

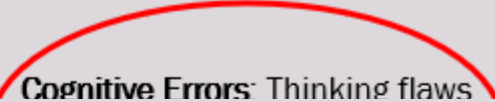
TEACHING IMPROVEMENT  
SCIENCE (TIS):  
WEEK 7



## Today's Agenda


- **Recap Week 6**
- Culture of Safety
- RCA
- Wrap Up
- HSPs

# Week 6 Recap


 Cognitive Errors: Thinking flaws

Bias	Definition
Confirmation	Tendency to seek/focus on data to confirm, not refute, the hypothesis
Authority	Tendency to stop thinking when confronted with authority (a person or an objective test)
Anchoring	Tendency to lock onto salient features in the initial presentation too early in the diagnostic process and failing to adjust later
Availability	Tendency to judge the likelihood of an event by the ease with which examples come to mind

Week	1	2	3	4	5
Dates	8/10- 8/31	9/7- 9/28	10/5- 10/26	11/2-11/23	11/30-12/21
Topic	Systems 1: Intro & Clinical Efficiency	Systems 2: Microsystems & Tools for Improvement	Systems 3: Macrosystems & SDoH	Value-Based Care (+30 min)	Data Science (+30 min)



Week	6	7	8	9	10	11
Dates	1/11-2/1	2/8-3/1	3/8-3/29	4/5-4/26	5/3-5/24	5/31-6/21
Topic	Diagnostic Errors (+60 min)	Systems Errors (RCA) (+60 min)	Teamwork Simulation (+60 min)	Error Disclosure & Second Victim (+60 min)	Narrative Medicine (+60 min)	Present HSPs!



**Health System Projects Will Be Completed Across Weeks 4-11**



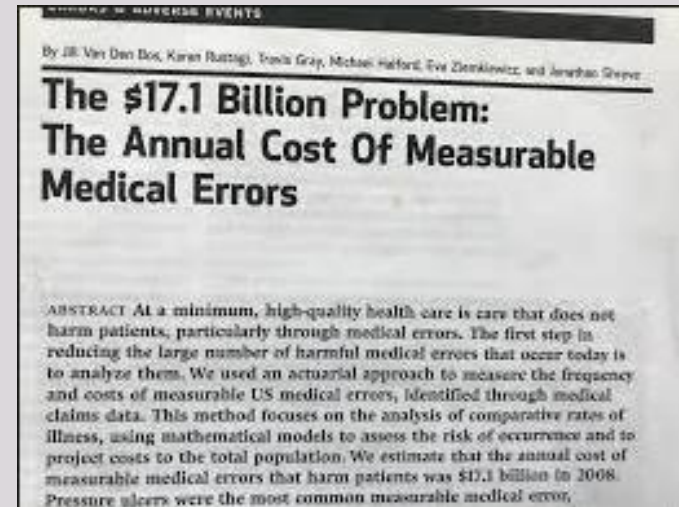
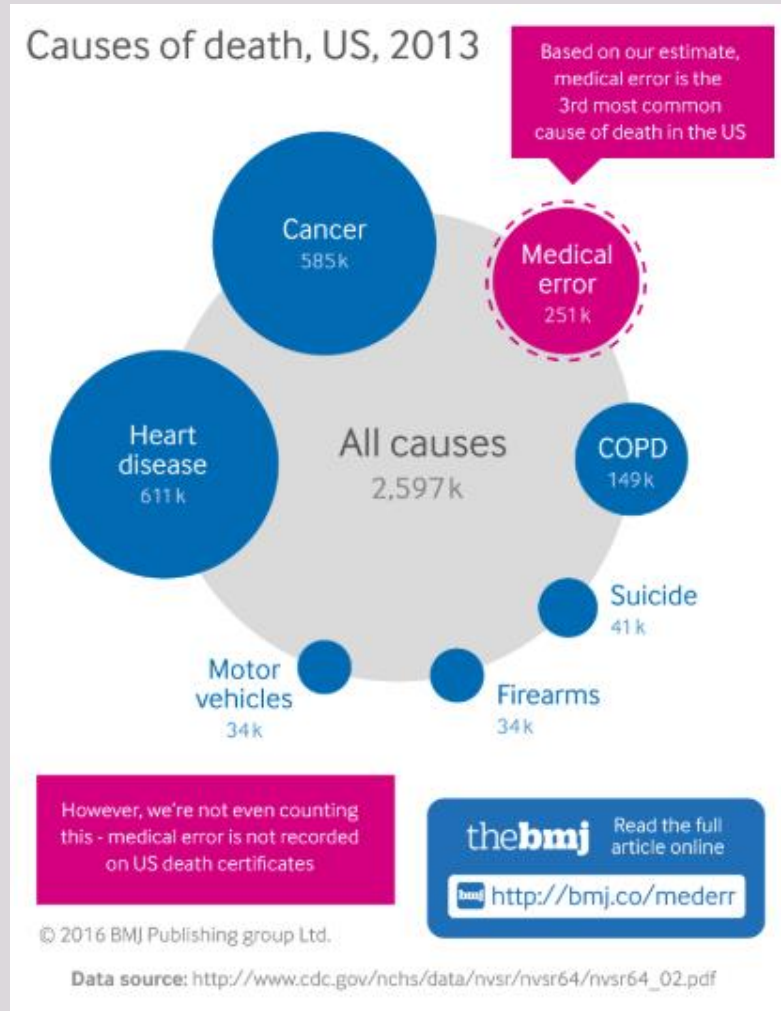
## Today's Agenda

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- **Culture of Safety**
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# A Comedian on Errors



# Why is this important?



# Culture of Safety

- What is culture?
  - *“The way we do things around here”.*
- What is a Culture of Safety?
  - *Acknowledgement of the high-risk nature of what we do and a determination to work together to achieve consistent, safe operations.*
  - *A non-punitive environment.*
  - *Shared responsibility to identify and report errors.*
  - *Encouragement of collaboration across ranks to seek solutions.*
  - *An organizational commitment to address safety concerns.*



# Safety Culture



J Rec

## Human Error

*Product of Our Current System Design and Behavioral Choices*

Manage through changes in:

- Choices
- Processes
- Procedures
- Training
- Design
- Environment

## At-Risk Behavior

*A Choice: Risk Believed Insignificant or Justified*

Manage through:

- Removing incentives for at-risk behaviors
- Creating incentives for healthy behaviors
- Increasing situational awareness

## Reckless Behavior

*Conscious Disregard of Substantial and Unjustifiable Risk*

Manage through:

- Remedial action
- Punitive action



## Today's Agenda

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# *Mystery Dinner RCA Presents*

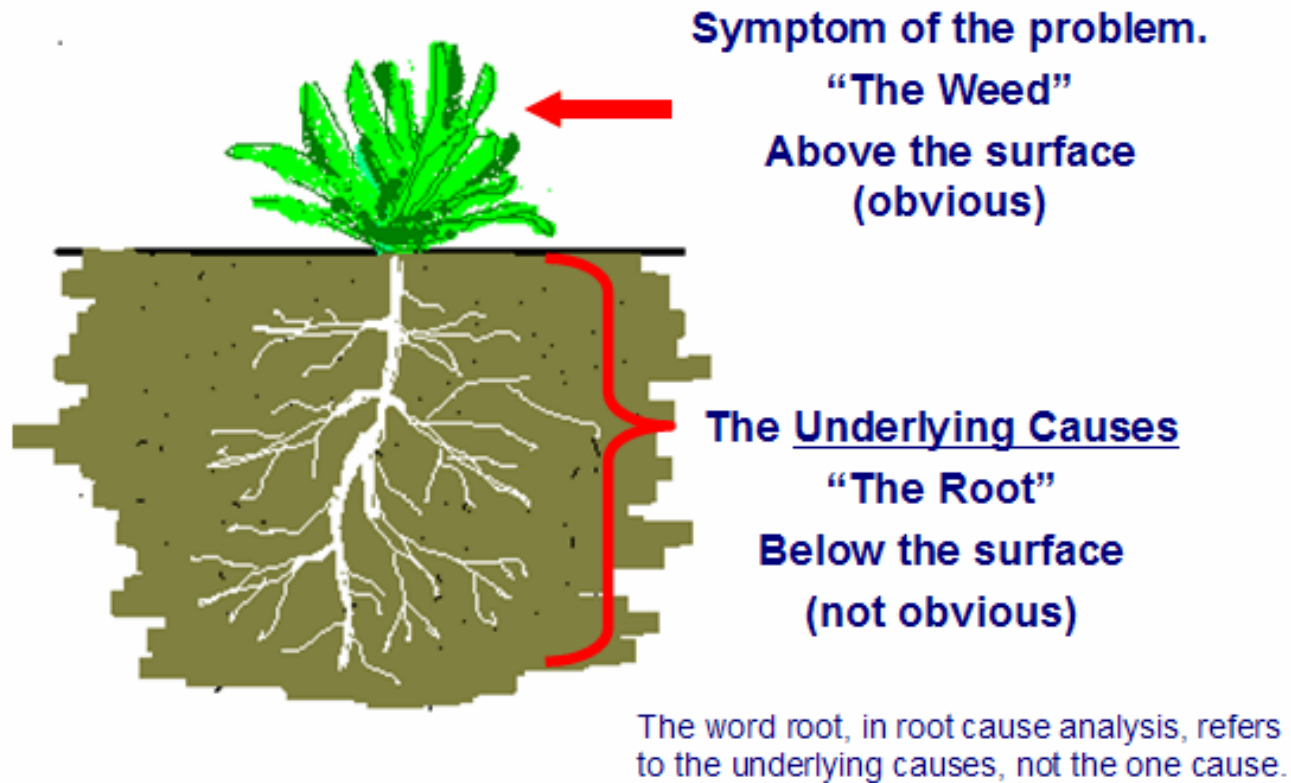


**Understanding How Social & Structural Determinants of Health Contribute to Error**

Created by: Matthew Diveronica, Shona Hunsaker, Andrea Smeraglio,  
Christopher Terndrup, Bryn McGhee



