



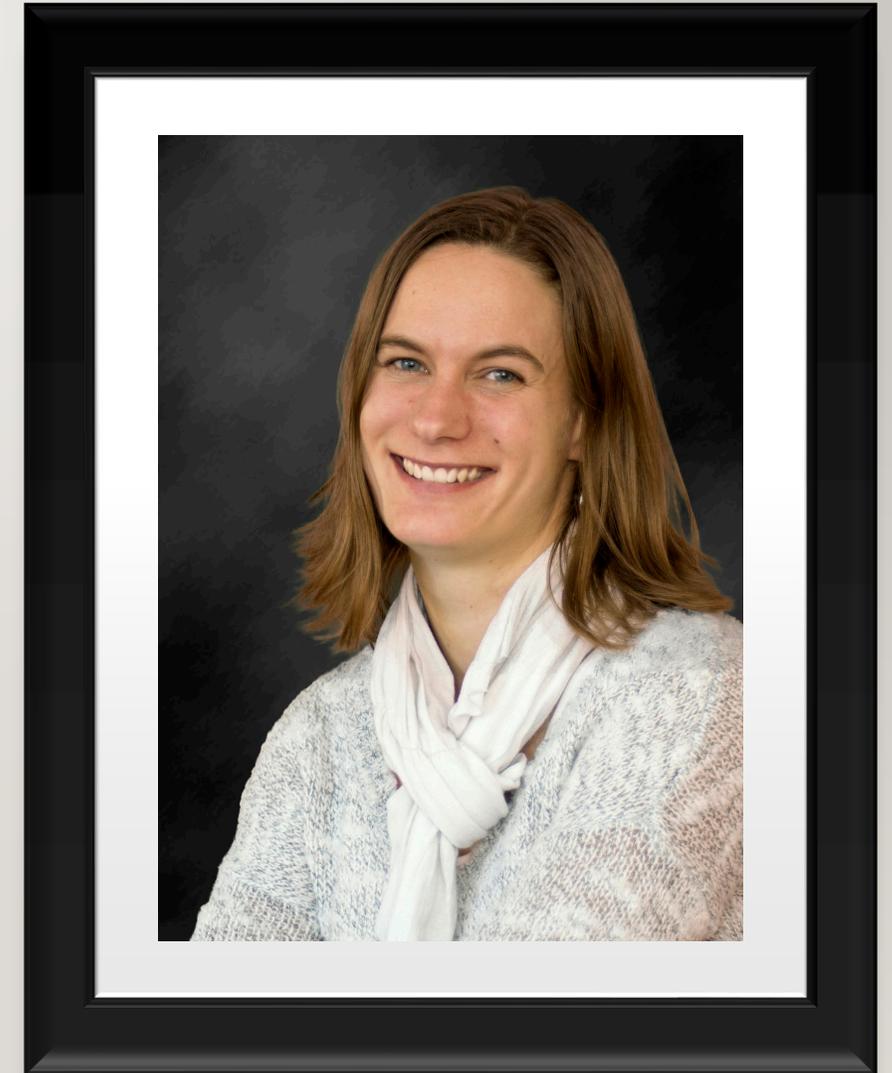
ROOT CAUSE ANALYSIS

KRISTEN BIGELOW-TALBERT, COMMUNITY HEALTH QUALITY MANAGER, MSHM, CPHQ

BI-STATE PRIMARY CARE ASSOCIATION, MONTPELIER, VT

INTRODUCTIONS

- Kristen Bigelow-Talbert, CPHQ, MSHM
- Community Health Quality Manager
 - Bi-State Primary Care Association
 - VT Rural Health Alliance, an HCCN
 - 11 FQHCs across 64 sites in VT
 - 11 FQHCs and 1 FQHC LAL across 47 sites in NH



LEARNING OBJECTIVES

1

The participant will be able to summarize the importance of conducting a root cause analysis.

2

The participant will understand how to develop your Problem Statement and gather baseline data.

3

The participant will understand the most common methods of Root Cause Analysis and how to conduct them.

4

The participant will understand how a root cause analysis may be used to identify priorities for diabetes prevention using a prioritization matrix.

Too Busy for Improvements?

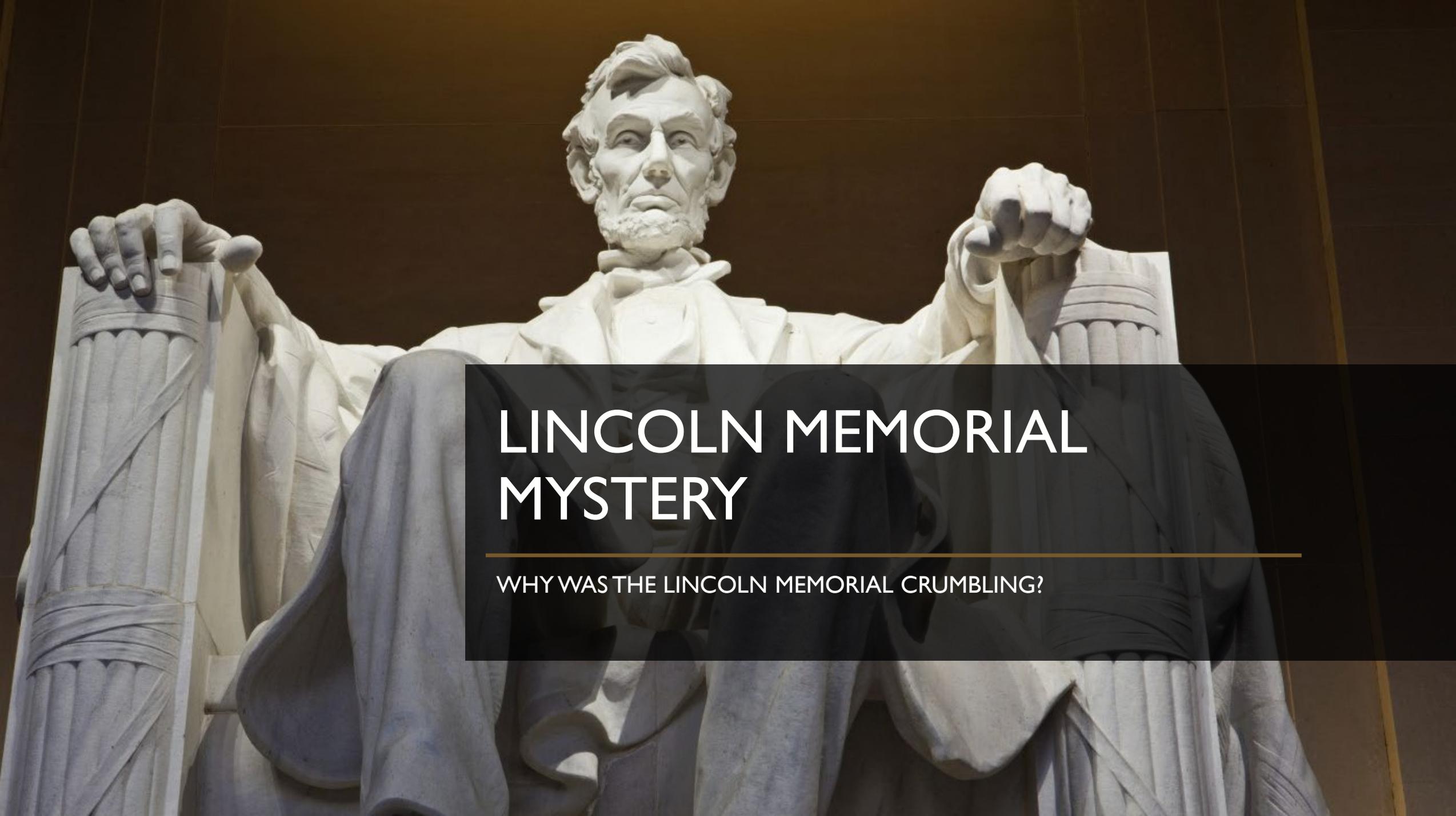
@successpictures



ROOT CAUSE ANALYSIS: WHY BOTHER?

Root cause analysis helps to get at the underlying problem (the root) that is causing the symptoms (the problem) that you see. Doing an intervention without first doing a root cause analysis is akin to putting a band-aid on a wound that needs surgery. It won't fix the problem!



