



# Reactive and Proactive Tools for Patient Safety: Workshop Materials

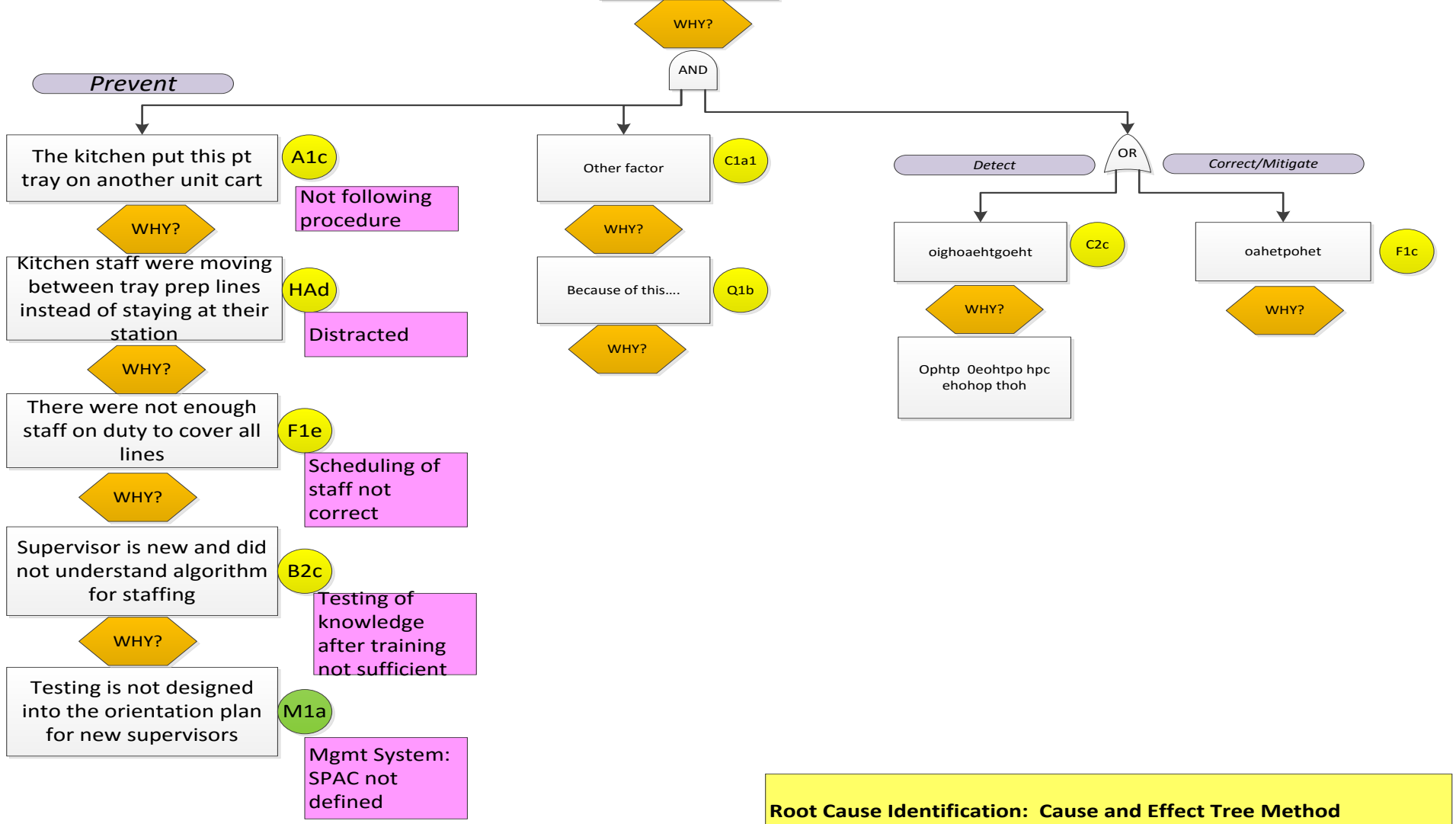
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**Causal Factor**  
The wrong tray was delivered to the patient

