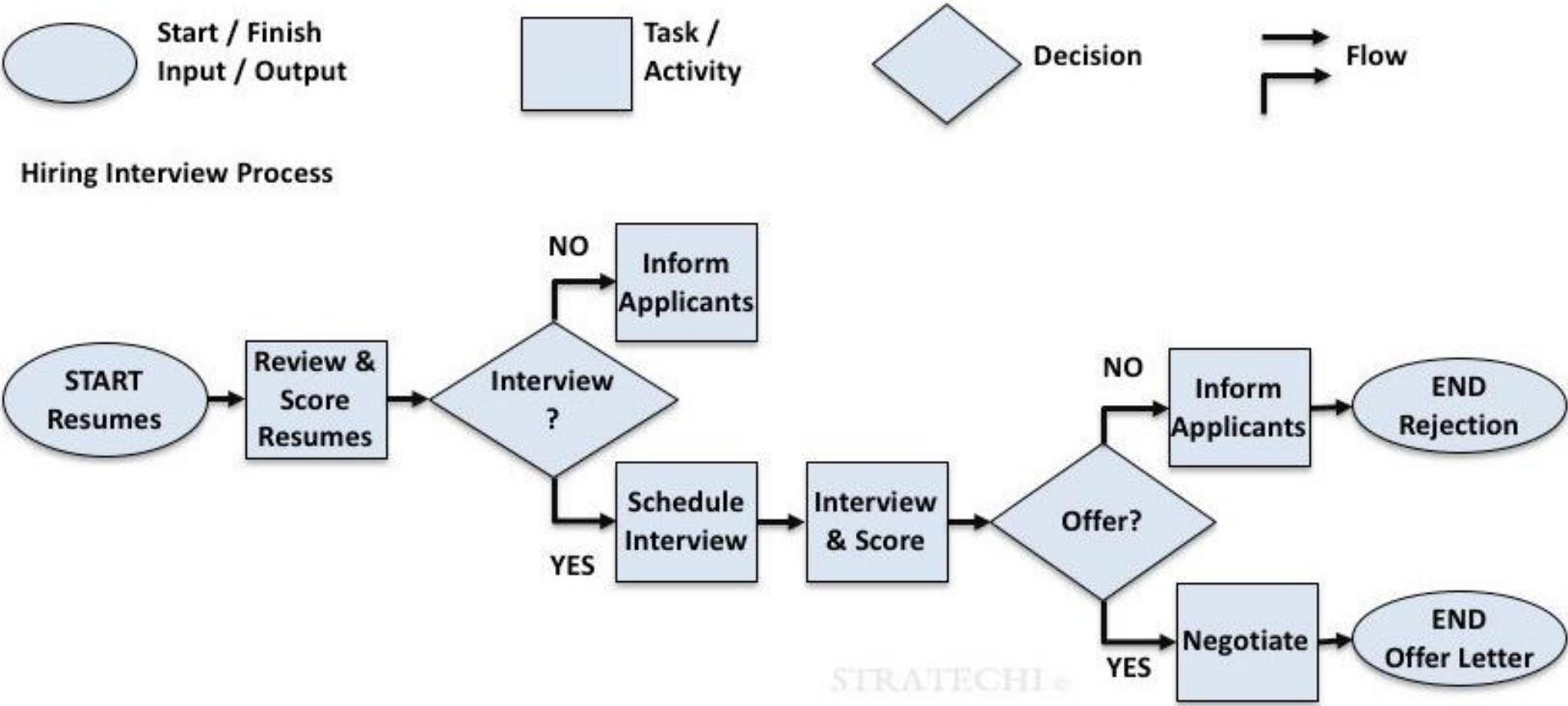
These materials are developed and created by IHQSE faculty and are the property of the Institute for Healthcare Quality, Safety and Efficiency (IHQSE).

Reproduction or use of these materials for anything other than personal education is strictly prohibited.



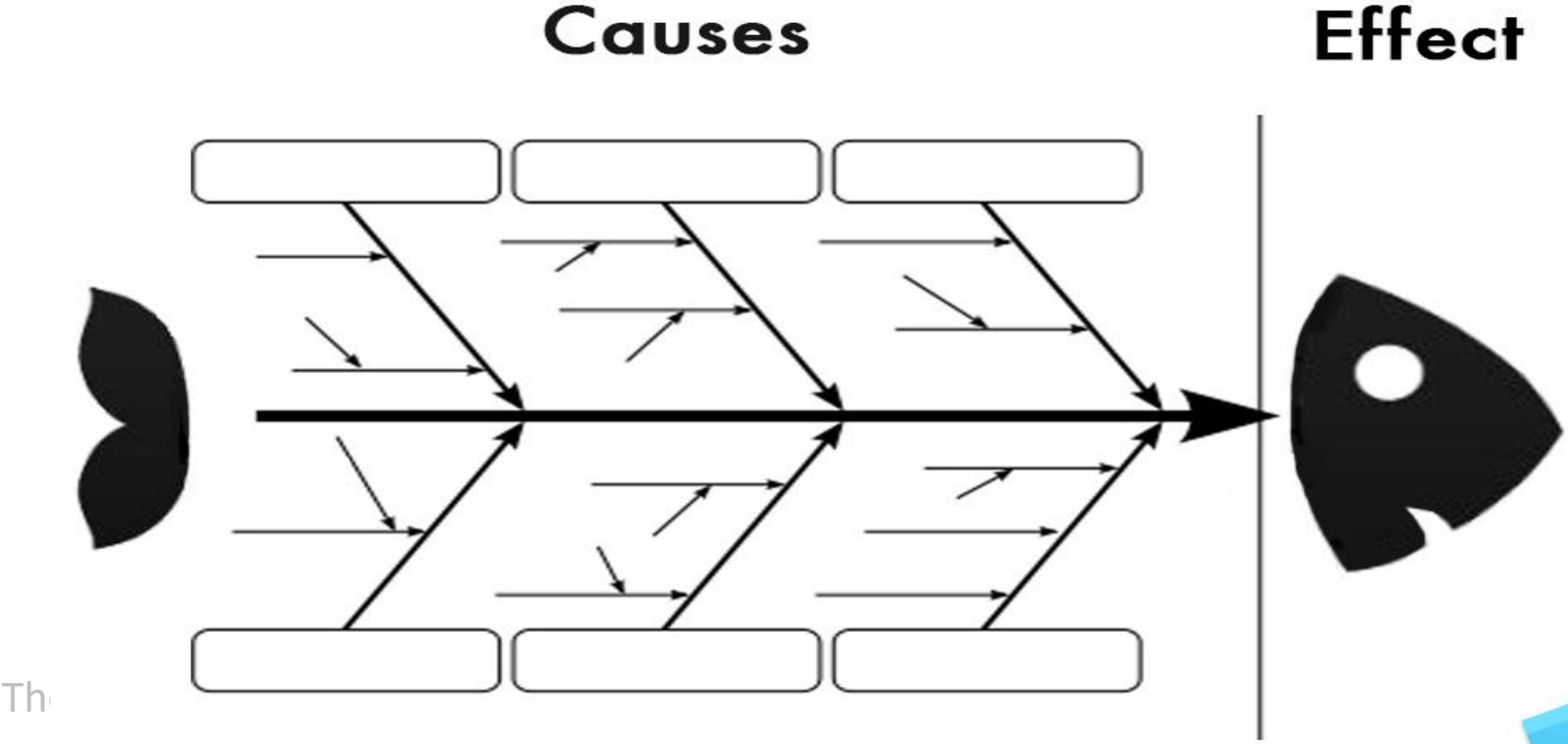
2. Understand the problem

Process Map

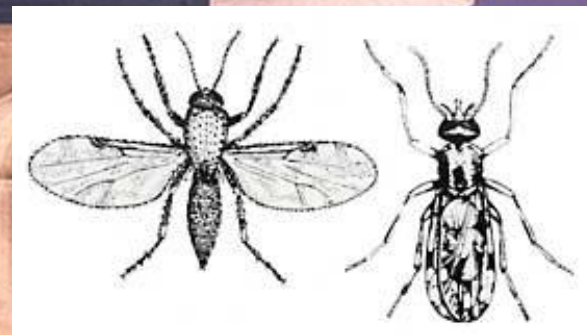


2. Understand the problem

Fishbone “Ishikawa” Diagram



Five Why's



Reproduction or use of these materials for anything other than personal education is strictly prohibited.

University of Colorado | Anschutz Medical Campus | IHQSE

Please contact HQSE@cuanschutz.edu for questions or requests for materials.

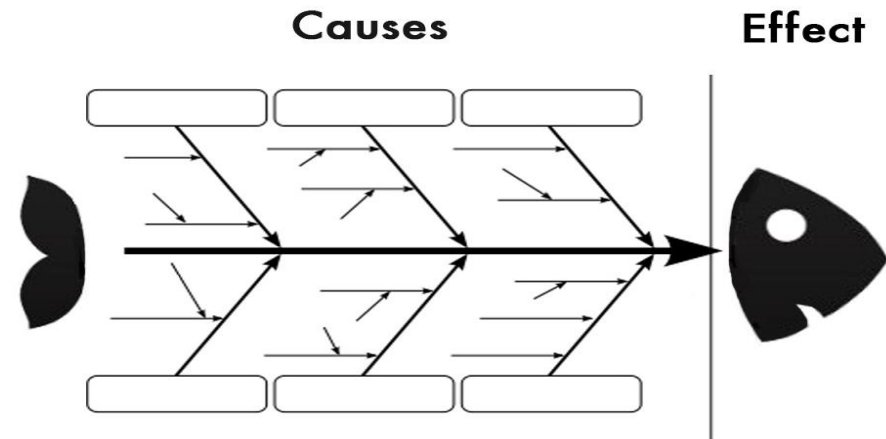
<https://taproot.com/saved-post-5-whys-folklore-the-truth-behind-a-monumental-mystery/>



5 Why's (Linear)



Fishbone (Branched)



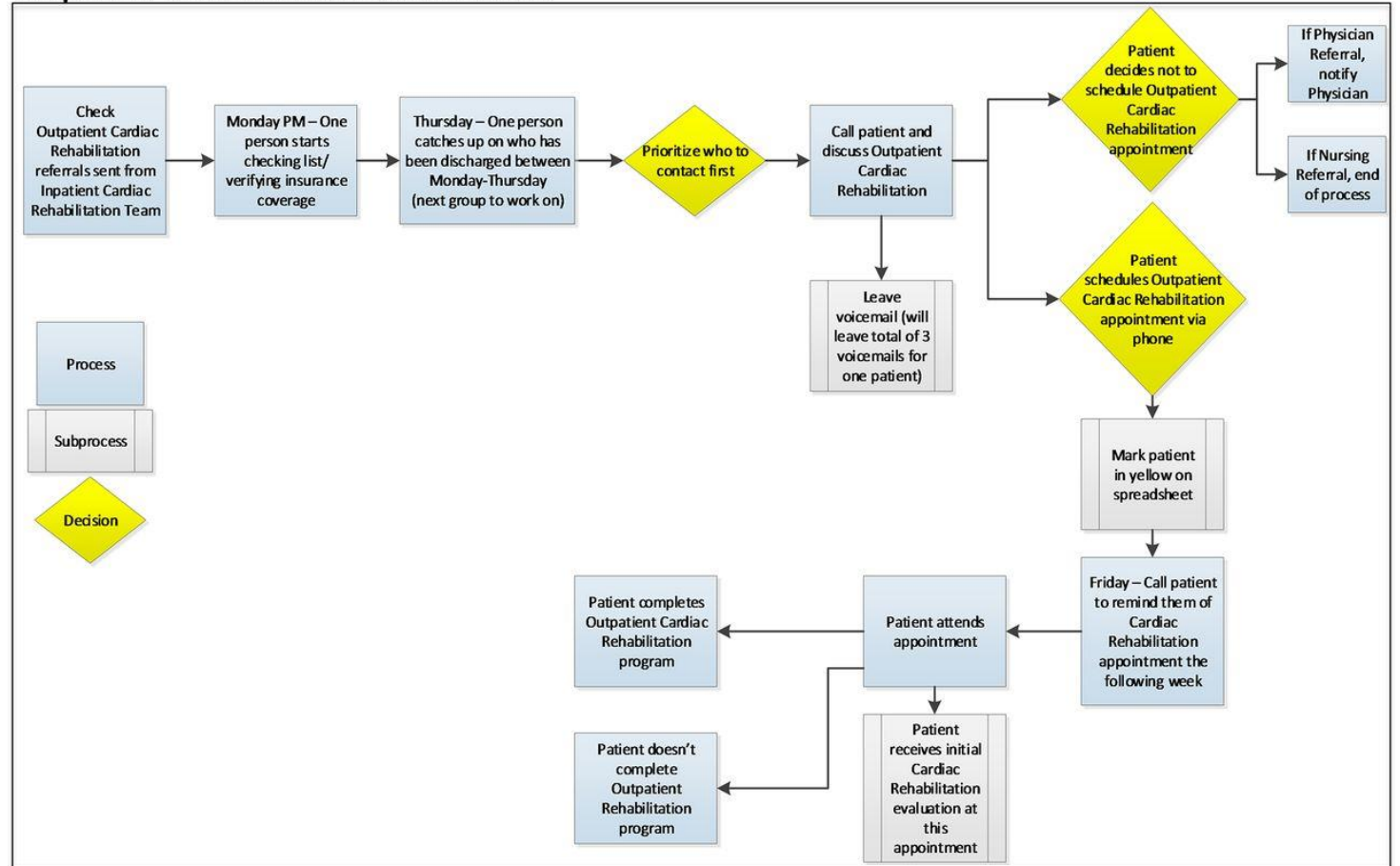
These materials are developed and created by IHQSE faculty and are the property of the Institute for Healthcare Quality, Safety and Efficiency (IHQSE).

