Certificate Training Program Session 4

Welcome!: Before We Start

Sign-in at the back
Pick up handout packet
Sit with your CTP team at your assigned table

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

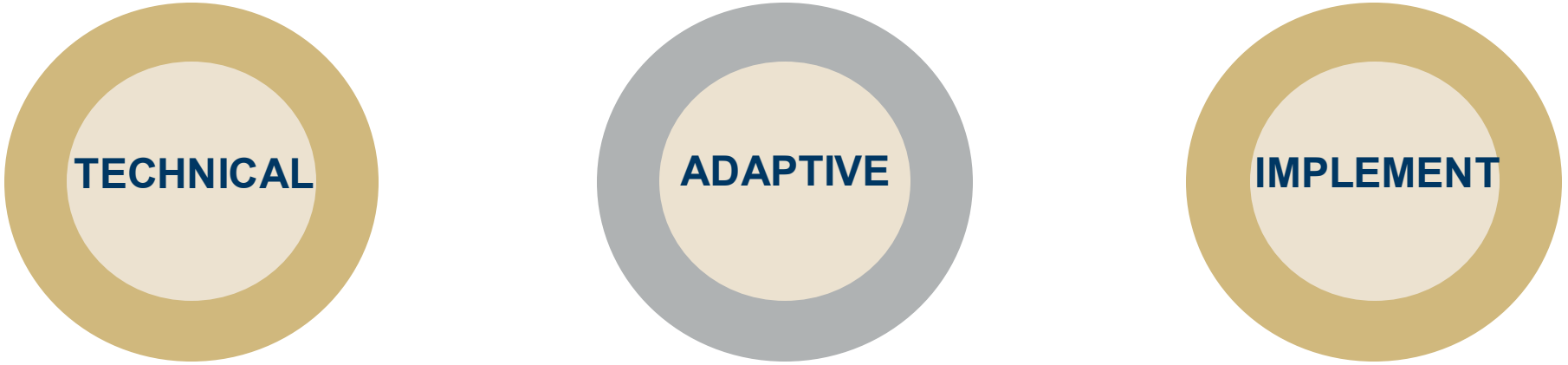
Oasis

Curriculum Overview

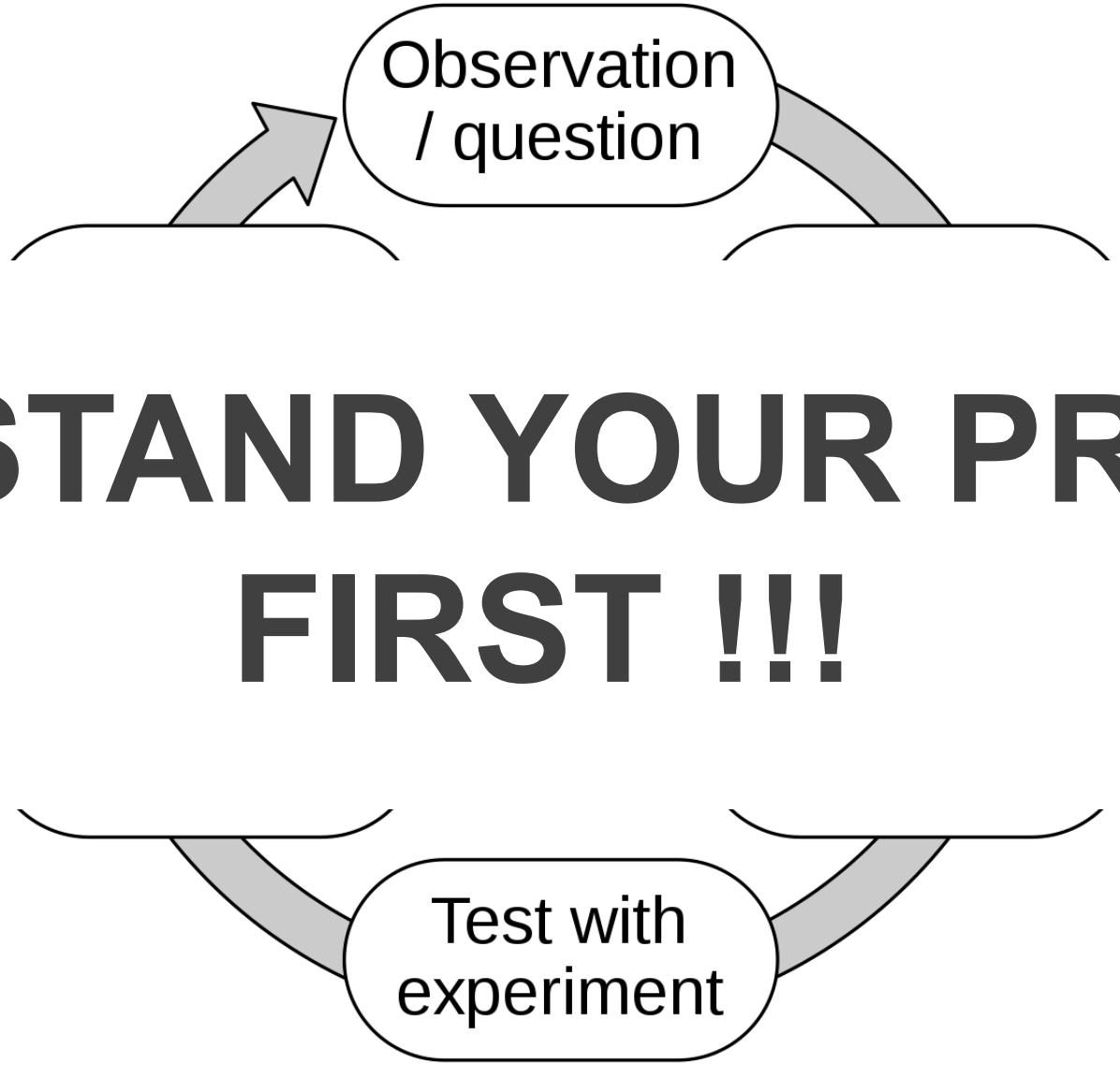
8/19	#1	Welcome	Beginning with the End in Mind	Objectives & Introductions	Overview	Leadership Defined	Team Norms		Understand Process
8/26	#2	CHCO Inpatient Pediatric Rehab	Thriving as a Leadership Imperative	Value Defined	Introduction to Quality Improvement	IHQSE Model of Change	Coaching		Understand Process
		Coaching							
9/9	#3	UCH Whole Blood Program	Investigate the Problem	Problem Statement	Voice of the Customer	Stakeholder Analysis	Process Mapping	Coaching	Baseline data
		Coaching							
9/23	#4	UCH Rheumatology Clinic	Investigate the Problem	Understanding Root Causes	Data: Uses in QI and Finding it	EMR Process & Data	Business Case		Baseline data
		Coaching							
10/7	#5	CHCO Digestive Health	QI vs. Research	Leading Change					Baseline data
		Coaching							
10/28	#6	UCH Pre-Procedure Services	Leading Change: Vision	Wellness	Leading Change: Sense of Urgency				Process Optimization
11/4	#7	DHH OB/GYN Clinics	Data Collection Plan	Myers Briggs					Process Optimization
		Coaching							
11/18	#8	UCH ED & Radiology	Hone the Intervention	This Place Called Academia	Understanding Business Drivers	Negotiating for what You Need			Finalize Need
		Coaching							
12/9	#9	CHCO Health Clinic & Dev. Peds.	Design Thinking	Positive Deviance	QI & Health Equity				Finalize Need
12/16	#10	UCH Antimicrobial Stewardship	Leading Change: Guiding Coalition	Aim Statement	Optimizing EMR Requests	Overcoming Resistance	Stakeholder Analysis	Team Logo	Submit Ticket
		Coaching							

I H Q S E

Investigate | **Hone** | **eQuip** | **Start** | **Embed**



❑ Search literature ❑ Acquire Baseline Data ❑ Capture Voice of Customer ❑ Capture Voice of Business ❑ Create Problem Statement ❑ Analyze stakeholders ❑ Complete Process Map ❑ Create Affinity Diagram ❑ Identify Key Metrics ❑ Build a Business Case ❑ Create Aim Statement	❑ Apply Pareto Principle ❑ Assess Positive Deviants ❑ Use Hierarchy of Interventions ❑ Perform Design Thinking ❑ Identify 2 - 3 interventions ❑ Determine Research or QI ❑ Create Effort/Impact matrix ❑ Complete Equity Analysis ❑ Craft Well-Being Analysis ❑ Create Data Plan ❑ Complete Pre-mortem ❑ Finalize Implementation Plan	❑ Create Sense of Urgency ❑ Align with the Vision ❑ Build Motivation Plan ❑ Apply Diffusion of Innovation ❑ Identify & Remove Barriers ❑ Address Resistance ❑ Craft Awareness Campaign ❑ Create Logo ❑ Create Short-term Wins	❑ Pilot Intervention ❑ Ignite Awareness ❑ Launch Intervention ❑ Apply Motivation & Diffusion ❑ Track Data and Refine ❑ Recognize New Resistance ❑ Celebrate Short-term Wins ❑ Credibility for More Change	❑ Track Run Charts, SPC ❑ Remove New Barriers ❑ Celebrate More Wins ❑ Reconcile Business Case ❑ Present to Stakeholders ❑ Disseminate Project Work ❑ Create sustainment plan



UNDERSTAND YOUR PROBLEM FIRST !!!

Define the problem

Is it a problem?

How do you know?

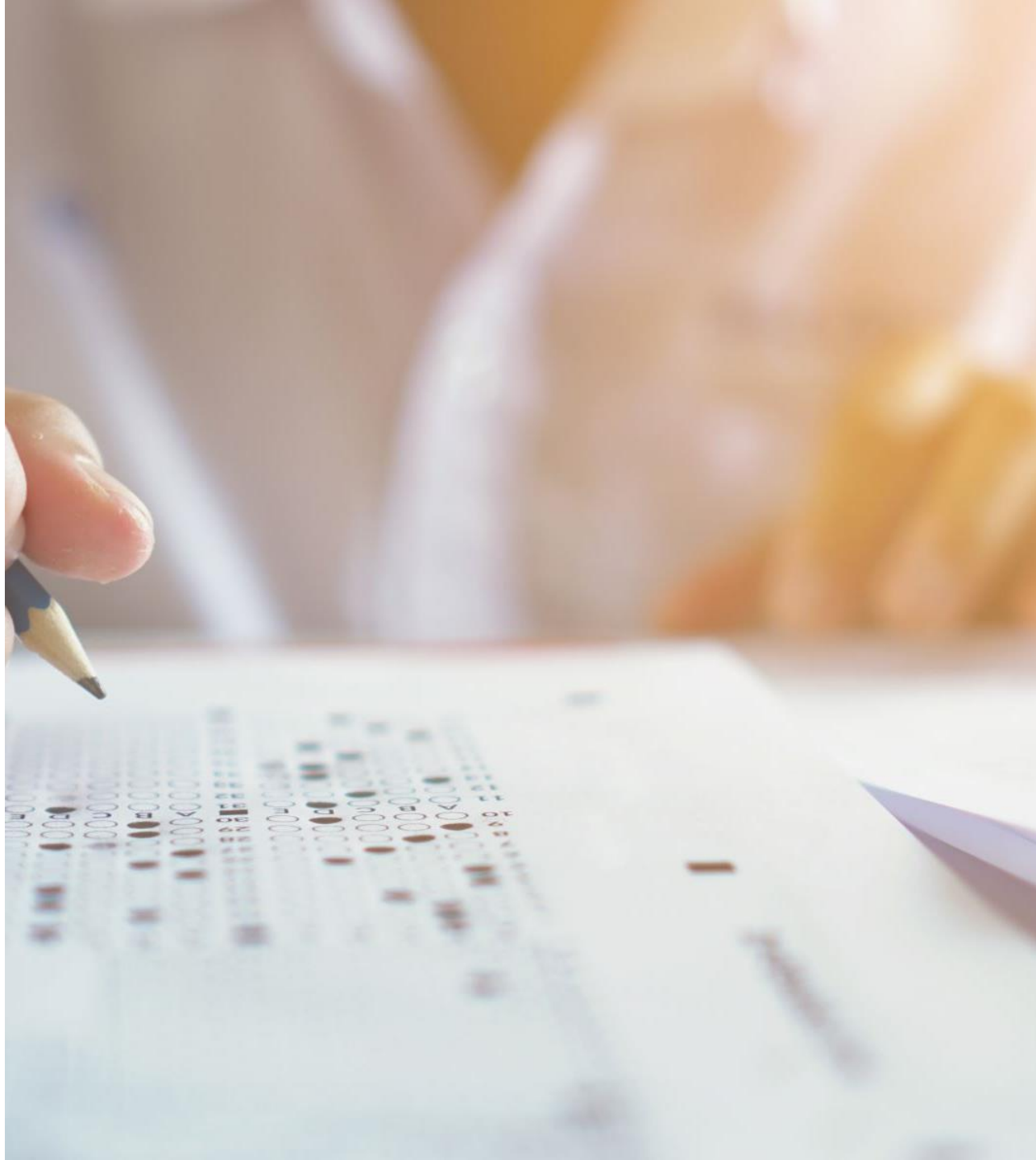
Who is affected?

By how much?

PROVE IT.

Problem Statement

It can take over **30** minutes and cost **> $1000** to reschedule a single case, and we reschedule ~500 cases per year, accounting for **250 hours** of wasted time and half a million bucks!



Capturing your Voices

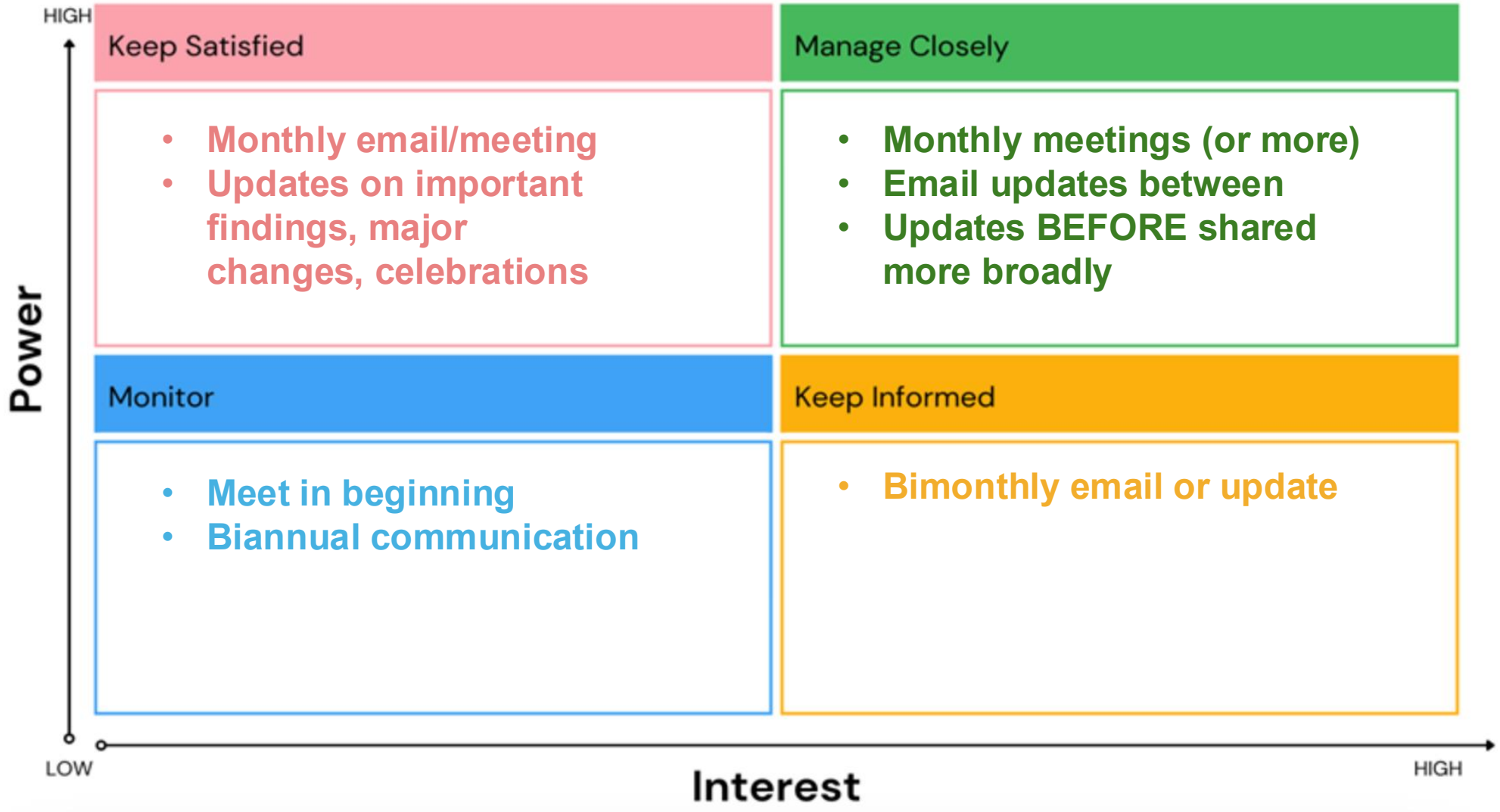
Step 1: Who are your people?

