




Cause and Effect Diagram

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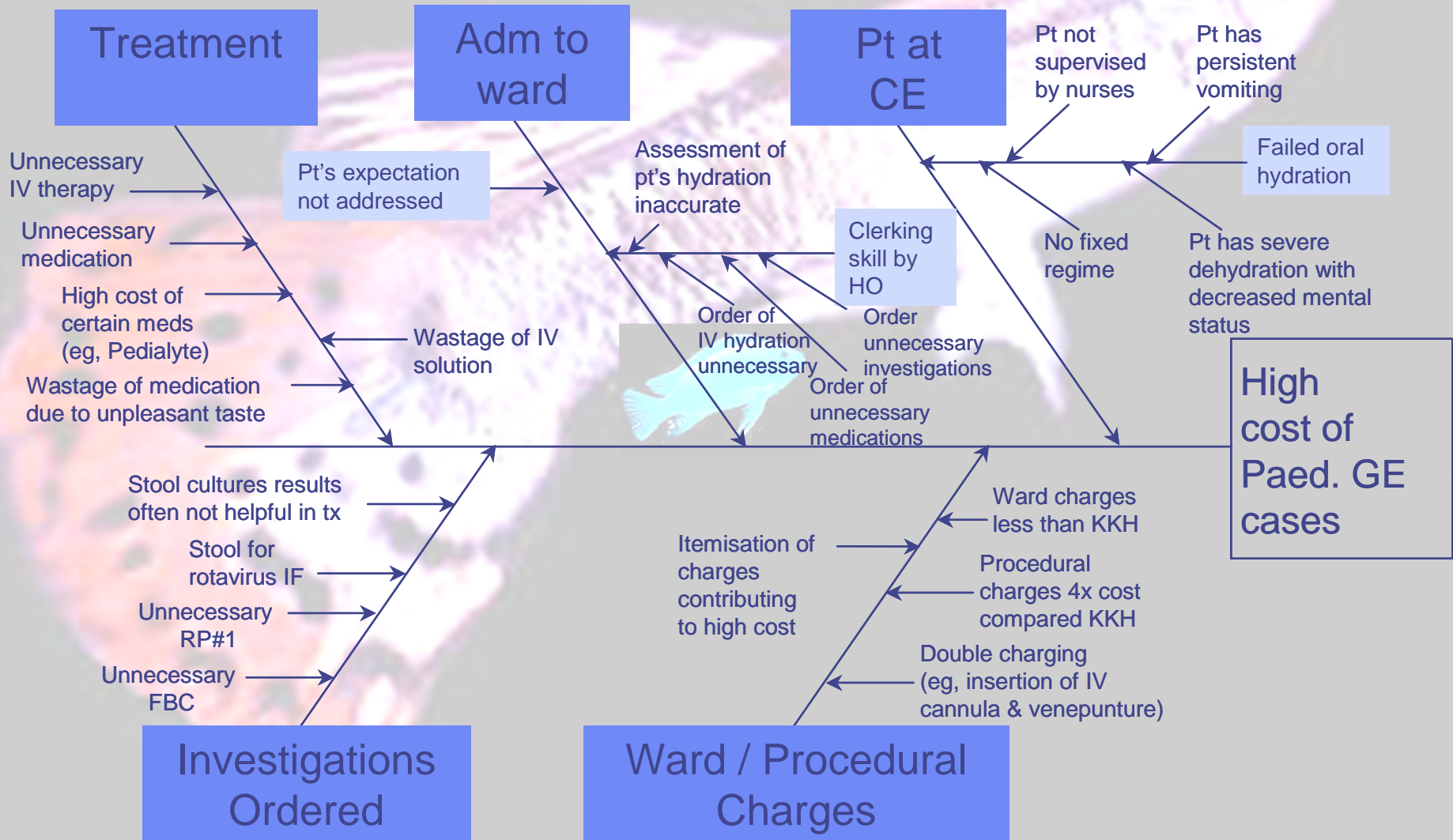
What Have We Done Till Now?

- Incident reported
 - Severity score allocated
 - Decision to conduct an RCA
 - RCA Team convened
 - Investigations commenced within 7 days
 - Investigations completed
 - RCA team meets
 - Initial flow diagram done
 - Interviews and triage questions
 - Final flow diagram
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Cause and Effect Diagram

- With the assistance of **Cause and Effect Diagram**, an RCA team can uncover chains of “causal links” that will lead them to the **root causes/contributing factors** of the problem
 - This will enable the team to recommend effective solutions and barriers
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Cause & Effect Diagram



Cause and Effect Model

We are most familiar with fishbone diagram or Ishikawa Diagram

■ Ishikawa fishbone diagram process


- Brainstorm causes
- Put into predefined categories
- Vote on which most likely to cause problems
- Generate solutions

■ Problems with Ishikawa diagram

- Feels contrived with categories
 - Difficult to write in fishbone so that the group can see
 - Doesn't encourage asking deeper "why"
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A Four Step Process