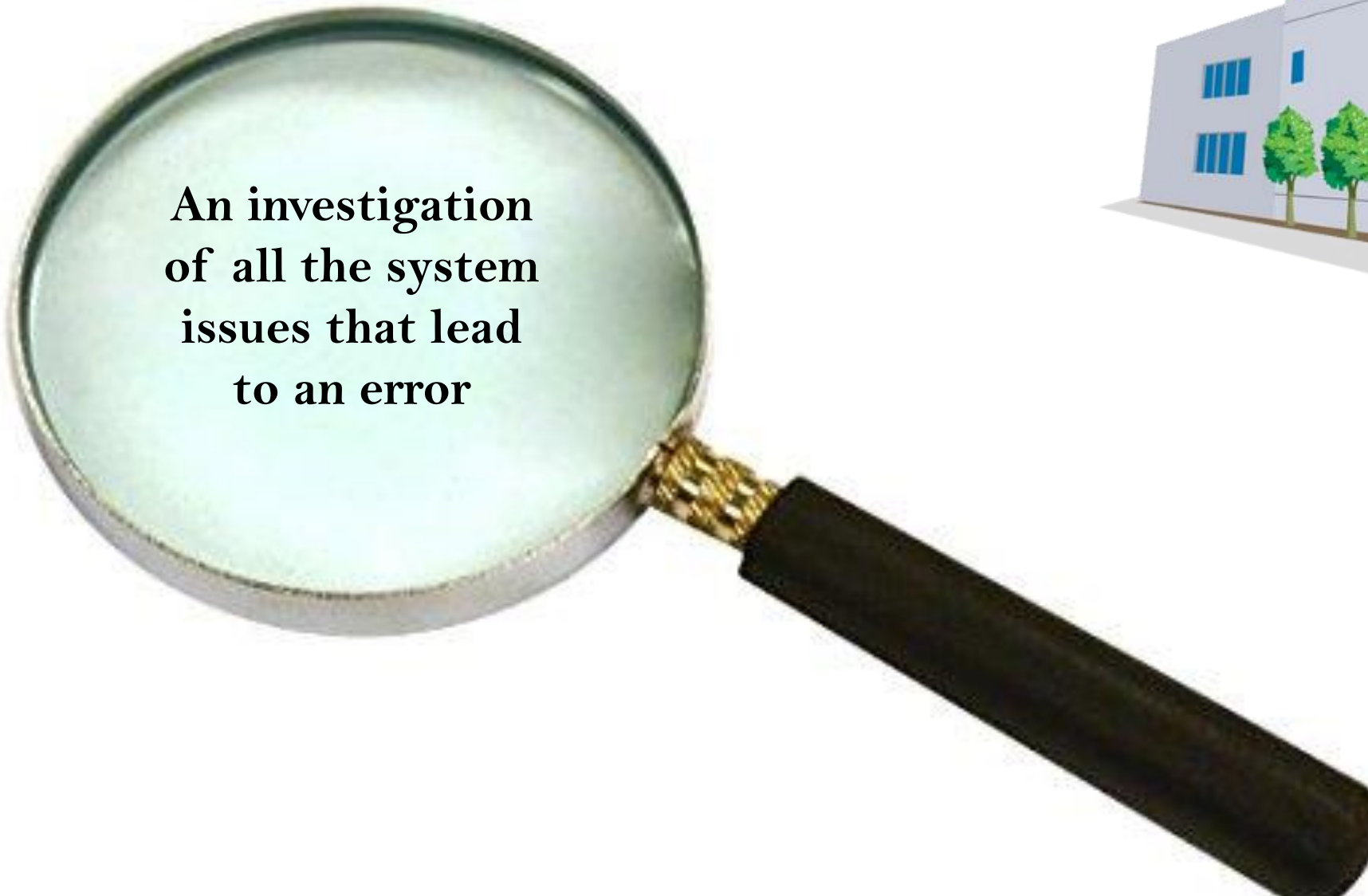
# Root Cause Analysis Basics



These are the errors, events, near misses that take place in the hospital

These are the underlying issues within a system that allow errors, events and near misses to occur and reoccur

# What is an RCA??



An investigation  
of all the system  
issues that lead  
to an error



# What is an RCA??



# What is an RCA?

## GOAL

Make the system  
better and patient  
care safer!

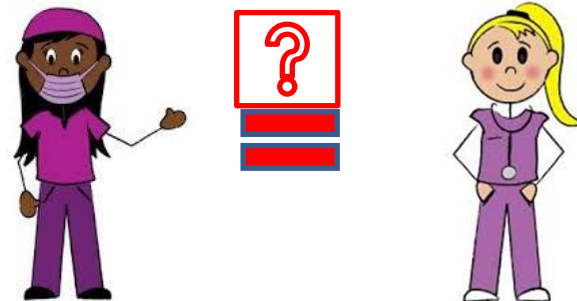


# Root Cause Analysis (RCA)

- Embrace your inner child
  - 5 Whys
- But act like an adult
  - Focus on the system
  - Not finger pointing, blaming, shaming
  - **Substitution test:**



Ask: Could I imagine another person making the same mistake?

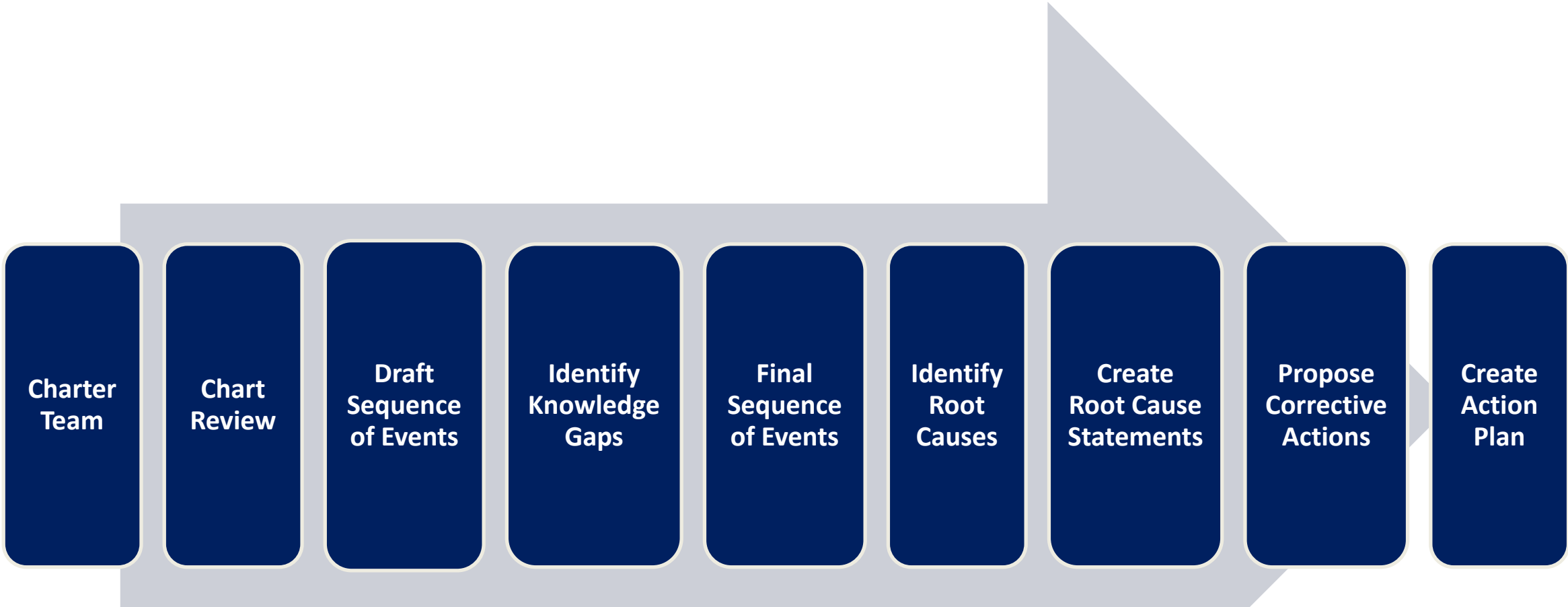


If Yes: Improve the system

If No: Coach the individual



# RCA Process: Step by Step



# *Root Cause Analysis: Mystery Dinner Style*



# Case Intro



Meet Nick...our patient safety officer.

“Hi. I’m Nick. I’m the Patient Safety Officer for this hospital. Every day I review our Medical Event Reports. Employees enter one of these when an event occurs that they felt placed a patient at risk of harm or did harm a patient.

I was just reviewing this report that was submitted yesterday afternoon. I need you to help me lead a Root Cause Analysis on this event. Here’s what I know so far...”



## Medical Event Reporting

Submit

Event Date	Patient Name	SSN (Last Four Only)
1/18/2023	Ramirez-Gonzalez, Veronica	

Location
ED

If the correct location is not in this list, please let us know in the **Description of the Event** and we will add it.

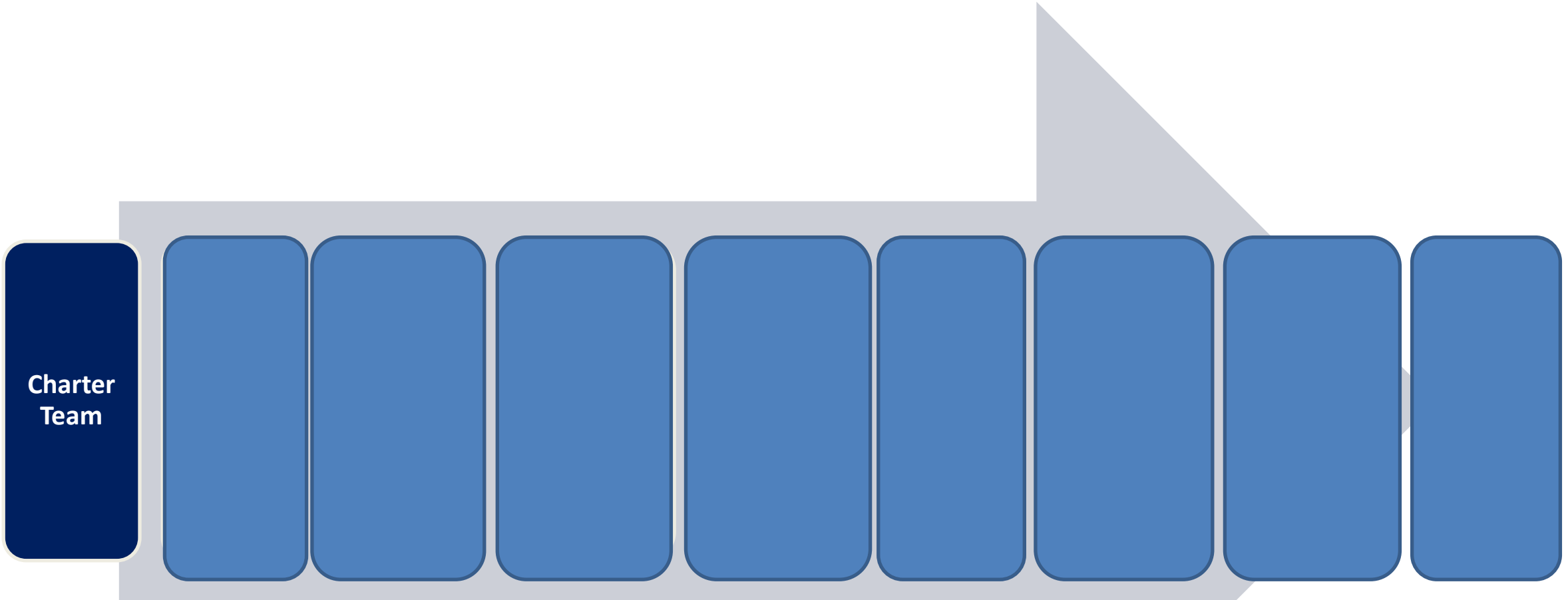
Patient Age	Patient Sex
20	Female

### Description of the Event

**New critical value of anemia & abnormal transvaginal ultrasound report from Primary Care clinic not available in chart for review by ED. Patient care was delayed. Required transfusion, treatment for infection after missed ectopic pregnancy.**