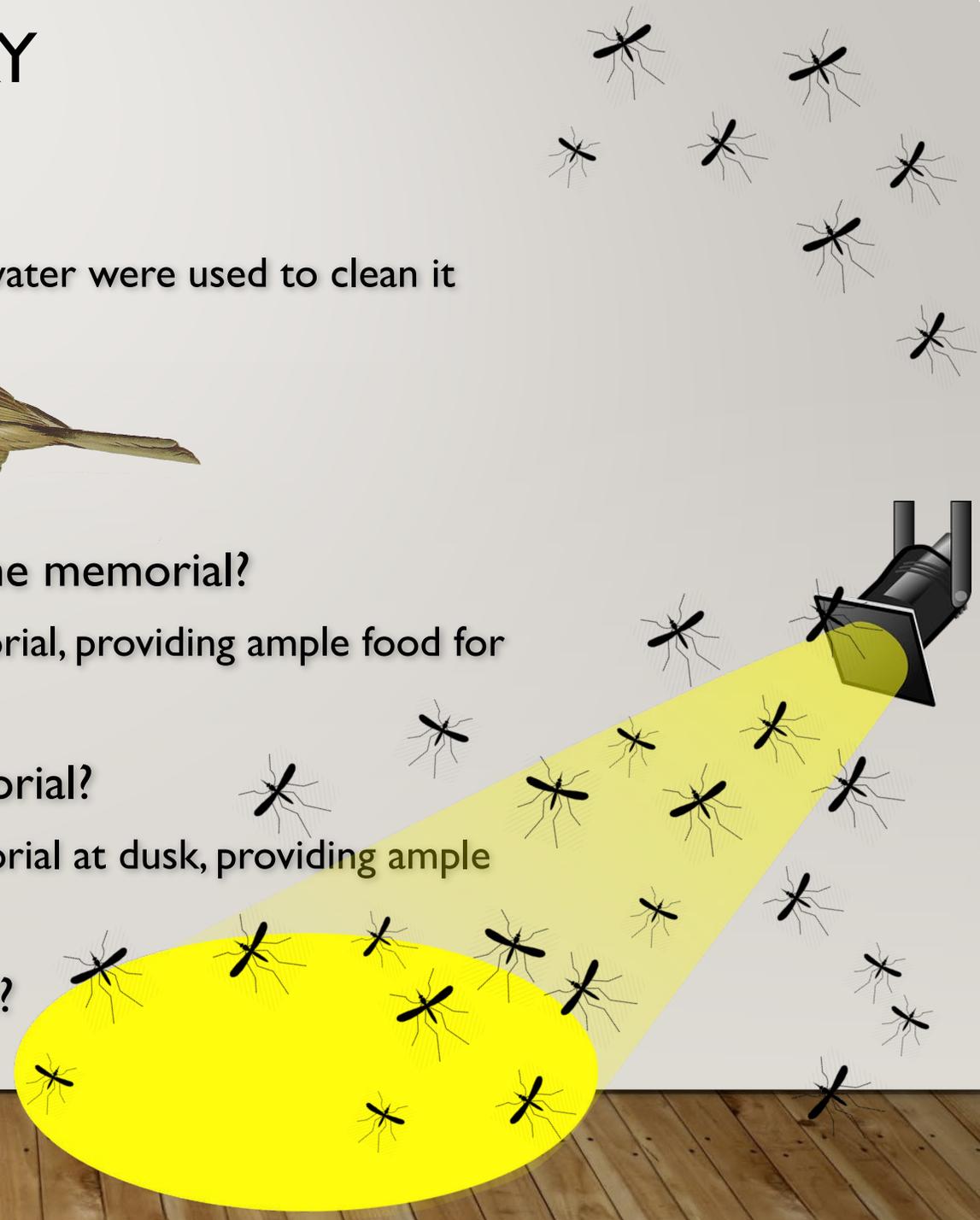


LINCOLN MEMORIAL MYSTERY

WHY WAS THE LINCOLN MEMORIAL CRUMBLING?

LINCOLN MEMORIAL MYSTERY

- Why was the Lincoln memorial crumbling?
 - Harsh cleaning chemicals and a large volume of water were used to clean it daily
- Why were harsh chemicals used?
 - To get off the bird droppings
- Why were there so many bird droppings on the memorial?
 - There were numerous spiders living in the Memorial, providing ample food for starlings and sparrows
- Why were there so many spiders in the Memorial?
 - Midges (a type of tiny insect) swarmed the Memorial at dusk, providing ample food for the spiders
- Why were the midges swarming the Memorial?
 - They were attracted to the lights



LINCOLN MEMORIAL: ROOT CAUSE & SOLUTION

- Proposed solution: turn off the lights during the one hour timeframe after sunset.
 - Results of a 6 week PDSA: 85% reduction in midge infestation

• <https://www.deseretnews.com/article/96997/MONUMENT-LIGHTING-WILL-BE-DELAYED-TO-GET-THE-BEST-OF-PEST.html?pg=all>

DEVELOPING YOUR PROBLEM STATEMENT

- To be done BEFORE starting your Root Cause Analysis
- “All patients with diabetes who have an A1C over 9” is too broad of a category. Narrow it down!

Data



Problem
Identification

TIPS FOR WRITING YOUR PROBLEM STATEMENT:

Include

Identify the Gap

Timeframe / trend

Impact (health outcomes, cost, etc.)

Importance (urgency)

Data (if available)

Do Not Include

Assumed causes of the problem

Possible solutions to the problem

Conjecture or belief rather than fact

External issues outside of the scope of the problem

Names of staff

EXAMPLE PROBLEM STATEMENTS: THE GOOD, THE BAD, THE UGLY

- “45% of our patients aren’t coming to us for their flu shots, because they prefer the timeliness of getting them at the pharmacy.”
- “30% of our patients with an A1C over 9 have not come in for their 3 month diabetic check. For patients with out of control A1Cs, ongoing patient engagement is necessary to help patients manage their diabetes.”
- “The problem is that the triage nurses aren’t answering the phones, so we have a backlog of phone messages.”

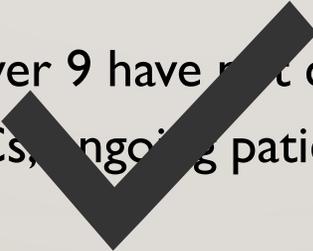
EXAMPLE PROBLEM STATEMENTS: THE GOOD, THE BAD, THE UGLY

- “45% of our patients aren’t coming to us for their flu shots, because they prefer the timeliness of getting them at the pharmacy”

 - REVISED: “We are missing information on whether or not 45% of our patients have had a flu shot this season.”
- “30% of our patients with an A1C over 9 have not come in for their 3 month diabetic check. For patients with out of control A1Cs, ongoing patient engagement is necessary to help patients manage their diabetes.”
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- “30% of our patients with an A1C over 9 have not come in for their 3 month diabetic check. For patients with out of control A1Cs, ongoing patient engagement is necessary to help patients manage their diabetes.”
✓
- “The problem is that the triage nurses aren’t answering the phones, so we have a backlog of phone messages.”
X
• REVISED: “We have a backlog of phone messages in our system; 30 from last week, and 23 from the week before. This is not only a liability risk, but a patient safety risk.”

REAL PROBLEM STATEMENT EXAMPLE

For some patients we are missing lab results. It is unclear if the patient attended their lab appointment or not. Missing lab results impacts patient quality of care.



BEFORE YOU BEGIN...



Proposals

Solutions

Ideas

GET YOUR TEAM TOGETHER

- Assign a facilitator
- Clinicians
- QI Lead
- Other folks that are involved in patient care for the topic (Care Coordinators, RNs, MAs, etc.)
- Don't forget non-clinical folks! (Front desk staff, IT, Management, etc.)



ROOT CAUSE ANALYSIS

THE FIVE WHY'S



WHY?

