



OBSTETRIC SEPSIS AND SIMULATION TRAINING

OHA Statewide Sepsis Initiative

April 20, 2016

OHA Statewide Sepsis Initiative

- I. Welcome and Housekeeping

- II. Presentation: Cynthia S. Shellhaas, MD, MPH,
and Stephen F. Thung, MD, The Ohio State
University Wexner Medical Center

- III. Q & A

OHA QUALITY PROGRAMS TEAM

Collaborating for a Healthy Ohio



Amy Andres
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9TH ANNUAL QUALITY SUMMIT

Wednesday – June 15, 2016

8:00am-9:00am	Poster Session
9:00am-10:30am	Disparities Panel
10:30am-10:45am	Break
10:45am-12:15pm	Breakout Sessions: Leadership Track: Sustainability Panel -OR- Performance Improvement Track: PFE 4 & 5 and Iatrogenic Delirium
12:15pm-12:45pm	Poster Session
12:45pm-12:55pm	OPSI Best Practice Award
12:55pm-2:25pm	Sepsis Panel: Transitions of Care for the Sepsis Patient
2:25pm-2:30pm	Evaluations/Adjournment

Maternal Morbidity & Mortality in Ohio: The Role of Simulation Training

Cynthia S. Shellhaas, MD, MPH
Stephen F. Thung, MD

Outline: Today's Presentation

- Overview--Maternal morbidity and mortality
- The Ohio Pregnancy Associated Mortality Review (PAMR)
- Overview—Simulation Training
- Ohio PAMR Simulation Training Projects
- The Ohio State University Obstetric Sepsis Project
- Next Steps
- Questions

Definitions

❑ **Pregnancy Associated Mortality**

- The death of a woman, from any cause, from any site, while she is pregnant or within 1 year after she terminates a pregnancy.

❑ **Pregnancy Related Mortality**

- Death of a woman while pregnant or within one year of termination of pregnancy, regardless of duration and site of pregnancy, from any cause related to or aggravated by her pregnancy or its management.

❑ **Severe Maternal Morbidity (SMM)**

- Physical and psychological conditions, related directly or indirectly to pregnancy, that negatively impact a woman's health

CORE PUBLIC HEALTH FUNCTION: THE MATERNAL DEATH REVIEW PROCESS

- State- & Urban-based Maternal Death Review Processes in US since early 1900s
 - No uniform process/format
 - Most funded by Title V
- Ohio initiated in 2010
 - Initial funding from AHRQ; now funded by Title V
 - Five years of review completed: 2008-2012
- **Goal of Ohio PAMR:** To identify and review all pregnancy-associated deaths in Ohio and develop interventions that reduce those deaths.

Committee Membership

- Volunteer professionals
- Multi-disciplinary
- Geographically diverse
- Representative of organizations & agencies that work with women and children in Ohio

