



Rural ED's What to do with an OB patient

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Support acknowledgement: HRSA State Maternal Health Innovation Program

This program was supported by the Health Resource and Services Administration (HRSA) of the U.S. Department of Health and Human Services (HHS). The contents are those of the author(s) and do not necessarily represent the official views of, nor an endorsement, by HRSA, HHS or the U.S. Government

Disclosures

- ▶ I have no financial disclosures to make
- ▶ I am passionate about providing education and the importance of simulation to ED's in non-birthing hospitals.
- ▶ I could talk for HOURS advocating for rural obstetrical care
- ▶ I talk A LOT and can go down many rabbit holes

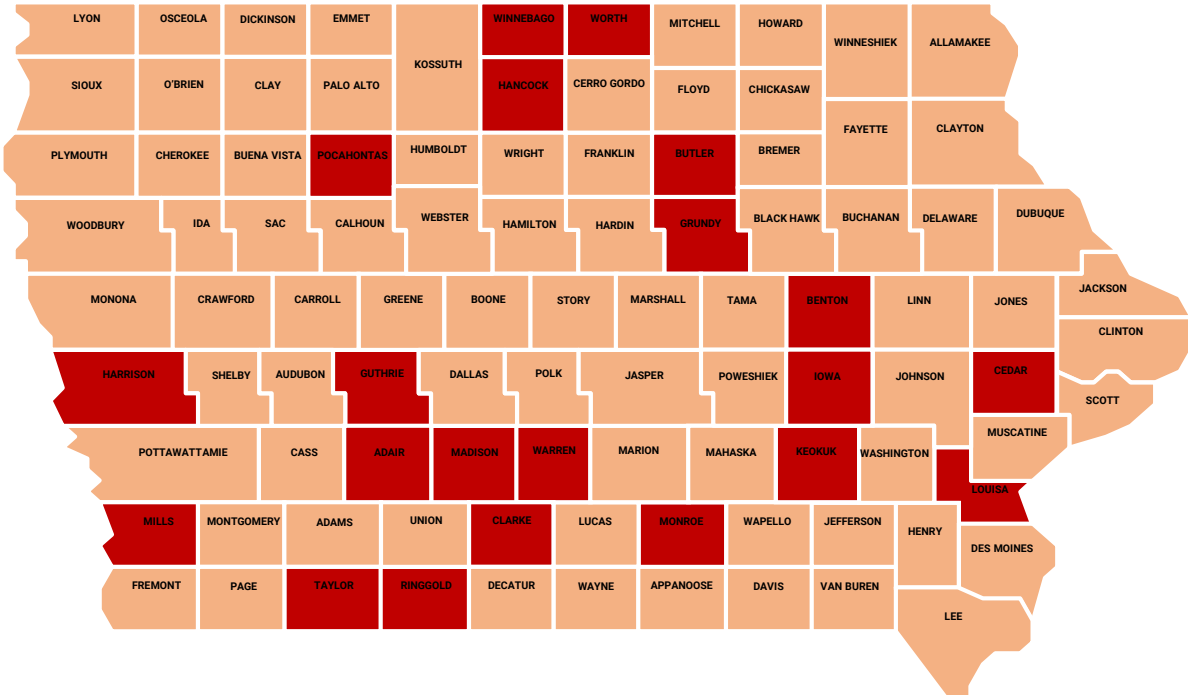
Objectives

- ▶ Participants will be able to recognize the role that didactic and simulation education plays a role in the reduction of maternal mortality and morbidity
- ▶ Describe the importance and value of conducting OB-related simulations and drills with ED Professionals
- ▶ Identify at least 3 suggested obstetric emergency trainings and drills to implement with ED professionals
- ▶ Discuss ways to provide low fidelity simulations to staff in birthing and non birthing facilities



