



## SITUATION MONITORING

*Attention to detail is one of the most important details...*

– Author Unknown



### SUBSECTIONS

- Situation Monitoring
- Cross Monitoring
- STEP
- Situation Awareness
- Shared Mental Models
- Teamwork Actions

**TIME:** 45 minutes

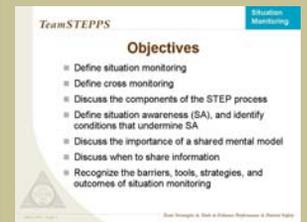


# OBJECTIVES

### SAY:

In this module, we'll—

- Introduce the concepts of situation monitoring, cross monitoring, situation awareness, and shared mental models
- Discuss the components of the STEP process to support situation monitoring
- Identify some strategies to help cultivate shared mental models among teams
- Discuss the importance of when to share information
- Recognize potential barriers to success and identify tools and strategies to overcome them



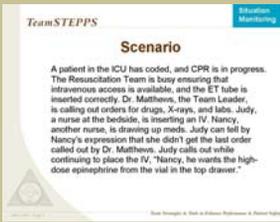
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### MODULE TIME:

45 minutes

## SCENARIO



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### SAY:

Review the following scenario while keeping in mind how well members of this team worked together.

A patient in the ICU has coded, and CPR is in progress. The Resuscitation Team is busy ensuring that intravenous access is available and the ET tube is inserted correctly. Dr. Matthews, the Team Leader, is calling out orders for drugs, X-rays, and labs. Judy, a nurse at the bedside, is inserting an IV. Nancy, another nurse, is drawing up meds. Judy can tell by Nancy's expression that she didn't get the last order called out by Dr. Matthews. Judy calls out while continuing to place the IV, "Nancy, he wants the high-dose epinephrine from the vial in the top drawer."

### DISCUSSION:

- What examples of teamwork skills were demonstrated in this scenario?

### SAY:

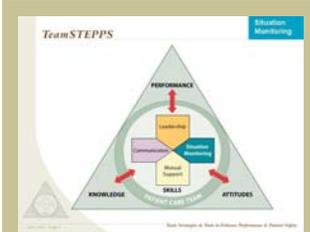
Situation monitoring is a key component of the teamwork process and is intimately linked to the other three essential elements of teamwork:

- Because situation monitoring concerns the willingness and ability to continually monitor situations and share this awareness with fellow team members, it is enhanced by team leadership, given that team leaders encourage and role model supportive behaviors.
- Situation monitoring allows mutual support through the ability to anticipate other team members' needs with accurate knowledge of their responsibilities.
- Situation monitoring is also moderated by communication, which allows for the sharing of new and emerging information with other team members to retain a shared mental model.

Continual monitoring of the situation enables the team to anticipate and predict the needs of patients and fellow team members, allowing the team to be more adaptive and flexible. That allows the team to recognize early and respond to deviations in the plan of care, potential problems, or dangerous circumstances. Because of this vigilance, teams are better able to self-correct, compensate for fellow team members, and reallocate functions if necessary. Effective teams possess a shared understanding of the way a procedure or plan should be carried out and established goals met, which allows teams to mitigate and correct errors before they occur or cause harm to the patient.

The most important team outcome of knowledge is a shared mental model. The basic premise underlying the relationship between shared mental models and teamwork is that team effectiveness will improve if team members have a shared understanding of the situation.

We'll talk more about situation monitoring and shared mental models in this module.



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#### SAY:

Here we have a continuum that begins with the individual skill of situation monitoring. The processing of monitored information results in the individual outcome of situation awareness. Sharing your situation awareness with fellow team members results in the team outcome of a shared mental model.

- **Situation monitoring** is the process of actively scanning and assessing elements of the situation to gain information or maintain an accurate understanding of the situation in which the team functions. Situation monitoring is a skill, which implies that it can be trained and developed as discussed earlier.
- **Situation awareness** is the state of knowing the conditions that affect one's work. It is a detailed picture of the situation. Note: Situation awareness (SA) is not a static "thing" or concept. Because the situation and context in which the situation exists are dynamic and ever-changing, team members must continually assess relevant components of the situation and update their individual SA.
- **Shared mental models** are the result of each team member maintaining his or her situation awareness and sharing relevant facts with the entire team. Doing so helps ensure that everyone on the team is "on the same page."
- **A continuous process** is necessary because of the dynamic situations in which teams function. It allows individual team members to maintain their situation awareness and share new and emerging information with other team members to retain a shared mental model.

