OHIO HOSPITAL ASSOCIATION

OBSTETRICAL SEPSIS

October 19, 2022

SEPSIS WEBSITE

ohiohospitals.org/sepsis

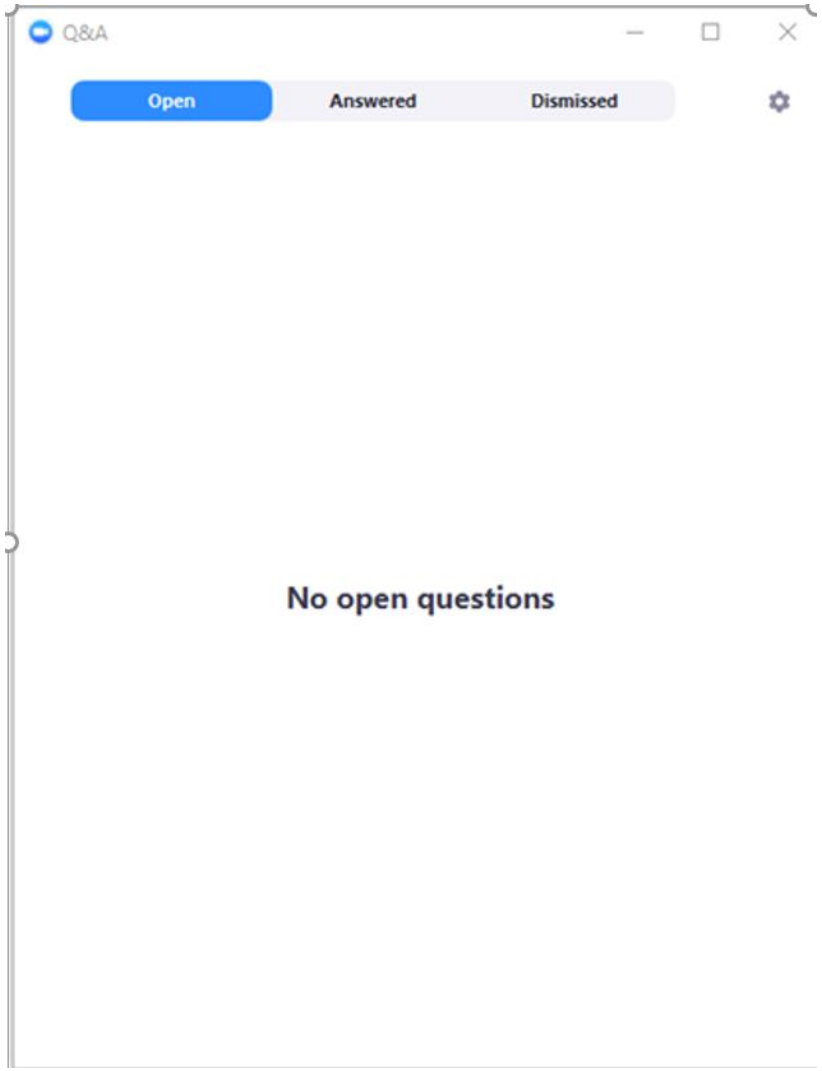
CONTINUING EDUCATION

- The link for the evaluation of today's program is: https://www.surveymonkey.com/r/Sepsis-October2022

- Please be sure to access the link, complete the evaluation form, and request your certificate. The evaluation process will remain open **two weeks** following the webcast. Your certificate will be emailed to you when the evaluation process closes after the 2-week process.

- If you have any questions, please contact Dorothy Frabott (Dorothy.Frabott@ohiohospitals.org)

SUBMITTING QUESTIONS



PRESENTER

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Obstetrical Sepsis

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Objectives

- Describe the epidemiology of sepsis in the perinatal period and how the AIM Sepsis bundle addresses areas for system improvement.
- Identify how transitions of care across healthcare setting may influence sepsis care.
- Explain how systems of infrastructure can support the adoption of quality improvement initiatives.

Definition

For the purpose of this bundle, “sepsis in obstetrical care” refers to

a life-threatening condition defined as organ dysfunction resulting from infection during pregnancy, childbirth, post-abortion, or the postpartum period (up to 42 days). Such conditions include infections that are related to delivery and other types of infections that occur during pregnancy or the postpartum period.

