# **Improving Obstetric Outcomes**





#### **Speaker bio**

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As a senior patient safety and risk consultant for MedPro Group, Laura identifies issues and solutions pertinent to risk management and patient safety for insureds.

Laura is an attorney and a registered nurse. As a registered nurse, she has cared for patients in acute renal, medical/surgical, high-risk obstetrics, labor and delivery, surgery, critical care, and ambulatory care settings. As an attorney, Laura was a malpractice defense attorney in private law practice, representing hospitals and healthcare providers.

In her most recent position before MedPro Group, Laura was the assistant counsel for continuing care at Trinity Health. During her 22-year tenure at that health system, Laura served as claims manager and loss control director, where she focused on risk assessments and risk modification programs for physicians, hospitals, and postacute care providers.

Laura obtained a bachelor of science degree in nursing at Oakland University and a masters of business administration degree from Michigan State University. She earned her juris doctor from Wayne State University. She is a member of the Indiana and Michigan Societies for Healthcare Risk Management (ISHRM and MSHRM), the American Society for Healthcare Risk Management (ASHRM), and the American and Michigan Bar Associations.



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#### **Objectives**



At the conclusion of this program, participants should be able to:

- Understand the scope and impact of liability exposures in the practice of obstetrics and gynecology
- Understand claims data and contributing factors in obstetricsrelated allegations
- Evaluate risks and select appropriate risk solutions
- Implement evidence-based best practices
- Achieve reduction in adverse events



# Laying the foundation

Background and scope

#### **Maternal health in the United States**

Over a 30-year period (1987-2016), the U.S. maternal mortality rate increased by 134.7%.

- Maternal mortality rose from 7.2 to 16.9 deaths per 100,000 live births
- Updated CDC data in January 2020 reflect an additional increase in maternal mortality to 17.4 deaths per 100,000 live births in 2018

More than 700 women die each year from pregnancy- and childbirth-related complications in the United States.

Approximately 60% of these deaths are preventable.

Petersen, E. E., Davis, N. L., Goodman, D., Cox, S., Mayes, N., Johnston, E., . . . Barfield, W. (2019, May 10). Vital signs: Pregnancy-related deaths, United States 2011-2015, and strategies for prevention, 13 states, 2013-2017. *Morbidity and Mortality Weekly Report (MMWR)*, 68(18):423-429. Retrieved from <a href="http://www.cdc.gov/mmwr/volumes/68/wr/mm6818e1.htm">www.cdc.gov/mmwr/volumes/68/wr/mm6818e1.htm</a>

#### U.S. maternal health compared to the world

In contrast to the U.S. experience, maternal mortality rates globally have declined 38% from 2000 to 2017.

In 2017, the World Health Organization ranked the United States as tied for 56th by maternal mortality ratio, the number of maternal deaths per 100,000 live births.

Data sources conclude that the United States has the highest maternal mortality rate among developed countries, making it the most unsafe place in the developed world for a woman to give birth.

#### **Racial/ethnic disparities in U.S. maternal mortality**

Data from births recorded between 2011 to 2015 indicate that African American and American Indian/Native Alaskan women were three times more likely to die from pregnancy-related complications than white women.

Perinatal deaths were caused by hemorrhage,\* cardiovascular and coronary conditions,\* infection, cardiomyopathy,\* embolism, hypertensive disorders, and mental health-related factors (\*top three in all age groups).

Underlying causes include advanced maternal age (older than age 35 at delivery), obesity, heart disease, coagulation-related morbidities, and diabetes.

#### Why is obstetrics a high-risk service?



- Health of the mother
- Health of the fetus/neonate
- Process factors
- System failures
- Human factors
- Errors
- Environmental factors
- Equipment factors

#### One is too many!



### **Claims data**

What can we learn from claims about risks in obstetrics?

#### Nationwide causes driving obstetrics-related claims



#### **Obstetrics-related allegations**

Allegation type	% of case volume
Delay in treatment of fetal distress	24%
Performance of vaginal delivery+	17%
Management of pregnancy complications	17%
Treatment immediately after labor/delivery	9%
Delay in recognizing need for earlier delivery plan <sup>++</sup>	7%
Performance of operative delivery	7%
Management of labor	6%
Improper choice of delivery method	5%
Management of postpartum patient	5%
Retained foreign body	3%

Note

Multiple allegation types can be assigned to each case; however, only one "major" allegation is assigned that best characterizes the essence of the case.