- Identify the problem: review the event flow diagram and clarify the problem statement
 - Brainstorm causes: brainstorm a list of causes and choose the most important
 - Complete diagram: complete the causal chain
 - Develop causal statements: conclude the investigation by developing root cause/contributing factor statements
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Step 1 - Identify the Problem

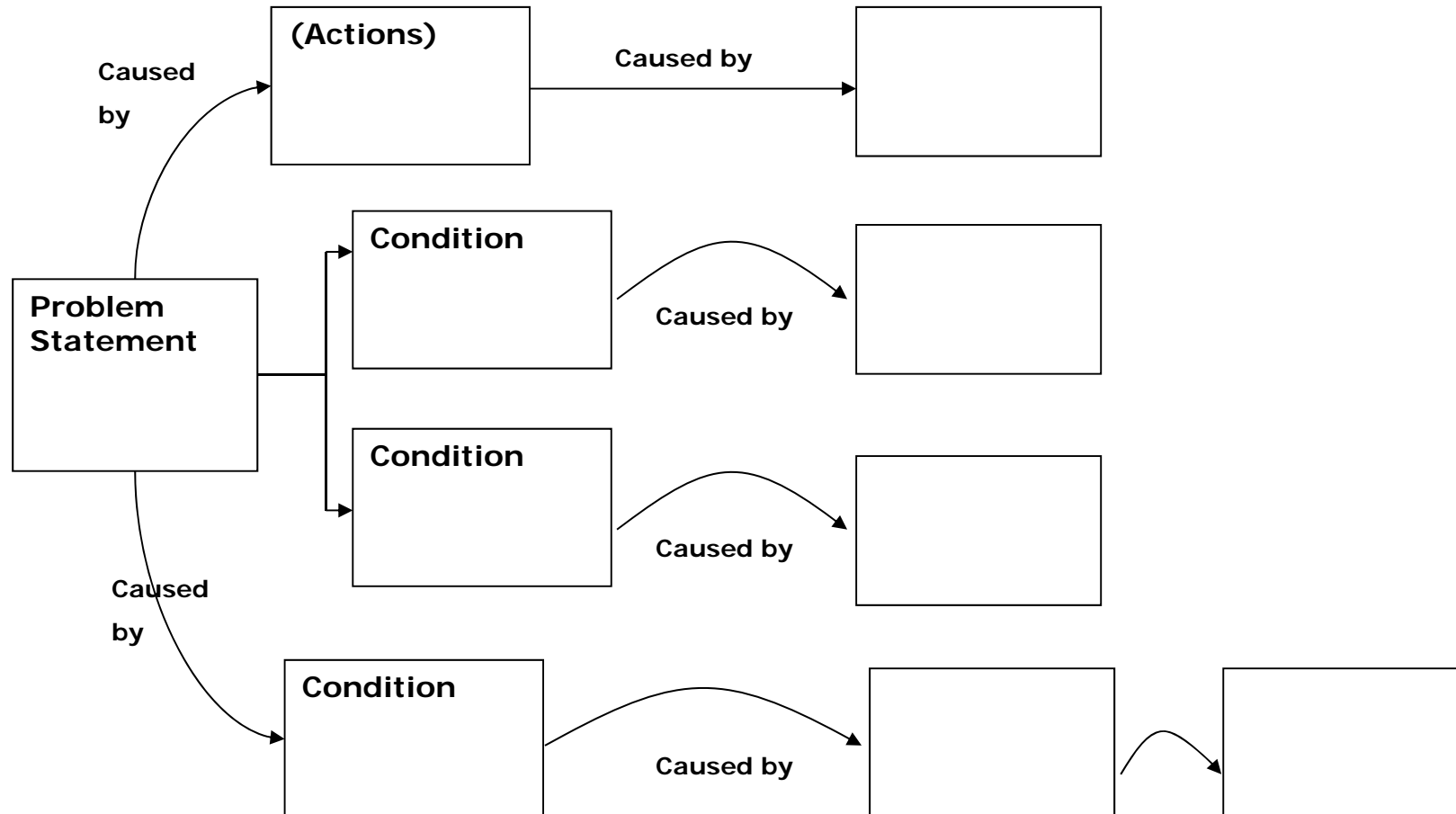
- Teams may have difficulty at this step
 - Problem statement should reflect what has happened and what you are trying to avoid
 - Keep it simple (noun, verb if possible)
 - e.g. embolism from injecting air, death due to excess medication dose
 - Use final flow diagram
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Step 2-Brainstorm Primary Causes

- The team leader should prompt the group by asking “caused by” statements repeatedly (the wrong lens implant (problem) was caused by..... , the wrong procedure on patient “A” was caused by.....)
 - Use post-it notes to record suggestions and evaluate afterwards
 - When searching for possible causes remember the rules of brainstorming
 - Don’ judge suggestions
 - Aim for quantity
 - Get everyone involved
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Cause and Effect Diagramming