↳ **WHY?**

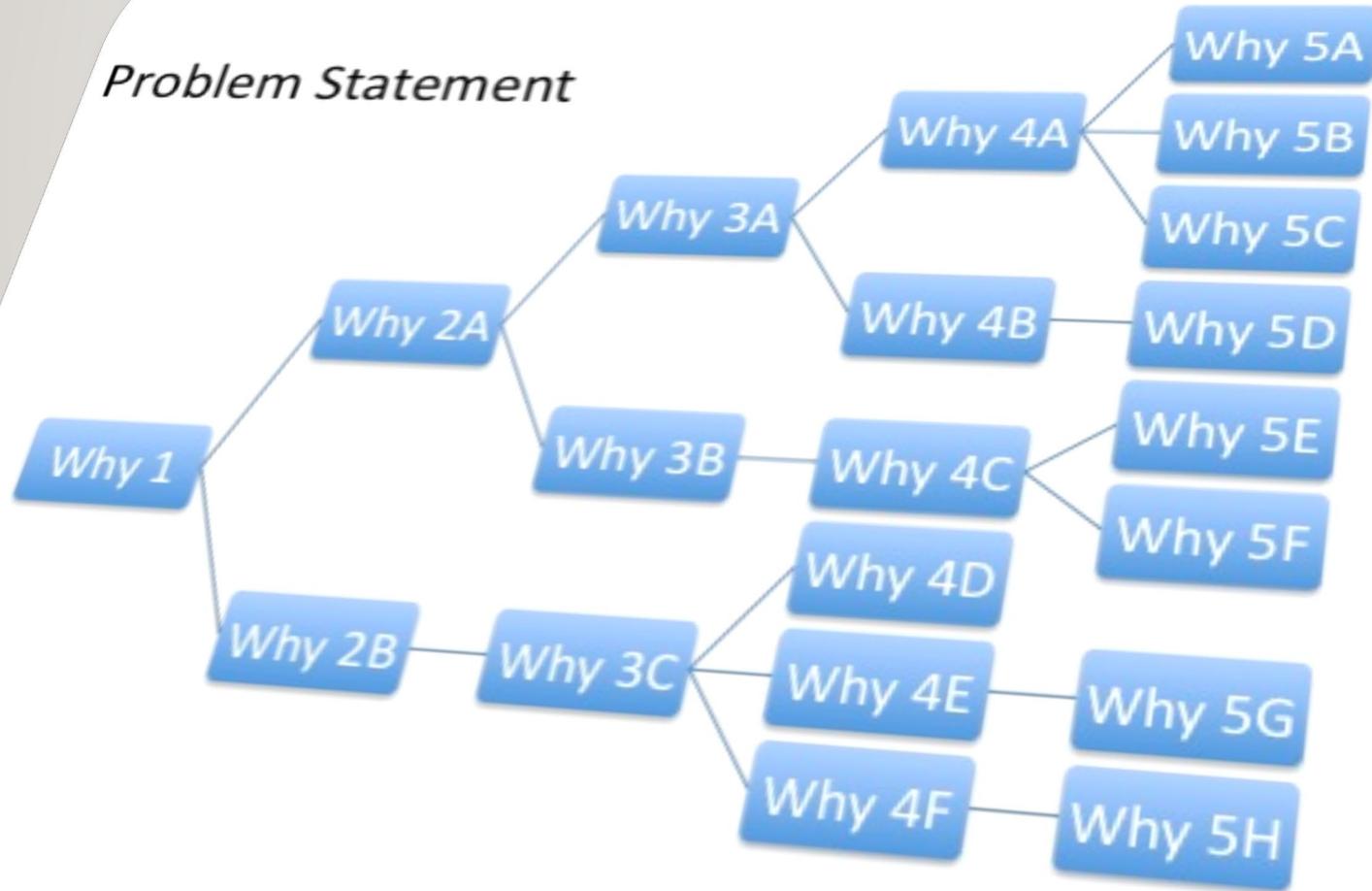
↳ **WHY?**

↳ **WHY?**

The Five Why's

↳ **WHY?**
Real solution is found here

Problem Statement



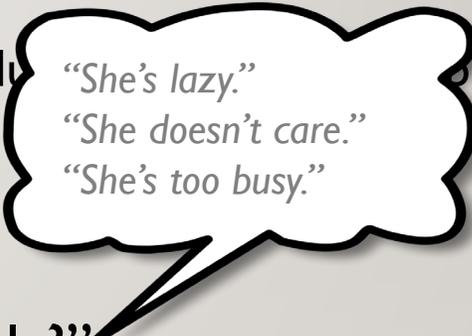
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CAREFUL WHEN ASKING “WHY”...

- Craft your “why” question so that it doesn’t point fingers at individuals, but at processes, barriers, and systems.

- Examples:

- “Why is Susan not following up on these referrals?”



“She’s lazy.”
“She doesn’t care.”
“She’s too busy.”

CAREFUL WHEN ASKING “WHY”...

- Craft your “why” question so that it doesn’t point fingers at individual people, but rather focuses on processes, barriers, and systems.

- Examples:

- “Why is Susan not following up on these referrals?”
- Instead, try: “Why are referrals not being followed up on?”
- “Why is our CEO not providing leadership and resources to this?”

“She’s lazy.”

“She doesn’t care.”

“She’s too busy.”

“They don’t see it as important.”

“No time set aside”

“Difficult to track in EMR”

CAREFUL WHEN ASKING “WHY”...

- Craft your “why” question so that it doesn’t point fingers at individuals; rather, inquire about processes, barriers, and systems.

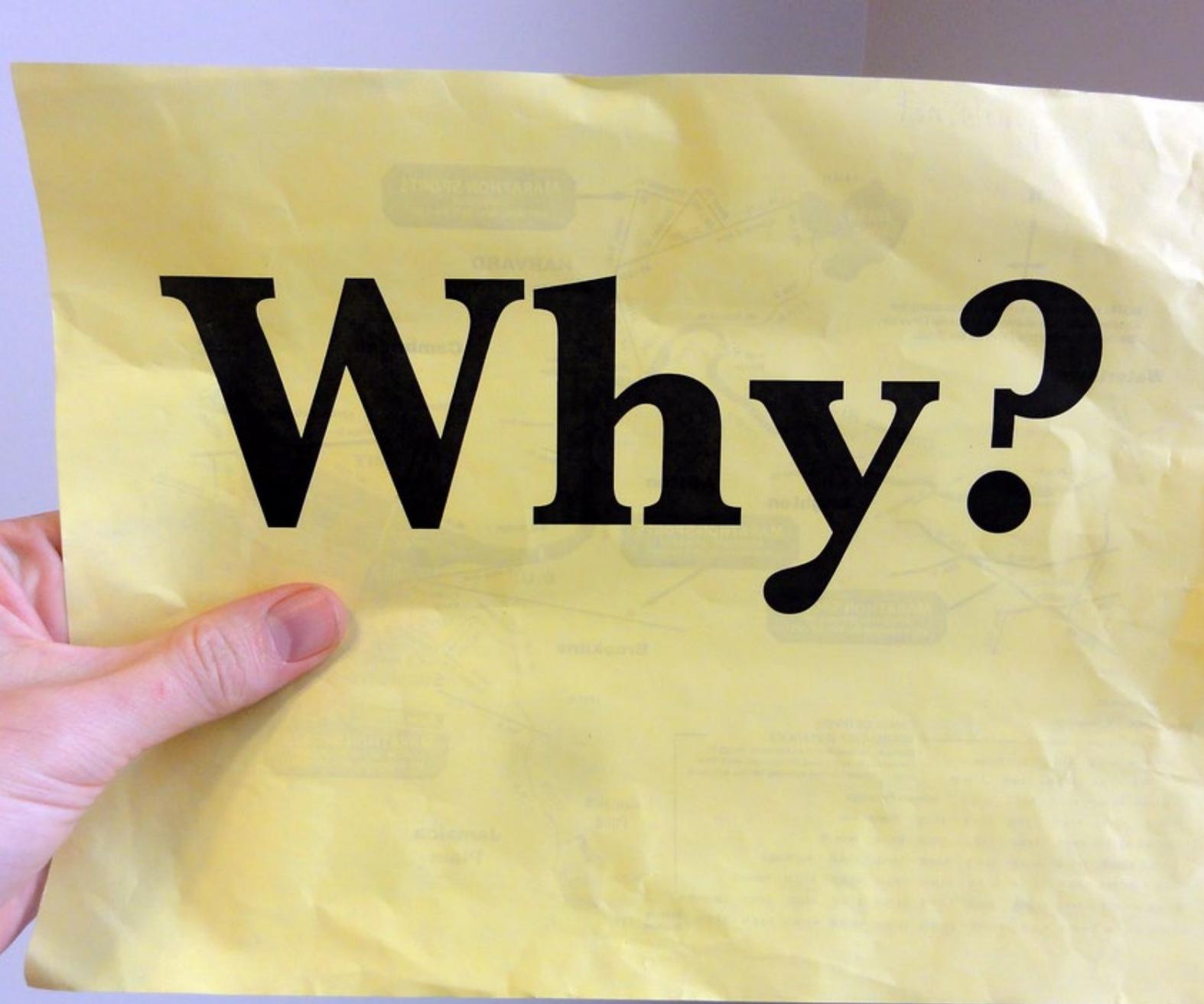
- Examples:

- “Why is Susan not following up on these referrals?”
- Instead, try: “Why are referrals not being followed up on?”
- “Why is our CEO not providing leadership and resources to this project?”
- Instead, try: “Why is this project not a top priority for management?”

“They don’t see it as important.”

*“No time set aside”
“Difficult to track in EHR”*

“Right now MAT and SUD are taking a lot of time and resources.”



Why?

**TO
SIMPLIFY...**

*JUST ASK: "WHY DID THAT
HAPPEN?" OR "WHY DID
THIS OCCUR?"*

For some patients we are missing lab results. It is unclear if the patient actually attended their lab appointment or not. Missing lab results impacts patient quality of care.

Why would we be missing lab results?

1. Patient didn't get lab work or testing completed

? i. Why would the patient not have completed their labwork?

1) They didn't go get their labs prior to their appointment time (there is a Quest lab in-house; all they have to do is walk in; no apt. needed)

? a) Why were labs not completed prior to the appointment time?

i) Patient forgot they were supposed to have them done

? One. Why didn't the patient remember they were supposed to get labs?

First. Too much time in between appointments; they forget

Second. They didn't get a reminder call

? 1. Why wouldn't a patient get a reminder call?

1. Limited capacity of staffing; not enough time to do chart prep (which includes these calls)

? 1. Why is there not enough time to do chart prep?