#### ASK:

When have you used situation monitoring in your work? How did the information that you obtained from the environment affect how you approached or responded to the situation?

# SITUATION MONITORING (INDIVIDUAL SKILL)

## Situation Monitoring

### SAY:

Situation monitoring is the process of actively scanning behaviors and actions to assess elements of the situation or environment.

Situation monitoring is a skill team members can acquire, practice, and improve on. It enables team members to identify potential issues or minor deviations early enough so that they can correct and handle them before they become a problem or pose harm to the patient. Mutual respect and team accountability are cultivated because situation monitoring provides a safety net for both the patient and team members.

### ASK:

What are some of the ways you monitor the situation on your unit or in your department?

### *Examples:*

Assessing the patient's condition, noting malfunctioning equipment, and being aware of workload spikes and stress levels among team members



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### KEY POINT:

- Situation monitoring is a skill that essentially over time becomes second nature for the seasoned clinical professional.



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### KEY POINTS:

- Cross monitoring is a safety net feature for the patient.
- It is the ability of team members to monitor each other's task execution and provide immediate feedback.
- Mutual respect and team accountability are essential for the strategy of cross monitoring to be successful among team members.
- This strategy is meant to help the team meet its collective goal: safe and effective patient care.
- Mutual performance monitoring is an important team competency as described by McIntyre and Salas (1995).

### SAY:

Cross monitoring is used by fellow team members to help maintain situation awareness and prevent errors. Commonly referred to as “watching each other’s back,” it is the action of monitoring the behavior of other team members by providing feedback and keeping track of fellow team members’ behaviors to ensure that procedures are being followed appropriately. It allows team members to self-correct their actions if necessary. Cross monitoring is not a way to “spy” on other team members, rather it is a way to provide a safety net or error-prevention mechanism for the team, ensuring that mistakes or oversights are caught early. When all members of the team trust the intentions of their fellow team members, a strong sense of team orientation and a high degree of psychological safety result.

### DO:

Have participants form pairs, and have each pair share an example of a situation in which cross monitoring was successful and one in which cross monitoring should have been used but was not.

Have several pairs volunteer to share their examples with the larger group.

## CROSS MONITORING EXAMPLE

### SAY:

In the cartoon, how might this team member's cross monitoring be beneficial to the patient and the team as a whole?

It would alert the team member to the need to—

- Get the crash cart
- Check on ICU availability
- Have respiratory therapy start O<sub>2</sub>

Staff members need to constantly be aware of the situation, anticipate next steps, “watch each other’s back” and take appropriate self-corrective action to prevent errors from reaching the patient.

In the next video, let’s watch how Dr. Pham prevents a possible medication error using cross monitoring.



**DO:** Play the video by clicking the director icon on the slide.



**DISCUSSION:** What actions by the intern Dr. Pham were a result of cross monitoring?

- Direct and immediate feedback about the medication order
- Active listening and participation in the care plan
- Early detection and correction of team errors



### Slide



### KEY POINTS:

- Vigilance leads to self-correction, which leads to error reduction.
- Self-correction is the process by which team members reflect on previous performance to improve future performance.



### VIDEO TIME:

0:18 seconds

### MATERIALS:



CrossMonitoring  
.InternTo  
Resident.LandD  
Video



### CUSTOMIZABLE CONTENT



### Slide

### SAY:

How do you acquire a trained eye as you “monitor the situation” on your unit? What are relevant components of the situation that provide clues about impending complications or contingencies? The STEP process is a mnemonic tool that can help you monitor the situation and the overall environment.

The STEP process involves ongoing monitoring of the—

- **S**tatus of the patient
- **T**eam members
- **E**nvironment
- **P**rogress toward the goal

### Examples:

- The respiratory therapist notes that a ventilated patient is showing a marked increase in respiratory rate that might indicate an increased level of pain that cannot be communicated (**STATUS**).
- The patient’s nurse is busy helping another patient (**TEAM MEMBERS**).
- It is a shift change, and everyone is busy, so you check the medication record and note that the patient is overdue for his morphine (**ENVIRONMENT**).
- You notify the oncoming nurse of your concern (**PROGRESS**).