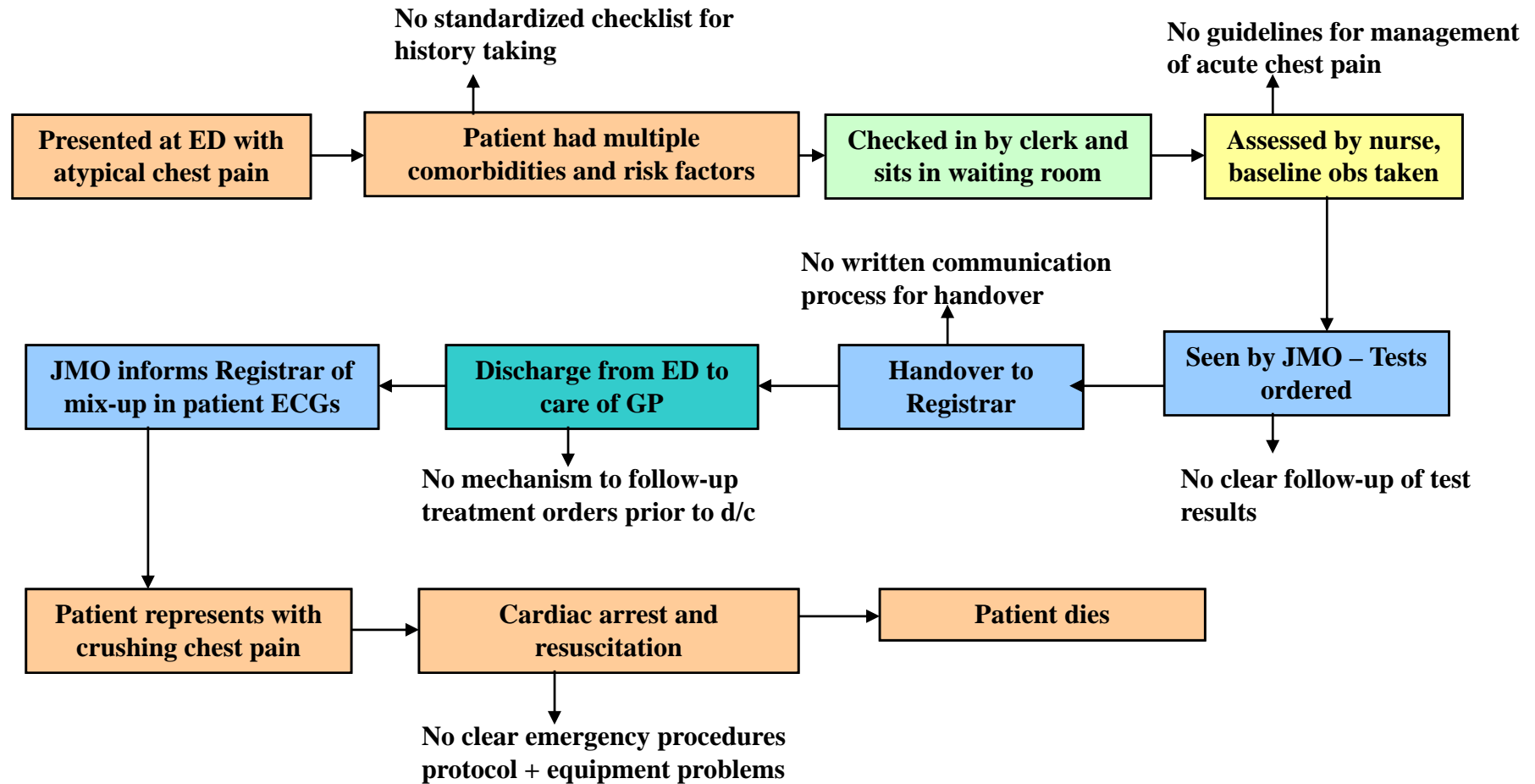


Actions: Momentary / Immediate Proximate Cause

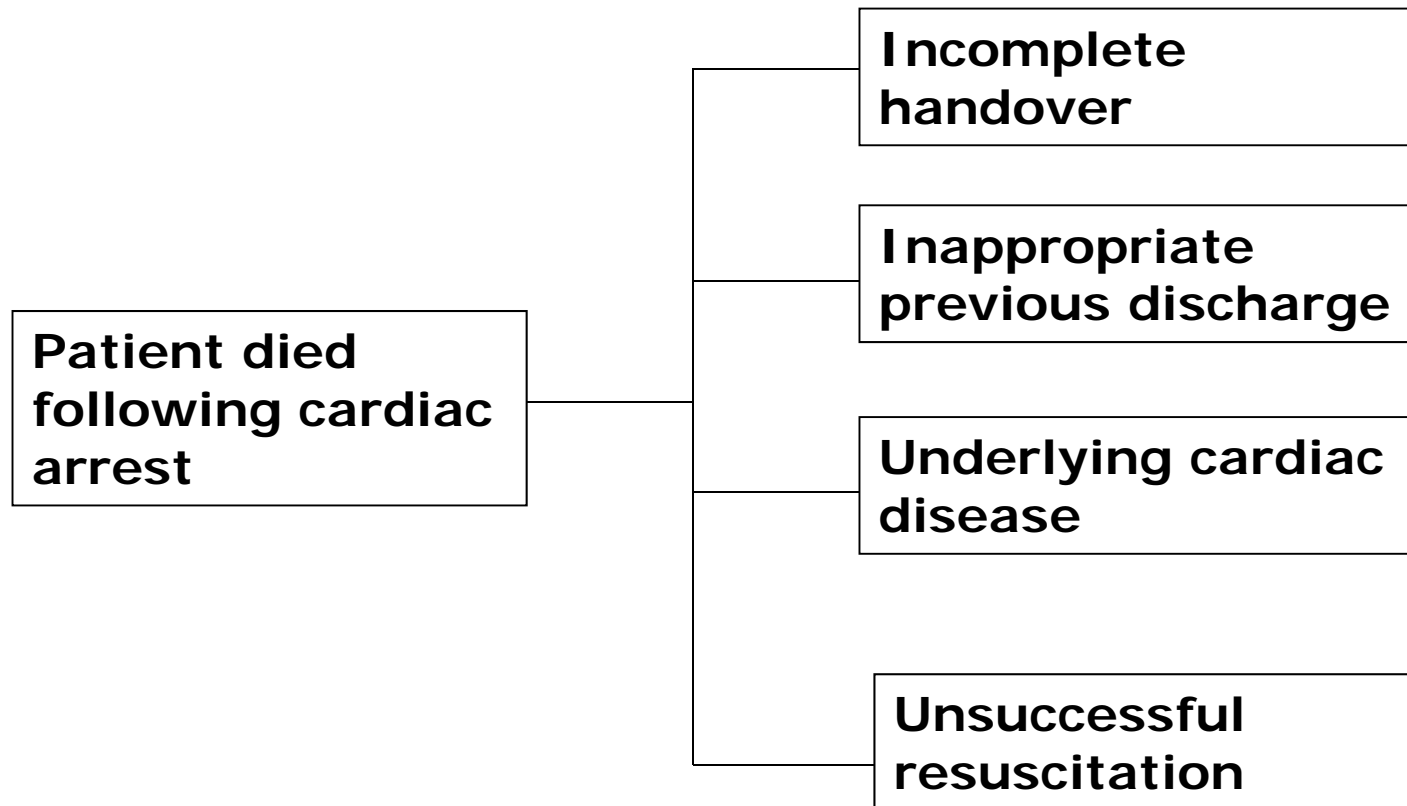
Conditions: Exist over time

Primary causes: Without these present, event would not have happened

Final Flow Diagram




Cause and Effect Diagram

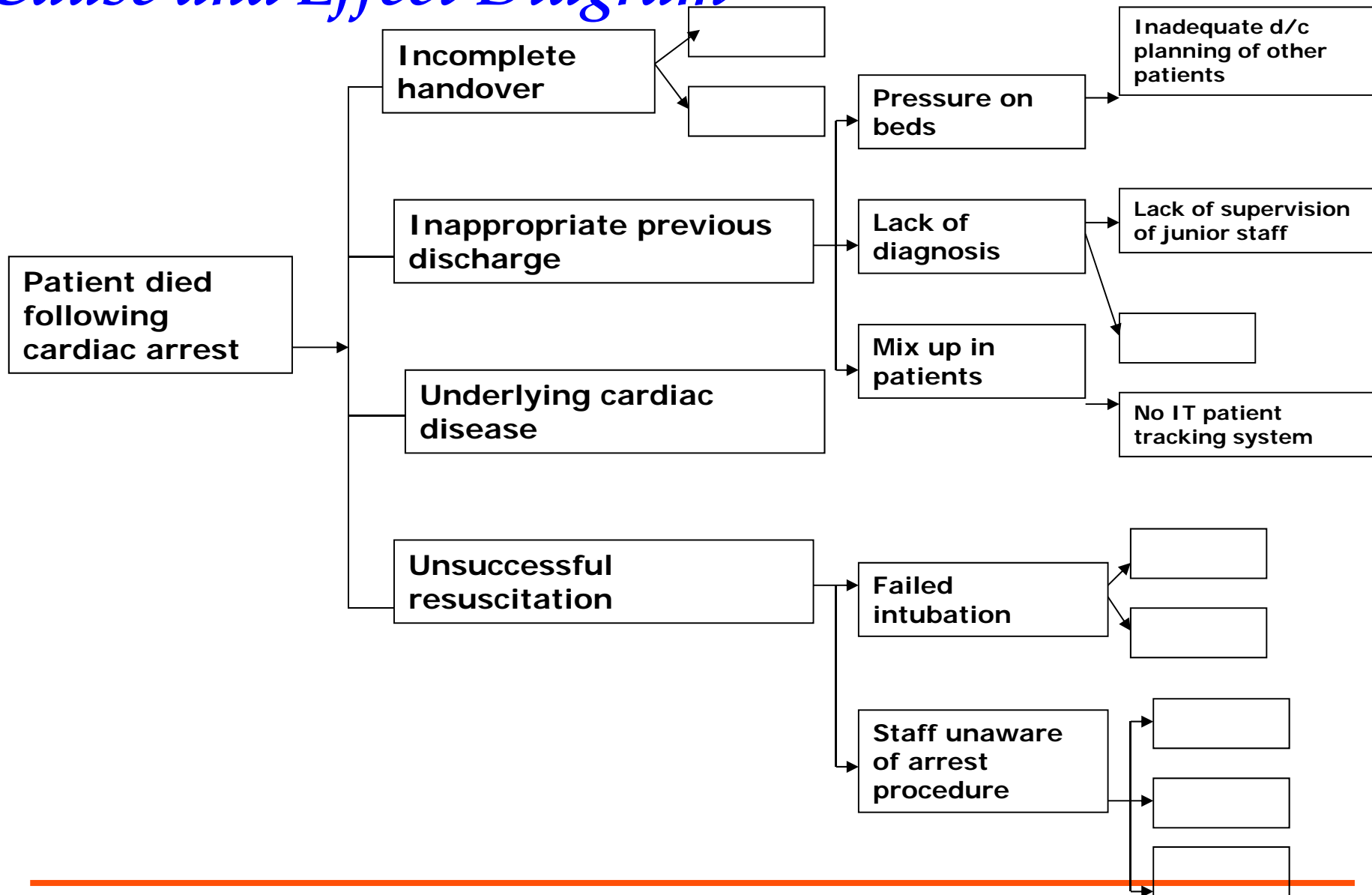




Step 3 - Complete Causal Chain

- Take each action or condition one at a time and capture responses by the group on post-it notes