Iowa OB unit closures by county

Iowa OB Units by County 1999



Iowa OB Units by County 2023



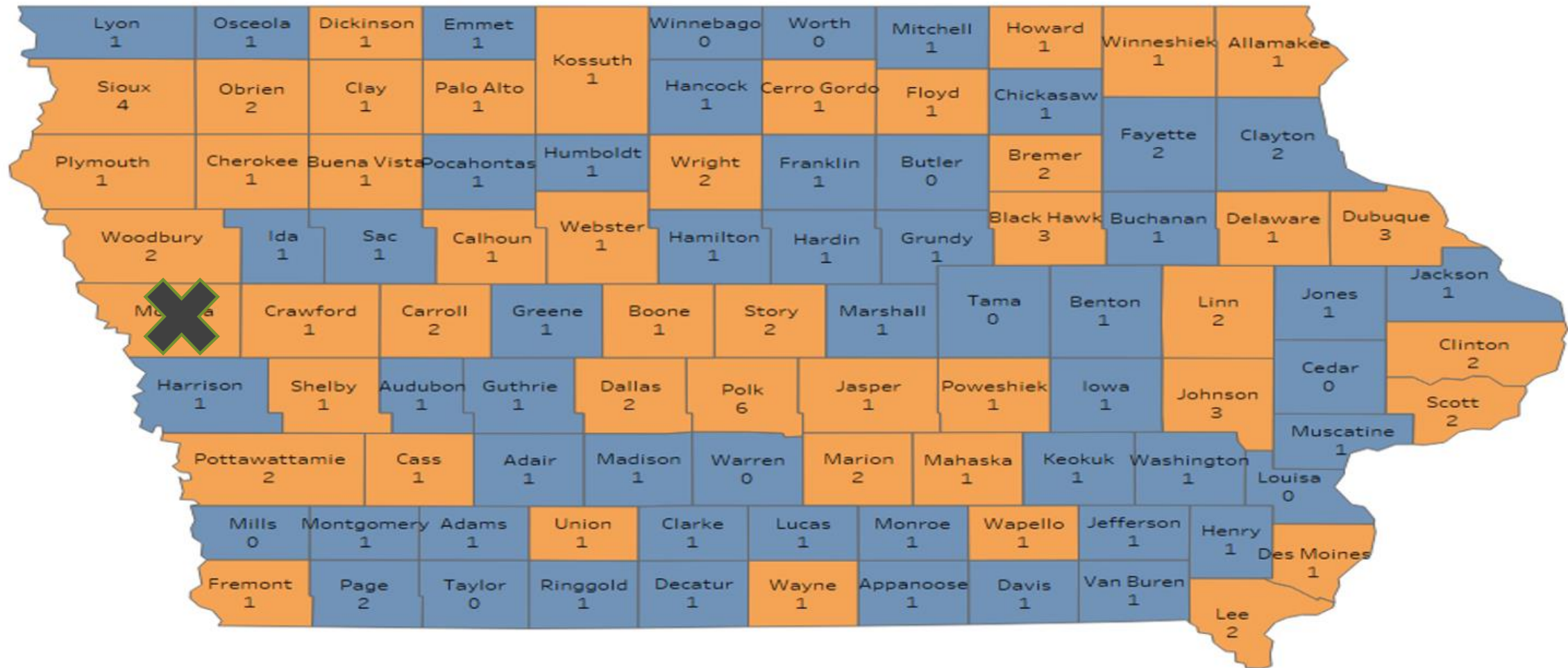
● OB Unit ● No OB Unit

Slide used with permission
Dr Stephen Hunter MD Phd

Where Do I work and Live?



County Level Availability of OB Units in Iowa with Count of Trauma Facilities 11.20.20



© 2020 Mapbox © OpenStreetMap

County Level OB Unit availability 11.20.20

■ No OB Unit ■ Yes OB Unit

Iowa Department of Public Health, Bureaus of Health Statistics and Family Health. Debra J. Kane, PhD, RN

OB's in ED's Without Obstetrics

- ▶ 65% of responding hospitals were located 30 miles or more from a hospital with OB Services
- ▶ 28% reported having emergency room births in the past year
- ▶ 32% Unanticipated adverse birth outcomes
- ▶ 22% delay in urgent transport for a pregnant patient

Kozhimannil KB, Interrante JD, Tuttle MS, Gilbertson M, Wharton KD. Local Capacity for Emergency Births in Rural Hospitals Without Obstetrics Services. J Rural Health. 2021 Mar;37(2):385-393. doi: 10.1111/jrh.12539. Epub 2020 Nov 17. PMID: 33200829.

Why are OB Patients Presenting to ED's

- ▶ Transportation
 - ▶ Lack of money
 - ▶ No one to drive
 - ▶ Shared vehicle
- ▶ Insurance
 - ▶ Underinsured or non insured
- ▶ EMTALA
 - ▶ Guarantees access to EMS services regardless of ability to pay including screening by qualified medical personnel stabilizing treatment without delay and outlines requirements for appropriate transfer
- ▶ Weather
- ▶ Distance to travel between birthing facilities
 - ▶ Prenatal
 - ▶ Postpartum
- ▶ Undocumented
 - ▶ ED providers are integral to the health of this population

Consensus Statement

ENA | 930 E. Woodfield Road, Schaumburg, IL 60173 | 800.900.9659 | ena.org
AWHONN | 1800 M Street, NW, Suite 740S, Washington, DC 20036 | 800.673.8499 | awhonn.org

During pregnancy and the postpartum period, it is common for patients to present to emergency settings for emergent and non-emergent care (Kilfoyle et al., 2017). The overall number of these patients triaged in any setting exceeds the hospital birth volume by 20% to 50% (Association of Women's Health, Obstetric and Neonatal Nurses [AWHONN], 2011). When pregnant or postpartum patients present to emergency settings, risk assessment, evaluation for early warning signs of maternal and fetal compromise, followed by timely communication and coordination with obstetric clinicians are essential.

Scenarios are often enacted in mock drills and simulations to prepare for emergency care of patients. However, obstetric emergencies, such as ectopic pregnancy, precipitous birth, postpartum hemorrhage, hypertensive crisis, postpartum depression/psychosis, cardiac arrest, and resuscitative hysterotomy are rarely rehearsed and can create unsafe and/or chaotic care. Conditions of pregnancy and the postpartum period that can be managed in emergency settings should be planned and practiced.

12. Emergency facilities maintain immediate access to equipment, supplies, and medications necessary to properly assist with precipitous birth, resuscitative hysterotomy, and postpartum complications.

13. Responses to obstetric emergencies are practiced and rehearsed by interprofessional teams in the emergency setting.

Care of a pregnant or postpartum patient necessitates specialized education, training, and competencies that are not routinely acquired by emergency nurses.

READINESS

Every Care Setting

- Develop processes for management of pregnant and postpartum patients with severe hypertension, including:
 - A standard protocol for maternal early warning signs, diagnostic criteria, monitoring and treatment of severe preeclampsia/eclampsia (including order sets and algorithms)
 - A process for the timely triage and evaluation of pregnant and postpartum patients with severe hypertension or related symptoms
 - A system plan for escalation, obtaining appropriate consultation, and maternal transfer as needed
- Ensure rapid access to medications used for severe hypertension/eclampsia with a brief guide for administration and dosage in all areas where patients may be treated.
- Conduct interprofessional and interdepartmental team-based drills with timely debriefs that include the use of simulated patients.
- Develop and maintain a set of referral resources and

RECOGNITION & PREVENTION

Every Patient

- Assess and document if a patient presenting is pregnant or has been pregnant within the past year in all care settings.
- Ensure accurate measurement and assessment of blood pressure for every pregnant and postpartum patient.
- Screen for structural and social drivers of health that might impact clinical recommendations or treatment plans and provide linkage to resources that align with the pregnant or postpartum person's health literacy, cultural needs, and language proficiency.
- Provide ongoing education to all patients on the signs and symptoms of hypertension and preeclampsia and empower them to seek care.
- Provide ongoing education to all health care team members on the recognition of signs, symptoms, and treatment of severe hypertension





Improving Health Response to Hypertensive Disorders of Pregnancy

A CMQCC Quality Improvement Toolkit

Focus on Delayed Postpartum Preeclampsia and Eclampsia in the Emergency Department

Key Principles

1. The most important first step when women present to the emergency department (ED) is to **identify whether they are or have been pregnant in the last 6 weeks**. If yes, assess immediately. Emergency department personnel should be familiar with the risk factors and signs and symptoms of postpartum preeclampsia and eclampsia. Delayed or new-onset disease can occur in women with seemingly normal BP on arrival. Identify significant symptoms which indicate preeclampsia for early intervention and treatment, and to prevent eclampsia.
2. The critical or “trigger” blood pressure (BP) in pregnancy and postpartum is ≥ 160 mm Hg systolic or ≥ 110 mm Hg diastolic. These values are typically lower than values used for hypertensive emergencies in non-obstetric patients.