# STATUS OF THE PATIENT

## SAY:

In a healthcare setting, the most obvious element of the situation requiring constant monitoring is your patient’s status. Even minor changes in the patient’s vital signs may require dramatic changes in the team’s actions and the urgency of its response. When assessing patient status, consider the following:

- Patient History
- Vital Signs
- Medications
- Physical Exam
- Plan of Care
- Psychosocial Condition (e.g., patient’s stress level)

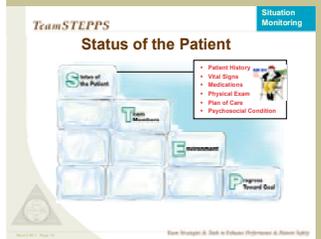


**DO:** Play the video by clicking the director icon on the slide.



**DISCUSSION:** Even though the patient’s vital signs were normal, why did Greg have reason for concern?

- Patient was not lucid
- Patient did not “seem” herself
- Patient’s stress level was elevated



Slide



**VIDEO TIME:**

0:37 seconds



**MATERIALS:**

- STEP.INPTMED video



**CUSTOMIZABLE CONTENT**

## TEAM MEMBERS



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### SAY:

You should also be aware of team members' status, to include the following:

- Fatigue Level
- Workload
- Task Performance
- Skill Level
- Stress Level

Healthcare providers are just as prone to human error as the general population. Teams that recognize and maintain an awareness of their individual team members' functioning are more likely to lend support or assistance. Observing the actions of fellow team members is a safety mechanism that can be used to mitigate error before the patient is harmed.

# I'M SAFE CHECKLIST

## SAY:

Awareness of your own condition to ensure that you are fit and ready to fulfill your duties is essential to delivering safe, quality care. Team members should assess and report if there is a personal situation affecting their ability to perform.

“I'M SAFE” is a simple checklist that should be used daily (or more frequently) to determine both your co-workers' and your own ability to perform safely. I'M SAFE stands for—

- **Illness.** Am I feeling so bad that I cannot perform my duties?
- **Medication.** Is the medication I am taking affecting my ability to maintain situation awareness and perform my duties?
- **Stress.** Is there something (such as a life event or situation at work) that is detracting from my ability to focus and perform my duties?
- **Alcohol/Drugs.** Is my use of alcohol or illicit drugs affecting me so that I cannot focus on the performance of my duties?
- **Fatigue.** The effects of fatigue should not be ignored. Team members should alert the team regarding their state of fatigue (e.g., watch me a little closer today, I only had three hours of sleep last night).
- **Eating and Elimination.** Has it been 6 hours since I have eaten or used the restroom? Many times we are so focused on ensuring our patient's basic needs that we forget to take care of our own. Not taking care of our elimination needs affects our ability to concentrate and stresses us physiologically.

Teams should be encouraged to set goals concerning the items on this checklist (e.g., everyone will be given the opportunity to take a break and have lunch today).

## ASK:

- In your current situation would you feel able to express that you're not safe?
- What are the factors that inhibit you from doing so and/or that contribute to your inability to do so?
- If you feel inhibited, what can you and your team do to change the culture?

For this to be successful, there must be a culture in place in which staff feel safe to be honest without fear of reprisal, retribution, or disdain.



## Slide



## Slide

### SAY:

The environment directly affects the quality of care delivered. Is the needed equipment present? Is there enough staff to tend to all the patients? The environment can change quickly and dramatically, and teams must be able to adapt to the dynamic nature of the situation. When assessing the environment, consider the following:

- Facility Information
- Administrative Information
- Human Resources
- Triage Acuity
- Equipment Status

## PROGRESS TOWARD GOAL

### SAY:

By monitoring progress toward the team's established and agreed-on goals, team members will be able to alert the team when strategies or the plan of care may need to be reconsidered or revised or when additional resources are needed. When assessing progress, team members need to consider the following:

- Status of the team's patients
- Goal of the team
- Tasks/actions completed or that need to be done
- Continued appropriateness of the plan

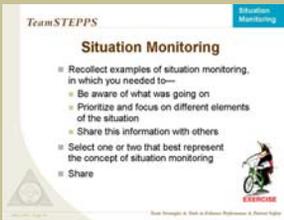
Goals were established and agreed on at the team meeting. What has changed, and how does our goal have to be modified?