Reproduction or use of these materials for anything other than personal education is strictly prohibited.

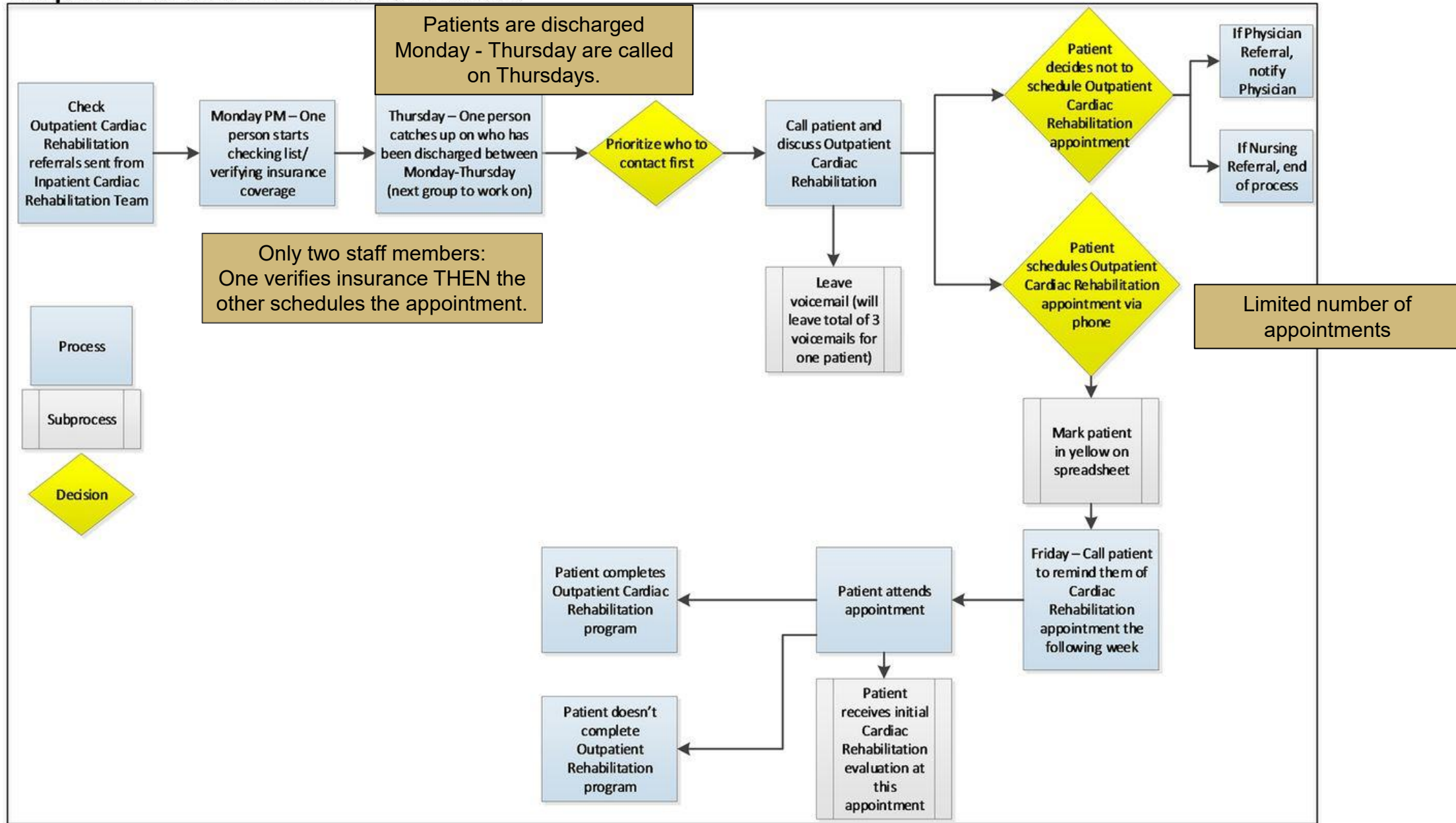


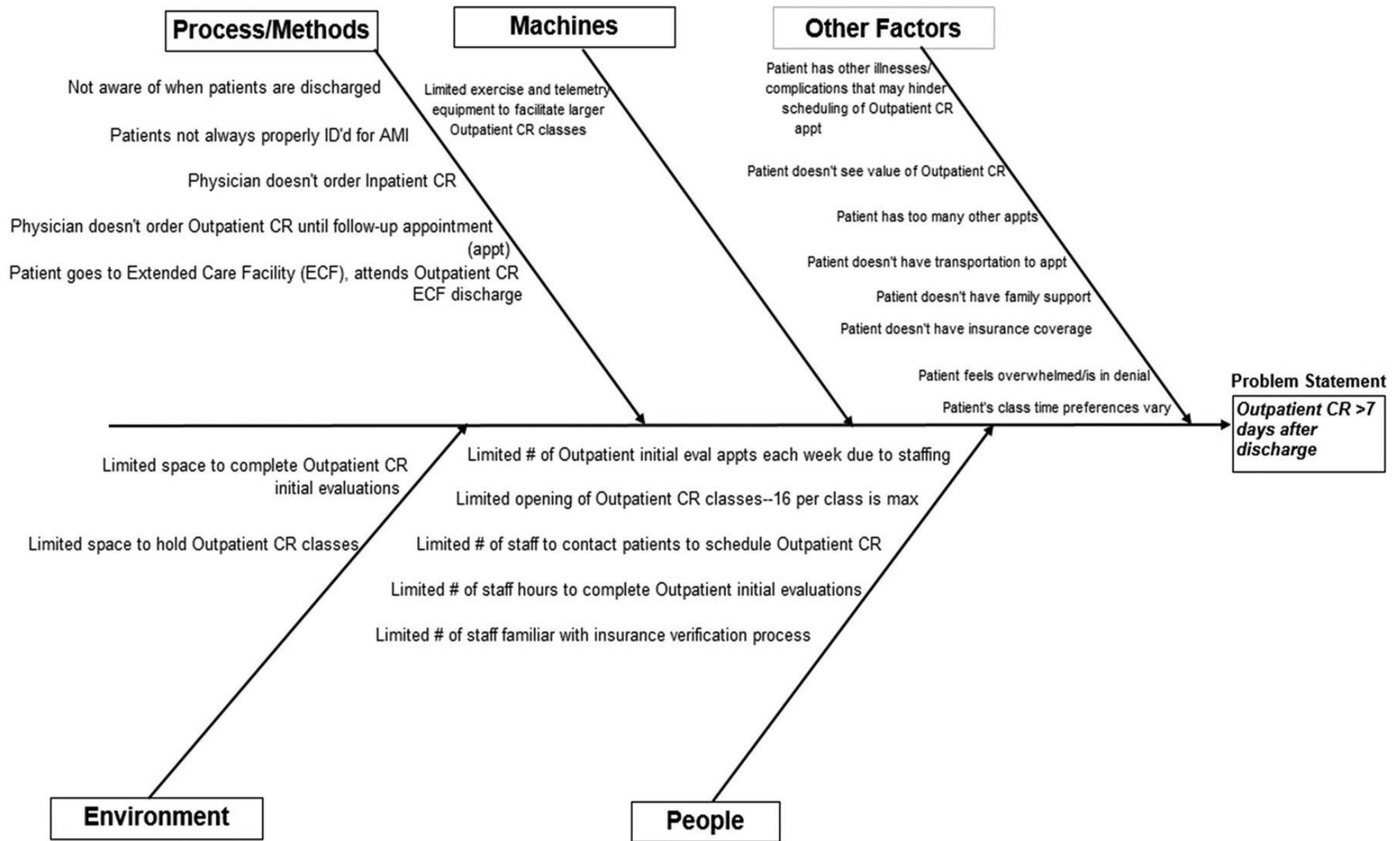


Outpatient Cardiac Rehabilitation Process



Outpatient Cardiac Rehabilitation Process







Breakout #1



15 minutes

- Introduce yourself
- Your problem/project/thing you want to fix
- How do you know it's a problem?
- **Ask 5x Why's for your problem (2-3 people)**

These materials are developed and created by IHQSE faculty and are the property of the Institute for Healthcare Quality, Safety and Efficiency (IHQSE).

Reproduction or use of these materials for anything other than personal education is strictly prohibited.



Steps for a Successful QI Project

1. Identify that you have a problem.
2. Understand the problem.
- 3. Define success.**
4. Develop and Implement solutions: track and observe.
5. Build upon success and sustain the process.

These materials are developed and created by IHQSE faculty and are the property of the Institute for Healthcare Quality, Safety and Efficiency (IHQSE).

Reproduction or use of these materials for anything other than personal education is strictly prohibited.

Please contact IHQSE@cuanschutz.edu for questions or requests for materials.



QI Metrics

OUTCOME

PROCESS

STRUCTURAL

BALANCE

These materials are developed and created by IHQSE faculty and are the property of the Institute for Healthcare Quality, Safety and Efficiency (IHQSE).

Reproduction or use of these materials for anything other than personal education is strictly prohibited.

University of Colorado **Anschutz Medical Campus** | **IHQSE**

Please contact IHQSE@cuanschutz.edu for questions or requests for materials.



Matter to Patients
(or stakeholders)

OUTCOME

- Patient Satisfaction
- LOS
- Readmission Rate
- Adverse Events

Can act as proxy for
outcomes

PROCESS

- Use of checklists
- Lab orders

STRUCTURAL

- PPE
- Medications
- Hand sanitizer

I
N
T
E
R
V
E
N
T
I
O
N
S

BALANCE

These materials are intended to support the quality of the

the Institute for Healthcare Quality, Safety and Efficiency (IHQSE)

Reproduction or use of these materials for anything other than personal education is strictly prohibited.



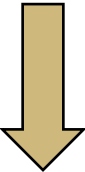
I
N
T
E
R
V
E
N
T
I
O
N
S



Dependent
on
intervention

**Consider
health
equity.**

Experience shows that traditional QI methods can maintain or worsen health inequities across subpopulations.



Look at disparities and solutions upfront among commonly disadvantaged subgroups such as wealth, race, and location.

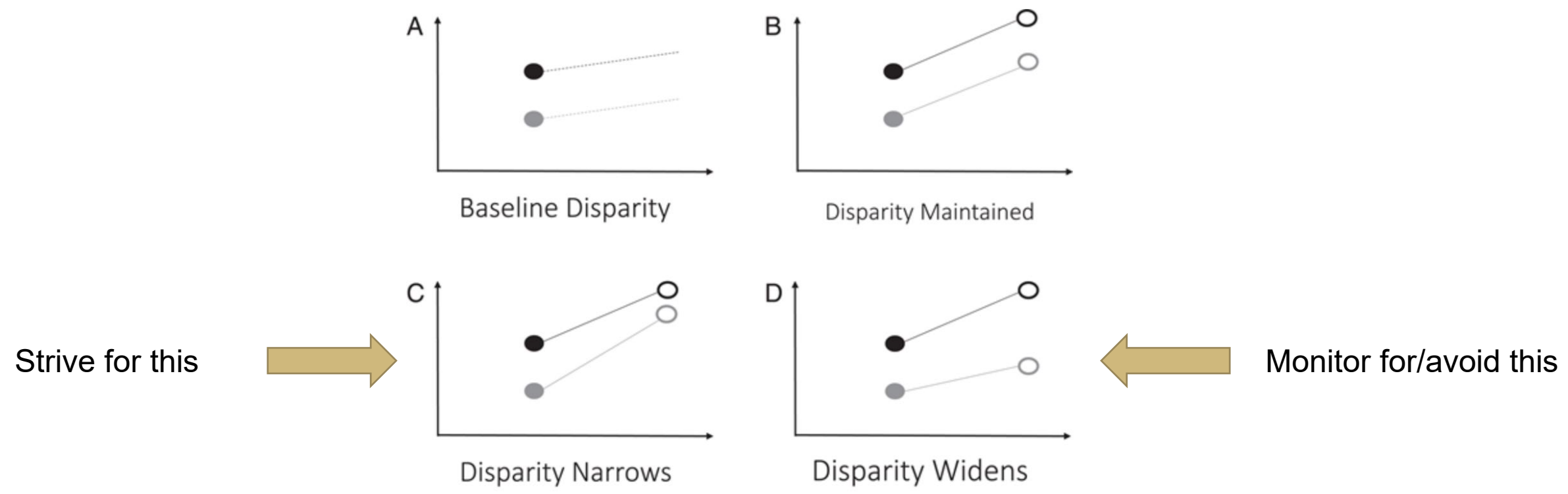
These materials are developed and created by IHQSE faculty and are the property of the Institute for Healthcare Quality, Safety and Efficiency (IHQSE).