1. Because they are rooming for multiple providers; already overburdened. **More staff needed.**

ii) Patient didn't fast, and it was a fasting lab and therefore couldn't be completed

? One. Why didn't the patient fast?

First. They didn't get a reminder call

? 1. Why wouldn't a patient get a reminder call?

1. Limited capacity of staffing; not enough time to do chart prep (which includes these calls)

? 1. Why is there not enough time to do chart prep?

1. Because they are rooming for multiple providers; already overburdened. **More staff needed**

Second. They forgot (in spite of a reminder call)

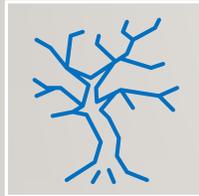
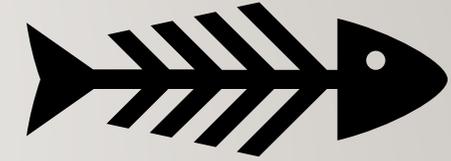
? 1. Why would patients forget?

1. **There is a lot going on in their lives; lots of SDOH and BH complicating things**

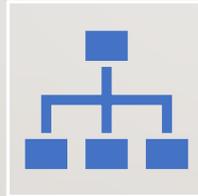
CAUSE AND EFFECT DIAGRAMS

(ALSO KNOWN AS FISHBONE DIAGRAMS)

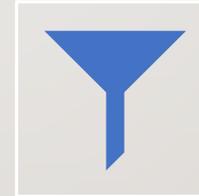
WHY USE A “FISHBONE DIAGRAM?”



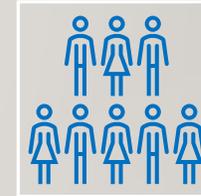
Often many “root causes,” or factors contributing to a problem



Visual way to organize a list of causes and their relationships



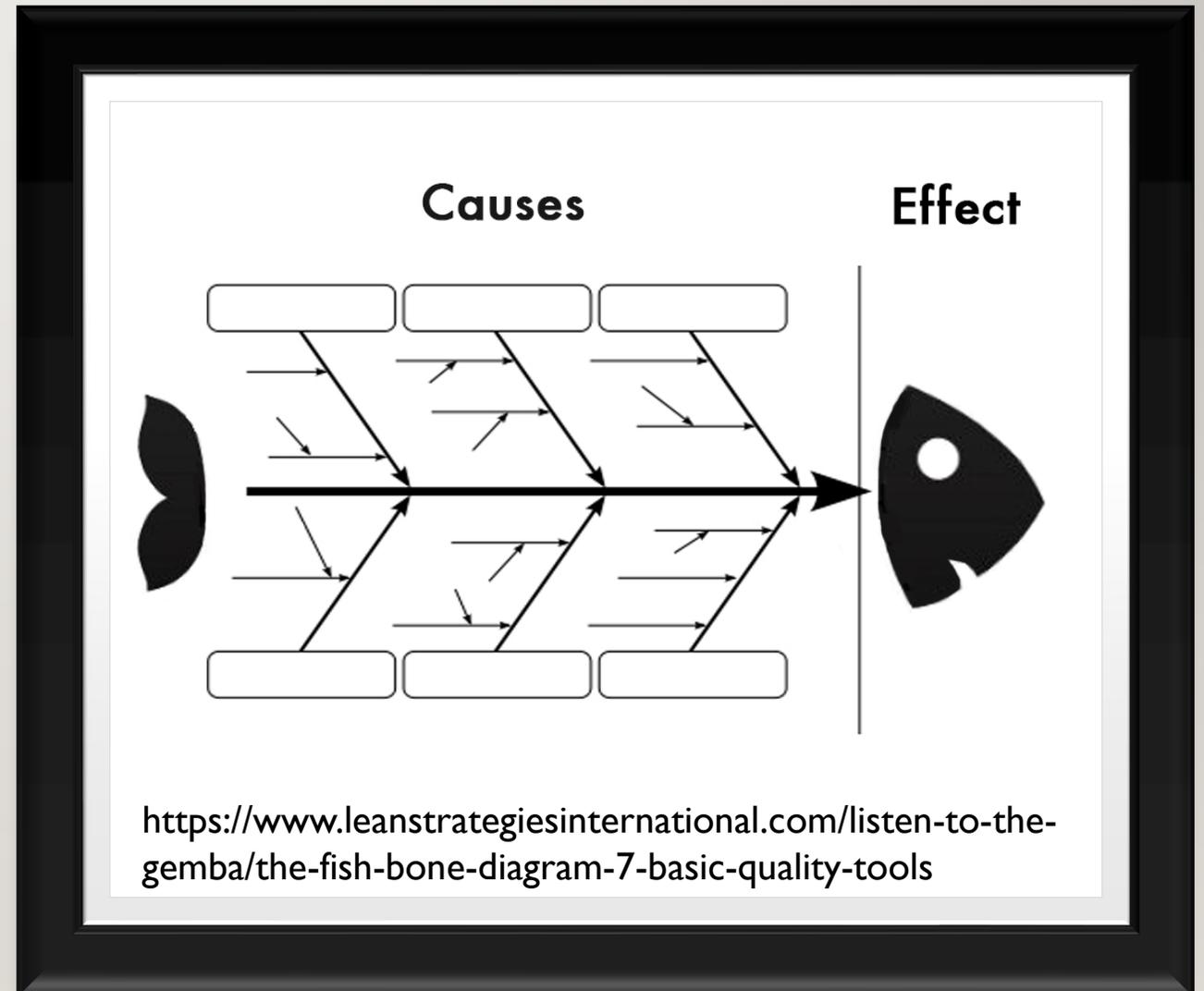
Categorize causes, determine what is and is not in your control



Group process; actively engages everyone that is part of the process, or influences the outcome

CAUSE-EFFECT DIAGRAM (FISHBONE DIAGRAM)

- Developed by Prof. Kaoru Ishikawa
- It visually connects “effect” (problem statement) and “cause(s)”
- A good tool to investigate several categories for each problem statement
- Useful for visual learners



COMMON CATEGORIES USED

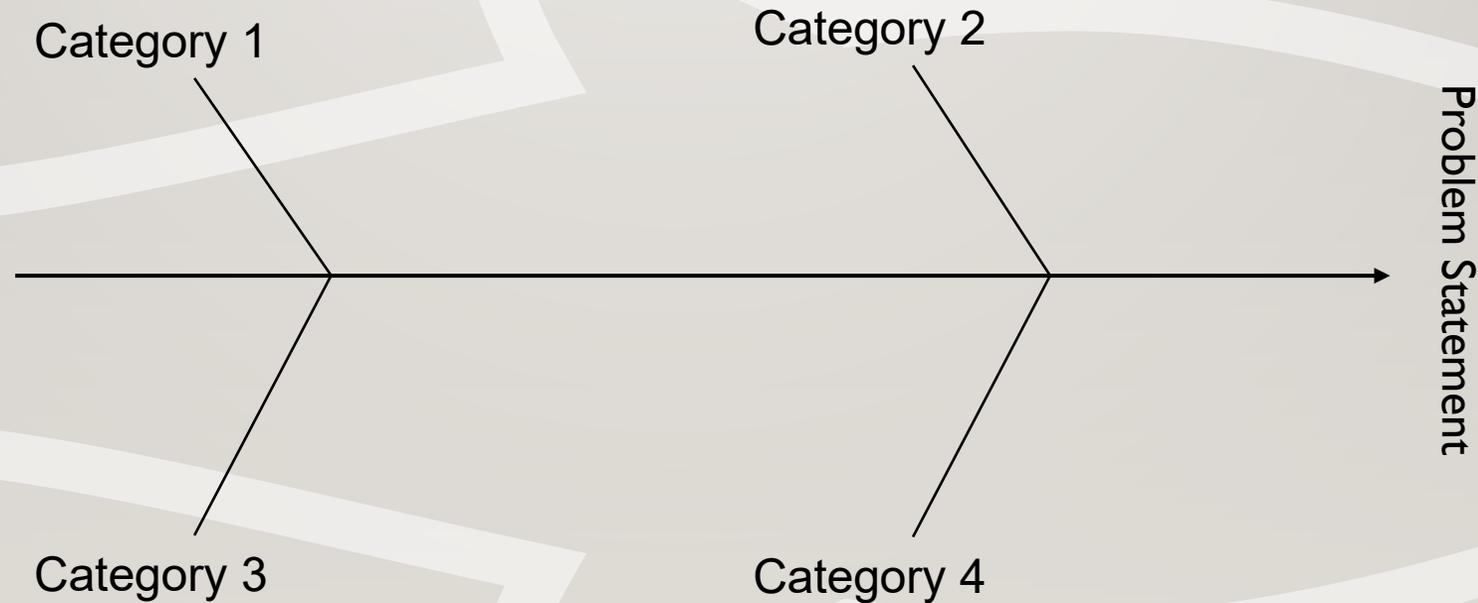
- The 6 M's: Methods, Machines, Materials, Manpower, Measurement, Management
- The 4 S's: Surroundings, Suppliers, Systems, Skills
- The 8 P's: Procedures, Policies, Place, Product, People, Processes, Price and Promotion

