Stillbirth

Indian Country ECHO Care and Access for Pregnant People

Providing Support to Indigenous Families Impacted by Pregnancy Loss and Stillbirth

10-21-24

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Objectives

- Understand stillbirth-
  - Diagnosis
  - Treatment
  - Evaluation

} through lens of cultural safety from Utah

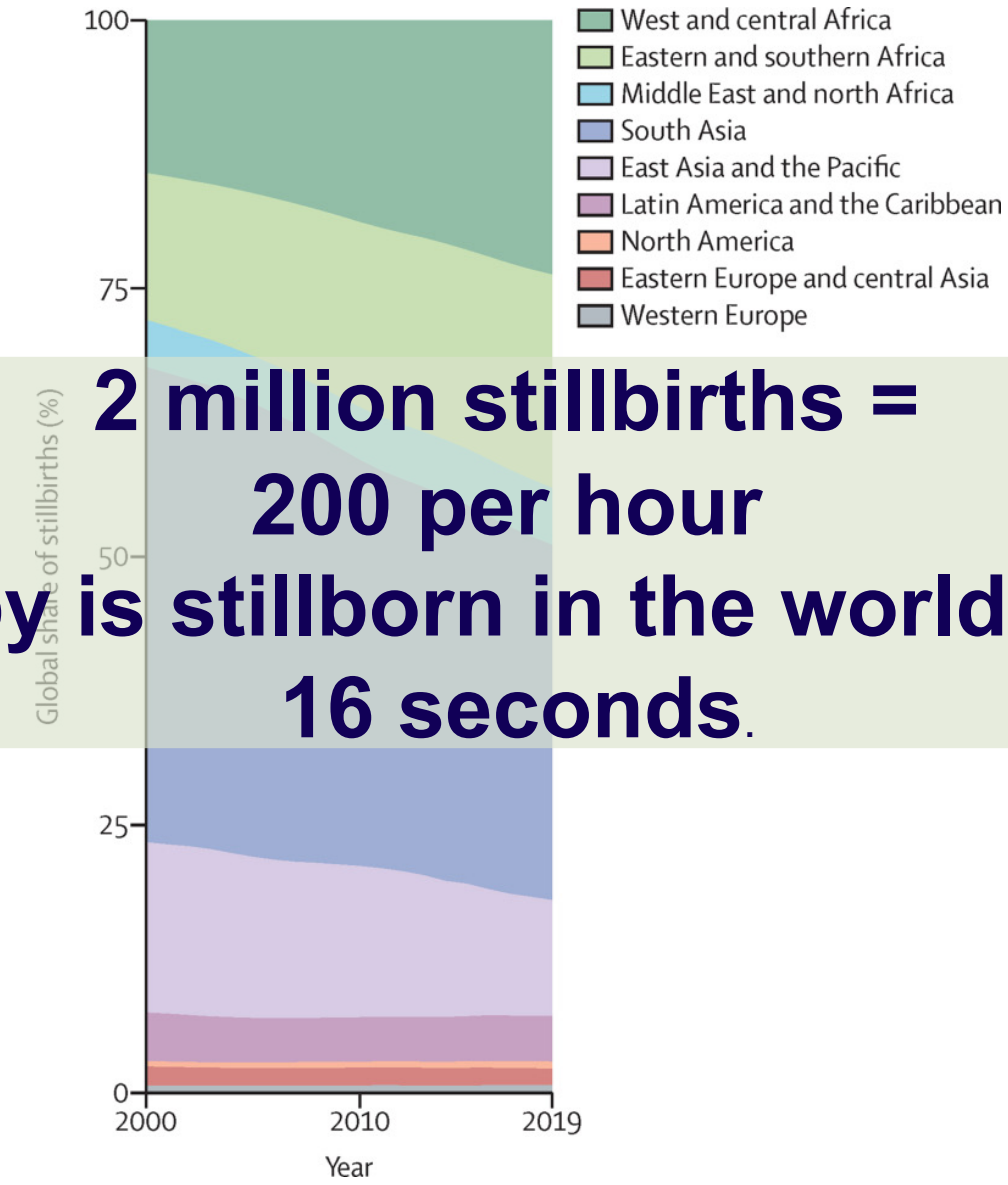
Definitions/Diagnosis

- Stillbirth → fetal death at 20+ wk or 350g or greater
  - Reporting requirements vary by state

- Neonatal death → newborn death prior to 28d of life
- Perinatal mortality → stillbirth + neonatal death

Diagnosis:
- no fetal cardiac activity on ultrasound examination
- no signs of life or APGARS 0, 0 at delivery

Global burden of stillbirth



2 million stillbirths =
200 per hour
1 baby is stillborn in the world every 16 seconds.