Among women who died from pregnancy-related causes, two-thirds received care in an ED at some time in the prenatal or postpartum period, with nearly 40% having more than two visits to the ED.²

SAVE YOUR LIFE:

Get Care for These POST-BIRTH Warning Signs

Most women who give birth have no health problems. But any woman can have complications after giving birth. Learning to recognize these POST-BIRTH warning signs and knowing what to do can save your life.

POST-BIRTH WARNING SIGNS

<p>Call 911 if you have:</p> <ul style="list-style-type: none"> <input type="checkbox"/> Pain in chest <input type="checkbox"/> Obstructed breathing or shortness of breath <input type="checkbox"/> Seizures <input type="checkbox"/> Thoughts of hurting yourself or someone else 	<p>Call your healthcare provider if you have:</p> <p>(If you can't reach your healthcare provider, call 911 or go to an emergency room)</p> <ul style="list-style-type: none"> <input type="checkbox"/> Bleeding, soaking through one pad/hour, or blood clots, the size of an egg or bigger <input type="checkbox"/> Incision that is not healing <input type="checkbox"/> Red or swollen leg, that is painful or warm to touch <input type="checkbox"/> Temperature of 100.4°F or higher <input type="checkbox"/> Headache that does not get better, even after taking medicine, or bad headache with vision changes
--	--

Types your symptoms. (If you can't reach your healthcare provider, call 911 or go to an emergency room)

Tell 911 or your healthcare provider:

"I gave birth on _____ and
I am having _____"

These post-birth warning signs can become life-threatening if you don't receive medical care right away because:

- Pain in chest, obstructed breathing or shortness of breath (could indicate your heart) may mean you have a blood clot in your lung or a heart problem
- Seizures may mean you have a condition called eclampsia
- Thoughts or feelings of wanting to hurt yourself or someone else may mean you have postpartum depression
- Bleeding (heavy), soaking more than one pad in an hour or passing an egg-sized clot or bigger may mean you have an excessive blood loss
- Incision that is not healing, increased redness or any pus (from epidural or C-section site) may mean you have an infection
- Redness, swelling, warmth, or pain in the calf area of your leg may mean you have a blood clot
- Temperature of 100.4°F or higher, bad swelling, vaginal blood or discharge may mean you have an infection
- Headache (very painful), vision changes, or pain in the upper right area of your belly may mean you have high blood pressure or preeclampsia

GET HELP

My Healthcare Provider/Clinic: _____ Phone Number: _____
Hospital/Clinic To Me: _____



This program is supported by funding from AWHONN. Through these partnerships, the company's or your institution's name is included on the materials to ensure they are given the credit for their contribution to the program.

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WARNING SIGNS



pbwssylhandoutenglish.pdf (awhonn.org)

Award of
HRSA
Grant
Sept. 2019

Simulation
Team
Formed
Aug 2020

First ED Didactic &
Train the Trainer
4/2021

First ED
Simulation
Visit April
2022

**Covid
Shut
Down
March
2020**

ED Project
Formed
10/2020

First
Virtual
Simulation
Training
Jan 2022

First
Simulation
Training
Site Visit
6/2022



Iowa Obstetrical Mobile Simulation Unit

- ▶ Rural Non Birthing ED's
 - ▶ Virtual didactics related to OB simulation visits
 - ▶ Skill sessions related to simulations
 - ▶ In-situ simulation with recording
 - ▶ Video debriefing
 - ▶ Resources
- ▶ Simulations
 - ▶ Precipitous Delivery
 - ▶ PPH
 - ▶ PP Hypertension/Preeclampsia/Eclampsia

Choice of Simulations

- ▶ Many Different responses from the needs assessment
- ▶ Looked at Iowa Maternal Mortality and Morbidity Review Committee reports
- ▶ Personal experiences with misdiagnosis in ED's
- ▶ Very little paid to the postpartum patient

Question: What part of the OB patient walking into your ED is the most daunting, scary or unsettling for you and your team?

What about the Postpartum Patient?!



2021 Maternal Mortality Review Committee (MMRC)

- ▶ Pregnancy Related:
 - ▶ Eclampsia - leading cause
 - ▶ Post Partum Hemorrhage
 - ▶ Suicide
- ▶ Timing of Deaths
 - ▶ None of the pregnancy-related deaths occurred during pregnancy
 - ▶ 75% were within 42 days of the end of the pregnancy
 - ▶ 25% within 43 Days to 1 year of the end of the pregnancy
- ▶ Race/Ethnicity
 - ▶ 50% Non-Hispanic white
 - ▶ 50% Ethnicity Hispanic (race not identified)
- ▶ Committee determined that 100% WERE PREVENTABLE

Who Makes up our Team

- ▶ Dr Stephen Hunter MD PhD
 - ▶ MFM at the U of I
 - ▶ Co-Director of the Iowa Statewide Perinatal Group
 - ▶ PI of our Grant
- ▶ Dr. Kokila Thenuwara - MBBS, MD,MME, MHCDS
 - ▶ Obstetric Anesthesiologist
 - ▶ Lead Faculty Team Simulation Design and Debriefing course at the U of I
- ▶ Dr Jeff Quinlan MD, FAAFP
 - ▶ Chair and DEO Department of Family Medicine U of I
- ▶ Jeana Forman MSN, RNC-OB C-EFM, C-FMC
 - ▶ Inpatient OB Nursing Practice Leader - U of I
- ▶ Jill Henkle BSN, RNC-OB, C-EFM
 - ▶ Rural Critical Access Nurse
- ▶ Kristal Graves DNP, MSN, RNC-EFM
 - ▶ Clinical Nurse Improvement Coach AIM/IMQCC
- ▶ Amanda Staab MSN, RNC-OB
 - ▶ Clinical Nurse Improvement Coach, AIM/IMQCC



What does a
Simulation
Visit Look
Like?