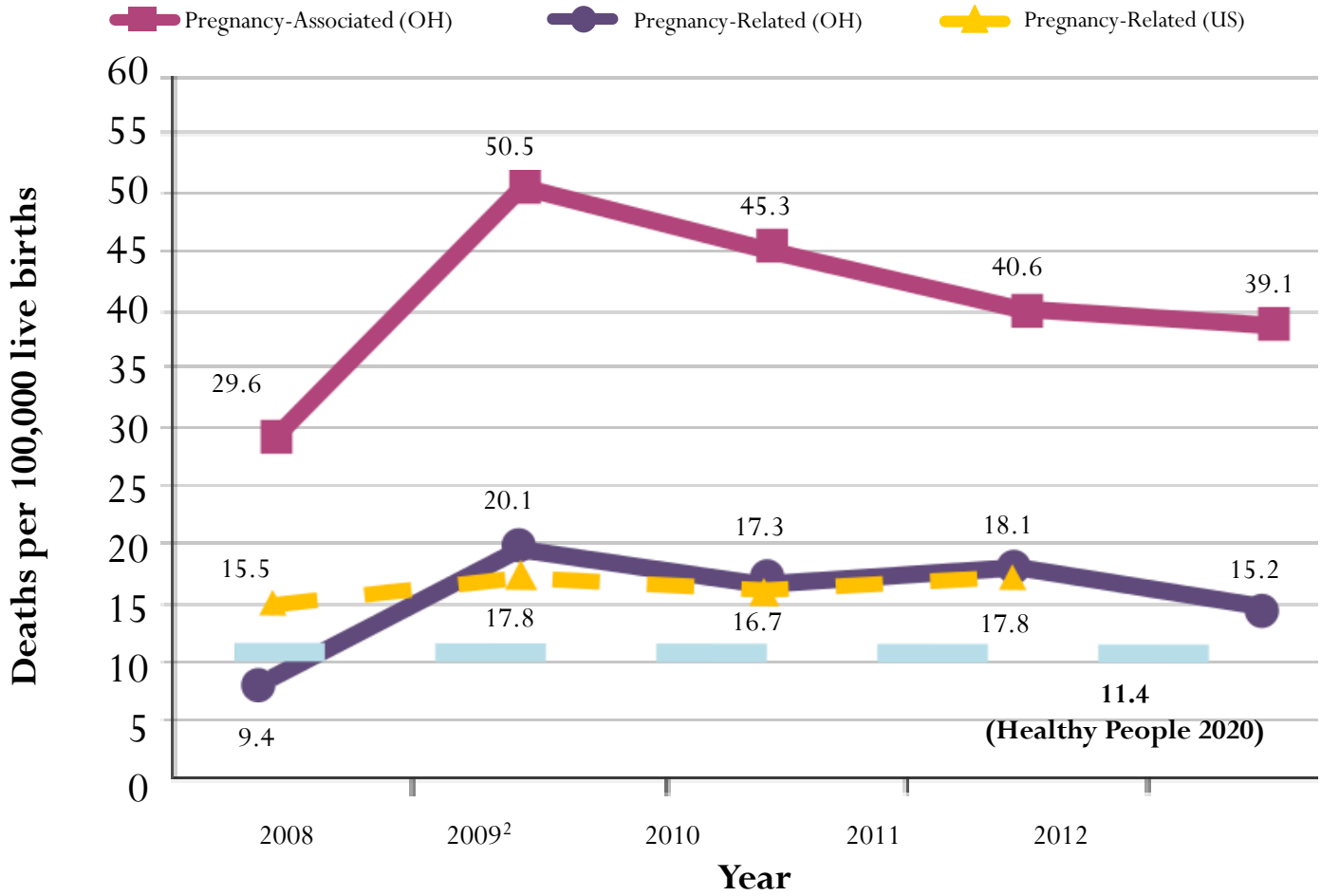
- Ob/gyn, MFM, midwifery
- Anesthesiology
- Ohio Coroners' Association
- State and local health departments
- Legal system and risk management
- CFR, hospital administration, social work



Review Process

- Review de-identified case summaries abstracted from primary sources—ex: medical records
- Identify risk factors and contributing factors
- Analyze services and interventions
- Identify barriers/gaps/needs
- Prepare individual case recommendations
- Focus on the case issues that are preventable; not the question of preventability