# CAUSAL FACTOR X



**Root Cause Identification: Cause and Effect Tree Method**  
Simulation Case: Wrong Tray Delivered to Patient

# RCA Case Summary-What Happened



On a busy Saturday night, 5 patients with suspected trauma are admitted to the Duke ED within 90 minutes of one another. Two patients whose names are not known, hereafter identified as Unknown A and Unknown B, are admitted to the ED after a MVA. Both patients are males in their 70's but were in different accidents. They are both confused and both undergo CT of the brain, which is negative in both cases. Unknown A undergoes a CT of the abdomen for evaluation of a left flank hematoma and clinical suspicion of splenic laceration. The abdominal CT shows active hemorrhage from a splenic laceration and a decision is made to perform splenic embolization by the Interventional Radiology (IR) service. The ED Resident ordered the study and it was then posted to the electronic workqueue (list of requested cases/studies) in IR (also see next page).

The ED nurse, who is exhausted and hungry after a busy shift in which he was not able to take a dinner break, calls the IR nurse and gives a report on the patient with abdominal trauma but mistakenly refers to him as "Unknown B" (rather than "Unknown A"). Nonetheless, he sends the correct patient, i.e., Unknown A. When Unknown A arrives at IR, the IR nurse sends the patient back to ED on the presumption that the wrong patient has been sent.

In the interval, the ED nursing staff has changed shift. The ED nurses who first saw Unknown A and Unknown B are no longer present. The IR nurse calls the ED to have Unknown B sent as they are ready for the procedure, and he is sent to IR.

A "time out" procedure is performed, and the embolization begins. During the attempted embolization procedure on Unknown B, he becomes hypotensive for many minutes, thought to be due to hemorrhage from the presumed splenic laceration. However, no splenic injury is seen during the procedure and the procedure is terminated. The IR team then notes that Unknown B is aphasic and has a mild right hemiparesis. He undergoes a repeat brain CT, which shows early findings of a left hemisphere infarct. A CTA shows severe left carotid artery stenosis. The infarct is presumed to be due to the diminished blood flow across the carotid stenosis during the period of hypotension.

Unknown A in the meantime, has remained in the ED. His splenic laceration has gone untreated, and he codes. Due to the blood loss into his peritoneum, he cannot be resuscitated successfully, and the patient dies.

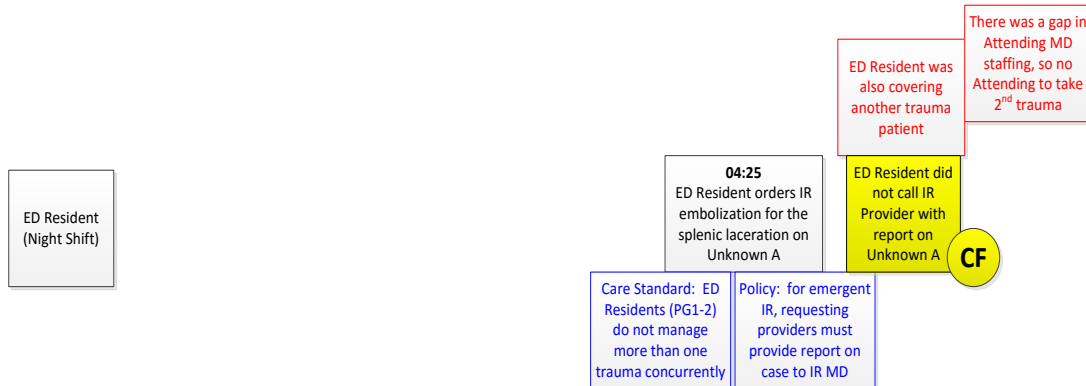
- ADDITIONAL INFO:
- All patients in the ED have ID bands applied, including Unknowns, and the bands include the Unknown name ("Unknown A") and a Medical Record Number.
- In the hypothetical hospital presented here, the policy for emergent interventional procedures states that the ED Attending physician or ED Resident must call the IR Provider with the history and clinical problem. In this case, neither ED provider called the IR Provider, which is required by the policy (Attending and Resident).
- All IR procedures, even those for ED patients, are ordered through the EMR. Once ordered, these requested studies shows on a listing or workqueue used by IR staff. The policy requires that IR staff confirm all patients are in the workqueue, confirm patient ID and confirm the requested procedure. Therefore, the IR nurse would have seen the order for Patient A if she had looked at the workqueue and could have corrected the ED Nurse who was referring to Patient B in the verbal handoff. In the scenario presented here, the IR Nurse did not look for the order when she was speaking with the ED Nurse about the patient that needed embolization.
- When Unknown A was returned to the ED without having undergone the IR procedure, the transporter did not notify the ED nurse that the patient had been returned to the ED.