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Epidemiology of Obstetrical Sepsis

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Prevalence of Obstetrical Sepsis

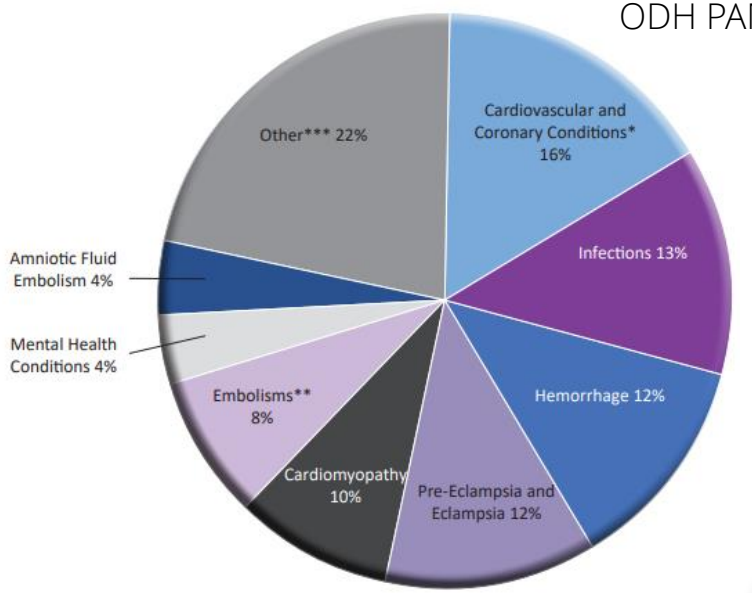
A Leading Cause of Death:

- 2nd leading cause of pregnancy-related death in the U.S.
- Significant cause of maternal mortality in the U.S.
- MMRs have demonstrated consistent deficiencies in awareness & recognition of maternal sepsis

Pregnancy-Related Deaths in Ohio:

- Infection: 2nd leading cause of pregnancy-related deaths in Ohio. Of these, 64% determined to have been preventable.

ODH PAMR, 2019



*While pregnant or within 1 year of pregnancy, any cause r/t or aggravated by pregnancy or management of pregnancy

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At-Risk Population

Pregnancy Adaptations:

- Dysregulation in maternal immune response during pregnancy
- Hemodynamic changes during pregnancy
  - Expanded plasma volume and progesterone-induced vasodilation
- Physiological hyperventilation
- Development of hydronephrosis and urinary reflux r/t ureteral compression from uterus

Lack of Clarity:

- Increased frequency of urination -> pregnancy or UTI?
- Increased respiratory rate -> pregnancy or infection?
- Diaphoresis, chills in postpartum period -> normal changes or infection?
- Pain after delivery -> normal or infection?

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Etiology of Obstetrical Sepsis

Antepartum:

*Frequently non-pelvic

- Septic abortion
- Chorioamnionitis
- Urinary Tract Infection
- Pneumonia
- Appendicitis

Postpartum:

*More likely to have pelvic source

- Endometritis
- Would Infection
- Urinary Tract Infection
- Pneumonia
- Gastrointestinal

(SMFM, 2019)

*In 30% cases, no source identified

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Recognition of Obstetrical Sepsis

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Obstetrical Sepsis Obscured

Physiologic Alterations of Normal Pregnancy:

- Sepsis cutoffs for respiratory rate, heart rate, partial pressure of carbon dioxide, and WBC count overlap with normal range for pregnancy, labor, and/or early postpartum period
  - Elevated HR, lower BP, higher WBC may obscure sepsis
- Increase of lactic acid levels during labor

Lack of Classic Presentation in OB:

- Fever is often absent at the time of initial presentation.
  - Michigan MMR of deaths r/t sepsis, 73% were normothermic
- In the absence of septic shock, pregnant patient with sepsis may appear deceptively well until rapidly deteriorating

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*National sepsis criteria not

Recognition of Sepsis

Use Pregnancy-Adjusted Tool:

- Pregnancies ≥ 20 weeks
- Immediate postpartum period, within 3 days of birth

Pregnancy-Adjusted Tools:

- CMQCC 2-Step Tool ->Based on modified SIRS
- MEOWS
- Obstetric qSOFA
- SOS

Use Non-Pregnancy Adjusted Tool:

- Early Pregnancy (<20 weeks)
- Postpartum, > 3 days from birth
  - Higher pregnancy thresholds may not be met at these stages

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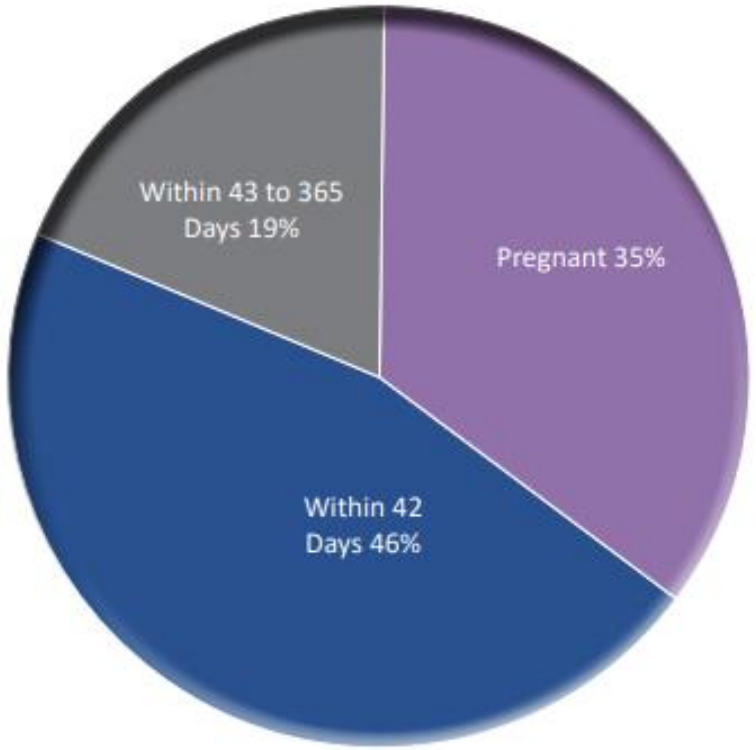
Healthcare Setting of Diagnosis