Ohio¹ and U.S. Maternal Mortality Ratios



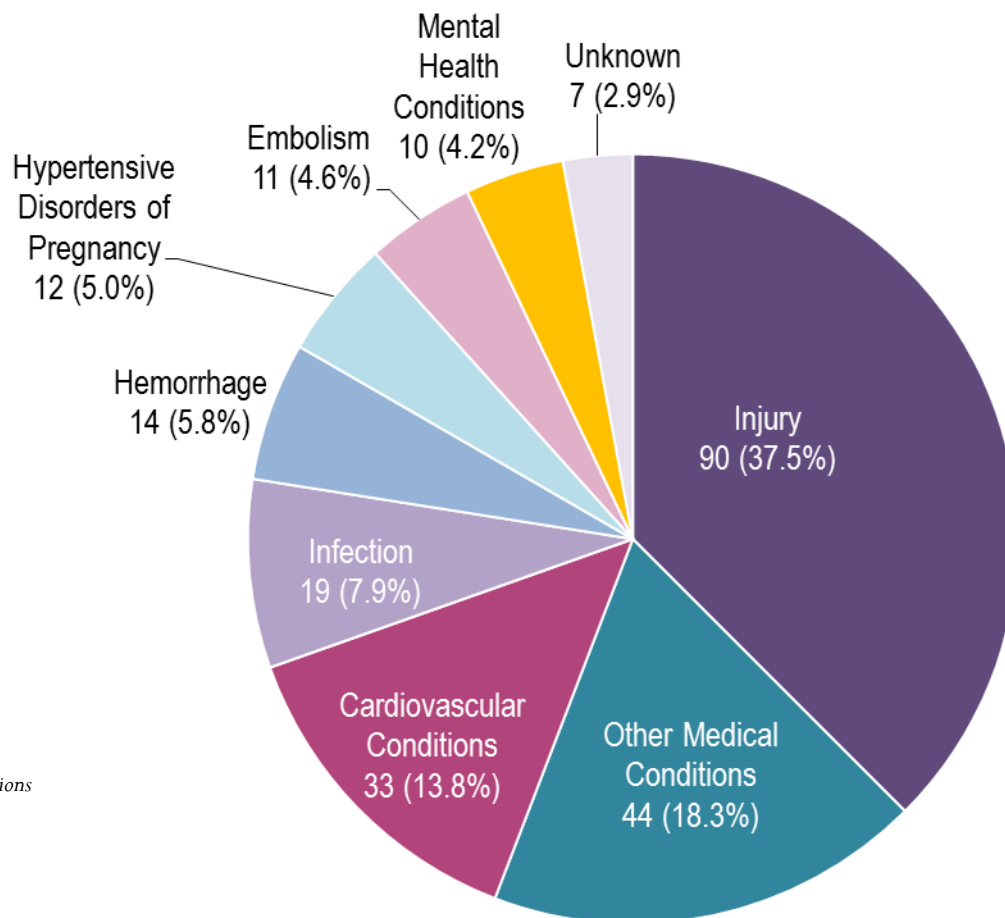
¹ Data are preliminary
² Ohio's ratio may be unreliable due to small number of deaths
 Note: 2012 US Pregnancy-related mortality ratios are not yet available

Source: Ohio Pregnancy-Associated Mortality Review

Ohio Pregnancy-Associated Deaths¹ 2008-2012²

*Of the 90 injury deaths, about 69 percent were unintentional, 27 percent were intentional, and 4 percent were of unknown intent.

- Most common manners of death were accident (68%), homicide (21%) and suicide (7%).
- Close to 27 percent were drug-related.