Time of Event

# RCA Process: Step by Step



# 1. Charter a Team

## KEY POINTS

- **Patient Safety Officer.** Patient safety leadership reviews the report and organizes the team:

### PCP Clinic Representative

**Activity: Based on the medical event report below what team members do you want to recruit for this RCA??**

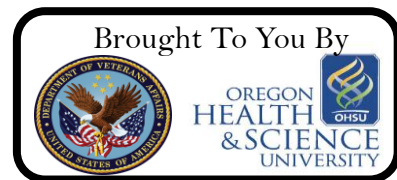
### ED Provider Representative

- NOT individuals directly involved in the error
- ### Hospital Registration Representative

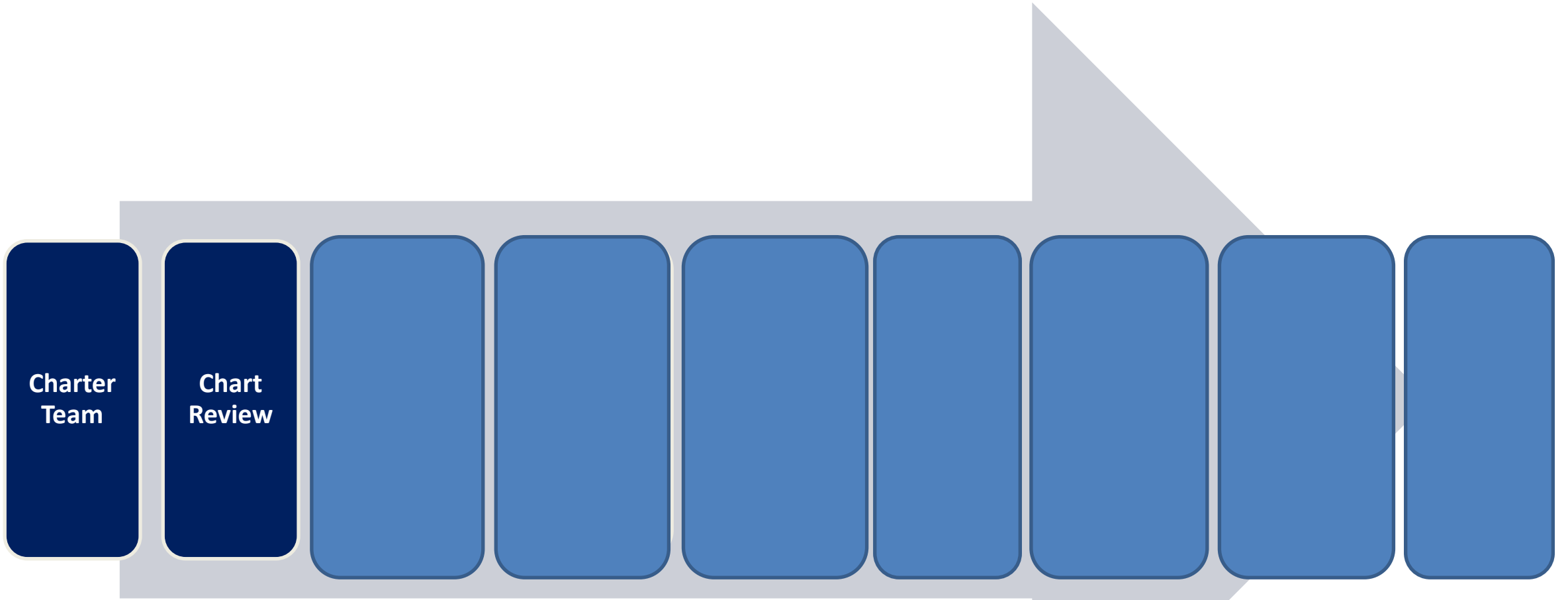


Here is a reminder of the medical event report →

New critical value of anemia & abnormal transvaginal ultrasound report from Primary Care clinic not available in chart for review by ED. Patient care was delayed. Required transfusion, treatment for infection after missed ectopic pregnancy.



# RCA Process: Step by Step





## 2. Chart Review



**Activity Part 1:** Review the charts provided. Create a list as a group of the pertinent information you collected from chart review.

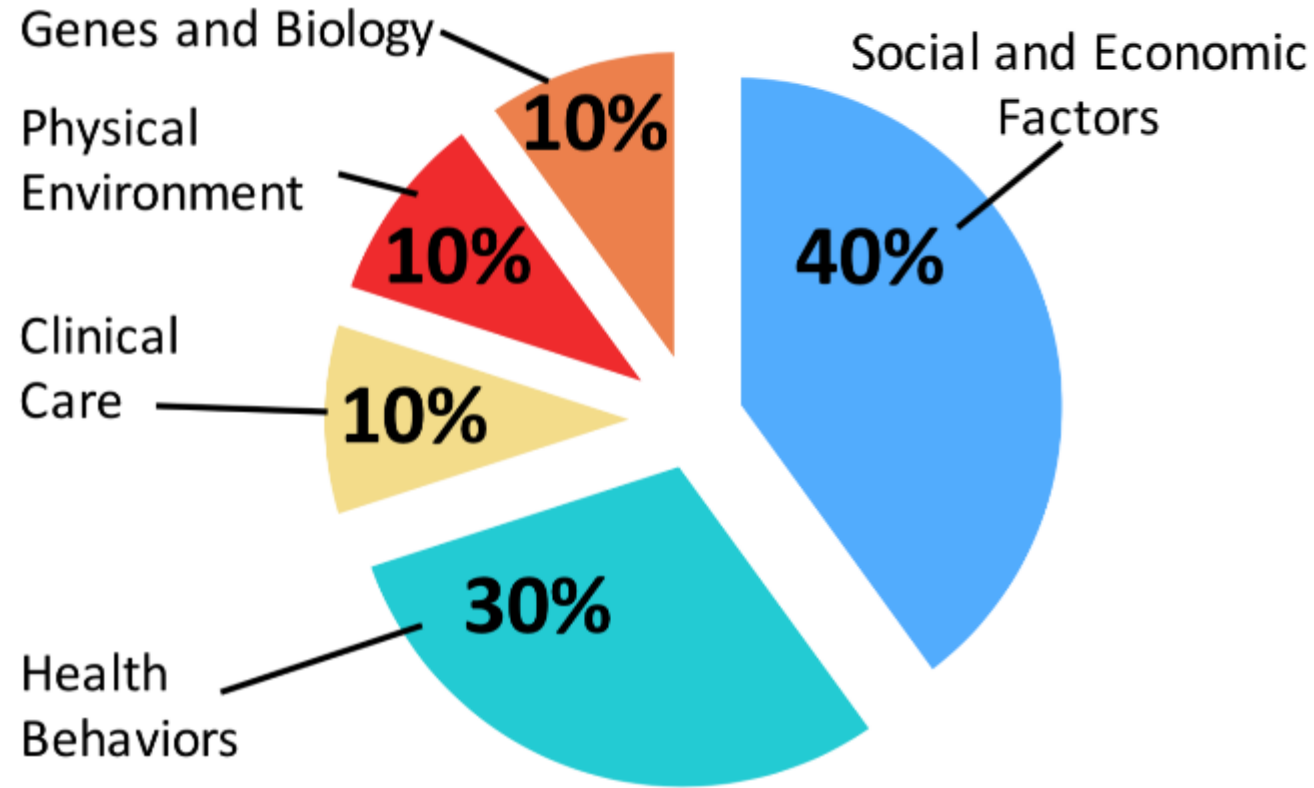
**Activity Part 2:** What information do you still want to know based on the chart review? Create a list as a group of questions you still want answered.

**Activity Part 3:** What potential social determinants of health did you notice in this chart review?

Here is a reminder of the  
medical event report

→ New critical value of anemia & abnormal transvaginal ultrasound report from Primary Care clinic not available in chart for review by ED. Patient care was delayed. Required transfusion, treatment for infection after missed ectopic pregnancy.

# Determinants of Health



Determinants of Health Model based on frameworks developed by: Tarlov AR. *Ann N Y Acad Sci* 1999; 896: 281-93; and Kindig D, Asada Y, Booske B. *JAMA* 2008; 299(17): 2081-2083.

# Social Determinants of Health

Conditions in the environments in which people live, learn, work, play, worship, and age that affect a wide range of health, functioning, and quality-of-life outcomes and risks.

- *Healthy People 2020*, CDC

Figure 1  
Social Determinants of Health

Economic Stability	Neighborhood and Physical Environment	Education	Food	Community and Social Context	Health Care System
Employment	Housing	Literacy	Hunger	Social integration	Health coverage
Income	Transportation	Language	Access to healthy options	Support systems	Provider availability
Expenses	Safety	Early childhood education		Community engagement	Provider linguistic and cultural competency
Debt	Parks	Vocational training		Discrimination	Quality of care
Medical bills	Playgrounds	Higher education		Stress	
Support	Walkability				
	Zip code / geography				

**Health Outcomes**  
Mortality, Morbidity, Life Expectancy, Health Care Expenditures, Health Status, Functional Limitations

