

Enhancing Maternal
Emergency
Preparedness:
Evaluating a Train-the-
Trainer Model for
Obstetric Life Support in
Arizona

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Disclosures



- Principal Investigator
 - R18HS026169: Advances in Patient Safety through Simulation Research grant
 - 1R18HS029639-01: Adaptation of an Evidence-Based Curriculum to Teach the Prevention, Evaluation and Treatment of Maternal Medical Emergencies for Pre-hospital & Hospital Healthcare Workers in Rural Context
 - 1R18HS029814-01: Implementation of a Maternal Resuscitation Curriculum in a Regionalized Perinatal Health System: Maximizing the Chain of Survival to Reduce Maternal Health Inequities
- Member, Varda5, LLC, owns exclusive sublicense for OBLS

Learning Objectives

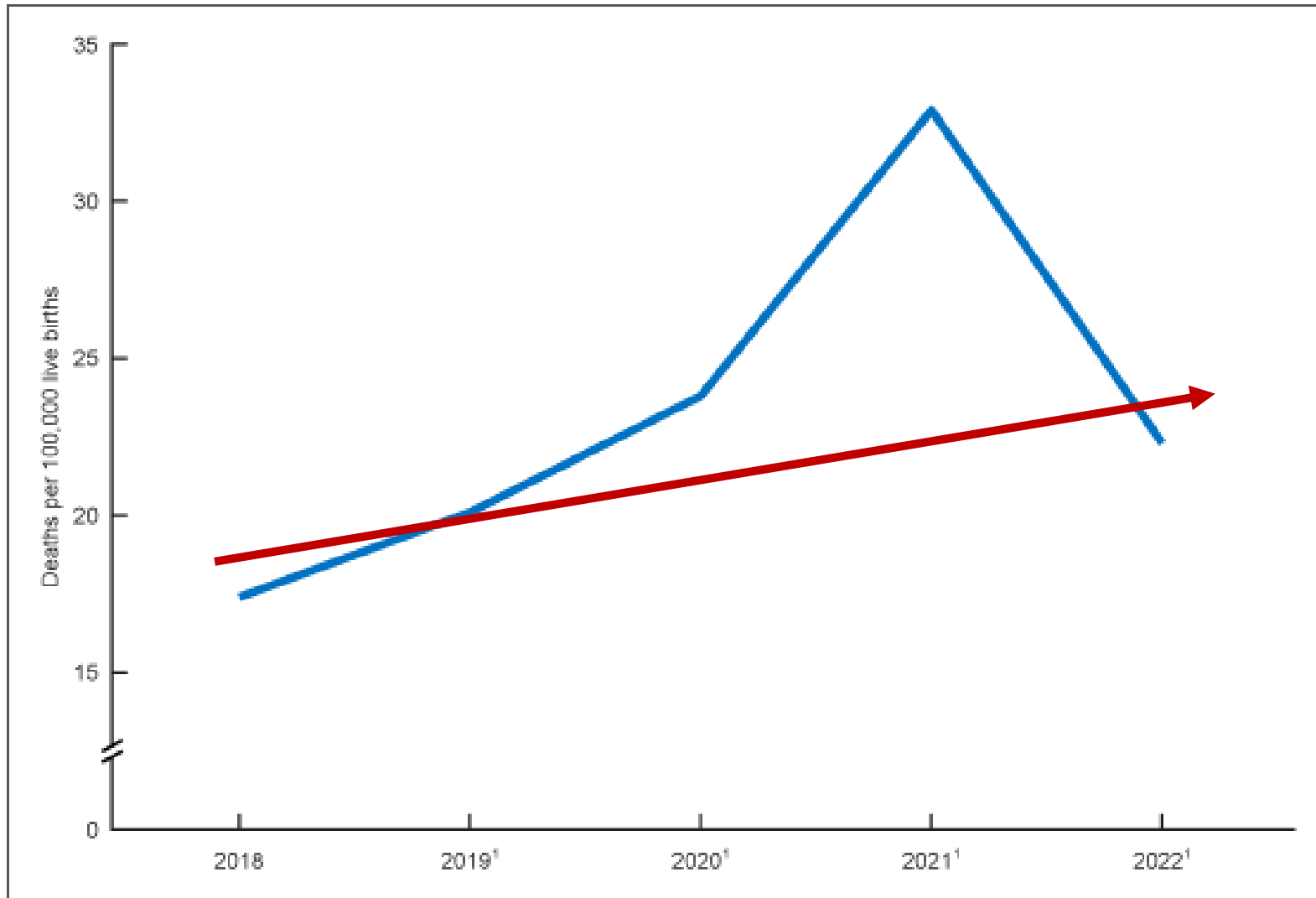


1. Describe disparities in maternal mortality and morbidity, particularly in rural and underserved settings.
2. Explain how OLS simulation-based training enhances maternal emergency response and contributes to reducing health inequities.
3. Discuss preliminary findings and lessons learned from evaluating a train-the-trainer approach to OLS implementation across diverse health care settings in Arizona.

How Big is the Problem?



Maternal Mortality Rates 2018 - 2022





The U.S. Has the Highest MMR of Industrialized Nations

Maternal Mortality in the U.S. Far Outstrips That of Other Industrialized Nations



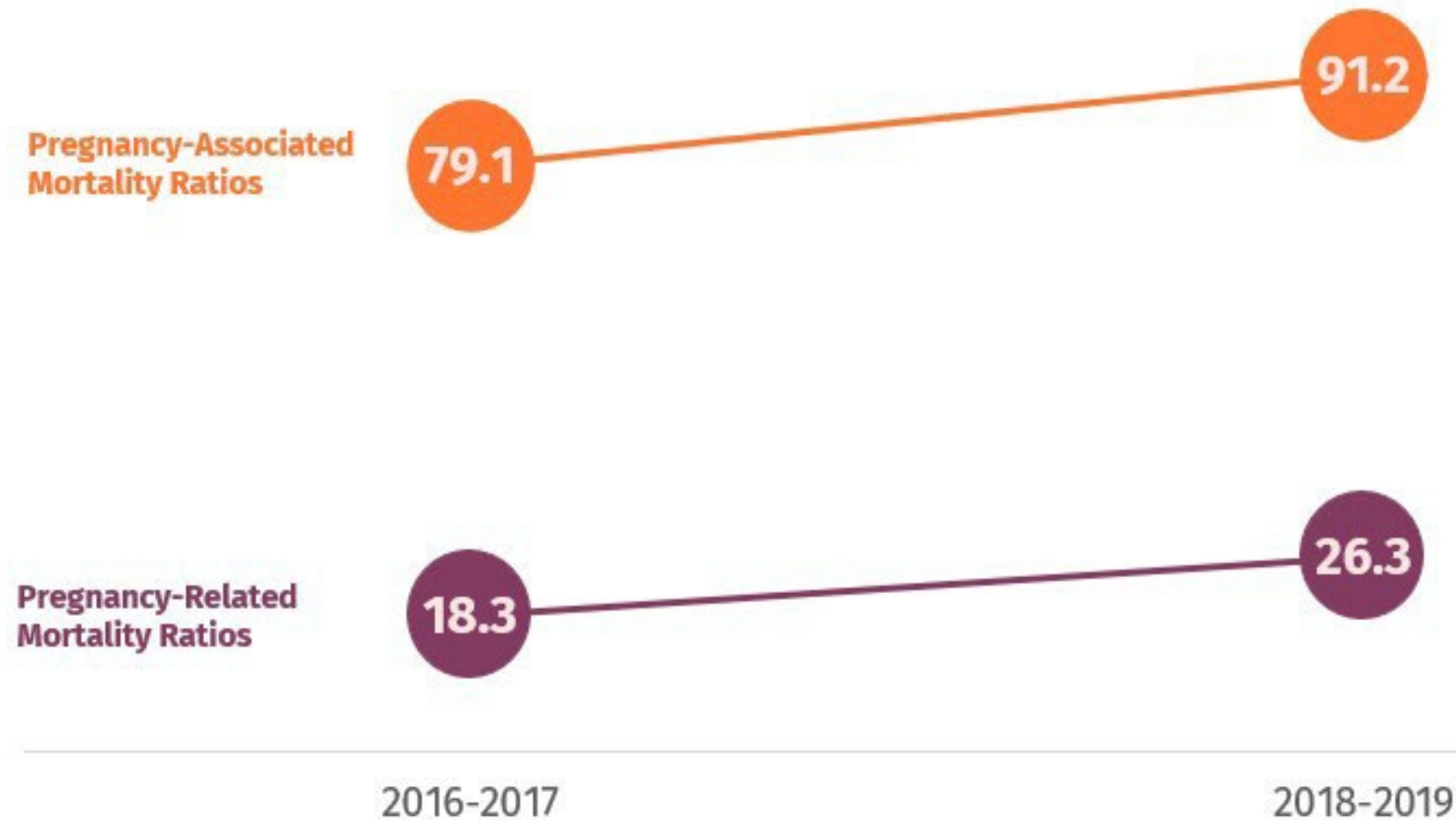
*Deaths per 100,000 live births

Source: <https://www.cdc.gov/nchs/data/hestat/maternal-mortality/2020/maternal-mortality-rates-2020.htm>

Arizona Maternal Mortality 2016-2017 vs 2018-2019

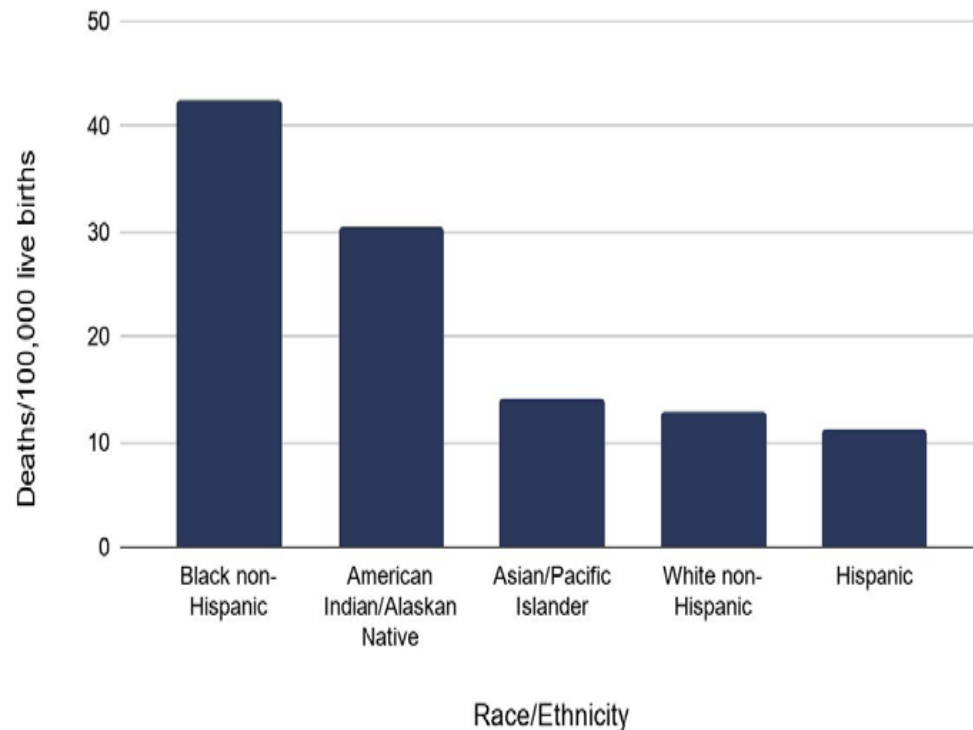


2-year Mortality Ratios per 100,000 live births (15-49 years of age)

