Maternal 911 in Action: Imminent Birth

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.

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.

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.

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.

Maternal 911 and Maternal 911 in Action contains information designed as an educational resource to aid practitioners in providing obstetric care and the use of this information is voluntary. This information should not be considered as inclusive of all proper treatments or methods of care or as a statement of the standard of care. It is not intended to substitute for the independent professional judgement. Maternal 911 reviews the publication regularly, but may not reflect the most recent evidence.

Maternal 911 makes every effort to present accurate and reliable information. The Maternal 911 and Maternal 911 in Action are publications provided 'as is' without any warranty of accuracy, reliability or otherwise, either express or implied. Maternal 911 does not guarantee, warrant or endorse the products or services of any firm, organization or person. Neither co-founder nor any officers, directors, members, employees, participants or agents will be liable for any loss, damage or claim with respect to liabilities, including direct, special, indirect, or consequential damages, incurred in connection with this publication or reliance on the information presented.

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

Maternal 911 in Action
Case Scenario to Post
Imminent Birth

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.

1200: A 32-year-old G4 P3003 woman presents to the emergency department. She states "I am visiting from out of town, but I think I'm in labor. My labor has been fast."

Trainer's Form
Maternal 911 in Action Case Scenario
Imminent Birth

Supplies: Trainer Sheet (with answers) one for yourself and for the role of family member
Case Scenario
Pelvic Model and fetal doll
Consents for participants to sign regarding confidentiality (from legal/risk)
Consider printing the Simulation Based Training Analysis Template (page 14) to document needed changes
Please have the QR code available for participants once the simulation is complete (page 15)

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.

1200: A 32-year-old G4 P3003 woman presents to the emergency department. She states "I am visiting from out of town, but I think I'm in labor. My labor has been fast."

Role playing family member states in a loud voice: "She's going to have her baby! You need to get the doctor in here now!

Ask the following in left column [NOTE numbers are for the trainer to ask and expected answers listed from the team are by letters a, b, c etc], more prompts in right column.

911 in Action	Discussion
1. What information needs to be obtained first: a. Has the baby been moving? b. When are you due? c. How many deliveries? Vaginal? d. Any health problems? Before pregnancy? e. Blood type? f. GBS? g. Any problems with baby during pregnancy? h. Have the membranes ruptured? Color?	39 weeks gestation (see next highlighted statement for remaining answers)

She states her deliveries have been vaginal without any problems. Her last labor only lasted three hours, but she was transfused blood following the delivery. She is uncertain of her blood type but states the GBS was negative. She is healthy and has felt the baby moving. There have been no concerns with the baby during the pregnancy. Her membranes have not ruptured.

Role playing family member: "You need to get ready for all this and get things around so she doesn't bleed to death! She nearly died last time."

911 in Action	Discussion
2. What additional information would you obtain if time allows? a. Cervical dilation, fetal presentation and fundal height. b. Contraction pattern and fetal well-being. c. Maternal vitals.	Bedside ultrasound, if available, and if any concerns on fetal position.

1215: A vaginal exam reveals the cervix at 6cm with bulging membranes, vertex presentation. Contractions are every 3 minutes, lasting 60 seconds and palpate strong. Maternal vital signs are stable. Fetal surveillance is reassuring with fetal heart tones in the 140's at the end of the contraction.

Role playing family member: "It's not going to be long!"

911 in Action	Discussion
3. Why is it best to listen for fetal heart tones at the end of the contraction? 4. What is the immediate plan of management? a. Notify the primary care provider b. Prepare for delivery c. Prepare for postpartum hemorrhage management d. Consider IV access e. Consider CBC and cross-matching blood	If the fetus has reserve, the heart tones are in an acceptable range (120-160s) at the end and right after the contraction. If the fetal heart tones are bradycardic, concerns arise. Does your department have a cart or package available for an imminent birth? Who would bring the postpartum hemorrhage cart/box to the room?

1220: She states, "I just felt a gush." On exam, you find a large amount of clear amniotic fluid present on the bed.

Role playing family member: "Are you ready for her baby? When will her doctor get in here?"

911 in Action	Discussion
4. What is your immediate management? a. Cervical exam for dilation and cord b. Fetal heart rate c. Notify PCP d. Vital signs	If the cord is palpated, do not remove the hand from the vagina. Keep the hand there to hold the presenting part up so that it does not compress the cord.

The cervix is found to be 8cm, 100% effaced and stretchy. No cord palpable. Fetal surveillance is reassuring and the PCP states they are on their way and should arrive in fifteen minutes.

Role playing family member: "Fifteen minutes? This baby is not going to wait that long! So, who is going to deliver this baby?"

911 in Action	Discussion
5. What is your immediate action plan? a. Stay calm. b. Call for other personnel. c. Reassure patient and her family. d. Position the mother for delivery. e. Provide privacy. f. Plan to deliver on the bed for safety of the infant. g. Have assistant open delivery pack. h. Have the assistant prepare for newborn care. i. Keep your eyes on the perineum.	What would you say to the family member?

