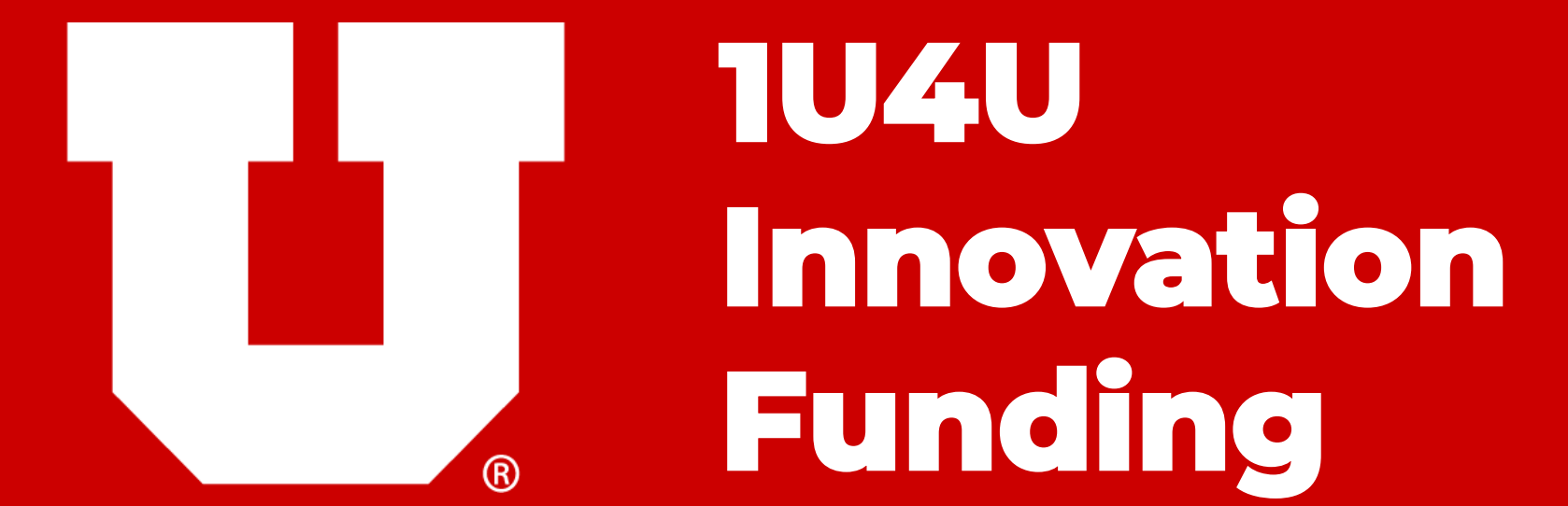


Let's Talk About (Prenatal) Sex (Chromosomes):

Understanding opportunities for gender inclusive health care provision and parent education



Susanna R. Cohen, DNP, CNM
Dept. of OBGYN

Robin Jensen, PhD
Dept. of Communications

Jami Baayd, MSPH
Dept. of OBGYN

Gentry Carter, MS
Dept. of OBGYN

Caitlin Quade, MPH
Dept. of OBGYN

Claudia Geist, PhD
Dept. of Sociology

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BACKGROUND

- The distinction between **sex** (biological characteristics) and **gender** (socially defined roles) is relevant to prenatal care, especially with the rise of cell-free DNA (cfDNA) testing, which predicts fetal sex based on chromosomes.
- Sex** and **gender** are not binary, and societal norms often conflate the two.
- CfDNA testing** provides valuable insights into fetal health, but it also presents challenges in communicating results that may not align with binary gender expectations.

TOPIC

Understand views and practices regarding cfDNA testing in prenatal care, with a focus on how providers disclose fetal sex chromosome results, how these results are framed within the contexts of sex and gender, and how patients perceive clinical discussions around sex and gender during cfDNA testing.

METHODOLOGY

Our two-part study included:

A quantitative survey among U.S.-based prenatal care providers to understand their views on sex vs. gender and their practices regarding cfDNA result disclosures. Descriptive statistics and regression analyses of responses were performed to examine relationships between attitudes, behaviors, and clinical settings.

Focus groups with patients who had recently received cfDNA results to explore their experiences and expectations of language around sex and gender during prenatal care. Constant comparative methodology was employed to analyze the results.

SURVEY RESULTS

- We received 626 responses
- 81%** of providers agreed it is medically inaccurate to equate **XY with male** and **XX with female**.
- Despite this, most providers still referred to fetuses as “boys” or “girls.”
- Providers in clinics that emphasized discussions about sex and gender were more likely to engage patients in such conversations.