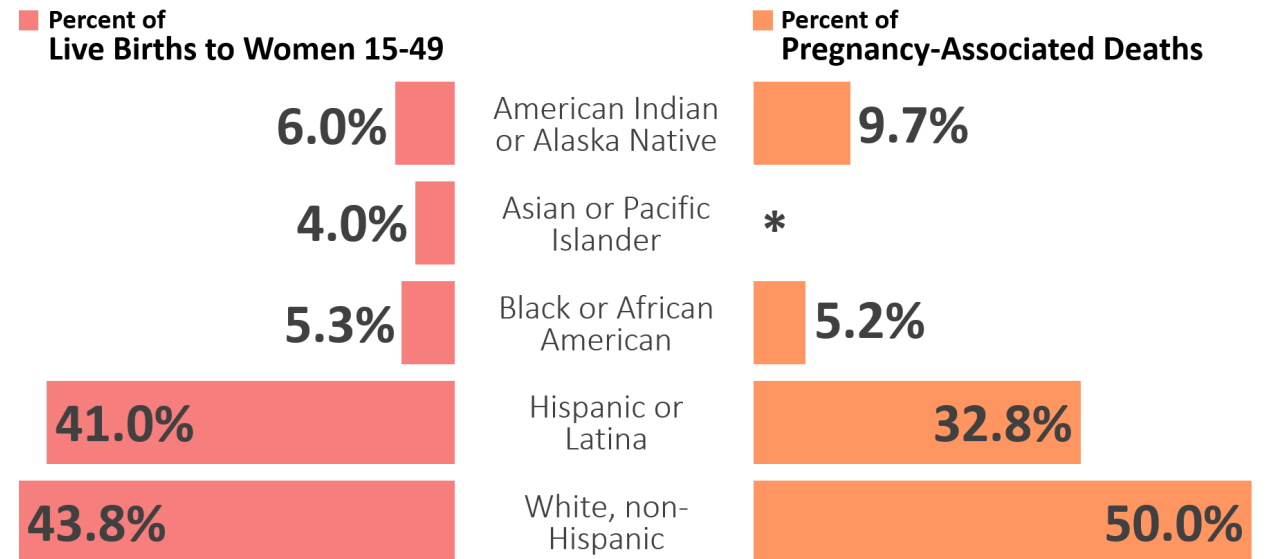


Persons of Color are the Most Impacted

United States

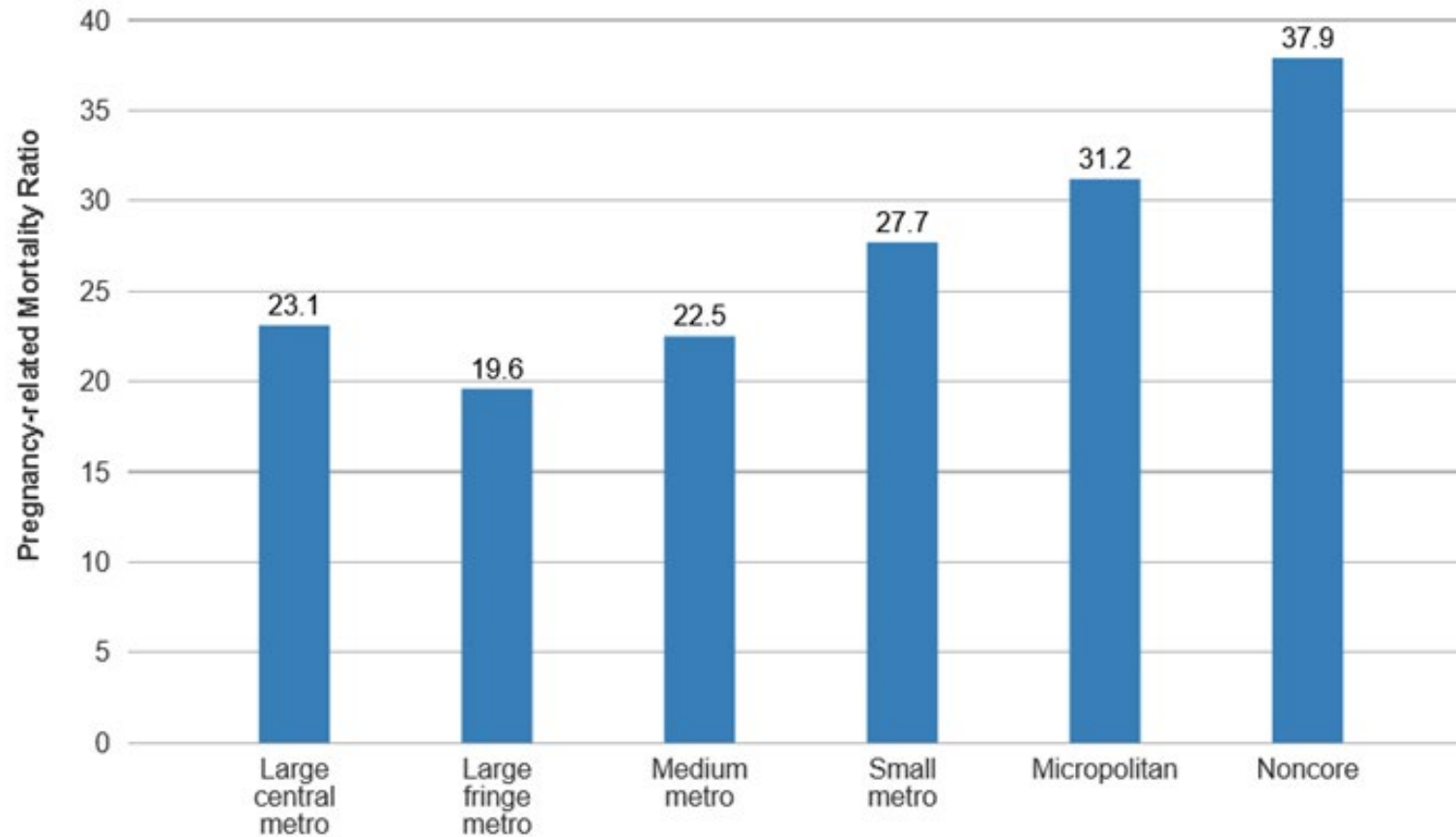


Arizona



* Suppressed value < 6

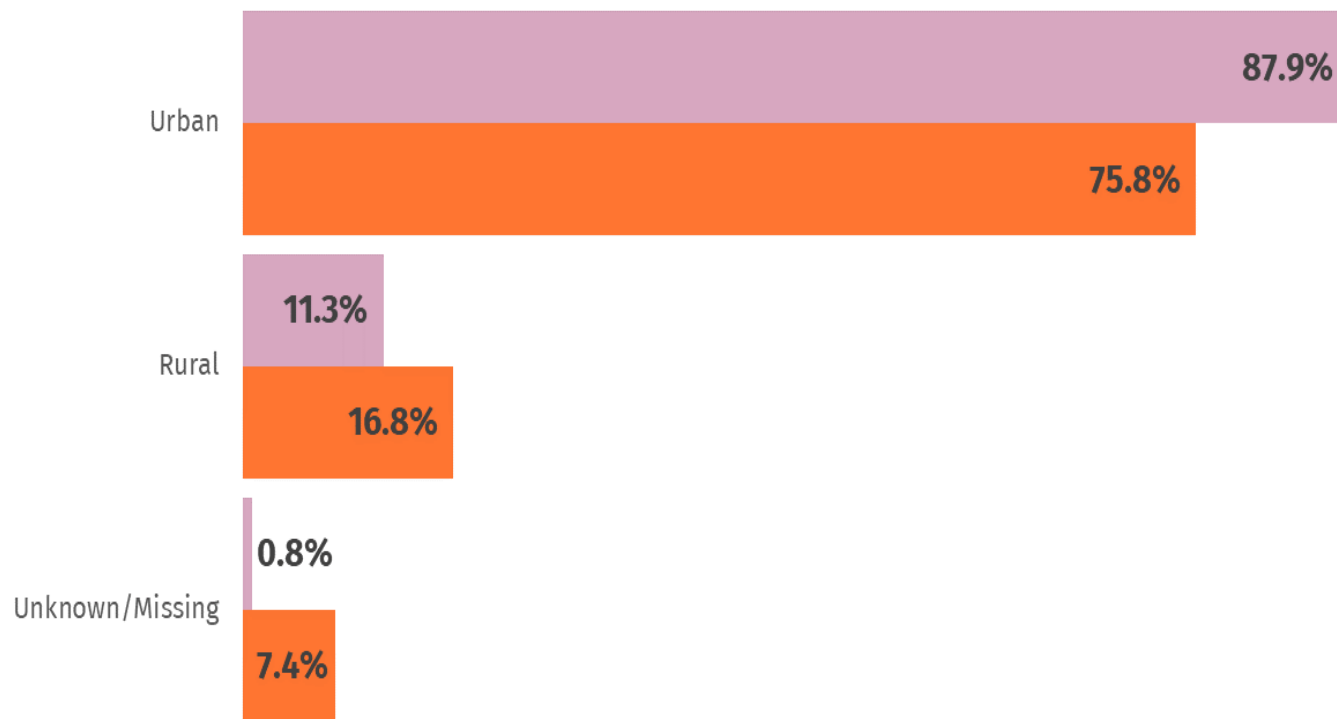
Pregnancy-related deaths by urban-rural classification 2020



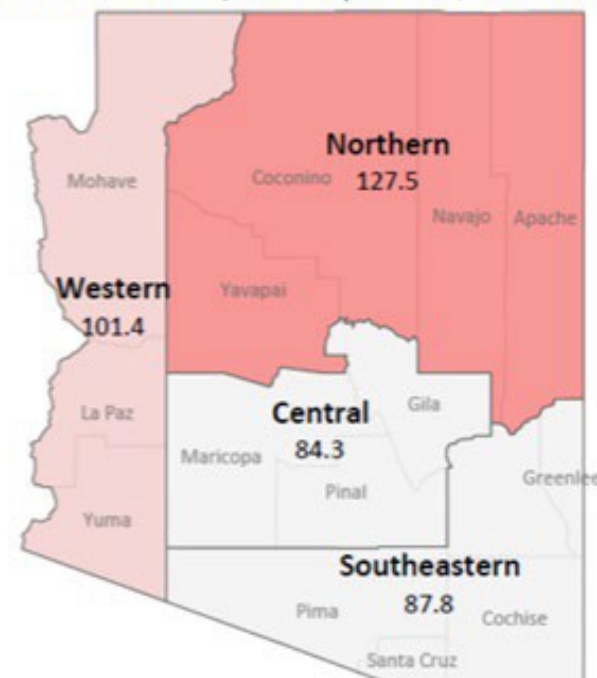
Arizona Maternal Mortality by Maternal Residence



■ Percent of Live Births to Women 15-49 Years of Age
■ Percent of Pregnancy-Associated Deaths



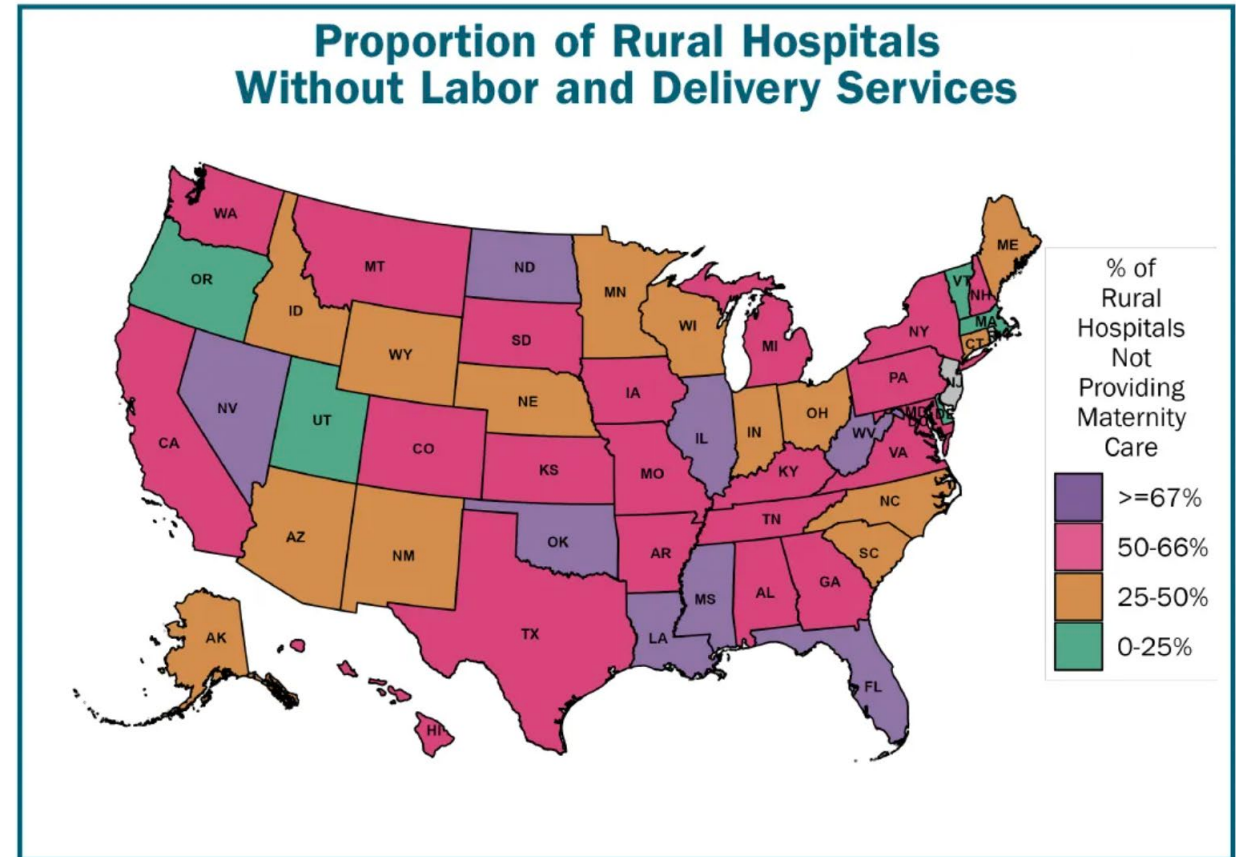
The Pregnancy-Associated Mortality Ratio in the Northern and Western Region of Arizona were the highest in the state. (Deaths per 100,000 live births)



Maternity Care Deserts are Growing



- Nearly **half of rural U.S. counties** are maternity care deserts
 - Hundreds more communities are at risk



(Source: The Crisis in Rural Maternity Care Report)

Maternity Care Access in Arizona



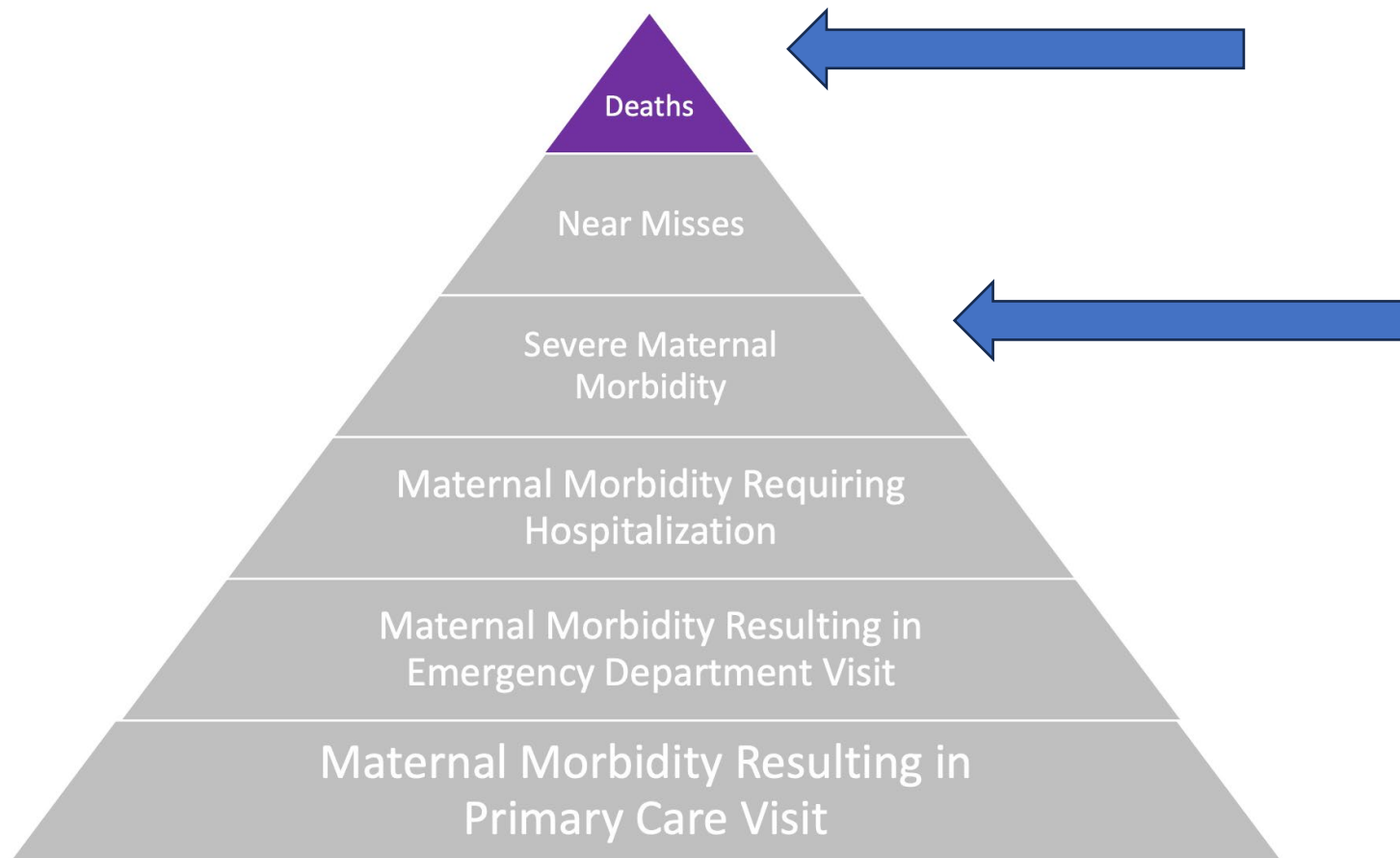
**6.8% of
women**

**had no birthing
hospital within 30
minutes compared to
9.7% in the U.S.**

**20% of
birthing
people**

**received inadequate
prenatal care,
greater than the U.S.
rate of 14.8%.**

Connection between SMM – Maternal Deaths



1 maternal death

≈

60 cases of SMM¹

More than 80%
deaths preventable³

¹AHRQ Healthcare Cost and Utilization Project 2015
Commonwealth Fund 2021

²[http://reviewtoaction.org/Report from Nine MM
RCs \(figure\)](http://reviewtoaction.org/Report%20from%20Nine%20MM%20RCs%20figure)