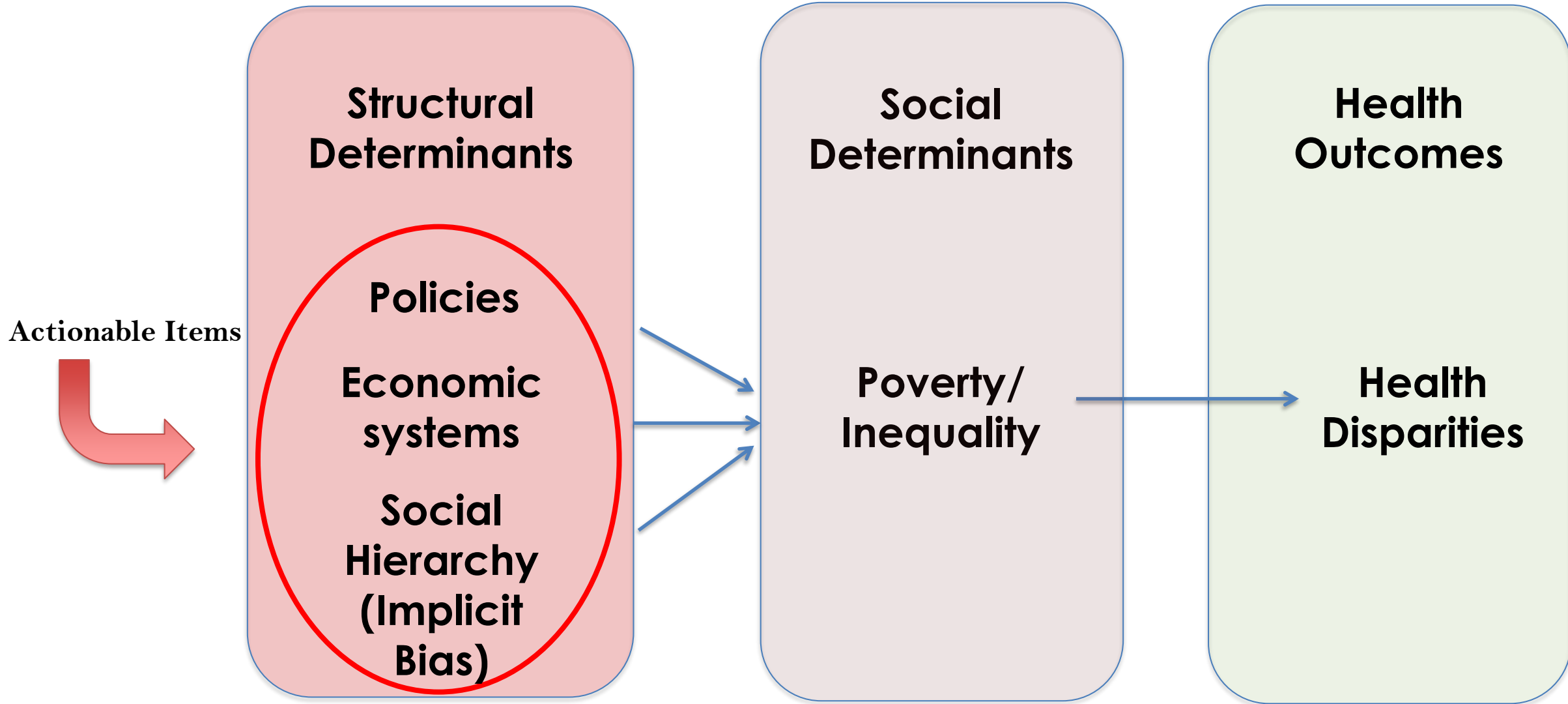


# What are structural determinants of health?

The policies, economic systems, and other institutions (judicial system, schools, etc.) that have produced and maintain modern social inequities as well as health disparities, often along the lines of social categories such as race, class, gender, and sexuality.



<https://online.simmons.edu>



“Structural determinants of the social determinants of health”

## 2. Chart Review



**Activity Part 1:** Review the charts provided. Create a list as a group of the pertinent information you collected from chart review.

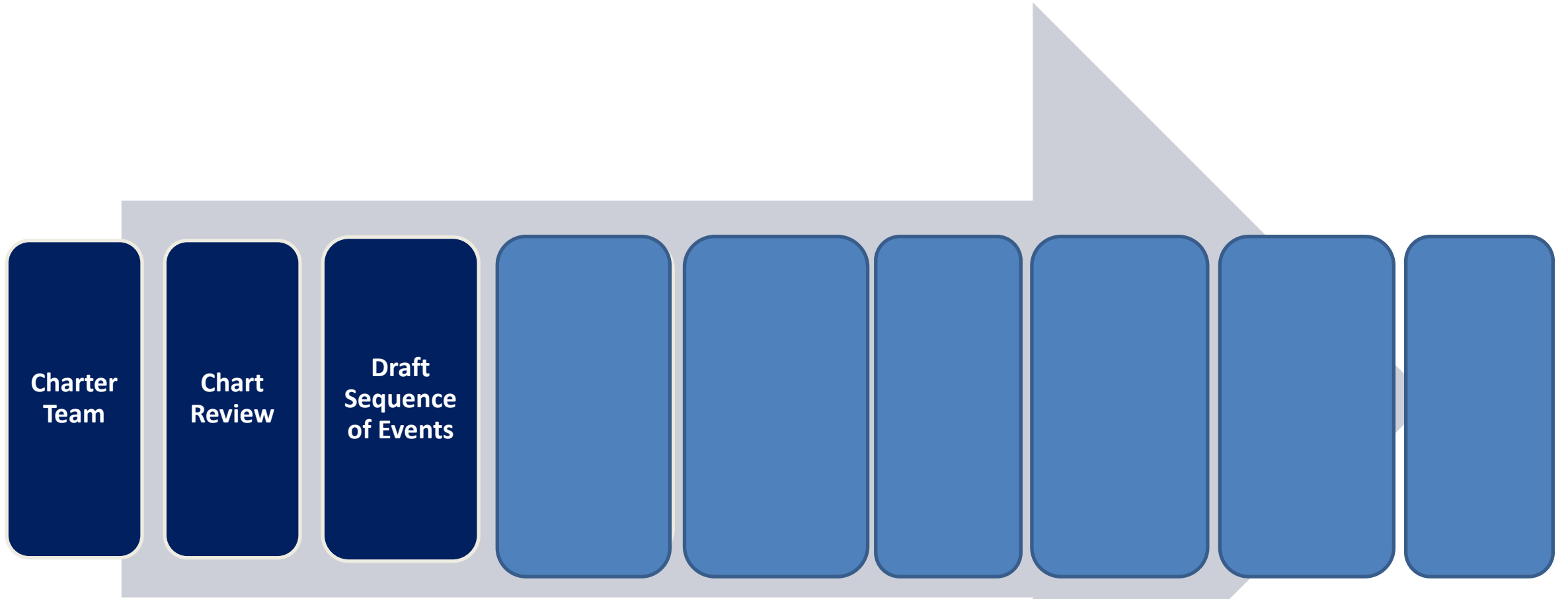
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Here is a reminder of the  
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→ New critical value of anemia & abnormal transvaginal ultrasound report from Primary Care clinic not available in chart for review by ED. Patient care was delayed. Required transfusion, treatment for infection after missed ectopic pregnancy.

# RCA Process: Step by Step



# Draft Sequence of Events

1. Patient seen in PCP office for three weeks of vaginal bleeding.
2. Laboratory and imaging exams ordered. Covering resident to follow up results.
3. Critical laboratory value not shared with patient.
4. Next day patient presents to ED with ongoing symptoms.
5. Patient's workup is repeated in the ED.
6. Surgery delayed waiting for duplicate workup, requiring treatment for infection and blood transfusion.





# RCA Process: Step by Step



# 4. Fill in the Gaps: (Fact Finding)



**Activity Part 1:** Conduct a series of interviews of people involved in the event. Try to understand each person's perspective on the case. Ask questions to help you more fully understand what occurred and why.

**Activity Part 2:** As a group, review what you learned from the interviews to fill in any remaining gaps.

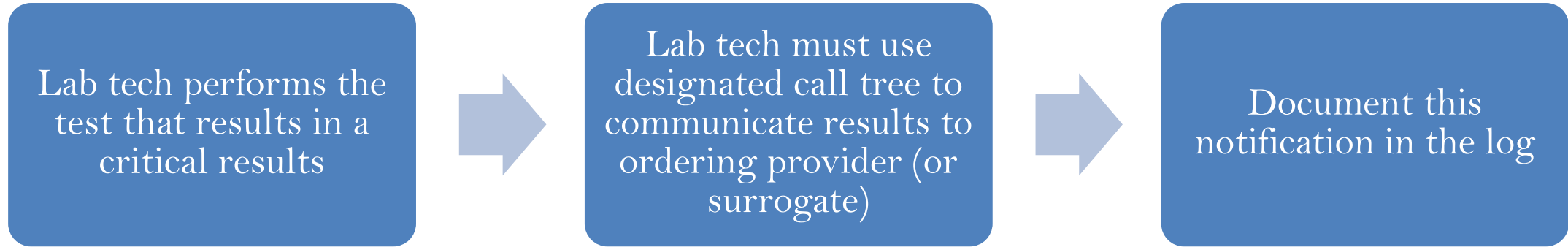
**Activity Part 3:** What social or structural determinants of health did you notice?

## 4. Fill in the Gaps: (Fact Finding)



Next is a series of slides to review while interviewing the Laboratory Technician.

# Current laboratory process for critical results reporting



Date	Patient	Date of Birth	Critical Result	Provider Paged	Time	Completed
1/17/23	Steele, Arthur	4/13/52	Na 119	Dr. Lu	12:29	✓
1/17/23	Ardson, James	6/12/93	Glucose 512	Mary Chien, FNP	13:05	✓
1/17/23	Campbell, Greg	10/25/47	INR 8.2	Dr. Greg Nelson	13:15	✓
1/17/23	Pearl, Emerson	6/1/82	WBC 0.9	Dr. Steve Rodgers	15:45	✓
1/17/23	Young, Thomas	2/4/68	Plt 15	Dr. Anna Stanley	15:50	✓
1/17/23	Gonzalez, Vennica Ramirez	11/18/03	Hct 19%	Dr. Steve Rodgers	16:30	✓
1/17/23	Gonzaga, Victoria	11/8/03	Hct 18%	Dr. Steve Rodgers	16:32	✓