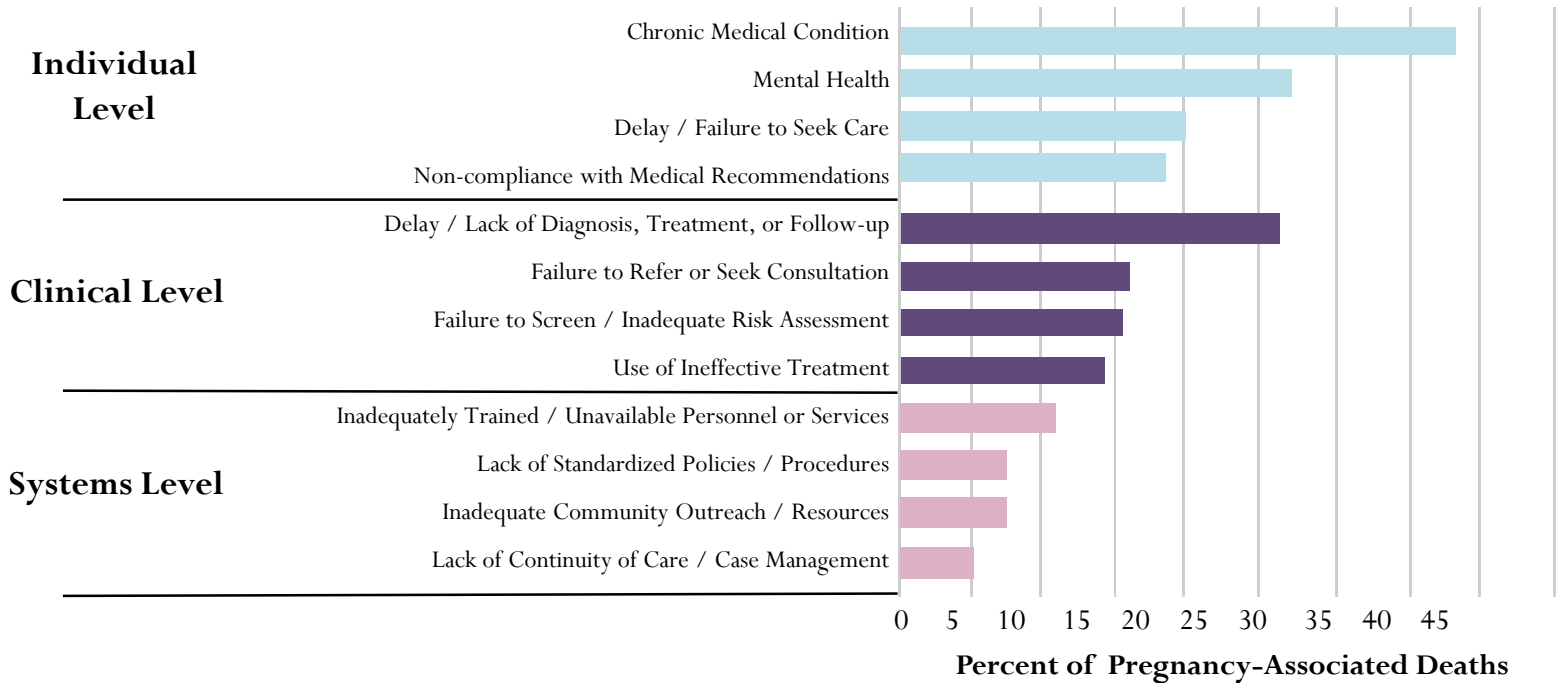


¹ Based on CDC's Maternal Mortality Cause of Death Classifications

² Data are preliminary

Source: Ohio Pregnancy-Associated Mortality Review Data

Most Common Factors Associated with Maternal Deaths in Ohio, 2008-2012



Source: Ohio Pregnancy-Associated Mortality Review

AMCHP Action Learning Collaborative: The Every Mother Initiative

- Funded through Merck for Mothers
- **Goal:** Enhance state maternal morbidity and mortality surveillance systems and support states in *translating data to actions* that improve maternal outcomes.
- **Technical assistance**
- **Sub-Award:** \$30,000
- 15 months: August 1, 2013-October 31, 2014

Ohio's Strategies

- **State-wide Capacity Survey**
- **Resource Development for Level I facilities**
 - **PAMR-Supported OB Emergency Simulation training**
 - Version 1.0: Primary Staff Training
 - Version 2.0: Train the Trainer, Secondary Staff Training
 - **Provision of Task Trainers**

Survey Respondents: Fall, 2013

Responses by Perinatal Region

	Respondents	Total	%
I	9	12	75.0
II	13	18	72.2
III	11	18	61.1
IV	24	27	88.9
V	10	15	66.7
VI	16	22	72.7