 - Work upstream until no longer able to answer any new questions
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Cause and Effect Diagram





Step 4 - Causal Statements

- Once the cause and effect diagram is completed and filled out, the team needs to develop root cause/contributing factor statements





Example

(courtesy VA NCPS)





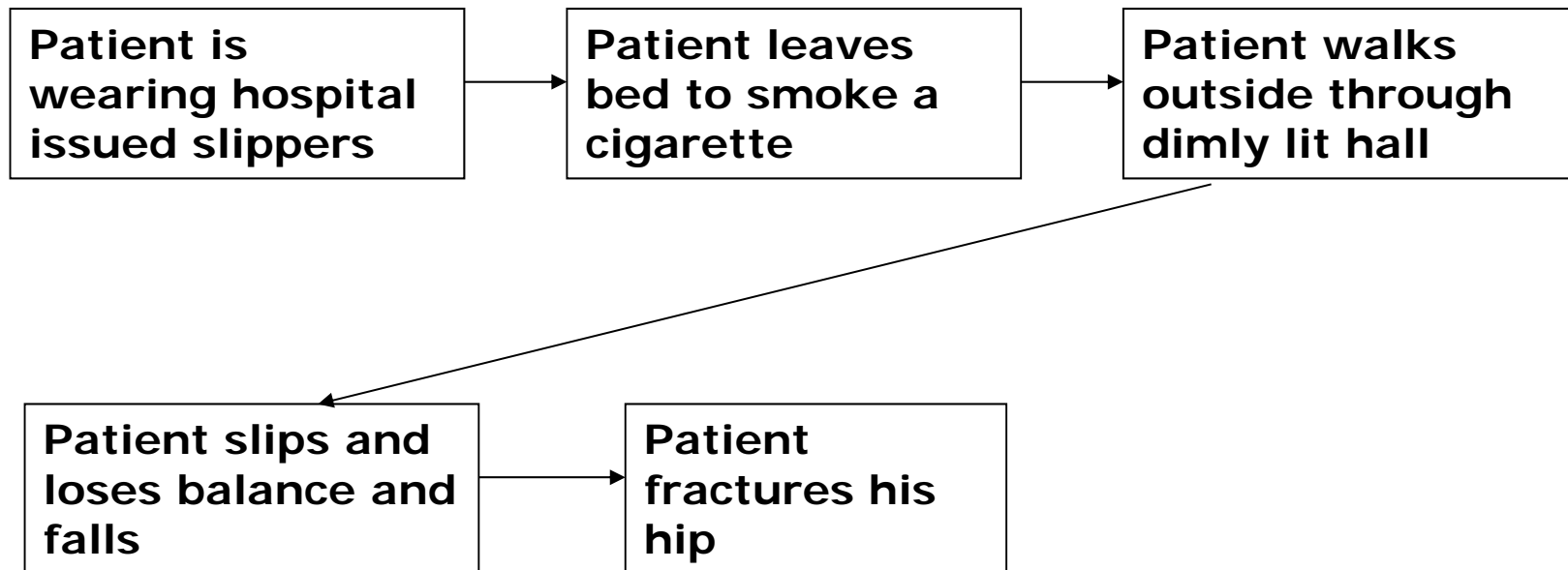
Step 1 - Identify Problem Statement

■ Event Reported:

- A slip and fall accident resulted in an elderly patient fracturing his hip.
- The man wearing only his hospital gown and slippers, had last been seen walking down the dimly-lit hallway that leads to the outdoor smoking shelter



Event Flow Diagram





*From this information, we construct
the following problem statement*

Fractured Hip
(Problem Statement)