# 4. Fill in the Gaps: (Fact Finding)

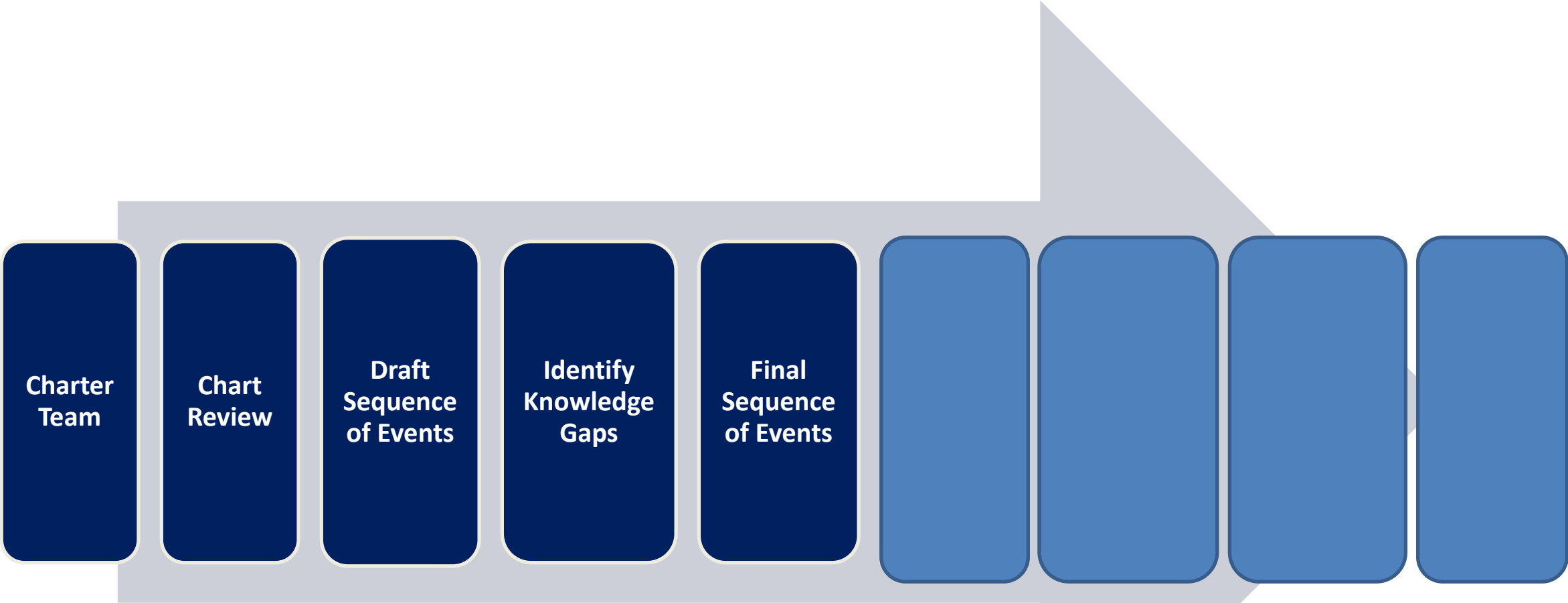


**Activity Part 1:** Conduct a series of interviews of people involved in the event. Try to understand each person's perspective on the case. Ask questions to help you more fully understand what occurred and why.

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**Activity Part 3:** What social or structural determinants of health did you notice?

# RCA Process: Step by Step

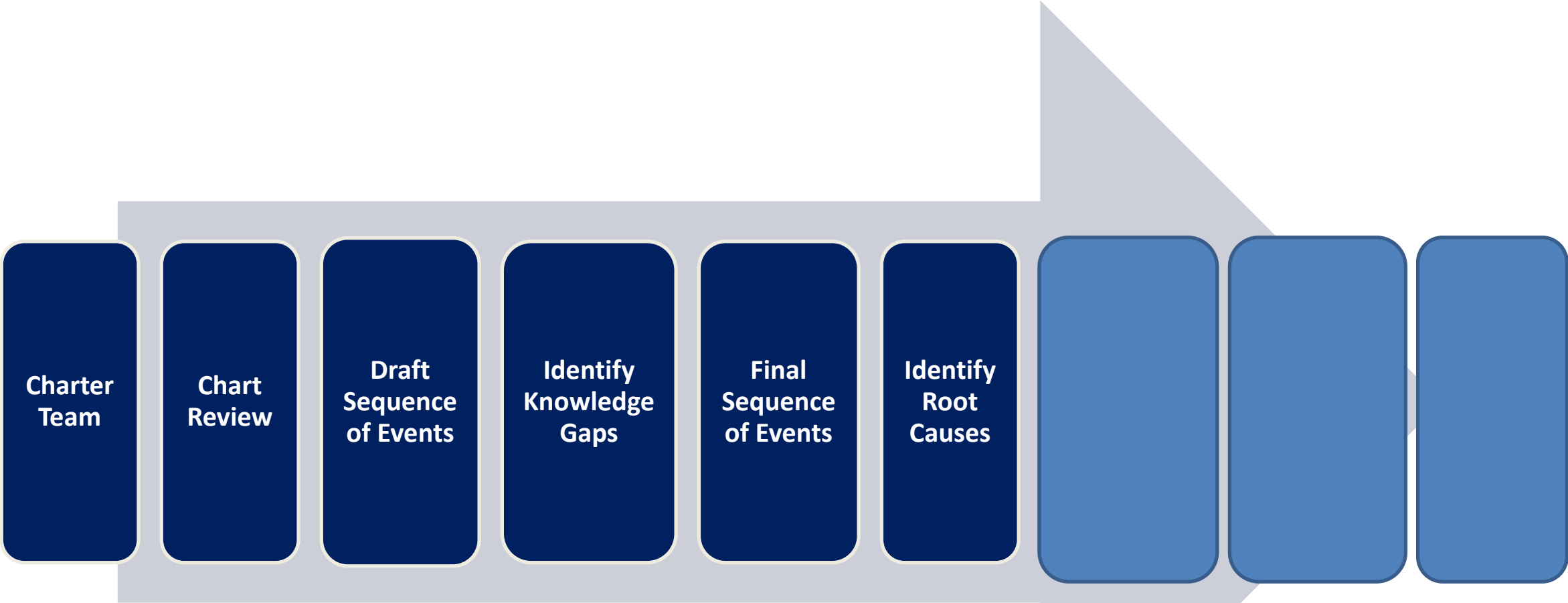


# 5. Final Sequence of Events

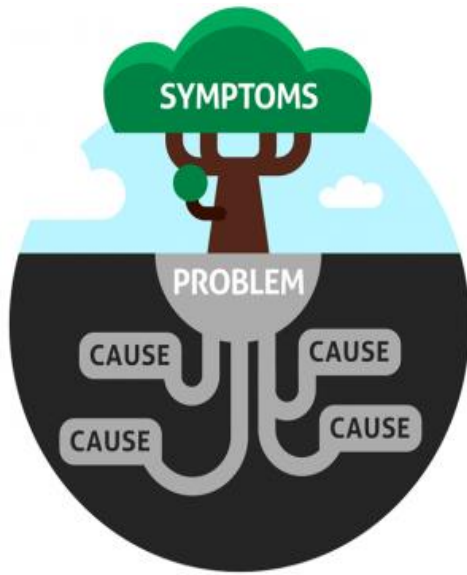
1. Patient seen in PCP's office for three weeks of vaginal bleeding. Has ultrasound and labs completed.
2. Primary care clinic resident coverage schedule incorrect thus results are not followed up
3. Critical anemia result accidentally marked as reviewed in laboratory, thus not acted upon or told to patient.
4. Patient presents to ED, registered in ED under the name on her student ID and a second chart unknowingly created.
5. Because of duplicate chart & not using interpretive services, the ED resident is unaware of recently completed ultrasound .
6. Patient declines repeat ultrasound, prompting use of interpretive services and discovery of duplicate chart.
7. Surgery delayed waiting for duplicate workup, requiring treatment for infection and blood transfusion.



# RCA Process: Step by Step



# 6. Identify Root Causes

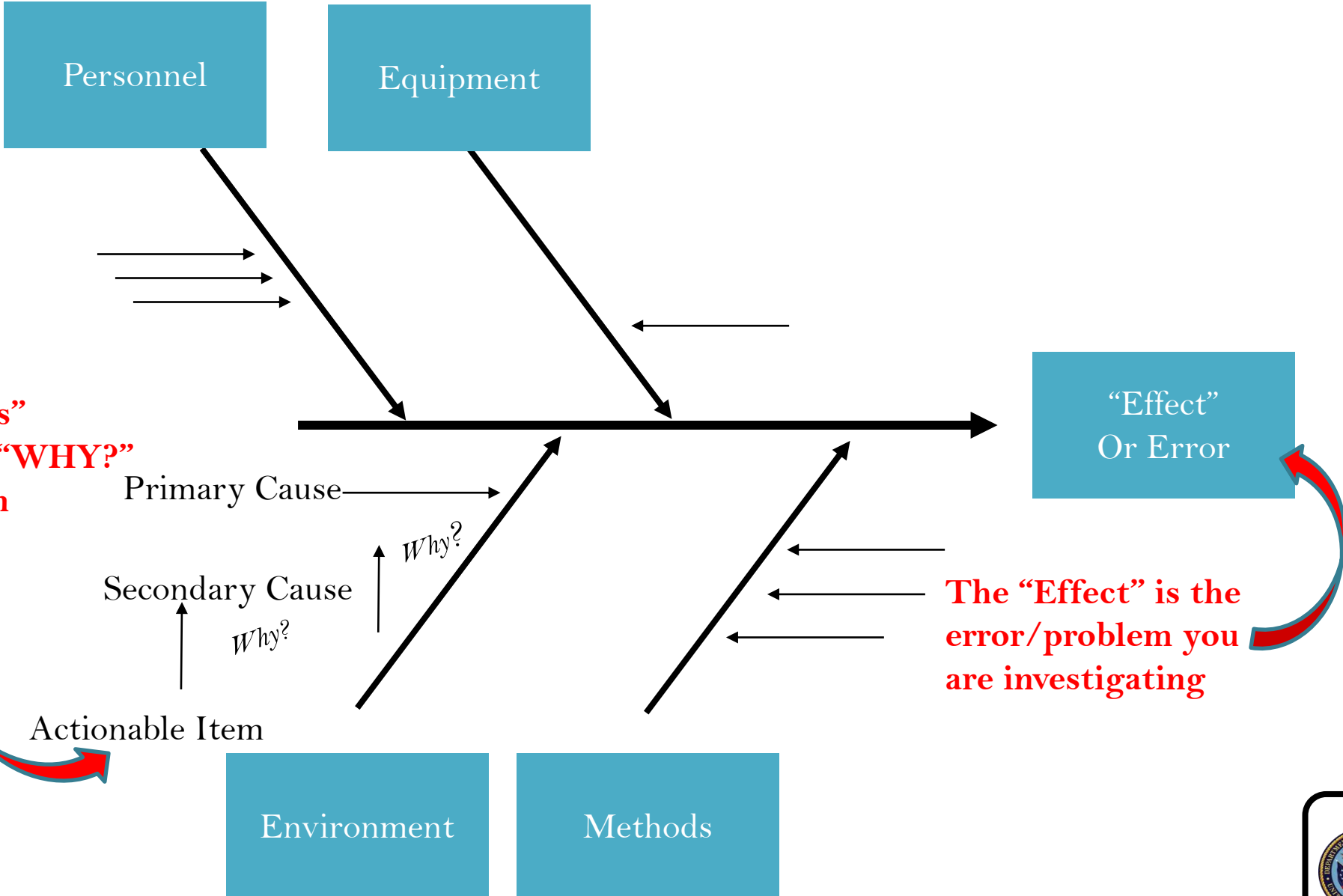


**Activity:** Answer the following question in small groups or individually for the department you represented.

1. What was the main issue that went wrong?
2. Why did it go wrong?

Be ready to discuss with the larger group.

# Cause & Effect Diagram (FISHBONE)



The "Root Causes"  
Just keep asking "WHY?"  
until you reach an  
actionable item.