³CDC 2023

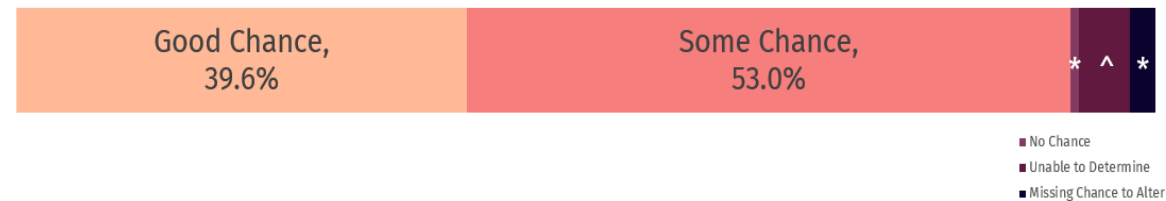
AZ Maternal Mortality by Preventability and Timing of Death



MMRC Reviewed **Pregnancy-Associated** Deaths in Arizona of Persons 10-60 Years Old, 2018-2019 (n=149)

89.9% Of all Pregnancy-Associated Deaths were Preventable

Among All **Preventable** Pregnancy-Associated Deaths:



* Suppressed value <6
^ Unable to Determine, 4.5%

Pregnant 43-365 Days of Death

59.0%
93.9% Preventable

Pregnant Within 42 Days of Death

13.4%
100% Preventable

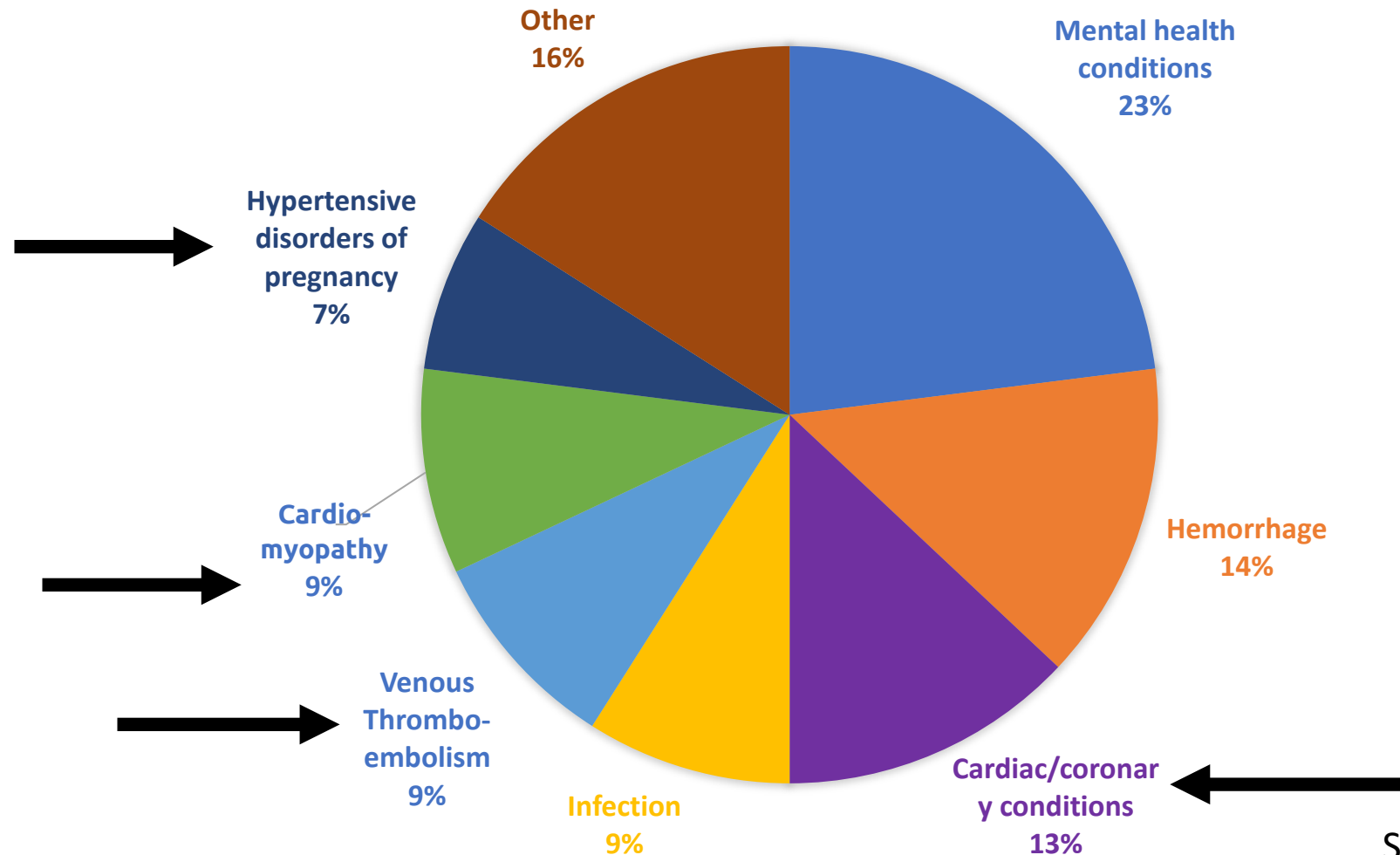
Day of Delivery

4.5%
85.7% Preventable

Pregnant at time of death

23.1%
100% Preventable

Etiologies for Maternal Death



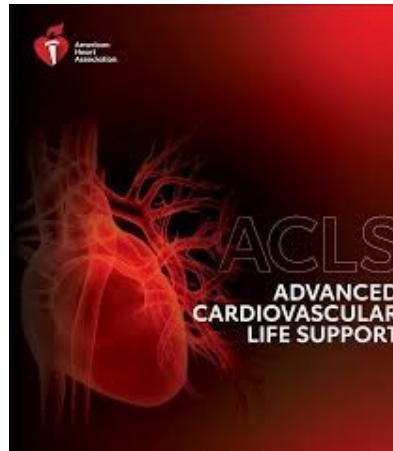
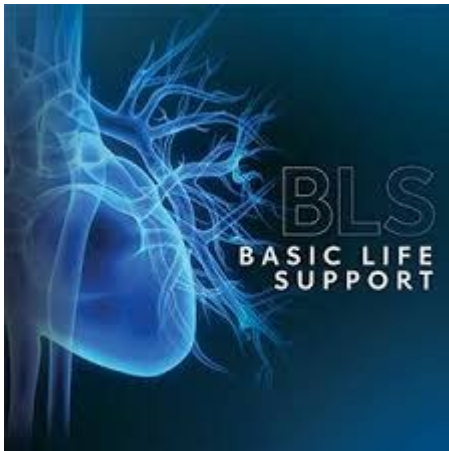
- Cardiac/coronary conditions
- VTE
- Cardiomyopathy
- Hypertensive disorders of pregnancy

$\cong 37\%$

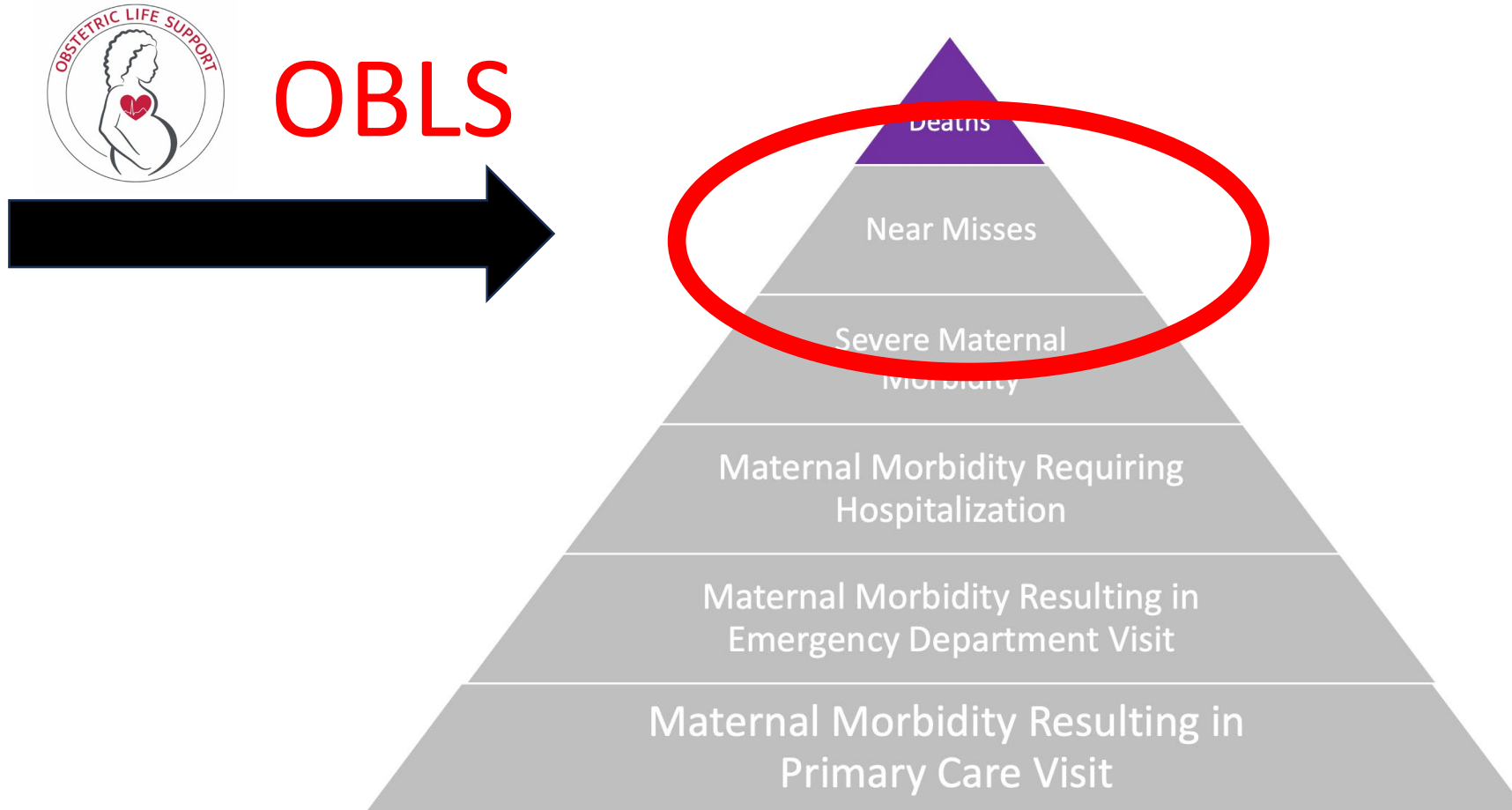
Missed Opportunity for Standardized Training



Despite published guidelines, **no national standardized training** required for maternal medical emergencies and MCA.



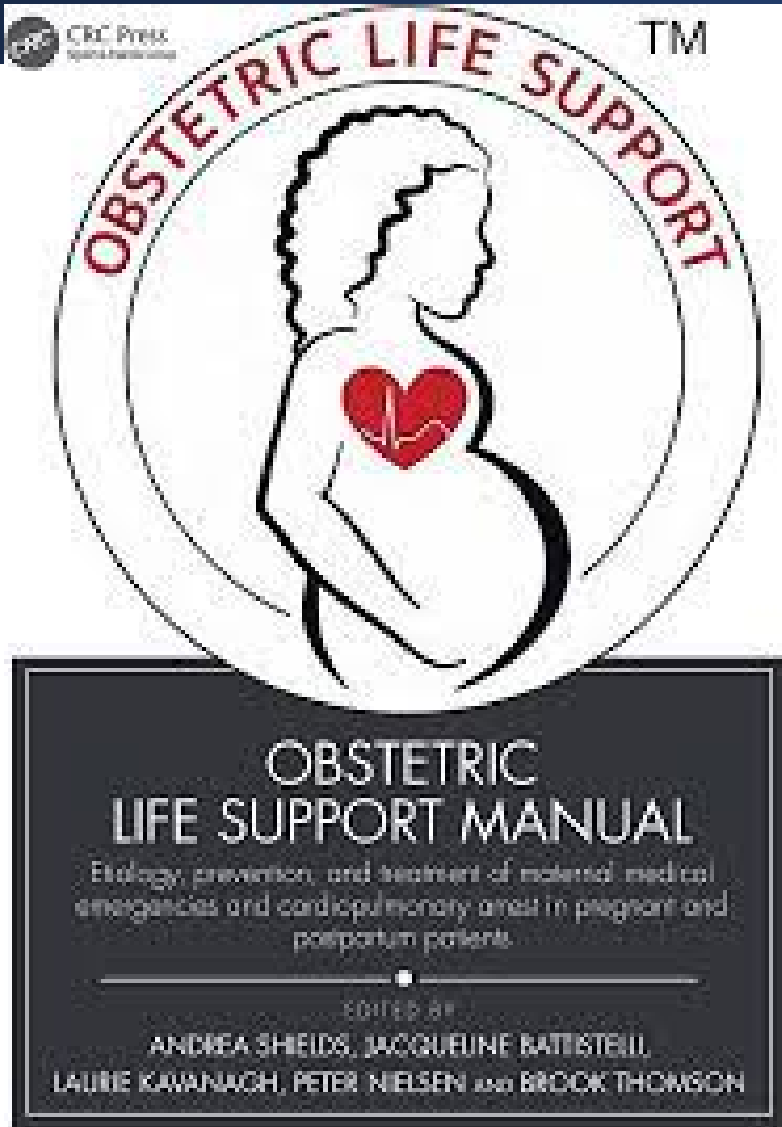
Preventing Maternal Deaths



OBLS Education



What We Originally Developed



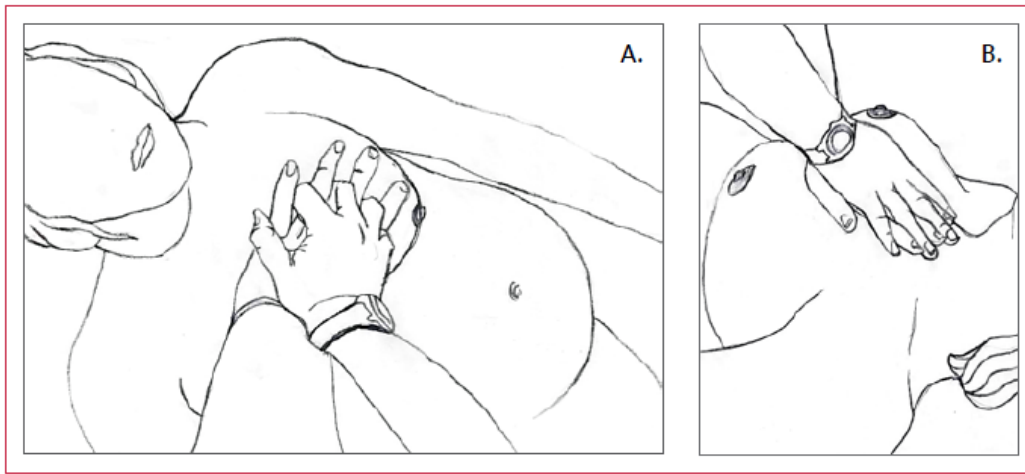
- Comprehensive manual
 - Several algorithms/checklists/tools
- Two curricula: In hospital and prehospital
 - Customized simulator
 - Training and Evaluation Megacode scenarios with drivers
 - Validated cognitive assessment with defensible cut score
 - Validated megacode checklist for evaluation of team leader
- Train the Trainer course