Reproduction or use of these materials for anything other than personal education is strictly prohibited.



Consider the heterogeneity of your population.... Are some groups affected differently than others?

FIGURE 1



A black and white photograph of a patient's legs in a hospital bed. The patient is wearing white compression stockings with dark wavy patterns. A medical device, possibly a Doppler ultrasound, is attached to the patient's right leg. The bed's side rail is visible on the right side of the frame.

Inpatient DVT Prophylaxis

Reproduction or use of these materials for anything other than personal education is strictly prohibited.

University of Colorado **Anschutz Medical Campus** | **IHOSE**

Please contact HQSE@cuanschutz.edu for questions or requests for materials.



OUTCOME

- DVT rates
- PE rates
- Mortality from VTE

PROCESS

- Connecting SCDs to pumps
- Ordering of prophylaxis
- Risk scoring

STRUCTURAL

- Supply of SCDs
- Anti-coagulant stock
- RNs to administer

I
N
T
E
R
V
E
N
T
I
O
N
S

B
A
L
A
N
C
E

Bleeding
rate

Reproduction or use of these materials for anything other than personal education is strictly prohibited.





OUTCOME

- Readmission rate
- 30/60/90-day mortality

PROCESS

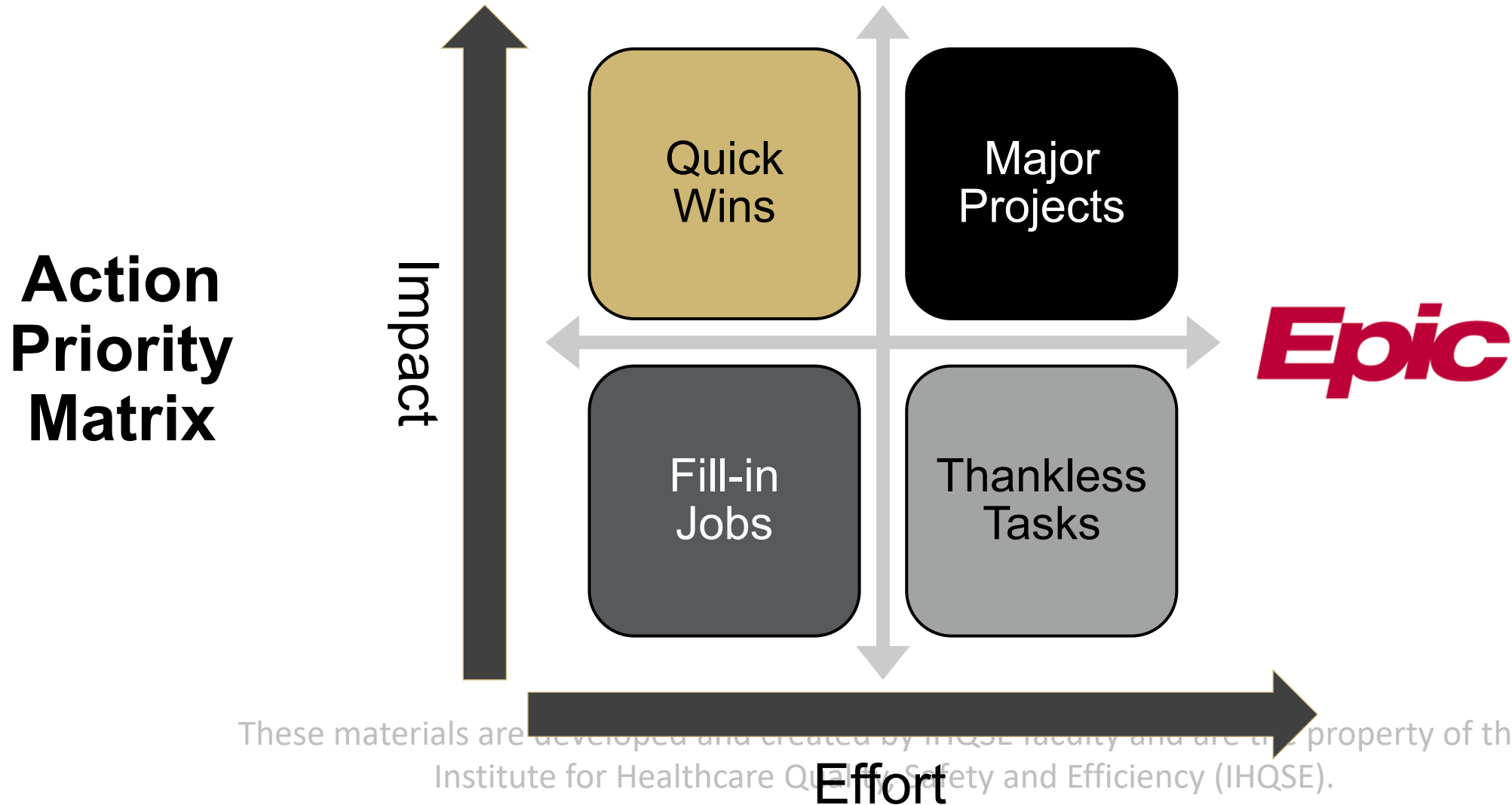
- Outpatient appt. w/in 7 days of discharge
- Number of patients contacted
- Referrals placed before d/c

STRUCTURAL

- Number of appointments
- Number of staff trained to verify insurance



3. Define success.



These materials are developed and created by IHQSE faculty and are the property of the Institute for Healthcare Quality, Safety and Efficiency (IHQSE).

Reproduction or use of these materials for anything other than personal education is strictly prohibited.





Impact

Quick Wins
Contact patients on all days, including prior to discharge

Major Projects
Add additional appointments
Cross-train staff to verify insurance AND schedule appointments

Fill-in Jobs

Thankless Tasks



Effort

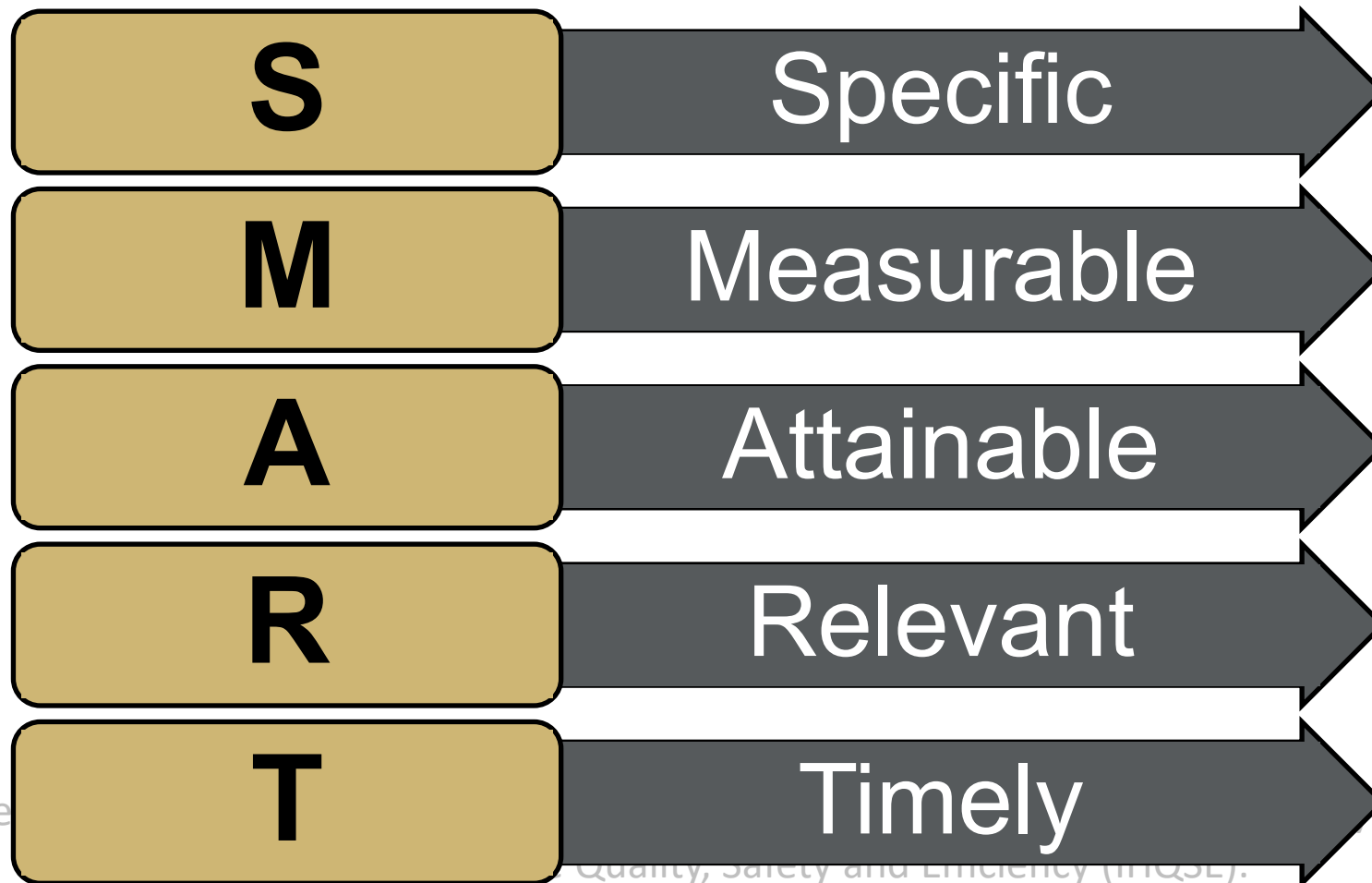
Developed and created by IHQSE faculty and are the property of the Institute for Healthcare Quality, Safety and Efficiency (IHQSE).

Reproduction or use of these materials for anything other than personal education is strictly prohibited.



3. Define success.

Aim Statement



These

of the

Quality, Safety and Efficiency (INQSE).

Reproduction or use of these materials for anything other than personal education is strictly prohibited.



“I want to be a better skier.”



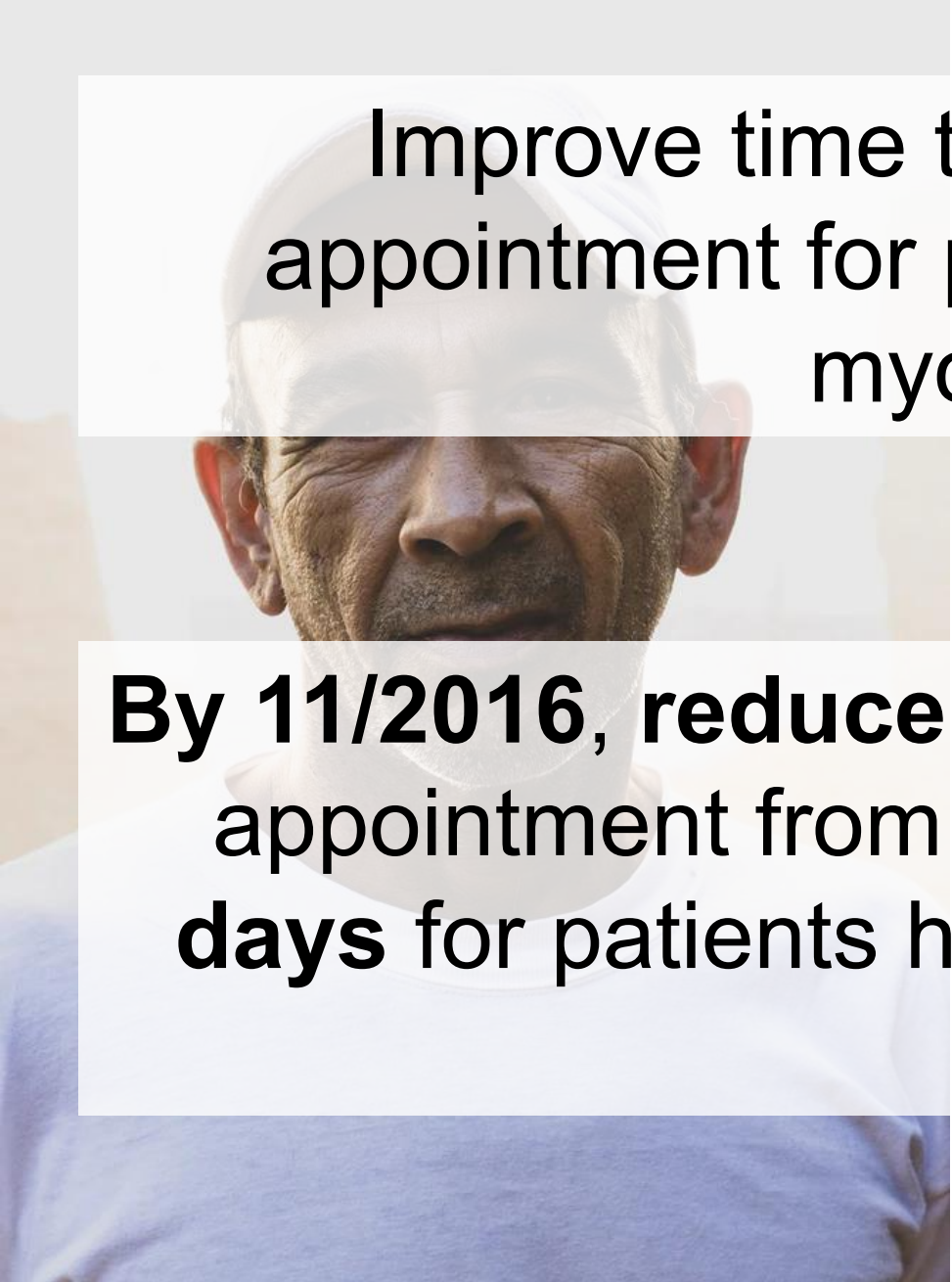
“By the end of the 24/25 season, I will be able to make it down a double-black diamond slope without falling.”