Overall Response: 74%

	Respondents	Total	%
I	47	62	75.8
II	16	27	59.3
III	20	23	86.9

Responses by Newborn Care Level

Simulation Use: Level I Hospitals

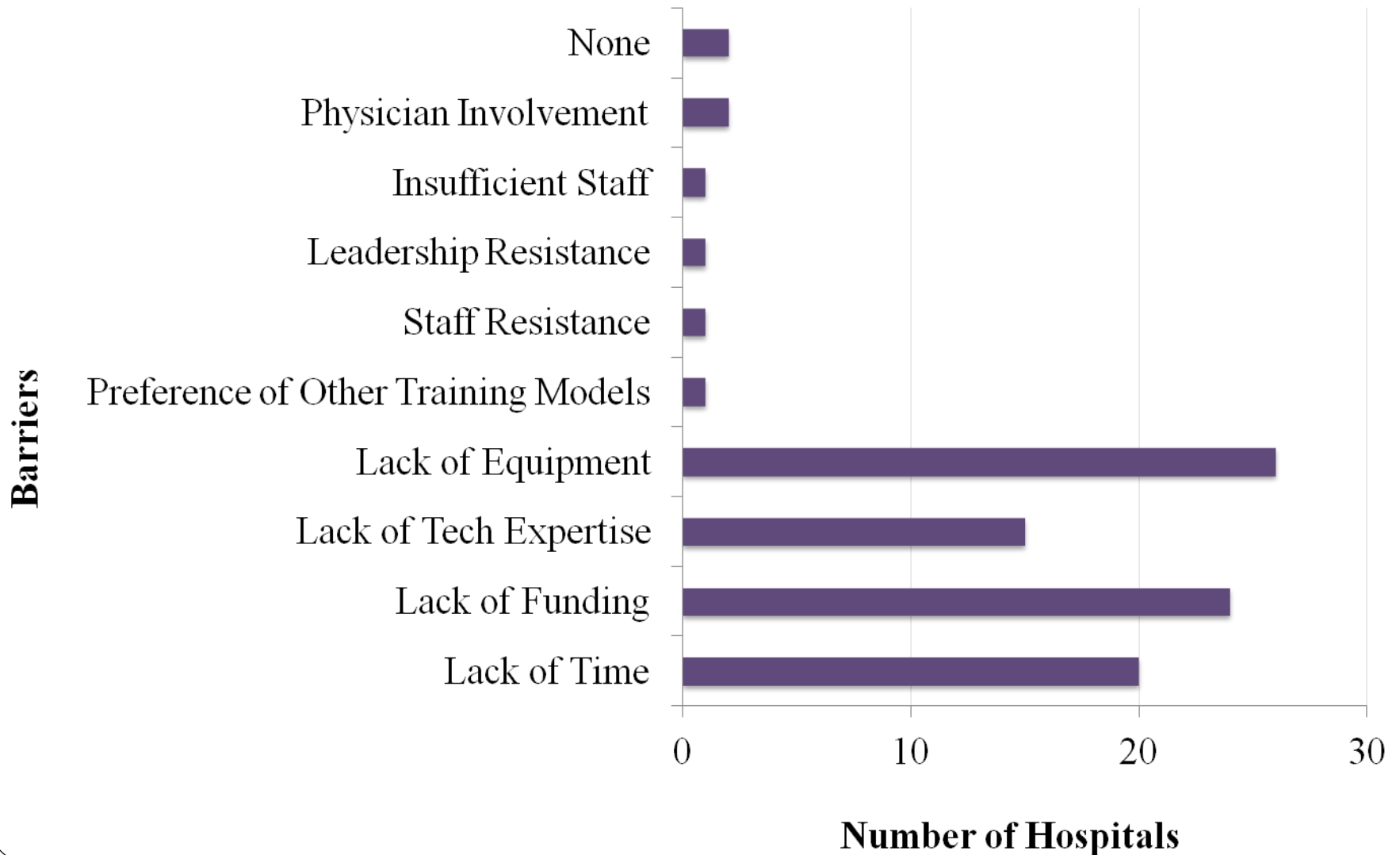
- Overall, about 92% reported using simulation training
 - About 85% of Level I institutions used for training
- Low-fidelity (non-programmable) mannequins
 - More likely in Level I institutions versus Level III

Level I Hospitals: Type of Simulation Use by Perinatal Region (N=40)