OBLS Curriculum



Curriculum Component	Content	Delivery Mechanism
Precourse Self-Study	Learners review ten chapters in the OBLS training manual that provide an overview of normal/abnormal pregnancy physiology, key modifications to Basic Life Support and Advanced Cardiovascular Life Support (ACLS) protocols in pregnancy, common causes of maternal cardiac arrest, and special procedures and effective team communication. (4 hours)	Self-paced learning using a training manual
OBLS Entry Exam	After self-study, learners are required to take and pass an entry exam on course material. (30 minutes)	Online multiple-choice exam
Instructor-Led Simulation-Based Training	Instructors lead small groups (4 for prehospital, 6 for hospital-based) in rapid-cycle deliberate practice on: team communication & dynamics management; leading & managing maternal cardiac arrest; techniques such as chest compressions on a pregnant patient, left uterine displacement, and resuscitative cesarean delivery; cardiac rhythm interpretation & vital sign management; application of ACLS drugs; debriefing for critical events, & sharing difficult news. (6 hours)	In person simulation training using low-fidelity simulators
Megacode Assessment	Evaluation of team leadership during a simulated maternal cardiac arrest scenario. Instructors use a validated scoring checklist. (Included in 6-hour training)	In-person with instructors

Key Points of High Quality CPR



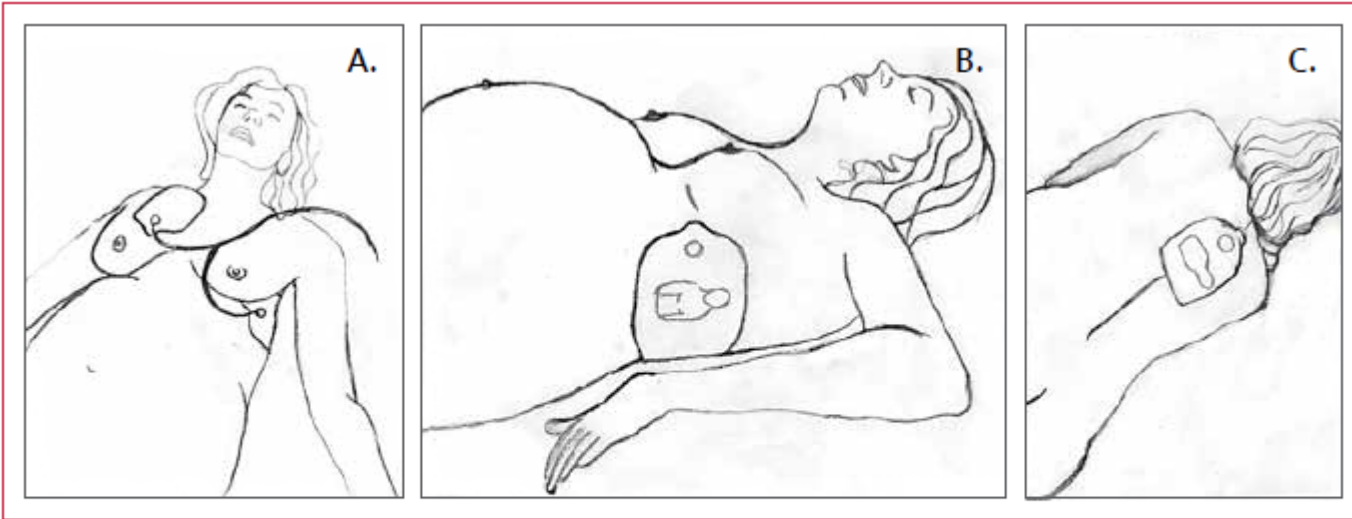
A. Proper hand placement in a pregnant patient

B. If breast tissue is in the way, as can occur with large, pendulous breasts, slightly rotate hand position to a more vertical position towards the patient's head to allow the proper delivery of downward force.

KEY POINTS OF HIGH-QUALITY CPR

- ◇ Effective chest compressions of 100-120/minute, with chest compression of 2 inches or 1/3 of chest depth with full recoil of the chest.
- ◇ Minimize interruptions in chest compressions. Pulse and rhythm checks should be < 10 seconds and performed every 2 minutes.
- ◇ Switch CPR compressors at least every 2 minutes to avoid fatigue.
- ◇ Avoid over-ventilating a patient. Focus one breath every 5-6 seconds; alternatively, a 30:2 compression/respiratory ratio is acceptable. Prompt defibrillation of a shockable rhythm can be life-saving and should be administered as soon as feasible.

Key Points of High-Quality CPR



A. Right anterior position

B. Left anterolateral position

C. Posterior position

*Posterior pad placement is not recommended in patients with suspected spinal cord injury, to limit movement and potential further injury

Defibrillation Pad Placement



Use hands to pull the uterus up and over towards the maternal right to lift the uterus off the great vessels.

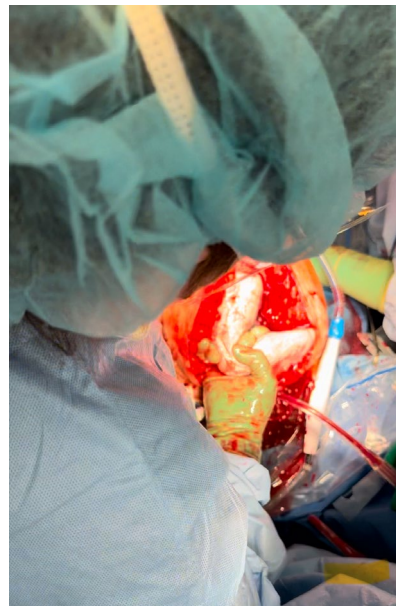
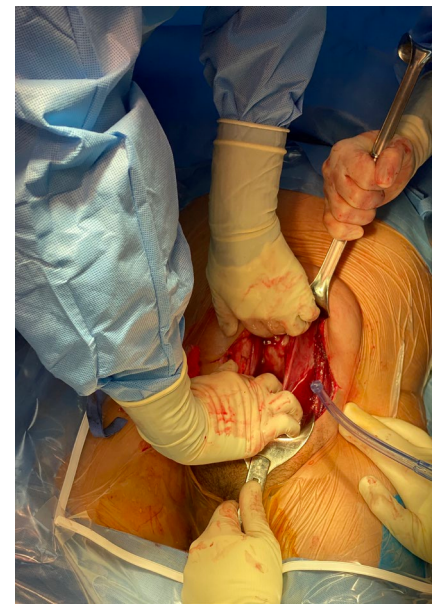
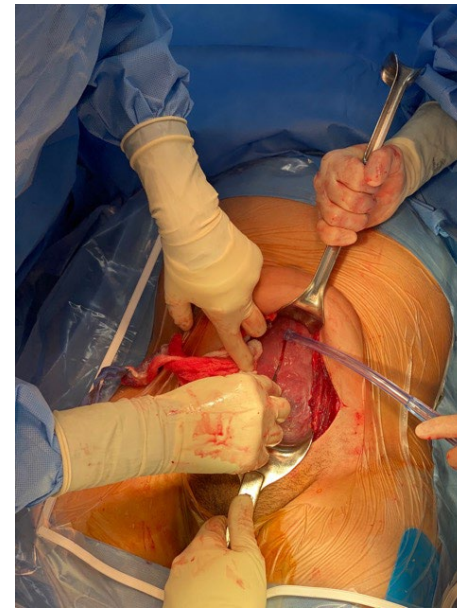
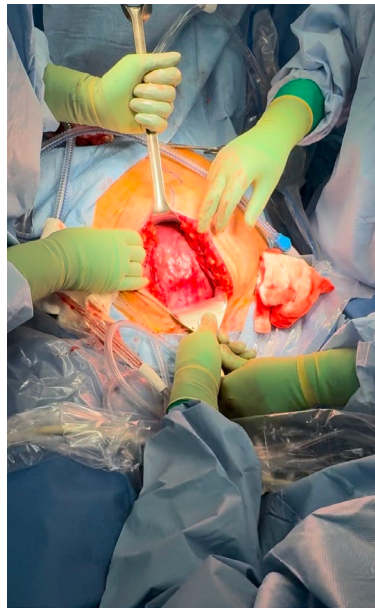
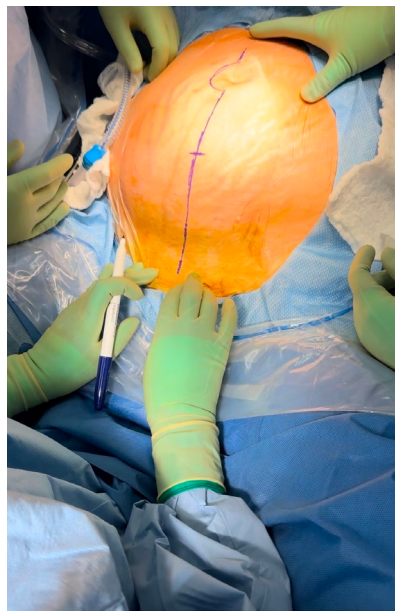
Left Uterine Displacement

Key Points of High Quality CPR



- Medications are the same as ACLS, with possible exception of fibrinolytics.
- Early Advanced Airway – do not stop CPR
- End-tidal capnography
 - (P)ETCO₂ or waveform capnography should be >10mmHg with CPR
 - If (P)ETCO₂ is <10mmHg, CHANGE something, ROSC at 35-40 mmHg





OBLS Course Content



- Leadership
- Teamwork
- Communication skills
 - Reflective checklist debrief
 - Sharing difficult news



OBLS Cognitive Aids - BAACC TO LIFE



BAACC

TO

LIFE

Bleeding

Anesthesia

AFE

Cardiovascular/cardiomyopathy

Clot/cerebrovascular

Trauma

Overdose (magnesium sulfate/opioids/other)

Lung injury/ARDS

Ions (glucose/K+)

Fever (sepsis)

Emergency hypertension/eclampsia

OBLS Training

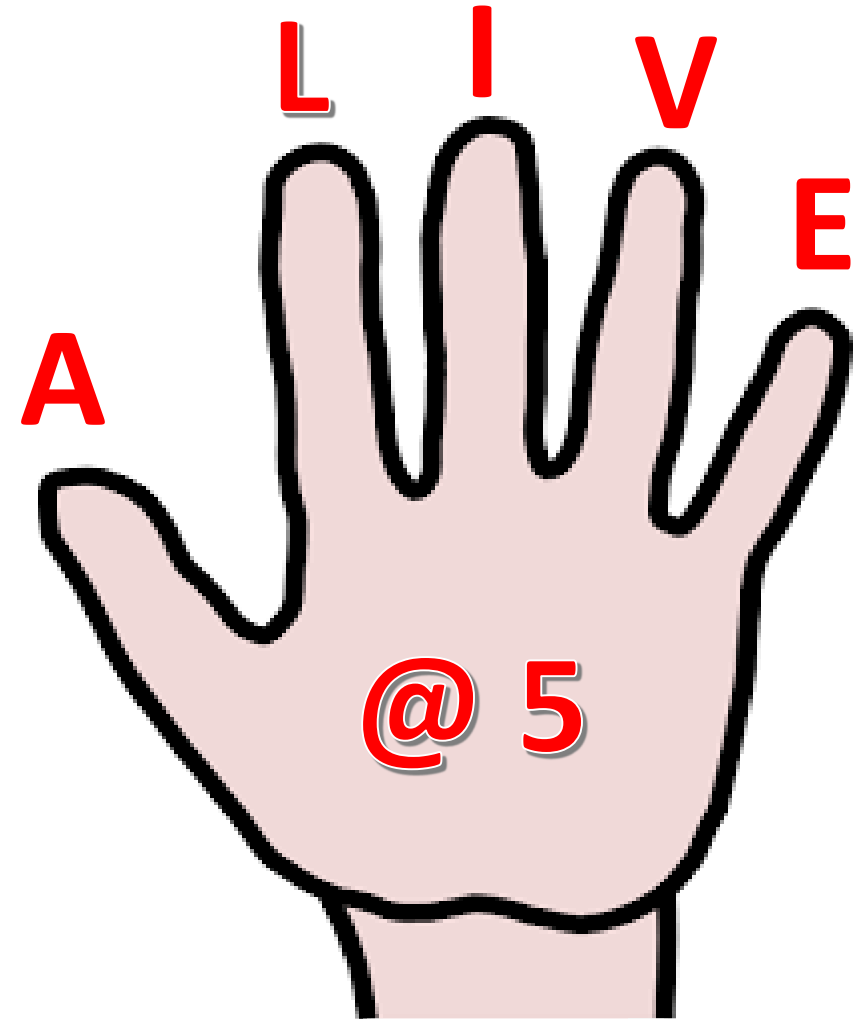
- Obstetric hemorrhage/abruption
- High spinal
- Cardiovascular emergencies (e.g., AMI, emergency hypertension, stroke, venous thromboembolism)
- Overdose/toxicity
- Maternal sepsis
- Amniotic fluid embolism