Step 2: What do you want to learn more about from them?

Step 3: How will you engage with them?

Step 4: How will you feedback what you learned?

Stakeholder Map



Coaching: Process Map

20 min

Step 1: Define your process & determine your entity

Step 2: List the steps involved – in sequence

Step 3: Create a flow chart

Step 4: Vet with others

Step 5: Identify pain points, positive points, and data points

NOTES for PB&J

1. Group consensus
2. Identify your customer – IE: who are you making this for?
3. Make decisions!

KEY	Team Check-in	Inspiration	Background	Process Improvement	Leadership	Quality/Safety	Coaching

#3 Sept. 9	Team Check-in: UCH Blood Bank	Who are my colleagues?	❑ **Complete Voice of Customer, Build Stakeholder analysis, and Develop a problem statement** *Due Oct. 28* ❑ **Complete a Process Map** *Due Nov. 4*	
	Investigate the Problem	How do I understand the problem I'm trying to solve?		
	Problem Statement	How do I quantify and scope the problem to solve?		
	Voice of the Customer and Stakeholder Analysis	What does your customer/business want?		
	Stakeholder Analysis	Who are the key people who will be impacted/impact my project?		
	Process mapping	How do I understand the steps in my current process?		
	Coaching			
Coaching	**Voice of the customer, process map, problem statement**			
#4 Sept. 23	Team Check-in: UCH Rheumatology Clinic	Who are my colleagues?	❑ **Complete Affinity Diagram** *Due Dec.9* ❑ **Reading for next session:** Kotter, John. *Leading Change: Why Transformation Efforts Fail* ❑ **Meet with Dr. Moksha Patel** *Due Nov. 4* ❑ **Draft Business Case** *Due Nov. 18*	
	Baseline Data	How do I identify key metrics?		
	Investigate the Problem	How do I understand the problem I'm trying to solve?		
	EMR and Process Data	How does the EMR enable data attainment? What EMR changes do I need to make to complete my project?		
	Understanding Root Causes	What tools can I use to organize information about my process?		
	Business Case	How do I make the financial case for my improvement work?		
Coaching	**Baseline data, root causes, business case**			
#5 Oct.7	Team Check-in: CHCO Digestive Health	Who are my colleagues?	❑ **Complete Myers-Briggs Assessment** *Due Oct. 24* ❑ **Complete literature review and program eval/QI/research tool** *Due Nov. 18*	✓ **Reading for next session:** Kotter, John. *Leading Change: Why Transformation Efforts Fail*
	Leading Change	What are the components of successful change?		
	QI vs. Research	How do I determine if my QI work is a research project?		

Today's Objectives

- Learn more about your fellow teams
- Understand tools for organizing information about your process
- Recognize the importance of data in QI
- List sources for obtaining data
- List the tips for getting better data, more efficiently
- Understand the financial impact of your work

Team Check-in: UCH Rheumatology

Background & Problem

For the CTP team check-in be prepared to succinctly share 3 items:

1) Introduce each team member (1 minute)

2) Tell us about your program (2 minutes)

3) What is the problem you think you will focus on? (3-5 minutes)
   - *E.g., What are the pain points for you, your staff and customers?*
   - *E.g., Do you have any data to understand your problem?*

AMC Rheumatology OP

- Liudmilia Kastsianok, M.D., RhMSUS, FACR
- Susan Donahue, M.S., FACMPE

September 23, 2025

uchealth

AMC & Lone Tree Rheumatology

- AMC & Lone Tree Rheumatology are part of CU School of Medicine focusing both on highly complex rheumatologic conditions and research
- Current number of providers – 8.125 cFTEs
- Uniquely provide tertiary/quaternary referrals for highly complex rheumatologic conditions
- We must delicately balance preserving this critical access point with the fluctuating regional rheumatology needs

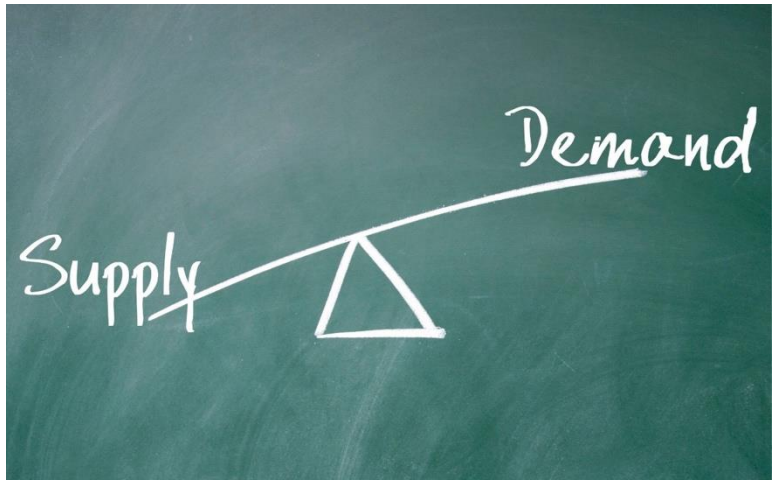
Patient Access to Rheumatology

- Nationwide and statewide shortage of rheumatologists
- High demand with limited supply:
  - 800-900 Referrals a month with capacity to see 14% of the patients
- Pain points for patients:
  - The ease of getting an appointment
  - Wait for initial appointment
- Pain points for referring physicians:
  - Access to rheumatology
- Pain points for physicians:
  - New patients scheduled without appropriate rheumatology diagnosis for Rheumatology
  - Call Center scheduling and decision tree errors
  - Physician referral review process (uncompensated work)
  - Limited clinic space
- Pain points of support staff:
  - Referral intake and review process
  - Increased number of calls and communication to the patients regarding referral acceptance or denial

AMC & Lone Tree Rheumatology

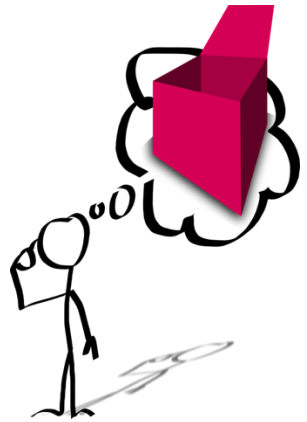
The Problem

- Limited supply of rheumatologist
- Limited space
- Increasing demand



The Solution

- Better use of resources
- Expand access outside of the clinic space
- Alternative visit- eConsults



Data and Focus

- AMC Rheumatology receives an average of 800–900 referrals each month, evenly split between internal and external sources.
- Analysis shows that approximately 20% of the diagnoses are associated with abnormal labs with non-specific symptoms/diagnosis
- Convert these referrals to eConsults

Investigate the Problem

Emily Gottenborg, MD

Institute for Healthcare Quality, Safety and Efficiency
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Investigate

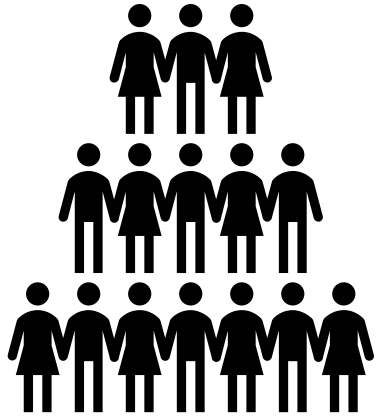
WHAT is your problem?

WHY is it happening?

Investigate - WHAT

Sense a problem

Describe
in detail -
Problem Statement



Understand
stakeholders –
Voice of Customer

Investigate - WHAT

Problem Statement

Sense a problem

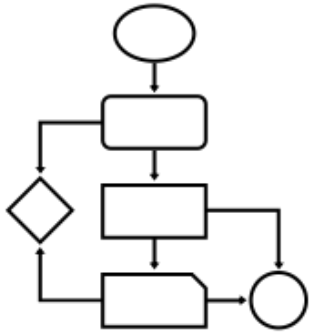
Describe
in detail -
Problem Statement

Understand
stakeholders –
Voice of Customer

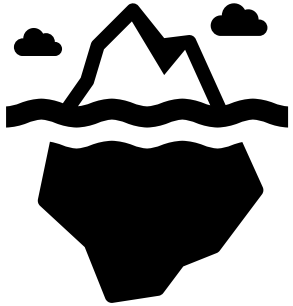
Investigate – WHY

Problem Statement

Gemba – The Place, The Walk



Process Map



Affinity Diagram

Investigate: **WHY** do you have a problem

- ❑ Create Problem Statement
- ❑ Perform Stakeholder Analysis
- ❑ Complete Voice of Customer
- ❑ Complete Process Map
- ❑ Complete Literature Search
- ❑ Create Affinity Diagram
- ❑ Acquire Baseline Data
- ❑ Identify Key Metrics – outcome, process, structural, balancing
- ❑ Build a Business Case
- ❑ Create Aim Statement

Tool: Affinity Diagram
Understanding Root Causes

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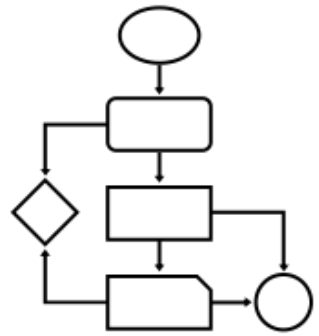
It is critical to identify the root cause(s) and not only address what lies upon the surface.

Voice of the customer

Epic

現場

Gemba (Walk)



Process Map

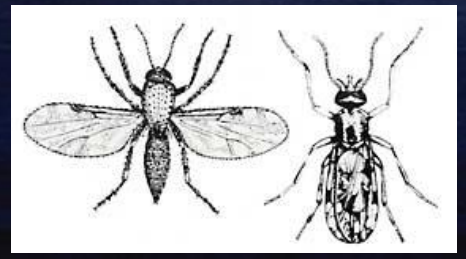
Step 1: Brainstorm

Why is your problem happening?

Step 1: Brainstorm

Step 2: Ask Why

Five Why's



37% of Physical Therapy Consults Are Inappropriate

10,000 hours of work (wasted) per year

Why do we order PT?

Reason for PT? ??????

Comments: ✚ Add Comments

5 WHYs

Why don't providers order PT appropriately?

- *They don't know what is appropriate.*

Why don't they know what's appropriate?

- *No list of indications within the order.*
- *Mobility is part of the nursing assessment.*

Why don't we understand the nursing assessment?

- *Different language than providers use (AMPAC).*

If nurses do the assessment, and document it... why don't they order PT?

.....

Step 3: Sort by Themes

Communication
Environment
Materials
Processes
EHR
Policies

Step 4: Vote on Top Contributors

EHR	Communication	Process	Materials Environment	Knowledge
No Indications	RN/MD/PT use Different language	not discussed in discharge rounds	Busy	Don't know indications for PT
RN assessment not visible	Providers don't know this language		No geographic cohorting	
No feedback loop				

Step 5: Affinity Diagram

EHR	Communication	Process	Materials Environment	Knowledge
No Indications	RN/MD/PT use Different language	not discussed in discharge rounds	Busy	Don't know indications for PT
RN assessment not visible	Providers don't know this language	2	No geographic cohorting	2
No feedback loop	6		1	
7				

Next Steps...

Change the Epic Order Set; Optimize Roles to Enhance Communication!

Coaching Breakout:
Contributing Factors

Consider WHY you have a problem.

Brainstorm as many causes of this problem as possible.

Put each on 1 sticky note. Ask Why.

Sort into themes / domains.

You will continue work on this as you complete prior steps in the Investigate phase (VOC, gemba, process map)


BREAK-TIME
Come back at 2:00!

Data: Uses in QI & Finding It

Tyler Anstett, DO

Institute for Healthcare Quality, Safety and Efficiency
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data noun

da·ta ˈdā-tə ˈda- *also* ˈdä-

factual information (such as measurements or statistics) used as a basis for reasoning, discussion, or calculation

“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.

Uses for Data

- Problem identification/demonstrate need or buy-in
- Understand WHY

- REALLY understand WHY
- Reveal solutions
- Track interventions
- Visualize change

Uses for Data

- Problem identification/demonstrate need or buy-in
- Understand WHY

TODAY

- REALLY understand WHY
- Reveal solutions
- Track interventions
- Visualize change

FUTURE SESSIONS

Define the problem

Is it a problem?

How do you know?

Who is affected?

By how much?

Are there best practices to refer to?

PROVE IT.

(ahem, with data ☺)

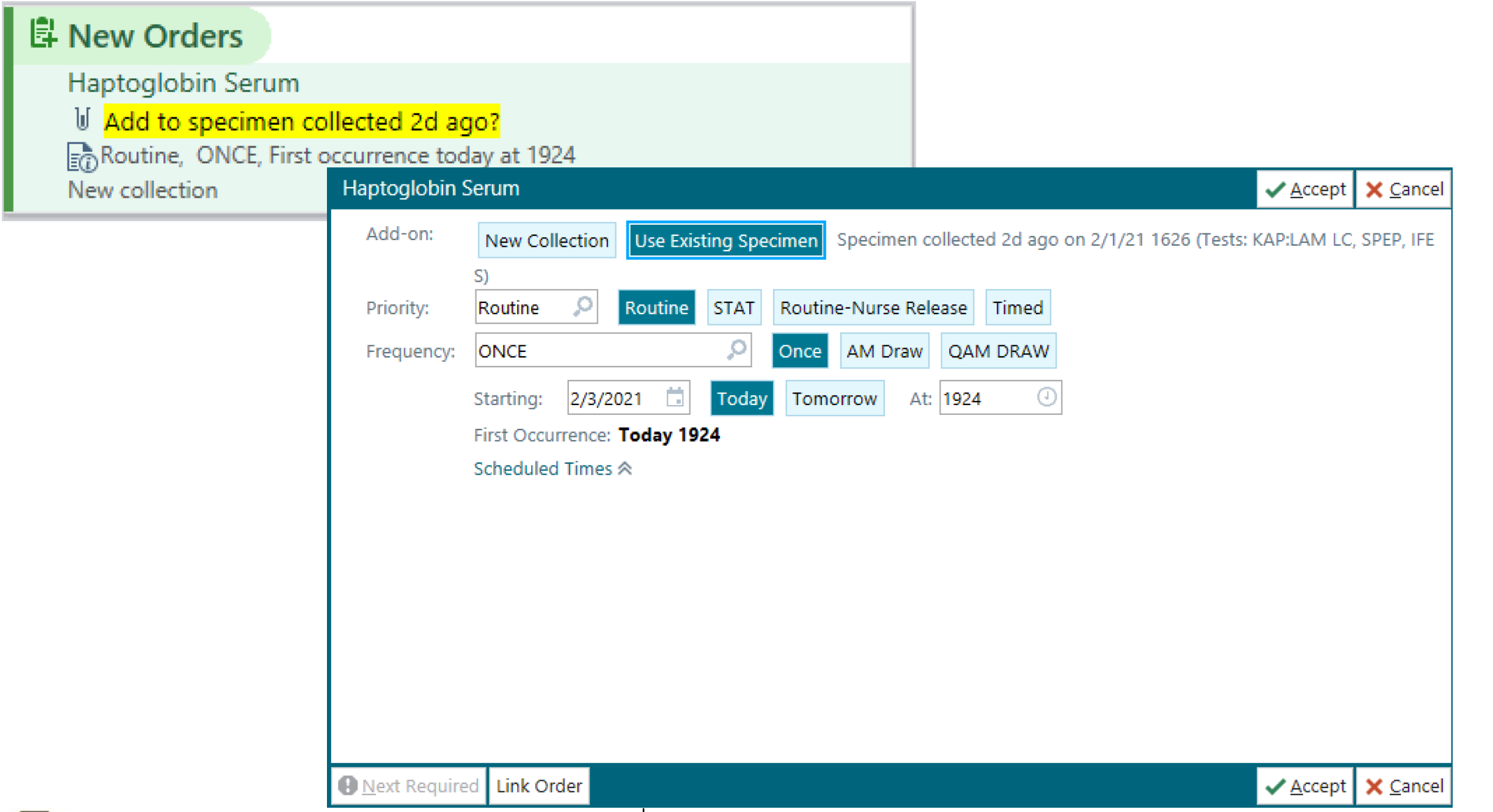

O
Rh POSITIVE
A
Rh POSITIVE
B
Rh POSITIVE
AB
Rh POSITIVE

Red Blood Cell (pRBC) Transfusion Recommendations
pRBCs are most likely APPROPRIATE in the following clinical scenarios:
• Hgb < 7 g/dL OR Hgb < 8 with CV disease AND symptoms
• Hemodynamically unstable patient with an acute bleed
• Perioperative acute blood loss anemia with expected Hgb < 7
• Cytotoxic chemotherapy with expected Hgb < 7
• Anemia with symptoms that are intolerable without transfusion
Transfuse 1 unit at a time unless Hgb <6.0 or bleeding out

