Maternal 911 in Action: Umbilical Cord Prolapse

Traditional patient safety approaches, known as Safety-I, are reactive and focus on identifying and mitigating contributing factors after adverse events have occurred. This approach views safety as the condition whereas few things go wrong as possible, using tools like root cause analysis and risk assessments to prevent future incidents. While Safety-I is effective in evaluating failures and minimizing adverse events, it fails to consider the many factors that contribute to everyday successes in healthcare, which are often just as critical to ensuring patient safety in dynamic and complex environments. [1,2]
In contrast, the Safety-II framework takes a proactive, system-wide approach to patient safety by focusing on understanding and learning from everyday successes rather than just failures. Safety-II emphasizes the importance of adaptability and resilience, recognizing that safety is not only the absence of adverse events but also the presence of actions that go right. By studying what works well and how healthcare professionals effectively adapt to varying conditions, Safety-II aims to replicate and strengthen these successful processes to ensure optimal outcomes, even in unpredictable circumstances. [1,2]

1. Venkatesan C, Helak K, Sousane Z, et al. Application of Safety-II Principles. PSNet [internet]. Rockville (MD): Agency for Healthcare Research and Quality, US Department of Health and Human Services. 2024.
2. Safety-I and Safety-II: The Past and Future of Safety Management. Hollnagel E. Aldershot, Hampshire, England: Ashgate; 2014. ISBN: 9781472423085.

Is Something About to Happen?

The objective of Maternal 911 in Action is to put real-life events into practice with the management of each step prior to an actual event. This is not a test of individuals. This is an opportunity to strengthen the process, to identify and fix gaps within the unit and to improve teamwork, communication and overall reliability.

Every healthcare scenario aims to be as realistic as possible ideally involving the members of the team that would be present during an actual event. Even consider involving another colleague to simulate a family member.

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A 911 in Action drill should be practiced in a room consistent with where an actual event would occur. This will make the drill efficient in helping participants familiarize themselves with the room set-up, equipment location, and medication available helping participants to identify improvements in their location for faster retrieval in a real event.

911 in Action is to be as hands-on as possible.
Following the practice event, the team should discuss what went well, what could be improved, what needs to be changed regarding equipment, supply location, and questions answered so each member has a clear understanding of the event and management.

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Maternal 911 in Action Steps to Preparedness

1. Please have conversations with your risk team to have non-discoverable status; this may ensure that protected documents and items cannot be used in a court of law during a malpractice suit.
   - This process is best determined by the hospital attorney or the Risk Management Department and needs to be in place before simulation occurs**.**
   - Simulations and findings may also be considered a quality improvement project and be protected in the same manner other such projects are.
   - Once a process is determined, simulation instructors need to be familiar with how to protect simulations and findings along with consequences of not following the process.
   - Instructors are responsible for explaining what non-discoverable status is to trainees, ensure all in simulation follow the process and understand the consequences violating the process.
2. Simulations are a safe place to learn; therefore, confidentiality is a key part of training.
   - Everyone attending the simulation training must sign a confidentiality form stating they will not discuss the events of the scenario and debriefing (obtain from legal/risk).
   - Whether mistakes are made, or performance is excellent, each trainee needs to understand that anyone at the session from instructors to other trainees to observers will not discuss their performance outside of the training session.
   - Issues that are uncovered for quality improvement will be described, but not attributed or linked with any specific individual.
3. The drill should be as realistic as possible:
   - Mannequins or individuals may be used.
   - Equipment and supplies should be available.
   - Even consider having a colleague simulate a family member.
4. Drills should meet department or unit needs and practices using current evidence-based practice.
5. Those who attend should be the team members who would provide care during an actual event.
6. Explanation of the process should be understood prior to initiation of the action:
   - Provide a case scenario.
   - Participants understand their role is to respond as would be done during an actual event.
   - Individuals should know that the patient's outcome will be based upon their actions.
7. The trainer will provide scenario outcomes in events as participants work through the drill and redirect as appropriate.
8. All procedure performances will be demonstrated through discussion, so the team will be aware of the time and supplies needed for successful completion.
9. Following the event, the team will discuss the process:
   - Debriefing provides a powerful and essential structure for maintaining learning capacity.
   - The team can evaluate what worked well and identify needed improvements.
   - This may include adding or removing equipment, supplies, and medication, etc.
10. Repeating the drill may be necessary until all members are functioning proficiently within their scope of practice.
11. The trainer will have the participant(s) go through the drill until they are competent in the topic and health care delivery.