# What Happened Map- Swimstreams – Page 1



RCA: Failure to Rescue-Patient Not Diagnosed Timely  
 Date of Event: 11/16/14 Date of RCA Review: 12/10/14  
 Executive Sponsor: Sally Hargrove, VP-ED; John Carson, MD, Medical Director-ED  
 Team Leader: Harry Cuentes, RN, Director-ED

Blue info boxes=Barriers to enhance safety  
 Red info boxes=Gaps/breaches in barriers  
 Green Box=Additional information  
 CF=Causal Factor

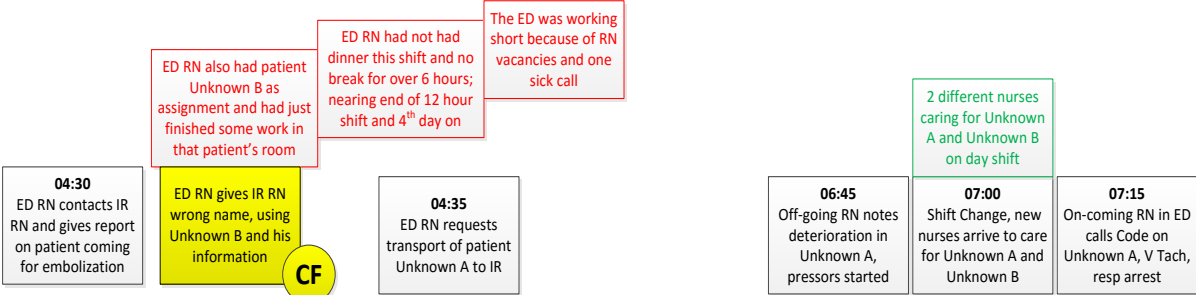


# What Happened Map- Swimstreams – Page 2

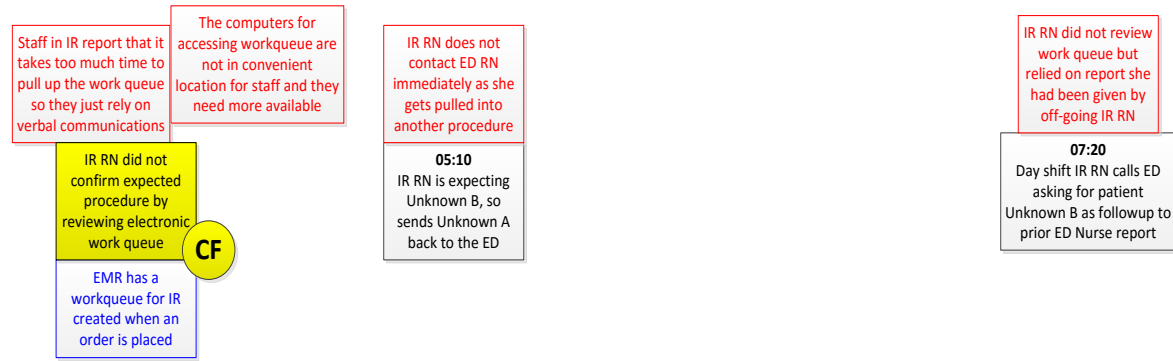


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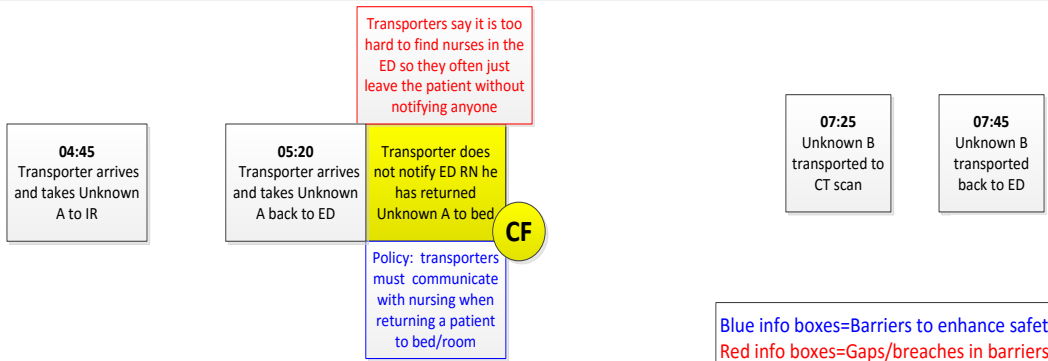
ED Night Nurse/ED Day Nurse