COST = **~$700**
Per Unit

50% of non-OR, non-MTP, inpatient transfusions DO NOT meet guidelines

1783 units transfused outside guidelines x $700/unit = $1,248,100.00


New Orders
Haptoglobin Serum
Add to specimen collected 2d ago?
Routine, ONCE, First occurrence today at 1924
New collection
Haptoglobin Serum
Accept
Cancel
Add-on:
New Collection
Use Existing Specimen
Specimen collected 2d ago on 2/1/21 1626 (Tests: KAP:LAM LC, SPEP, IFE
S)
Priority:
Routine
Routine
STAT
Routine-Nurse Release
Timed
Frequency:
ONCE
Once
AM Draw
QAM DRAW
Starting:
2/3/2021
Today
Tomorrow
At:
1924
First Occurrence: Today 1924
Scheduled Times
Next Required
Link Order
Accept
Cancel

Outcome of Add-On Requests

from 1/1/2018 to 9/18/2019

Slide Credit: Amber Stokes

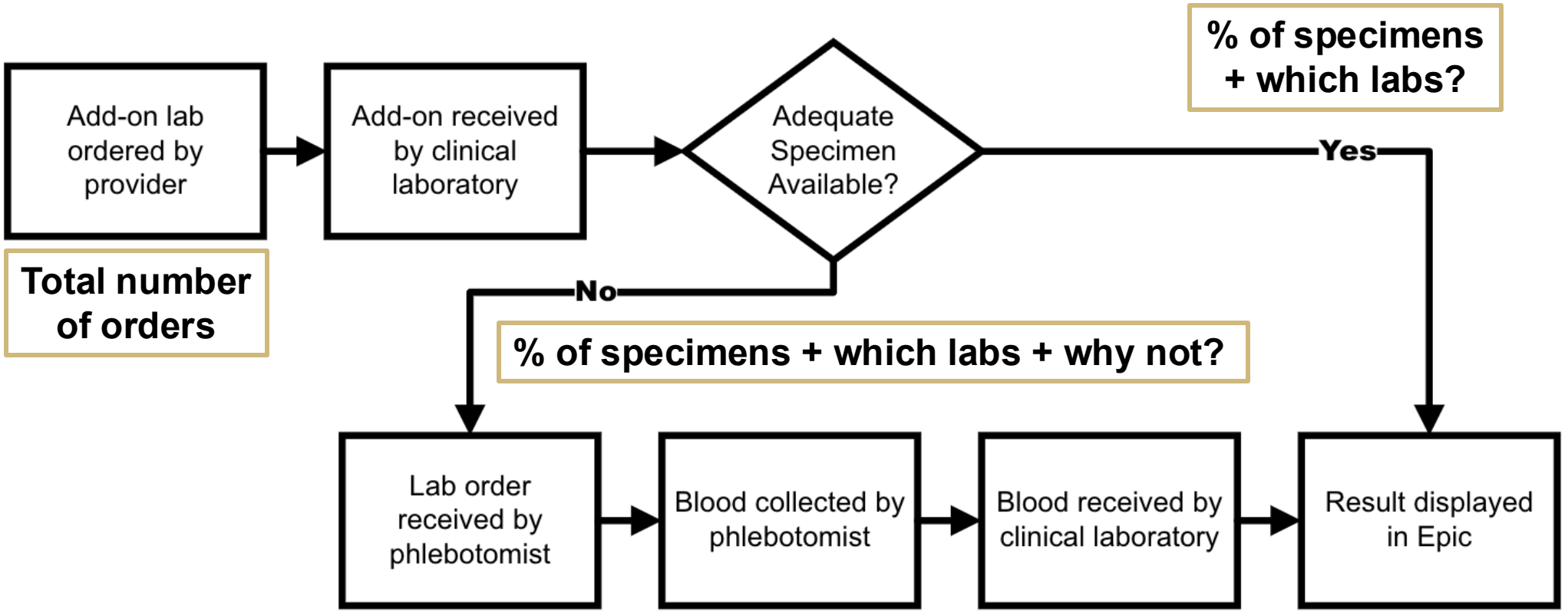
“Every system is perfectly designed to get the results it gets”

Paul Batalden, MD
IHI Senior Fellow
Professor Emeritus of Pediatrics, Community and Family Medicine and The Dartmouth Institute for Health Policy and Clinical Practice

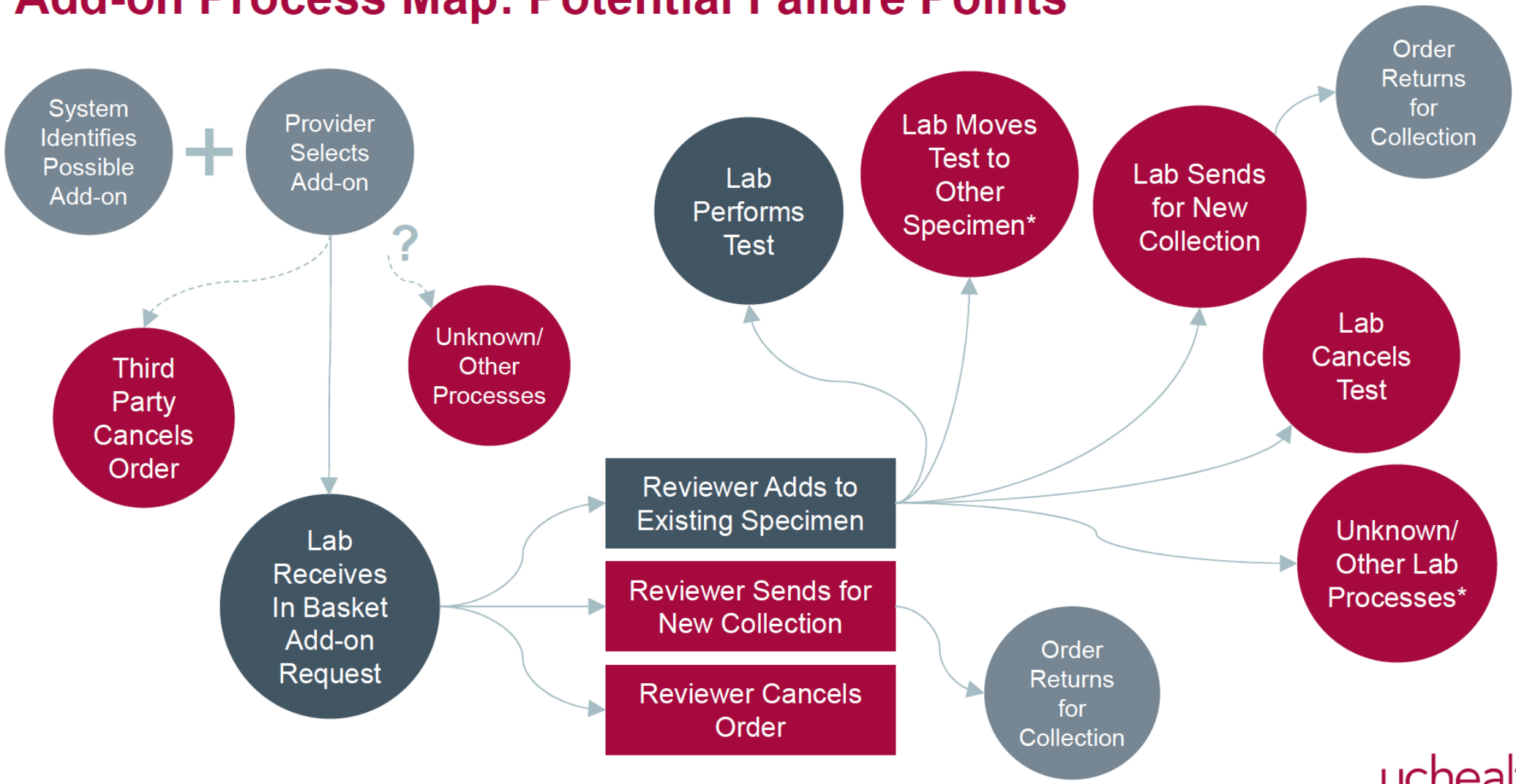
Source: https://www.ihi.org/insights/magic-every-system-perfectly-designed.

How is your system currently "*designed*"?

(AKA: how are your current processes leading to your observed outcomes?)


Add-on lab ordered by provider
Add-on received by clinical laboratory
Adequate Specimen Available?
% of specimens + which labs?
Yes
No
Total number of orders
% of specimens + which labs + why not?
Lab order received by phlebotomist
Blood collected by phlebotomist
Blood received by clinical laboratory
Result displayed in Epic

Add-on Process Map: Potential Failure Points



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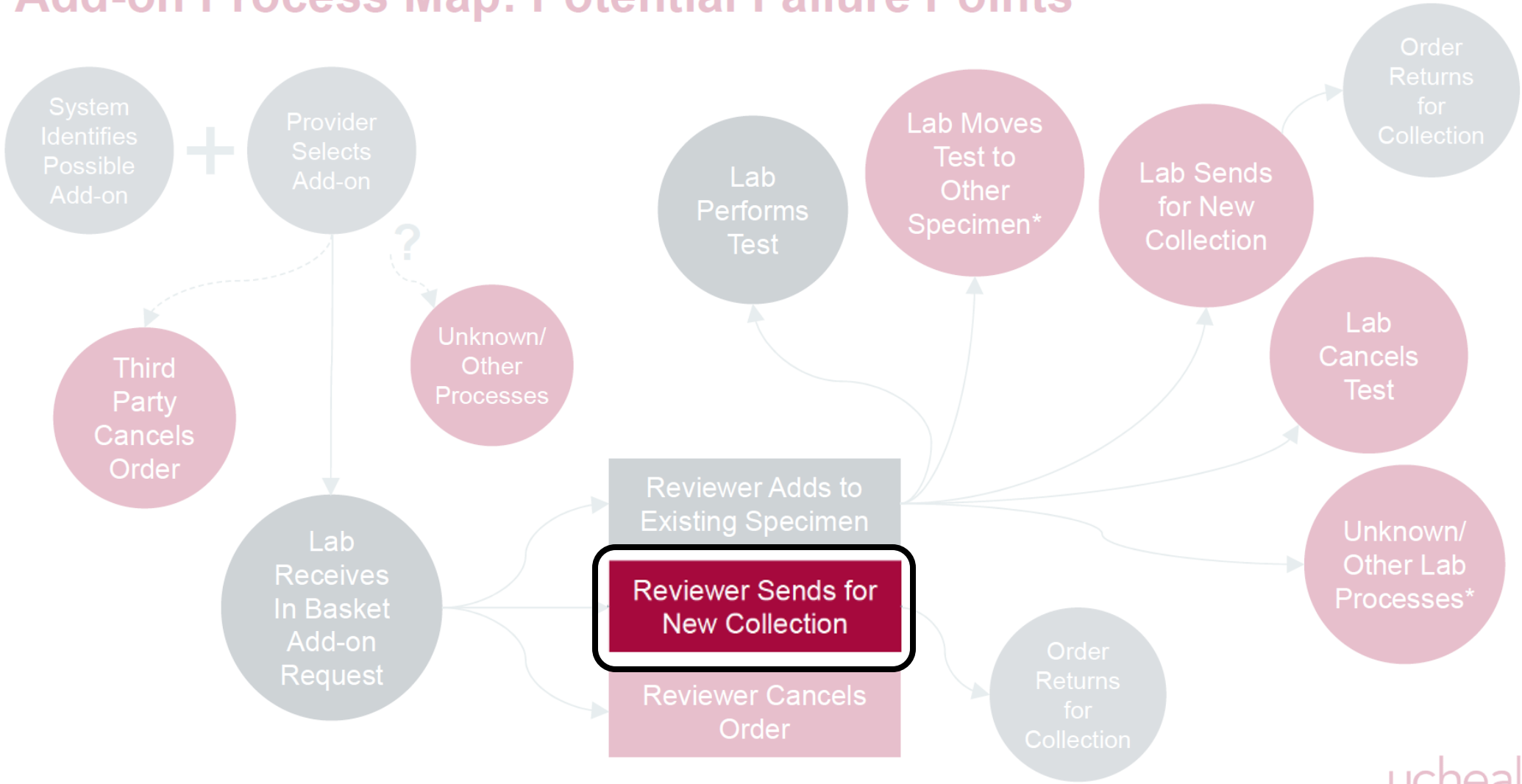
Add-on Process Map: Potential Failure Points



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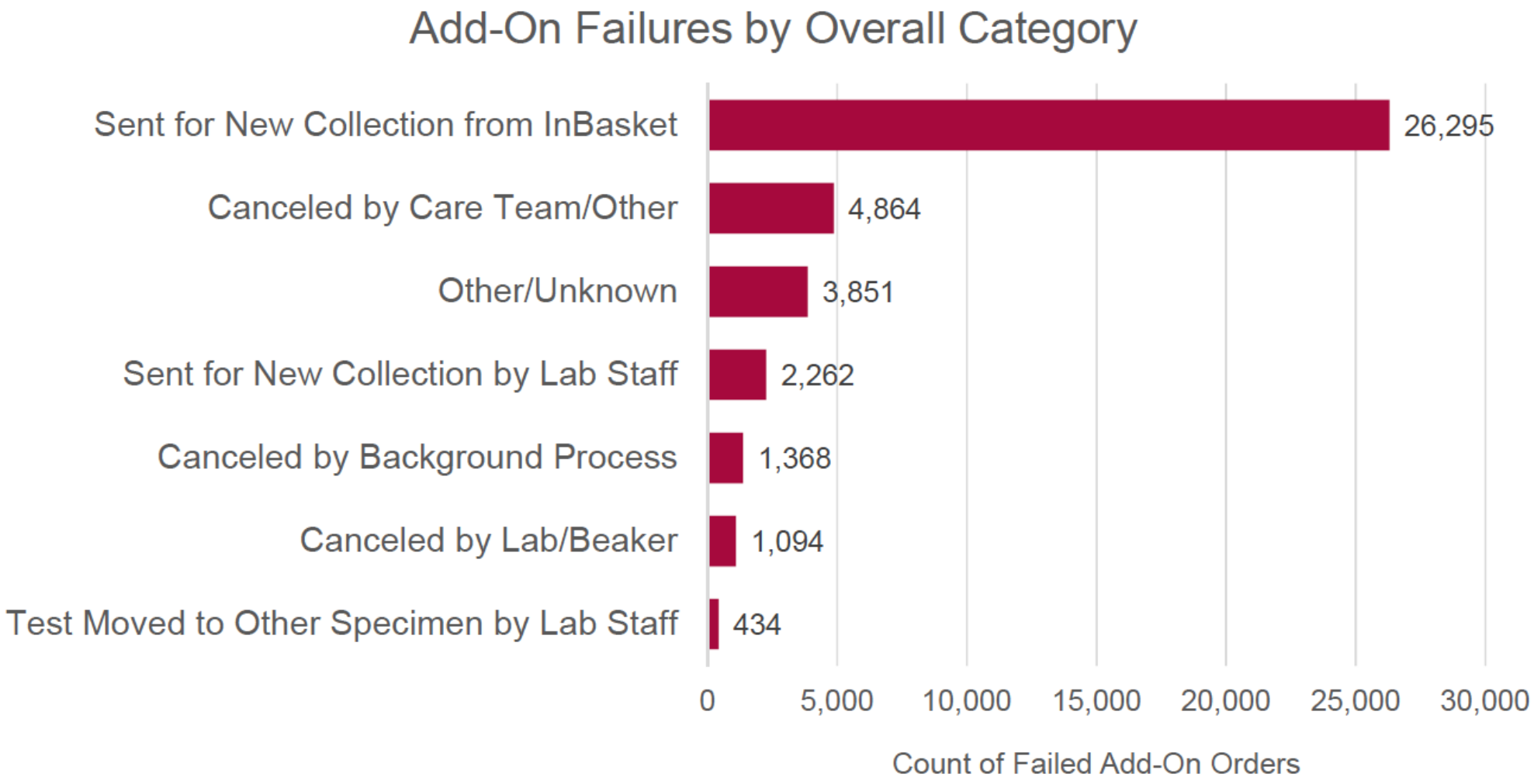