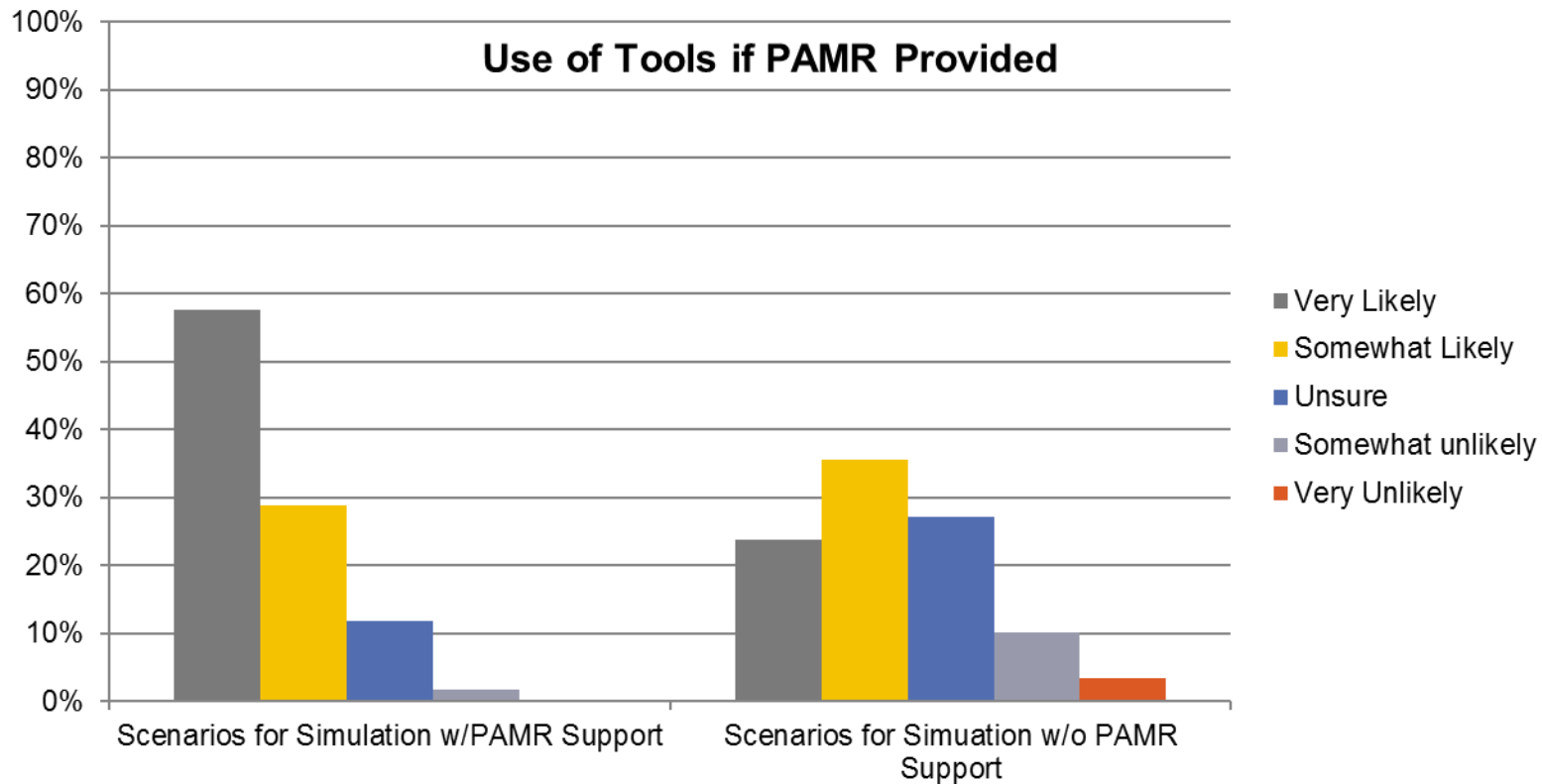
TYPE OF SIMULATION TECHNOLOGY

PERINATAL REGION	High Fidel w/ Support	High Fidel w/o Support	Low Fidelity	Computer- Based	Other
I	1	0	2	0	0
II	0	1	1	0	1
III	2	1	4	1	1
IV	3	4	8	2	4
V	0	1	4	1	1
VI	0	1	6	2	2
TOTAL	6	8	25	6	9

Barriers to Improving Simulation Use (N=40)