Can also organize by functions or processes:

- Prescribing, filling, dispensing, purchasing, and taking medication
- Ordering, performing, resulting, communications

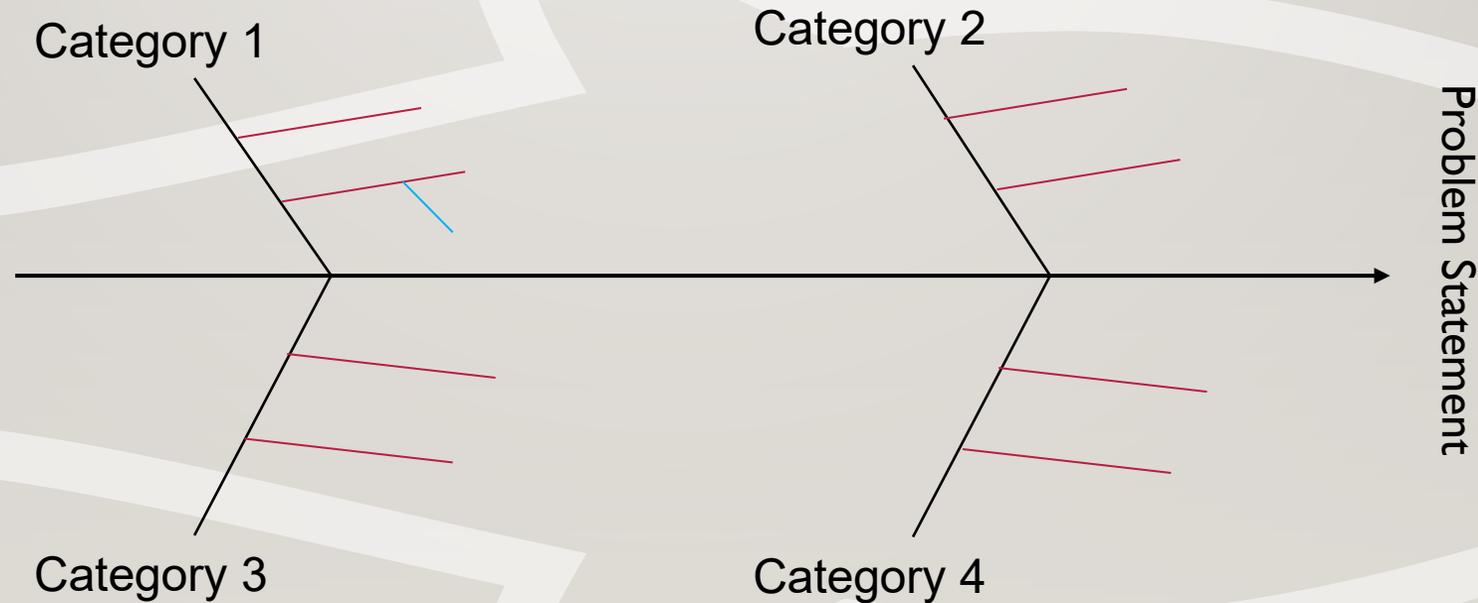
How to Create a Fishbone Diagram

- Your Problem Statement is placed on the far right as the “head” of the fishbone
- Decide what categories you want to use; these categories will then become the main “bones”
- Draw a line to connect the categories to the problem statement

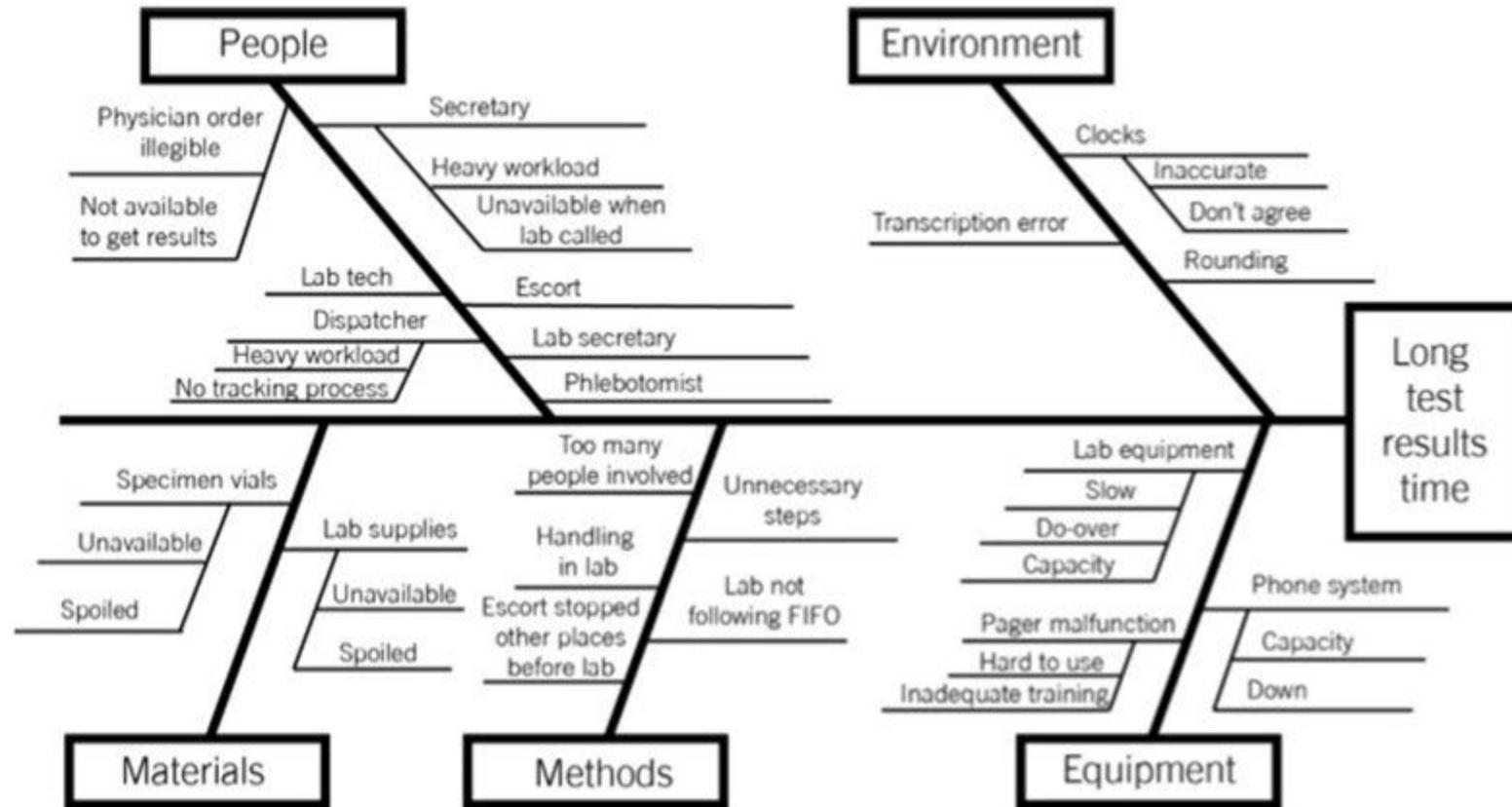


How to Populate a Fishbone Diagram

- Examine each category and determine what in that category is affecting the problem (ask “why?”). These then become smaller “bones” on each category.
- As you dig deeper, more “bones” are added



Cause & Effect Diagram



5 WHYS VS. FISHBONES



Fishbone is broken out into categories, visual helps to see connections, relationships between causes

