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Reduction of sentinel wrong line placement events using a structured, longitudinal approach to safety event reviews

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Disclosures: None

Introduction

The Joint Commission adopted a formal Sentinel Event Policy in 1996 to encourage investigation of patient safety events that are not related to a patient's underlying condition.

High reliability organizations create a culture of safety by having a transparent process of careful review and action planning. Safety concerns are reported through our internal system and reviewed at the local level to determine if we had a deviation from generally accepted practice standards (gaps). If a deviation is identified, we evaluate how the patient was affected and work with the Michigan Medicine Office of Patient Safety to determine the appropriate level of review needed. Sentinel events require Apparent Cause Analysis (ACA) reviews regardless of patient harm level.

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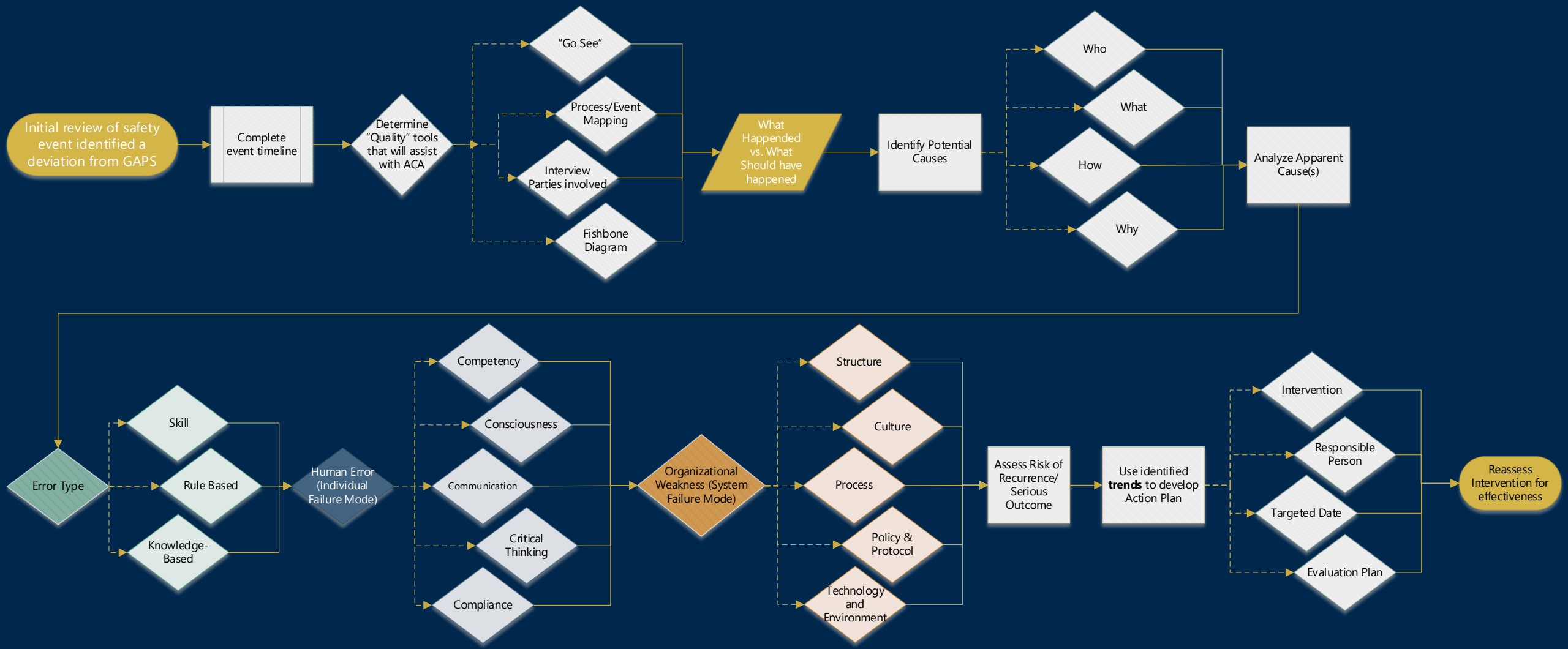
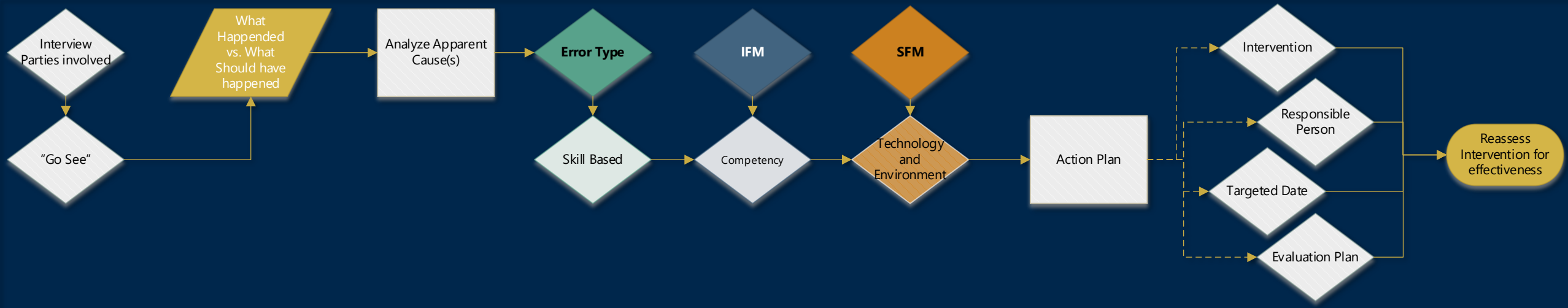
Methods