1228: The mother states "The baby is coming! I have to push!" You note the perineum is bulging.

Role playing family member: "Oh my gosh, the baby is coming, and no one is here to deliver it! How is this going to work?"

911 in Action	Discussion
6. Delivery of fetal head a. Control the head with one hand & support perineum with the other. A towel may be used to block the anal area of contamination. b. Gentle downward pressure of the infant's head to guide and avoid rapid expulsion. Try to not allow the head to pop. c. Coach the mother to pant or breath with crowning. d. Deliver the head between or at the end of a contraction.	Participants should demonstrate What is the next consideration after the head is delivered? Giving Pitocin IM immediately is imperative with her history of hemorrhage, obtain the order for this to be administered. Many institutions have this as a protocol for imminent birth.

Another nurse arrives. She has called for the EM physician, but they are managing a multi-person trauma situation, but states' s/he will arrive as soon as possible. Delivery is imminent, the head is crowning.

Role playing family member: "Here comes the baby. I hope someone knows what they are doing."

911 in Action	**Discussion**
7. Check for the nuchal cord	If cord is found, trainee demonstrates: a. Sliding cord to reduce over fetal head b. Sliding the cord over the fetal shoulder and 'deliver through" the cord c. Loosening cord and keeping the baby's head close to the perineum to 'somersault' baby around cord. d. Last resort: double clamp and cut the cord. Cutting cord guarantees no more oxygen will flow to the baby which may be of concern if a shoulder dystocia is found.
8. What should be demonstrated when delivering the shoulder? a. Coach the mother to pant while waiting for restitution. b. Do not rush, do not panic c. Consider McRoberts maneuver. d. Place gentle downward pressure with both hands and flat fingers along the baby's head. Do not pull on the baby's head. e. To deliver the posterior shoulder, slide one hand to the perineum using upward motion to assist the posterior shoulder over the perineum. Coach mother to pant.	McRoberts maneuver involves flexing the hips with bent knees; often requesting the mother to grab her knees will provide the needed flexion and rotate the pelvis to help resolve a shoulder dystocia and preemptively prevent.

9. Complete delivery of the infant a. Grasp the baby around the shoulders and complete the delivery in an upward motion b. Place the infant skin to skin with mother; dry and cover with warm blankets if appropriate. c. Don't be in a hurry to cut the cord.	Participant should demonstrate delivery. But, by 2 minutes the cord should be cut to prevent retro-flow.

The baby has a vigorous cry with a heart rate at 138, good tone, and color. The mother is skin to skin with the newborn. The PCP has not yet arrived, and Emergency Medicine physician is tending to the patient now.

Role playing family member: "She should not be charged for this delivery since a doctor wasn't here. I want to talk to the president of the hospital about this so she doesn't get charged."

911 in Action	**Discussion**
10. Managing the cord: a. If all is well, wait up to 2 minutes to clamp and cut the cord; leaving at least 10cm length *with* the baby. b. Double clamp and cut. c. Collect red blood and cord gasses or clamp another segment of the cord for later collection.	Participant should perform this management with the mannequin. Discuss APGAR scoring.

11. Managing the placenta: a. Wait for spontaneous delivery. b. Never massage the fundus prior to placental delivery. c. Signs of placental separation: 1. Gush of blood. 2. Cord lengthening. 3. Fundus rising in abdomen. 4. Uterus becoming firmer. d. Gentle cord traction with one hand and uterine counter-traction with the other hand. e. Check the placenta for completeness once delivered. f. Keep the placenta until examined by the PCP.	Participant should perform placental management.

The Emergency Medicine physician arrives for active third stage management.

Role playing family member: "I told them to call you when we got here. Where have you been? This is your job, to be here for her!"

Discussion for all participants:

1. What are the increased risks associated with an imminent birth?
    a. Higher risk of postpartum hemorrhage (PPH)
        - Due to this risk, many emergency medicine departments add the dose of IM Pitocin into the protocol for imminent birth.
    b. Atony of the uterus
    c. Lacerations of the genital tract
2. Discuss managing the newborn
    a. Documentation of the Apgar score
    b. Assess the newborn for trauma
    c. Consider child protective services issues
3. What documentation should be included?
    a. Complete the delivery summary
    b. Identify the delivery caregiver
    c. Steps taken to notify the PCP and ED or other providers
    d. Newborn resuscitation and status
4. What communication should be included?
    a. Discuss with the mother and her family
    b. Discuss the events with the PCP
    c. Discuss with hospital administration, depending on the hospital policy
    d. Consult any support services required
    e. Attempt to obtain prenatal records

After the Maternal 911 in Action drill:

1. What will occur next?
2. Discuss the importance of documenting.
    a. Discussion with the patient and/or her family.
    b. 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?

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

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