Timing of Pregnancy-Related Deaths from Infection, Ohio 2008-2016



ODH PAMR, 2019

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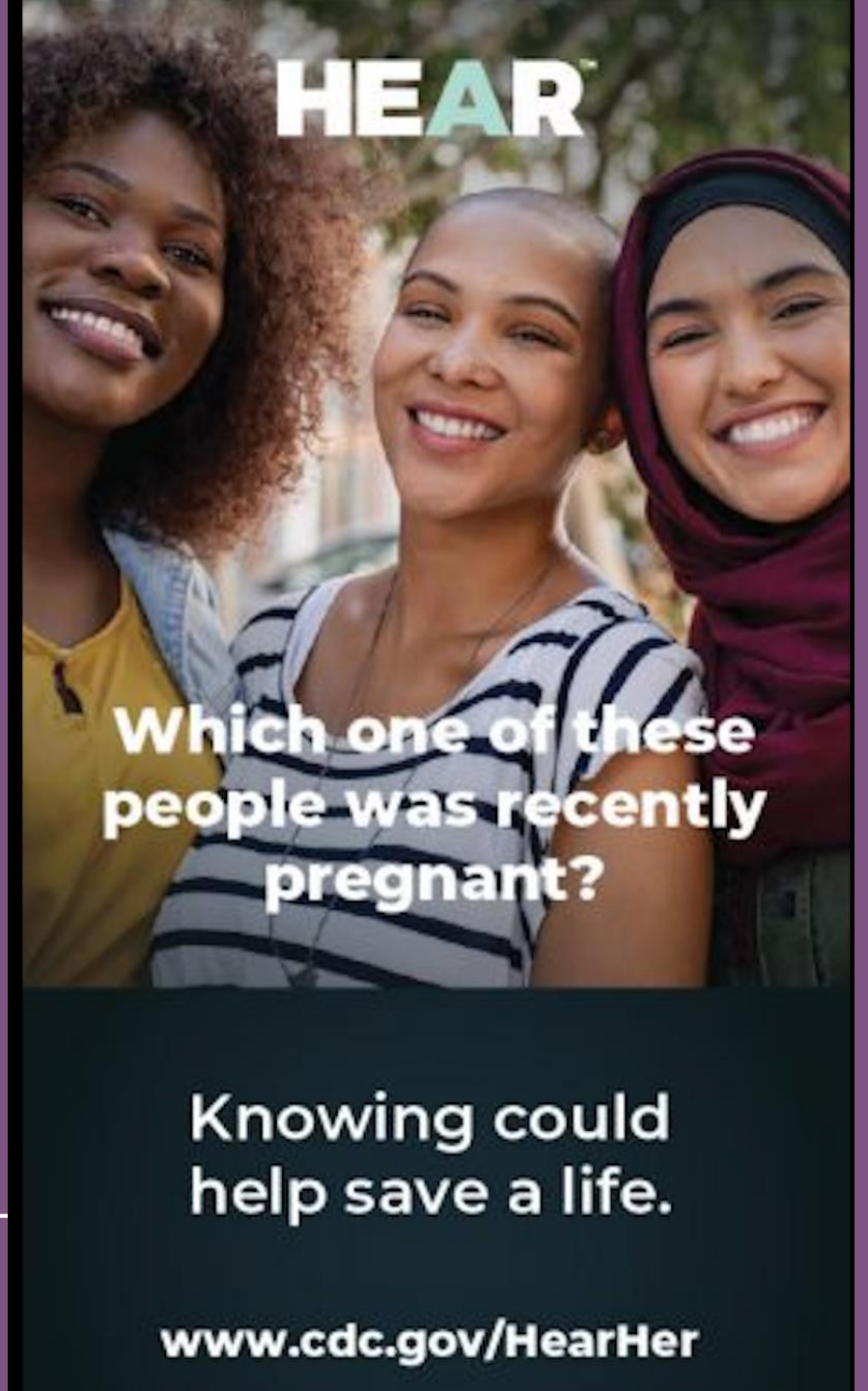
Recognition is Key!



AIM Patient Safety Bundles

Found on the AIM website
saferbirth.org

HRSA Maternal & Child Health
AIM ALLIANCE FOR INNOVATION ON MATERNAL HEALTH
ACOG The American College of Obstetricians and Gynecologists

Bundles are accompanied by resources and documents to support implementation

Bundle development workgroups include wide variety of disciplines and specialties, Patient With Lived Experience Consultants, and AIM staff

AIM Sepsis in Obstetrical Care Patient Safety Bundle

Now Available!

*Visit **saferbirth.org** for bundle documents and supporting material.*

HRSA Maternal & Child Health

AIM Alliance for Innovation on Maternal Health

ACOG The American College of Obstetricians and Gynecologists

AIM PATIENT SAFETY BUNDLES

AIM develops multidisciplinary, clinical-condition specific patient safety bundles to support best practices that make birth safer. LEARN MORE

SEPSIS IN OBSTETRICAL CARE

For the purpose of this Bundle, sepsis in obstetrical care refers to the World Health Organization definition for maternal sepsis as a life-threatening condition defined as organ dysfunction resulting from infection during pregnancy, childbirth, post-abortion, or the postpartum period (up to 42 days). Such conditions include infections that are related to delivery and other types of infections that occur during pregnancy or the postpartum period.