### Slide

### KEY POINT:

- In reviewing progress toward the goal, have you noticed a change that would provide a reason to modify the goal?



### Slide



#### TIME:

5–10 minutes



#### MATERIALS:

- Flipchart or Whiteboard (Optional)
- Markers (Optional)

#### SAY:

Break into groups and recollect real-life examples of situation monitoring in which you needed to—

- Be aware of what was going on
- Prioritize and focus on different elements of the situation
- Share that information with others

#### DO:

Once each group has completed the exercise, ask the groups to share their examples with the larger group.

# SITUATION AWARENESS IS

## SAY:

Situation awareness is the state of knowing the conditions that affect one's work. It is the extent to which team members are aware of the following:

- Status of a particular event
- Status of the team's patients
- Operational issues affecting the team
- Need to maintain mindfulness

The healthcare environment is dynamic, requiring team members to continually reassess situations to update their situation awareness. What results is a sense of “knowing what’s going on around them.”

A loss of situation awareness results in the following:

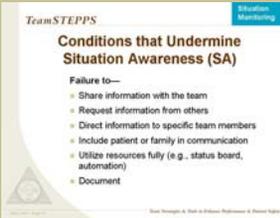
- Ambiguity
- Confusion
- Decreased communication

### *High-Reliability Organizations (HROs)*

The success of HROs in managing the unexpected is due to their determined efforts to act mindfully! Strive to maintain an underlying style of mental functioning that is distinguished by continuous updating and a deepening of increasingly plausible expectations of what the context is, what problems define it, and what remedies it contains.



Slide



### Slide

#### KEY POINT:

- Create a culture in which there is an expectation that information will be shared among team members and that information will be actively sought from others.

#### SAY:

Below are some of the numerous barriers to maintaining situation awareness. They are the result of team members' failure to—

- Share information with the team
- Request information from others
- Direct information to specific team members
- Include patient or family in communication
- Utilize resources fully (e.g., status board, automation)
- Maintain documentation that is adequate, complete, and timely

## A SHARED MENTAL MODEL IS

### SAY:

A mental model is a mental picture or sketch of the relevant facts and relationships defining an event, situation, or problem. When all members of a team share the same mental model, this is referred to as a “shared mental model.” Sharing your situation awareness with fellow team members results in a shared mental model, or in “everyone being on the same page.”

Similar to the way situation awareness is the result of an individual team member’s situation monitoring, a shared mental model is the result of each team member maintaining his or her situation awareness and sharing relevant facts with the entire team. In isolation, it is possible for an individual team member to misinterpret cues or to place too much emphasis on one piece of information. Shared mental models are knowledge structures of the relevant facts and relationships about tasks or situations that the team is engaged in, and about the way the team members interact. Shared mental models enable the team to anticipate and predict each other’s needs; identify changes in the team, task, or teammates; and adjust the course of action or strategies as needed.

Shared mental models are sustained by the following:

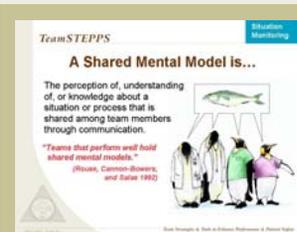
- The process of planning
- Team decision-making
- Vocalizing

Research supports the notion that the ability to hold shared mental models is an important team competency.

Shared mental models provide team members with a common understanding of who is responsible for what task and what the information requirements are. In turn, this allows them to anticipate one another’s needs so that they can work (i.e., provide patient care) in synchronicity (Stout et al. 1999).

### DO:

Ask participants to share instances in which they have been on the “same page” with others on their team.

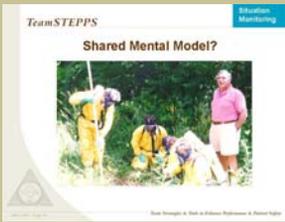


### Slide

### KEY POINTS:

- Situation monitoring is a trained eye.
- Cross monitoring is “watching each other’s back.”
- Situation awareness is “knowing what is going on around you.”
- With a shared mental model all team members are “on the same page.”