Initial review of safety event identified a deviation from GAPS
Complete event timeline
Determine "Quality" tools that will assist with ACA
"Go See"
Process/Event Mapping
Interview Parties involved
Fishbone Diagram
What Happended vs. What Should have happened
Identify Potential Causes
Who
What
How
Why
Analyze Apparent Cause(s)
Error Type
Skill
Rule Based
Knowledge-Based
Human Error (Individual Failure Mode)
Competency
Consciousness
Communication
Critical Thinking
Compliance
Organizational Weakness (System Failure Mode)
Structure
Culture
Process
Policy & Protocol
Technology and Environment
Assess Risk of Recurrence/ Serious Outcome
Use identified **trends** to develop Action Plan
Intervention
Responsible Person
Targeted Date
Evaluation Plan
Reassess Intervention for effectiveness

In December 2022 there was identification of a wrong line placement classified as a sentinel event, triggering an apparent cause analysis (ACA) review with VIR Faculty and the Radiology Safety Program Manager.

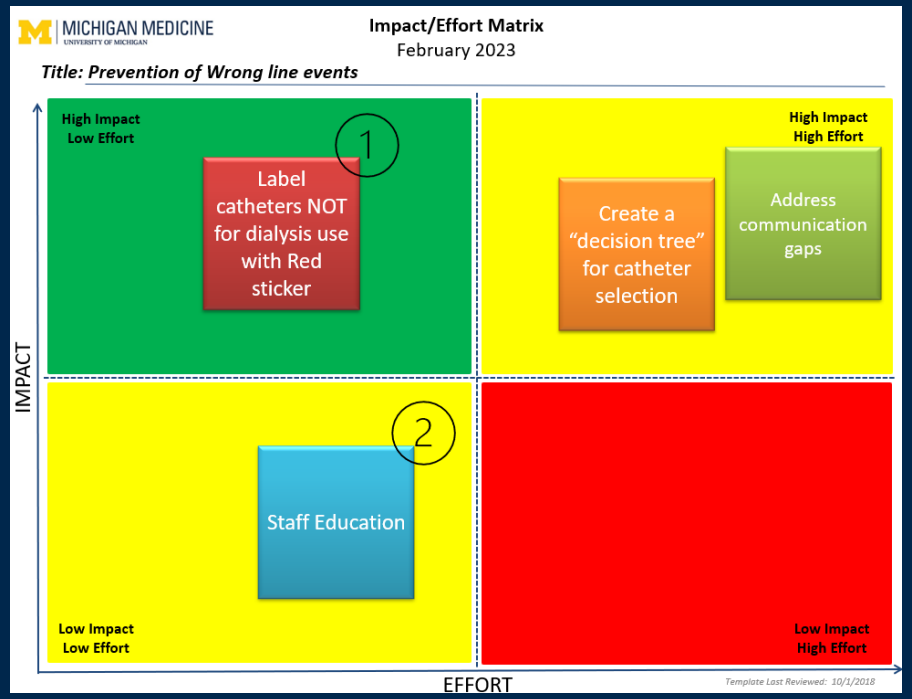


1. Staff involved were interviewed - identified how the team experienced the event
2. "Go See" – Visualize where the work is done
3. Event mapping – established where deviation from generally accepted practice standards (gaps) occurred
4. "5 Why's" Root Cause analysis
5. Identification of the Error Type, Individual Failure Mode (IFM) and System Failure Mode(SFM) as defined by HPI.