- READINESS
- RECOGNITION & PREVENTION
- RESPONSE
- REPORTING & SYSTEMS LEARNING

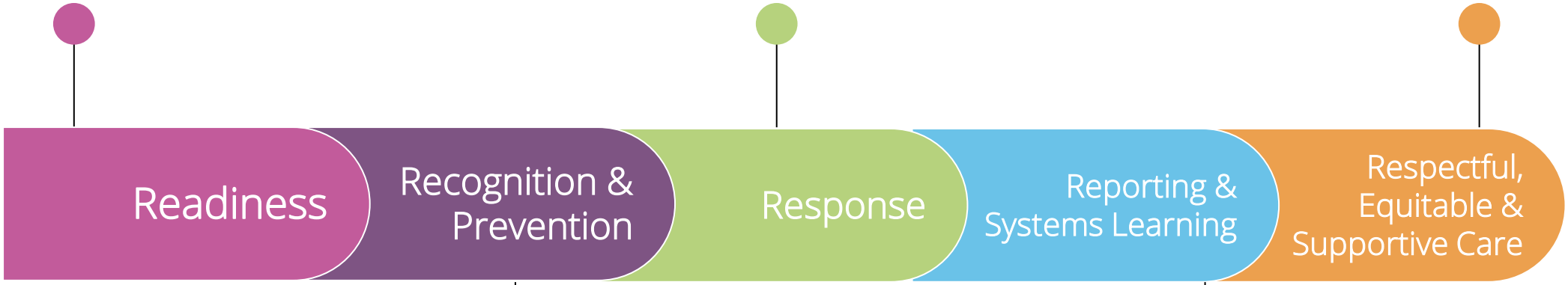
QUICK LINKS

- Printable Bundle (PDF)
- Sepsis in Obstetrical Care Element Implementation Details (PDF)
- Sepsis in Obstetrical Care Implementation Resources (PDF)

Provide multidisciplinary education on obstetric sepsis to all clinicians and staff that provide care to pregnant and postpartum people

Engage in team communication among units involved in the care coordination for patients with sepsis to understand diagnoses, treatment plans, & follow-up care

Include each pregnant or postpartum person & their identified support network as respected members of & contributors to the multidisciplinary care team



In all care environments, assess and document if a patient presenting is pregnant or has been pregnant within the past year

Conduct multidisciplinary reviews for systems improvement of each sepsis case to assess screening program, the quality of care provided to patients with sepsis, and whether instances of bias may have impacted care

Transitions in Care

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System Plan for Consult, Escalation, & Transfer

Outpatient Clinics:

- When patient reports signs and symptoms related to infection, use preadmission risk assessment to determine next steps.

Facilities without L&D:

- Emergency services should develop transfer protocols where pregnant patients taken to most appropriate facility.

Facilities with L&D:

- OB unit collaboration with emergency departments, ancillary services, and emergency response systems to establish guidelines.

*Representative from each discipline involved with protocol development

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System Plan for Consult, Escalation, & Transfer

Determine facility capability:

- Based on critical care resources within each setting and the ACOG Levels of Maternal Obstetric Care Consensus
  - Level 3 care is necessary for pregnant patients with sepsis
- If ICU services not available, the nearest transfer center should be identified and a process for transfer should be determined

When to Escalate Care

Escalate If:

- Patient is determined to be at high risk for clinical deterioration, is clinically unstable, or needs invasive hemodynamic monitoring or mechanical ventilation

Predictive Tools:

- Consider alerts and protocols to standardize care while supporting clinical decision making
- Sepsis in Obstetric Score (SOS) of ≥6 validated for predictive of ICU care.

Sepsis Obstetrics Scoring System			
Temperature (Centigrade) (° C) * 36 - 38.4 C (96.8 - 101.1 F)	0	SpO2% blood oxygen saturation >= 92%	0
Systolic blood pressure (mmHg) > 90	0	White blood count uL 5.7 - 16.9	0
Heart Rate (beats per minute) <=119	0	% Immature Neutrophils <10%	0
Respiratory Rate (breaths per minute) 12 - 24	0	Lactic Acid (mmol/L) <4	0
Calculate Sepsis Obstetrics Score (S.O.S)	0		

(Albright 2017; Albright 2014)