Characteristic	Provider Survey	N = 626
Professional role		
MD/DO		141 (23%)
NP		131 (22%)
CPM/LM		98 (16%)
CNM/CM		87 (14%)
PA		86 (14%)
Genetic Counselor		41 (6.7%)
Nurse		22 (3.6%)
Political Ideology		
Very conservative		35 (5.8%)
Somewhat conservative		138 (23%)
Moderate		147 (24%)
Somewhat liberal		164 (27%)
Very liberal		123 (20%)

The understanding of sex and gender has evolved over time and it is no longer medically accurate to say XY=male and XX=female

Strongly agree	185 (31%)
Somewhat agree	299 (50%)
Somewhat disagree	90 (15%)
Strongly disagree	22 (3.7%)

Providers should spend time discussing sex and gender during cfDNA results discussion

Yes	318 (53%)
No	131 (22%)
Unsure	149 (25%)

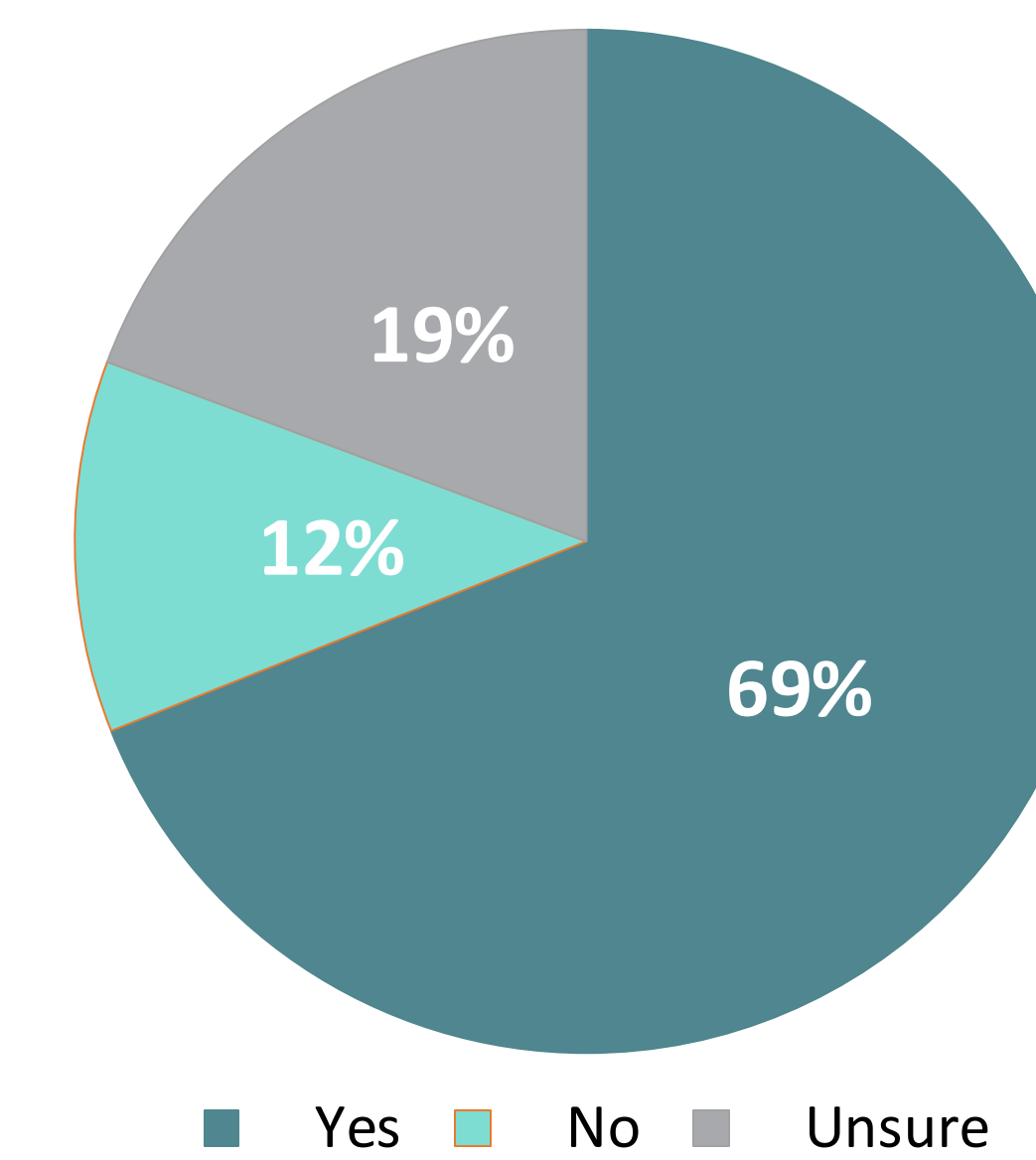
I currently spend time discussing the relationship between sex and gender during prenatal clinical encounters

Yes	311 (52%)
Sometimes	136 (23%)
No	151 (25%)