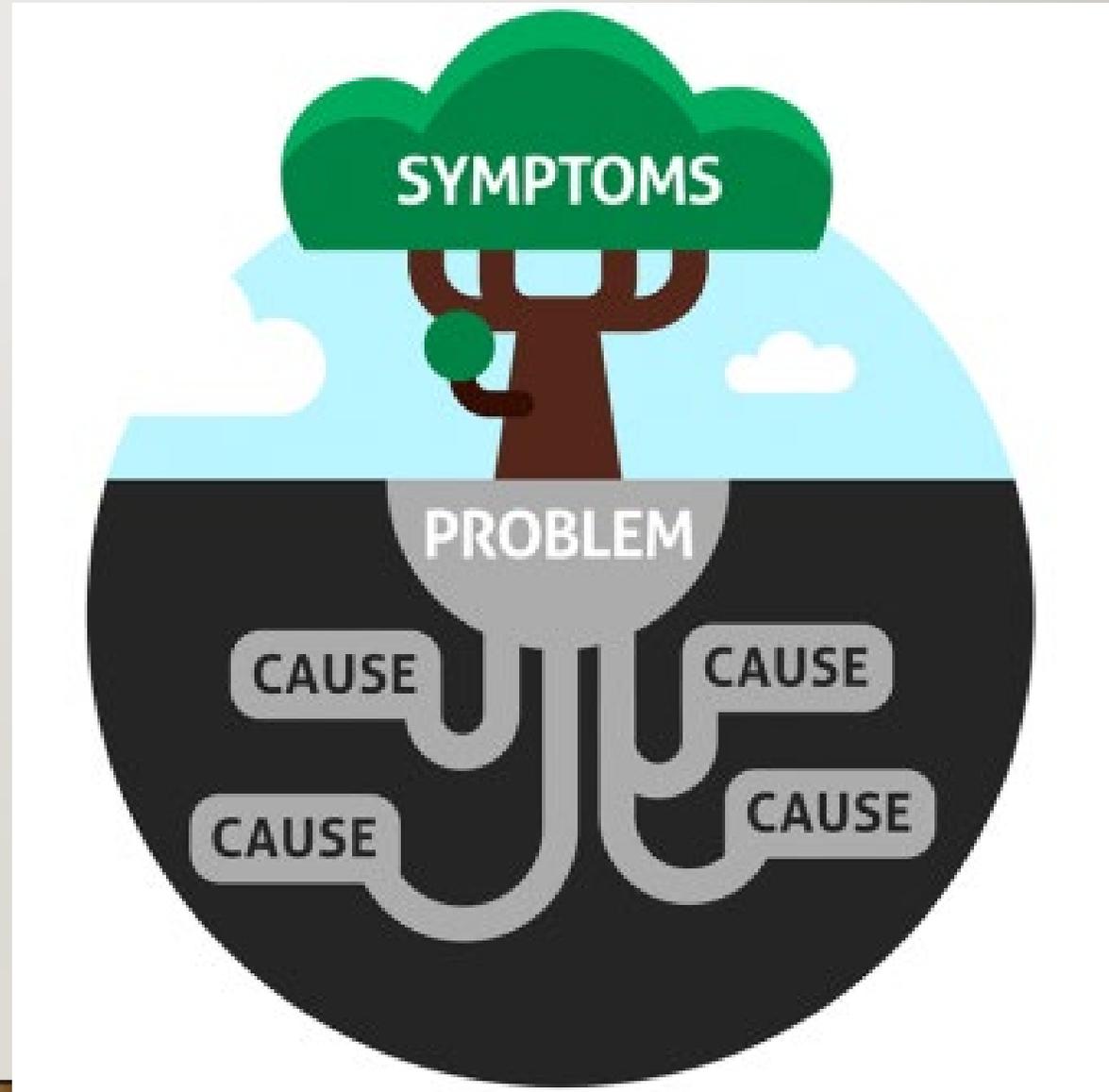


Easier to go into deeper levels with “5 Whys”



BOTH valid RCA tools!

WHEN
ARE
YOU AT
THE
ROOT?...



EXAMINING ROOT CAUSES: PRIORITIZE



Prioritizing: Which would have the biggest impact?



Tools: Prioritization Matrix (a simplified version)

Criteria to consider:

- Impact on the Problem Statement
- Feasibility
- Urgency

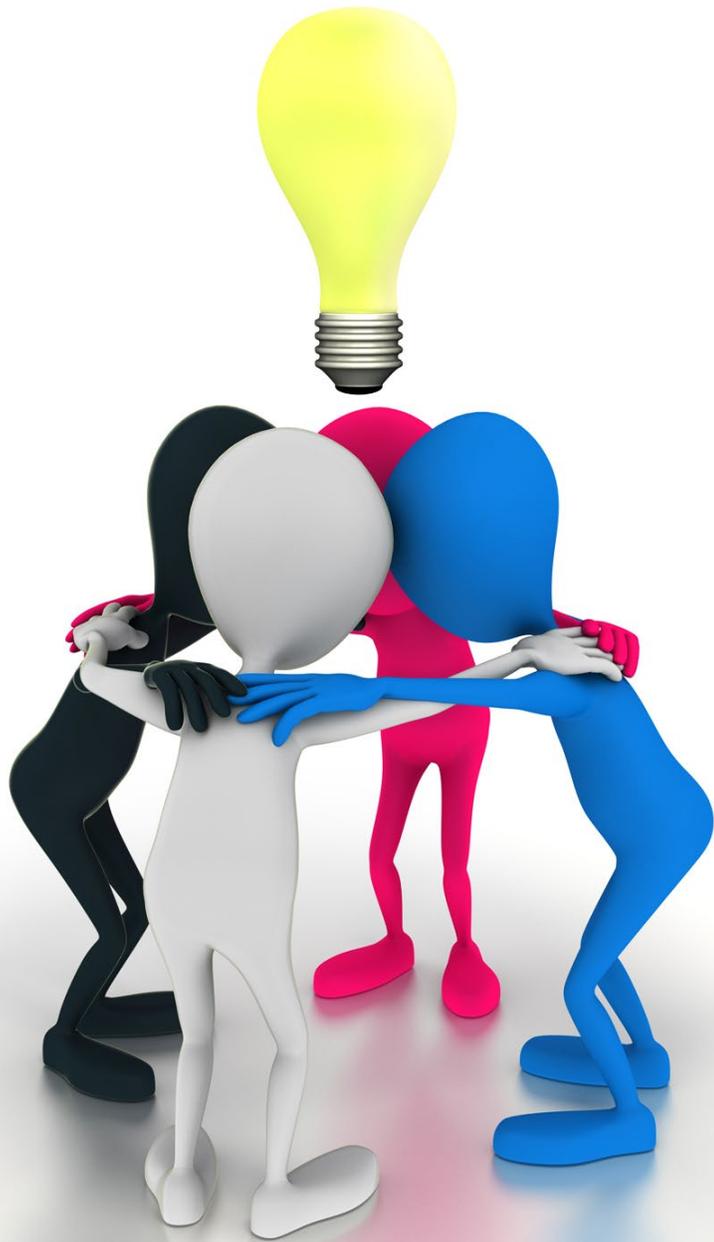
Priority Matrix (Simplified)

Key: 10 = high, 1 = low

Problem Statement: Poor diet is contributing to the rise of DM Type 2, obesity, and high A1Cs.

Root Causes	Impact on Problem Statement	Feasibility	Urgency	Actionable?	TOTAL
Patients were not brought up to know how to cook raw/healthy/non-processed foods	6	8	4	5	23
The older population seems to have a heavy reliance on doctors and Rx to fix them. It's a generational barrier; a cultural expectations. "If I take this pill, I should be able to eat what I want."	7	1	3	1	12
There are food deserts, and no transportation to grocery stores after working hours. (We are rural, and there are not enough people to make that affordable.) People are shopping at gas stations / dollar stores / whatever is closest to their homes.	8	5	3	5	21
Grocery stores are not open 24/7. For patients who need to grocery shop between work shifts, their food options are limited.	4	1	3	3	11

ROOT CAUSE PRIORITY MATRIX: EXAMPLE (FICTIONAL)



BRAINSTORMING SOLUTIONS

- Focus on one root cause at a time!
- All ideas are valid! Anything on the table
- Brainstorming methods:
 - Sticky notes
 - Whiteboard
 - Quiet team members? Talk to them privately
- Revisit your parking lot!
- Prioritize Solutions!
 - Can use the same Matrix
 - Feasibility, Cost, Impact, Actionable?

DEVELOPING YOUR QUALITY IMPROVEMENT PROJECTS



Root Causes

Take the 3 Root Causes that are at the top of the priority list



Brainstorm Solutions

All ideas are equal – write them down!
Involve all players – even community partners
Revisit your parking lot



Prioritize

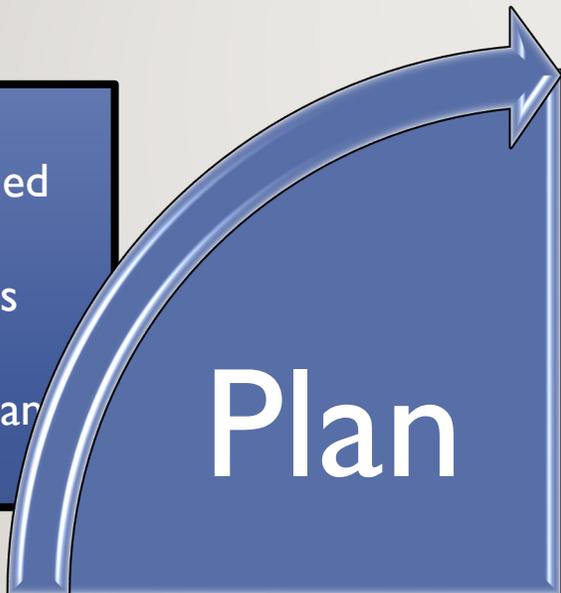
Use the Prioritization Matrix



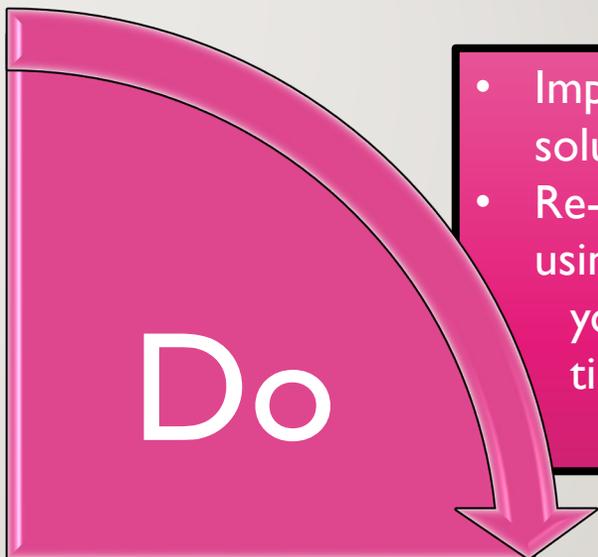
Develop Next Steps

Develop Your PDSAs
Who do you need to collaborate with?