ALIVE @ 5

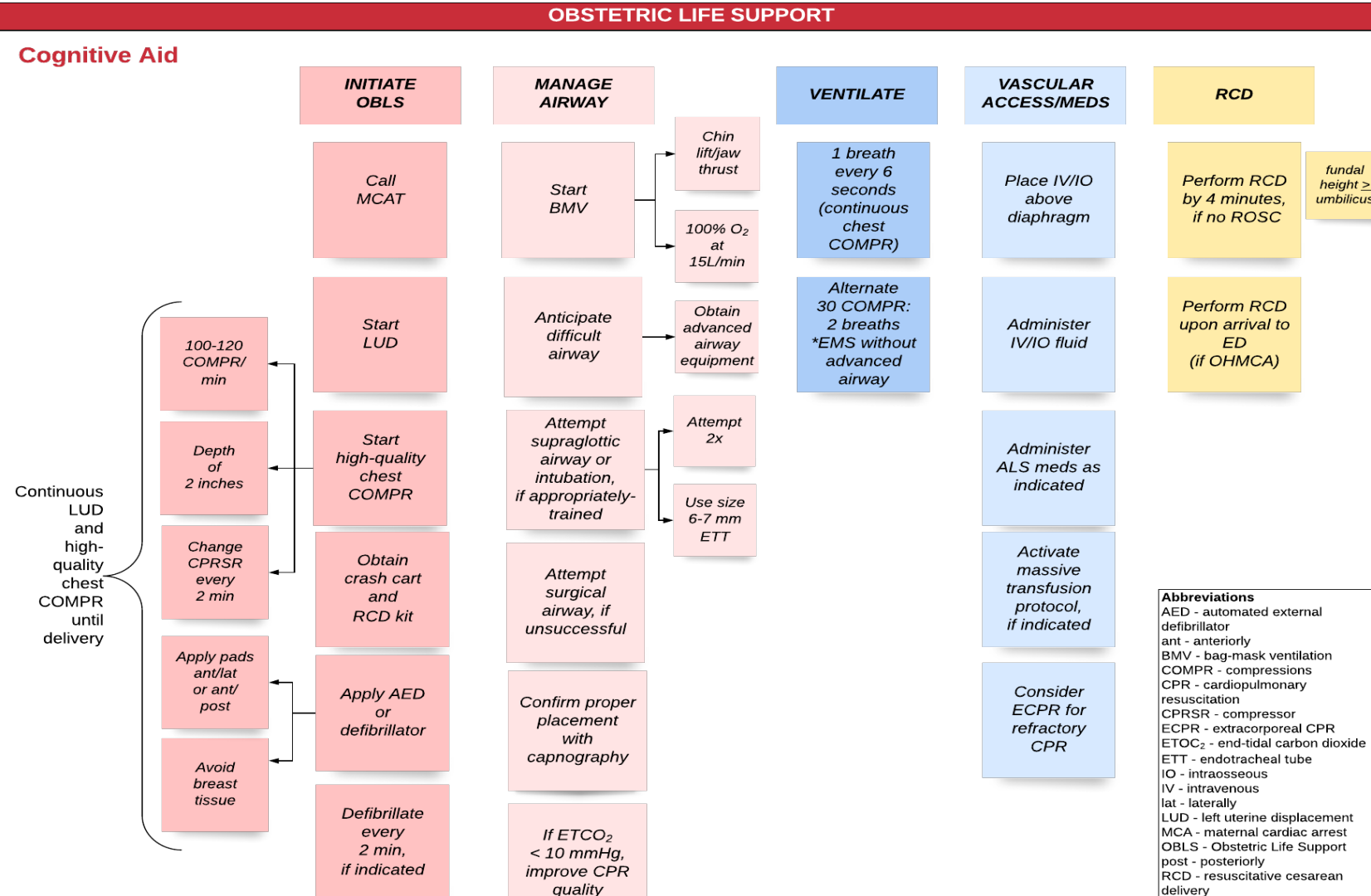


Coding the Pregnant Patient

- **A**ctivate OBLS
- **L**eft uterine displacement
- **I**V placement above diaphragm/**I**ntubate early
- **V**erify gestational age and equipment
- **E**xtract fetus and placenta at 4 minutes



OBLS Cognitive Aids – Alive at 5



IH Megacode Checklist

OBLS MEGACODE CHECKLIST - In-Hospital					
Team Leader _____		Team # _____			
Item #	Assessment/Action	Done Correctly (5 points)	Done Poorly or Delayed (3 points)	Not Done (0 points) Critical fail for resuscitation section	N/A
RESUSCITATION					
1	Recognizes unstable vital signs in pregnant patient				
2	Recognizes cardiac arrest				
3	Activates MCAT				
4	Positions patient flat and places backboard				
5	Initiates high-quality chest compressions				
6	Establishes and maintains effective ventilation				
7	Ventilates at appropriate rate				
8	Assesses possibility of pregnancy/assesses uterine fundus relationship to umbilicus				
9	Performs and maintains LUD throughout resuscitation				
10	Gathers equipment for RCD				
11	Places defibrillation pads avoiding breast tissue				
12	Assesses cardiac rhythm after 1 cycle of CPR				
13	Removes fetal monitors				
14	Defibrillates if indicated, clears patient prior to shock				
15	Inserts IV or IO above diaphragm				
16	Administers epinephrine: - non-shockable: immediately - shockable: after two shocks				
17	Recognizes and treats reversible etiologies for MCA, if applicable (e.g., calcium gluconate for magnesium toxicity, Narcan for opioid overdose, etc.)				
18	Completes RCD by 5 min at site of arrest				
19	Minimizes chest compression interruptions (< 10 sec delay)				
20	Timely notification of contingency teams (i.e. ECP, MAST, vascular surgeon)				
21	Verifies ROSC				
		Resuscitation SUBTOTAL (Items 1-21)			
POST-ARREST CARE					
22	Discusses post-arrest care elements following ROSC to establish next steps in management				
23	Secures airway and gives breaths every 6-8 seconds, as needed				
24	Maintains LUD, if pregnant				
25	Maintains vascular access and administers fluids				
26	Uses BAACC TO LIFE to consider potential etiology(ies)				
27	Manages wounds (closure, antibiotics)				
28	Orders head CT prior to transfer to ICU, if indicated				
		Post-Arrest Care SUBTOTAL (Items 22-28)			

TEAM LEADER PERFORMANCE						
		Perfect (5 points)	Good (4 points)	Average (3 points)	Poor (2 points)	Unacceptable (1 point)
29	Effectively guides resuscitation, focusing on high-quality chest compressions and continuous LUD					
30	Effectively delineates responsibilities to team members					
31	Ensures team member keeps time of cardiac arrest and logs times/interventions					
32	Ensures contingency teams are present and working together effectively					
33	Recommends debrief w/ OBLS debrief tool					
		Team Performance SUBTOTAL (Items 29-33)				
COMMUNICATION/TEAMWORK						
	How well did the TEAM	Perfect (5 points)	Good (4 points)	Average (3 points)	Poor (2 points)	Unacceptable (1 point)
34	Use SBAR to orient team members as they arrived?					
35	Call for ADDITIONAL ASSISTANCE in a timely manner?					
36	Utilize CLOSED-LOOP communication?					
37	Maintain SITUATIONAL AWARENESS?					
38	Utilize PATIENT FRIENDLY language and tone					
	Rate the following	Perfect (5 points)	Good (4 points)	Average (3 points)	Poor (2 points)	Unacceptable (1 point)
39	OVERALL team communication					
40	OVERALL team performance					
		Communication/Teamwork SUBTOTAL (Items 35-41)				

SCORING	
Subtotals	
A Resuscitation	
B Post-Arrest	
C Team Leader Performance	
D Total Communication/Teamwork	
E Overall Raw Score (add A + B + C + D)	
F Total points possible	200
G N/A adjustment (count total in N/A column and multiply by 2)	
H Adjusted total points (F minus G)	
I Overall Weighted Score (Divide E by H)	
J Number of critical fail items #1-21	
K Overall score > 70% and no critical fail items	YES - PASS

Comments

NO - RETAKE

Obstetric Life Support (OBLS) vs. Other Resuscitation and Obstetric Training Courses



- **Targeted maternal morbidity and mortality focus:** Addresses physiological changes and complications unique to pregnancy.
- **Unique, multifaceted approach:** Utilizes simulation pedagogy, individual and team-based learning principles, mastery of learning concepts, and therapeutic communication practices.
- **Interdisciplinary relevance:** Prepares a wide range of providers (e.g., EMTs, nurses, physicians) to handle maternal emergencies in various settings (hospitals and prehospital)



TESTING



Study Timeline



- AHRQ R18 grant funded by NIH
- Develop a simulation-based maternal cardiac arrest resuscitation curriculum for in-hospital (IH) and pre-hospital (PH) professionals
- Invited over 35 national experts in the field, and collaborated with over 20 organizations







Original Research

Validation of a Simulation-Based Resuscitation Curriculum for Maternal Cardiac Arrest

Andrea D. Shields, MD, MS, Jacqueline Vidosh, MD, Brook A. Thomson, MD, Charles Minard, PhD, Kristen Annis-Brayne, RN, Laurie Kavanagh, MPH, Cheryl K. Roth, PhD, WHNP, Monica A. Lutgendorf, MD, Stephen J. Rahm, Les R. Becker, PhD, MSMEAL, Vincent N. Mosesso, MD, Brian Schaeffer, MPA, Andrea Gresens, MS, Sondie Epley, RN, Richard Wagner, MD, Matthew J. Streitz, MD, Utpal S. Bhalala, MD, Lissa M. Melvin, MD, Shad Deering, MD, and Peter E. Nielsen, MD, MSS

Pilot

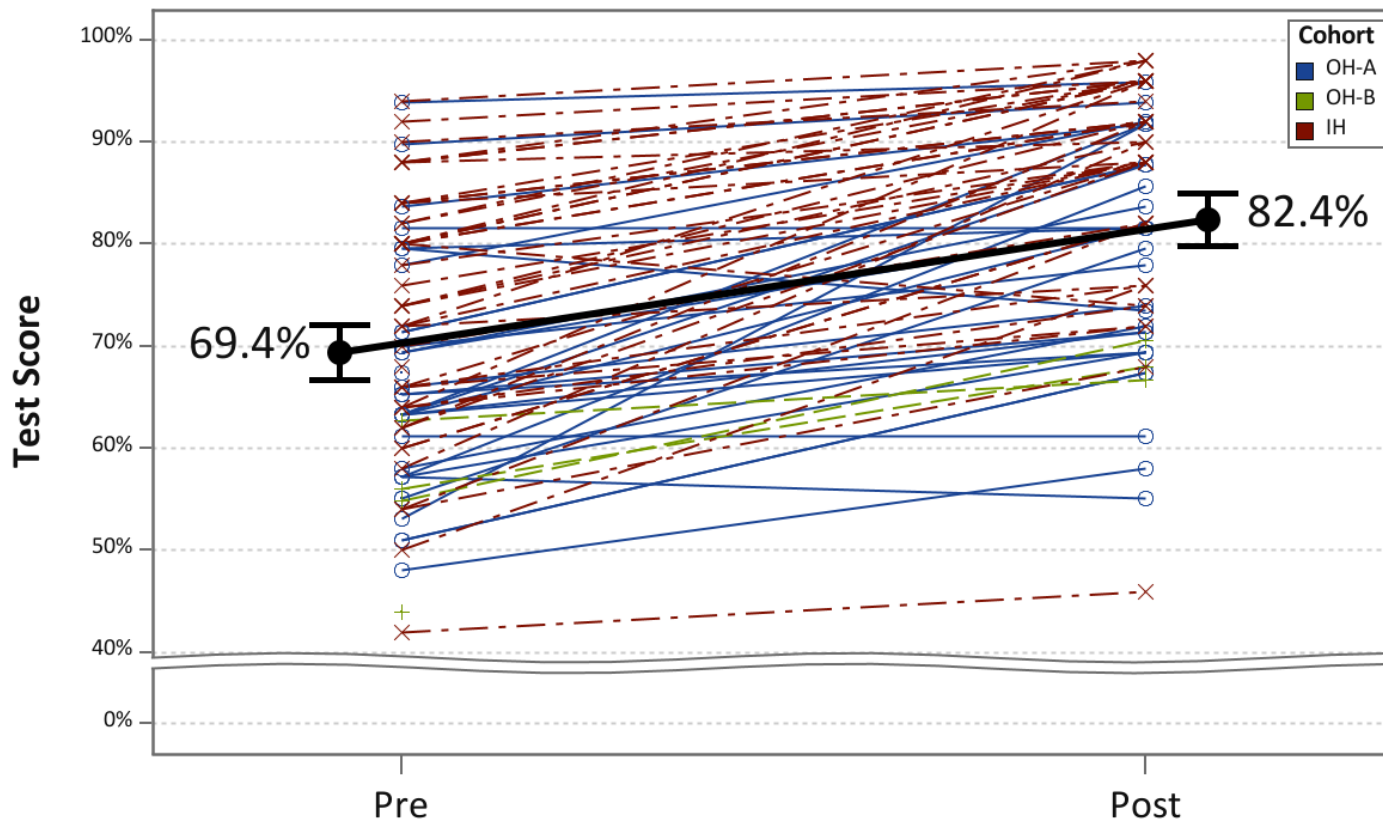


- 88 participants
 - Eligibility criteria: All genders, 18 years of age or older, faculty, residents, medical students, and nurses from Anesthesiology, Critical Care, Emergency Medicine, Family Practice, Obstetrics; Paramedics, EMT-advanced or basic, firefighters or police officers
- 4 rounds
- After each round we made changes to the curriculum, manual and megacode checklist to validate:
 - based on participant feedback
 - to diversify the category of participant who took the course and would provide feedback
 - to improve participant confidence scores

Pilot



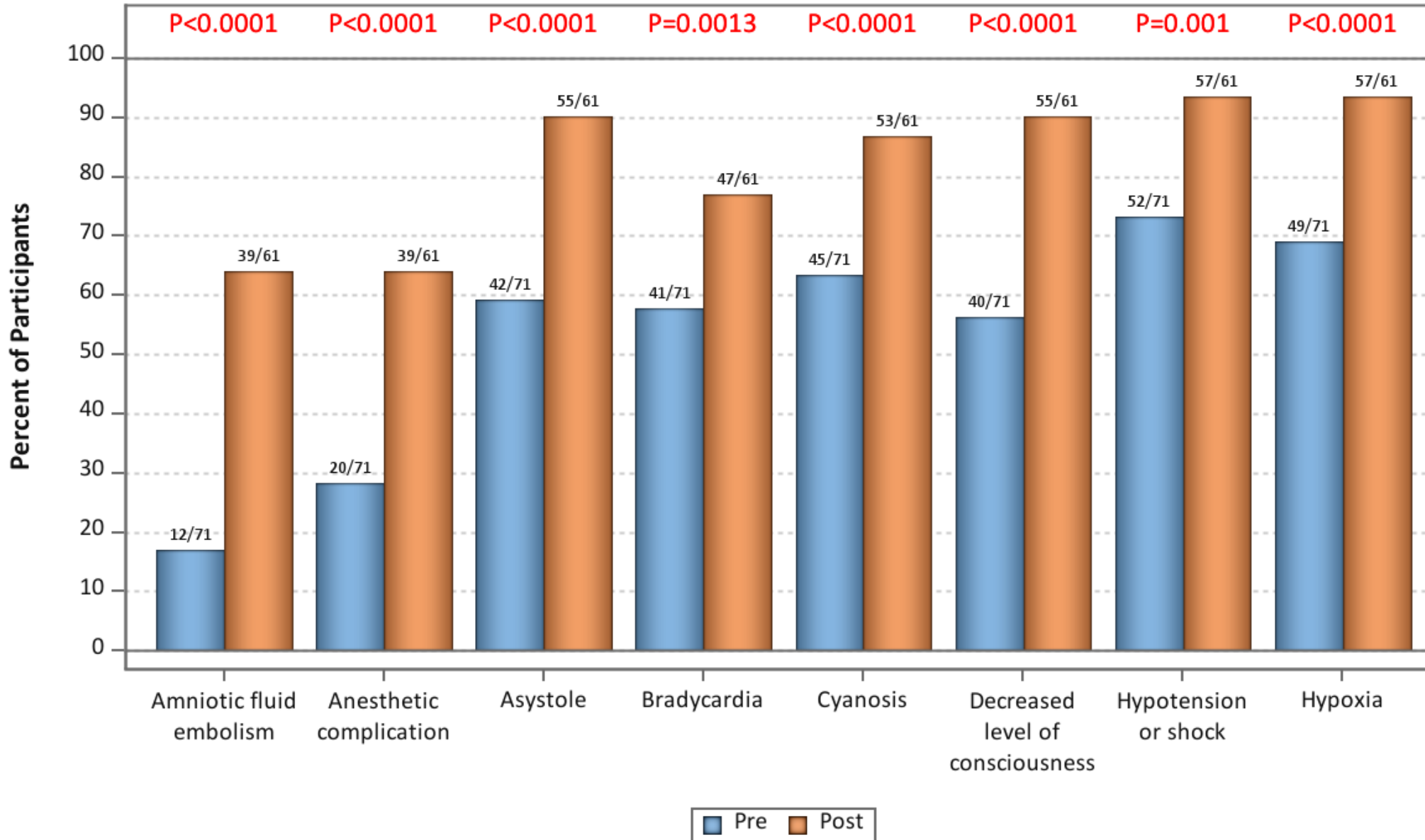
Change in test scores with mean and 95% CI



- Scores on the cognitive assessment increased by 13 percentage points (95% CI; 10.4, 15.4), $p < 0.0001$ (Figure).
- Participant confidence scores improved in:
 - Clinical skills (15 of 16 items)
 - Procedure skills (12 of 12 items)
 - Knowledge (17 of 17 items)
 - Communication (4 of 4 items)
- Majority of participants agreed/strongly agreed the course met its educational objectives.