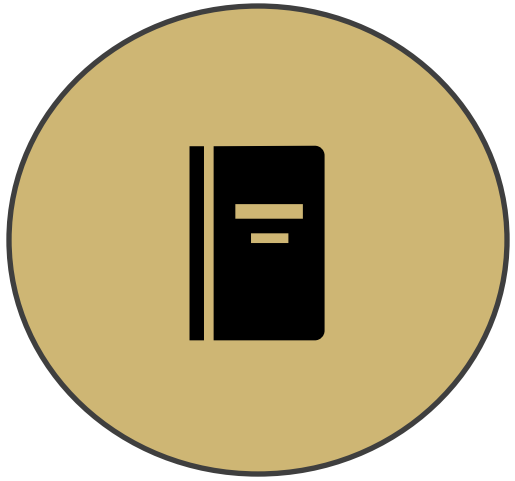
Slide Credit: Amber Stokes

How is your system currently "*designed*"?

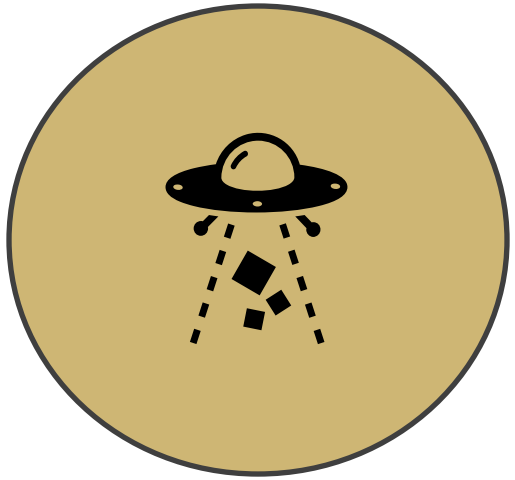
(AKA: how are your current processes leading to your observed outcomes?)

This is your baseline data

Where to find, how to find, and how to collect data.

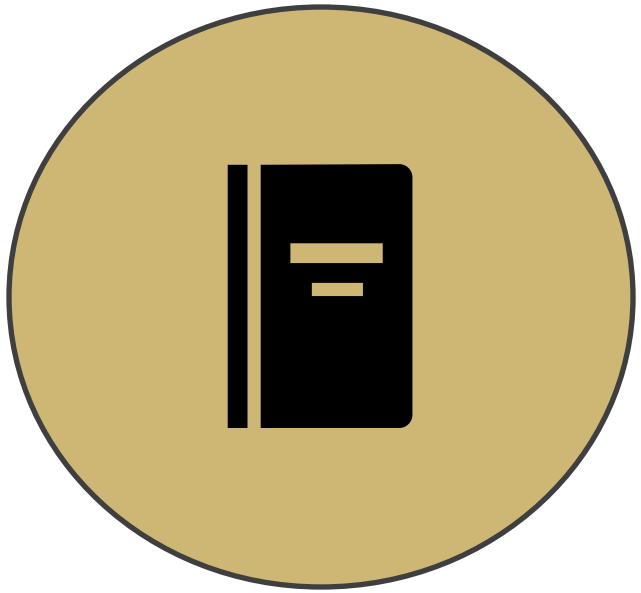


Data Sources



Data Collection

Data from Epic



Data
Sources

Get it yourself		Manual Chart Review EHR reports
Division/Unit	EHR Reports Data experts	National registries
Department	EHR Reports Data experts	National registries
Institution	EHR Reports Data experts	National rankings
State-Wide		State-death registry All-payer claims database

Get it yourself

現場 Gemba

NOTE: your data may not presently exist!

Measuring Gait Speed in Seniors Clinic

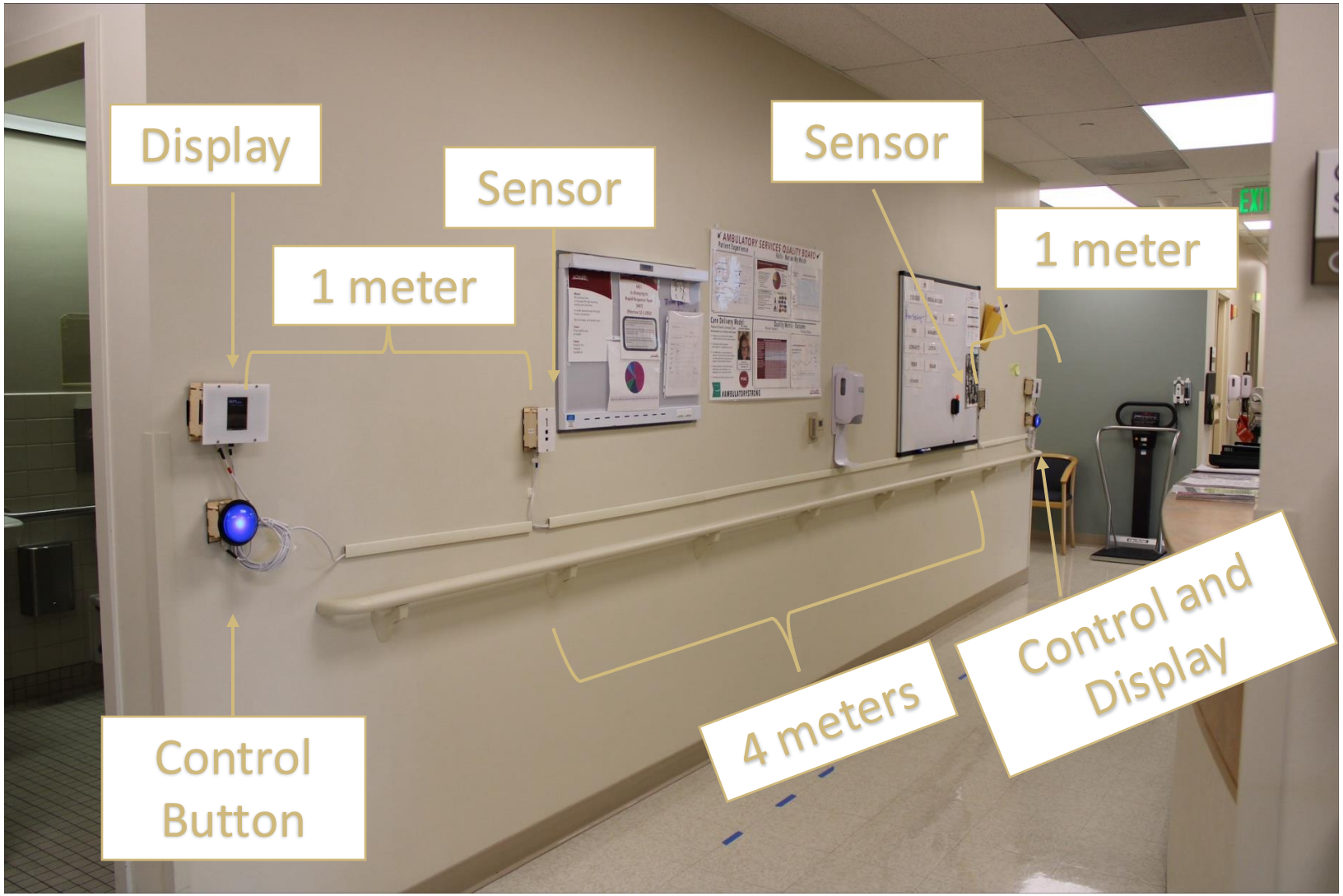
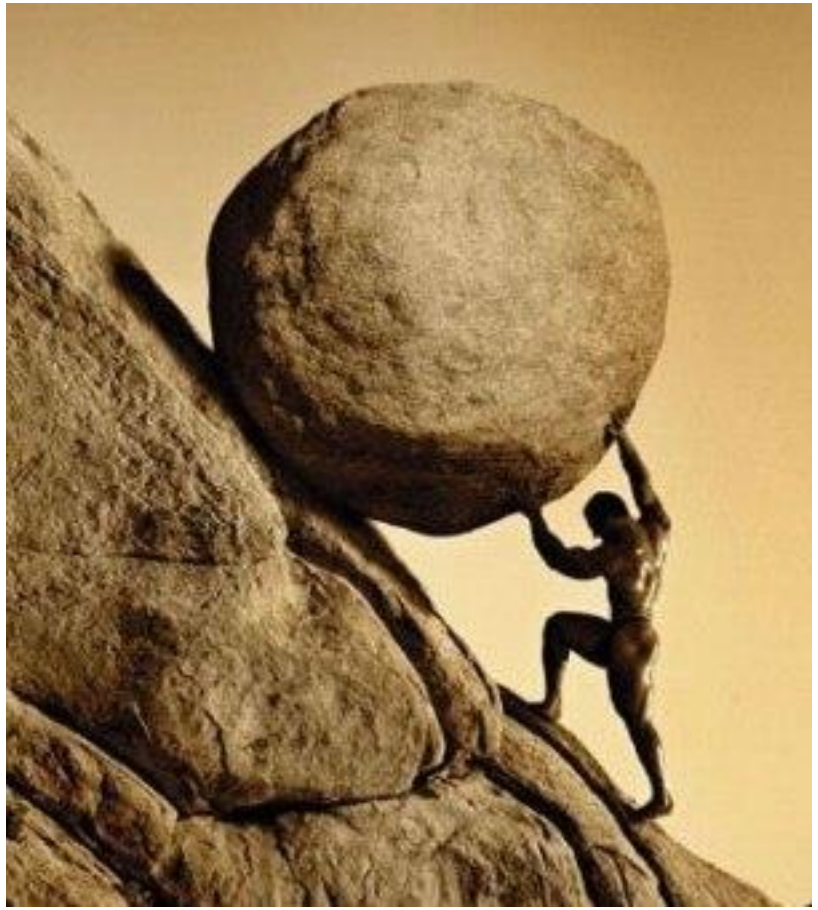


Image Courtesy of Thomas Johnson, MD

Get it yourself



Manual chart review is ONLY for:

1. Identifying data sources
2. Validating your data
3. Exploring whether you have a problem.

NOT for ongoing data collection

Division/Unit

Department

Institution

vizient®

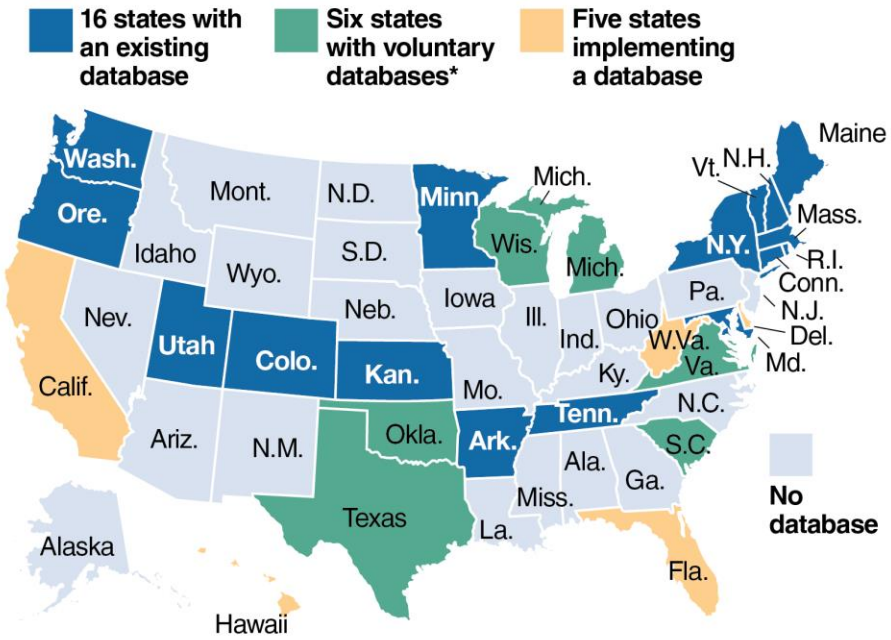
NOTE: Accountability data – USE CAUTION!

State-Wide

State-death registry
All-payer claims database

State of databases

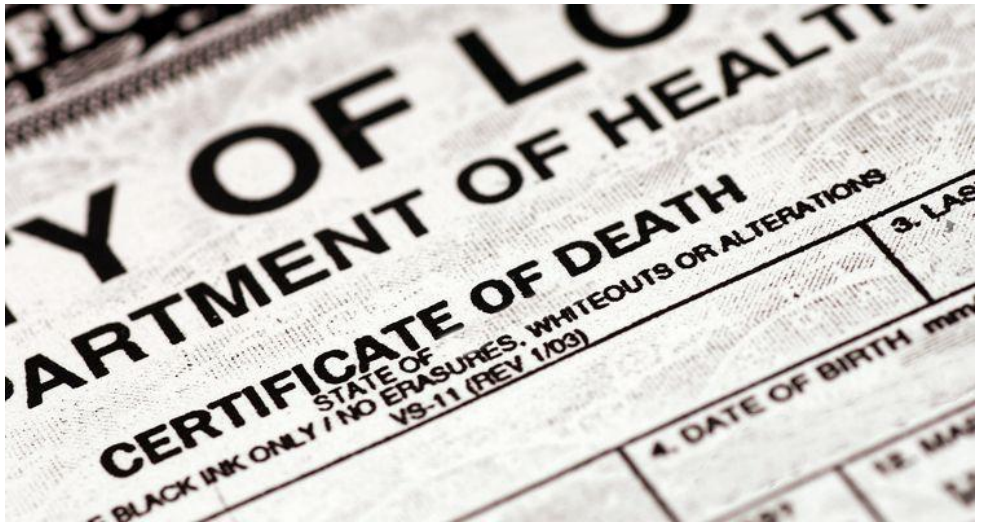
All-payer claims databases have yet to catch on at the state level



Notes: California also has a voluntary database. West Virginia's implementation is currently on hold.

* States where submissions are voluntary or the datase is maintained through voluntary effort

Source: APCD Council interactive state report map



HEALTH DATA Compass

Be clear about what you are measuring!