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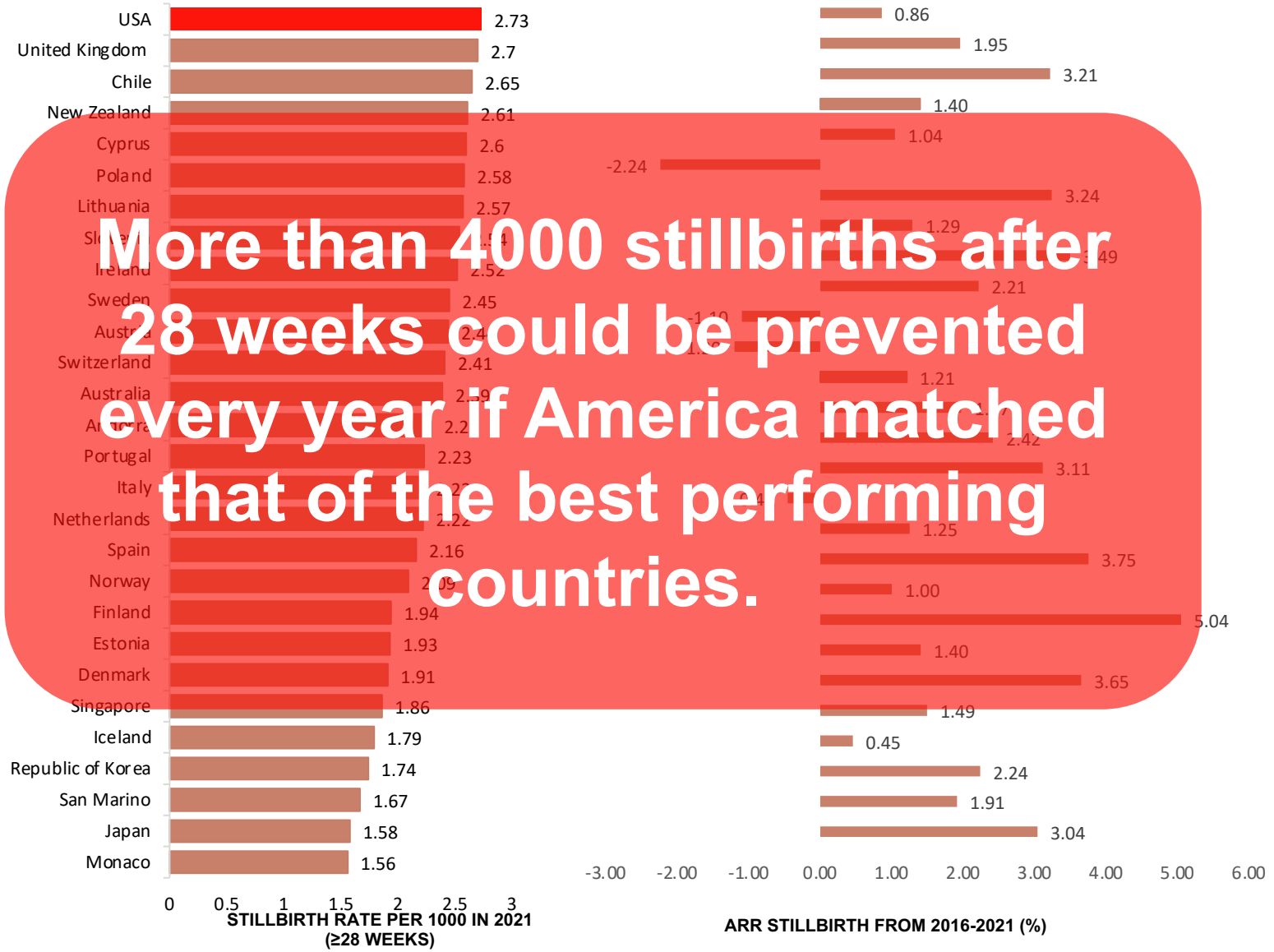
Stillbirth in high-income countries



More than 4000 stillbirths after 28 weeks could be prevented every year if America matched that of the best performing countries.

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GHO | by category | stillbirth rate - data by country [Internet]. World Health Organization.

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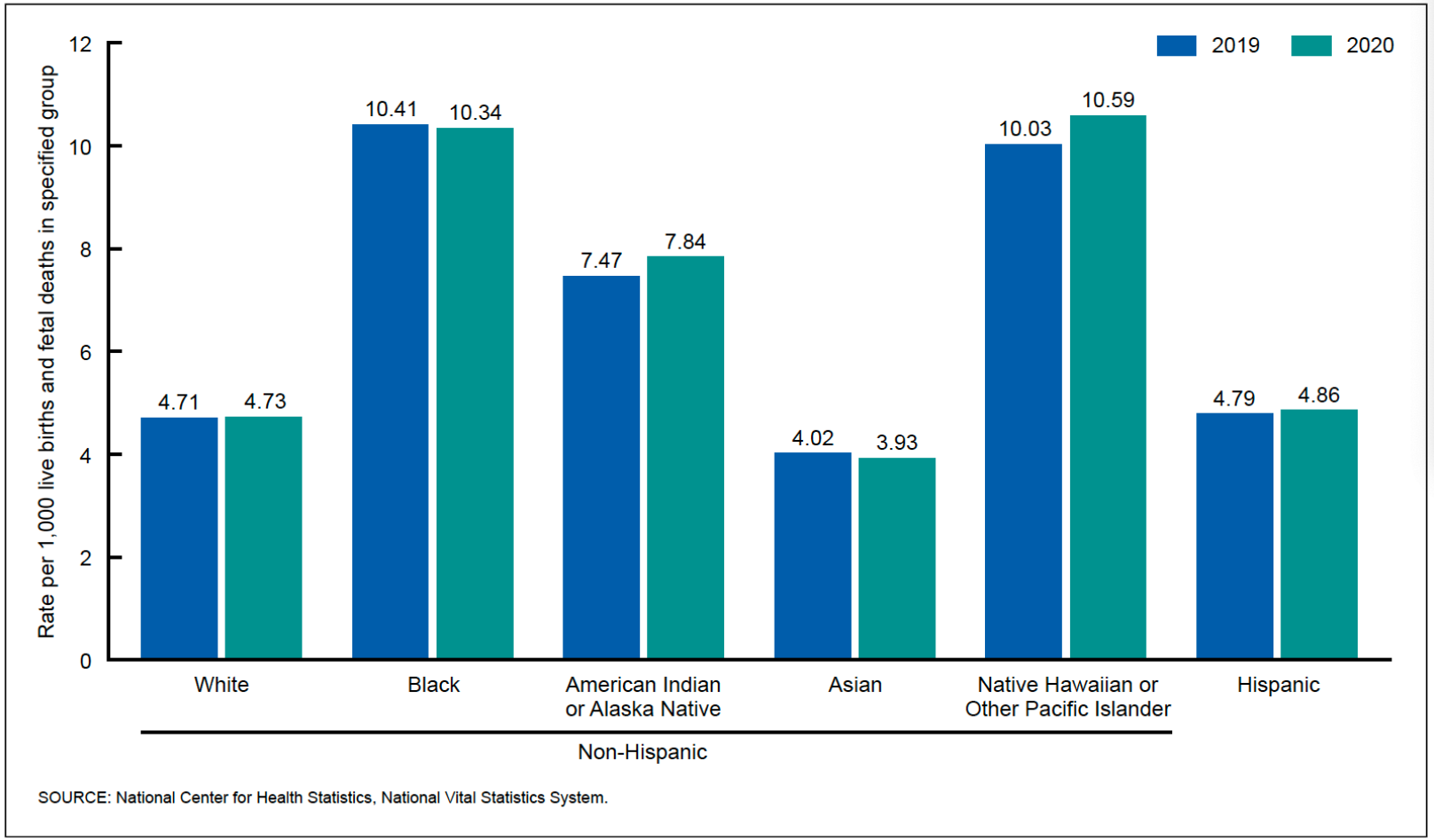
Stillbirth disparities

Figure 2. Fetal mortality rates, by race and Hispanic origin of mother: United States, 2019 and 2020



SOURCE: National Center for Health Statistics, National Vital Statistics System.

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Risk factors vs causes

Risk factors

- Maternal age
- BMI
- Nulliparity
- Prior stillbirth

Causes

- Placental disease
- Obstetric complications
- Genetic/structural pathology
- Maternal medical conditions

Conditions associated with stillbirth

Pathophysiologic process in the causal pathway to a death

Table 1 Factors Associated With an Increased Risk of Stillbirth and Suggested Strategies for Antenatal Fetal Surveillance After Viability *(continued)*

The guidance offered in this table should be construed only as suggestions, not mandates. Ultimately, individualization about if and when to offer antenatal fetal surveillance is advised.

Factor	Suggested Gestational Age to Begin Antenatal Fetal Surveillance	Suggested Frequency of Antenatal Fetal Surveillance
Prepregnancy BMI		
Prepregnancy BMI 35.0–39.9 kg/m2	37 0/7 weeks	Weekly
Prepregnancy BMI 40 kg/m2 or above	34 0/7 weeks	Weekly
Maternal age older than 35 years	Individualized[10]	Individualized
Obstetric		
Previous stillbirth		
At or after 32 0/7 weeks	32 0/7 weeks[11]	Once or twice weekly
Before 32 0/7 weeks of gestation	Individualized	Individualized
History of other adverse pregnancy outcomes in immediately preceding pregnancy		
Previous fetal growth restriction requiring preterm delivery	32 0/7 weeks	Weekly
Previous preeclampsia requiring preterm delivery	32 0/7 weeks	Weekly
Cholestasis	At diagnosis[2]	Once or twice weekly
Late term	41 0/7 weeks	Once or twice weekly
Abnormal serum markers[12]		
PAPP-A less than or equal to the fifth percentile (0.4 MoM)	36 0/7 weeks	Weekly
Second-trimester Inhibin A equal to or greater than 2.0 MoM	36 0/7 weeks	Weekly
Placental		
Chronic placental abruption[13]	At diagnosis[2]	Once or twice weekly
Vasa previa	Individualized	Individualized
Velamentous cord insertion	36 0/7 weeks	Weekly
Single umbilical artery	36 0/7 weeks	Weekly
Isolated Oligohydramnios (single deepest vertical pocket less than 2 cm)	At diagnosis[2,3]	Once or twice weekly
Polyhydramnios, moderate to severe (deepest vertical pocket equal to or greater than 12 cm or AFI equal to or greater than 30 cm)	32 0/7–34 0/7 weeks[14]	Once or twice weekly

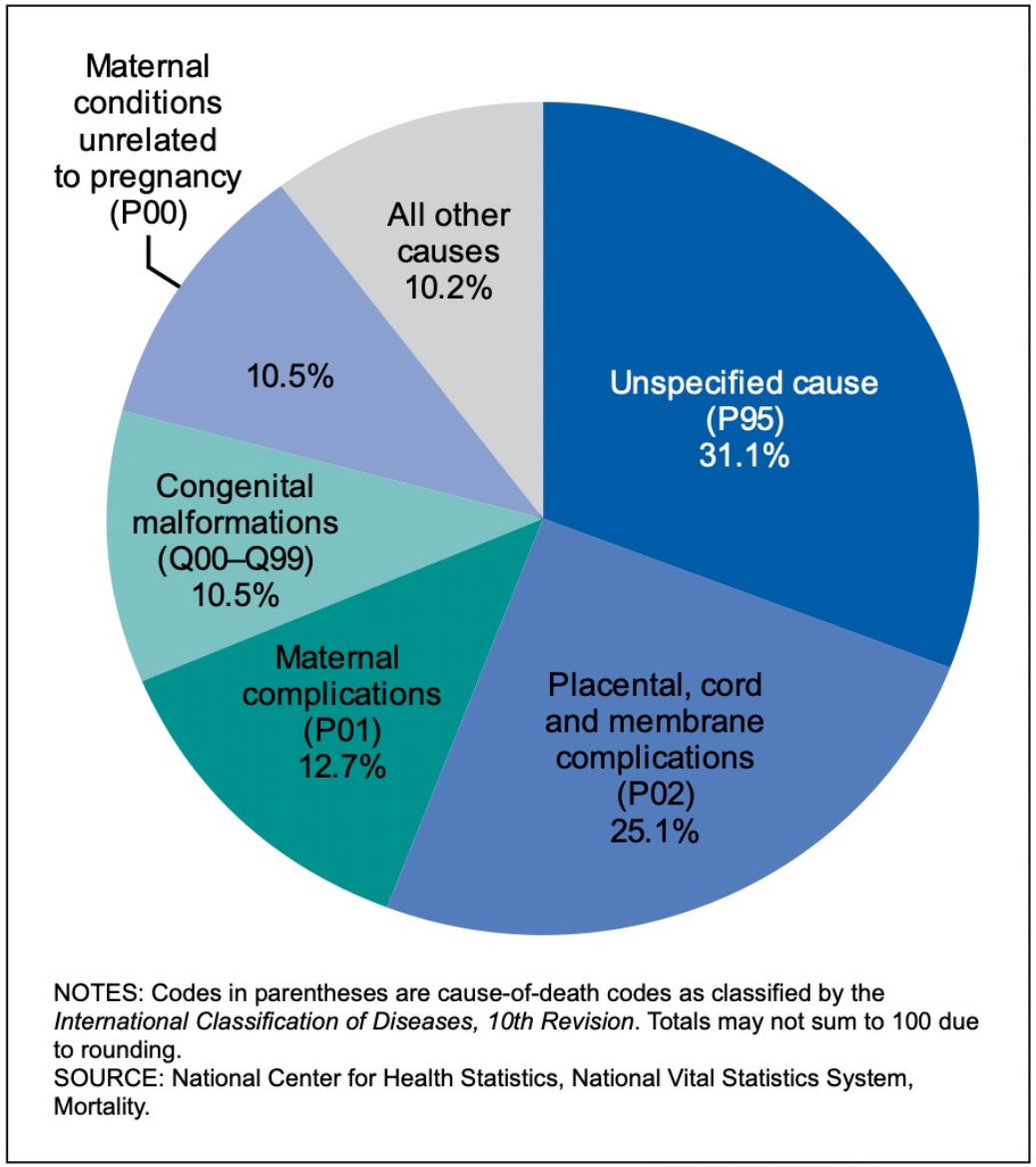
Cause of death classification systems

- Over 80 systems
- No single perfect system
- No gold standard by which to assess a system
- Cause of death difficult to define
- Often more than one cause
- May have multiple risk factors

Need a systematic method to evaluate cases and establish a potential cause

Causes

Figure 1. Fetal death, by selected causes: 42 areas, 2018–2020



NOTES: Codes in parentheses are cause-of-death codes as classified by the *International Classification of Diseases, 10th Revision*. Totals may not sum to 100 due to rounding.
SOURCE: National Center for Health Statistics, National Vital Statistics System, Mortality.

How do we evaluate stillbirth cases to find a cause of fetal death?

Stillbirth evaluation

Clinical history

Core evaluation

Tailored evaluation

Clinical history

Clinical history elements

- Maternal medical history
- Detailed obstetric history (past/present)
- Family history

Stillbirth evaluation

Core evaluation

Fetal autopsy	If patient declines, external evaluation by a trained perinatal pathologist. Other options include photographs, X-ray imaging, ultrasonography, magnetic resonance imaging, and sampling of tissues, such as blood or skin.	Provides important information in approximately 30% of cases
Placental examination	Includes evaluation for signs of viral or bacterial infection. Discuss available tests with pathologist.	Provides additional information in 30% of cases. Infection is more common in preterm stillbirth (19% vs. 2% at term)
Fetal karyotype/microarray	Amniocentesis before delivery provides the greatest yield. Umbilical cord proximal to placenta if amniocentesis declined	Abnormalities found in approximately 8% of cases
Maternal evaluation at time of demise	• Fetal–maternal hemorrhage screen: Kleihauer-Betke test or flow cytometry for fetal cells in maternal circulation	Routine testing for inherited thrombophilias is not recommended. Consider in cases with a personal or family history of thromboembolic disease.
	• Syphilis	
	• Lupus anticoagulant	
	• Anticardiolipin antibodies	
	• β_2 glycoprotein antibodies	
In selected cases	Indirect Coombs	If not performed previously in pregnancy.
	Glucose screening (oral glucose tolerance test, hemoglobin A_{1C})	In the large for gestational age baby
	Toxicology screen	In cases of placental abruption or when drug use is suspected

Tailor to the clinical situation

Tailored evaluation

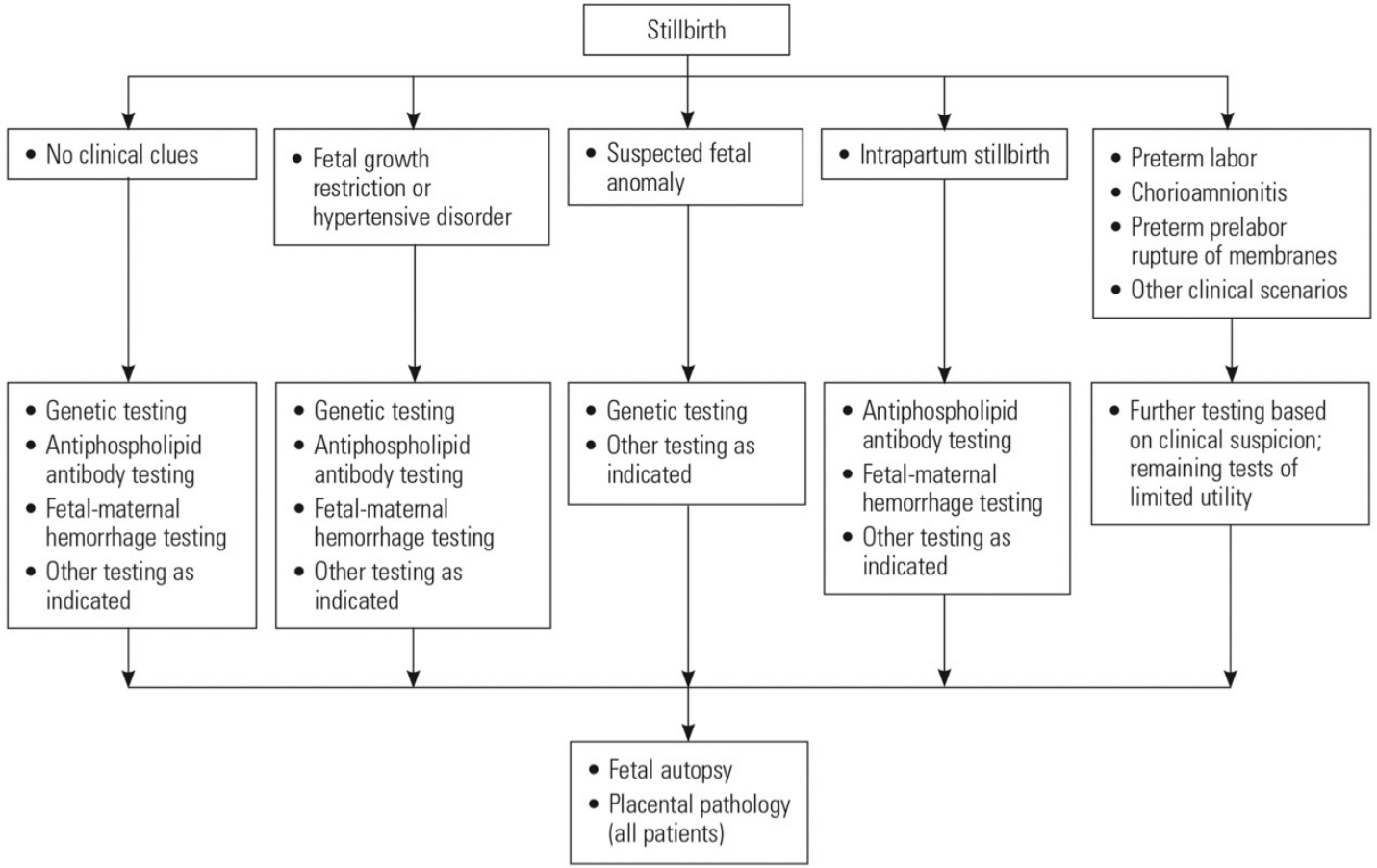


Figure 3. Evaluation of stillbirth based on test utility in a variety of clinical scenarios. (Adapted from Page JM, Christiansen-Lindquist L, Thorsten V, Parker CB, Reddy UM, Dudley DJ, et al. Diagnostic Tests for Evaluation of Stillbirth: Results From the Stillbirth Collaborative Research Network. Obstet Gynecol 2017;129:699–706.)

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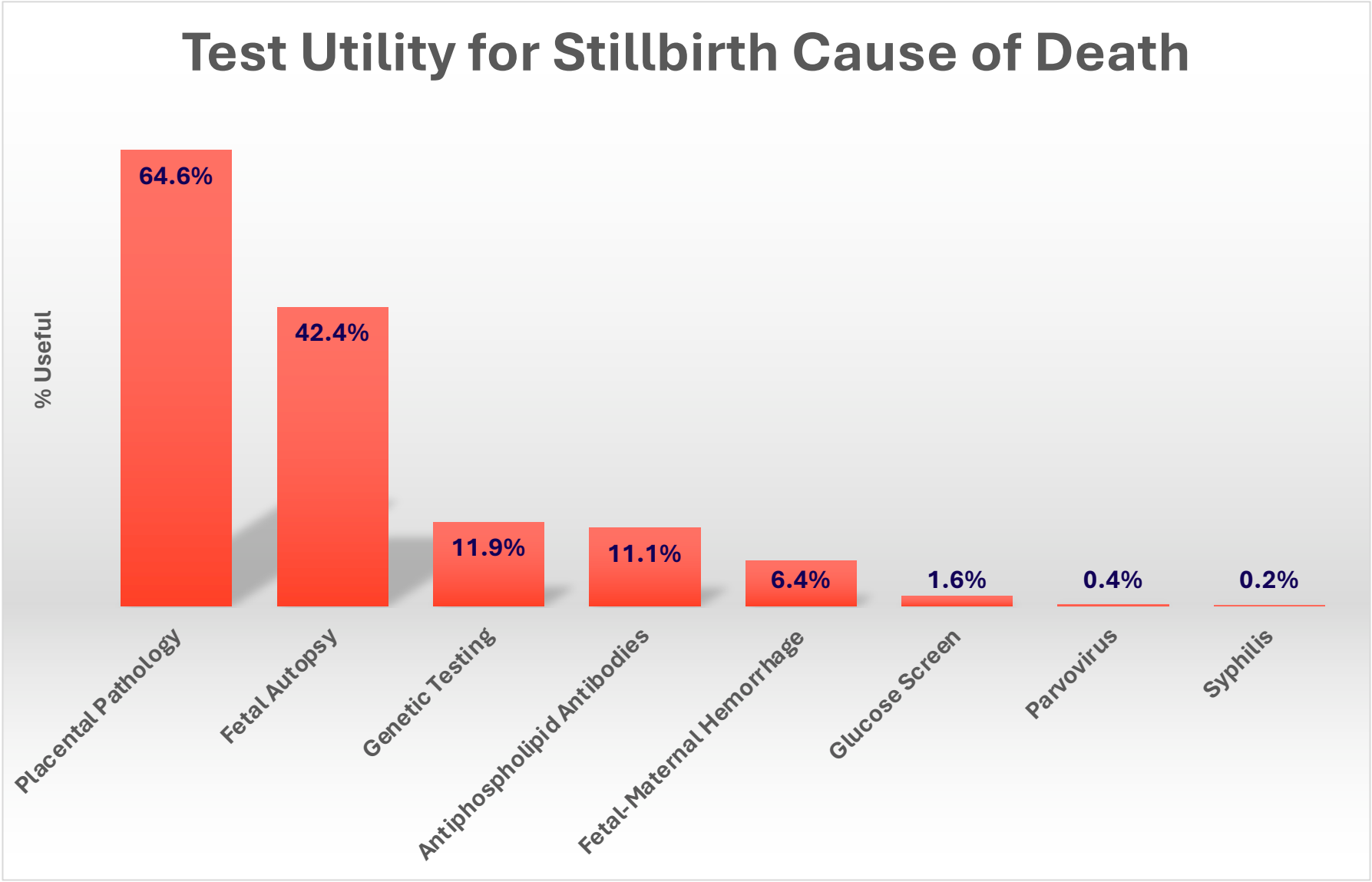
Test Utility for Stillbirth Cause of Death



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Page et al. Obstet Gynecol 2017;129:699

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Test yield

Placental examination:

- Abnormal 89.2% (87.2 – 91.1)
- Valuable 95.7% (94.2 – 96.8)

Autopsy:

- Abnormal 51.5% (47.4 – 55.2)
- Valuable 72.6% (69.2 – 75.9)

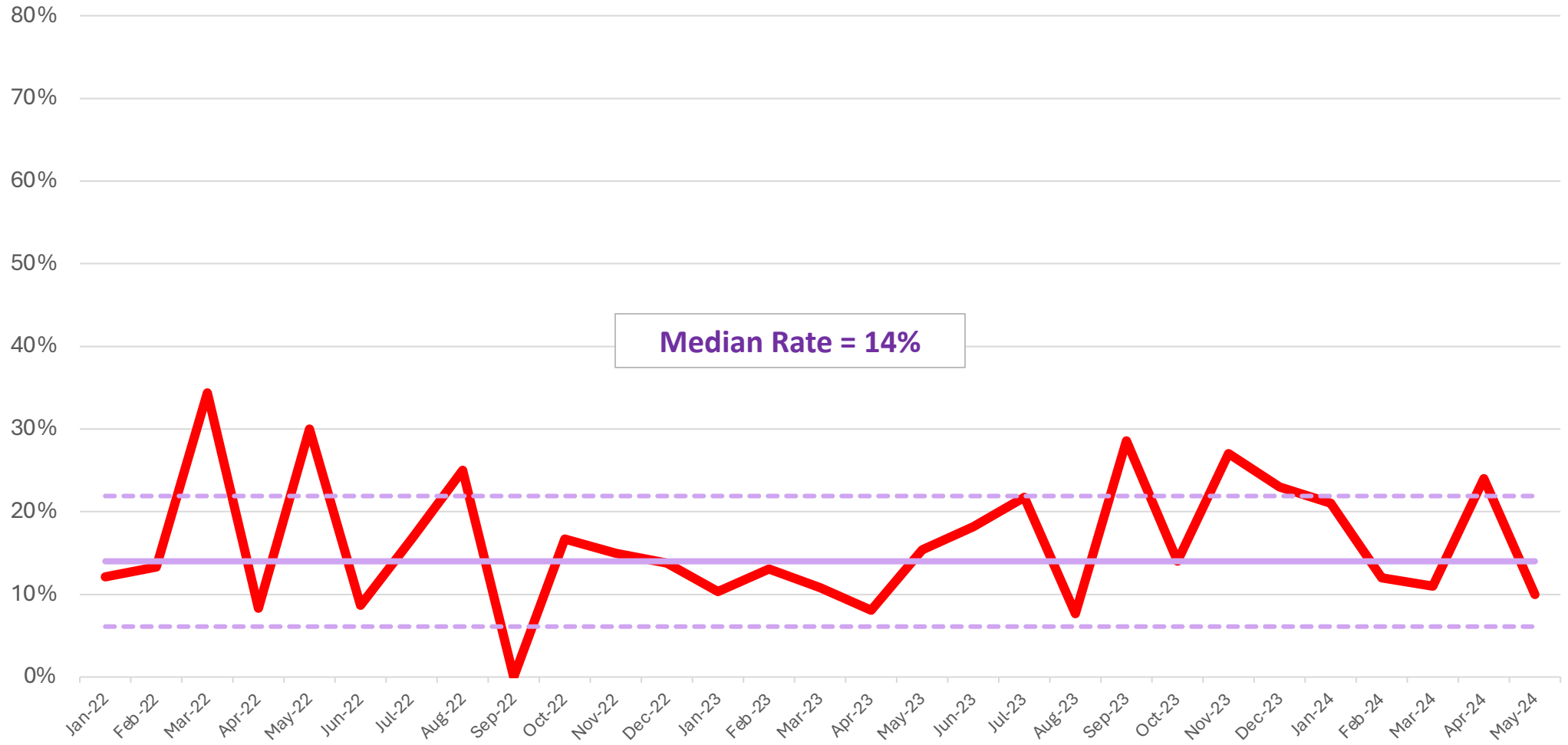
Karyotype:

- Abnormal 11.9% (8.7 – 15.7)
- Valuable 29.0% (24.4 – 34.0)

Despite the high yield of fetal autopsy it is performed in a minority of stillbirths

Korteweg et al. Am J Obstet Gynecol 2012;206:e1-12

Chart 2. Recent Data - % Autopsy Completed per Stillbirth



829 pregnancies

Documentation of **discussion offering fetal autopsy in 58.6% of stillbirth cases**

Only **18.4% of patients pursued fetal autopsy**

Those at **higher gestational ages** and with **history of prior stillbirth** were **more likely** to have a fetal autopsy performed

More likely to counsel regarding fetal autopsy at **higher gestational ages**

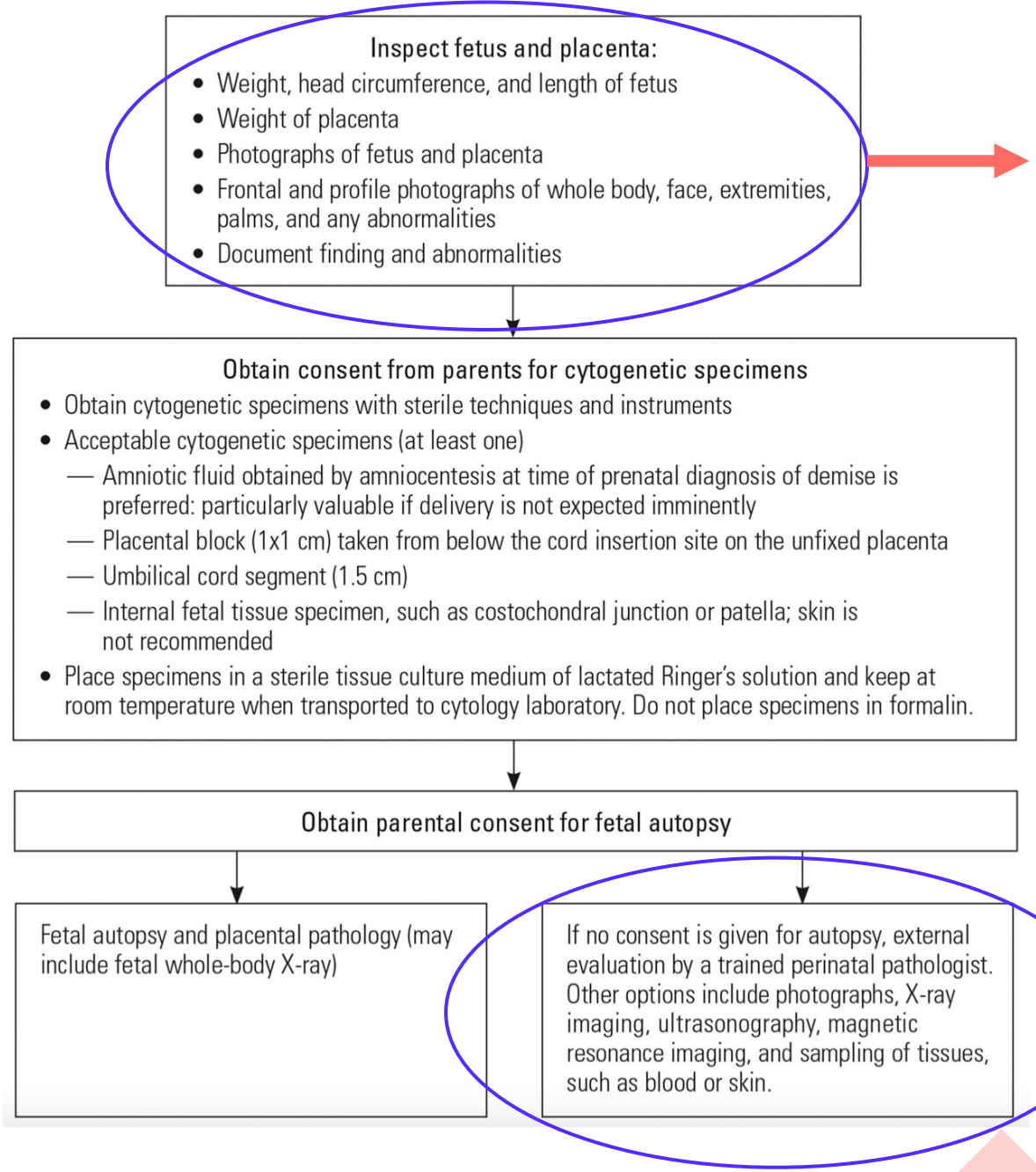
Patients in **rural areas had counseling regarding fetal autopsy performed less frequently** but ultimately had similar rates of autopsy performed

No significant differences in autopsy counseling or completion according to maternal age, race/ethnicity or insurance status

383 caregivers were sent surveys to assess barriers and facilitators of fetal autopsy in stillbirth cases, 130 responses (34%) were received

The **most impactful barriers** to fetal autopsy included **clinical situation, gestational age, logistics of ordering the exam, insurance status, patient emotions and lack of personal knowledge of the exam**

Core evaluation



At time of delivery by obstetric provider

By perinatal pathologist

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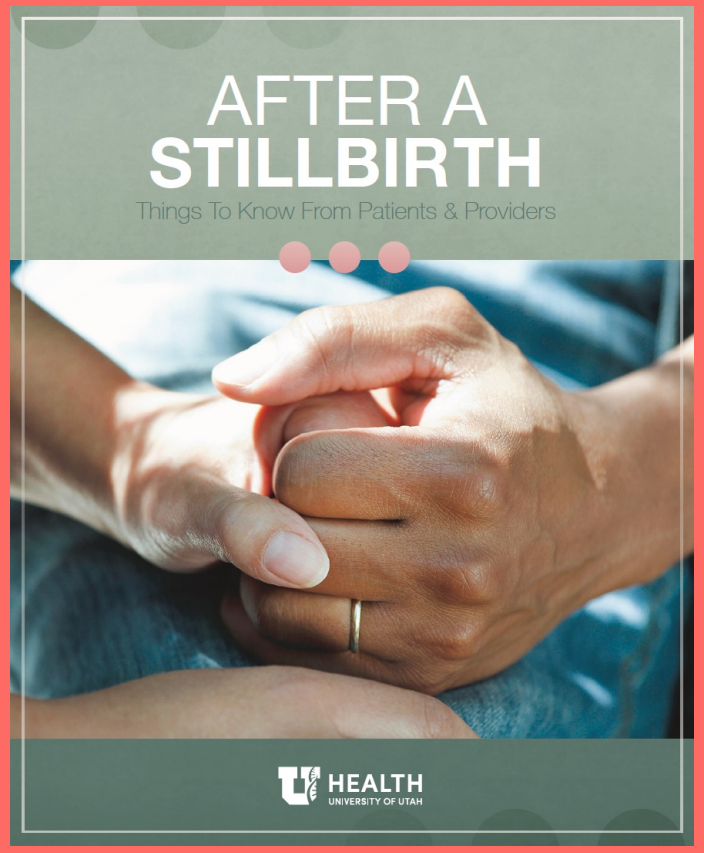
Caring for families experiencing stillbirth

Keys to counseling & treatment

- Time
- Recognition of parenthood
- Cultural respect
- Accurate information
- Provider support



“When my baby died, I had no idea what I needed to know, or what was possible. It was such an overwhelming time. What I really needed was to know the options I had so that we could make decisions that were right for us.”

Parent quote from the Guiding Conversations booklet.

The subsequent pregnancy

- Difficult for couple
- Anxiety, failure, personal guilt, apprehension
- Lack of closure- cause of stillbirth remains unknown (50%), never counseled postpartum
- Difficult for clinicians to optimally counsel, evaluate and manage
- Very little is known about pregnancy after experiencing stillbirth

The subsequent pregnancy

- Emotional support, peer support
- Serial ultrasounds
- Antenatal surveillance
- Delivery at 39 weeks (37-39wk in line with ACOG recs)
- Late preterm or early term delivery not recommended unless other indications arise

Thank you

References

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