Clinical Skills Confidence Part 1

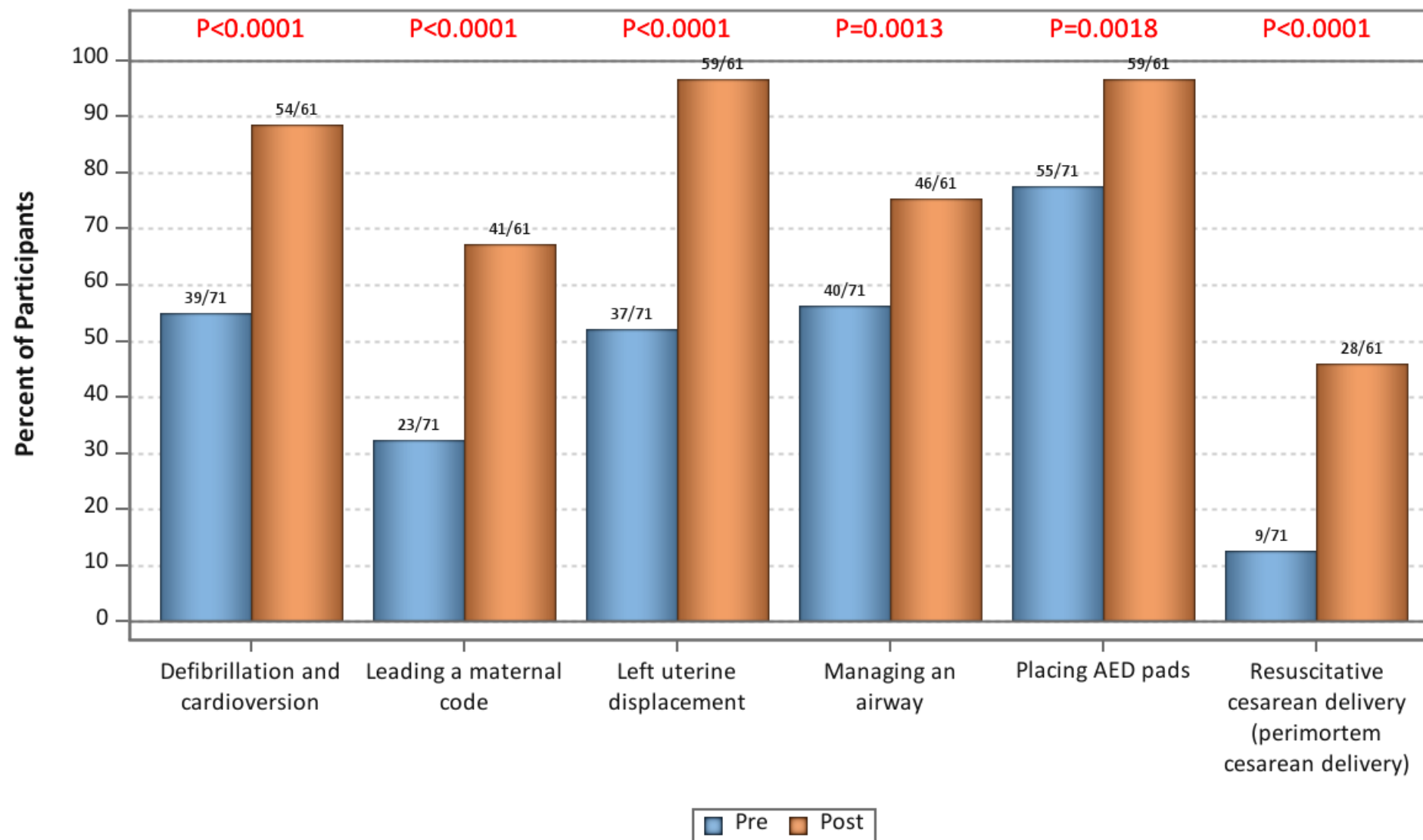
Percent of participants who are confident or very confident in assessing and managing each critical clinical scenario





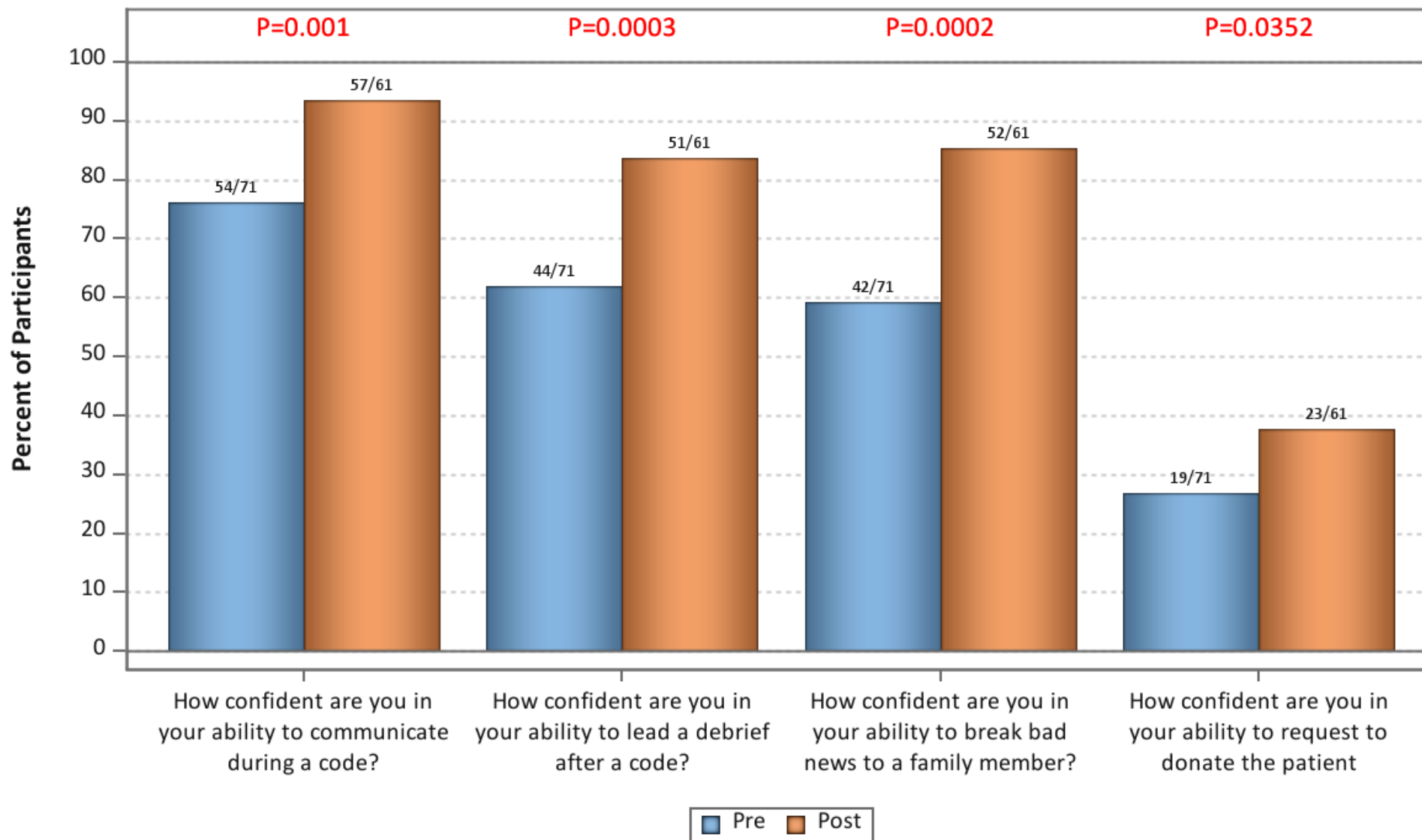
Procedural Confidence Part 2

Percent of participants who are confident or very confident in performing the procedure on pregnant patients

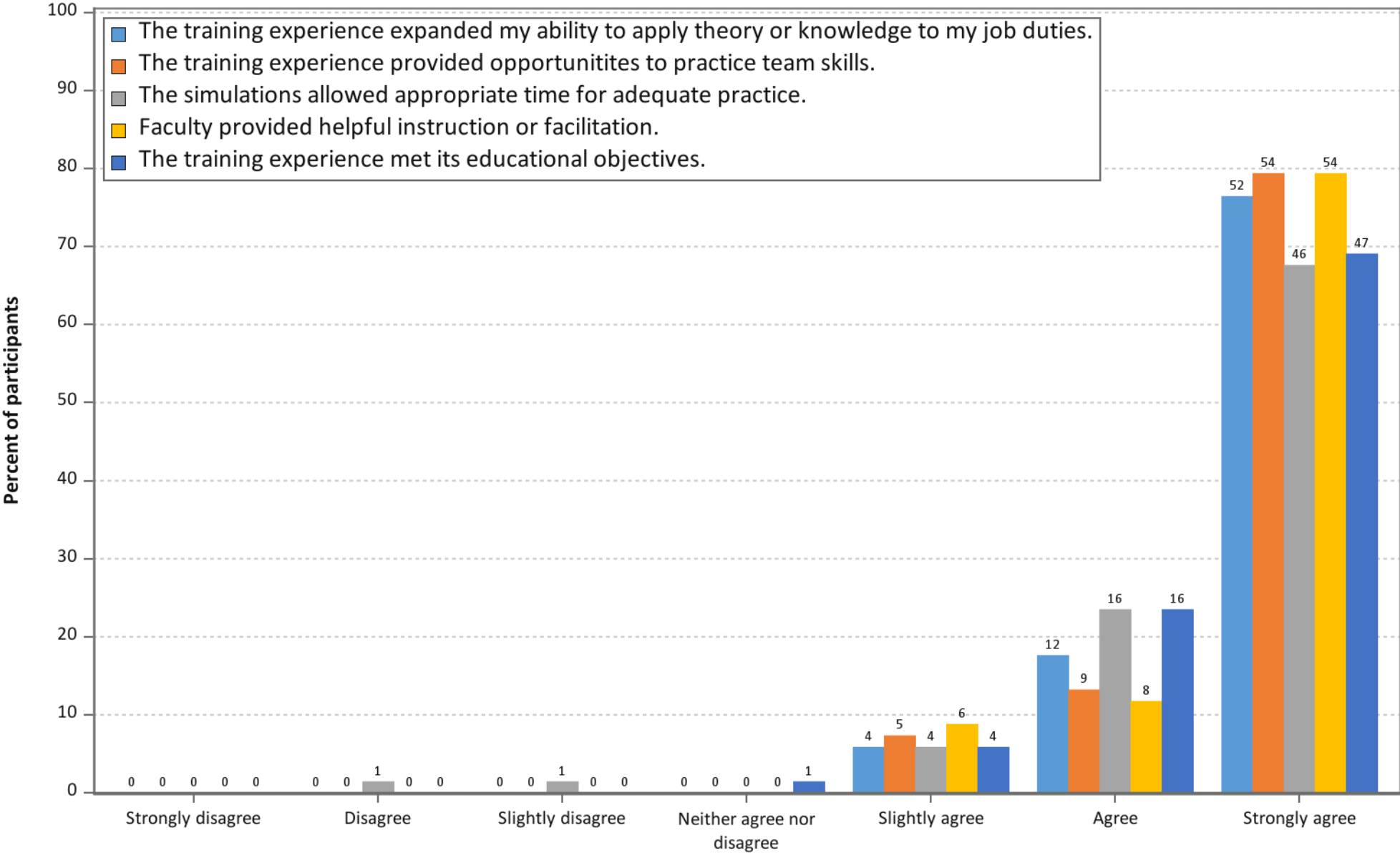


Communication Confidence

Percent of participants who are confident or very confident in communication around maternal cardiac arrest



Please rate your experience with the OBLS course and faculty



What did you like most about the training experience?



Instructors

*“During the simulation course, the **instructors** exhibited **exceptional kindness** and **engagement** with the participants. Their approachability encouraged questions, and they responded with **thorough explanations**, ensuring that every question/concern was addressed”* (IH participant)

*The staff was very **knowledgeable** and friendly. They are very appreciated.”*
(OH participant)

Curriculum

*“The **most comprehensive emergency training** I have ever taken.”* (IH participant)

*“The **continual practice** of the content during simulations. It **reinforced the ideas** for me.”*
(IH participant)

*“I learned a lot of **new things** in this training. It had **challenges** that I never thought I would experience...”* (OH participant)

What did you like most about the training experience?