Introduction Call



MEET WITH
MANAGERS/EDUCATORS/DIRECTORS/ANYONE THAT IS
INTERESTED



BRIEF
INFORMATIONAL PPT
PRESENTATION



ANY QUESTIONS
FROM FACILITY

Informational Call

- ▶ Get to know more about facility
- ▶ Hospital based EMS
- ▶ Volunteer EMS
- ▶ Provider make -up
- ▶ Supplies Sim Team vs Facility
- ▶ Discuss Agenda



Informational Call

- ▶ Virtual calls prior to visit
- ▶ 1- or 2-days training available
- ▶ Agendas - what works best for facility, staff and needs
- ▶ Review policies/SOP/management plans
- ▶ Delivery kits/carts/drawers
- ▶ What medications do they have available
 - ▶ Management after delivery
 - ▶ PPH
 - ▶ Hypertension
- ▶ Transfers to birthing hospitals
- ▶ Special education requests

Simulation Day

Skills stations

<i>Skill Station: Vaginal Delivery</i>	Vaginal Delivery & PPH
<i>Skill Station: PPH</i>	
<i>Skill Station: HA and HTN management</i>	HA & HTN Management with Eclampsia
<i>Skill Station: Eclamptic seizure</i>	

Agenda:

Time	Session Details
9:30-10:30 AM	Set up
10:30-11:30 AM	De-bug with local facilitators
11:30-12:00 PM	Lunch
12:00-3:00 PM	Skills station Simulation and debrief
3:00-3:15 PM	Break
3:15-6:15 PM	Skills station Simulation and debrief
6:15-6:30 PM	Wrap up, tear down



- Skills
- Precipitous Delivery
- Post Partum Hemorrhage
- Skills
- PP Hypertension, Preeclampsia, Eclampsia

Touch Base Virtual Call

- ▶ One to two weeks prior to visit
 - ▶ What medications do you have - review
 - ▶ Any Policy and Procedures - review
- ▶ Any other people that need to be included
- ▶ Our travel team that will attend
- ▶ Final preparations
- ▶ Finalize agenda (if needed)
- ▶ Logistics
 - ▶ Where to arrive





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[ER OB Simulation Didactic Calls](#)

Improving the quality
healthcare and com
improvement initiativ

ans by partnering with
-informed quality

Simulation Day

- ▶ Simulation Team provides:
 - ▶ Simulation Meds (specific to facility)
 - ▶ Moulage
 - ▶ Simulators
 - ▶ Weighted Chux
 - ▶ Video Equipment
 - ▶ Bakri® Balloon
 - ▶ Prebriefing
 - ▶ Facilitation of Simulation
 - ▶ Debriefing with video

Facilities provide:

- ▶ ED Equipment (things specific to facility)
 - ▶ IV Pumps/tubing
 - ▶ Delivery Kits
 - ▶ Bed/gurney
 - ▶ Infant warmer
 - ▶ IV start kits
- ▶ Skills/Debriefing Room



Montgomery County Memorial Hospital
Medical Campus



Simulators



Learners

- ▶ Groups of 4-6 (what is realistic in facility)
 - ▶ Anyone that might take care of an OB patient
 - ▶ ED Staff
 - ▶ Non-ED Staff
 - ▶ Providers - all levels
 - ▶ Techs
 - ▶ EMS - all levels