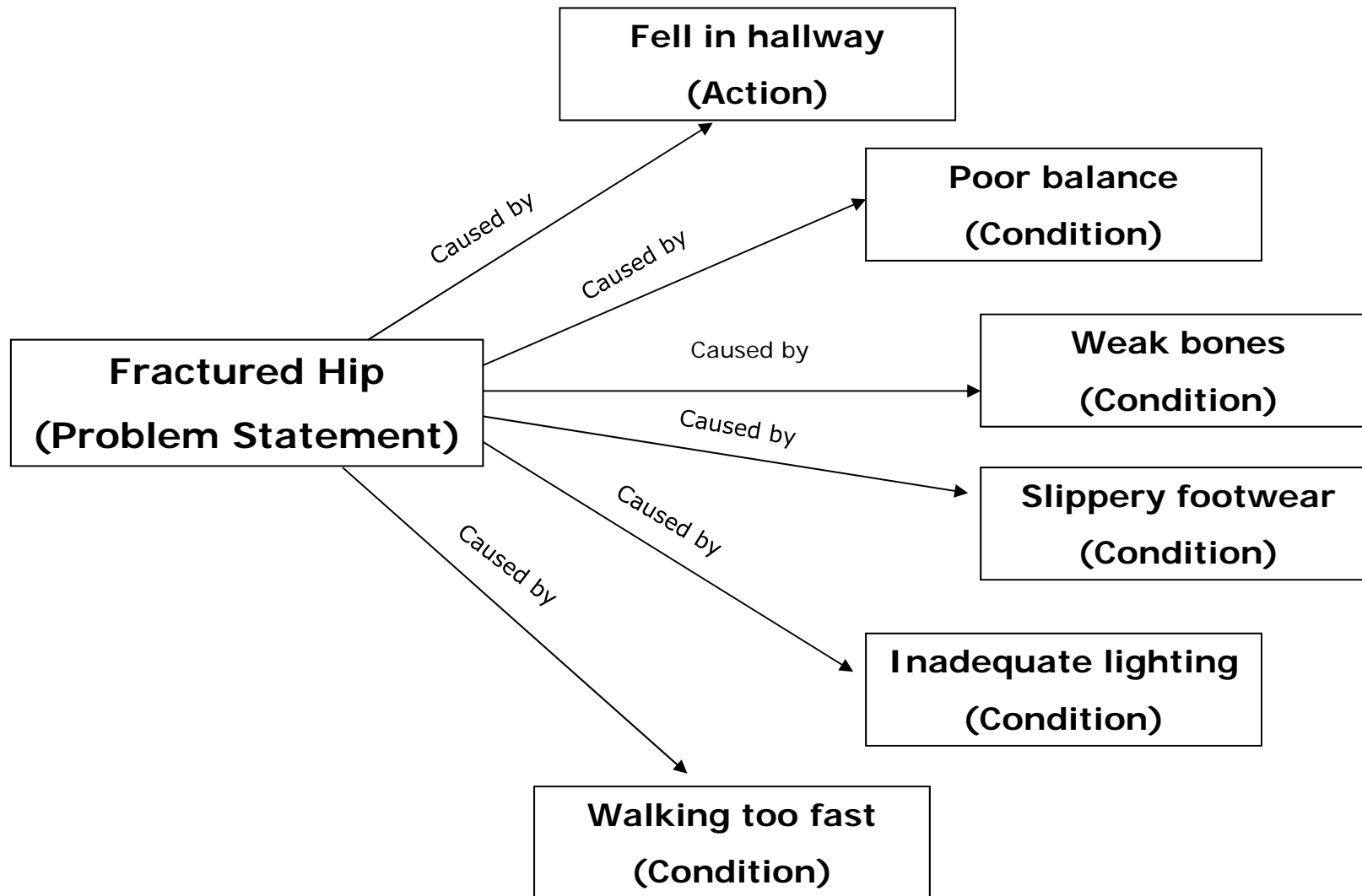




Step 2 - Brainstorm Primary Causes

- The leader or the facilitator now asks “caused by” repeatedly. The fractured hip was caused by.....