Reproduction or use of these materials for anything other than personal education is strictly prohibited.

University of Colorado | Anschutz Medical Campus | IHQSE

Please contact IHQSE@cuanschutz.edu for questions or requests for materials.





Improve time to initial cardiac rehabilitation appointment for patients hospitalized with acute myocardial infarction.

By 11/2016, reduce time to initial cardiac rehabilitation appointment from an **average of 18.9 days to < 7 days** for patients hospitalized with acute myocardial infarction.



Steps for a Successful QI Project

1. Identify that you have a problem.
2. Understand the problem.
3. Define success.
- 4. Develop and Implement solutions: track and observe.**
5. Build upon success and sustain the process.

These materials are developed and created by IHQSE faculty and are the property of the Institute for Healthcare Quality, Safety and Efficiency (IHQSE).

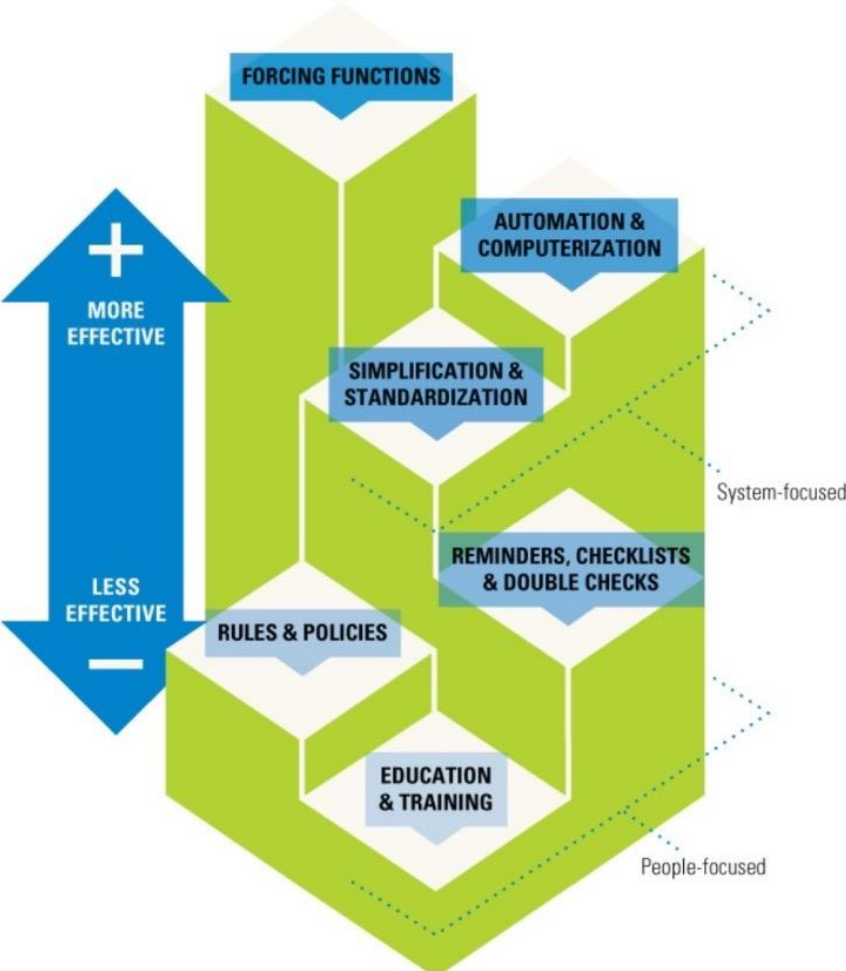
Reproduction or use of these materials for anything other than personal education is strictly prohibited.

Please contact IHQSE@cuanschutz.edu for questions or requests for materials.



4. Develop and Implement solutions: track and observe.

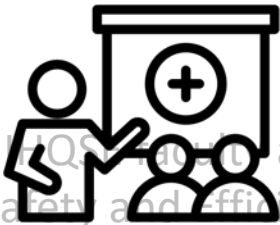
The Hierarchy of Intervention Effectiveness



What you need to know about AEDs

- ✓ They're found in public places
- ✓ They can be used by anybody in an emergency
- ✓ They won't give an electric shock unless it's necessary, so you can't harm someone by using an AED

American Red Cross



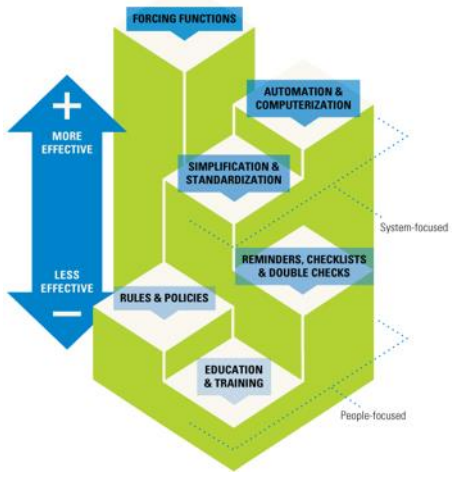
BMJ Quality & Safety EDITORIAL

Education as a low-value improvement intervention: often necessary but rarely sufficient

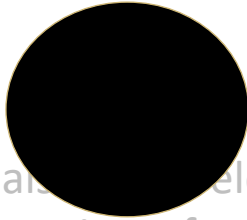
Christine Soong¹, Kaveh G Shojania²

and created by IHQSL and are the Healthcare Quality, Safety, and Efficiency (IHQSL),

reproduction or use of these materials for anything other than personal education is strictly prohibited. <https://cassiemcdaniel.com/Design>



?



These materials were developed and created by IHQSE faculty and are the property of the Institute for Healthcare Quality, Safety and Efficiency (IHQSE).

Reproduction or use of these materials for anything other than personal education is strictly prohibited.





TRY HARDER

DO MORE

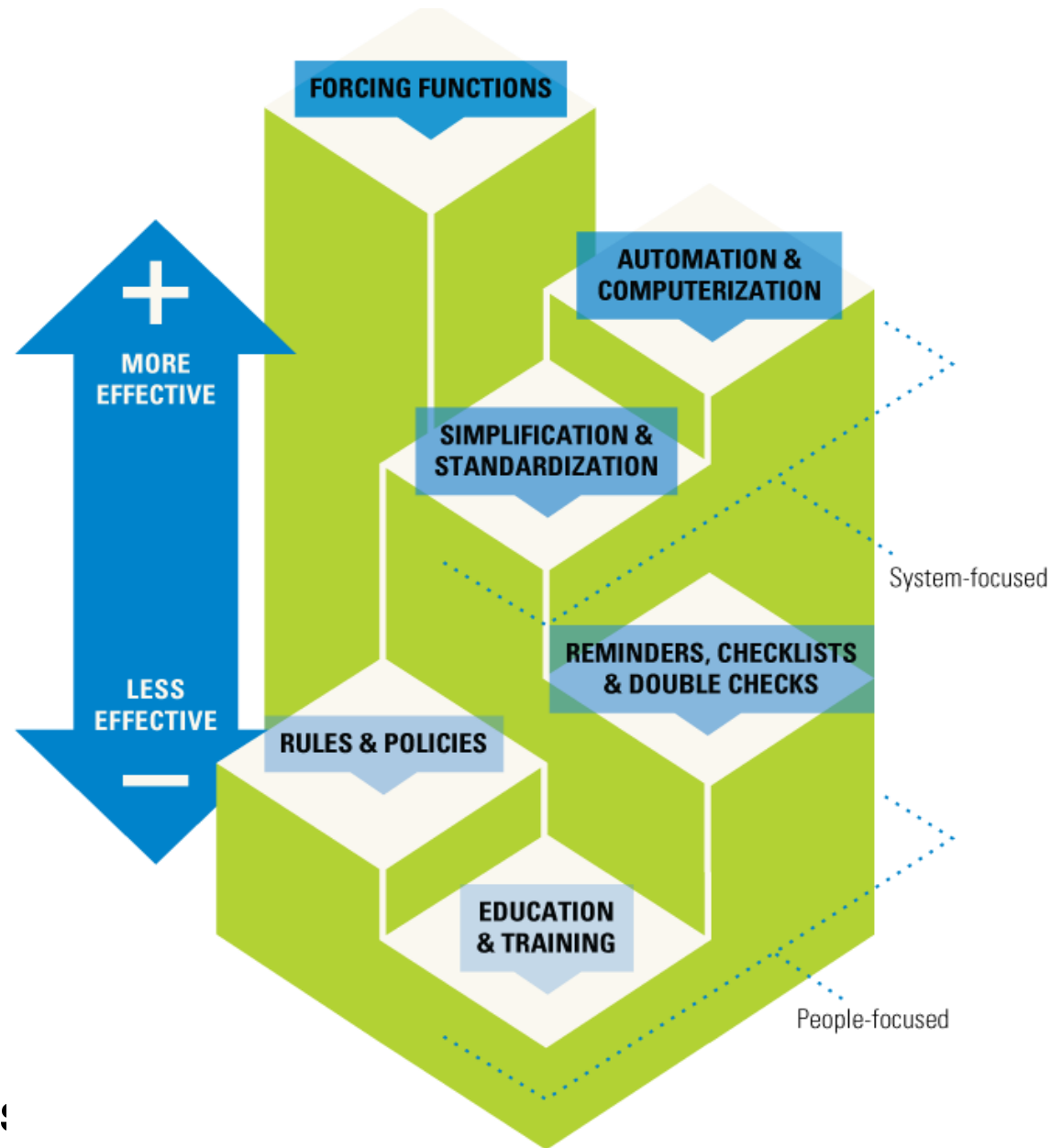
These materials are developed by the University of Colorado and are the property of the Institute for Healthcare Quality, Safety and Efficiency (IHQSE).

Reproduction or use of these materials for anything other than personal education is strictly prohibited.

Please contact IHQSE@cuanschutz.edu for questions or requests for materials.



University of Colorado **Anschutz Medical Campus** | **IHQSE**

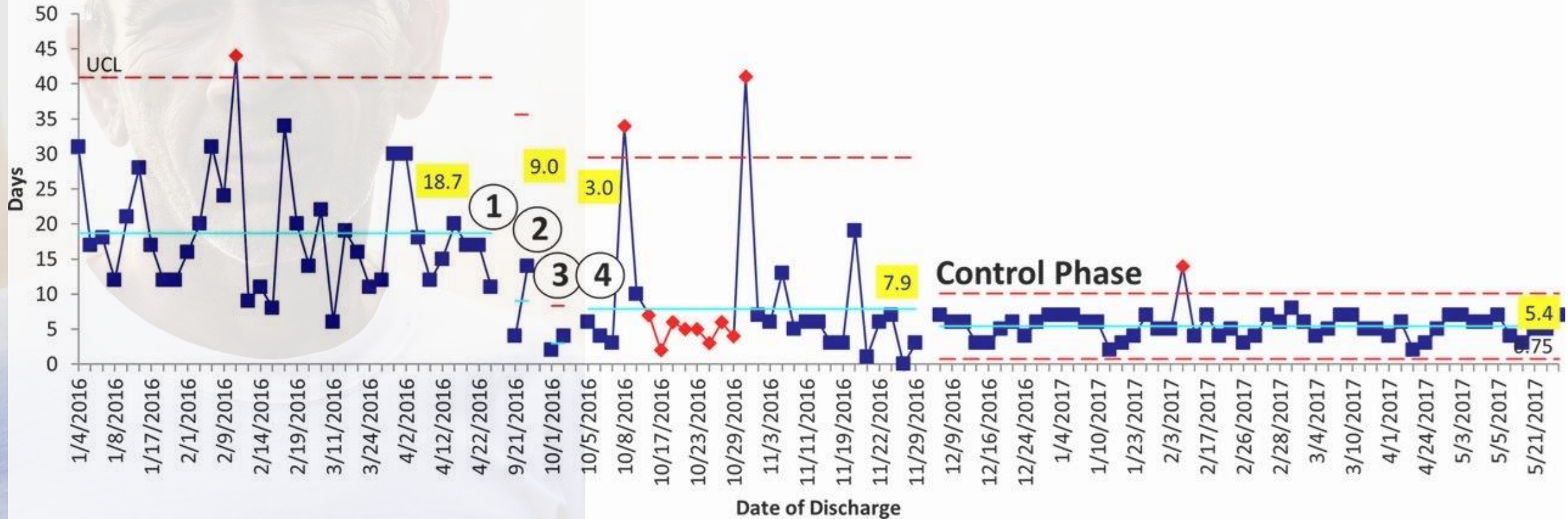




- 1) Add additional appointment slots.
- 2) Cross-train schedulers.
- 3) Cross-train insurance verification.
- 4) Schedule appointment prior to hospital discharge.