Debriefing



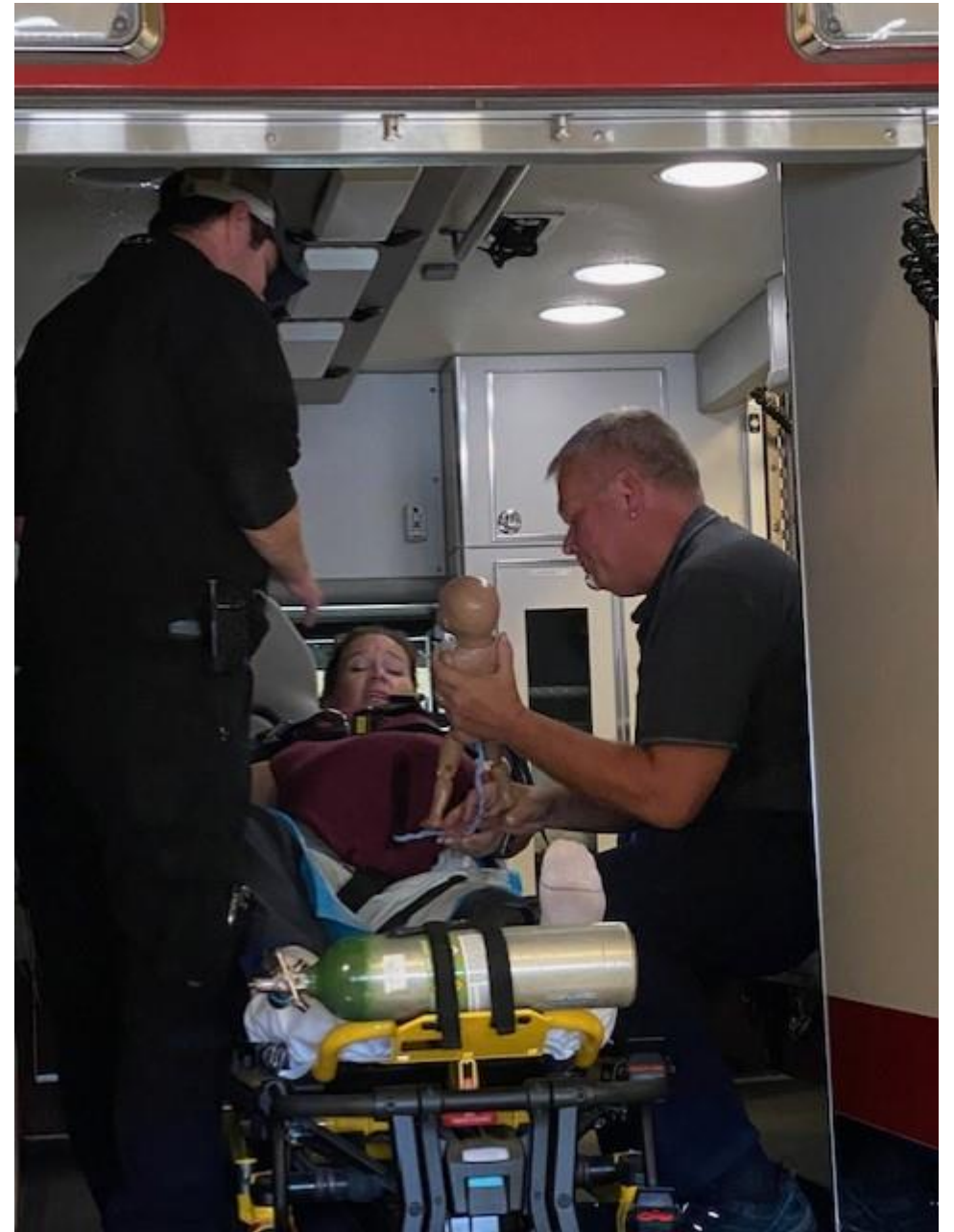
VIDEO RECORDED



**VIDEO USED IN
DEBRIEFING**



**DELETED AFTER
DEBRIEFING**



Wrap-Up



RESOURCES



CHECKLISTS



FOLLOW-UP



**CONTINUED
SUPPORT**



Tell us if you
ARE PREGNANT *or*
HAVE BEEN PREGNANT
within the past 6 weeks



Come to the front of the line if you have:

- ▶ Persistent headache
- ▶ Visual change (floaters, spots)
- ▶ History of preeclampsia
- ▶ Shortness of breath
- ▶ History of high blood pressure
- ▶ Chest pain
- ▶ Heavy bleeding
- ▶ Weakness
- ▶ Severe abdominal pain
- ▶ Confusion
- ▶ Seizures
- ▶ Fevers or chills
- ▶ Swelling in hands or face



Díganos si usted
ESTÁ o HA ESTADO
EMBARAZADA *en las*
últimas 6 semanas.



Pase al frente de la fila si tiene algo de lo siguiente:

- ▶ Dolores de cabeza continuos
- ▶ Alteraciones en la vista (manchas, puntitos negros que parecen flotar ante los ojos)
- ▶ Antecedentes de preeclampsia
- ▶ Dificultades para respirar
- ▶ Antecedentes de presión arterial alta
- ▶ Dolores en el pecho
- ▶ Sangrado intenso
- ▶ Debilidad
- ▶ Dolores abdominales fuertes
- ▶ Desorientación
- ▶ Convulsiones
- ▶ Fiebre o escalofríos
- ▶ Hinchazón de la cara o las manos

Improving Health Care Response to Obstetric Hemorrhage, a CMQCC Quality Improvement Toolkit, 2022
Translation provided by Stanford Children's Health, 2022

Pregnant now or within the last year?

Get medical care right away if you experience any of the following symptoms:



Headache that won't go away or gets worse over time



Dizziness or fainting



Changes in your vision



Fever of 100.4 °F or higher



Extreme swelling of your hands or face



Thoughts of harming yourself or your baby



Trouble breathing



Chest pain or fast beating heart



Severe nausea and throwing up



Severe belly pain that doesn't go away



Baby's movement stopping or slowing during pregnancy



Severe swelling, redness or pain of your leg or arm



Vaginal bleeding or fluid leaking during pregnancy



Heavy vaginal bleeding or discharge after pregnancy



Overwhelming tiredness

These could be signs of very serious complications. If you can't reach a healthcare provider, go to the emergency room. Be sure to tell them you are pregnant or were pregnant within the last year.

Learn more at www.cdc.gov/HearHer



HEAR
HEAR HER CONCERNS

This list of urgent maternal warning signs was developed by the Council on Patient Safety in Women's Health Care.

URGENT MATERNAL WARNING SIGNS



Headache that won't go away or gets worse over time



Dizziness or fainting



Thoughts about hurting yourself or your baby



Changes in your vision



Fever



Trouble breathing



Chest pain or fast-beating heart



Severe belly pain that doesn't go away



Severe nausea and throwing up (not like morning sickness)



Baby's movements stopping or slowing



Vaginal bleeding or fluid leaking during pregnancy



Vaginal bleeding or fluid leaking after pregnancy



Swelling, redness, or pain of your leg



Extreme swelling of your hands or face



Overwhelming tiredness

If you have any of these symptoms during or after pregnancy, contact your health care provider and get help right away.

If you can't reach your provider, go to the emergency room. Remember to say that you're pregnant or have been pregnant within the last year.

Learn more: <https://saferbirth.org/aim-resources/aim-cornerstones/urgent-maternal-warning-signs/>



Take a photo to learn more

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V5 September 2022



Medications

- ▶ Recommended Medications
- ▶ Algorithms for Medications
- ▶ Dosages for Medications



References

- ▶ [Iowa wins major federal grant to improve maternal health care | Carver College of Medicine \(uiowa.edu\)](#)
- ▶ [Maternity Care Deserts Report | March of Dimes](#)
- ▶ [ENA-AWHONN-Consensus-Statement-Final-11.18.2020.pdf](#)
- ▶ [Improving Health Care Response to Hypertensive Disorders of Pregnancy | California Maternal Quality Care Collaborative \(cmqcc.org\)](#)
- ▶ [Maternal deaths and mortality rates by state, 2018-2021 \(cdc.gov\)](#)
- ▶ [Iowa Department of Health and Human Services - Bureau of Family Health. Access to Obstetrical Care in Iowa: A Report to the Iowa State Legislature - Calendar Year 2021. Des Moines: Iowa Department of Health and Human Services 2023 .](#)
- ▶ Forman J, Henkle J. Obstetrical Readiness: Preparing Rural Emergency Departments Without Hospital-Based Obstetrical Services. Clin Obstet Gynecol. 2022 Dec 1;65(4):829-838. doi: 10.1097/GRF.0000000000000749. Epub 2022 Sep 27. PMID: 36162083.

How Can YOU Provide Education to Rural ED's?



High Reliability NOT
learned



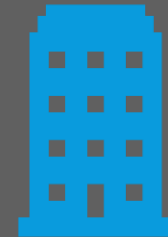
VERY LOW FIDELITY



Local Dollar Store



Local Big Box Store



What do I already
have available?