The "Effect" is the  
error/problem you  
are investigating

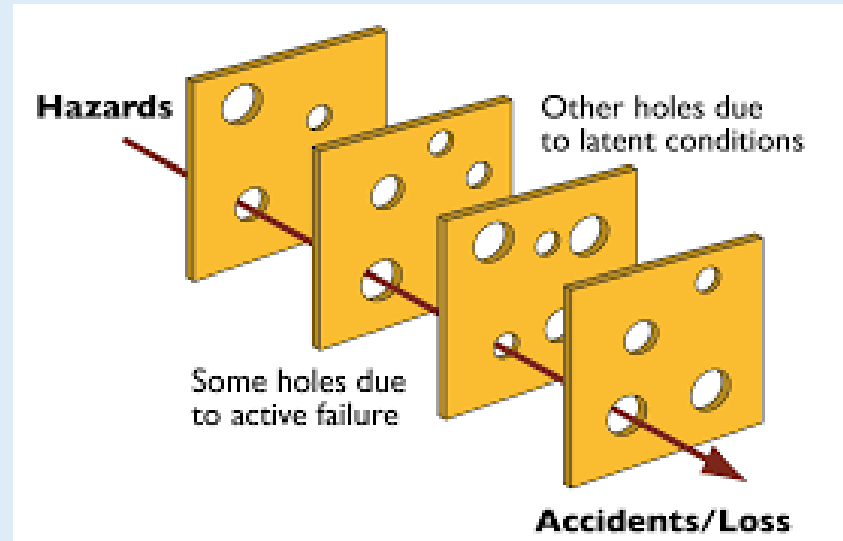
# Understanding the Roots

## Systems Roots

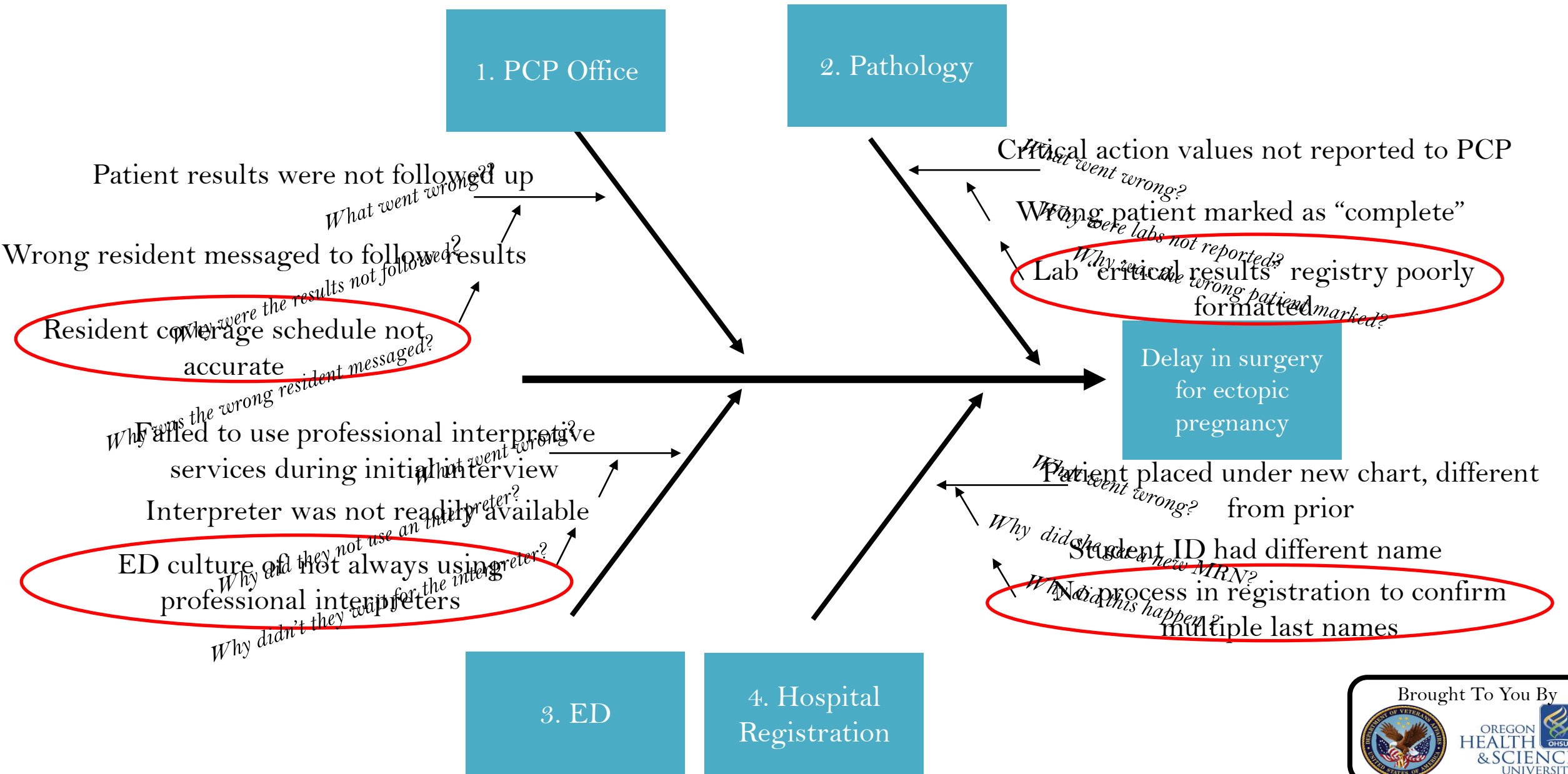
The underlying issues within a hospital or clinic system that allow errors, events and near misses to occur and reoccur.

## Social and Structural Determinant Roots

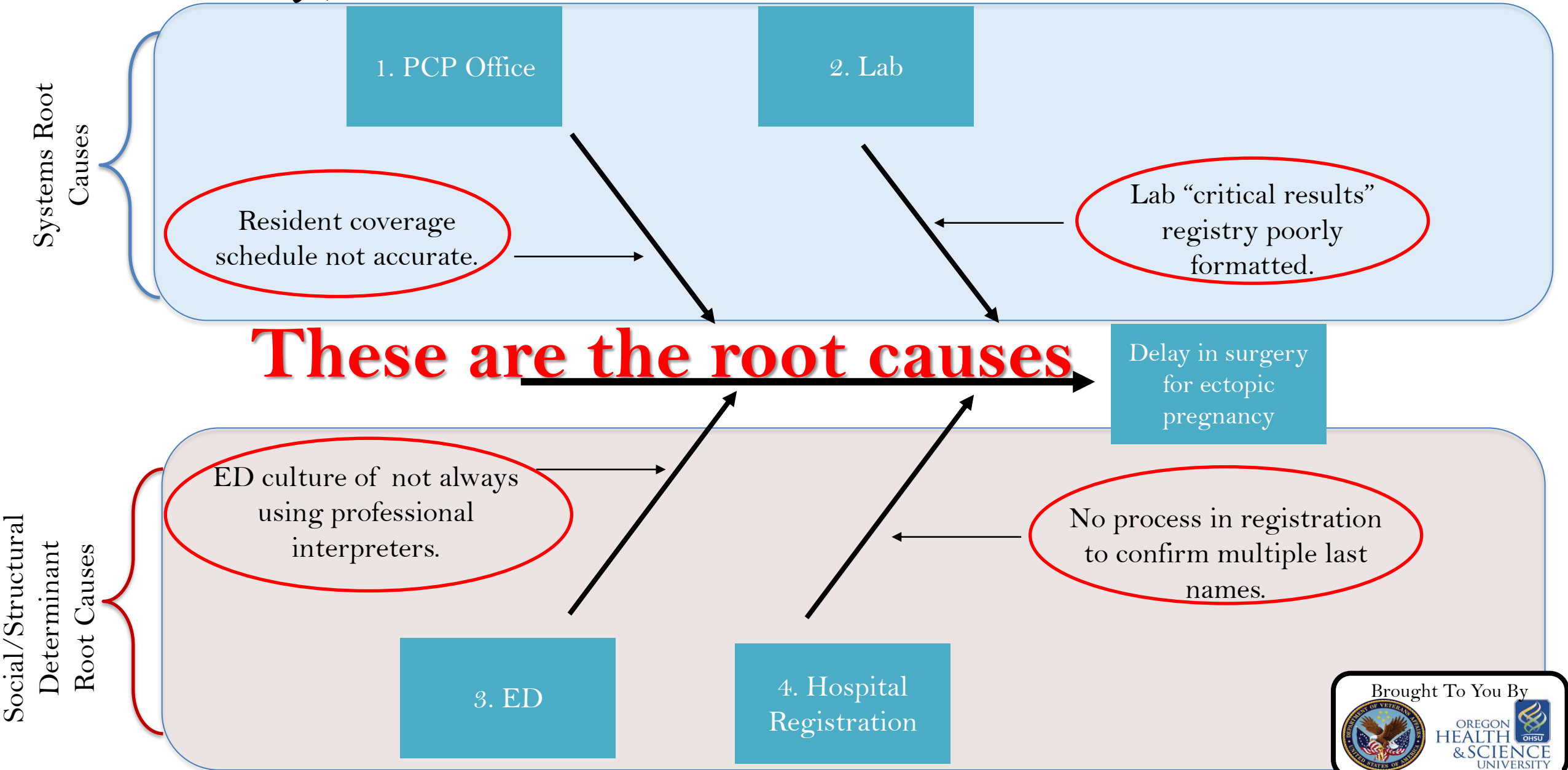
Underlying social and implicit values and biases that contribute to certain populations or groups being more likely to experience an error within the healthcare system.