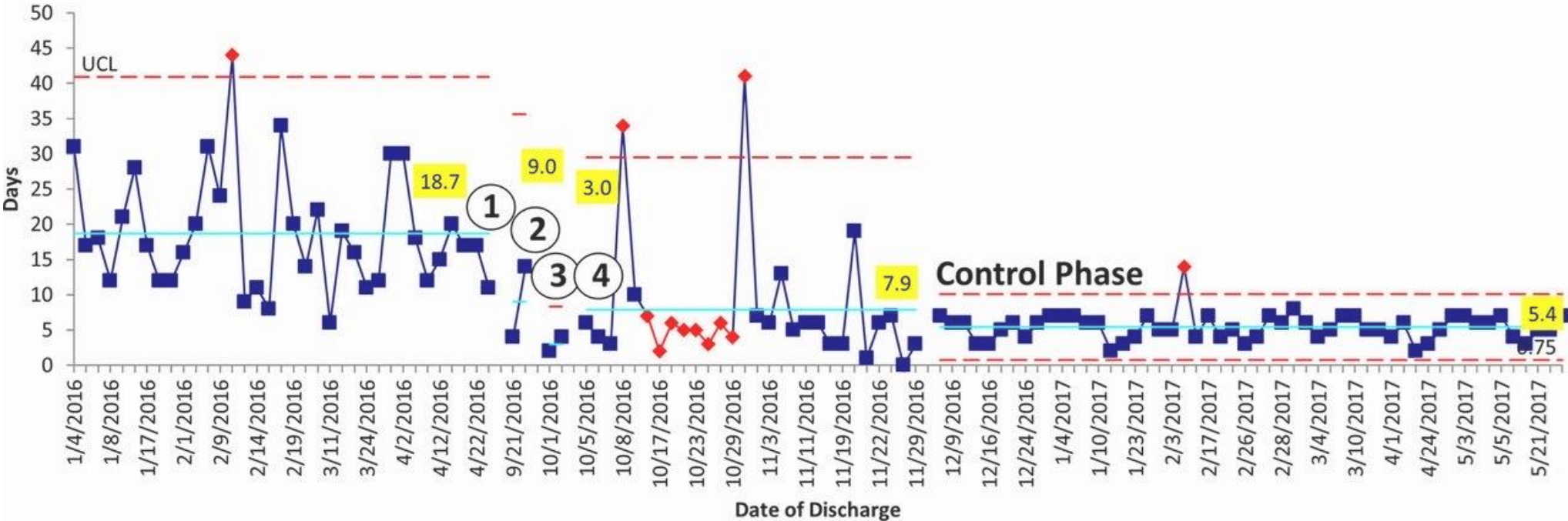


Days from Hospital Discharge to First Scheduled Outpatient Cardiac Rehabilitation Appointment



4. Develop and Implement solutions: track and observe.

Days from Hospital Discharge to First Scheduled Outpatient Cardiac Rehabilitation Appointment



You MUST have data overtime!

Steps for a Successful QI Project

1. Identify that you have a problem.
2. Understand the problem.
3. Define success.
4. Develop and Implement solutions: track and observe.
- 5. Build upon success and sustain the process.**

These materials are developed and created by IHQSE faculty and are the property of the Institute for Healthcare Quality, Safety and Efficiency (IHQSE).

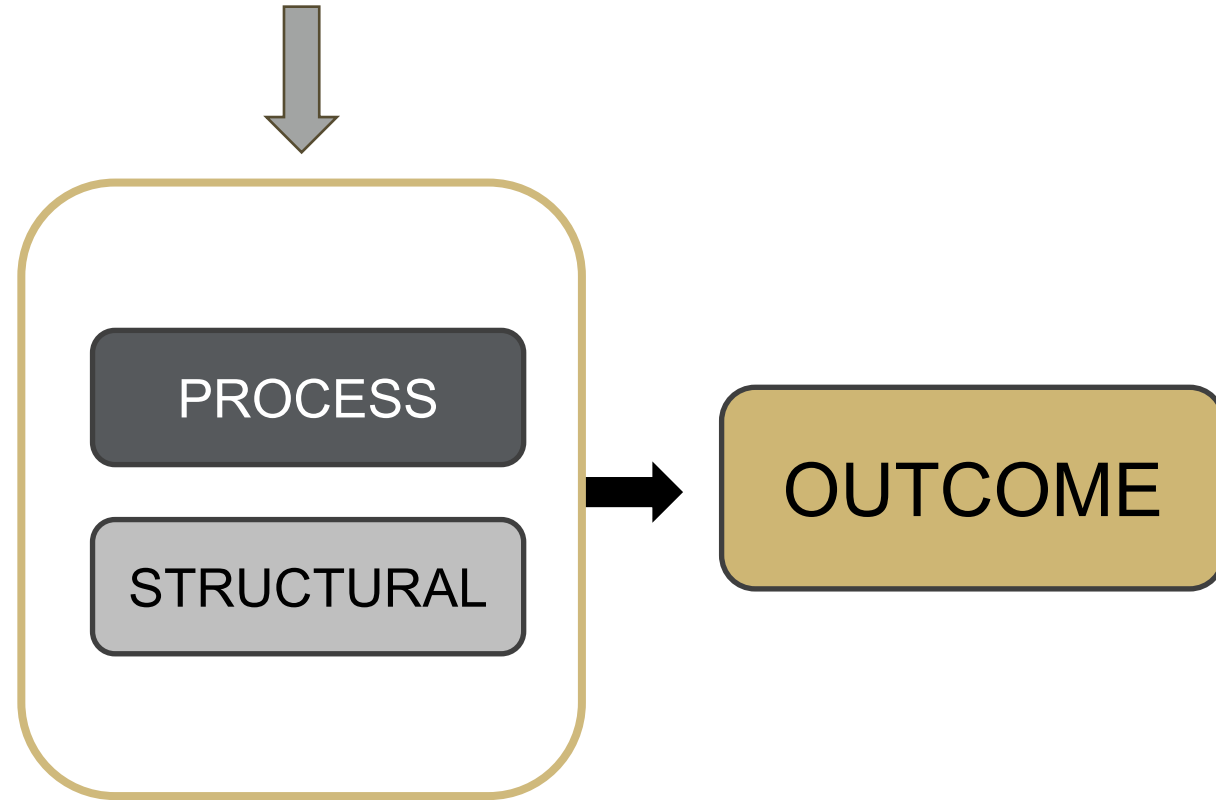
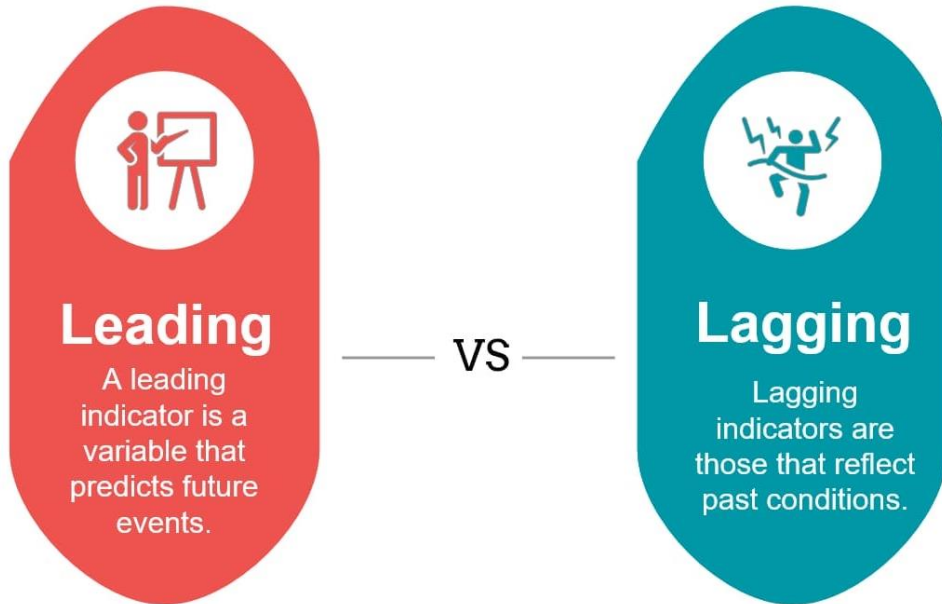
Reproduction or use of these materials for anything other than personal education is strictly prohibited.



FOCUS HERE!

Leading vs Lagging Indicators


A "leading" indicator signals what's likely to happen, whereas a "lagging" indicator signals what happened.



These materials are developed and created by IHQSE faculty and are the property of the Institute for Healthcare Quality, Safety and Efficiency (IHQSE).

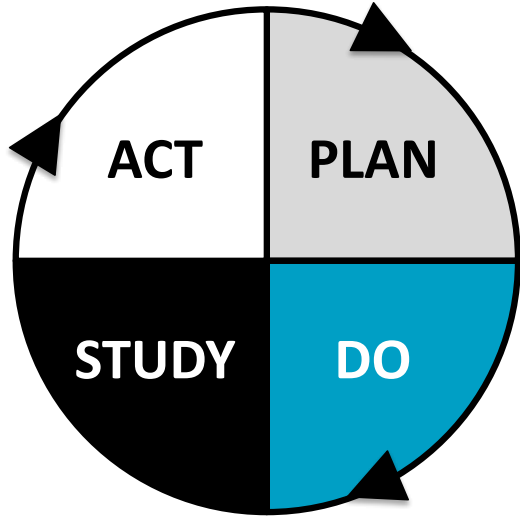
Reproduction or use of these materials for anything other than personal education is strictly prohibited.



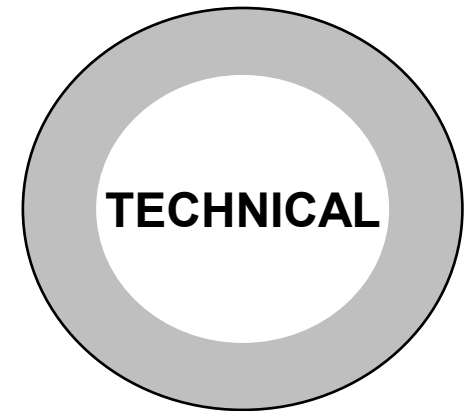
A close-up photograph of Jim Lovell from the movie 'The Apollo 13'. He has a serious, concerned expression, looking slightly to the left. The background is dark and out of focus, showing what appears to be the interior of a spacecraft.

**Houston,
we have
a problem.**

- Jim Lovell



QI results are often mixed, unpredictable or demonstrate limited impact.