6. Impact/Effort Matrix constructed to brainstorm ideas.
7. Action plan identified as high impact/low effort implemented to address the system issues discovered.

- Wrong catheter collected from stock room
- Similar name/ appearance; Stored adjacent to one another in stock room
- Lack of Education of the difference between the two catheters
- No reference available to guide catheter selection
- Faculty did not appreciate the confusion; no cross check to verify catheter selection

Our investigation identified three system weaknesses

1. A causal risk related to the look-alike, sound-alike nature of two vascular access catheters:
   - Trifusion (Not for dialysis, tunneled catheter)
   - Trialysis (For Dialysis, non-tunneled catheter)
2. General lack of knowledge regarding the different types of catheters and their uses.
3. Communication among the care team is not structured or documented.



Action Plan Interventions:

Red Sticker Labels Created

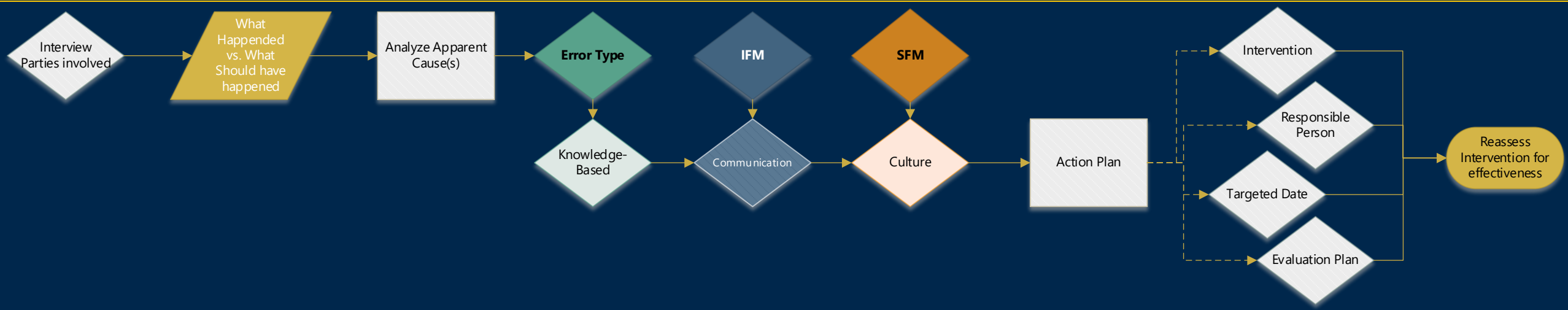
NOT FOR DIALYSIS USE

2/23/2023
- Look alike/sound alike products
- Knowledge gap related to catheter uses

Staff Education

2/23/2023
- Knowledge gap related to catheter uses

In June 2023 there was identification of 2 additional wrong line placements that were Trifusion catheters placed instead of a Trialysis catheter. Apparent cause analysis review with same team members (VIR Faculty and Radiology Safety Program Manager).