Class environment

*"That there was so much hands-on time, and the class was **small size** which allowed for **more interaction** and **discussion**."* (OH participant)

*"Instructors created a **safe learning environment**. I felt my confidence grow as the day progressed."* (IH participant)

Group diversity

*"My group was made up of an OB-GYN, L&D RN, and 2 ED RNs. It was a good group. We were able **to work together** to use our **individual strengths** to succeed in the Mega Code."* (IH participant)

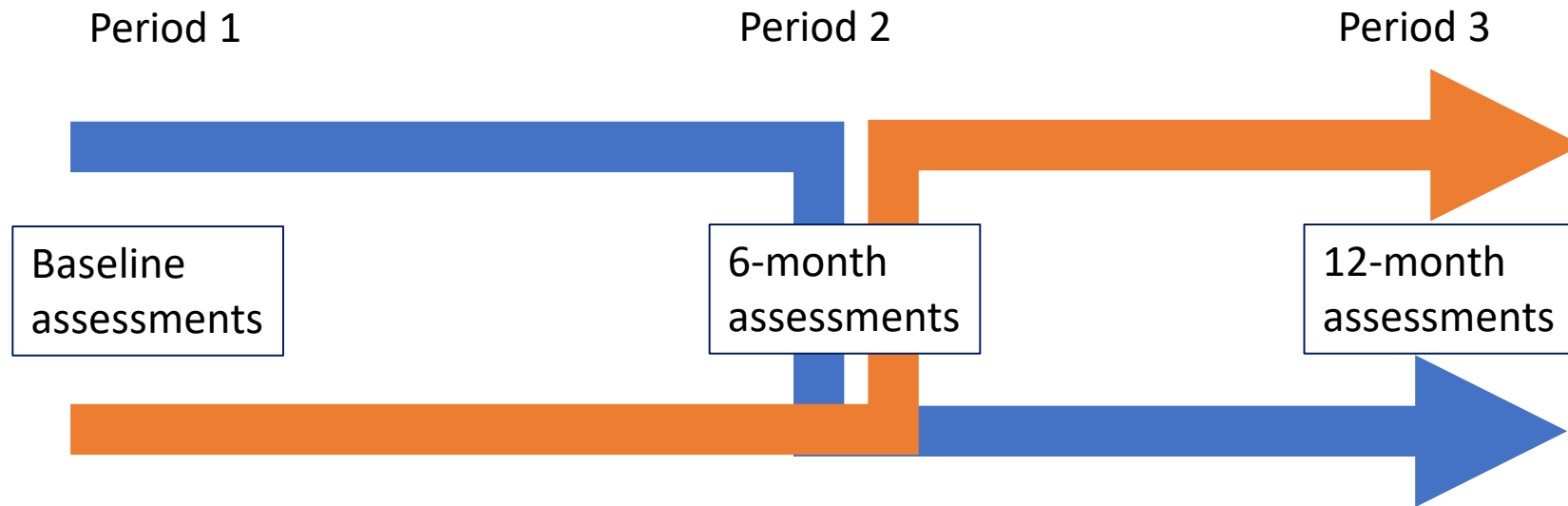


Original Investigation | Emergency Medicine

Obstetric Life Support Education for Maternal Cardiac Arrest A Randomized Clinical Trial

Andrea D. Shields, MD, MS; Jacqueline Vidosh, MD; Charles Minard, PhD; Brook Thomson, MD; Kristen Annis-Brayne, RN; Makayla Murphy, MPH; Laurie Kavanagh, MPH; Cheryl K. Roth, PhD, WHNP; Monica A. Lutgendorf, MD; Meredith L. Birsner, MD; Stephen J. Rahm, NRP; Les R. Becker, PhD, MS, MEdL, NRP, CHSE; Vincent Mosesso, MD; Brian Schaeffer, MPA; Matthew Streitz, MD; Utpal Bhalala, MD; Andrea Gresens, NRP, MSHS; John Phelps, DBA, DS, ACHE, NRP; Benjamin Sutton, NRP; Richard Wagner, MD; Lissa M. Melvin, MD; Kathleen Zacherl, MD; Laura Karwoski, RN, MSN; James Behme, BA; Alex Hoeger, AAS, BS; Peter E. Nielsen, MD, MSS

OBLS RCT



- **Method:** Prospective, single-masked randomized trial

RCT



- 46 participants
 - Eligibility criteria: All genders, 18 years of age or older, faculty, residents, medical students, and nurses from Anesthesiology, Critical Care, Emergency Medicine, Family Practice, Obstetrics; Paramedics, EMT-advanced or basic, firefighters or police officers
- Inclusion criteria:
 - All genders
 - 18 years of age or older
 - Emergency medicine providers (ED, FP, ICU) surgeons (OB, general and trauma), anesthesiologists/CRNAs, trainees of GME, and nurses from ED, FP, ICU/NICU, or OB/L&D/OB OR, EMS healthcare providers of all levels including basic, advanced, paramedics; firefighters, law enforcement officers, and trainees in any of these EMS programs.
 - Ability to read, write and speak in English
- Exclusion criteria:
 - Participants included in the pilot-testing sessions
 - Participants from other medical specialties not listed in the inclusion criteria.

OBLS RCT RESULTS



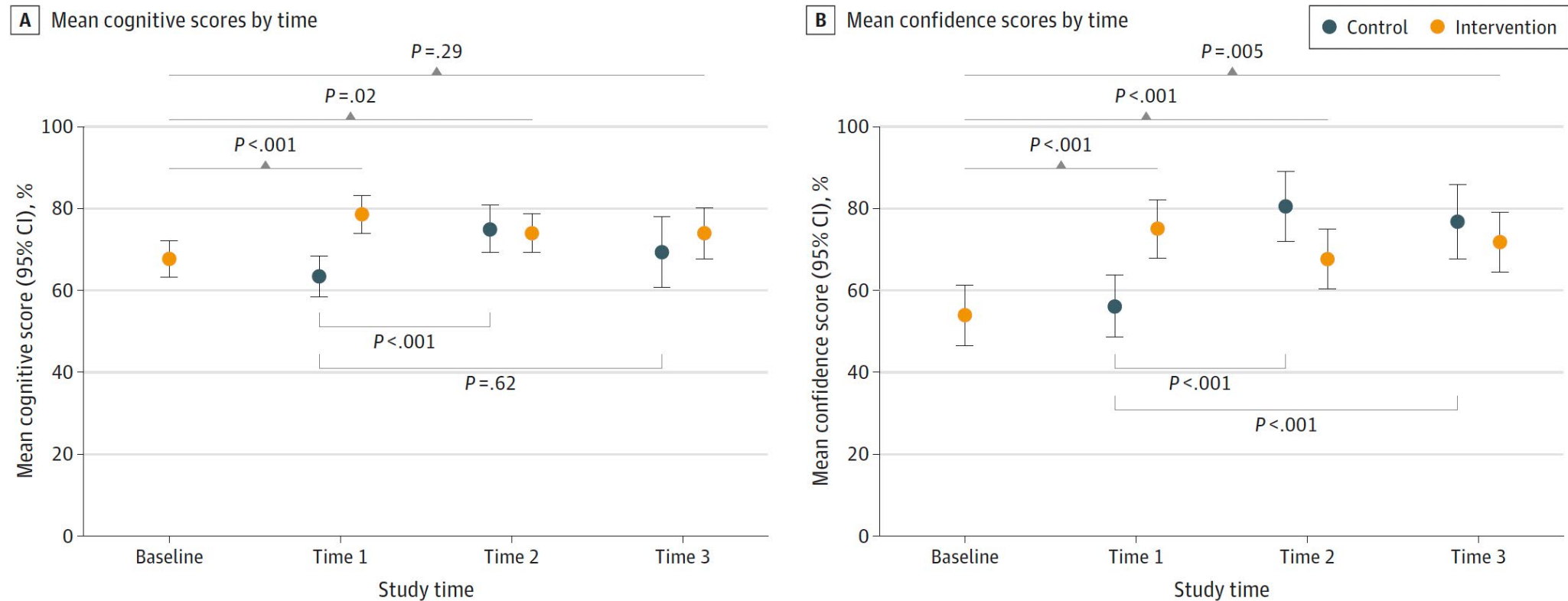
Table 2. Summary Statistics of Cognitive, Megacode, and Confidence Scores and Combined Assessment Pass Rates Between Intervention and Controls During Time 1

Outcome measure	Summary statistic		P value
	Intervention (n = 24)	Control (n = 22)	
Cognitive score, mean (SD)	79.5 (9.4) ^a	63.4 (12.3) ^a	<.001 ^b
Megacode score, mean (SD)	91.0 (5.0) ^a	61.0 (12.0) ^c	<.001 ^d
Confidence score, mean (SD)	72.7 (13.3) ^e	56.2 (17.9) ^a	.002 ^b
Combined assessment pass rate, %	91 ^a	10 ^c	<.001 ^f

RCT Results



Figure 3. Mean Cognitive and Confidence Scores by Study Arm and Time



Each item was equally weighted, and a final score was tabulated by adding item scores and converting to a 100-point scale, with 1 indicating no confidence and 100 indicating total confidence. Error bars indicate 95% CIs.

What we have learned



- <10% of HCWs trained in BLS and ACLS that were assigned to the control arm were able to pass a validated megacode scenario of a maternal medical emergency leading to a cardiac arrest as a team leader, regardless of level of experience or training
 - Due to suboptimal knowledge on cognitive assessment and missing critical elements during the resuscitation (e.g., not performing RCD within 5 minutes at site of arrest)

What we concluded



- Interdisciplinary simulation training in pre-arrest, arrest and post-arrest care for a maternal medical emergency/MCA through the OBLS course is effective for improving:
 - Knowledge
 - Performance as team leader
 - Self-confidence skills
- Regardless of level of training
- Significant retention of post-training confidence at 12 months, but attrition of medical knowledge by 6-12 months post training

OBLS in Rural Contexts

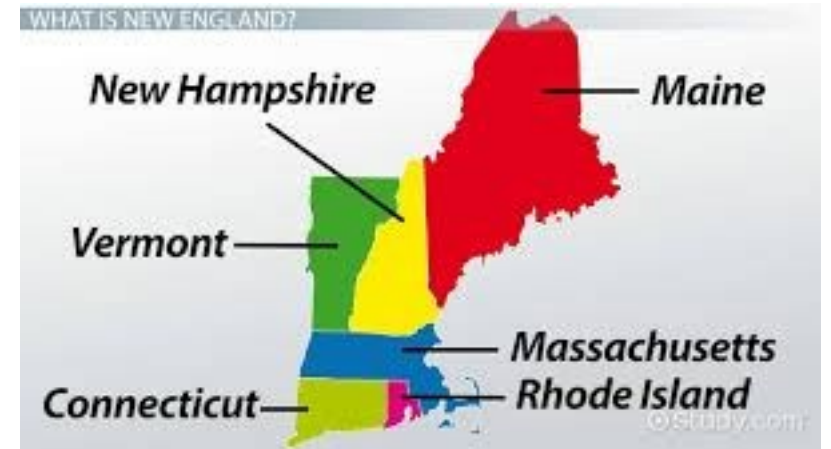


OBLS Research Projects

Adaptation of an Evidence-Based Curriculum to Teach the Prevention, Evaluation and Treatment of Maternal Medical Emergencies for Pre-hospital & Hospital Healthcare Workers in Rural Context

\$1.4 Million over 5 years

Objective: Customize OBLS for rural contexts



Implementation of a Maternal Resuscitation Curriculum in a Regionalized Perinatal Health System: Maximizing the Chain of Survival to Reduce Maternal Health Inequities

\$2.25 Million over 5 years

Objective: Evaluate a train-the-trainer approach for implementing OBLS in a diversity of hospital, freestanding birthing centers, and prehospital contexts throughout Arizona.



OBLS New England: Aims

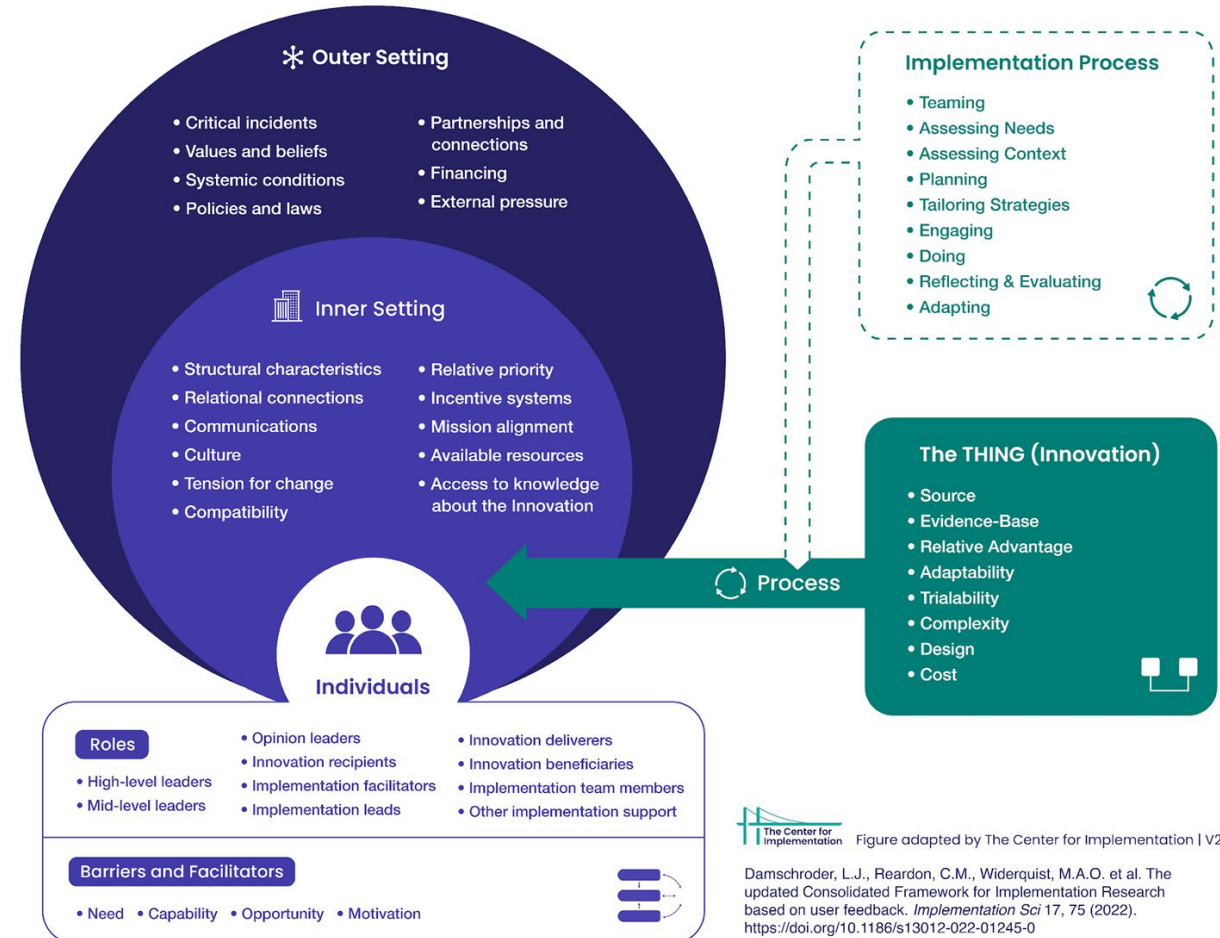


1. Identify barriers and facilitators to implementation of OBLS in rural and low-resource settings.
2. Systematically adapt OBLS for HCWs practicing in rural and low-resource settings.
3. Implement and evaluate the adapted curriculum in rural communities in New England.

Data Collection



- Sequential mixed methods design
 - Survey: n= 122 (57 prehospital, 65 hospital-based)
 - Focus groups: n=34 (20 prehospital, 14 hospital-based)
- Guided by Consolidated Framework for Implementation Research (CFIR)



Survey Results



Domain	Hospital	Prehospital
Acceptability	98% found OBLS training appealing and 95% welcomed implementation. 94% approve of the OBLS training.	95% found OBLS training appealing and 89% welcomed implementation. 93% approve of the OBLS training
Appropriateness	92% agreed OBLS training meets local training needs.	93% agreed OBLS training meets local training needs.
Feasibility	65% agreed OBLS implementation is achievable. 46% agreed OBLS would be easy to implement.	84% agreed OBLS implementation is achievable. 51% agreed OBLS would be easy to implement.
Resources for training	71%-75% agree space, equipment/materials, and HCW support available. 46%-66% agree time, leadership support, clinical & non-clinical staffing, and financial resources available.	75%-79% agree space, leadership support, and HCW support available. 48%-63% agree time, equipment/materials, clinical & non-clinical staffing, and financial resources available.

Themes: Prehospital/Hospital Focus Groups



OBLS Implementation Challenges:

- **Limited instructor availability.**
- Balancing OBLS integration while maintaining system-wide compliance with current training standards.
 - Barriers related to the **cost, time/staffing, and logistics** of attending in-person training sessions.
- Resistance to integrate OBLS due to a **lack of familiarity** with the program.