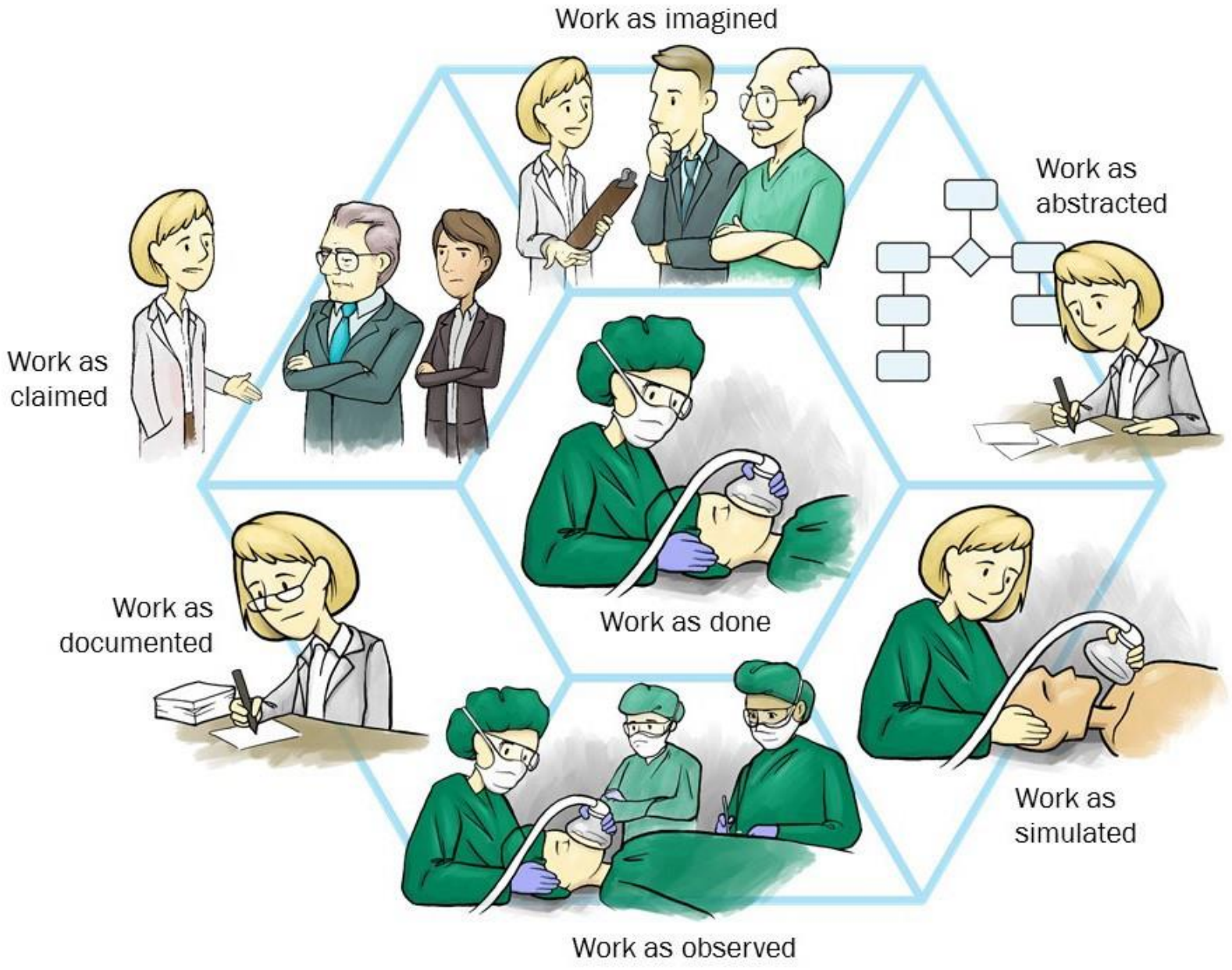
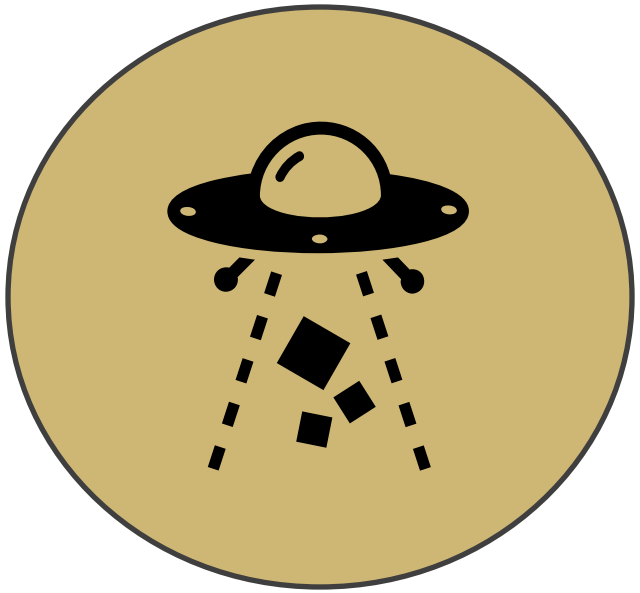


Image credit: Deutsch E. 2017. Bridging the gap between work-as-imagined and work-as-done. Pennsylvania Patient Safety Advisory. https://collections.nlm.nih.gov/master/borndig/101711396/201706_80.pdf



Data Collection

Conceptual vs Operational definitions

- Conceptual is *what* you are going to measure
- Operational is *how*

Average time to appointment

Date/Time appointment occurred

–

Date/Time appointment requested

Total number of appointments requested

Conceptual vs Operational definitions

Hours? Days? Weeks?

Average time to appointment

Occurred? Scheduled?

Date/Time appointment occurred ← Encounter Closed?

–

Date/Time appointment requested ← Order? Call?

Total number of appointments requested

Conceptual vs Operational definitions

Daily order of CBCs and BMPs on inpatients ordered by day team residents

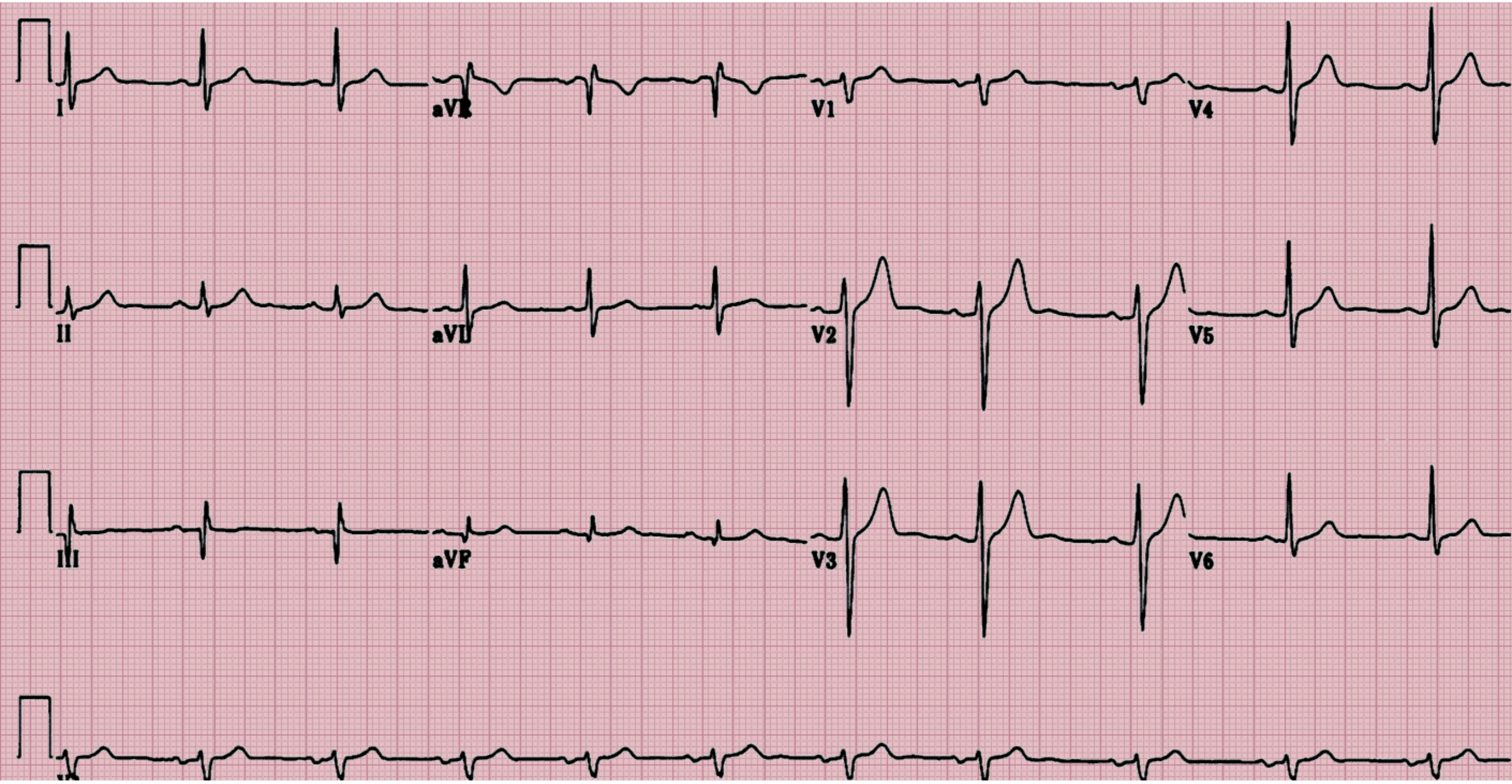
Number of CBCs

+

Number BMPs on inpatients ordered by day team residents between 1200am – 1159pm

---

Total medicine team census per day


I
aVR
V1
V4
II
aVL
V2
V5
III
aVF
V3
V6

ECG (Electrocardiogram) 12 Lead (Order 397966448)

ECG

Date and Time: 5/10/2018 2:09 PM Department: UCHealth Heart and Vascular Care - Anschutz Medical Campus
Ordering User/Authorizing: Benton, Emily M, NP (auto-released)

Ordered On 5/10/2018 2:09 PM

Ordering Provider	Authorizing Provider	Ordering User	Ordering Department
Benton, Emily M, NP 720-848-5300 303-266-4610	Benton, Emily M, NP 720-848-5300 303-266-4610	Benton, Emily M, NP	AMC CARD PROGCARE UNIT

Order Information

Order Date/Time	Release Date/Time	Start Date/Time	End Date/Time
05/10/18 02:09 PM	05/10/18 02:09 PM	05/10/18 02:10 PM	05/10/18 02:10 PM

Order Details

Frequency	Duration	Priority	Order Class
ONCE	1 occurrence	STAT	Hospital Performed

Order Questions

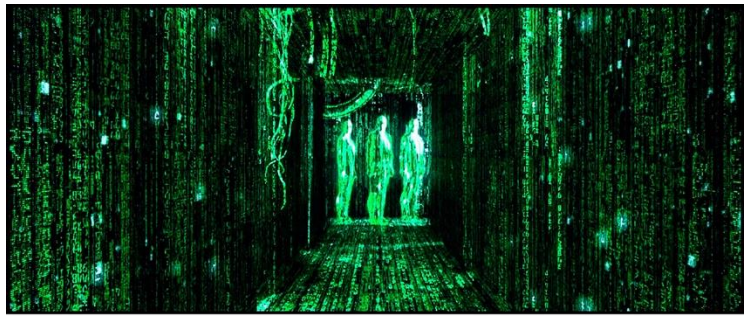
Question	Answer	Comment
Indication for test:	Tachycardia	

“Happiness is there when expectations meet the reality.”

Dr. Debasish Mridha, MD


Tip

Data Collection



Data Analysis

Data Interpretation

These are different steps and often done by different people. **Know the role and capabilities of the person you are speaking with.**

Image Credit: Warner Bros.

Create a data dictionary

- Repository of all your data points
- Provides a detailed description of each data point including:
  - Definition
  - Source
  - Other notes
- Built over-time as you get more data
- Especially helpful for EHR data

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

Data Organization

	A	B	C	D	E	F
1	**Date**	**Item**	**Sales Rep**	**Quantity**	**Price**	**Commission**
2	01-07-2018	Projector	Bob	13	150	11%
3	01-07-2018	White Board	Mark	8	40	9%
4	02-07-2018	White Board	Stacey	7	40	7%
5	03-07-2018	White Board	Mark	18	40	8%
6	05-07-2018	Office Chair	Stacey	19	230	6%
7	05-07-2018	Projector	John	4	150	10%
8	08-07-2018	Printer	Bob	9	80	6%
9	10-07-2018	Printer	Laura	16	80	2%
10	10-07-2018	Office Chair	Mark	15	230	9%
11	10-07-2018	Diary	Bob	15	16	1%
12	10-07-2018	Office Chair	John	7	230	2%
13	13-07-2018	Diary	Laura	23	16	11%
14	17-07-2018	White Board	Bob	20	40	5%
15	17-07-2018	Office Chair	Mark	9	230	3%
16	20-07-2018	White Board	Stacey	23	40	6%
17	20-07-2018	White Board	Stacey	4	40	5%

1. ORGANIZE by columns
2. DON’T use color coding
3. Set up BEFORE you start collecting data

Build out shells for your data BEFORE you collect AND analyze it.

Characteristic	UCH	Non-UCH Metro	North	South	All sites Combined
Transfusion order date/time					
Pre-transfusion order Hgb level					
Number of units ordered to be transfused					
Indication for transfusion selected					

	Non-Alert	Alert	
Characteristic	**Arm 1**	**Arm 2 (non-interruptive)**	**Arm 3 (interruptive)**
Age_in_Years			
Sex			
Female			
Male			
missing			
Race			
American Indian or Alaska Native			
Asian			
Black or African American			
Native Hawaiian and Other Pacific Islander			
White or Caucasian			
Other			
More than one race			
Ethnicity			
Hispanic, Latino/a, or Spanish Origin			
Non-Hispanic			
missing			
Language			
English			
Spanish			
Other			
Financial_Classification			
Commercial			
Indigent Care			
Medicaid			
Medicare			
Other			
Self-Pay			

“Doveryai, no proveryai.” (Trust, but verify)

Ronald Reagan, United States President 1981 – 1989

“A minimum put to good use is enough for anything.”

Jules Verne, Around the World in Eighty Days

Getting Data Steps

1. Define base population – inclusion/exclusion criteria

2. Request data as best you can, but recognize this will be a conversation between you and who will be pulling data

    - GOAL = pulling ice cream, maybe not specific flavor

3. Validate your data

Don’t let perfect be the enemy of good enough!

Coaching Breakout: *Baseline Data*

10 min

What data do you…

- Have?
- Need?
- Want?

Where will you get it?

An Epic Journey:

From Data --> Wisdom --> Action

How to use the EMR to drive evidence-based improvement efforts

Moksha Patel, MD

Institute for Healthcare Quality, Safety and Efficiency

SCHOOL OF MEDICINE

UNIVERSITY OF COLORADO **ANSCHUTZ MEDICAL CAMPUS**

Where Are We Going?