TECHNICAL ASSISTANCE



Overview: Simulation Training

- Goals
 - Educate staff
 - Practice scenarios
 - Test clinical infra-structure
- Structure → Employs adult learning theory in realistic setting
 - Didactics
 - Emergency scenario
 - Debriefing
- End Result(s)
 - Standardization of clinical care
 - Repetition for management/techniques
 - Fosters teamwork/communication

Sim Mom



- About \$60K
- Advanced full body birthing simulator
- Wireless connectivity
- Professional training for multiple obstetric scenarios

Set Up



Running the Drills

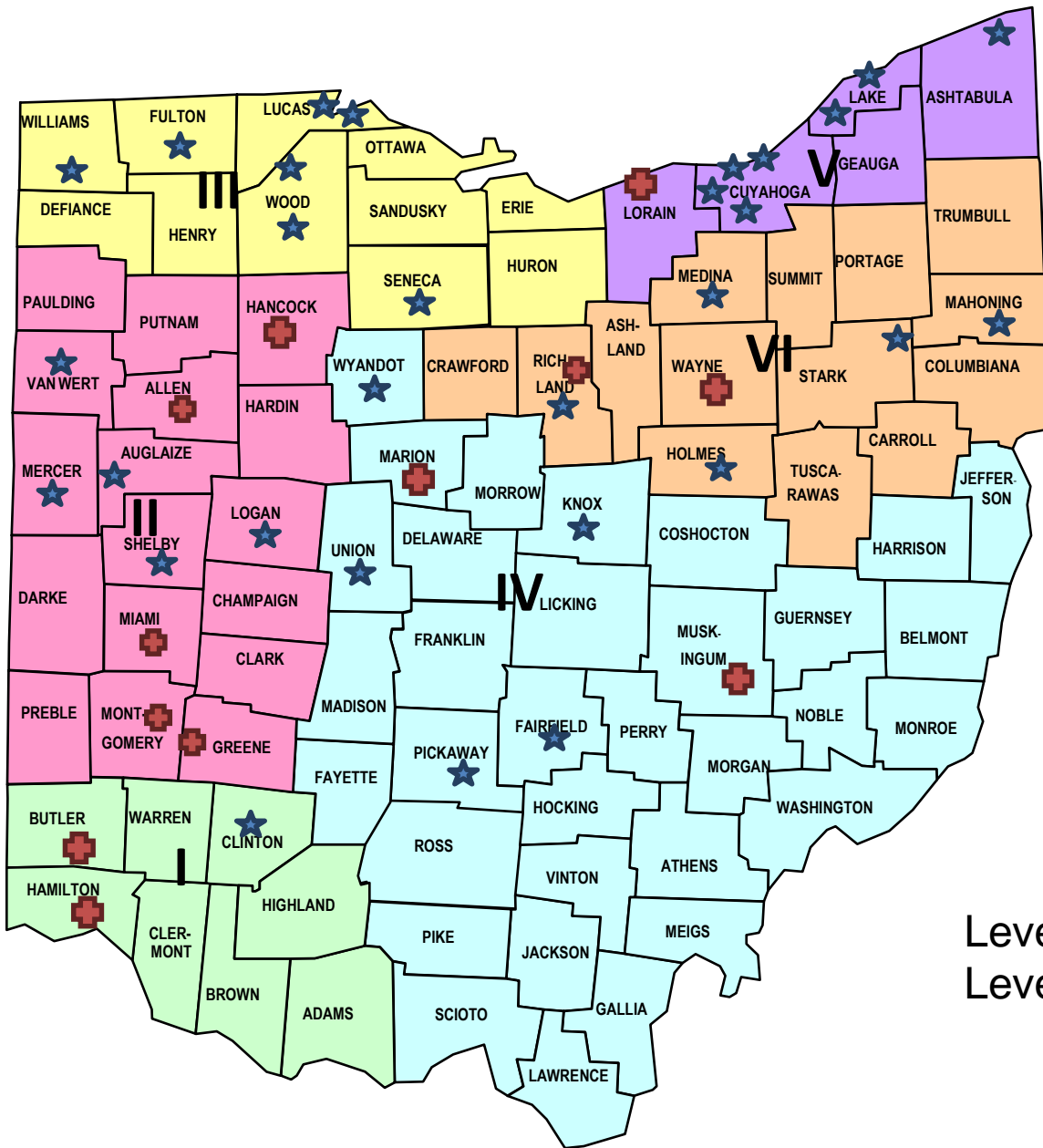


Ohio: Simulation Training Sites (3)—Version I.0



Evaluations

- 122 professionals from 14 facilities
- Methods
 - Standard Course Evaluation
 - Pre-Test: Day of Course
 - Post-Test 1: Day of Course
 - Post-Test 2: One month following course
- Results—Improvement in:
 - Overall knowledge of obstetric complications
 - Self-efficacy & confidence levels in management of emergencies



Train the Trainer Fall, 2015 Participant Hospitals

Level One Birthing Center = ★
Level Two Birthing Center = ✚

Train the Trainer Participants

- N=47; 72% Level I facilities
- Average OB nursing experience: 19.3 years
- Average experience as educator: 4.5 years
- Self-evaluation of simulation experience: 2.5
- Use of handoff tool: 66% (SBAR—87%)
- 83% had participated in simulation exercise
- 60% had staff participating in simulation training
- Raffle: 14 Mama Natalie task trainers provided

Highlights of the Three Month Evaluation

- ❑ 82% of respondents have done simulation exercises since the training
- ❑ 75% have made changes in how simulation is performed
- ❑ 44% plan to do simulation-based training quarterly, 22% monthly, 11% annually and 22% “other”.
- ❑ On a scale of 1-10 with 10 being the highest, participants rated their confidence at conducting a simulation-based training at 7.7, with a range of 5-9.
- ❑ 94% would attend a Train the Trainer, Part 2 course, if offered

Comments: Benefits of attending Train the Trainer

- ❑ “Purchased a Mama Natalie and began quarterly presentations/scenarios”
- ❑ “Demonstrated how low fidelity is beneficial to a Level I hospital with minimal funding.”