Themes: Prehospital/Hospital Focus Groups



Suggestions for Feasibility and Sustainability:

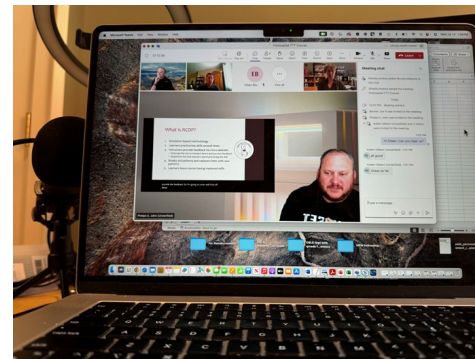
- **Positive feedback for integrating online learning modules** as part of pre-work.
 - Generational and user-specific engagement with modules should be considered.
- Current **instructor-to-student ratios** (hospital: 2:6, prehospital 2:4) are **resource-intensive** and may need adjustments for scalability.
- **Leveraging partnerships** across hospitals and systems to share training responsibilities and reduce the resource burden.
- **Development of refresher courses** to support knowledge retention and address long-term training needs.
- Strong support for a **train-the-trainer approach** to expand access and sustainability.
- Recommendations to **embed OBLS into EMT, paramedic, and nursing curricula**.
- Suggestions to **pair OBLS with other certifications** (e.g., ACLS, PALS) as a "one-stop" training solution.

OBLS Adaptations & Enhancements



- Website upgrades
 - Registration capability
 - Participant hub
 - Instructor hub
- Online courses and workbook for pre-work
 - Addition of videos, gamification, MedCart AR
- Critical access/maternal transport course
- Online Train-the-Trainer course
- Prehospital course
 - Addition of OB emergencies and neonatal resuscitation
 - 12:2-4 participant to instructor ratio
- Modular/Longitudinal course
- Birth centers course
- OBLS essentials: Obstetric Life Support for Everyone
- Refresher course

- Implementation guide and prospectus
- Simulator updates
- Equipment solutions
 - iSimulate defibrillators
- Course incentivization
 - Continuing education
 - Maintenance of certification



OBLS Arizona: Specific Aims



1. Identify and train HCWs from hospital and prehospital contexts in Arizona to be OBLS instructors
2. Implement OBLS in hospital and prehospital contexts across the state, with the training being led by local instructors
3. Evaluate OBLS implementation and process outcomes

OBLS Arizona: Study Design



Cohort A: 2024-2026



Cohort B: 2026-2028

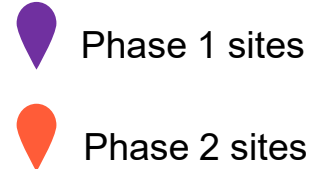


Phase I and II Implementation Sites



Phase I:

1. Banner University Medical Center in Tucson, AZ
2. Central Arizona College in Coolidge, AZ
3. Gila River Healthcare in Sacaton, AZ
4. San Carlos Apache Healthcare in Peridot, AZ
5. Tohono O'odham Nation Healthcare



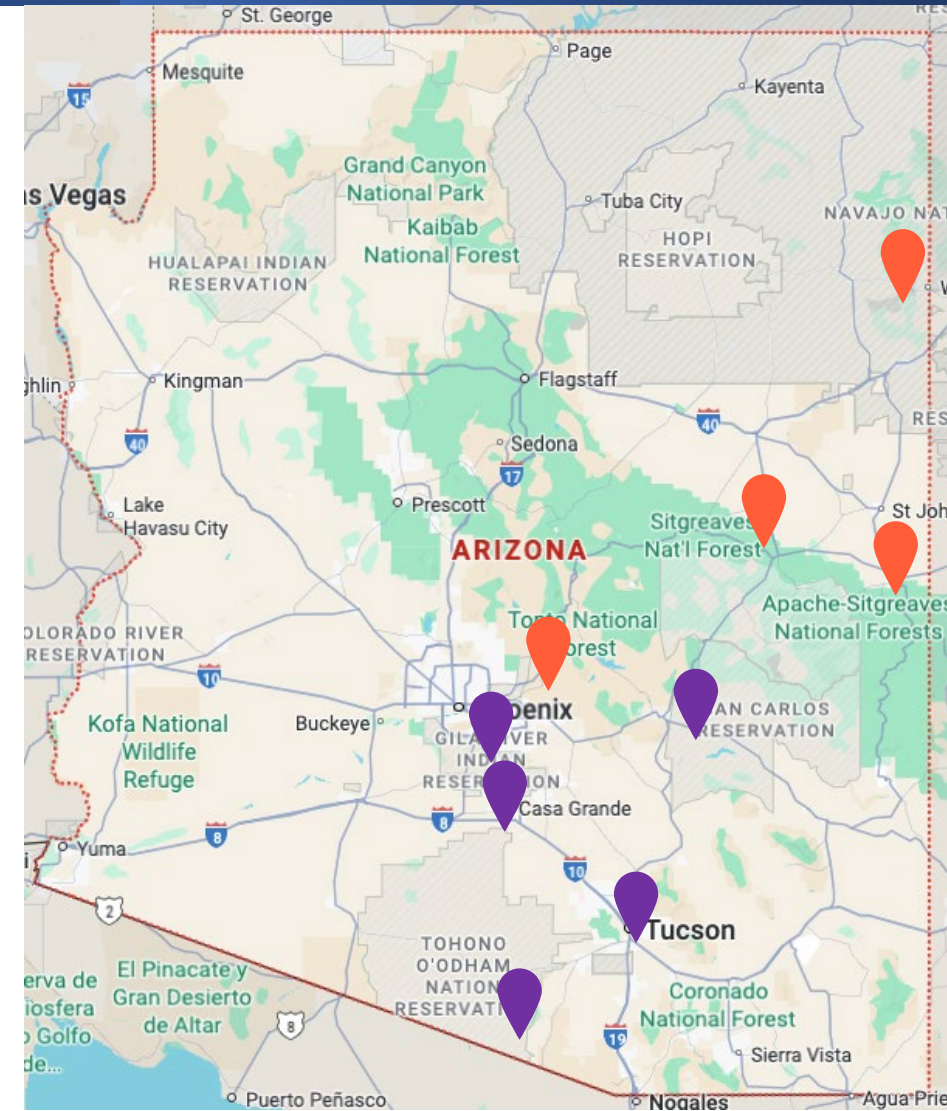
Phase II:

Confirmed sites (to date)

1. Blossom Birth and Wellness Center in West Phoenix, AZ
2. Sage Memorial Hospital in Ganado, AZ
3. White Mountain Regional Medical Center in Springerville, AZ

Pending

- Summit Regional Center in Show Low, AZ



OBLS Trainings



Number OBLS courses: 71

- Hospital-based: 20
- Prehospital: 41
- Critical access: 10

Number HCWs trained: 353

- Hospital: 102
- Prehospital: 195
- Critical access: 56

OBLS training pass rate: 90%

- Hospital: 91%
- Prehospital: 87%
- Critical access: 98%

Number eligible to be instructors: 163

- Hospital-based/Critical access: 94
- Prehospital: 69

Number Train-the-Trainer courses: 15

- Hospital-based/Critical access: 10
- Prehospital: 5

Number new OBLS instructors: 41

- Hospital-based/Critical access: 31
- Prehospital: 10

OBLS training locations:

- Salt Lake City, Utah
- Farmington, Connecticut
- Lebanon, New Hampshire
- Hanover, New Hampshire
- Burlington, VT
- Wabasha, Minnesota
- Bulverde, Texas
- San Antonio, Texas
- Bethlehem, Pennsylvania
- Coolidge, Arizona
- Flagstaff, Arizona
- Phoenix, Arizona
- San Carlos, Arizona
- Scranton, Arizona
- Tucson, Arizona
- Tohono O'odham Nation, Arizona
- Yuma, Arizona

OBLS Training Outcomes



Satisfaction with training: Percentage of participants who responded “Agree” or “Strongly Agree.”

Course evaluation	Hospital	Prehospital
Course preparation		
Completed the assigned prework for this course	92%	95%
Found the OBLS manual to be beneficial in preparing for the course	89%	81%
I felt prepared to take the course	88%	85%
Overall course feedback		
The training experience met its educational objectives	100%	98%
I was fully engaged in the training	100%	99%
I will recommend the OBLS course to colleagues of mine	100%	96%
I hope I am eligible to be an OBLS instructor	81%	84%

OBLS Training Outcomes



"The OBLS course stretched me **beyond my comfort zone** and allowed me to practice in a **team lead role**, which I do not generally feel very confident in." (Hospital)

..."I also **loved the instructors** and felt that adding the delivery of a lousy news component is critical in our world." (Hospital)

"Hands on practice and **varied scenarios**. Learning about complicated deliveries with **hands on practice** and **feedback** was great. Being able to watch how others practiced was valuable as well." (Prehospital)

"Was conducted in a **judge free atmosphere**." (Prehospital)

"The codes were amazing, but would have like **a little extra lecture time** going over different scenarios that we were unable to sim." (Hospital)



"Maybe **fewer mega codes**. By the end of the day it's **hard to pay attention**, it felt like a lot of the same thing over and over with 6 codes. Maybe doing the 3 simulations in the morning, and then 3 official mega codes in the afternoon, to better keep the focus and attention." (Hospital)

"There could be more power point instruction/coverage of **maternal health and physiology**." (Prehospital)

"I think the online learning portion could be **more interactive / enhanced with technology**" (Prehospital)

Field Perspectives: Key Successes



- High engagement and strong outcomes
 - 100% pass rates at multiple sites; robust participation among nurses, residents, and EMS crews.
 - Participants reported increased preparedness and confidence in managing maternal emergencies.
- Effective interdisciplinary collaboration
 - Training mixed nurses, residents, fellows, and EMS professionals fostered shared learning.
 - SPIKES communication training was well received, particularly by EMS providers.]
- Innovative delivery approaches
 - Rapid-cycle deliberate practice and localized simulation scenarios increased realism.
 - Strong institutional support at several sites (e.g., Gila River, Banner UMC).
- Sustainability momentum
 - Many sites plan to integrate OBLS into ongoing staff training, onboarding, or simulation labs.

Field Perspectives: Challenges and Lessons Learned



- Implementation logistics
 - Scheduling conflicts, limited simulation staff, and pay/attendance policies affected participation.
 - Some sites lacked internet, simulation supplies, or access to instructor materials.
- Curriculum and materials
 - Prehospital participants noted content skewed toward hospital settings; requested more EMS-specific questions and examples.
- Coordination and communication
 - Communication gaps between leadership, instructors, and research teams delayed approvals and class coordination.

NEXT STEPS



OBLS: Next Steps



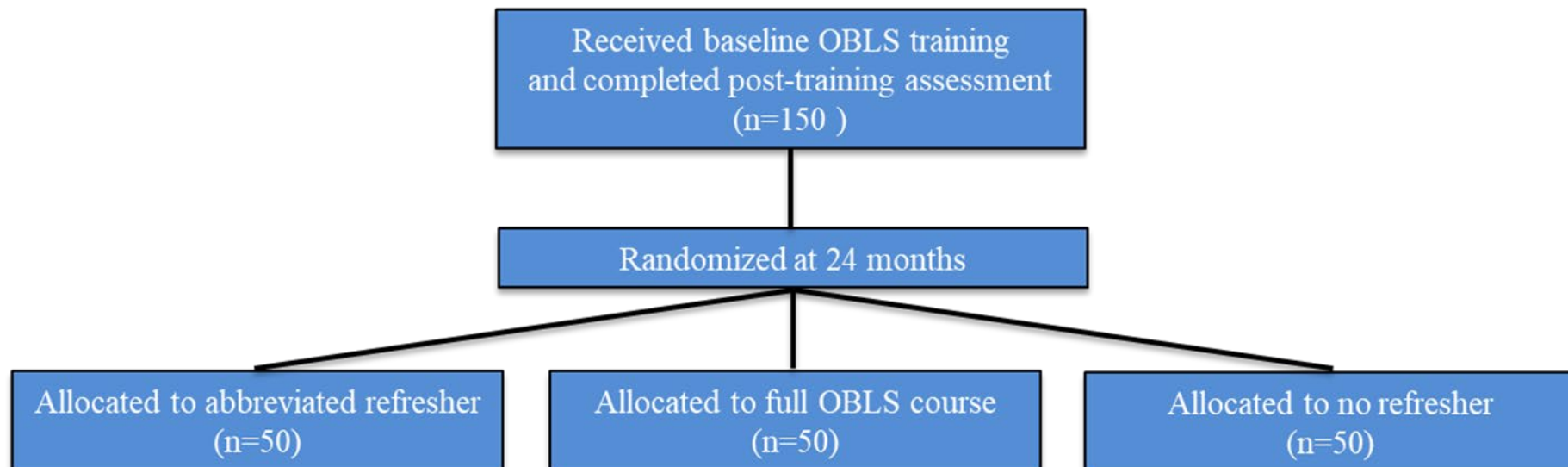
- Expand state-wide implementation of OBLS in Arizona using train-the-trainer approach
 - 100+ instructors trained in Q1/Q2 2026
 - 8 implementation sites that serve remote regions or underrepresented in Arizona
 - Train 400+ HCWs in Q2 2026 – Q3 2027



OBLS: Next Steps



- Developing refresher course
 - Interactive, scenario-based
- RCT July 2026-June 2028
 - Evaluate whether the abbreviated refresher course yields comparable OBLS skill maintenance to the full OBLS course



OBLS: Next Steps



- Piloting revised prehospital course with more desirable instructor-to-student ratio and addition of intro to obstetric emergencies (9/10-11/25)
- Course incentivization
 - Continuing education (e.g. CAPCE)
 - QM certification for on-line course
 - Endorsements from national organizations
- On-line interactive Train-the-Trainer course
- Modular curriculum
 - Virtual assessment
- Equipment needs
 - Developing simulation toolkits to support training, add-ons
 - Commercialization of MCA-specific simulator
 - Incorporation of AR into refresher course

OBLS National Conference hosted by UConn Health



Save the date!



Fourth Annual Conference on
Obstetric Life Support (FREE)
February 6, 2026



"Women are not dying because of diseases we cannot treat. They are dying because societies have yet to make the decision that their lives are worth saving."

***Professor Mahmoud Fathallah,
President of FIGO***

OBLS Website



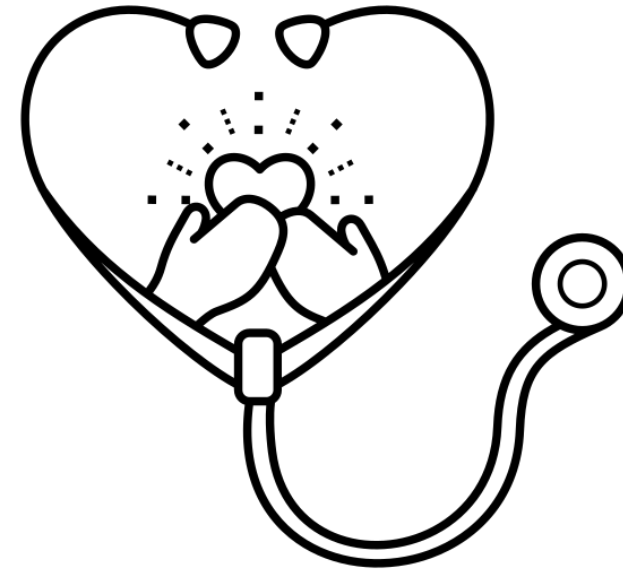
- www.obls.org
- Emerging updates
- OBLS manual



Questions?



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