+ includes forceps, vacuum extractions, use of specific maneuvers

++ not related to fetal distress

#### **Allegation trending over time**

Allegations involving delayed treatment of fetal distress and performance of vaginal deliveries have started to trend upward as a percentage of all cases.



### **Clinical severity\* — top allegation categories**

Typically, the higher the clinical severity, the higher the indemnity payments and the more frequently an indemnity payment occurs.

![](_page_14_Figure_2.jpeg)

■Low ■Medium ■High

Within the high severity cases are permanent patient injuries ranging from serious to grave and patient (fetal and/or maternal) death. \*NAIC severity scale

#### **Claimant type and top locations**

![](_page_15_Figure_1.jpeg)

#### **Contributing factors**

![](_page_16_Figure_1.jpeg)

Contributing factors are multilayered issues or failures in the process of care that appear to have contributed to the patient outcome and/or to the initiation of the case.

Multiple factors are identified in each case because generally not just one issue, but rather a combination of issues leads to these cases.

#### Top contributing factor categories by allegation

![](_page_17_Figure_1.jpeg)

![](_page_18_Picture_0.jpeg)

### **Building evidence-based solutions**

Improving maternal/infant health

### Administrative + clinical = improved quality

Leadership sets the stage for success

Leaders establish the standards and expectations, and they measure performance designed to meet those goals.

### Clinical excellence

Excellence in patient care is dependent on clinicians who have the education, training, and experience to exercise reasoned judgment and provide the appropriate care necessary to meet patient needs.

Quality

Quality is measured by the clinical processes and outcomes of mothers and babies as they move through the care delivery system. Maternal morbidity and mortality (as well as infant survival to age 1 year) are well-established public health metrics that affect the need for medical care and social services for a lifetime.

![](_page_19_Figure_7.jpeg)

#### **Obstetrics department structure**

#### **Administrative functions**

- ACOG levels of perinatal care
- Policies, procedures, and checklists for obstetrics department
- Obstetrics department leadership selection process (elected vs. appointed by the board)
- Obstetrics medical staff privileging and credentialing processes
- Obstetrics nursing staff training and credentialing processes
- Assessment of competencies

- Interdisciplinary peer review process
- Documented authority gradient/chain of command
- Obstetrics department equipment and physical plant
- Obstetrics supportive services (anesthesia, neonatal/pediatrics, operating room, lab)
- Incident reporting and response processes
- Building a Just Culture
- Auditing for adherence

#### **Obstetrics department structure (continued)**

#### **Clinical foundations**

- Electronic fetal heart rate monitoring (EFM) training and certification (physicians and nursing staff trained together)
- Obstetric rapid response team/MEWS, simulation and drills
- TeamSTEPPS training; HRO training as appropriate
- Communication training as appropriate (SBAR or similar tool)
- Handoff training as appropriate (I PASS or similar tool)
- Identification of key success and quality metrics
- Auditing for adherence/department and provider scorecards and success metrics

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# Analyzing and managing risks

Understanding causes of poor outcomes

#### Framework for risk analysis during case review

#### People, process, environment, equipment

![](_page_23_Picture_2.jpeg)

Human factors (including culture) Process or system factors Environmental factors Equipment, technology, or device factors

#### Consider both active and latent failures in your analysis.

#### **Case study #1: fetal distress**

Patient	29-year-old G1PO at 37.3 weeks admitted for induction of labor due to Type 2 diabetes mellitus and large estimated fetal weight.	
Summary of labor	New graduate nurse assigned to the patient. Temp 100.6 on admission. Patient did not understand triage question of "ruptured membranes;" later revealed she had been leaking vaginal fluid for two days. Prolonged first stage of labor; multiple decelerations on EFM but not communicated by nurse to physician. Charge nurse relieving for break noted decelerations and informed physician, but did not apply oxygen, did not reposition patient, and did not increase IV fluids.	
Summary of delivery	Prolonged second stage of labor; pushed for more than 3 hours. Tight nuchal cord. Shoulder dystocia for 4.5 minutes; maneuvers not documented. Fourth degree perineal laceration noted.	
Outcome	Apgar scores of 1 and 2; baby died at two days of life. Placental pathology studies revealed chorioamnionitis.	
Allegations	Failure to diagnose and treat fetal distress; failure to perform primary C-section due to probable cephalopelvic disproportion; failure to diagnose and treat infection; failure to monitor and timely report changes in condition.	

#### **Discussion points: fetal distress**

Large fetus, untried pelvis: Was the decision to allow to labor appropriate?

Prolonged labor, prolonged 2nd stage: Hints that there might be difficulties

Inexperienced nurse with limited EFM interpretation experience

Was everyone on the same page regarding the EFM tracings?