1. Staff involved were interviewed - identified how the team experienced the event
2. Event mapping was completed to determine where the deviation from generally accepted practice standards (gaps) occurred.
3. 3 events evaluated together in additional RCA to identify trends.
4. Identification of the Error Type, Individual Failure Mode (IFM) and System Failure Mode(SFM) as defined by HPI.
5. Impact/Effort Matrix constructed to brainstorm ideas.
6. High Impact/High Effort Action plan developed addressing additional system issues identified.

4th Wrong Line Event

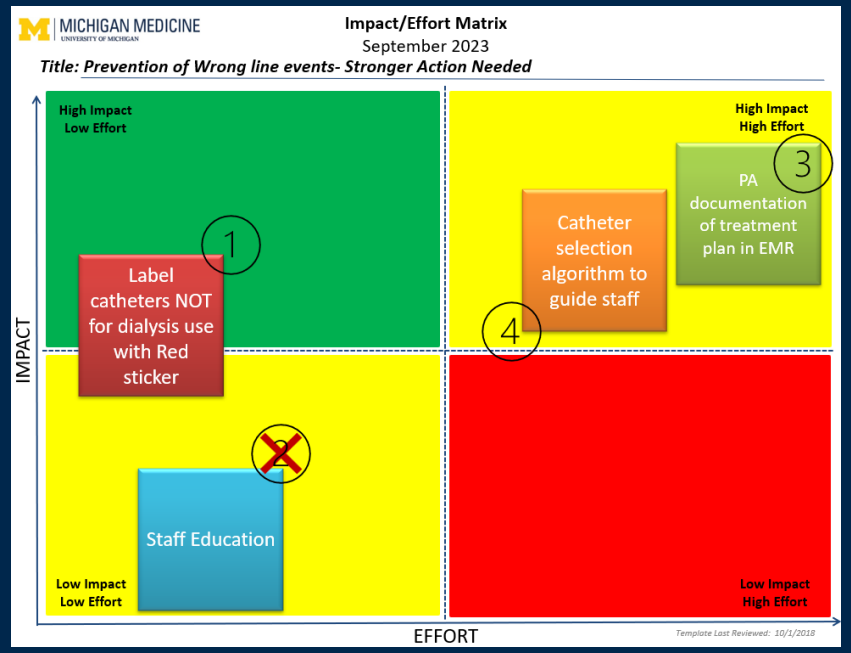
While completing these ACA reviews, an additional wrong line placement event occurred with slightly different circumstances. However, completing the same steps of the review process, with the same team members, allowed us to determine that the Action Plans in development would address the new event as communication breakdown was identified as the apparent cause.

Root Cause Analysis (RCA)

Recurring Concerns
Lack of knowledge related to catheter uses
Wrong catheter selected from stock room
Proceduralist did not cross check

Communication Gaps
Initial order reviewed and scheduled by PA
No expectation or standard work for documentation of communication
Incorrect treatment length selected on order; Clinical indication not familiar to IR HO
Communication attempted with inpatient team; incorrect assumptions made

Action Plan Interventions:



PA progress note added to EMR for Inpatients

10/16/2023

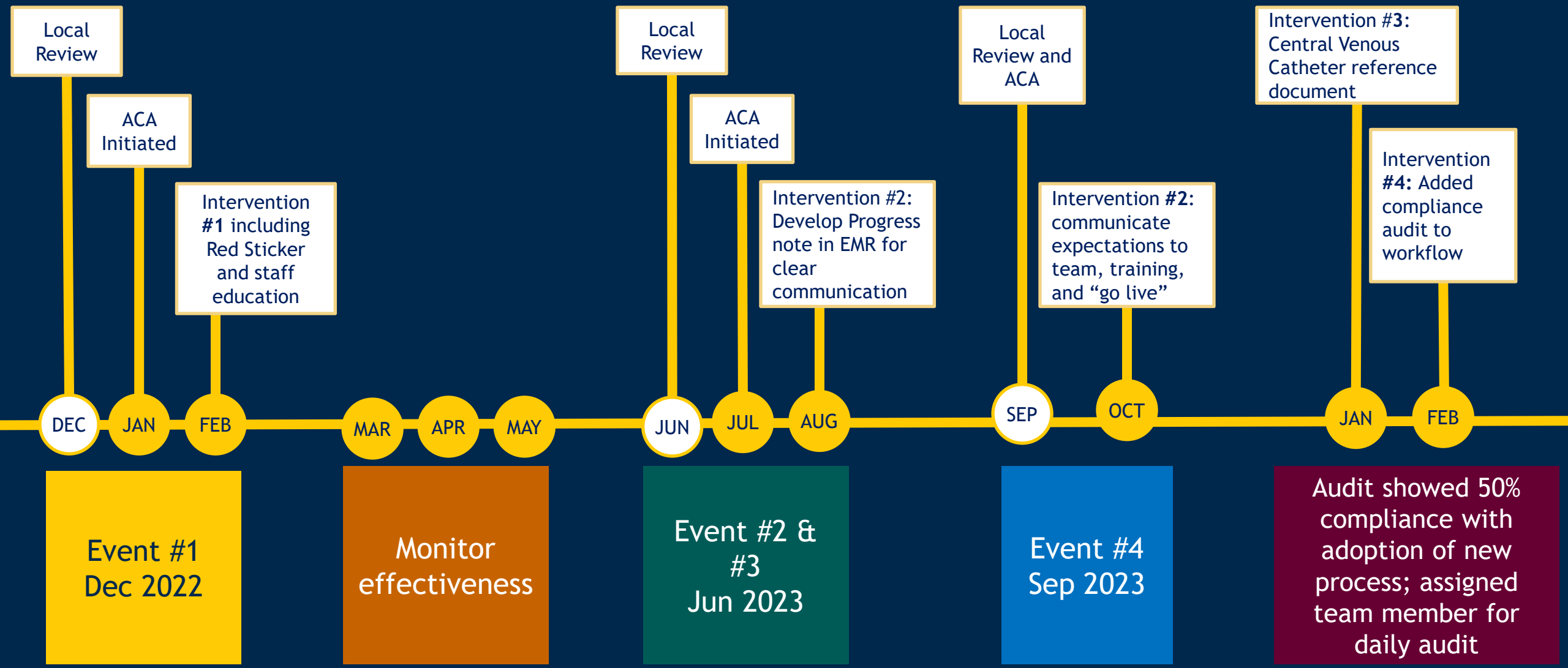
- Definitive review of clinical state by the procedural PA team, with documentation entered in EMR to communicate the treatment plan to the entire care team.
- Continuous audit of practice adoption