## SHARED MENTAL MODEL?



Slide

### SAY:

On our continuum of situation monitoring, situation awareness, and shared mental model, where are these two groups? How can lack of a shared mental model affect safety?

# PRACTICAL EXERCISE PREPARATION— OPTIONAL ACTIVITY

 You have the option of using the following exercise if you want.

Prepare two sets of information, and place separately on an index card or sheet of paper.

Information Set A should include a list of three to four patients by name, sex, and age.

### Example of **Information Set A:**

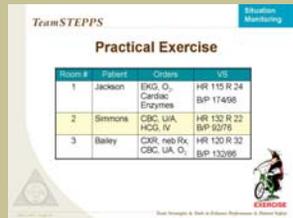
1. Patient Jackson is a 23-year-old male.
2. Patient Simmons is a 19-year-old female.
3. Patient Bailey is a 76-year-old male.

Information Set B should include some details of past medical history, or presenting symptoms, or scheduled procedure for each patient listed in Information set A.

### Example of **Information Set B:**

1. Patient Jackson is a known cocaine user with chest pain, and you are concerned about a possible MI.
2. Patient Simmons is hypotensive and experiencing tachycardia, and you are concerned about a ruptured ectopic pregnancy.
3. Patient Bailey has tachypnea, tachycardia, and fever, and you are concerned about pneumonia.

A **Status Board** slide should be prepared for display that includes the standard information used on a specific unit for patients listed in the information sets. An example **Status Board** is found in slides. You should modify as necessary for your audience based on the units they work on.



### Slide



TeamSTEPPS Education Monitoring

Practical Exercise

Room #	Patient	Orders	V/C
1	Jackson	ING, O <sub>2</sub> , Ceftriax, Enzymes	HR 115 R 24 BP 114/88
2	Simmons	CBC, UA, HCG, IV	HR 132 R 22 BP 92/76
3	Bailey	CXR, neb RX, CBC, UA, O <sub>2</sub>	HR 120 R 32 BP 132/86

Slide

**DO (SMALL GROUP EXERCISE):**

Divide the class into an even number of teams.

- Provide half the teams with **Information Set A** and the other half with **Information Set B**.
- Display the **Status Board** slide.
- Ask each team to independently discuss and prioritize the patients using only the information provided.
- After 5 minutes, ask a representative from each team to report his or her team’s conclusions.
- Focus discussion on the relationship between the communication of information and the development of a shared mental model.

OR

**DO (WHOLE GROUP EXERCISE):**

- Display the **Status Board** slide.
- Ask the class to prioritize the patients using only the information provided on the slide.
- After they discuss their conclusions, provide the class with **Information Set A**.
- Discuss how the additional information alters the group’s initial plan.
- Provide **Information Set B**. Discuss how this additional information changes the group’s revised plan.
- Focus discussion on the relationship between the communication of information and the development of a shared mental model.



**TIME:**

10 minutes



**MATERIALS:**

- Copies of Information Set A
- Copies of Information Set B
- Status Board Slide



**KEY POINT:**

- Sharing information is critical to the development of a shared mental model.

# HOW SHARED MENTAL MODELS HELP TEAMS

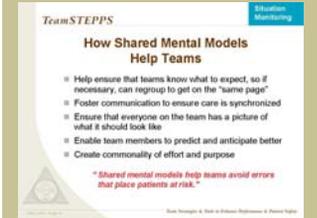
### SAY:

Can you think of ways that the team will work more efficiently and effectively if all members of the team are “on the same page?” If teams are better able to predict and anticipate, then the team will know what is supposed to happen. They will have a better understanding of how the case is progressing.

How do shared mental models help teams?

- Lead to a mutual understanding of problems, goals, team strategies, patients’ condition, and plan of care
- Lead to more effective communication to ensure that team members have the necessary information for task performance
- Enable team members to back up and fill in for one another
- Help team members understand each other’s roles and how they interplay
- Improve ability of individual team members to predict and anticipate the needs of the team
- Create commonality of effort and purpose

**Most important, shared mental models help teams avoid errors that put patients at risk.**

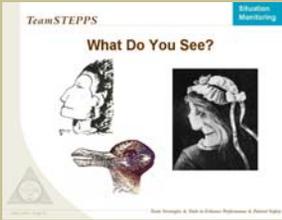


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### KEY POINTS:

- Shared mental models help teams avoid errors that put patients at risk.
- Shared mental models ensure that all team members are aware of the plan of care.