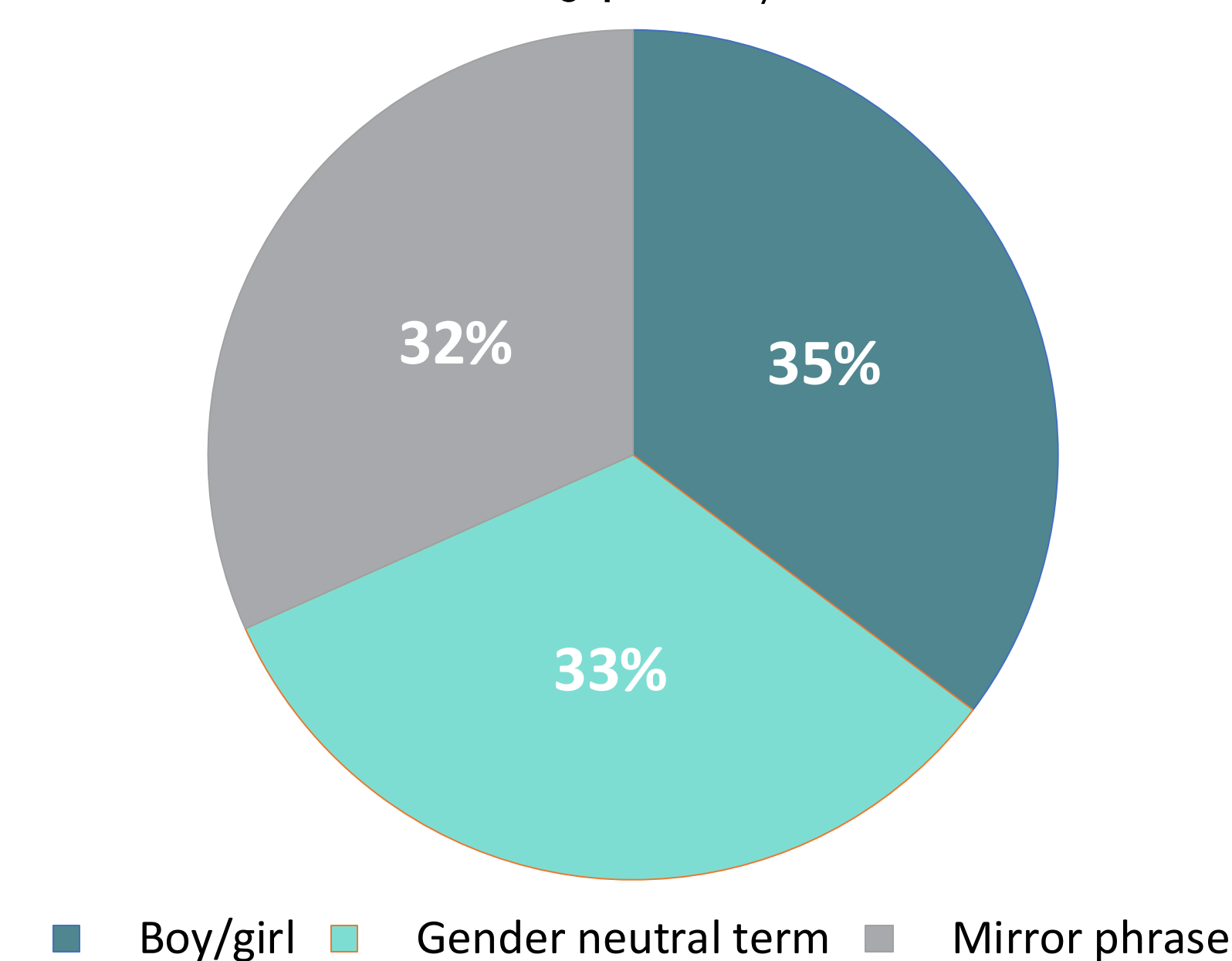
FOCUS GROUP RESULTS

- We conducted two focus groups with a total of eight patients
- Patients expressed confusion over the genetic language used by providers.
- Many felt unprepared to receive non-binary sex chromosome results.
- Social pressure to conform to binary gender norms in discussing pregnancies was evident.

Organizations should provide guidance on discussing sex and gender



When sex chromosomes are known to the parent(s), I usually refer to the fetus by the following phrase/term



CONCLUSION

- Providers** generally align with more inclusive perspectives on sex and gender but do not consistently incorporate these perspectives into their clinical practices.
- Barriers to inclusive care** include time constraints, limited resources, and a focus on person-centered care that may overlook the complexities of sex and gender distinctions.
- Patients** require more support in understanding cfDNA results, especially when results do not fit into the binary gender framework to which they are accustomed.

NEXT STEPS

- Submission of the manuscript for publication
- Spanish- language Focus Groups
- Social Media Analysis of direct-to-consumer genetic testing

RECOMMENDATIONS

- Standardized guidelines** for pre- and post-test counseling should be developed to ensure clear, inclusive communication that balances **medically accurate** information with **patient-centered counseling**.
- More **education and resources** for both providers and patients are necessary to navigate the complexities of sex and gender in the context of cfDNA testing.
- Further research** is needed to explore the impact of clinical settings, provider characteristics, and patient demographics on the communication of sex chromosome results.

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