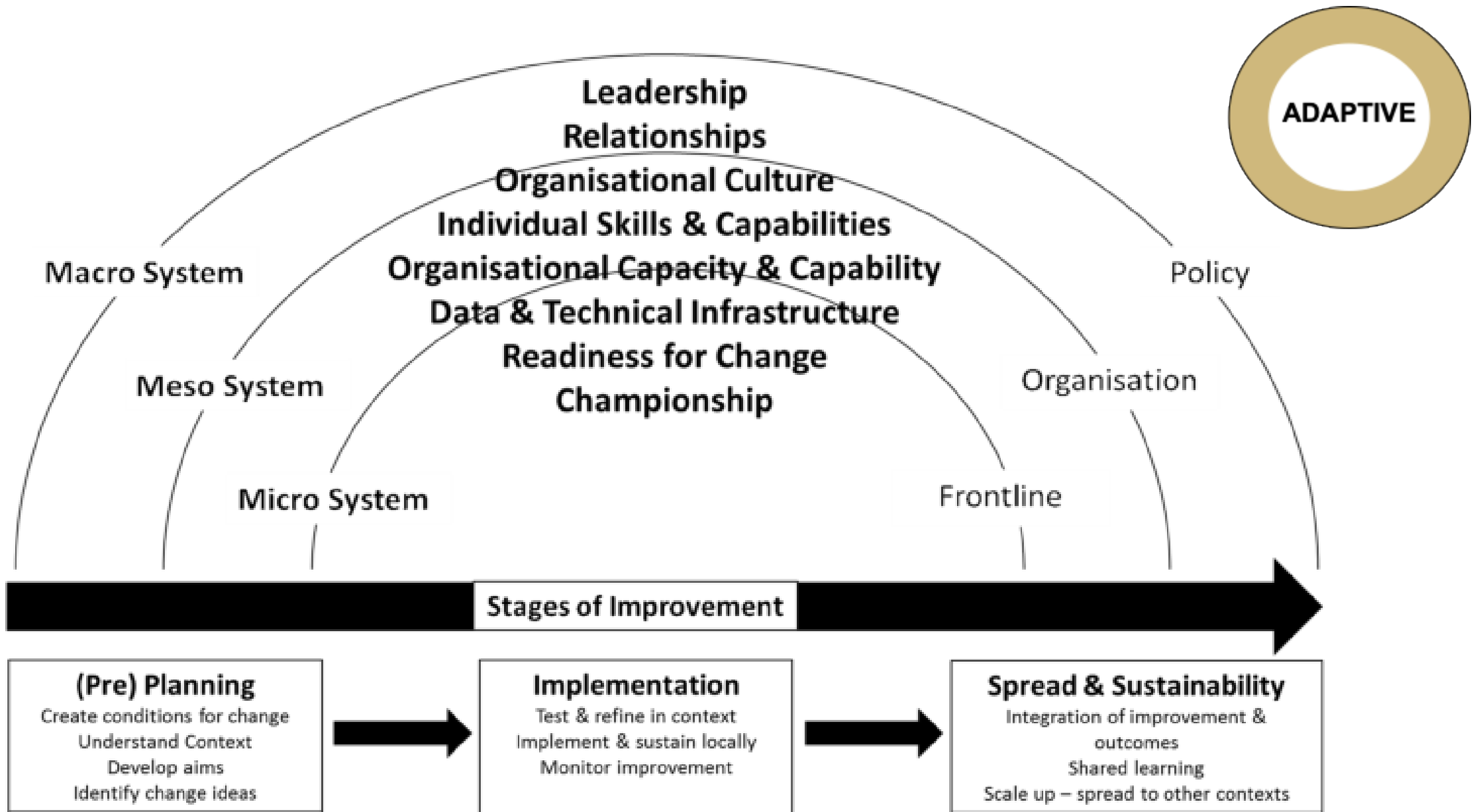


These materials are developed and created by IHQSE faculty and are the property of the Institute for Healthcare Quality, Safety and Efficiency (IHQSE).

Reproduction or use of these materials for anything other than personal education is strictly prohibited.

Health Foundation. Overcoming challenges to improving quality. Lessons from the Health Foundation's improvement programme evaluations and relevant literature. London: Health Foundation; 2012.





Institute for Healthcare Quality, Safety and Efficiency (IHQSE).

Reproduction or use of these materials for anything other than personal education is strictly prohibited.



UNIVERSITY OF COLORADO HOSPITAL

A Local Story, 2008

Vancomycin Use in the ICU

Problem: Only **50%** of 1st vancomycin troughs within desired range of 10-20 mcg/mL

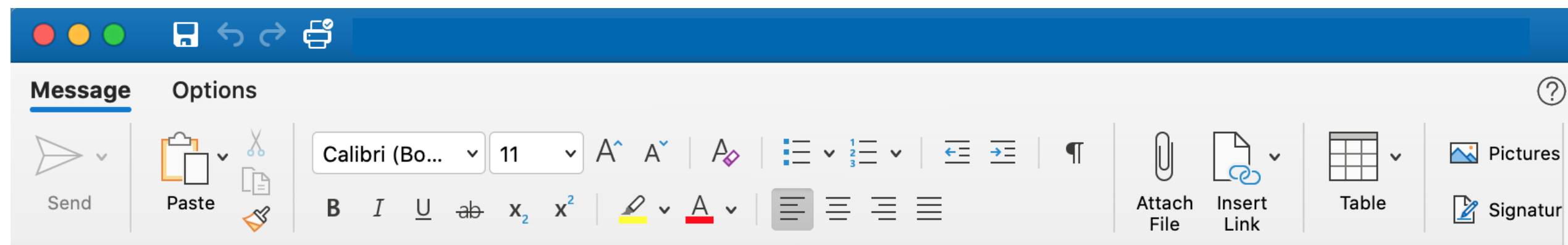
Solution: QI project to develop simple weight- and creatinine-based guide to dosing

- ICU and Pharmacy leadership buy-in
- Rolled out nomogram for the ICU
- Email sent to residents/faculty every month

These materials are developed and created by IHQSE faculty and are the property of the Institute for Healthcare Quality, Safety and Efficiency (IHQSE).

Reproduction or use of these materials for anything other than personal education is strictly prohibited.





I wanted to make everyone aware of the ongoing QI initiative in the MICU addressing initial vancomycin dosing. The standard 1 gram every 12 hours is not appropriate for many ICU patients and the first troughs have been in the therapeutic range of 10-20 mcg/mL only about 50% of the time. We have developed a very simple dosing nomogram (attached) that also includes guidelines on dosing for HD and CVVH, and when the troughs should be checked. Based on the existing data, we expect this nomogram to eliminate about 75% of subtherapeutic troughs and 50% of suprathreshold troughs.

The nomogram requires only the patient's actual body weight and MDRD-estimated GFR with age, gender, race, and serum creatinine (online at www.mdrd.com).

We rely primarily on you as treating physicians to follow the nomogram and correctly order the antibiotics, decreasing the risk of under- or over-dosing your critically ill patients in the crucial initial 24-72 hours of therapy until the first trough is obtained. The MICU pharmacists will be helping you with the nomogram as well.

Thank you in advance for your help and your hard work. We welcome all questions and feedback on this quality improvement initiative.

These materials are developed and created by IHQSE faculty and are the property of the Institute for Healthcare Quality, Safety and Efficiency (IHQSE).

Reproduction or use of these materials for anything other than personal education is strictly prohibited.

Vancomycin use in the ICU: Outcomes

Pre-intervention trough (10-20) 50%

Post-intervention trough (10-20) 50%

Protocol adherence rate 20%!

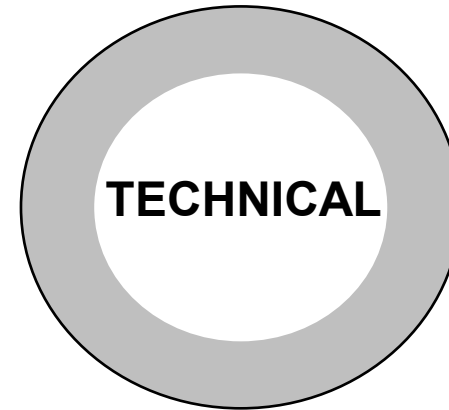
These materials are developed and created by IHQSE faculty and are the property of the Institute for Healthcare Quality, Safety and Efficiency (IHQSE).

Reproduction or use of these materials for anything other than personal education is strictly prohibited.



Why didn't the providers change their behavior?

What was wrong with this approach to leading change?



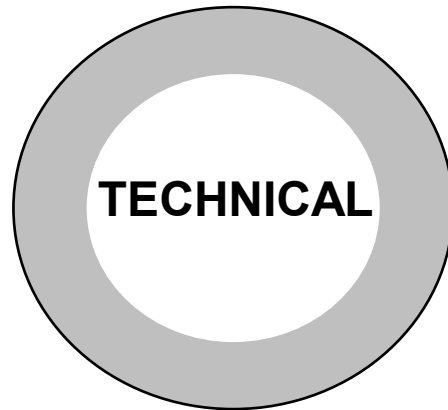
These materials are developed and created by IHQSE faculty and are the property of the Institute for Healthcare Quality, Safety and Efficiency (IHQSE).

Reproduction or use of these materials for anything other than personal education is strictly prohibited.

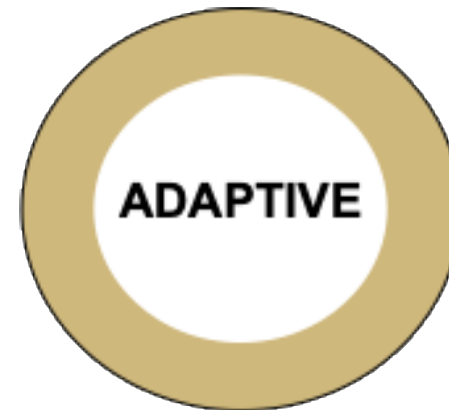
University of Colorado **Anschutz Medical Campus** | **IHQSE**

Please contact IHQSE@cuanschutz.edu for questions or requests for materials.





Process Improvement



Change Management

These materials are developed and created by IHQSE faculty and are the property of the Institute for Healthcare Quality, Safety and Efficiency (IHQSE).

Reproduction or use of these materials for anything other than personal education is strictly prohibited.

University of Colorado **Anschutz Medical Campus** | **IHQSE**

Please contact IHQSE@cuanschutz.edu for questions or requests for materials.



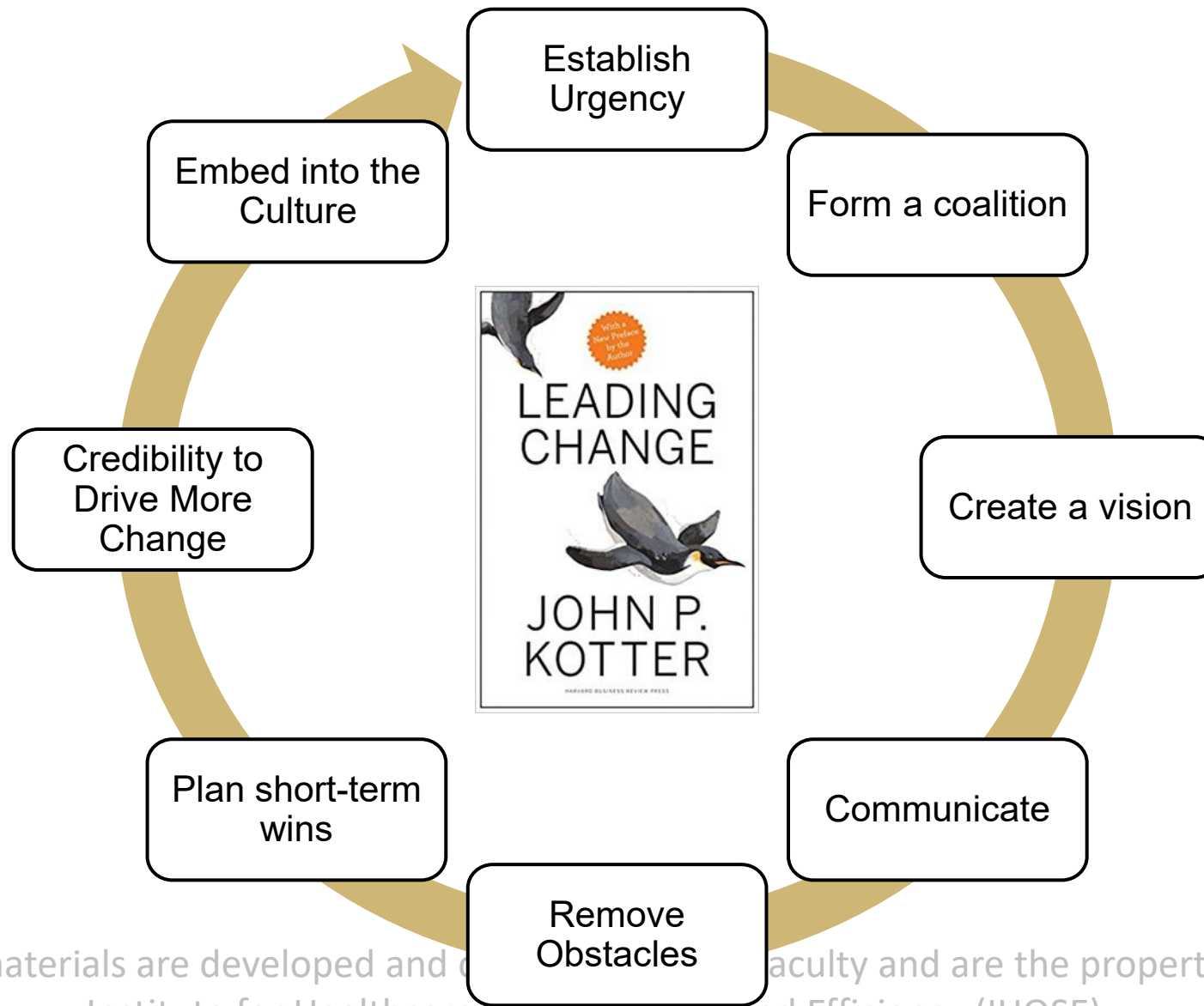
These materials are developed and created by IHQSE faculty and are the property of the Institute for Healthcare Quality, Safety and Efficiency (IHQSE).