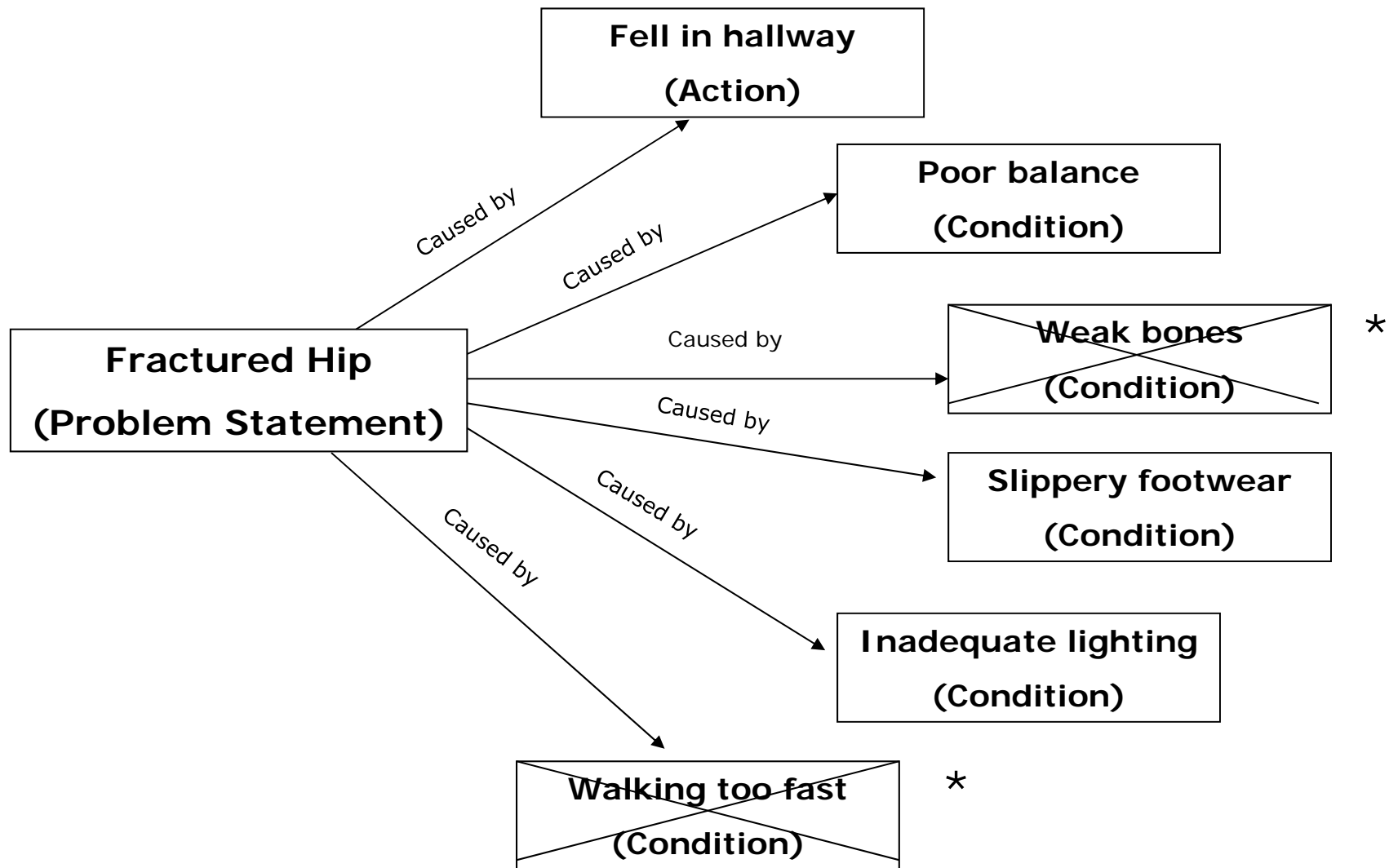


Now review the list of causes and choose only those that are most relevant to the event. Hint: These primary causes should be so directly relevant that, if any were removed, the event most likely would not have occurred.

Remember to have at least one action and several condition statements.

Definitions:

- **Action:** Momentary and fleeting (administering meds, falling, lifting hand, turn on IV pump)
- **Condition:** Exists over time (e.g. temperature of room, competency of staff, waxed floor)