Reference Document Developed

1/17/2024

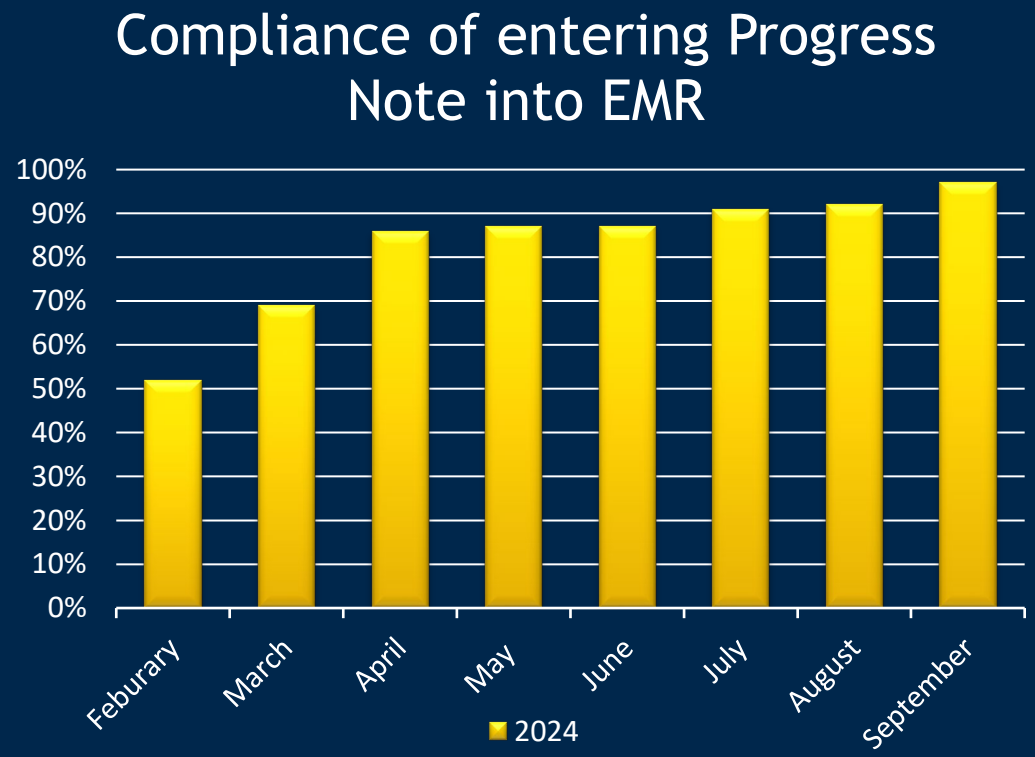
- Knowledge related to central venous catheter selection based on need
- Comprehensive education to all team members involved in vascular access procedures

Events/Interventions

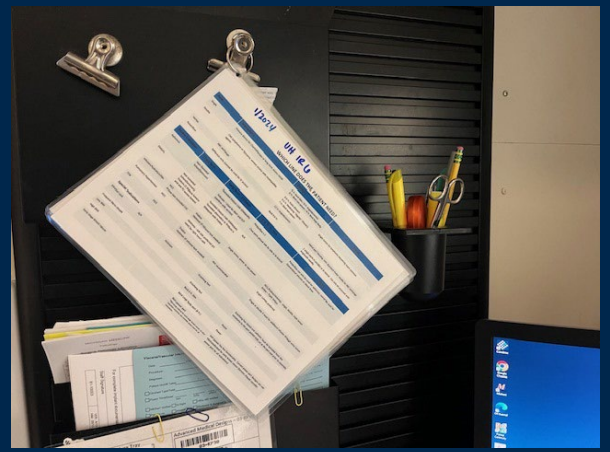


Results

Initial interventions did not address the gap in communication between all team members. The addition of a progress note documented in the EMR by the consulting PA, detailing the care plan, was adopted to improve communication. Continued auditing and assignment of accountability has increased compliance to >90% consistently as of July 2024.



Our team also created an educational reference to be displayed in the procedure rooms to guide the staff on Central Venous Catheter selection by clinical indication and expected line uses.



We have not had a repeat event of Wrong Line placement in >365 days!

Discussion

Utilizing a systematic approach to safety event reviews improves patient outcomes.

The initial qualitative assessment can be compiled quantitatively to identify recurring themes and trends.

Subsequent event reviews are important to evaluate the efficacy of interventions and guide future action planning efforts.

The need for multiple interventions is not an uncommon occurrence. Complex problems often require complex solutions.

Thank You

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References

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