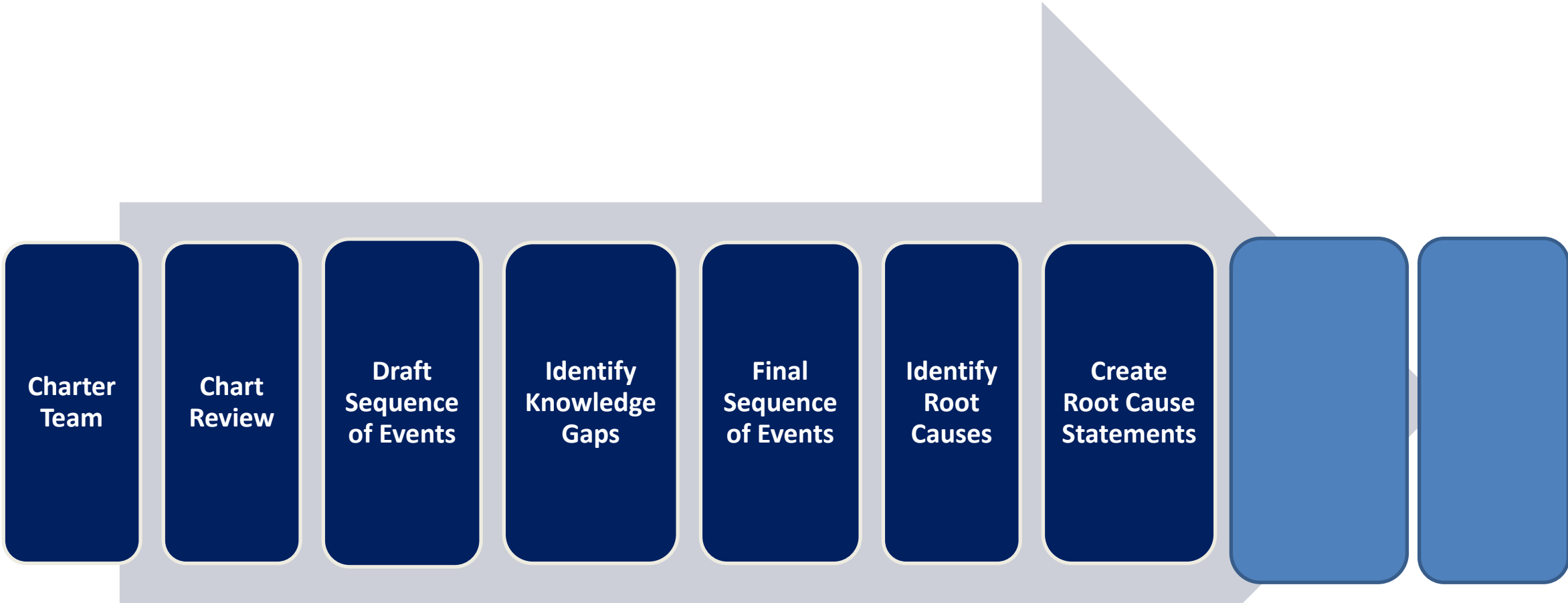
# 6. Identify Root Causes



# 6. Identify Root Causes



# RCA Process: Step by Step



# 7. Root Cause Statements



- Single sentence
- Always stated as:  
“Because x, y (error) occurs”

**Activity:** Create a root cause statement for your assigned department.



# 7. Root Cause Statements

Systems Root Causes

## PCP Office

Because the primary care resident coverage schedule was not accurate, the patient was not followed for results and symptom management.

Resident coverage schedule not accurate

## Lab

Because the registry is poorly formatted, the patient's critical lab results were not communicated to the PCP's office.

Lab registry poorly formatted

Social/Structural Root Causes

## ED

Because the patient had limited English proficiency and the resident did not use an interpreter, critical information about recent labs and US was missed.

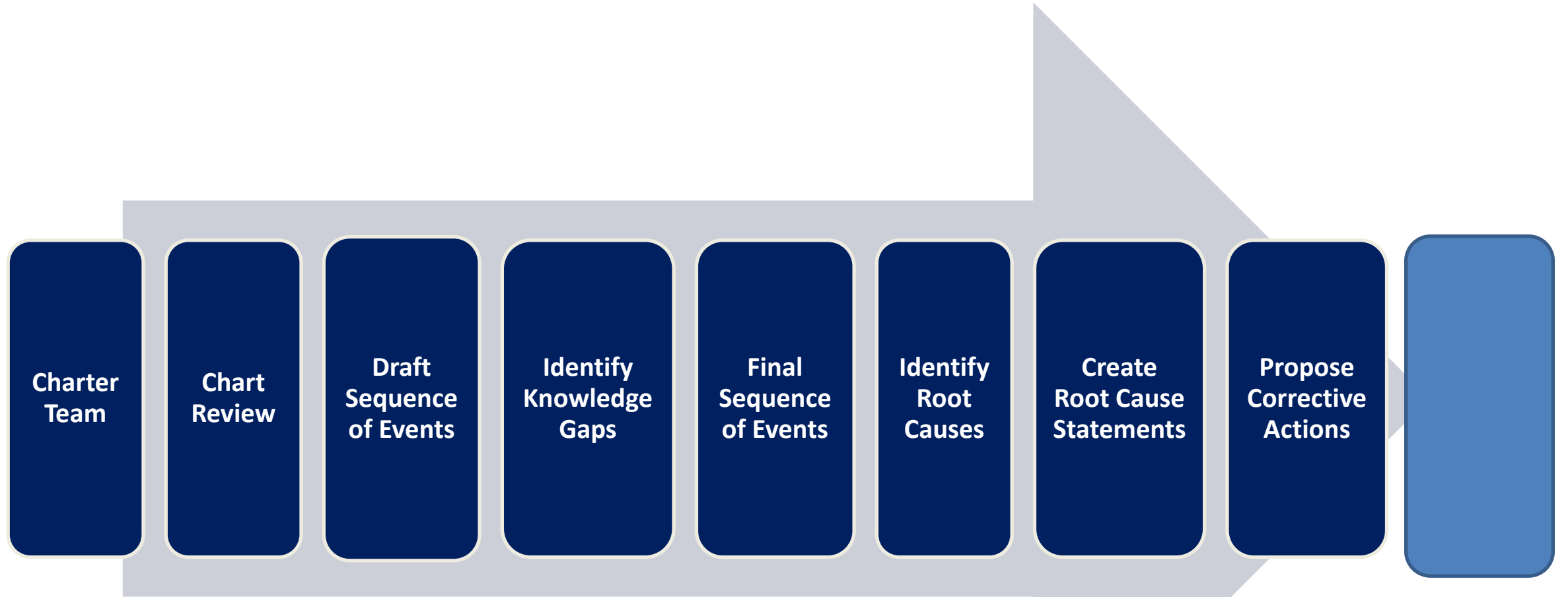
ED culture of not always using professional interpreters

## Registration

Because there is no standard process to confirm multiple last names during registration, the patient had a duplicate chart created.

No process to confirm multiple last names

# RCA Process: Step by Step



# *8. Propose Corrective Actions*

Generate a list of recommended actions for each root cause statement to prevent the error from reoccurring

*Easier said than done?*

# 8. Propose Corrective Actions

Example: Alerts in the EMR

## Systems Interventions

- Forced stop function / physical
- Computerized/automated
- Human/machine redundancy

Most Reliable

- Checklists
- Forced Pause
- Reminders
- Standardization
- Double checked

Somewhat Reliable

- Education
- Rules/policy

Less Reliable

**When fixing system issues, do something that reliably prevents the error from reoccurring in the future.**

Best Practice Advisory - California, Jean-Pierre

Advisory: 1)

**Quality and Safety:** Allergies for this patient have not been documented. Complete this documentation by choosing the Allergies activity below.

**Example: Surgical checklists**

**SURGICAL SAFETY CHECKLIST (FIRST EDITION)**

Before patient leaves operating room

**Example: Training Modules**

Use of a Powered Air Purifying Respirator (PAPR)

**What is a respirator?**

- A respirator protects against respiratory hazards by removing specific air contaminants from the ambient (surrounding) air or by supplying breathable air from a safe source. Air contaminants include things like dust and microorganisms.
- The respirators commonly used at OHSU are the N95 mask and the Powered Air Purifying Respirator (PAPR).

N95

PAPR

Brought To You By

DEPARTMENT OF VETERANS AFFAIRS

OREGON HEALTH & SCIENCE UNIVERSITY

# 8. Propose Corrective Actions

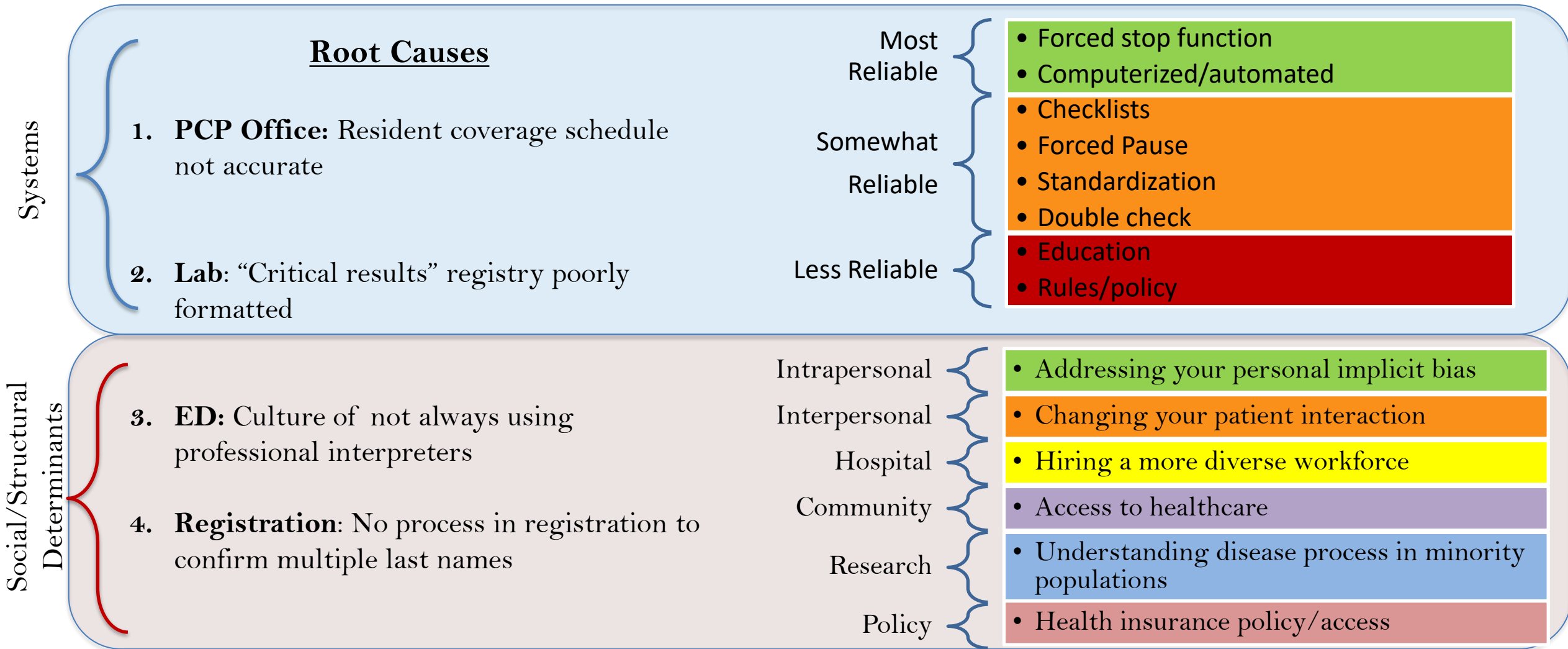
**Social/Structural Intervention**  
**When fixing social/structural issues, first decide on which level of intervention you want to effect change**

<u>Levels of Intervention</u>	<u>Examples</u>
Intrapersonal	• Addressing your personal implicit bias
Interpersonal	• Changing your patient interaction
Clinical/Hospital	• Hiring a more diverse workforce
Community	• Access to healthcare clinics.
Research	• Understanding disease process in minority populations
Policy	• Health insurance policy/access

# 8. Propose Corrective Actions

## Activity:

- In groups come up with at least two system changes to prevent the root cause error that went wrong for your department. Come back together in groups to debrief.