* Deleted do not lend themselves to corrective actions

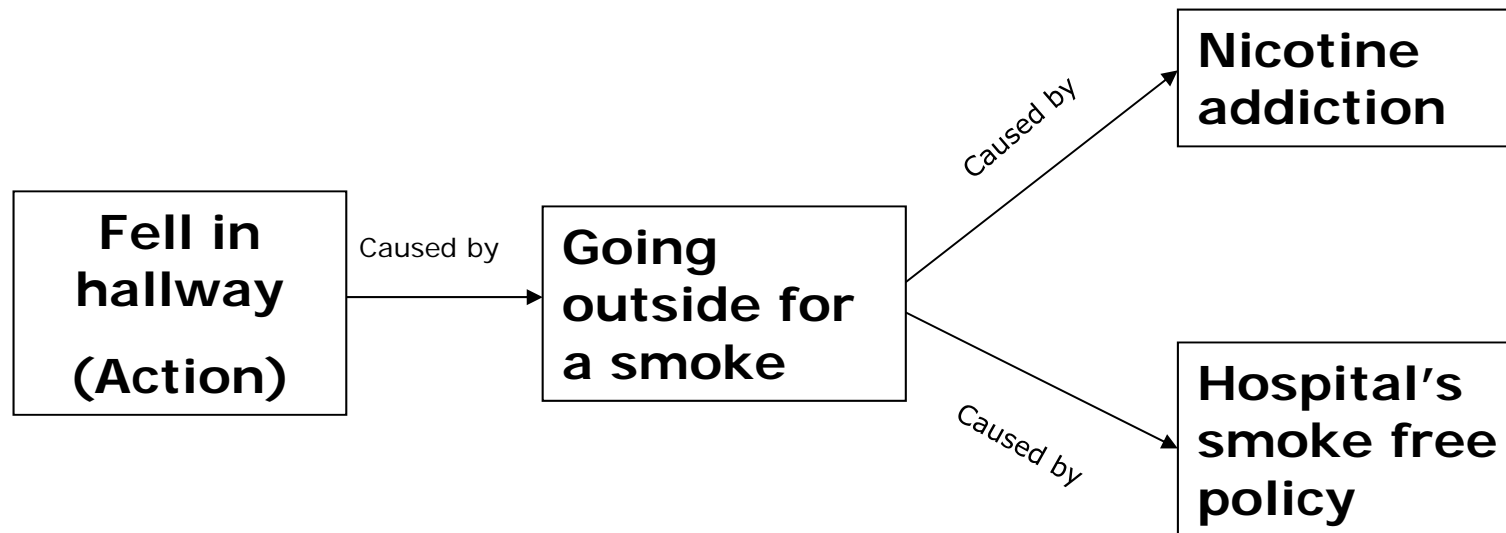


Step 3 - Complete Causal Chain

- Take each action or condition at one time
- For example, the facilitator asks the group “Fell in hallway caused by.....”

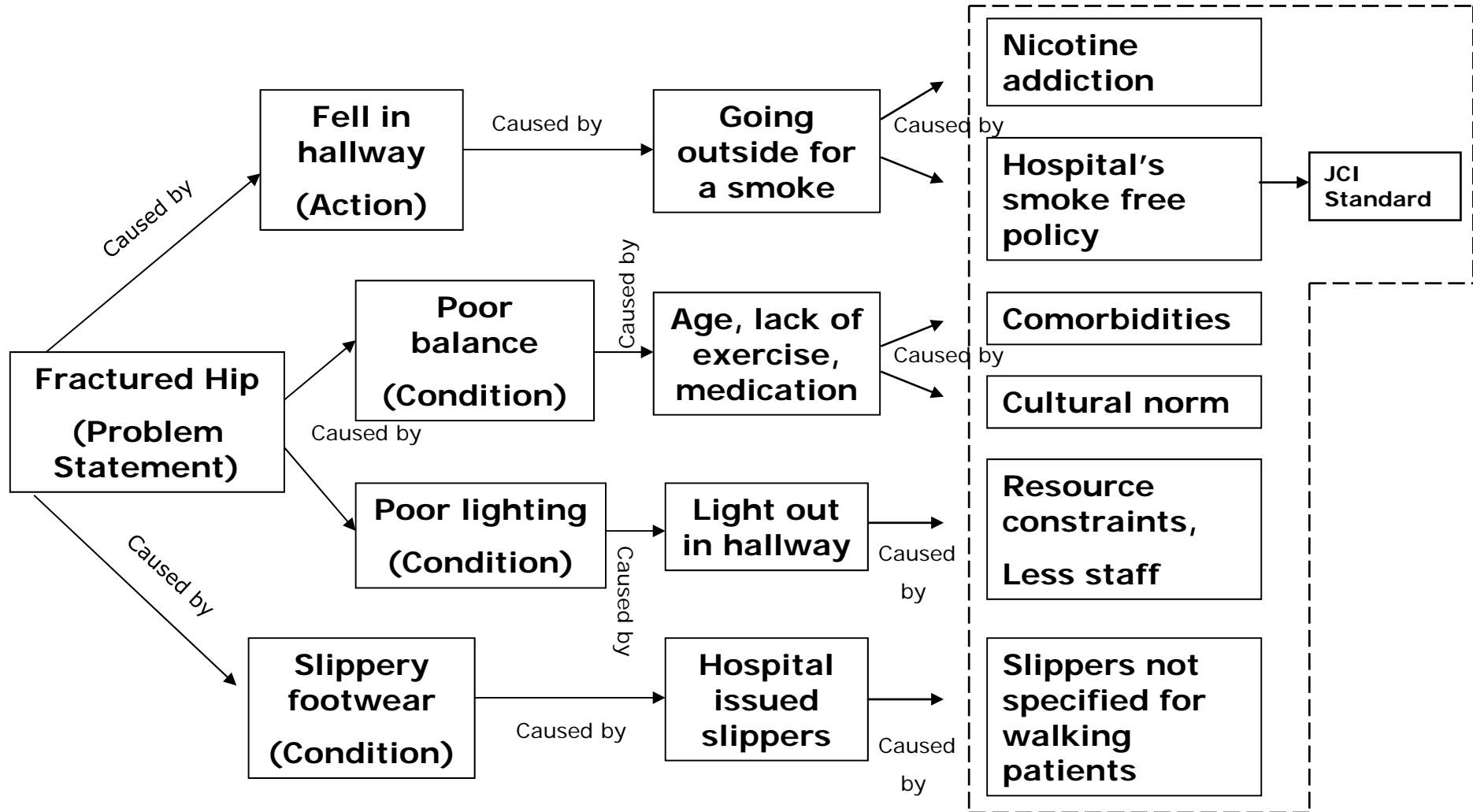


The group should complete a particular leg of the diagram and then move on to the next primary cause






Contributing Factors




Root cause/contributing factor statements can be taken from the cause and effect diagram





*Step 4 - This step involves
developing causal statements*





Thank you