Charge nurse did not mentor/collaborate to provide care

Drift (allow to push for 3 hours). What is its meaning in Just Culture?

Shoulder dystocia maneuvers: Do you have a standardized policy?

Was there evidence of infection upon admission?

Did this case study present any surprises to you? What were they?

#### **Risk mitigation strategies: fetal distress**

Conduct standardized EFM interpretation training

Train physicians and nurses together so they speak the same language

Maintain certification in EFM interpretation

Identify potential underlying causes of fetal intolerance to labor

Understand labor is taxing to a fetus already compromised by other factors, such as infection or prematurity

Establish oxytocin administration protocol

Adopt active management of labor protocol (including second stage)

Consider implementing internal monitoring if external monitoring is difficult

#### **Case study #2: TOLAC**

Patient 24-year-old G2P1 at 39.3 weeks was admitted for induction and trial of labor. Previous C-section done for failure to progress. History of gestational diabetes noted. Patient had large body habitus and consistently refused to be weighed during pregnancy.

Summary of labor

No estimated fetal weight was documented upon admission. Exam: cervix 4 cm, 80% effaced, -2 station. Labor progressed slowly. Amniotomy was performed with light meconium-stained fluid noted. Epidural was placed at 7 cm dilatation. Patient was completely dilated 14 hours after start of oxytocin. Slow fetal descent and poor pushing effort was documented. Fetal heart rate pattern demonstrated persistent lack of variability for the entire labor. The attending physician and labor and delivery nurses disagreed on whether variable or late decelerations were present. Decision was made to move patient to delivery suite and apply vacuum extractor.

#### Case study #2: TOLAC (continued)

Delivery There was no pre-arranged delivery plan communicated with the team. A difference of opinion was raised regarding the length of time the vacuum was applied and the number of pop-offs that occurred. Prolonged episode of pulling on head/caput resulted in nurse touching physician's hand and contaminating the instrument. A heated verbal exchange between physician and nurse followed. After approximately 45 minutes, the room was converted for C-section. OB paused to eat a sandwich while the room was being prepared.

Outcome

Infant was delivered with Apgar scores of 3, 5, and 7; noted to be limp and dusky. Delayed evaluation by neonatology (had not been notified that the patient was having a C-section). Diminished movement of infant's right arm was noted; transferred to neonatal intensive care unit. Keyhole opening noted in uterus during C-section.

#### **Discussion points: TOLAC**

What are the eligibility criteria for TOLAC at your hospital?

Do you think the existing policy/protocol for using the vacuum extractor was referenced and/or followed?

Does your hospital conduct chain of command drills?

Does your hospital have a disruptive behavior policy for all staff including physicians? Is it enforced with everyone?

Have you ever debriefed after an event like this?

What would you have done differently?

What causes and contributing factors did you identify?

### **Risk mitigation strategies: TOLAC**

Establish risk-in and risk-out criteria for TOLAC

- Patients
- Facilities

Carefully relay and document the TOLAC informed consent discussion

Establish clear procedures for use of vacuum extractors and forceps

#### Adopt active management of labor protocol

- Create evidence-based criteria for failure to progress
- Create care plan to include movement toward repeat C-section if criteria are met

Drill chain-of-command scenarios

Collaborate with NICU/peds to create criteria for consult at deliveries

![](_page_31_Picture_0.jpeg)

# **Focus on maternal injuries**

#### Focus on maternal injuries: allegations

Obstetrics-related allegation details	% of case volume
Management of pregnancy complications	26%
Treatment immediately after labor/delivery	20%
Management of postpartum patient	18%
Management of labor	10%
Performance of operative delivery	9%
Delay in recognizing need for earlier delivery plan – not related to fetal distress	6%
Delay in treatment of fetal distress	5%
Performance of vaginal delivery (includes forceps, vacuum extractions, and use of specific maneuvers)	4%
Retained foreign body	2%

OB-related allegations with one or more of AIM's severe maternal morbidity (SMM) ICD-9 codes identified

#### Focus on maternal injuries: diagnoses

![](_page_33_Figure_1.jpeg)

OB-related allegations with one or more of AIM's severe maternal morbidity (SMM) ICD-9 codes identified \*Endocrine and/or metabolic

#### **Locations**

![](_page_34_Figure_1.jpeg)

OB-related allegations with one or more of AIM's severe maternal morbidity (SMM) ICD-9 codes identified

#### **Responsible service types**

![](_page_35_Figure_1.jpeg)