## WHAT DO YOU SEE?



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### SAY:

Each team member has a unique perspective and information that benefits the team as a whole when shared. Different people may view the same situation differently, but without sharing and communicating, each team member may have a different understanding.

Ask the audience what they see in each picture. After responses are given, discuss how totally different figures are seen if the pictures are viewed from the left versus the right.

### DISCUSSION:

- When looking at these images, what do you see?
- Do you see different images if you look right to left versus left to right?
- How did sharing perspectives increase your ability to see the whole picture?

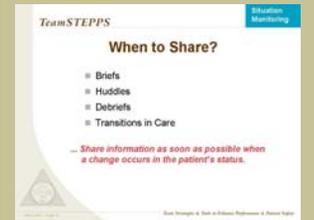
### **Answers:**

- Left image: Indian and Eskimo
- Center image: Duck and rabbit
- Right image: Old lady and young one

## WHEN TO SHARE?

### SAY:

There are both ad hoc and structured opportunities to share vital information with team members. Some examples of when information can be shared include team events such as briefs, huddles, and debriefs. It is important to establish the expectation that these team events will occur and that all team members are empowered to speak up. Teams should communicate often and at the right time to ensure that fellow team members have the information they need to be able to contribute.



### Slide

TeamSTEPPS Situation Monitoring

BARRIERS	TOOLS and STRATEGIES	OUTCOMES
<ul style="list-style-type: none"> <li>• Hierarchical Culture</li> <li>• Lack of Resources or Information</li> <li>• Ineffective Communication</li> <li>• Conflict</li> <li>• Time</li> <li>• Distractions</li> <li>• Workload</li> <li>• Fatigue</li> <li>• Misinterpretation of Data</li> <li>• Failure to Share Information</li> </ul>	<ul style="list-style-type: none"> <li>• Brief</li> <li>• Huddle</li> <li>• Debrief</li> <li>• STEP</li> <li>• Cross Monitoring</li> </ul>	<ul style="list-style-type: none"> <li>• Situation Awareness</li> <li>• Shared Mental Model</li> <li>• Adaptability</li> <li>• Team Orientation</li> <li>• Mutual Trust</li> </ul>

Slide

## SAY:

This module discussed barriers that hinder team members from accurately monitoring situations that affect the care of the patient and the effectiveness of the team.

The tools and strategies introduced in this module to overcome these barriers include the following:

- **STEP**—a mnemonic template to help cue active monitoring of all the vital components of a situation
- **I'M SAFE checklist**—a list to prompt a self-status check
- **Cross monitoring**—“watching each other’s back”
- Shared mental models and their impact on patient safety are the most important outcomes of situation awareness. Other benefits include the following:
  - **Adaptability**—having members who can back up and fill in for one another and easily adjust the plan of care as new information becomes available
  - **Team orientation**—having members who understand each other’s roles and how they fit together
  - **Mutual trust**—having members who trust other team members’ intentions
- By conducting situation monitoring you are more likely to have a positive experience:
  - You’ll enjoy working as a team.
  - You’ll trust your teammates.
  - You’ll be better able to adapt to changes and quickly recover.
  - And finally, your team will be safer and more likely to identify and correct errors.

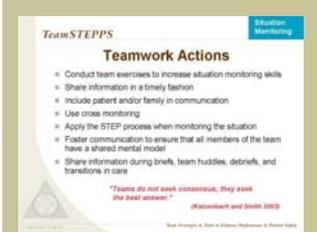
### SAY:

Teamwork actions can include the following:

- Conduct team exercises to increase situation monitoring skills
- Share information
- Include patient and/or family in communication
- Use cross monitoring
- Apply the STEP process when monitoring the situation
- Foster communication to ensure a shared mental model among all team members
- Share information during team events (e.g., briefs, huddles, and debriefs) and transitions in care

### ASK:

What actions will you take to improve your and your team's situation monitoring skills?



### Slide

## REFERENCES

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