EXPERIENTIAL LEARNING



THE IDEAL PROCESS OF
LEARNING



LEARNING THROUGH
EXPERIENCE



LEARNING THROUGH
REFLECTION ON DOING

TEACHING VS LEARNING

- Cognitive Skills
 - Memory – allows us to store information and access it for later retrieval
 - Attention – allows us to focus on certain aspects of a situation
 - Planning – anticipates the future, designing strategies
- Technical Skills
 - Knowledge and abilities to perform specific task that require specialized or qualified expertise
- Behavioral Skills
 - How we use cognitive and technical skills – communication

SCENERIO

- What is the goal
- Facility specific
- Suspend disbelief
- Bedside Handoff

PATIENT

- SP – Standardized Patient
 - Interaction
- CPR Torso
 - Baby Monitor
 - Voice from behind curtain
- CPR Mannequin
- Scripting
- Support Person

ROOM

- Set room up like it would be normally
- Supplies where normally are
- Resources where they normally are
 - Checklists
 - Management Plans
- Procedures to get extra help

TASKS AND TIME

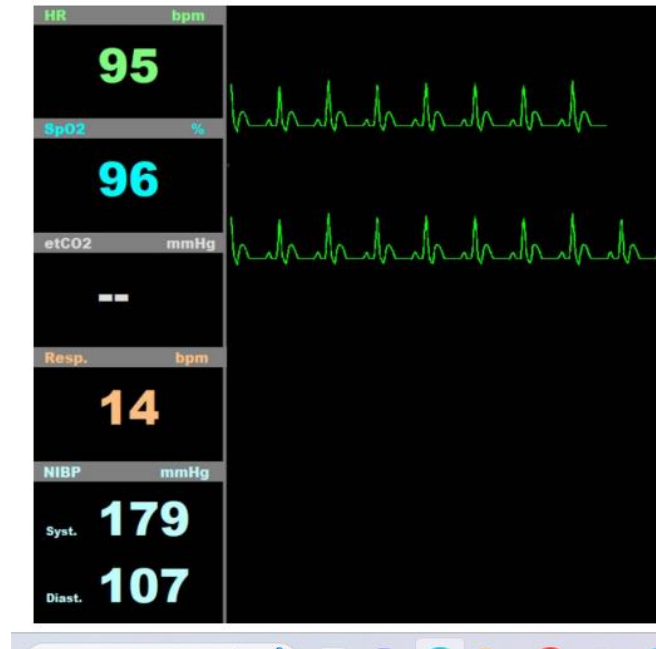
- Real time vs warp time
- Time keeper
- Real time for tasks to be done
 - If IV needs to be started – go through process
 - If meds need to be pulled – pull in real time and same process
- Response time
 - Provider arrival
 - CRNA
- Lab/Blood

USE EQUIPMENT STAFF IS USED TO



VITAL SIGNS

- Index Cards
- Laminated Cards
- Laminated Sheets
- Attach with Velcro
- Attach with rings to flip
- PPT Slides
- Put where staff would normally expect to find VS



Heart Rate	125
O2 Sat	96
Resp	20
Blood Pressure	90/65

CPR TORSO



SIMULATED FUNDUS







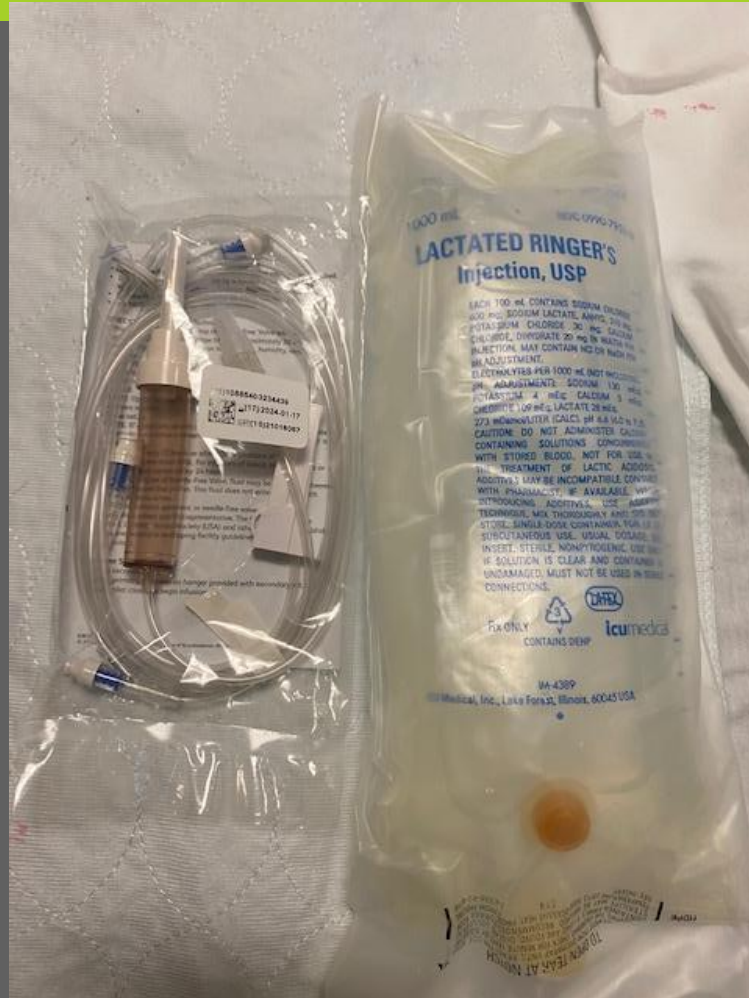
ITEMS USED TO
SIMULATE BLOOD
AND BLOOD LOSS