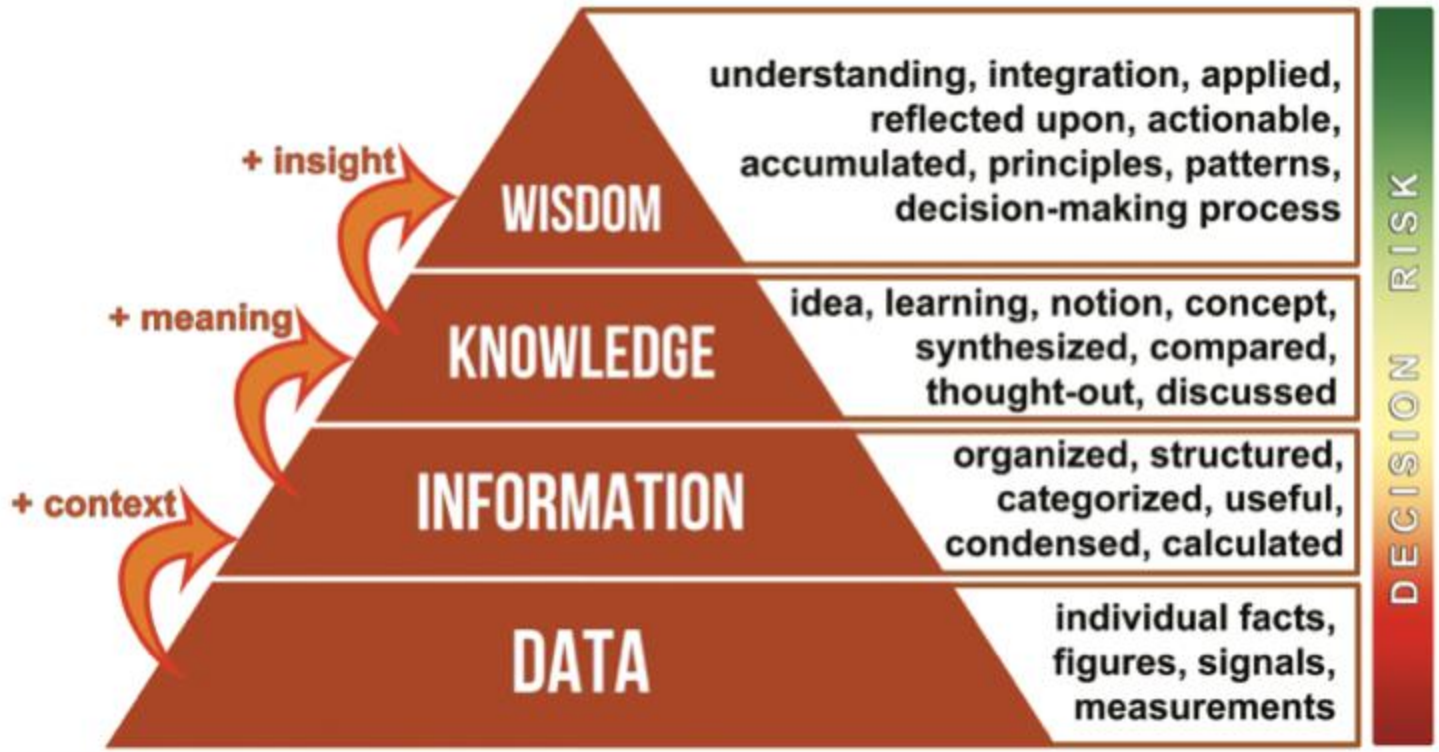
Objective:

Develop a process for obtaining relevant EMR data for quality and performance improvement projects

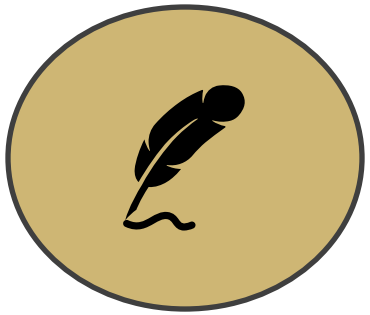
Outline

- The DIKW Pyramid
- Epic Structural Overview
- R.E.A.L. D.A.T.A - A Step-by-step guide to obtain EMR Data
- Data collection with the UCH HEAT team

Understanding Data: *Data Hierarchy*



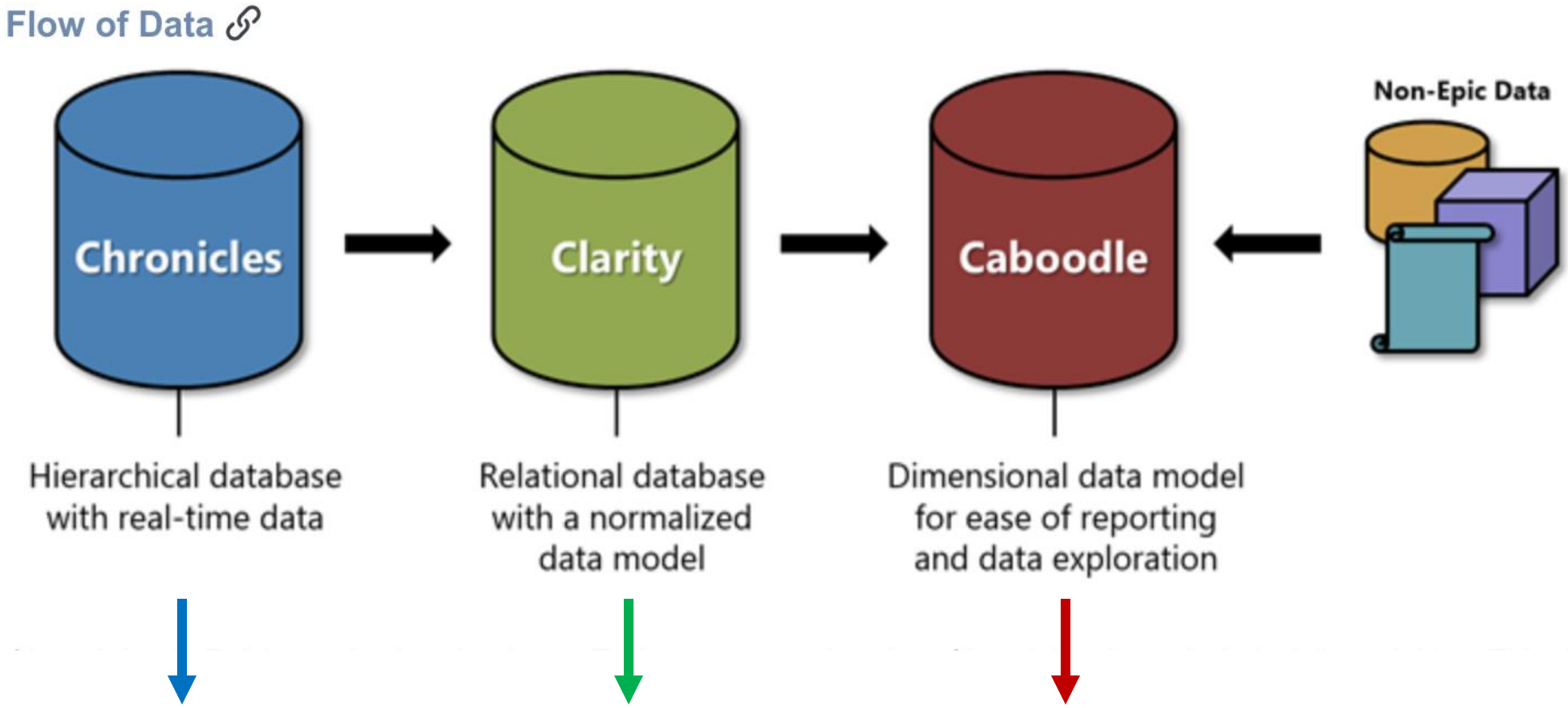
Tedeschi L. O. (2019). ASN-ASAS SYMPOSIUM: FUTURE OF DATA ANALYTICS IN NUTRITION: Mathematical modeling in ruminant nutrition: approaches and paradigms, extant models, and thoughts for upcoming predictive analytics1,2. *Journal of animal science*, *97*(5), 1921–1944. https://doi.org/10.1093/jas/skz092



Key Point

~~Data~~
Wisdom

Change



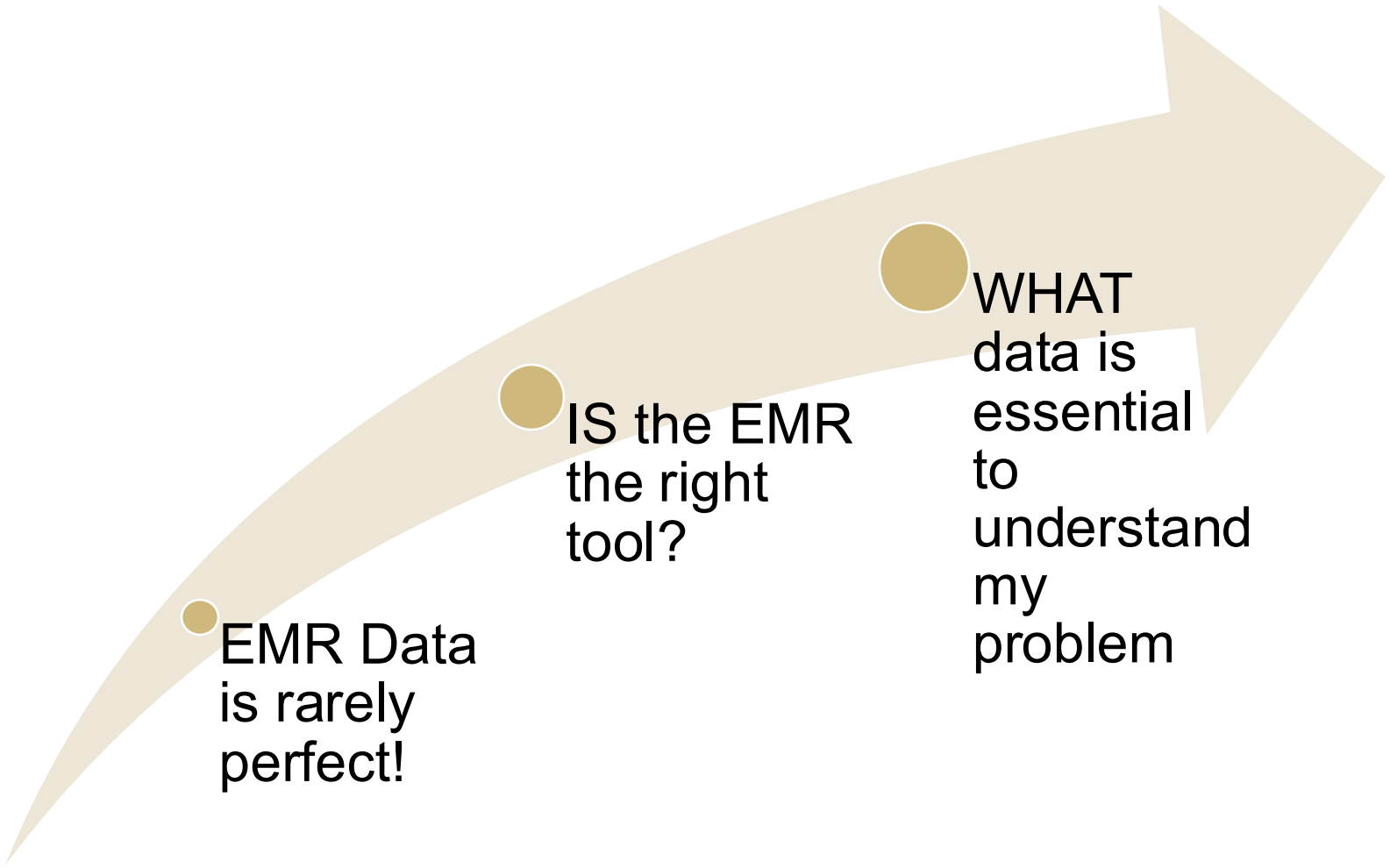
REPORTING TOOL:

Reporting WorkBench

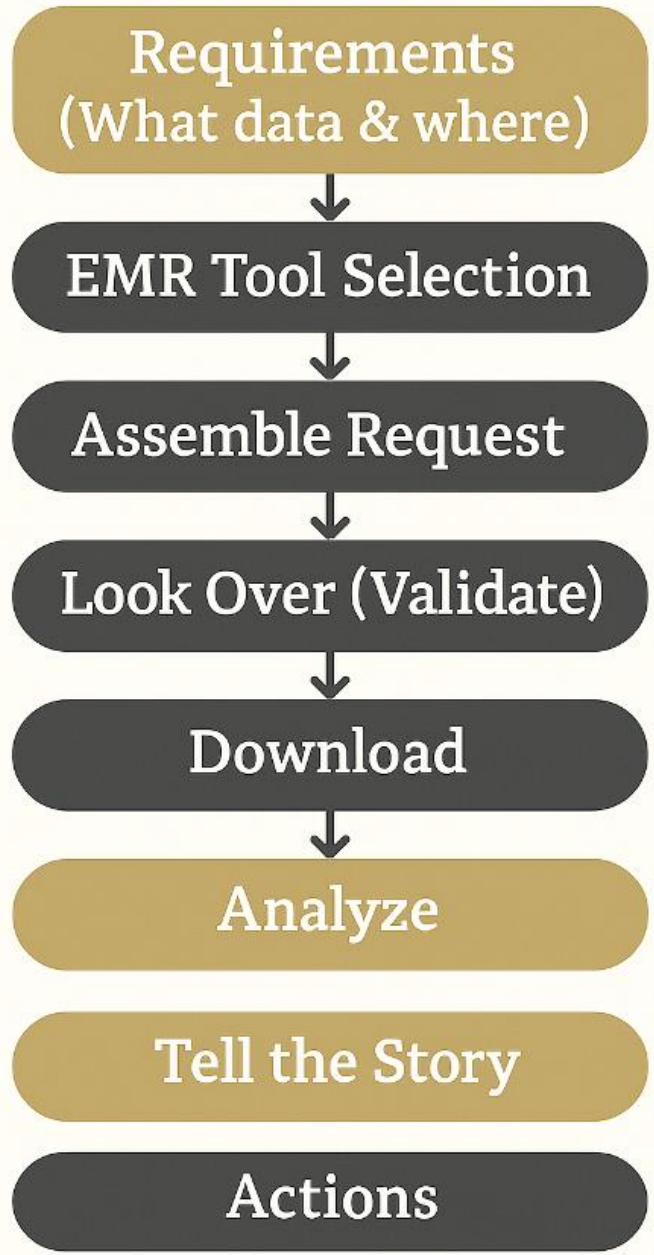
SQL Query

SlicerDicer

EMR Data: Caveats



R.E.A.L. D.A.T.A.


Requirements
(What data & where)
EMR Tool Selection
Assemble Request
Look Over (Validate)
Download
Analyze
Tell the Story
Actions

Requirements: What data do I need?

Who - Who is my intended population?

What - What metrics do I need? (i.e Length of stay, patient age)

Where - What locations, departments, or units am I interested in?

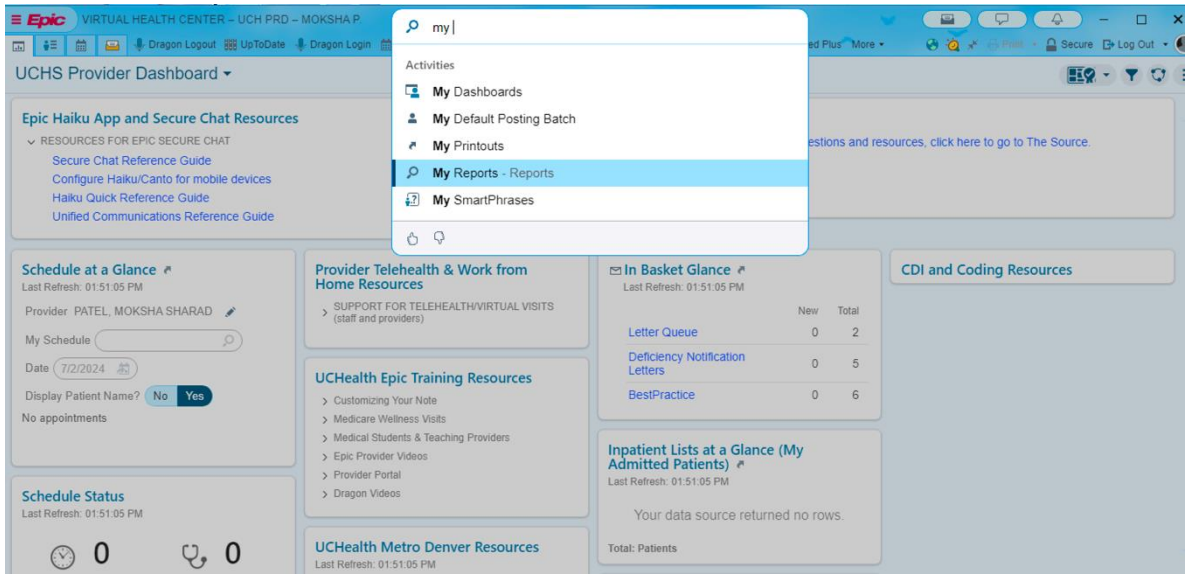
When - What time frame am I interested in?