OB-related allegations with one or more of AIM's severe maternal morbidity (SMM) ICD-9 codes identified

### **Case study #3: postpartum bleeding**

Patient	29-year-old G3P2 admitted in active labor (8 cm) at 38 weeks gestation.
Summary of labor	Spontaneous rupture of membranes period of time prior to delivery (estimated at 12+ hours). Pudendal block placed prior to delivery because advanced stage of labor did not allow for epidural placement.
Summary of delivery	Vaginal delivery of female infant 9 lb 12 oz, Apgar scores of 8 and 9. Placenta spontaneously delivered and sent to pathology. Patient noted to have heavy bleeding within minutes. Uterus was boggy, but responsive to massage and oxytocin.
Outcome	OB/GYN was called to postanesthesia care unit for reported bleeding (5 pads in 30 minutes). Uterus responsive to massage and carboprost tromethamine. IV oxytocin concentration was increased. Lab called up to the unit to report blood specimens had clotted and needed to be redrawn. OB stated (later) that she did not receive the information about the clotted blood specimens.

#### **Case study #3: postpartum bleeding (continued)**

Outcome (continued)

Patient self-administered ibuprofen from her purse for postpartum discomfort. Found unresponsive in bathroom with profuse bleeding from vagina.

Patient was taken to surgery; D&C revealed retained products of conception. Postoperatively, uterus was firm but bright red bleeding persisted.

Next morning, patient was assisted with ambulation and passed a clot the size of a dinner plate. Repeat labs revealed hemoglobin 6.2.

Returned to surgery second time; anesthesiologist transfused one unit packed cells. Anesthesiologist was new to the department and unaware of hemorrhage protocol. Estimated blood loss 1,000 cc; posterior cervical tear discovered and repaired.

Patient was transferred to surgical intensive care unit. Had stormy course of recovery; required additional transfusions and brief ventilator support. IV antibiotics administered for positive blood cultures.

#### **Discussion points: postpartum hemorrhage**

How does your organization define obstetric hemorrhage?

Which obstetric patients are at risk for postpartum hemorrhage?

Does your hospital have an established obstetric hemorrhage response protocol?

If so, what are the components?

What departments are involved in developing and executing the protocol?

#### **Risk mitigation strategies: postpartum hemorrhage**

Adopt active management of third stage of labor protocol

#### Establish consistent process to quantify estimation of blood loss

- Calibrated delivery table drape
- Compare weight of materials, dry vs. wet

Evaluate postpartum hemorrhage using a 4-T analysis

• Tone (uterine atony)

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- Trauma (lacerations, hematomas, inversion, rupture)
- Tissue (retained products, invasive placenta)
- Thrombin (coagulopathies)

Establish multidisciplinary obstetric hemorrhage protocol

#### Assess blood bank capacity and response

American College of Obstetricians and Gynecologists. (2019). Quantitative blood loss in obstetric hemorrhage. ACOG Committee Opinion Number 794. Retrieved from <a href="https://www.acog.org/clinical/clinical-guidance/committee-opinion/articles/2019/12/quantitative-blood-loss-in-obstetric-hemorrhage">https://www.acog.org/clinical/clinical-guidance/committee-opinion/articles/2019/12/quantitative-blood-loss-in-obstetric-hemorrhage</a>. Evensen, A., Anderson, J.M., & Fontaine, P. (2017). Postpartum hemorrhage: Prevention and treatment. *Am Fam Physician*, *95*(7):442-449. Retrieved**4()** from <a href="https://www.aafp.org/afp/2017/0401/p442.html">https://www.aafp.org/afp/2017/0401/p442.html</a>.

#### Focus on postpartum hemorrhage

Factor category	Details	Factor present in % of postpartum hemorrhage case volume
	Failure to appreciate/reconcile symptoms	50%
Clinical judgment	Failure to establish differential diagnosis	25%
	Inadequate patient monitoring	21%
Communication	Failure to communicate patient details that, if known, could have mitigated risk of injury	21%
Clinical environment	Weekend/holiday	14%
Technical skill	Procedural skill involved in managing the complication	43%
Administrative	Inadequate physician coverage	7%

#### **Case study #4: pre-eclampsia/eclampsia**

Patient 33-year-old G2P0, twin pregnancy after in vitro fertilization, with history of chronic hypertension controlled with oral meds, and gestational diabetes. Pregnancy being comanaged by primary OB/GYN and also a maternalfetal medicine (MFM) specialist. Visit to L&D Patient presented to labor and delivery at 34 weeks' gestation with cramping/contractions. Blood pressure elevated; labs done, low platelet count noted. Oral antihypertensive medication prescribed. Patient discharged to home. Call to OB One week later, the patient called her OB to report a headache and having vomited her pm dose of blood pressure medication. OB ordered repeat dose of blood pressure medication and acetaminophen for headache.