- ❑ “Made me realize we can do short, concise simulation events- does not need to be drawn out”

Next Steps

- **On site trainings**
 - Target specific geographic locations
 - Southeast Ohio: Appalachian counties, Level I hospitals
- **Additional Train the Trainer courses**
 - Hospitals that could not attend prior course
- **Train the Trainer, Part 2**
 - Second training, different topics for last year's participants

OSU OB Sepsis Project

- In response to increasing frequency of pregnant and postpartum women with infectious morbidity (remains rare)
- Introduced MEWS scores to Labor and Delivery, Antepartum, and Postpartum Units with recommended responses
- Plan to improve recognition, recruiting resources, and initial management through simulation training.

OSU OB Sepsis Project: Nursing

- **100% of staff completed the training**
 - 92 nurses
 - 10 surgical techs
 - 12 sessions (7-8 nurses/surgical techs per session)
- **Metrics:**
 - 100% utilized OB STAT/ERT teams correctly
 - 80% correctly identified sepsis as the underlying cause
- **Time-frame:** January-November, 2015

OSU OB Sepsis Project: OB/GYN Residents

- **Time Frame:** October, 2015-May, 2016
- **Aim to introduce to entire residency program:**
 - 75% (33/44) residents have completed to date
- **Format**
 - Introduction
 - Simulation (set scenarios)
 - Debriefing (50% perform simulation/50% observe)
 - Didactic session (much from OSU Guidelines)
 - Post-Test

Next Steps

- **Continue usage of simulation for common and rare complications of pregnancy.**
 - Postpartum hemorrhage
 - Shoulder dystocia
 - Diabetic Ketoacidosis
 - Sepsis
- **Develop additional tools to enhance education**
 - Multidisciplinary simulation to enhance teamwork
 - Actress involvement to enhance simulation and to evaluate communication to lay-person patient.

Acknowledgements

- The Ohio Department of Health
- The Ohio Pregnancy Associated Mortality Review
- The Clinical Skills and Education Assessment Center at The Ohio State University

QUESTIONS?



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OHA collaborates with member hospitals and health systems to ensure a healthy Ohio

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HelpingOhioHospitals



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