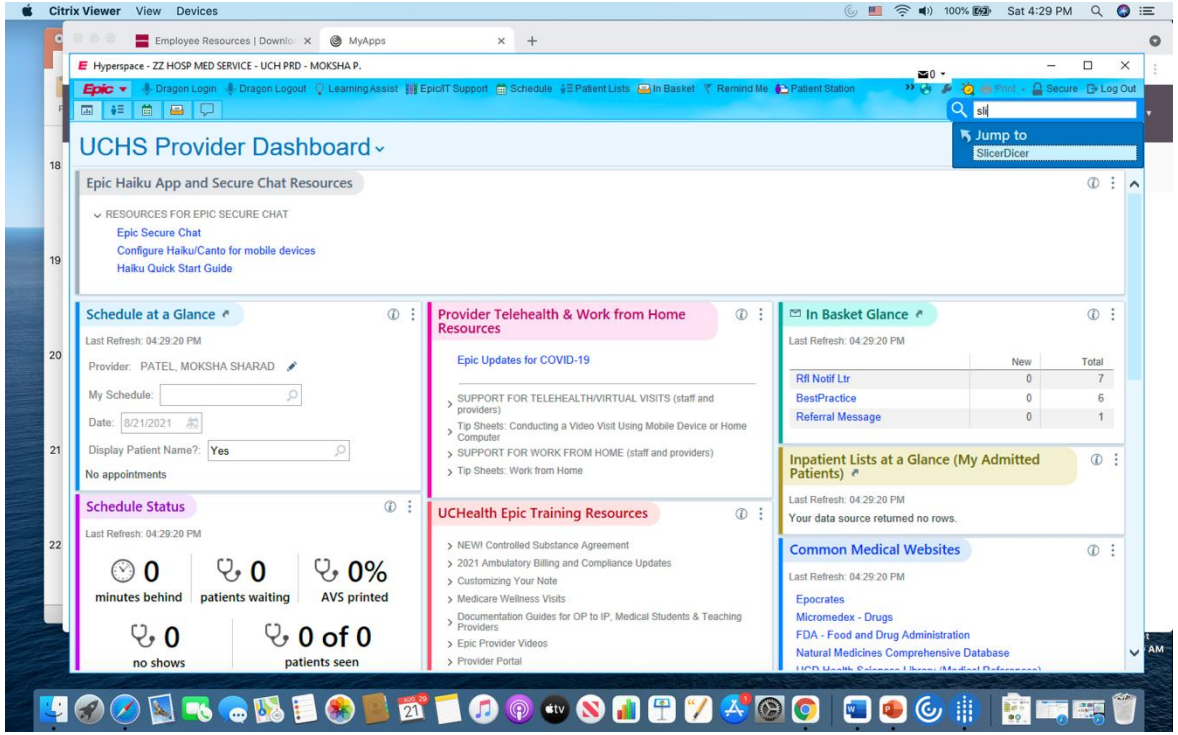
Why – Why do I need this data?

EMR tool Selection:

TOOLS	Description	PROS	CONS
Atlas Portal Reports	A ”food court” that searches all possible analytic tools (RWB, SlicerDicer, premade SQL Reports, Dashboards)	• Very inclusive • Includes detailed premade SQL Reports	• Difficult to Navigate • CHCO Does not have
Reporting Workbench	Queries the Chronicles database using predetermined templates	• Real Time Data	• Cannot obtain large data sets at once • Need special permission to export
SlicerDicer	Queries Caboodle database using data models	• Easy to use • Can link different data models	• Doesn’t always correlate perfectly with Clarity (SQL)
Signal Report	Provides data on how users (providers) are using Epic	• Detailed information on time in notes, time in orders, # of secure chats, etc.	• Limited Access
Vizient	An external company that analyzes EMR data	• UCH’s preferred data source	• Time/$$ Intensive

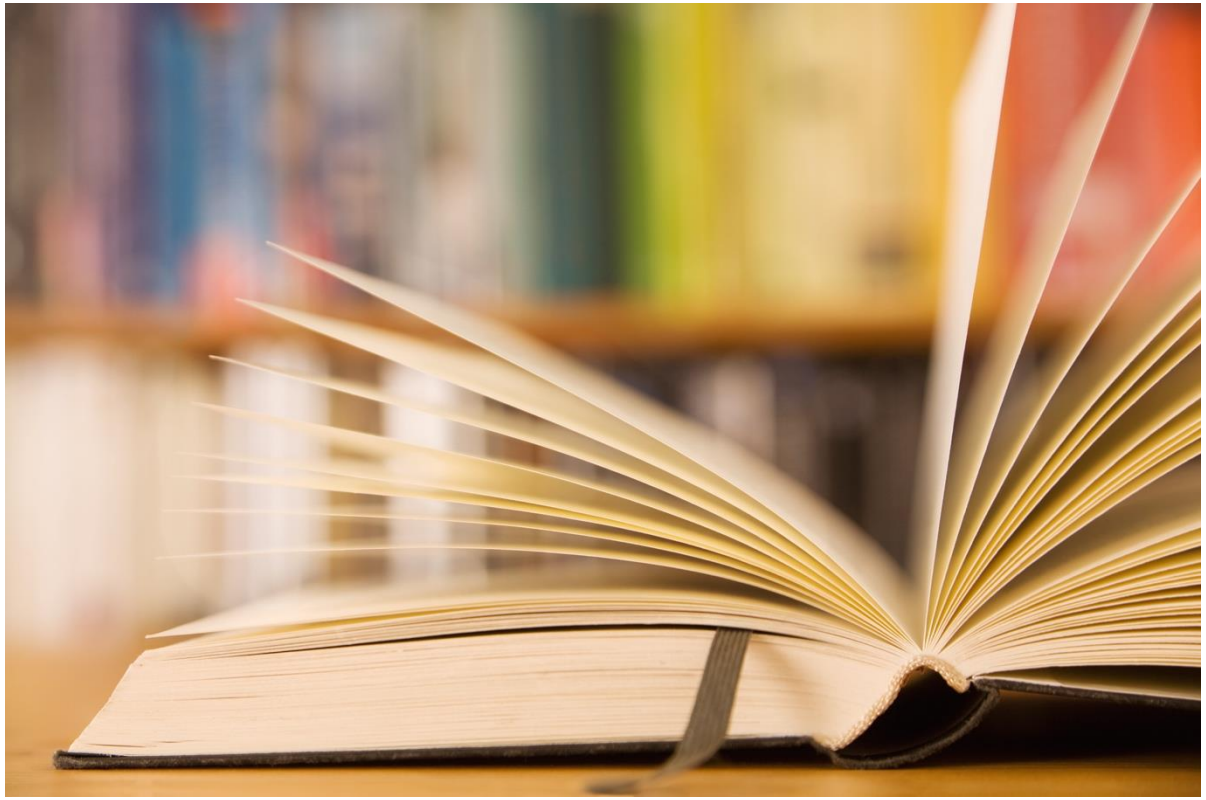
Assemble Request:

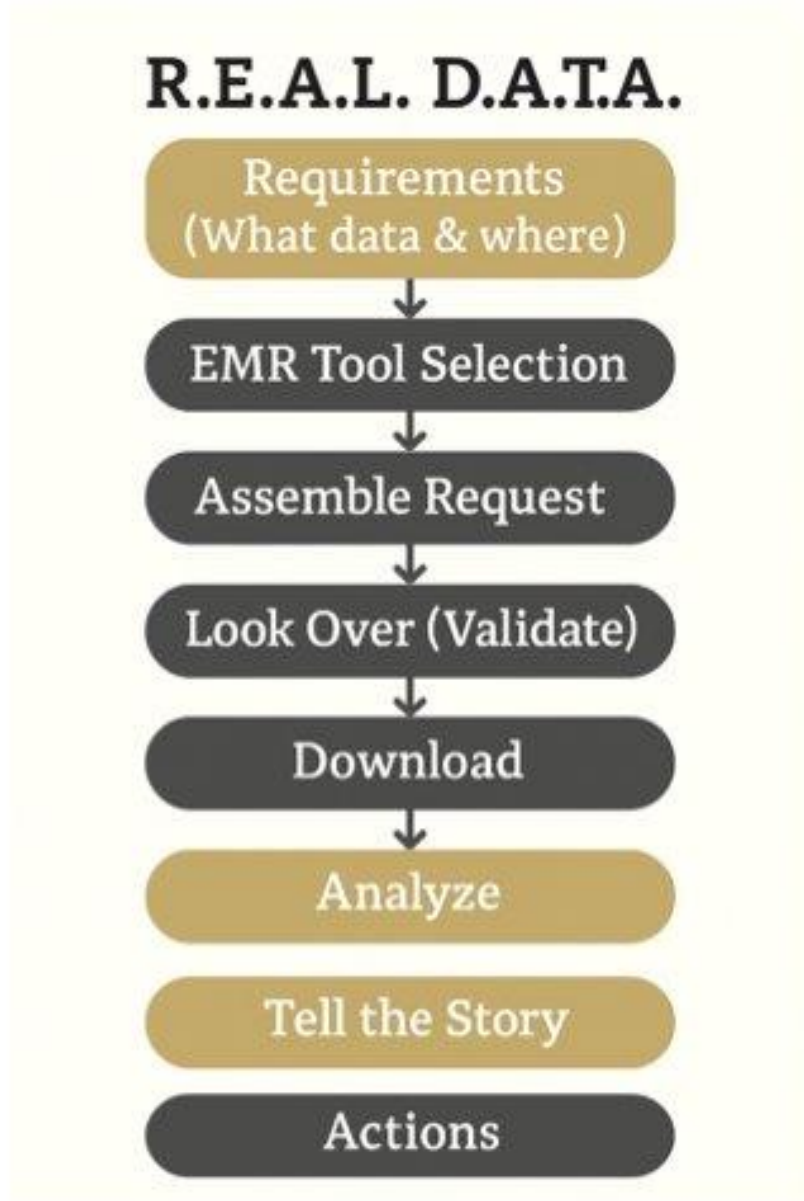




Look over → Download --> Analyze

Tell The Story --> Action




R.E.A.L. D.A.T.A.
Requirements
(What data & where)
EMR Tool Selection
Assemble Request
Look Over (Validate)
Download
Analyze
Tell the Story
Actions

Key Points

Meet the AF Williams Primary Care Clinic HEAT TEAM

To improve:

1. Quality
2. Efficiency
3. Patient-centeredness
4. Cultural Relevance

of diabetes care at AFW, with special attention to our Latino patients.

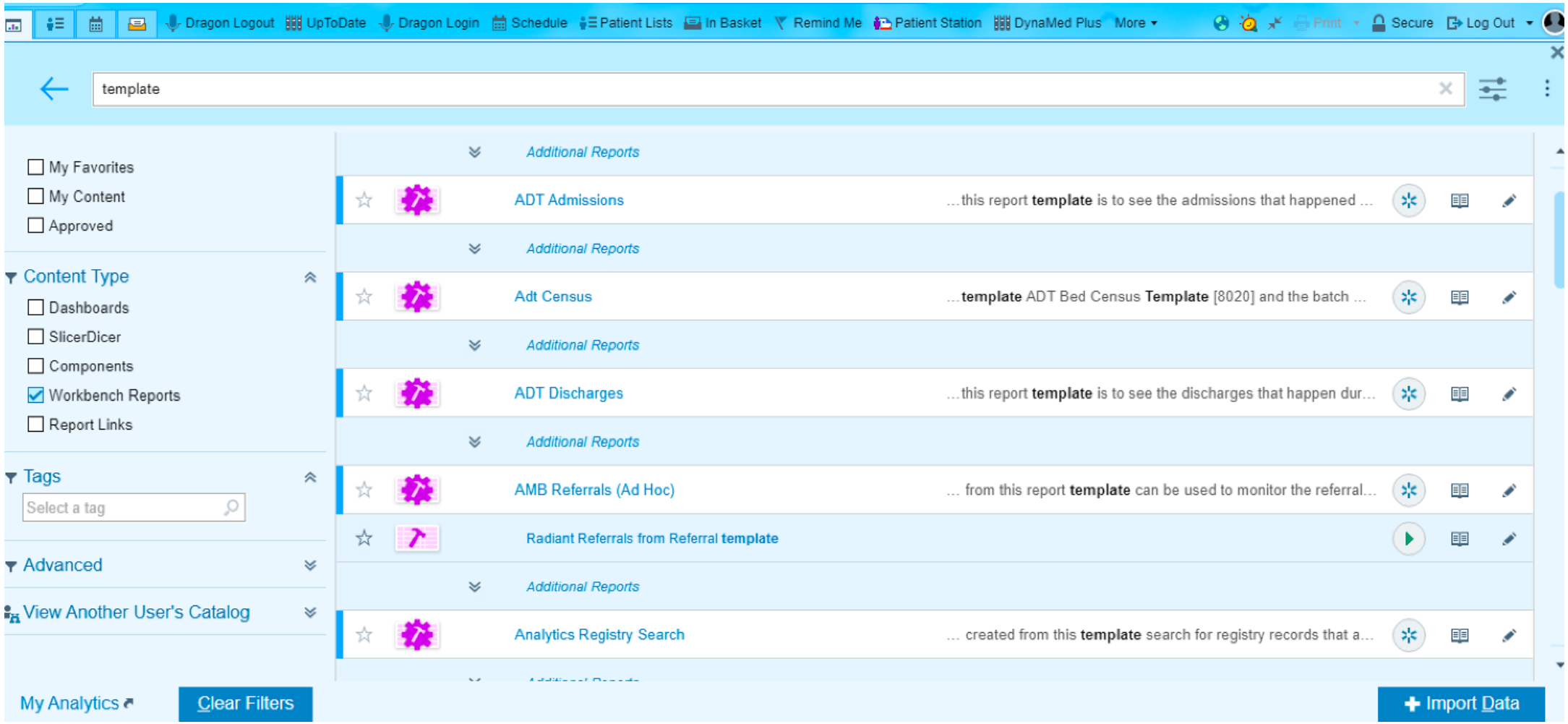
Requirement: WHAT Data Do I need?

	% of Patients with >/= 2 DM Coded visits	# of patients with >/= 2 DM coded visits	% of patients on an SGLT-2 currently	% of patients prescribed an SGLT-2 during these visits	% of patients prescribed a GLP-1 during one of these visits
All Patients	???	???	???	???	???
All races/ethnicities with A1c </= 8*	???	???	???	???	???
All races/ethnicities with A1c > 8*	???	???	???	???	???
Hispanic patients all A1cs*	???	???	???	???	???
Hispanic/Latino A1c </= 8*	???	???	???	???	???
Hispanic/Latino A1c > 8*	???	???	???	???	???