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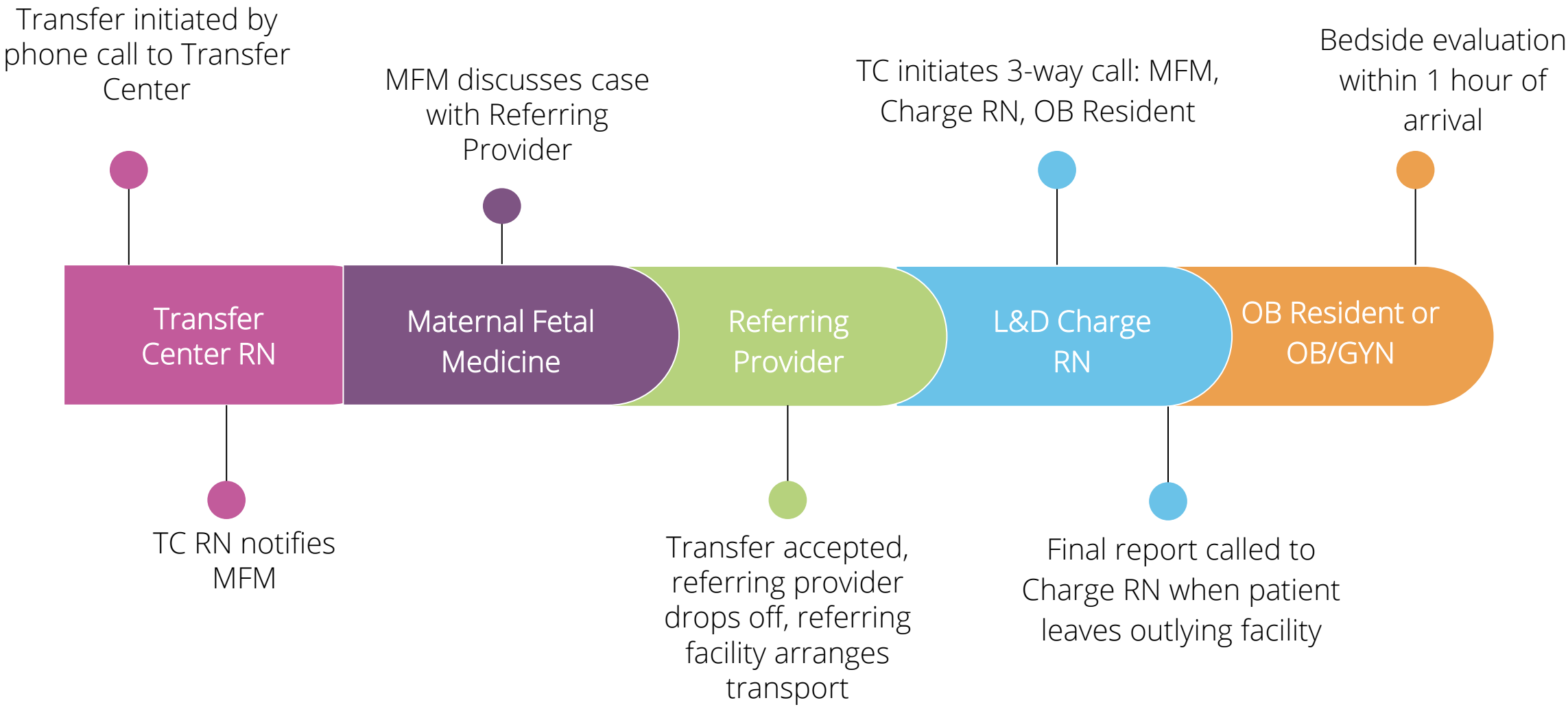
Maternal Transfer Center



Transfer Considerations: Preventable Harm

Handoffs

- Failures in communication occur in >70% of perinatal sentinel events (Singer, 2016)
- Ensure structured communication for high reliability

Transport Delays

- If transport delayed, notify receiving team
- Continue with patient status updates as necessary

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Transfer Considerations: Active Mobilization

Treatment Delays

- Delivery of bundle should not be delayed for transport to another unit or hospital
- Administer broad-spectrum antibiotic within 1 hour of presentation, even during transfer

Assemble the Team

- Multidisciplinary care team needed
- RRT as a compliment to the OB team
- Code Sepsis/Sepsis Alert to notify pharmacy, ICU, RRT

Multidisciplinary Care Team

May include:

- Obstetrics
- Maternal Fetal Medicine
- Anesthesiology
- Emergency Medicine
- Critical Care Medicine
- Infectious disease
- Nursing Leadership
- Internal and/or Family Medicine
- Respiratory therapy

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Transfer Considerations: Obstetric

Delivery

- Stabilize mother first
- Delivery should be reserved for the usual obstetric indications. Diagnosis of sepsis is not an indication for delivery.