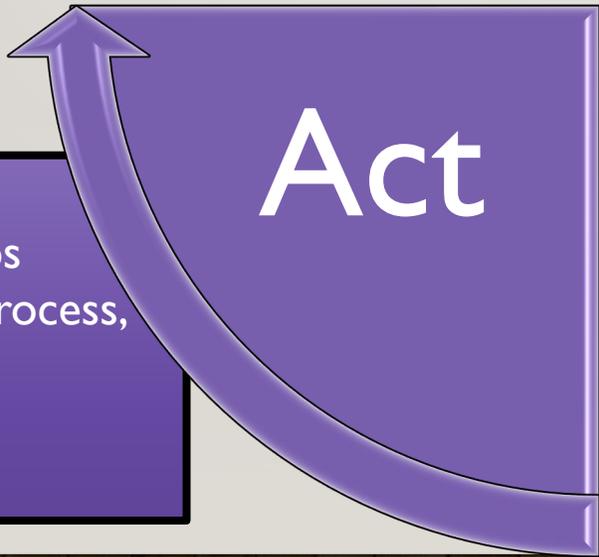
- Use your Problem Statement and Identified Root Cause
- Identify your Measures
- Collect your Baseline
- Create your Action Plan
- Set your goal



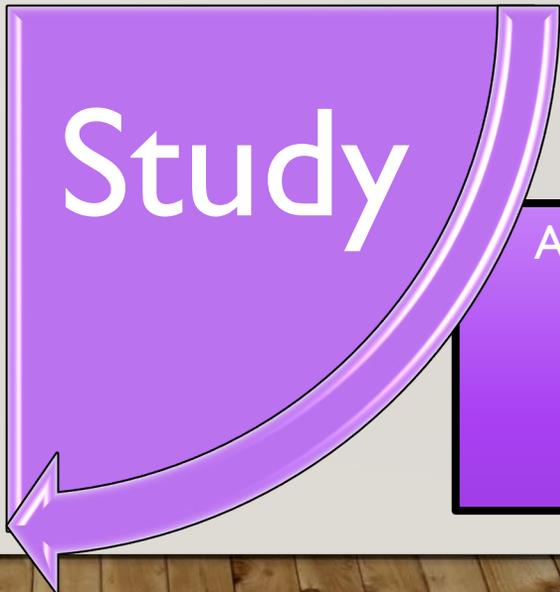
- Implement your selected solution
- Re-Measure your data, using the same criteria as your baseline, but a new timeframe.



- Use analysis to determine next steps and tweaks to the process, if needed.
- Repeat PDSA steps



Analyze data for trends and patterns.



MODEL FOR IMPROVEMENT



Practice Name:

Date: Updated

What is your Aim/Target Goal? (What are you trying to accomplish?)

What will you measure? (How will you know your changes are making an improvement?)

- Numerator:
- Denominator:

How will you collect your data? (Is it available now or will you have to create a data collection tool?)

What changes are you going to test to reach your Aim? (PDSA Cycles)

Team:

PLAN:

Tasks to be completed	Who will do it?	When will it be done by?	Tools/Resources needed?

DO: [Insert tables and graphs to monitor data]

STUDY: [Narrative analysis of data results]

ACT:

THE PLANNING PHASE



Include:

- Original Problem Statement
- Identified Root Cause
- Identified Solution
- Next steps (what, who, and by when)

Ask Yourself:

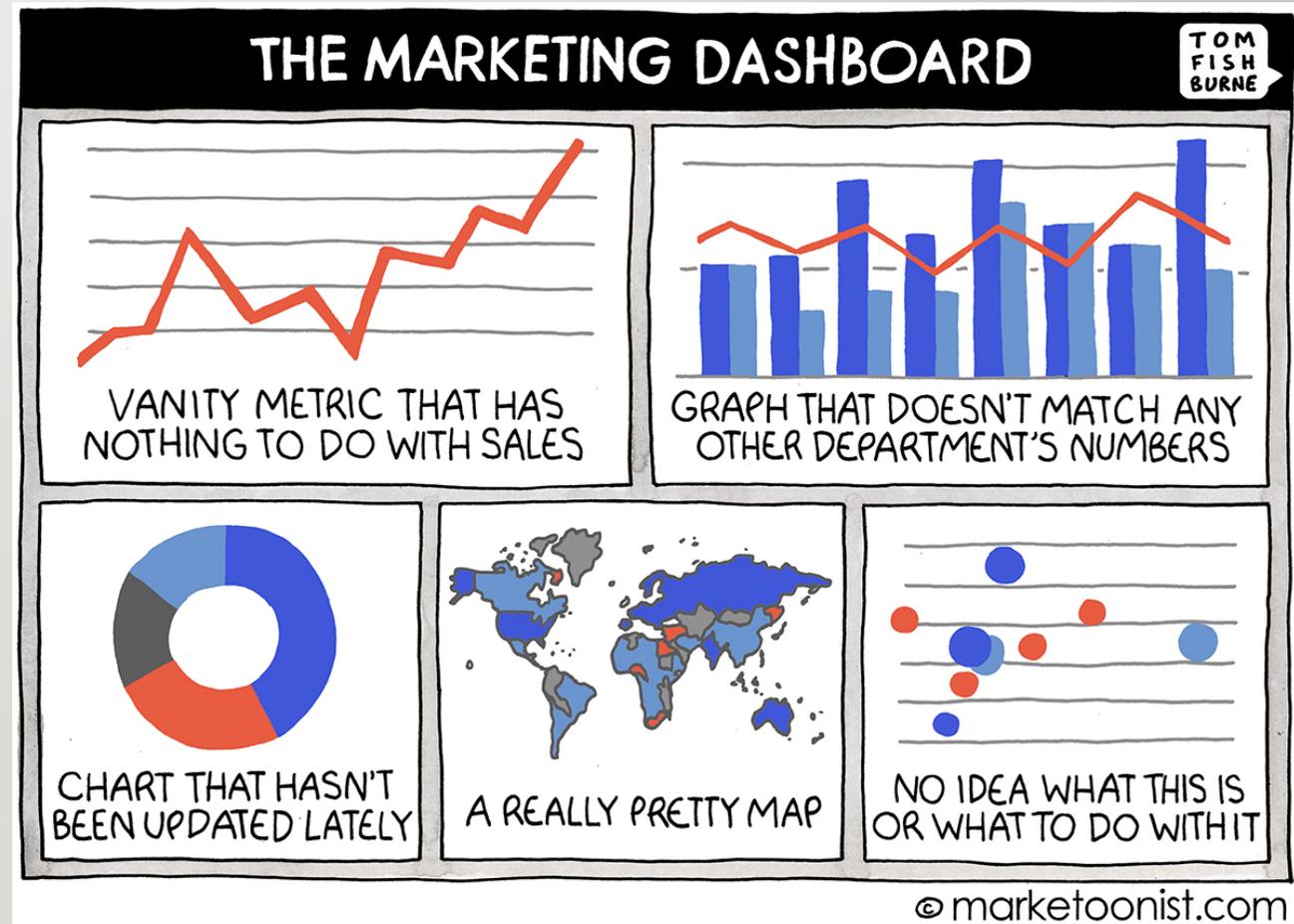
- Who could we collaborate with?
- What measures would tell the story we are trying to learn about? (Quantifiable data!)
- What resources do we need to pull this off?
- What is your goal?

REMEMBER
YOUR
COMMUNITY
PARTNERS!



WHERE TO START? BASELINE DATA

- Know your data! Check:
 - What are your available data sources?
 - What criteria is used?
 - Is it telling the truth?
 - Important! Does the data tell the story that you want to learn about?
 - Valid?
 - Don't just focus on percentages!



SELECTING YOUR MEASURES



- Measures include a numerator, denominator and rate
- Look at your denominator size
- Get your baseline! (Required!)
- Beware of generics!
- Think outside of the box
- What will tell the story??