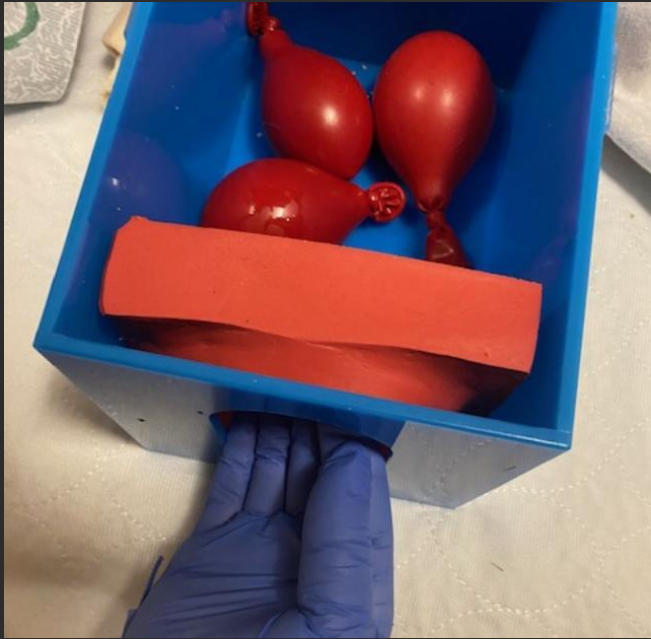


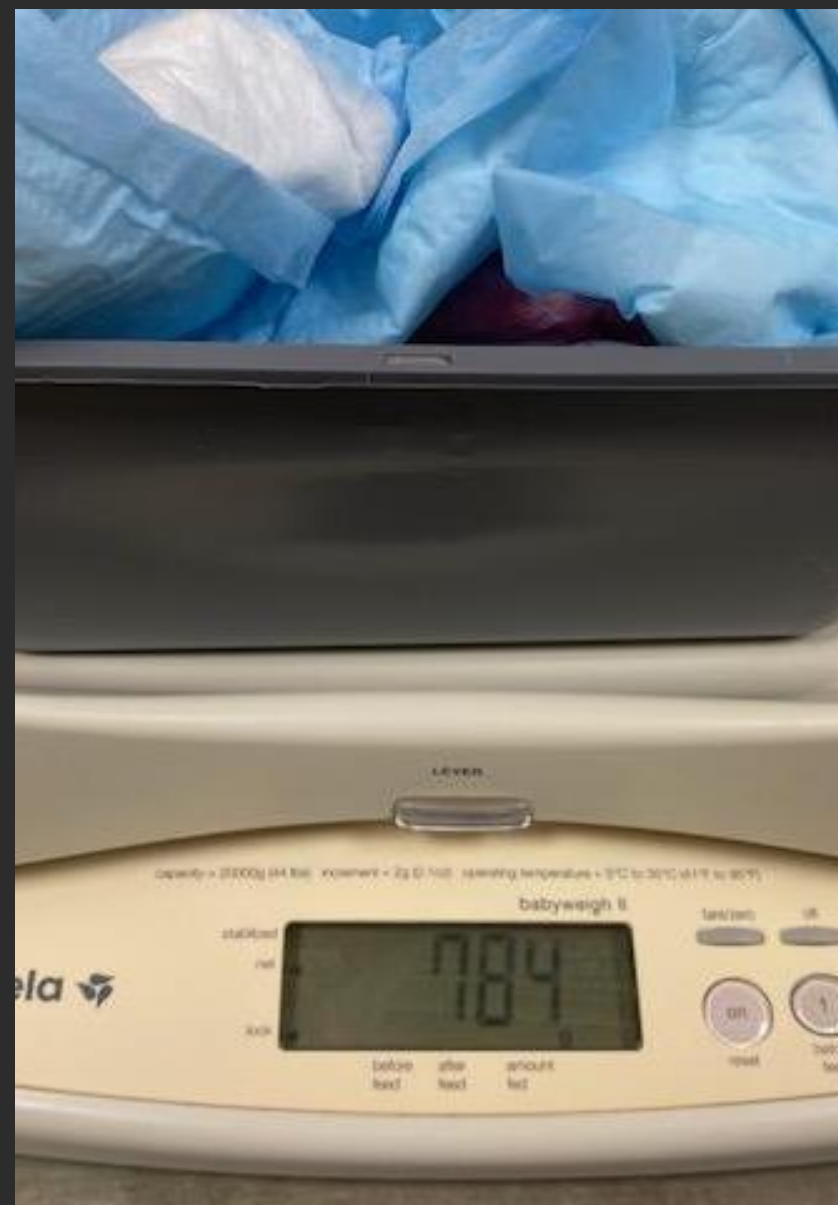
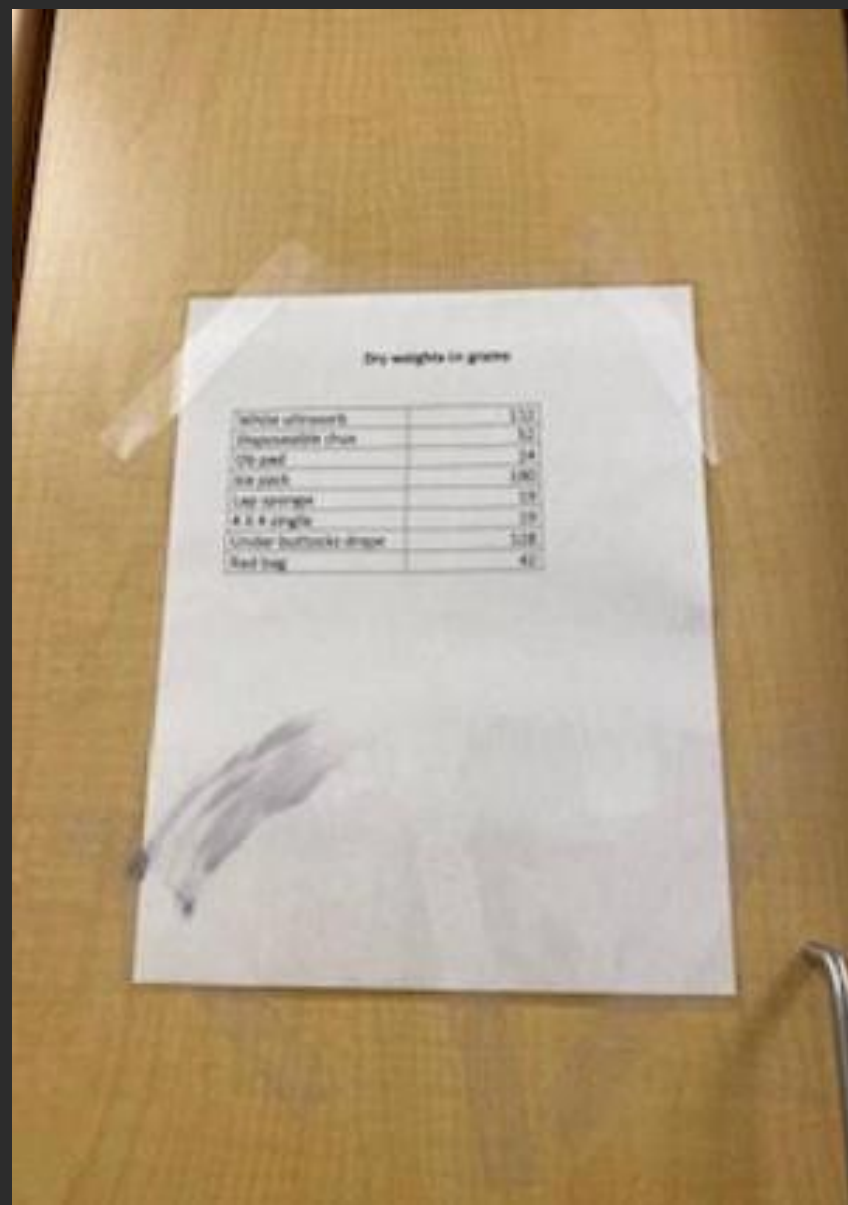