(Lapinsky, 2017; SMFM, 2019)

Fetal Monitoring

- EFM has limited role during interfacility transport

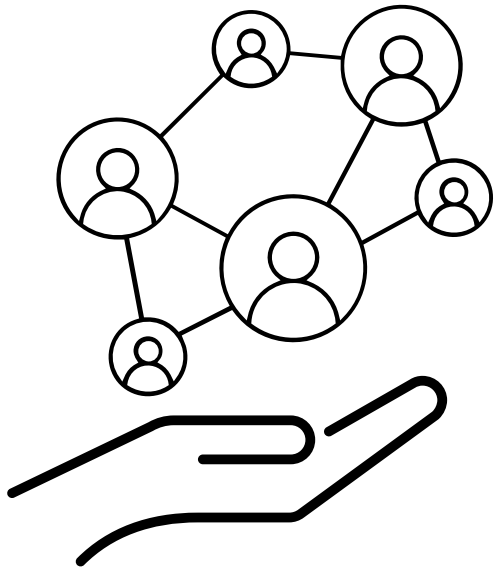
Team Dynamics:

- OB Team to assist other specialties with maternal and fetal pathophysiology
- Co-management by MFM specialist recommended when patient in critical care unit

Infrastructure for Sustainability

System design affects rate of adoption

- Availability of antibiotics
- RRT/Code Sepsis
- Policies, procedures, protocols
- Electronic medical record
- Hardwire into orientation/training
- Evaluation plans



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Barriers to Bundle Implementation

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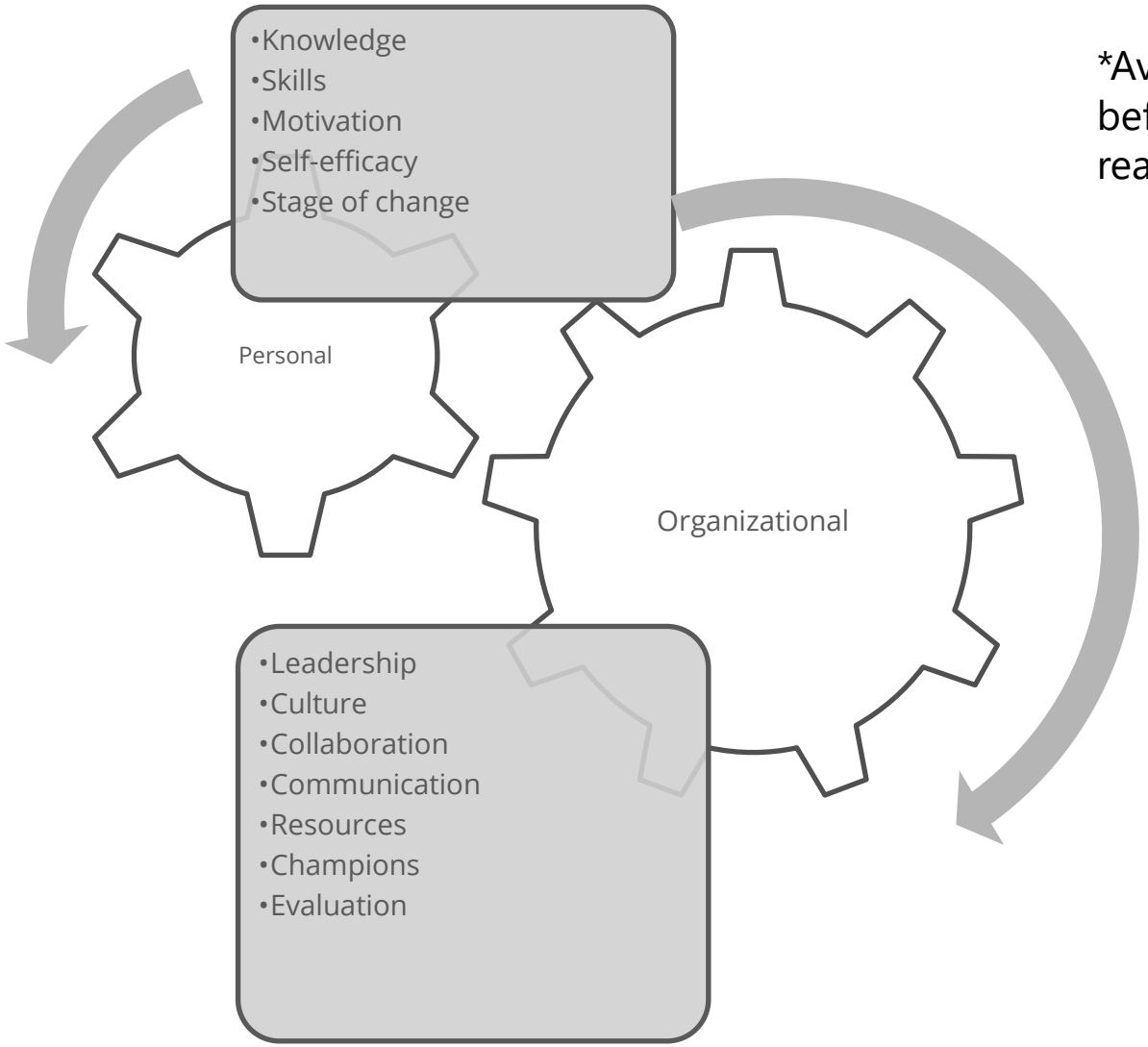
What Influences Implementation of EBP in Healthcare?