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Data from completing the modules may be used in research and publications with privacy maintained.

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Maternal 911 in Action
Case Scenario to Post
Umbilical Cord Prolapse & PPROM

Disclaimer: The objective of 911 in Action is to put real-life events in to practice with the management of each step prior to an actual event. This is not a test of individuals. This is an opportunity to strengthen the process, to identify and fix gaps within the unit and to improve teamwork, communication and overall reliability.

Shera, G3P2002, 39 weeks gestation is in active labor. She has experienced two rapid labors in her prior pregnancies. She has called the department for help while her partner is driving her to the emergency department. Because things are moving fast, she is concerned she won't make it to the hospital. She states her water just broke while on the phone. She states, "I feel something hanging between my legs."

Trainer's Form

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Maternal 911 in Action Case Scenario

Umbilical Cord Prolapse & PPROM

Supplies:

- Participant and Trainer case scenarios (copy for "family member" too)
- Pelvic model
- Fetal doll
- Placenta model
- Consent from each participant regarding confidentiality (from legal/risk)
- Consider printing the Simulation Based Training Analysis Template (page 11) to track needed changes
- Please have the QR code available once the simulation is complete for the participants to scan (page 12)

Announce: The objective of 911 in Action is to put real-life events into practice with the management of each step prior to an actual event. This is not a test of individuals. This is an opportunity to strengthen the process, to identify and fix gaps within the unit and to improve teamwork, communication and overall reliability.

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Role playing family member you can hear in the background: "Is it the baby's foot? What is it? Is the baby coming? We are almost there, hold on!"

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For the trainer: The column to the left are questions/ prompts and the column to the right are expected responses to help guide the simulation.

Questions	Discussion
1. What do you do upon arrival? Assist her to a supine position for an exam.	To implement management.
2. Help her remove her clothes if needed. Inspect the perineum. Cord is noted at the vaginal opening!	Is it the umbilical cord? YES! If you do not have the directive to perform a vaginal exam, then try knee-chest position. This may cause the cord to shorten, pulling it into the vagina where it will stay warm. (It the cord cools it may spasm).
3. Call for assistance and help of others.	You will need assistance.
4. Explain to the woman and her support person(s) in terms they can understand about the emergency while performing a perineal exam.	The fetal presenting part will need to be lifted off of the umbilical cord so circulation is not compromised.
5. Assess the umbilical cord for pulsation.	Pulsation is a positive finding.
6. Elevate the fetal presenting part so there is no pressure on the cord. Be conscious of your hand placement so you do put pressure on the cord.	Why is fetal presentation important?
7. Check cervical dilation if appropriate	Is cervical status an important assessment?
8. Reposition the woman to further reduce the compression on the cord; knees-chest, Trendelenburg, or lateral tilt.	To prevent further fetal compromise.

Role playing family member: "This is not right! What are you going to do about it? Don't let the baby die!"

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911 in Action	Discussion
9. Immediately communicate the emergency to those who arrive: "We have umbilical cord prolapse!"	Why is prompt discussion of the emergency situation important?
10. Follow established protocol to inform the delivering facility of the woman's condition.	The delivering facility can implement emergency protocol for a woman with an umbilical cord prolapse prior to arrival and be prepared for a cesarean delivery. This will allow time for the surgical team, delivering provider, and neonatal provider to be ready to receive her.
11. Obtain fetal heart tones or evaluate circulation per protocols. This may be a fetal doppler, ultrasound, or direct palpation of the umbilical cord.	Discuss fetal heart tones and what would indicate a need to change the plan of care.
12. Start an IV.	IV access for cesarean section delivery and venous access as needed.

Shera is feeling pressure and states she must push. (Vertex presentation).

Role playing family member: "The baby is coming! Why are you doing that (stating to anyone providing care) when you should be worried about the baby?"