Reproduction or use of these materials for anything other than personal education is strictly prohibited.

Please contact IHQSE@cuanschutz.edu for questions or requests for materials.

Change Management





These materials are developed and owned by the University of Colorado faculty and are the property of the Institute for Healthcare Quality, Safety and Efficiency (IHQSE).

Reproduction or use of these materials for anything other than personal education is strictly prohibited.



Establish Urgency

These materials are developed and created by IHQSE faculty and are the property of the Institute for Healthcare Quality, Safety and Efficiency (IHQSE).

Reproduction or use of these materials for anything other than personal education is strictly prohibited.

University of Colorado **Anschutz Medical Campus** | **IHQSE**

Please contact IHQSE@cuanschutz.edu for questions or requests for materials.



“Burning Platform”

Establish
Urgency



Reproduction or use of these materials for anything other than personal education is strictly prohibited.

University of Colorado | **Anschutz Medical Campus** | **IHOSE**

Please contact HQSE@cuanschutz.edu for questions or requests for materials.



Establish Urgency



1.0 - Survival

2.0 - Extrinsic Motivation: reward, punishment

3.0 - Intrinsic Motivation

Burning Aspiration

These materials are developed and created by IHQSE faculty and are the property of the Institute for Healthcare Quality, Safety and Efficiency (IHQSE).

Reproduction or use of these materials for anything other than personal education is strictly prohibited.



NEW YORK TIMES BESTSELLER

“Provocative and fascinating.” —MALCOLM GLADWELL

Daniel H. Pink

author of *A Whole New Mind*

DRIVE

The Surprising Truth
About What Motivates Us

AUTONOMY

MASTERY

PURPOSE

PLAY

CONNECTION

Establish
Urgency

These materials

ty and are the property of the
University of Colorado Anschutz Medical Campus (IHQSE).

Reproduction or use of these materials for anything other than personal education is strictly prohibited.

University of Colorado Anschutz Medical Campus | IHQSE

Please contact ihqse@cuanschutz.edu for questions or requests for materials.

Pink, D. H. (2011). *Drive*. Canongate Books.





Breakout



7 minutes

- What is your burning platform? (IE: SO WHAT?)

These materials are developed and created by IHQSE faculty and are the property of the Institute for Healthcare Quality, Safety and Efficiency (IHQSE).

Reproduction or use of these materials for anything other than personal education is strictly prohibited.

Please contact IHQSE@cuanschutz.edu for questions or requests for materials.



Form a Guiding Coalition

These materials are developed and created by IHQSE faculty and are the property of the Institute for Healthcare Quality, Safety and Efficiency (IHQSE).

Reproduction or use of these materials for anything other than personal education is strictly prohibited.



Who - *Anyone* impacted by your work

To Gain Trust, Expertise, Insight:

- Interprofessional
- Patients
- The Cool Kids

To Gain Resources:

- Various levels of organization
- The Bosses

Key Partner Engagement

These materials are developed and created by IHQSE faculty and are the property of the Institute for Healthcare Quality, Safety and Efficiency (IHQSE).

Reproduction or use of these materials for anything other than personal education is strictly prohibited.



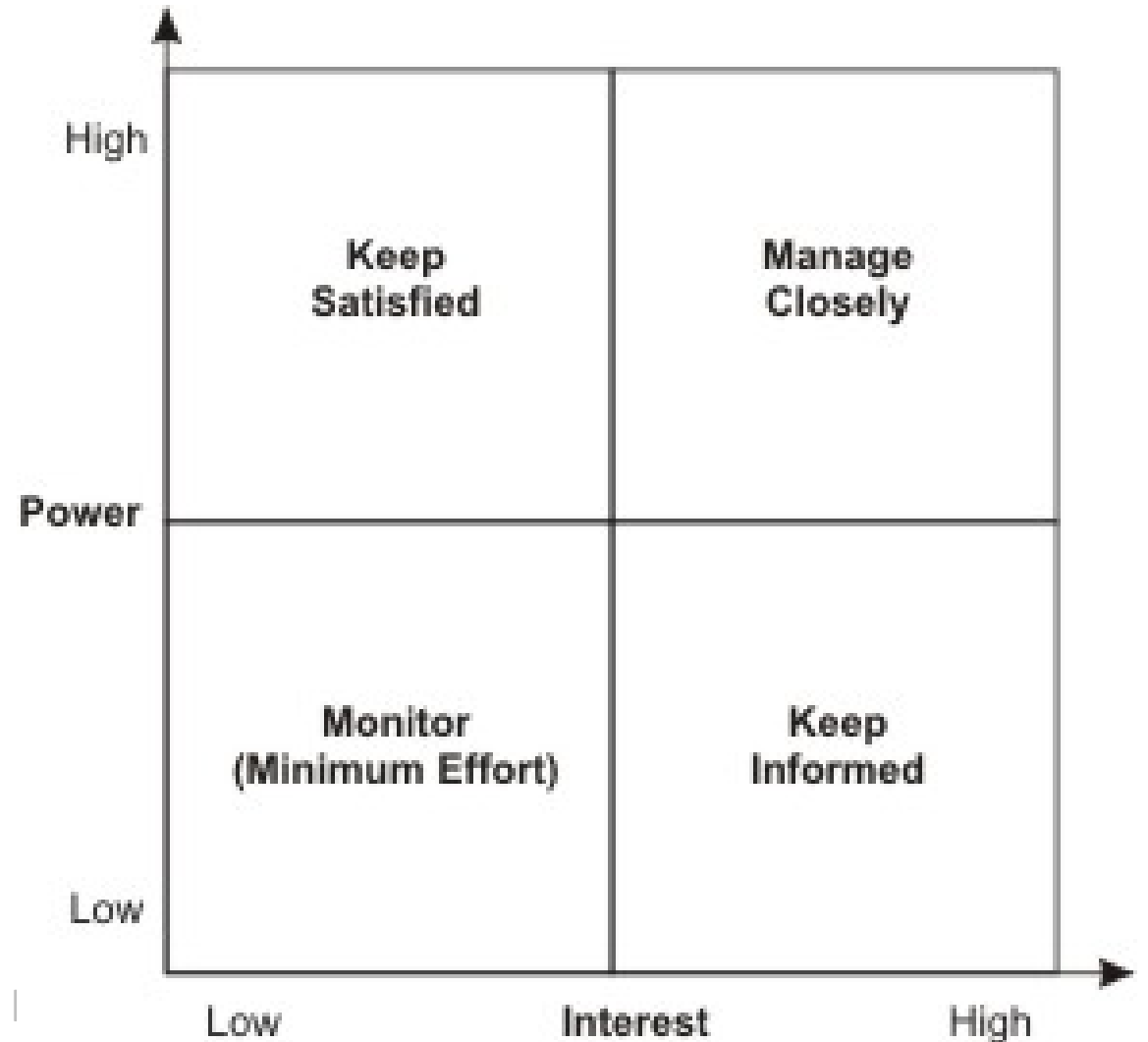
Guiding Coalition

Stakeholder/Partner Map

Step 1: Identify

Step 2: Prioritize

Step 3: Understand



These materials are developed and created by

Institute for Healthcare Quality, Safety and Efficiency (IHQSE).

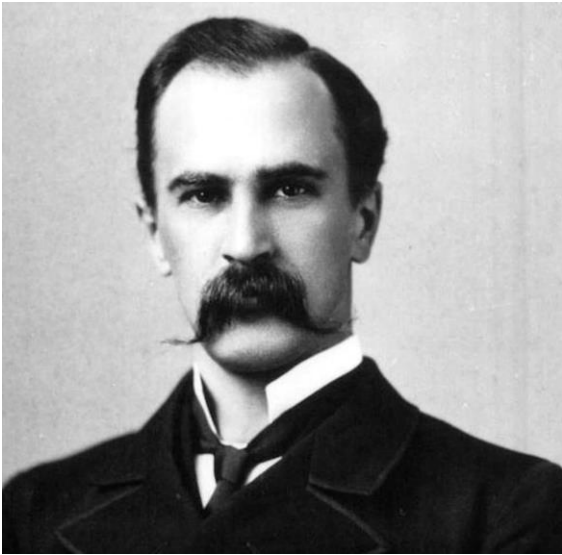
Reproduction or use of these materials for anything other than personal education is strictly prohibited.

University of Colorado | Anschutz Medical Campus | IHQSE

Please contact ihqse@ucanhsu.edu for questions or requests for materials.



Guiding Coalition



Experts



Naysayers



Cool Kids

These materials are developed and created by IHQSE faculty and are the property of the Institute for Healthcare Quality, Safety and Efficiency (IHQSE).

Reproduction or use of these materials for anything other than personal education is strictly prohibited.

University of Colorado **Anschutz Medical Campus** | **IHQSE**

Please contact IHQSE@colorado.edu for questions or requests for materials.



Create a Vision

These materials are developed and created by IHQSE faculty and are the property of the Institute for Healthcare Quality, Safety and Efficiency (IHQSE).

Reproduction or use of these materials for anything other than personal education is strictly prohibited.

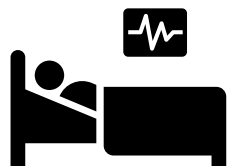
University of Colorado **Anschutz Medical Campus** | **IHQSE**
Please contact IHQSE@cuanschutz.edu for questions or requests for materials.



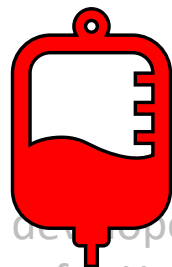
**Create
a Vision**



Discharge instructions will accurately list medications for patients discharged on IV antibiotics



Patients will be admitted during day shift for planned chemotherapy.



**We will transfuse wisely.
Not a drop wasted.**

These materials are developed and created by IHQSE faculty and are the property of the Institute for Healthcare Quality, Safety and Efficiency (IHQSE).

Reproduction or use of these materials for anything other than personal education is strictly prohibited.



Communicate

These materials are developed and created by IHQSE faculty and are the property of the Institute for Healthcare Quality, Safety and Efficiency (IHQSE).

Reproduction or use of these materials for anything other than personal education is strictly prohibited.

University of Colorado **Anschutz Medical Campus** | **IHQSE**
Please contact IHQSE@cuanschutz.edu for questions or requests for materials.



CHANGE
WE CAN BELIEVE IN

Communicate



Reproduction or use of these materials for anything other than personal education is strictly prohibited.

University of Colorado | Anschutz Medical Campus | IHQSE

Please contact IHQSE@cuanschutz.edu for questions or requests for materials.



The Elevator Pitch

Communicate

Introduction: Who are you?

Hook: What is the problem or opportunity?

Solution: What are you doing about it?

Value proposition: How does this create value for him/her?

Call to action: What next?

Reproduction or use of these materials for anything other than personal education is strictly prohibited.



University of Colorado | Anschutz Medical Campus | IHQSE

Please contact IHQSE@cuanschutz.edu for questions or requests for materials.



These materials
Ins

the property of the
(SE).

Reproduction or use of these materials for anything other than personal education is strictly prohibited.



University of Colorado **Anschutz Medical Campus** | **IHOSE**

Please contact HQSE@cuanschutz.edu for questions or requests for materials.

Remove Obstacles

These materials are developed and created by IHQSE faculty and are the property of the Institute for Healthcare Quality, Safety and Efficiency (IHQSE).

Reproduction or use of these materials for anything other than personal education is strictly prohibited.

University of Colorado **Anschutz Medical Campus** | **IHQSE**

Please contact IHQSE@cuanschutz.edu for questions or requests for materials.



Remove
Obstacles



These materials are developed and created by IHQSE faculty and are the property of the Institute for Healthcare Quality, Safety and Efficiency (IHQSE).

Reproduction or use of these materials for anything other than personal education is strictly prohibited.

University of Colorado **Anschutz Medical Campus** | **IHQSE**

Please contact IHQSE@cuanschutz.edu for questions or requests for materials.



Remove Obstacles

VANCOmycin IV + Pharmacy Consult ✓ Accept

- ✓ **!** VANCOmycin (VANCOCIN) in NS 500 mL IVPB
Intravenous, Administer over 2.5 Hours, EVERY 12 HOURS, First dose today at 1146
Pharmacy Dosing Service to manage VANCOmycin therapy.
Allergy/Contraindication: Vancomycin
- ✓ Inpatient Consult to Pharmacy
ASAP, ONCE, today at 1146, For 1 occurrence

These materials are developed and created by IHQSE faculty and are the property of the Institute for Healthcare Quality, Safety and Efficiency (IHQSE).

Reproduction or use of these materials for anything other than personal education is strictly prohibited.

University of Colorado **Anschutz Medical Campus** | **IHQSE**

Please contact IHQSE@cuanschutz.edu for questions or requests for materials.