CONVERTING QUALITATIVE TO QUANTITATIVE

- Some data – like experiences – can be hard to quantify.
- Try using a scale; 1-10
- Look for common themes in the data; can any be grouped? (for example, comments about the staff, comments about the space, positive comments, negative comments, etc.)
- Try to structure your data collection ahead of time to get as much quantitative data as possible.



SMART GOALS:

S

Specific

M

Measurable

A

Achievable

R

Relevant

T

Time-based

SETTING
YOUR GOAL:
BE SMART!

SETTING AIMS & GOALS: EXAMPLES



- Aim: To get patients to stop no-showing
 - **Needs Improvement!**
- Aim: To reduce no-shows from our baseline of 10% to 8%
 - **Better**
- Aim: To reduce no-shows from our weekly baseline of 10% to 8% within 1 month
 - **Best!**

FROM PAPER TO PRACTICE



- Develop your Action Plan!
- What / Who / When?
- Important to **assign tasks!!** Don't assume.
- Create a deadline and hold folks to it.
- Meet regularly; review the To-Do's from the previous meeting; status? Complete? Barriers to completion?

SAMPLE ACTION PLAN: OUTREACH

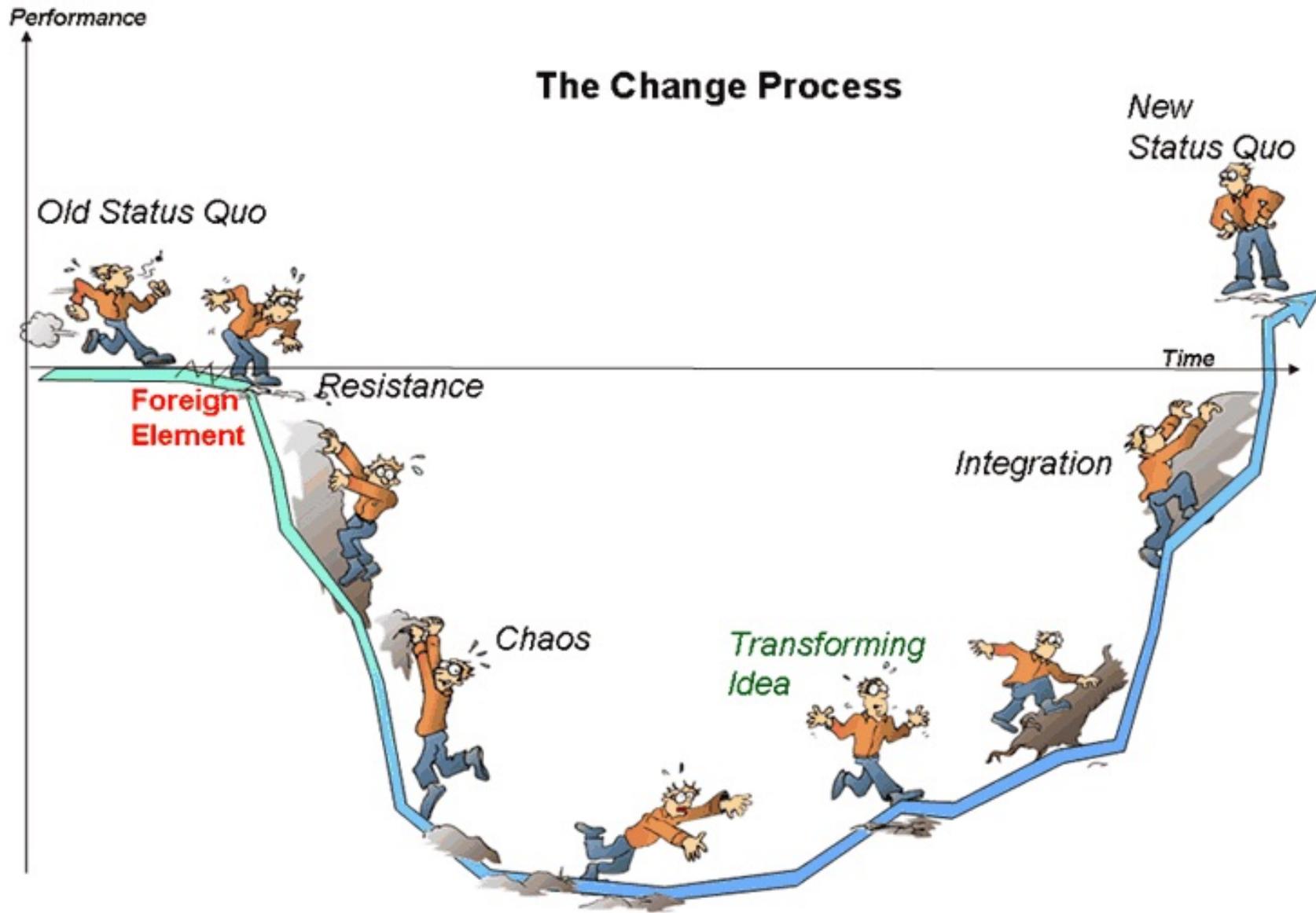


Tasks to be completed	Who will do it?	When will it be done by?	Tools/Resources needed?	Status
Generate a list of patient not up to date on their Mammogram Screening	IT	June 15, 2017	Access to the EMR, desired parameters for report	Complete
Decide: Phone Calls or Letter?	QI Team	June 20, 2017		Complete: letter was decided upon
Draft a phone script / letter	QI Team	June 30, 2017	Word Processor	Complete: letter drafted and ready to be printed
Conduct Outreach	Care Coordinators	July 30, 2017	Printer, paper, envelopes, stamps, etc.	In process; 50% complete
Monitor / Track responses	Care Coordinators	August 1, 2017 & ongoing	Spreadsheet with patient list	
Track data	IT	August 1, 2017 & ongoing	EMR	
Analyze Progress and Next Steps	QI Team	Monthly	Team members, status updates	

DO IMPLEMENT CHANGES

- Make sure all involved staff understand WHY the change is needed. Get them on board!
- Make sure all staff understand what you want them to do. No guessing games!
- Have a contact person for questions / concerns.
 - EXPECT resistance. Change is scary!! Support them, hear them. Their concerns are valid, and they deserve to be heard.
 - Having a clinical champion can help tremendously. Someone who is passionate about the cause!
- Check-in frequently. Make sure the requested changes are being done.





TIPS TO SUSTAIN CHANGE



Leadership buy-in



Find a Clinical Champion!



Communication, communication, communication!!!



Involve those who will be impacted – from the start!!!



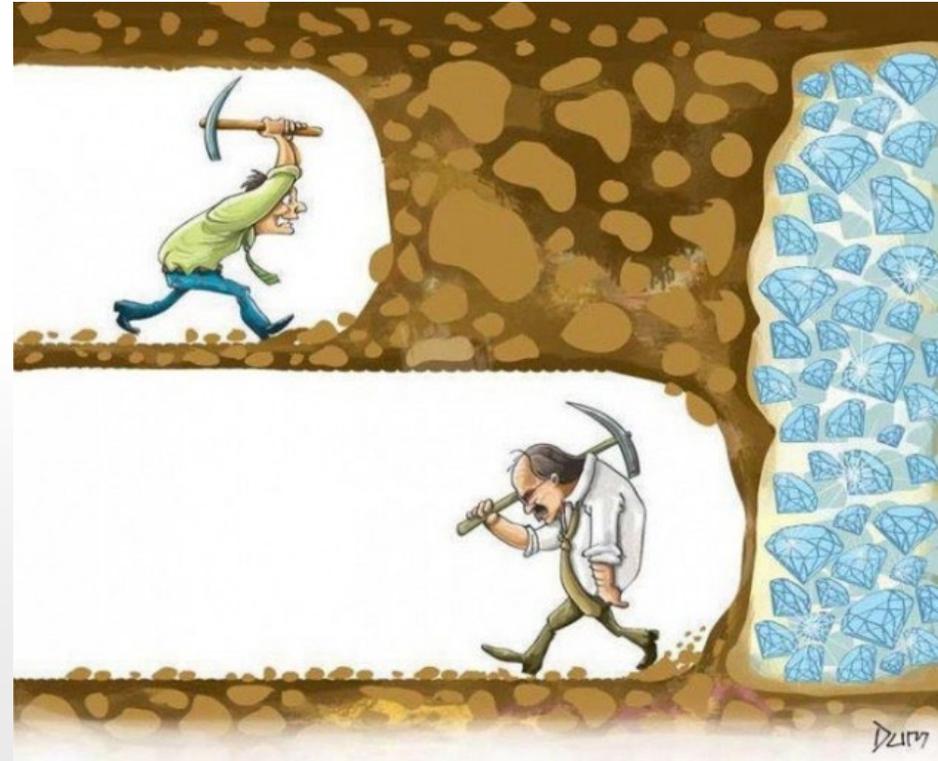
Make results visible



Celebrate small successes



Check in – how are things going for staff? Do they have questions or need extra support?





QUESTIONS??

- (Please fill out the evaluation!)

Contact Information:

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Bi-State Primary Care Association

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