#### Case study #4: pre-eclampsia/eclampsia (continued)

Follow-up visit Patient followed up with a routine OB visit one week after her L&D visit (and a day after her call to the OB). Labs drawn on a Thursday going into a Friday/holiday weekend. Platelets significantly lower, now at 100,000. Results were made available in the patient chart for access by both the OB and MFM; neither one took any action. Both were out of town over the holiday weekend.

ScheduledPatient followed up with a scheduled MFM appointment the following<br/>Tuesday. No B/P taken during the appointment.

Outcome

The patient experienced blurry vision later that same day, but did not contact either physician. Patient had seizure at home at 35.2 weeks. Found unresponsive by EMS, coded, and transported to hospital. Emergency C-section was done, but neither twin survived. Mother's diagnoses: eclampsia, pulmonary collapse, and cerebral edema. Life support removed and patient expired.

#### **Discussion points: pre-eclampsia/eclampsia**

What are the risk factors for pregnancy-induced hypertension (PIH)?

How do patients present with PIH (signs and symptoms)?

What is HELLP syndrome? What are some early manifestations?

#### **Risk mitigation strategies: pre-eclampsia/eclampsia**

![](_page_44_Figure_1.jpeg)

#### Focus on pre-eclampsia and eclampsia

Factor category	Details	Pre-eclampsia & eclampsia % of case volume
	Failure to appreciate/reconcile symptoms	63%
Clinical judgment	Inadequate patient assessment resulting in premature discharge and/or failure to admit for inpatient care	50%
	Mismanagement of labor & delivery	31%
Communication	Failure to communicate patient details that, if known, could have mitigated risk of injury	50%
Clinical environment	Night shift	38%
Administrative	Inadequate physician coverage	13%

OB-related allegations with one or more of AIM's severe maternal morbidity (SMM) ICD-9 codes identified

![](_page_46_Picture_0.jpeg)

# **Summary and resources**

#### **Commitment to maternal patient safety bundles**

- Alliance for Innovation on Maternal Health (AIM): Commitment by ACOG, AWHONN, AHA, AAFP, and others, such as IHI
- Combined strong messages encouraging obstetric providers to "get behind the science"
- Local circumstances must align with national obstetric standards
- Best practices from national organizations are incorporated into policies, procedures, and processes

- <u>AIM Maternal Patient Safety Bundles</u>
  - Obstetric Hemorrhage
  - Prevention of Retained Vaginal Sponges After Birth
  - Severe Hypertension in Pregnancy
  - Maternal Venous Thromboembolism
  - Maternal Mental Health: Depression and Anxiety
  - Obstetric Care for Women with Opioid Use Disorder
  - Postpartum Care Basics for Maternal Safety
  - Reduction of Peripartum Racial/Ethnic Disparities
  - Safe Reduction of Primary Cesarean Birth

#### Where to focus your efforts

Conduct an appropriate and thorough assessment of the patient, screening for risk factors and incorporating patient and family medical history.

 Carefully consider repeated patient complaints or concerns when making clinical decisions about patient care and additional diagnostic testing.

Communicate with each other.

 Focus on team training, which encourages clear communication across all providers, even during shift changes and evenings/weekends during lesser staffed hours.

Recognize that inexperience with high severity situations can be mitigated with situationspecific drills and team training.

 Continue with ongoing evaluation of procedural skills and competency with equipment as it is critical.

Develop tools to support high reliability processes that reflect current evidence-based standards.

#### Where to focus your efforts

Be aware of the potential impact to patient care during off-shift times, including evenings/nights, weekends, and holidays.

Document. Verify that documentation covers all clinically significant information, including the clinical rationale for the method of delivery.

 Be aware that lack of access to outpatient prenatal records containing documentation of maternal risk factors, such as obesity and pre-eclampsia, as well as test results for congenital fetal conditions, can significantly affect the decision-making of the inpatient team during L&D.

Enable a culture where chain of command policies are routinely followed in both the L&D unit and in the OR, and acted upon in the event of delayed response from the managing physician/surgeon.

• Focus on repetitive drills for managing fetal distress so that next steps in the escalation of care are well established.

#### Links to MedPro Group resources and other experts

![](_page_50_Picture_1.jpeg)

#### www.medpro.com/rm-resource-lists

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