Variceal UGIB

(Standard) designates default software selections

- (Standard)
{hospital ward, ICU}
- (Standard)
{for observation, for ongoing care, for possible D/C same day etc.}
- (Standard)
{Keep NPO, Start a clear liquid diet, Resume previous diet}
- (Standard){clear liquid diet, regular diet...}
- (Standard){PO, IV}
- (Standard){Daily, BID, TID}
- (Standard){Check Healing, Evaluate Response to Therapy, Retreatment...}

Recommendation

- *Culprit Lesion
- Return Patient
 - Return area -
 - Reason -
- Transfer Patient
- Diet, Sequential
 - Initial Diet -
 - Initial Duration - Today, Then Advance
 - Diet Recommendation -
 - *Duration - if stable
- Diet
 - *Cirrhotic UGIB Octreotide
 - *Cirrhotic UGIB Antibiotics
 - Proton Pump Inhibitor
 - Route -
 - Frequency -
 - *Duration - Post-banding
 - *PPI Cessation (Stop PPI)
 - *Cirrhotic UGIB Post-banding General
 - Resume Anticoags / Antiplatelets - Single
 - *Rebleed General
 - *Rebleed Varices Blakemore/Minnesota
 - *Rebleed Specific
 - Repeat UGI endoscopy
 - *Repeat day - 8w GI to order

Post Op Orders

Patient Profile: This is a 30 year old male. Refer to note in patient chart for documentation of history and physical.

Medications:

Moderate Sedation:

Procedure: After obtaining informed consent, the endoscope was passed under direct vision. Throughout the procedure, the patient's blood pressure, pulse, and oxygen saturations were monitored continuously. The Olympus GIF H190 was introduced through the and advanced to the.

Findings: (Standard){Grade I/II/III} (Standard){Upper/Middle/Lower Esophagus...} (Standard){Dimunitive, Small, Medium, Large...}

Complications:

Estimated Blood Loss:

Impression: (Free Text)

Recommendation:

- Source of blood loss likely due to [Lesion].
- Return patient to [Return area] [Reason].
- [Initial Diet] today, then advance as tolerated [Diet Recommendation] if stable.
- Complete octreotide drip for 72h then stop.
- Complete antibiotic course for total 7 days for upper GI bleed in cirrhosis.
- Use a proton pump inhibitor [Route] [Frequency] for post-banding bleeding prophylaxis, until varices eradicated, then stop unless otherwise indicated.
- Avoid instrumentation of esophagus this hospitalization including NG and OG tubes given risk of dislodging bands.
- If hemodynamically significant rebleeding, please notify GI service.
- Repeat upper endoscopy in 8 weeks (GI to order) [Reason].

Additional Images:

Procedure Code(s):

Diagnosis Code(s):

Post Op Orders:

Patient Instructions:

CC Letter to:

Attending Dr. Participation:

Remove Obstacles

These materials are developed and created by IHQSE faculty and are the property of the Institute for Healthcare Quality, Safety and Efficiency (IHQSE).

Reproduction or use of these materials for anything other than personal education is strictly prohibited.



Remove Obstacles



These materials are

provided by the Institute for Healthcare Quality, Safety and Efficiency (IHQSE).

Reproduction or use of these materials for anything other than personal education is strictly prohibited.

University of Colorado **Anschutz Medical Campus** | **IHQSE**

Please contact IHQSE@cuanschutz.edu for questions or requests for materials.



Generate Short-Term Wins

These materials are developed and created by IHQSE faculty and are the property of the Institute for Healthcare Quality, Safety and Efficiency (IHQSE).

Reproduction or use of these materials for anything other than personal education is strictly prohibited.



**Short
Term
Wins**



Celebrating Wins: Wea-ner of the Month



Use Credibility to Drive More Change

These materials are developed and created by IHQSE faculty and are the property of the Institute for Healthcare Quality, Safety and Efficiency (IHQSE).

Reproduction or use of these materials for anything other than personal education is strictly prohibited.

University of Colorado **Anschutz Medical Campus** | **IHQSE**

Please contact IHQSE@cuanschutz.edu for questions or requests for materials.



Credibility Momentum



These materials are developed and created by IHQSE faculty and are the property of the Institute for Healthcare Quality, Safety and Efficiency (IHQSE).

Reproduction or use of these materials for anything other than personal education is strictly prohibited.

University of Colorado **Anschutz Medical Campus** | **IHQSE**

Please contact IHQSE@cuanschutz.edu for questions or requests for materials.

Image Credit: <https://www.dallasspine.com/blog/what-is-orthopedic-surgery>



Embed it in the Culture

These materials are developed and created by IHQSE faculty and are the property of the Institute for Healthcare Quality, Safety and Efficiency (IHQSE).

Reproduction or use of these materials for anything other than personal education is strictly prohibited.

University of Colorado **Anschutz Medical Campus** | **IHQSE**
Please contact IHQSE@cuanschutz.edu for questions or requests for materials.



Culture Change



These materials

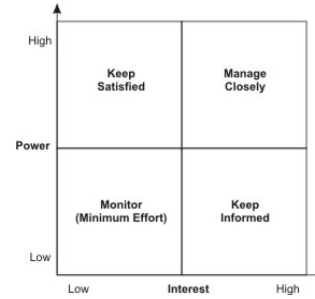
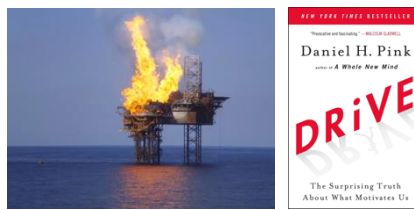
Institute for Healthcare Quality, Safety and Efficiency (IHQSE).

Reproduction or use of these materials for anything other than personal education is strictly prohibited.

University of Colorado **Anschutz Medical Campus** | **IHQSE**

Please contact IHQSE@cuanschutz.edu for questions or requests for materials.

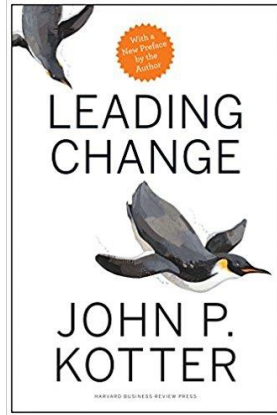




Credibility to Drive More Change

Establish Urgency

Form a coalition



Create a vision



Generate short-term wins

Communicate

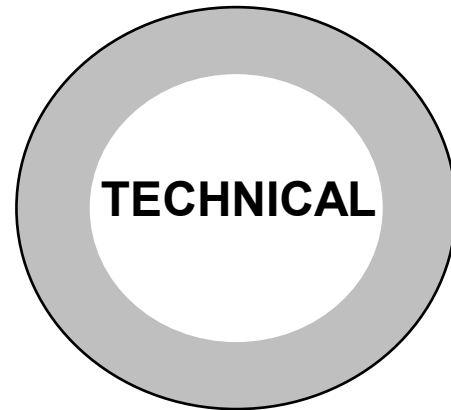
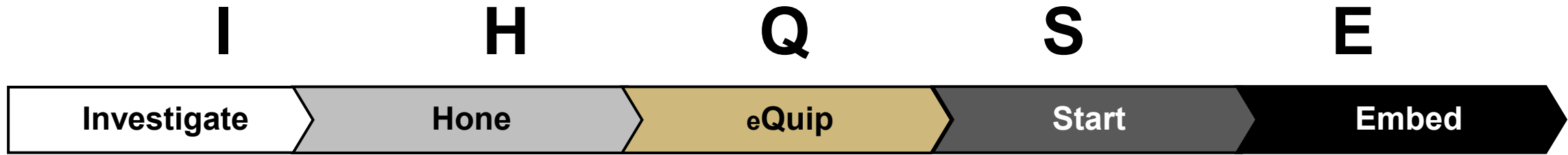


Remove Obstacles

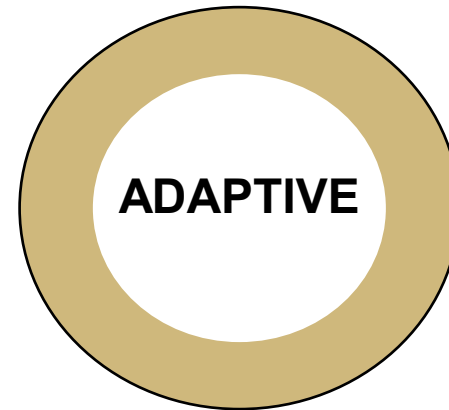


... developed and created by the University of Colorado, Anschutz Medical Campus, in partnership with the Institute for Healthcare Quality, Safety and Patient Experience (IHQSE). Reproduction or use of these materials for anything other than personal use is strictly prohibited.





Process Improvement



Change Management

“Model for Change”

I

H

Q

S

E



**UNDERSTAND YOUR
PROBLEM FIRST !!!**

Process Improvement

Change Management

Coaching

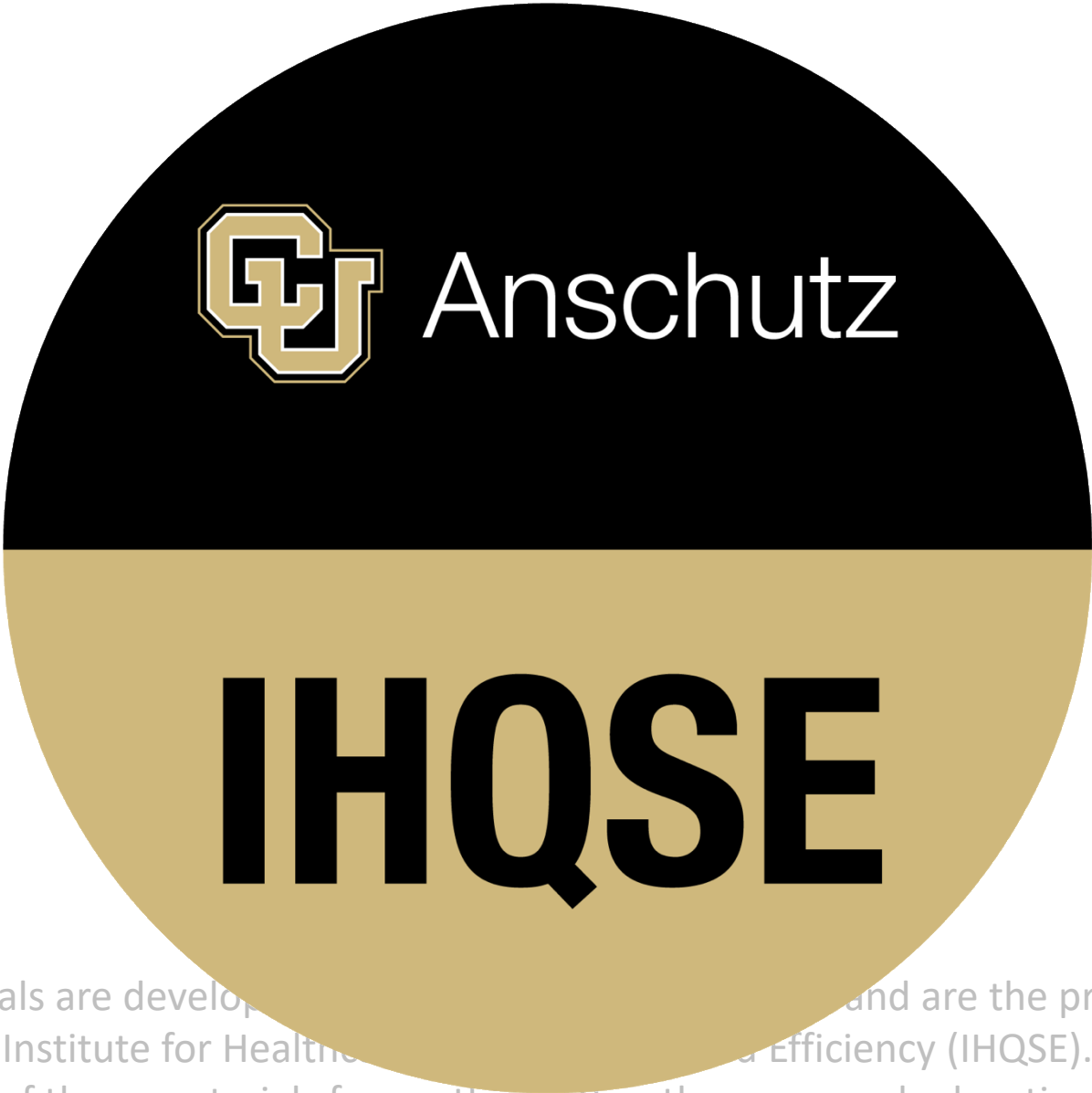
“Model for Change”

“Survival is optional. No one has to change.”



W. Edwards Deming





These materials are developed and are the property of the Institute for Health Care and Efficiency (IHQSE).

Reproduction or use of these materials for anything other than personal education is strictly prohibited.

University of Colorado Anschutz Medical Campus | IHQSE

Please contact IHQSE@cuanschutz.edu for questions or requests for materials.

Follow us:

