

How Big Is the “Gray Area”? Navigating Health-Threatening Previability Pregnancy Complications in States With Abortion Restrictions

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In 2025, the U.S. Department of Health and Human Services rescinded guidance directing hospitals to provide emergency abortions to stabilize health-threatening conditions. The move fueled ongoing debates about the sufficiency of medical exceptions to abortion bans. Although all 20 states with first-trimester restrictions make exceptions to protect the life and 15 to protect the health of the pregnant person, both exception types have been criticized as ambiguous and, as a result, are the subject of litigation (1, 2). Critics have argued that exceptions are insufficiently well defined to ensure that clinicians can intervene during medical emergencies without fear of retribution. By contrast, proponents maintain that confusion over medical exceptions has been overblown in the service of expanding general abortion access and that legitimate medical need is exceedingly rare.

In part, disagreements are fueled by uncertainty surrounding which conditions fall into the “gray area” of medical indications for termination that are not definitively life-threatening. To address this, we summarize the clinical context of health-threatening complications and synthesize the limited evidence about their frequency. We then suggest reforms for legislators, medical boards, and hospitals to ensure that pregnant individuals can receive needed emergency care.

WHY IS THERE A GRAY AREA?

For some complications—especially previable preterm prelabor rupture of membranes (pPROM)—the point at which intervention is required to prevent irreversible harm to the pregnant person is poorly defined. When previable pPROM occurs, delaying termination poses increasing risk for infection to the pregnant person. Although irreparable harm may not be certain or imminent, individuals with previable pPROM who medically deteriorate do so quickly: One French study found a median interval of 18 hours from onset of signs of infection to death (3). Compounding the gravity of delay, signs of infection may be subtle at earlier gestational ages; patients may not even present with fever (3). By the time the risk to the pregnant person is unequivocal, it may be too late for intervention to prevent harm, including sepsis, hysterectomy, or death. As a result, the national obstetric standard of care is to offer termination to patients with previable pPROM (3). Nevertheless, in states with abortion restrictions, care

has sometimes been delayed until infection, hemorrhage, or other definitive sequelae are documented (2).

In addition to acute emergencies, pregnancy also may gradually worsen preexisting chronic conditions, such as hypertension or cardiac arrhythmia. Recent reporting has documented fatal outcomes when individuals with such conditions were not offered termination as their health deteriorated over weeks (4).

Even when situations definitively qualify for exceptions under the law, care may be delayed when conditions are difficult to conclusively diagnose. For example, ectopic pregnancies may be challenging to visualize on ultrasonography. Given concerns that good-faith medical judgment might be interrogated, clinicians may delay care even if conviction is unlikely.

HOW OFTEN DO PATIENTS FALL INTO THE GRAY AREA?

We cannot definitively say how many patients fall into the gray area because nationally representative obstetric surveillance data are limited. Nevertheless, order-of-magnitude estimates of such complications can be made from 2 data types. First, a few recent studies have published data on health-threatening previability complication rates from facilities in states with abortion restrictions. In post-restriction U.S. data, from a Texas sample during 2021 and 2022, researchers observed 1 health-threatening complication per 333 deliveries among patients before 22 weeks' gestation (5). In Idaho in early 2024, absent a health exception, a large health system had 1 airlift out of state for emergency termination access per 460 live births (5). To what extent these rates would generalize to patients in other states with first-trimester abortion bans requires further research; if extrapolated to the 1 478 393 live births in these states, they would suggest that complications may affect 3200 to 4400 pregnant persons annually. Although the precision of these estimates is limited by available data, the calculation provides a point of departure suggesting that this is unlikely to be a negligible population.

Second, where complications correspond to well-defined obstetric conditions whose background incidence is less likely to be affected by abortion policy, we can examine estimates of complication incidence in the general obstetric literature. For previable pPROM, we identified a range from roughly 1 per 1000 to 1 per

300 across 5 studies (5). (Inclusion criteria and denominators varied across studies, and 4 of these estimates were from Europe and Australia, where complication rates may be lower than in the United States, making the range potentially conservative.) First-trimester miscarriage occurs in about 15% to 20% of pregnancies; a systematic review of 7 randomized trials reported that a quarter of such cases require surgical intervention after expectant management (6). About 1% to 2% of pregnancies are ectopic in the United States (7). Last, in the second trimester, an analysis estimated about 1 previability miscarriage requiring inpatient hospitalization for every 175 live births (5). Even a small fraction of these could represent thousands of affected individuals.

WHAT IS NEEDED?

This context highlights a critical need for concrete medical and legal guidance to protect pregnant people when complications arise before viability. Such guidance can come from multiple sources. Legislators can amend statutes to explicitly address previability complications, clarifying that intervention for conditions like previable pPROM or health-threatening exacerbations of chronic disease does not constitute a criminal violation, even when the risk, although serious, is not yet imminently life-threatening. State medical boards can issue clinical guidance that defines actionable scenarios and protects clinicians who exercise reasonable judgment. South Dakota's legislatively mandated educational materials describing conditions that may warrant intervention (8) and the Texas Medical Board's recent release of guidance and training materials for physicians are steps in this direction (9). Subspecialty organizations can provide standard-of-care guidelines (3), and emerging evidence suggests that hospital and health system policies that provide clinical staff with specific direction for managing gray-area cases may reduce rates of severe complications (10). Last, beyond guidance, systematic collection of data on pregnancy complications could enable policy evaluation that existing surveillance does not support.

Uncertainty about the precise scale of previability complications should not be mistaken for evidence that they are rare, nor should it justify inaction. Efforts by legislators, medical boards, subspecialty organizations, and hospital systems, together with improved surveillance, can and should address current ambiguities. Pregnant individuals with serious health threats deserve timely care, and providers deserve the legal clarity to deliver it.

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References

1. State bans on abortion throughout pregnancy. Guttmacher Institute. 5 December 2024. Accessed at www.guttmacher.org/state-policy/explore/state-policies-abortion-bans on 24 April 2026.
2. Cases archive. Center for Reproductive Rights. Accessed at <https://reproductiverights.org/cases> on 18 October 2024.
3. Battarbee AN, Osmundson SS, McCarthy AM, et al; Society for Maternal-Fetal Medicine (SMFM). Society for Maternal-Fetal Medicine Consult Series #71: management of previable and periviable preterm prelabor rupture of membranes. *Am J Obstet Gynecol.* 2024;231:B2-B15. [PMID: 39025459] doi:10.1016/j.ajog.2024.07.016
4. Surana K, Presser L. Women with high-risk pregnancies have limited options under abortion bans. ProPublica. 20 January 2026. Accessed at www.propublica.org/article/high-risk-pregnancies-chronic-conditions-abortion-bans on 5 February 2026.
5. Bilinski A, Garipey A, Son M, et al. Pregnancy complications summary. 2026. Accessed at https://github.com/abilinski/Gray_Area/blob/main/Online_Table.pdf on 5 February 2026.
6. Nanda K, Lopez LM, Grimes DA, et al. Expectant care versus surgical treatment for miscarriage. *Cochrane Database Syst Rev.* 2012;2012:CD003518. [PMID: 22419288] doi:10.1002/14651858.CD003518.pub3
7. Vadakekut ES, Gnugnoli DM. Ectopic pregnancy. In: StatPearls. Updated 27 March 2025. Accessed at www.ncbi.nlm.nih.gov/books/NBK539860 on 23 May 2025.
8. Medical education & guidance: South Dakota's abortion law. South Dakota Department of Health. Accessed at <https://doh.sd.gov/healthcare-professionals/medical-education-guidance/> on 5 February 2026.
9. Klibanoff E. Texas adopts guidance for how doctors should interpret abortion ban. *Texas Tribune.* 21 June 2024. Accessed at www.texastribune.org/2024/06/21/texas-medical-board-abortion-guidance/ on 10 February 2025.
10. Surana K, Presser L, Suozzo A. Why hospital policies matter in states that ban abortion. ProPublica. 7 May 2025. Accessed at www.propublica.org/article/texas-abortion-ban-sepsis-rates-dallas-houston on 5 February 2026.

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Pregnancy Complications Summary

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Frequency of health-threatening, pre-viability complications for which offering termination is the obstetric standard of care.

Source	Description	Numerator	Denominator	Rate
<p>Texas¹ <i>Abortion restricted with health and life exceptions</i></p> <p>“2 urban, inner-city healthcare systems”</p> <p>Sept. 21, 2021-May 20, 2022</p>	<p>“<22 weeks without preterm labor and with a medical indication for delivery...and a fetus with cardiac motion”</p>	28 patients	~9333 ^a	1 per 333 deliveries
<p>Idaho²⁻⁴ <i>Abortion banned with life exception only</i></p> <p>St. Luke’s Health System</p> <p>Early 2024</p>	2024 airlifts for emergency abortion care following removal of EMTALA-based protection	5.7 net airlifts, accounting for 2023 trends ^c	~2621 ^d	1 per 460 live births
<p>Texas^{5,6} <i>Abortion banned with health and life exceptions starting 2021</i></p> <p>“all hospitals from the Texas Department of State Health Services”</p> <p>2017-2023</p>	“hospitalizations where a pregnancy ended in the second trimester before fetal viability”	15,188 hospitalizations (~50% had fetal demise on admission.)	2,657,743 ^b	1 per 175 live births
<p>Obstetric literature</p> <p>Ireland (0.1%)^{7,e}, Netherlands (0.2%)⁸, France (0.22%)⁹, Australia (0.33%)¹⁰, Other (0.37%)¹¹, (Discussion in ¹²)</p>	Incidence of PPROM prior to 22-24 weeks in different international cohorts			1 per 270-1063 ^e

^a Denominator was obtained: 14,000 annual deliveries*8 months study duration/12 months.¹

^b Denominator was obtained from CDC WONDER births among Texas residents; location of birth is not available so we used residence as proxy.

^c Numerator adjusted for 2023 trends, as one patient was airlifted in 2023 and that airlifts occurred over ~30% of the year^{2,3}: 6 airlifts in 2024 – 1 airlift in 2023*0.3.

^d Denominator was obtained noting 8735 live births in 2022³ and that airlifts occurred over ~30% of the year^{2,3}: 8735*0.3.

^e Denominator was pregnancies for all but indicated study, which used births.

1. Nambiar A, Patel S, Santiago-Munoz P, Spong CY, Nelson DB. Maternal morbidity and fetal outcomes among pregnant women at 22 weeks' gestation or less with complications in 2 Texas hospitals after legislation on abortion. *Am J Obstet Gynecol*. 2022;227(4):648-650.e1. doi:10.1016/j.ajog.2022.06.060
2. Luchetta J. Idaho's biggest hospital says emergency flights for pregnant patients up sharply. *NPR*. April 26, 2024. Accessed October 24, 2024. <https://www.npr.org/2024/04/25/1246990306/more-emergency-flights-for-pregnant-patients--in-idaho>
3. Brief of St. Luke's Health System as Amicus Curiae in Support of Respondent. Published online 2024. https://www.supremecourt.gov/DocketPDF/23/23-726/303058/20240314104215197_23-726%2023-727%20bsac%20SLHS.pdf
4. *St. Luke's Health System, Ltd. v. Labrador*. (U.S. District Court for the District of Idaho 2025). Accessed April 1, 2026. https://litigationtracker.law.georgetown.edu/wp-content/uploads/2025/01/St.-Lukes-Health-System-LTD_2025.03.20._MEMORANDUM-DECISION-AND-ORDER.pdf
5. CDC WONDER. Accessed May 23, 2025. <https://wonder.cdc.gov/>
6. Suozzo A, Chou S, Presser L. Texas Won't Study How Its Abortion Ban Impacts Women, So We Did. ProPublica. February 20, 2025. Accessed May 23, 2025. <https://www.propublica.org/article/texas-maternal-mortality-analysis-methodology>
7. Linehan LA, Walsh J, Morris A, et al. Neonatal and maternal outcomes following midtrimester preterm premature rupture of the membranes: a retrospective cohort study. *BMC Pregnancy Childbirth*. 2016;16:25. doi:10.1186/s12884-016-0813-3
8. Simons NE, de Ruigh AA, van der Windt LI, et al. Maternal, perinatal and childhood outcomes of the PPROMEXIL-III cohort: Pregnancies complicated by previable prelabor rupture of membranes. *Eur J Obstet Gynecol Reprod Biol*. 2021;265:44-53. doi:10.1016/j.ejogrb.2021.08.007
9. Abrahami Y, Saucedo M, Rigouzzo A, Deneux-Tharaux C, Azria E, Group E. Maternal mortality in women with pre-viable premature rupture of membranes: An analysis from the French confidential enquiry into maternal deaths. *Acta Obstet Gynecol Scand*. 2022;101(12):1395-1402. doi:10.1111/aogs.14452
10. Sim WH, Ng H, Sheehan P. Maternal and neonatal outcomes following expectant management of preterm prelabor rupture of membranes before viability. *J Matern Fetal Neonatal Med*. 2020;33(4):533-541. doi:10.1080/14767058.2018.1495706
11. Waters TP, Mercer BM. The management of preterm premature rupture of the membranes near the limit of fetal viability. *Am J Obstet Gynecol*. 2009;201(3):230-240. doi:10.1016/j.ajog.2009.06.049
12. Battarbee AN, Osmundson SS, McCarthy AM, Louis JM. Society for Maternal-Fetal Medicine Consult Series #71: Management of previable and periviable preterm prelabor rupture of membranes. *Am J Obstet Gynecol*. 2024;231(4):B2-B15. doi:10.1016/j.ajog.2024.07.016