EMR Tool Selection

		Description	PROS	CONS
	Atlas Portal Reports	A ”food court” that searches all possible analytic tools (RWB, SlicerDicer, premade SQL Reports, Dashboards)	• Very inclusive • Includes detailed SQL Reports	• Difficult to Navigate
	Reporting Workbench a	Queries the Chronicles database using predetermined templates	• Real Time Data	• Cannot obtain large data sets at once • Need special permission to export
	SlicerDicer	Queries Caboodle database using data models	• Easy to use • Can link different data models	• Doesn’t always correlate perfectly with Clarity (SQL) • Historical Data
	Signal Report	Provides data on how users (providers) are using Epic	• Detailed information on time in notes, time in orders, # of messages, etc	• Limited Access
	Vizient	An external company that analyzes EMR data	• UCH’s preferred data source	• Time/$$ Intensive

Assemble Request:



Look Over --> Download --> Analyze

RN	Appt Instant	Patient	Dx Code	Encounter Diagnose	Medication Orders	Last A1C Value

All patients number of visits coded for DM

Number of vi	Number of M	% of MRNs
1	458	41.00%
2	323	28.92%
3	176	15.76%
4	92	8.24%
5	29	2.60%
6	24	2.15%
7	6	0.54%
8	4	0.36%
9	3	0.27%
10	2	0.18%
Grand Total	**1117**	**100.00%**

All patients with a1c </= 8 with number of visits coded for DM

# of Visits with DM Coded	# of MRNs	% of MRNs
1	356	41.88%
2	254	29.88%
3	135	15.88%
4	64	7.53%
5	20	2.35%
6	12	1.41%
7	3	0.35%
8	2	0.24%
9	2	0.24%
10	2	0.24%
Grand Total	**850**	**100.00%**

All patients with a1c > 8 with number of visits coded for DM

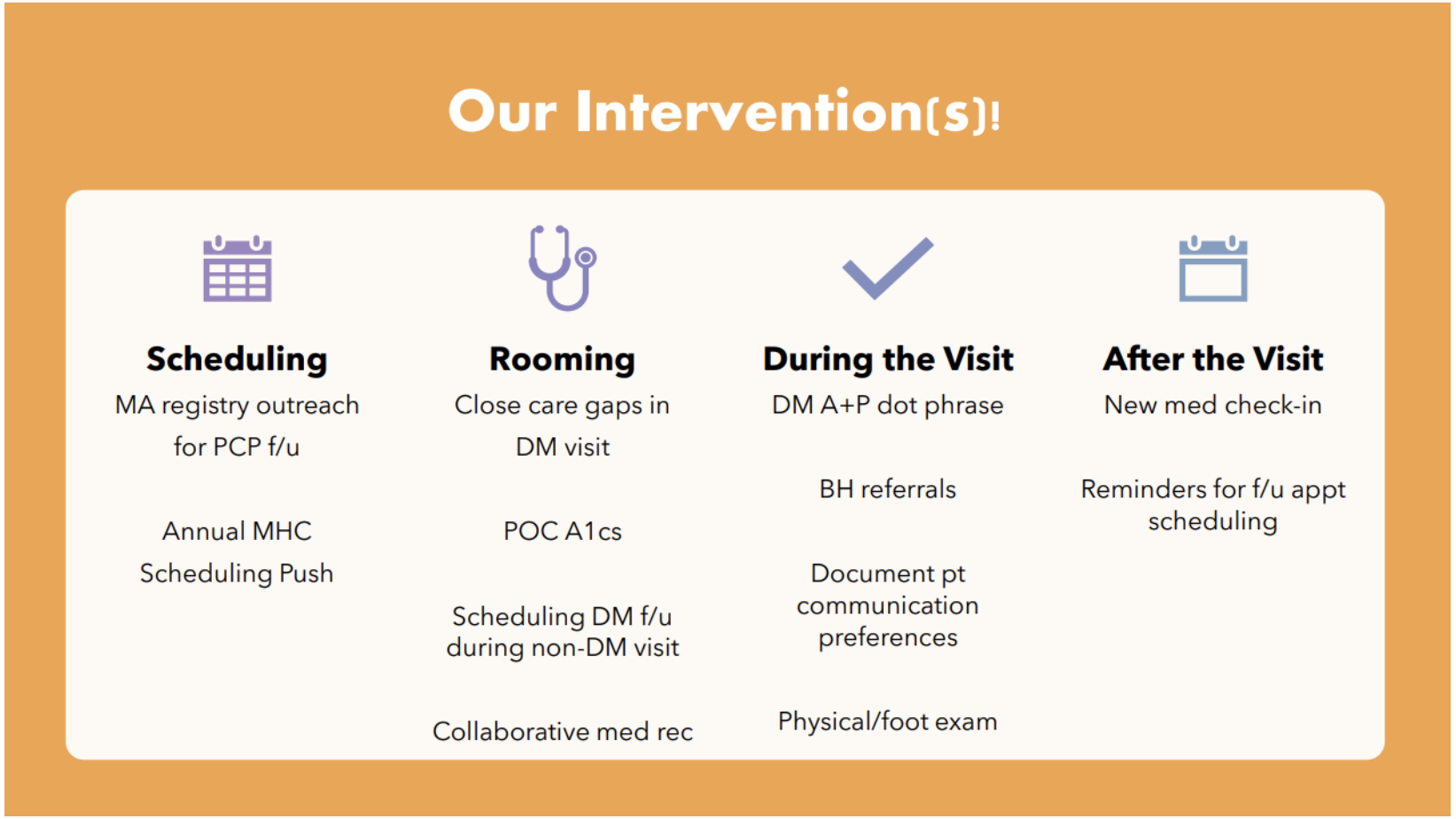
# of visits coded for DM	# of MRNs	% of MRNs
1	95	37.11%
2	68	26.56%
3	39	15.23%
4	27	10.55%
5	9	3.52%
6	12	4.69%
7	3	1.17%
8	2	0.78%
9	1	0.39%
Grand Total	**256**	**100.00%**

Tell The Story

	% of Patients with >/= 2 DM Coded visits	# of patients with >/= 2 DM coded visits	% of patients on an SGLT-2 currently	% of patients prescribed an SGLT-2 during these visits	% of patients prescribed a GLP-1 during one of these visits
All Patients	59.02%	659	23.10%	8.15%	7.99%
All races/ethnicities with A1c </= 8*	58.12%	494	19.44%	5.68%	6.62%
All races/ethnicities with A1c > 8*	62.89%	161	35.06%	15.50%	12.92%
Hispanic patients all A1cs*	58.48%	169	27.36%	8.15%	11.95%
Hispanic/Latino A1c </= 8*	54.37%	112	23.25%	10.09%	10.09%
Hispanic/Latino A1c > 8*	69.14%	56	38.64%	15.91%	15.91%

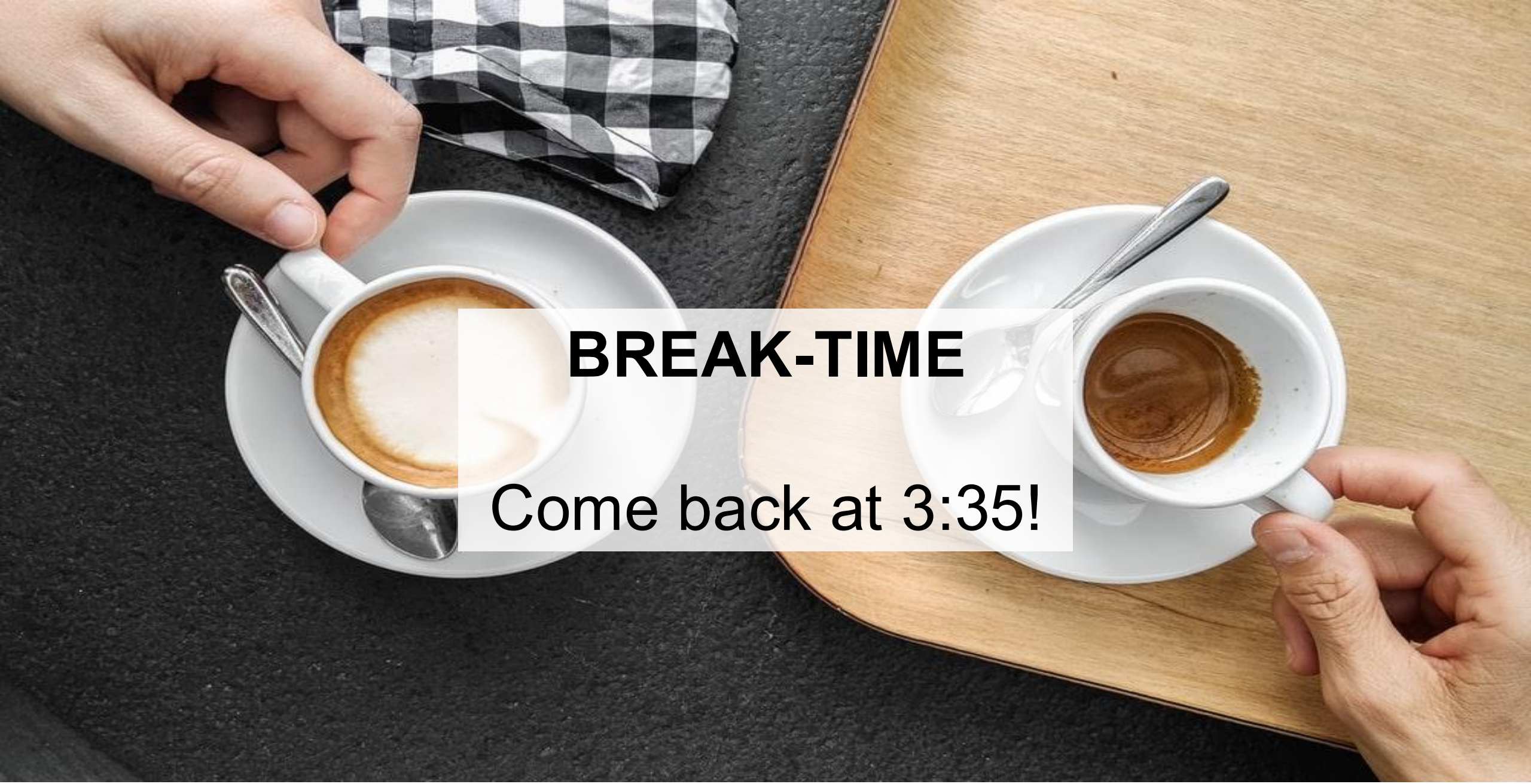
+

Action:


Our Intervention(s)!
Scheduling
MA registry outreach for PCP f/u
Annual MHC Scheduling Push
Rooming
Close care gaps in DM visit
POC A1cs
Scheduling DM f/u during non-DM visit
Collaborative med rec
During the Visit
DM A+P dot phrase
BH referrals
Document pt communication preferences
Physical/foot exam
After the Visit
New med check-in
Reminders for f/u appt scheduling

Key Points

- Data -->Information --> Knowledge --> Wisdom --> Action
- Data in Epic is stored primarily in 3 databases, all with a specific architecture
- The R.E.A.L. D.A.T.A framework can help turn EMR data into Action



BREAK-TIME

Come back at 3:35!

Business Case

How to Show Your Value

(and get what you need)

Jeff Glasheen, MD

Institute for Healthcare Quality, Safety and Efficiency

SCHOOL OF MEDICINE

UNIVERSITY OF COLORADO **ANSCHUTZ MEDICAL CAMPUS**

What?

Justifies resources—all work requires resources; why here?

Provides the ‘why’ to the aim/intervention’s ‘what/how’

Aim for financial return on investment (ROI)

Why?

State the value of the work

Data needed to show value

Allows for prioritization vs. other initiatives

Creates implicit ‘IOU’ and accountability

How?

Step 1: What are you trying to do?

Step 2: What is the benefit?

Step 3: How do I show the benefit?

Step 4: What data do I need?

Step 1: What are you trying to do?

What are you trying to do?

- Short
- Or, very short
- No, really, it needs to be short
- Like, 1 line. Maybe 2 if you have 2 goals.

Examples

- Reduce hospital length of stay by 0.5 days
- Reduce time from check-in to drug by 72 minutes
- Reduce the rate of harm by 15%
- Increase patient volume by 10%

Similar to AIM statement

Step 2: What is the benefit?

Now that you know what you are doing

Why are you doing it?

Why would anyone care?

Example: Reduce LOS by 0.5 days

- Improves flow through hospital; opens beds
- Reduces costs for a fixed DRG payment
- Allows for new patients to be placed in beds
- Patients go home earlier (most view positively!)
- Lower risk of iatrogenesis

Similar to VOC/VOB

Coaching Breakout:

What are you trying to do?

- Start with your problem
- Distill to one short statement
- Discuss and Refine
- Be specific…and short

What are the benefits?

- List as many as you can
- Be specific
  - What is the benefit?
  - Who does it benefit?

15 minutes

Step 3: How would I show the benefit?

LOS Reduction Benefit = [(B+C) x D] x A

A = Reduction in LOS
- Baseline LOS – goal LOS = reduction in LOS

B = Cost savings
- Each day saved results in less cost/DRG
- How much? ~$500-1000 cost savings/day

C = Revenue generated
- Each day saved results in another open bed
- New pt averages ~$500-1000 revenue/day

D = Number of patients seen per year

Benefit = [($750 + $750) x 1291] x 0.5 = $968,250

Step 4: What data do I need?

What you'll need to understand opportunity and measure success:

- LOS
  - Baseline
  - Goal
  - Current (after commence)

- Cost/day of your patient
- Revenue/day of 'average' patient
- Number of patients you see annually

Coaching Breakout:

How would I convey the benefit?

- Warning! Requires math
- More about methodology than accuracy
  - Just get the equations down
  - Estimate as needed
- Simple enough to convey the point

What data do I need?

- Financial, operational, workflow, harm
- You need to be very specific on your need and where it exists
- If it doesn't exist (or is hard to get) the PI/DA/EMR cannot get it

15 minutes


$10K

Example: Batting Cage

1. What are you trying to do?
   - Install batting cage in yard by November 1, 2025

2. What is the benefit?

Mom filled with pride when do well
Mom can send videos to grandparents
Dad able to reduce chance of injuries
Scholarship reduces cost of college

3 How will you convey benefit?

- Cost of Stanford education per year $74,570
- Years of college 4
- Total benefit of scholarship $298,280

- Cost of batting cage $4,800
- Cost of installation $2,500
- Cost of pitching machine $2,700
- Total cost of project $10,000

- ROI = $\frac{\text{Benefit-Cost}}{\text{Cost}}$ $\frac{\$298{,}280 - \$10{,}000}{\$10{,}000}$ = 28.8

4 What data points would you need?

- Annual cost of tuition at Stanford
- Cost of batting cage
- Installation cost
- Cost of pitching machine

Example: Infusion Center

1. What are you trying to do?
   - Reduce time from check-in to completed drug by 72 minutes

2. What is the benefit?

   Patient's happier
   Staff happier—less down time
   Timely access—open more chair time
   More patients for same amount of staff

3 How will you convey benefit?

Number of patients per month: **107**

Current time needed per patient: **272** minutes

Goal time needed per patient: **200** minutes

Average Reimbursement for patient: **$1585**

Baseline # of mins of patient care / month = **29,104 mins** (107 x 272 mins)

❸ How will you convey benefit?

Goal # of mins of patient care / month = **21,400** minutes (107 x 200 mins)

Goal minutes saved / month = **7,704** minutes (29,104-21,400 mins)

Potential new encounters / month = **38** (7,704 mins saved/200 mins/pt)

Potential increase in reimbursement = **$60,230** (38 pts/mo x $1585)

Potential increase in reimbursement per year = **$722,760** ($60,230/mo x 12)

4 What data points would you need?

- Baseline time from check in to completion
- Current time from check in to completion
- Goal time from check in to completion
- Baseline number of patients per month
- Contribution margin per case

Data Collection Plan

Next Steps

Dear Executive Stakeholder,

I plan to make you $700k next year.

To do this, I will need 20% of support from a QI specialist, roughly $30K.

Your ROI will be 23:1.

Thanks!

Coaching Breakout:

What are you trying to do?

- Start with your problem
- Distill to one short statement
- Discuss and Refine
- Be specific…and short

What are the benefits?

- List as many as you can
- Be specific
  - What is the benefit?
  - Who does it benefit?

15 minutes

Appreciative Debrief

Share with the group 1 thing you found most intriguing from this session

Next Steps

Date Assigned	Assignment	Due Date
#1 – Aug. 19, 2025	• Develop group ground rules • Complete Leadership Defined Self-assessment	#3 – Sept. 9, 2025
#2 – Aug. 26, 2025	• No new assignments	
#3 – Sept. 9, 2025	• Complete voice of customer • Build stakeholder analysis • Develop a problem statement	#6 – Oct. 28, 2025
	• Complete a process map	#7 – Nov. 4, 2025
#4 – Sept. 23, 2025	• Reading: Kotter, John. *Leading Change: Why Transformation Efforts Fail*	#5 – Oct. 7, 2025
	• Meet with Dr. Moksha Patel	# 7 – Nov. 4, 2025
	• Draft business case	#8 – Nov. 18, 2025
	• Complete affinity diagram	#9 – Dec. 9, 2025
#5 – Oct. 7, 2025	• Complete Myers-Briggs Assessment	Friday, Oct. 24, 2025
	• Complete literature review • Complete Program Evaluation/QI/Research Tool	#8 – Nov. 18, 2025
#6 – Oct. 28, 2025	• Well-being Analysis • Finalize Sense of Urgency • Develop/utilize current vision tying to project	#9 – Dec. 9, 2025
#7 – Nov. 4, 2025	• Complete data collection plan	#10 - Dec. 16, 2025
#8 – Nov. 18, 2025	No new assignments	
#9 – Dec. 9, 2025	• Health Equity Analysis	#11 – Jan. 13, 2026
	• Complete Design Thinking Exercise • Complete Positive Deviance Exercise • Develop list of potential interventions	#12 – Jan. 27, 2026
#10 – Dec. 16, 2025	• Complete aim statement • Finalize guiding coalition	#11 – Jan. 13, 2026
	• Finalize logo	#13 – Feb. 10, 2026
#11 – Jan. 13, 2026	• Draft mid-year report out	#12 – Jan. 27, 2026
	• Create and implement a communication plan	#14 – Feb. 24, 2026

Evaluation

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