SIMULATION CONTINUAL BLOOD FLOW



- Fill fluid with red fluid
- Use rapid flow tubing
- But under gown/beside patient
- Control bleeding with clamp



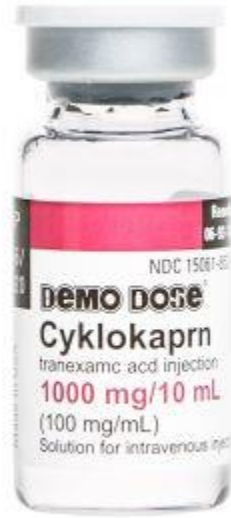




Idea from Jeana Forman

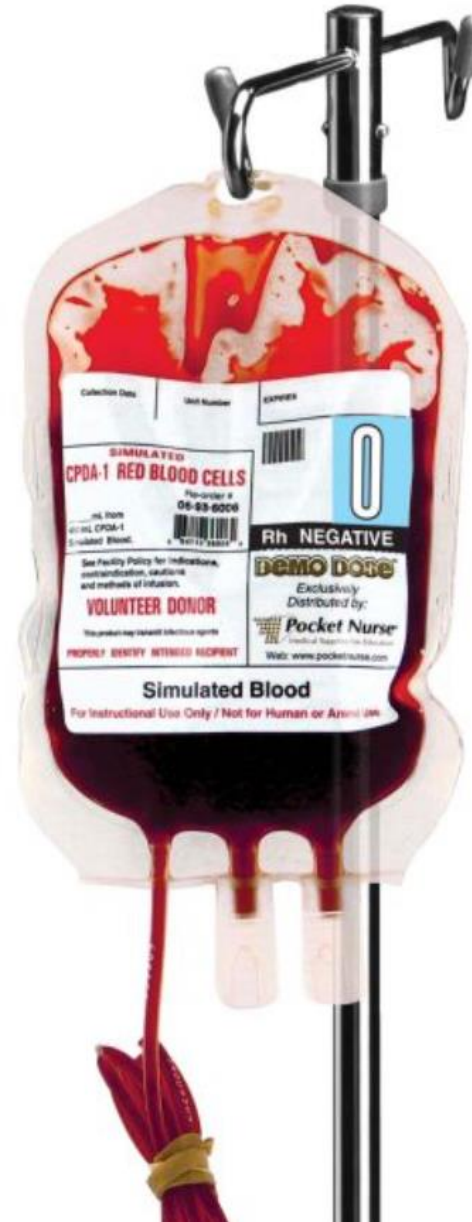


Idea from Jeana Forman



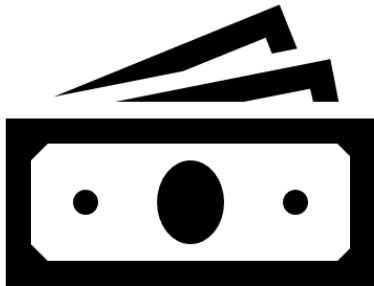
BLOOD PRODUCTS

- [Visual-Aids.pdf \(saferbirth.org\)](#)
- [SUPVOX 10PCS Halloween Decorations Blood Bag, Party Drink Blood Bags IV Bags for Halloween Zombie Party Favors with Clips Syringe and Sticker \(amazon.com\)](#)
- [Demo Dose | Pocket Nurse®](#)



THE DRINK CAN BE INJECTED WITH A SYRINGE





FINAL COST

- Approx 26\$
- Had some stuff on hand
- Used the outdate box at the hospital
- Can reuse some of the items I had to buy and did not use all of supplies

CONCLUSION

- Simulation can be a fun learning experience
- Get creative
- Use your resources
- Have fun
- Share ideas
- Make it happen



153240658

- Leon to Des Moines = 70 miles
- Lamoni to Leon = 16 miles
- Corydon to Leon = 23 miles

Lamoni woman shares twins' birth story during Des Moines Storytellers (desmoinesregister.com)

RESOURCES

- [FINAL_AIM_ObstetricInSituDrill-ProgramManual.pdf \(saferbirth.org\)](#)
- [AWHONN- Association of Women's Health, Obstetric and Neonatal Nurses - AWHONN](#)
- [MHLIC Obstetric Simulation Train the Trainer - Maternal Health Learning and Innovation Center](#)
- [Simulation Materials | Iowa State University Extension and Outreach Iowa Maternal Quality Care Collaborative \(imqcc.org\)](#)
- [A Blueprint for Medium-Fidelity Postpartum Hemorrhage Simulations \(nwhjournal.org\)](#)
- [HEMToolkit_03252022 Errata 7.2022 \(2\).pdf \(cmqcc.org\)](#)

The background features abstract, overlapping green geometric shapes, primarily triangles and polygons, in various shades of green, creating a modern, layered effect on the right side of the slide.

Questions?

Thank You !