IR Nurse-Night/Day Shift



Transporter

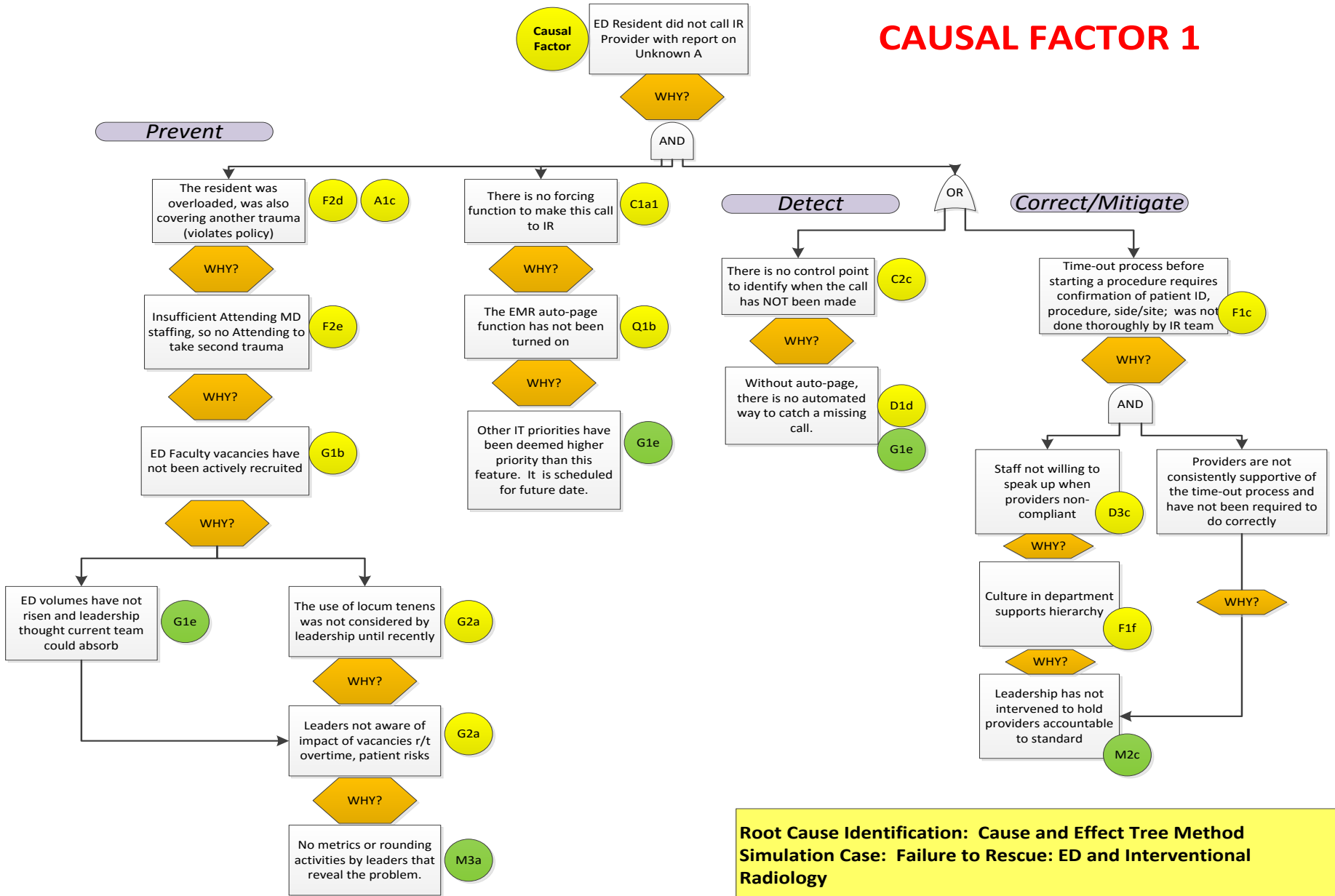


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# Root Cause Identification Through Cause and Effect Tree