# 8. Propose Corrective Actions

## Root Causes

## Corrective Actions

Systems

1. **PCP Office:** Resident coverage schedule not accurate
2. **Lab:** “Critical results” registry poorly formatted

**PCP Office:** Create standard process to ensure resident schedule is accurate and accessible to clinic and non-clinic staff.

**Lab:** Replace current paper registry with notation in patient’s chart documenting call to provider and read-back of name/results.

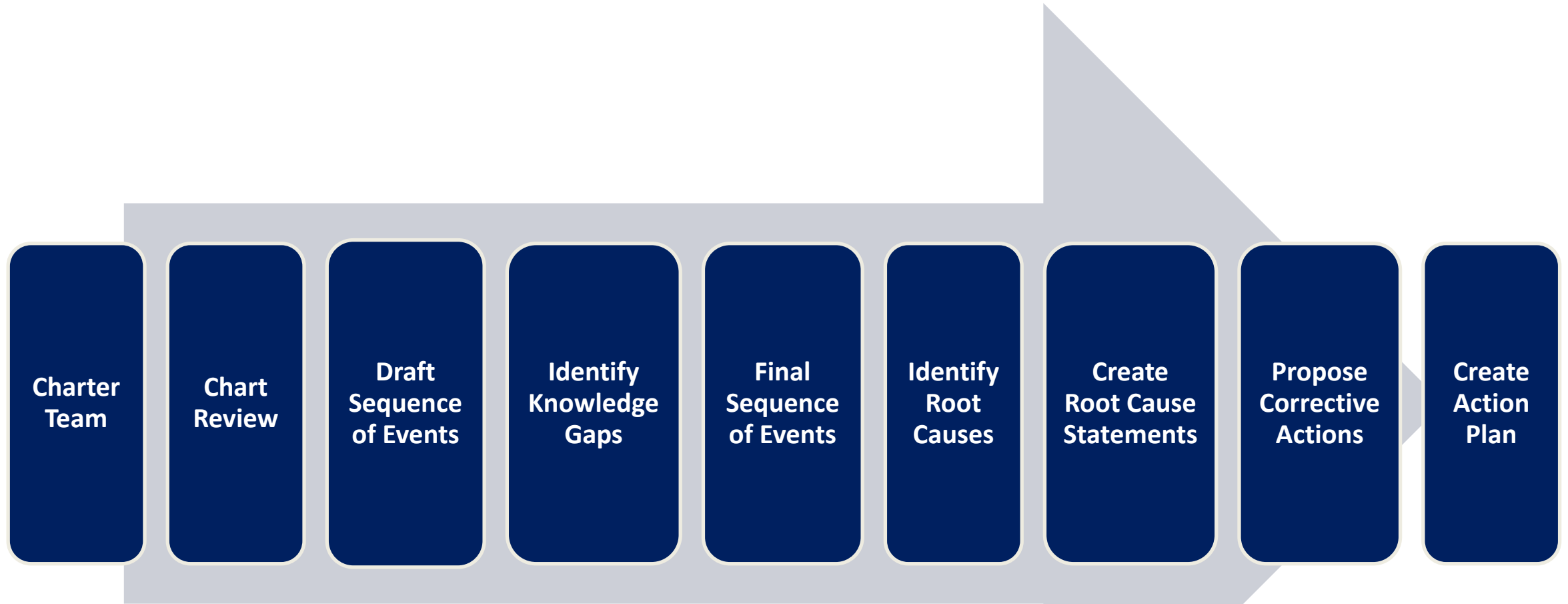
Social/Structural  
Determinants

3. **ED:** Culture of not always using professional interpreters
4. **Registration:** No process in registration to confirm multiple last names

**ED:** Diversity training for all ED staff to increase awareness of interpretive services importance.

**Registration:** Develop standardized process to ensure MRNs are linked to unique identifier(s) to prevent duplicate charts.

# RCA Process: Step by Step





# 9. Create An Action Plan

- Plan for who, how & when the “fix” will take place
- Make a timeline for monitoring completion
- Monitor for “relapses” of the error

## PRIORITIES

- 1.
- 2.
- 3.





***Congratulations!***  
***You just completed an RCA***





## Today's Agenda

- Recap Week 6
- Culture of Safety
- RCA
- **Wrap Up**
- HSPs

# WISC Wrap-Up



## **DISCUSSION:**


How have you seen SDoH contributing to errors or adverse outcomes in your patients?



## Today's Agenda

- Recap Week 6
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- Wrap Up
- **HSPs**

# Health System Project (HSP) Timeline:

11/2-11/23	11/30-12/21	1/11-2/1	2/8-3/1	3/8-3/29	4/5-4/26	5/3-5/24	5/31-6/21
Introduction to HSPs	Team & project selection, planning	Background & current state	Targets & metrics	Fishbone & root cause statements	Develop counter-measures	Finalizing PPT	Presentations! 

# LAST MONTH...

## Background Investigation

1. Is this a problem reported elsewhere?
2. How have others have solved this problem?
3. Is there alignment with local quality priorities?

## Current State

1. Is there a problem?
  - Prove this with baseline data whenever possible
2. Characterize the problem
  - Interviews
  - Chart review
  - Data pull

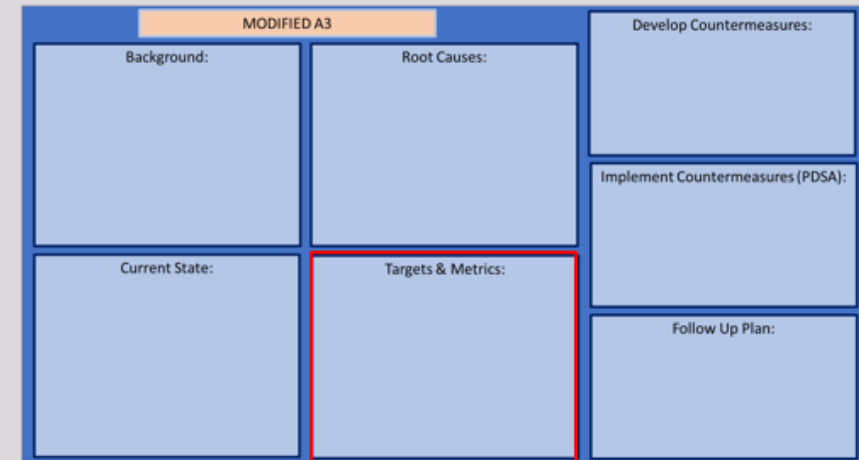
# THIS MONTH...

## Targets and Metrics

1. *AIM statement your project. It should be SMART:*

- *Specific*
- *Measurable*
- *Attainable*
- *Relevant*
- *Timebound*

2. *Metrics: These will be the process, outcome, balancing measures that you will track for your project*





## Brief refresher on metrics:

### Tip #1

Process & balancing measures should be data you can access relatively easy.

### Tip #2

Choose process & balancing measures that work with multiple different changes/PDSA cycles.

#### Outcome measures:

- What we are trying to improve
- What the end-user cares about

#### Process measures:

- Key steps and processes that influence the outcomes
- What we do proximal to outcomes

#### Balancing measures:

- The undesirable effects on a system because of your interventions

## Example Targets & Metrics:

### *AIM Statement:*

Increase the percentage of labs reported by 7:30 AM by 50% over a period of 3 months

### *Measures:*

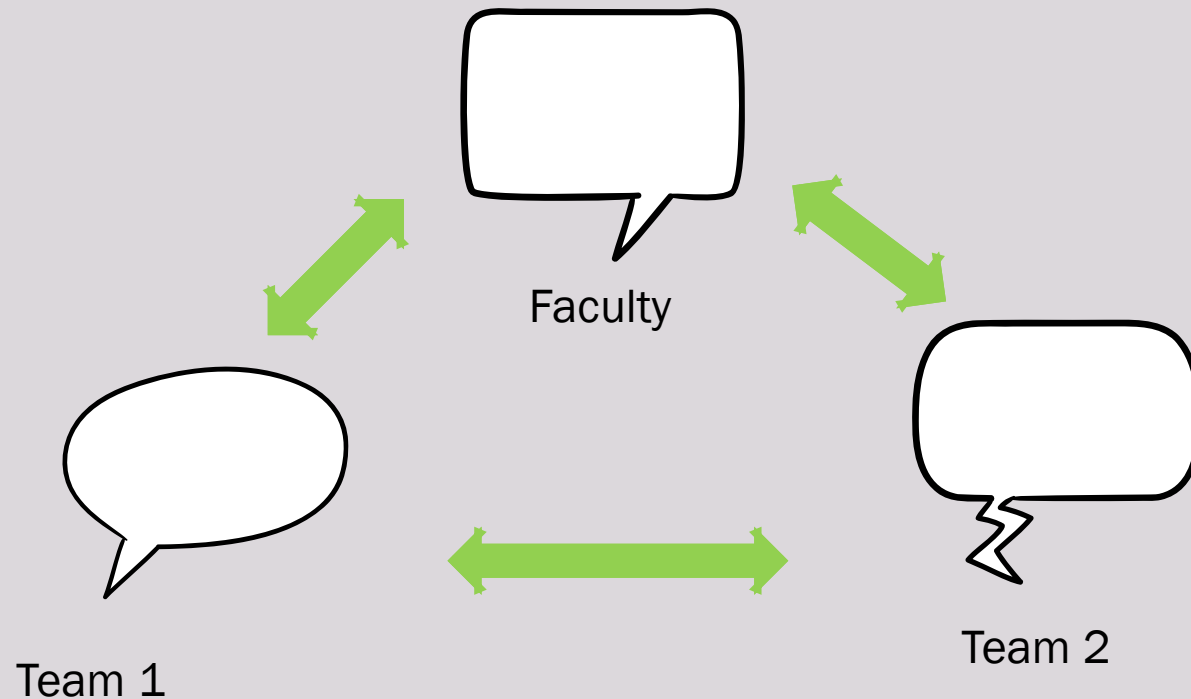
Outcome measure – % of labs reported by 7:30 AM

*Process measure – average time blood arrives in lab*

*Balancing measure - Minutes processing in the lab*

# Peer Learning

- Same group as last month
- Update: 3-5 minutes per team to describe the state of your project
- Next Steps: 5-7 minutes for group brainstorming of next steps



# Peer Learning:

- **Update: Describe progress with Background & Current State—**
  - What did you find in your lit review?
  - Have you been able to find valuable data?
  - How are interviews going with stakeholders?
- **Next Steps: Target & Metrics—**
  - Develop an AIM statement. Remember it should be “SMART.”
  - Pick an outcome measure, then brainstorm at least one process measure and one balancing measure.

# Usual weekly feedback...

[bit.ly/week7FB](https://bit.ly/week7FB)

**(case sensitive)**