<u>California Supporting Vaginal Birth Initiative</u>
Facilitators:
- High levels effective communication
- Leveling of hospital hierarchies
- Individual physician commitment/leadership

Barriers:
- Rigid siloes by clinician discipline
- Individual physician commitment/leadership

(White VanGompel 2021)



*Average of 14 years before research/EBP reaches bedside

(Li 2018; Nilsen & Bernhardsson 2019)

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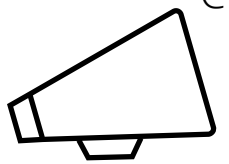
Strategies to Influence Adoption

Professional Behavior Change Strategies



- Audit and feedback – *mandatory 2nd opinion*
- Conduct educational meetings – *local opinion leader*
- Conduct local consensus discussions
- Conduct local needs assessments
- Facilitation
- Identify and prepare champions*
- Use advisory boards and workgroups
- Tailor strategies
- Remind clinicians
- Involve patients/consumers/family members
- Use train-the-trainer strategies

*Successful champions:

- Expert on the EBP
- Available for troubleshooting and training "on the floor"

(Chen 2018, Grimshaw 2012, Powell 2015)

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Successful Strategies for Adoption in OB

Hemorrhage

- Barrier Identification
- Tailored Strategies
- Promote Adaptability
- Change Environment
- Stage Implementation Scale up
- Mandate Change: *Time Out*

(de Visser 2018, Vamos 2016)

Reduction 1º Cesarean

- Local Needs Assessment
- Formal Implementation Blueprint
- Stage Implementation Scale up
- Conduct Consensus Discussions
- Identify and Prepare Champions

(Callaghan-Koru 2019)

Postpartum LARC

- Barrier Identification
- Tailored Strategies
- Implementation Team
- Engaged Champions
- External Networking

(DeSisto 2019, Harper 2019, Rankin 2016)

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Selection of Implementation Strategies

Based on Comprehensive Assessment:

- Available resources
- Facilitators and barriers to implementation
- Characteristics of the intervention
- Characteristics of the team

Thank You!

A huge thank you to all the SOC workgroup members, representing a wide variety of disciplines and specialties…

Melissa Bauer, Co-Chair
Rob Gibbs, Co-Chair
Cat Albright
Carole Burke
April Chavez
Phil Heine
Brenna Hughes
Sue Kendig
Maile Le Boeuf
Chelsea Lennox
Elliot Main
Luis Pacheco
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Rachel Solnick
Andrew Youmans
Rylea Luckfield
Izzy Taylor
Emily Greenwood
Garsy Presumey-Leblanc

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Questions?

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

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