911 in Action	Discussion
13. Explain what's happening to the woman and her support person(s) in terms they can understand.	Provide reassurance.
14. Reassess cervical dilation and presentation.	
15. The cervix is completely dilated, with vertex presentation confirmed, and delivery imminent. Prepare for a vaginal birth.	Some babies will deliver vaginal.

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16. Obtain fetal heart tones or evaluate circulation per protocols. This may be a fetal doppler, ultrasound, or direct palpation of the umbilical cord.	Discuss fetal heart tones and what would indicate a need to change the plan of care.
17. Team should be prepared for neonatal resuscitation.	
18. Prepare equipment for vaginal birth and neonatal resuscitation.	

A female is delivered vaginally, responds to resuscitation, with Apgar score 7 and 9.

Alternate scenario

Shera G3P2002, 29 weeks gestation telephones for assistance. She has rupture of membranes (PPROM).

911 in Action	**Discussion**
1. Action steps? Assist her to a supine position for an exam.	To implement management.
2. Help her remove her clothes. Inspect the perineum.	Is there fluid? YES! Is there umbilical cord present? No!
3. Is she at heightened risk for umbilical prolapse?	Yes, the fetus is not engaged in the pelvis at 29 weeks gestation.
4. Explain to the woman and her support person(s) in terms they can understand about the emergency.	
5. Obtain a set of vital signs in the ambulance.	Evaluate for elevated temperature.
6. Assess for other symptoms; contractions, purulent vaginal discharge and/or odor, injury or trauma.	Evaluation for labor, infection, or accident that may have led to PPROM.
7. Obtain fetal heart tones or evaluate circulation per protocols. This may be a fetal doppler, ultrasound, or direct palpation of the umbilical cord. Continue to monitor her vital signs.	Discuss fetal heart tones and what would indicate a need to change the plan of care.

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The ambulance driver telephones receiving facility. Follow established protocol to inform the delivering facility of the woman's condition.

Role playing family member: "This is not right! What are you going to do about it? Don't let the baby die!"

911 in Action	**Discussion**
8. Immediately communicate the emergency to those who arrive.	Why is prompt discussion of the emergency situation important?
	The delivering facility can implement emergency protocol for a woman with PPROM and allow time to arrange personnel; obstetrician, neonatal provider, and appropriate staff.
9. Start an IV.	IV access established if fluids and/or medication is needed.
10. Provide maternal oxygen per face mask.	This will assist with her and fetal oxygenation.

The ambulance arrives at the delivering facility and the health care team takes over with her care.

Now consider the Maternal 911 in Action Imminent Birth.

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After the Maternal 911 in Action drill:

1. What will occur next?
2. Discuss the importance of documenting.
3. Discussion with the patient and/or her family.
4. Documentation of the event.

After the Maternal 911 in Action drill, trainer leads team through the debriefing process:

1. What went well for the team?
2. What did we learn through this drill?
3. What would we do differently in a real-life situation?
4. Did we have any issues; equipment, processes, communication, understanding?
5. Who is going to follow-up to resolve the problems and/or contact those who need to assist in making changes?
6. What time frame will be allowed for completion of this project?
7. How will changes be communicated to the team?

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MATERNAL911

SIMULATION-BASED TRAINING ANALYSIS TEMPLATE

Topic of SBT:

Date(s) of training:

Number of trainees: *This section can be broken down by discipline or job title if this is relevant to the findings*

1. METRICS

METRIC	FINDING	COMMENTS
(Example) Time Anesthesiologist called to time in room	(Example) 6 minutes	(Example) Anesthesiologist needs pager that works in the OR to decrease response time to OB

2. SYSTEMS ISSUES AND PROCESSES UNCOVERED

ISSUE OR PROCESS	REPORTED TO	SUGGESTION FOR IMPROVEMENT
(Example) Instrument labeled incorrectly	(Example) Unit manager and sterile supply dept	(Example) Inform OB surgical staff of incorrect label, have 2 sets in case one is incorrect

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To help the Maternal 911 team improve simulations please have your team scan the QR code to complete a post simulation survey.

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