## CAUSAL FACTOR 1

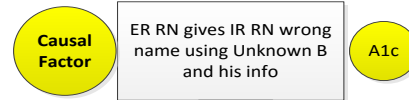


**Root Cause Identification: Cause and Effect Tree Method**  
**Simulation Case: Failure to Rescue: ED and Interventional Radiology**

# Root Cause Identification Through Cause and Effect Tree



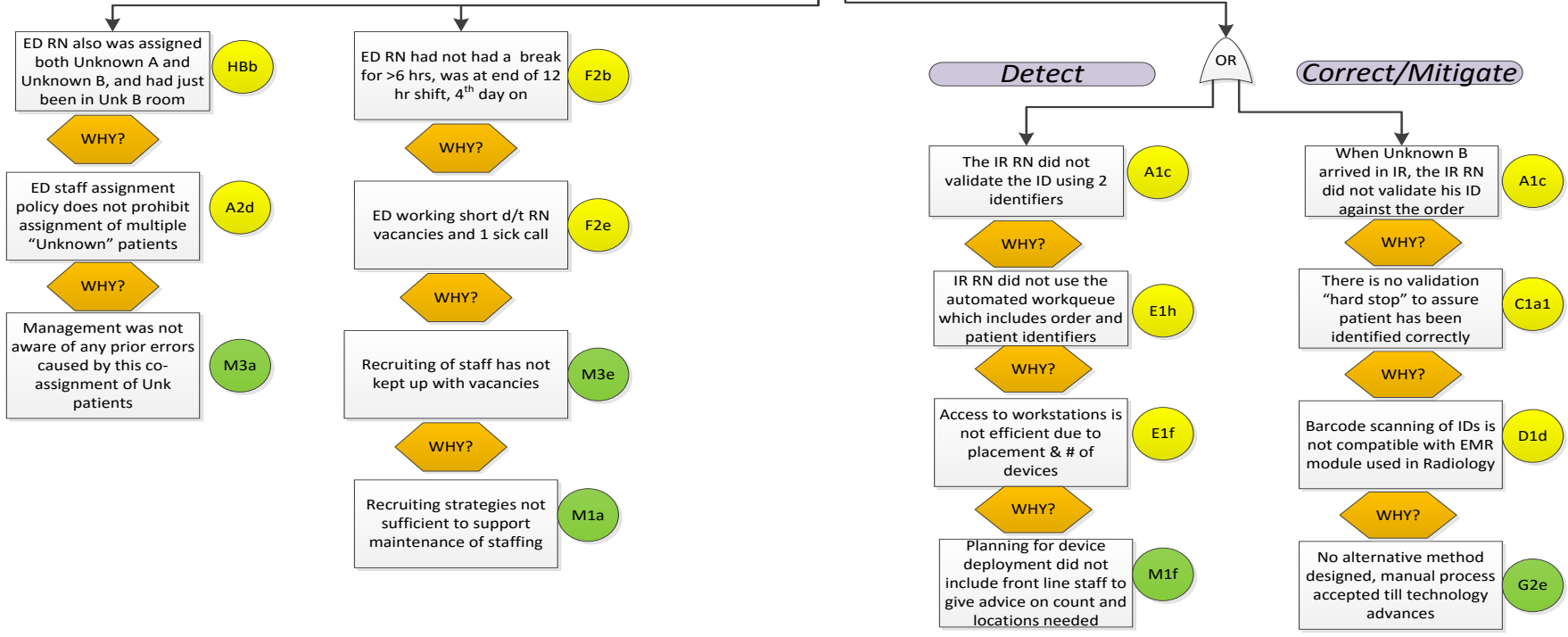
## CAUSAL FACTOR 2



**Prevent**

**Detect**

**Correct/Mitigate**



**Root Cause Identification: Cause and Effect Tree Method**  
**Simulation Case: Failure to Rescue: ED and Interventional Radiology**