

Review of Diagnostic Yields Obtained on Clinical Prenatal WES Cases

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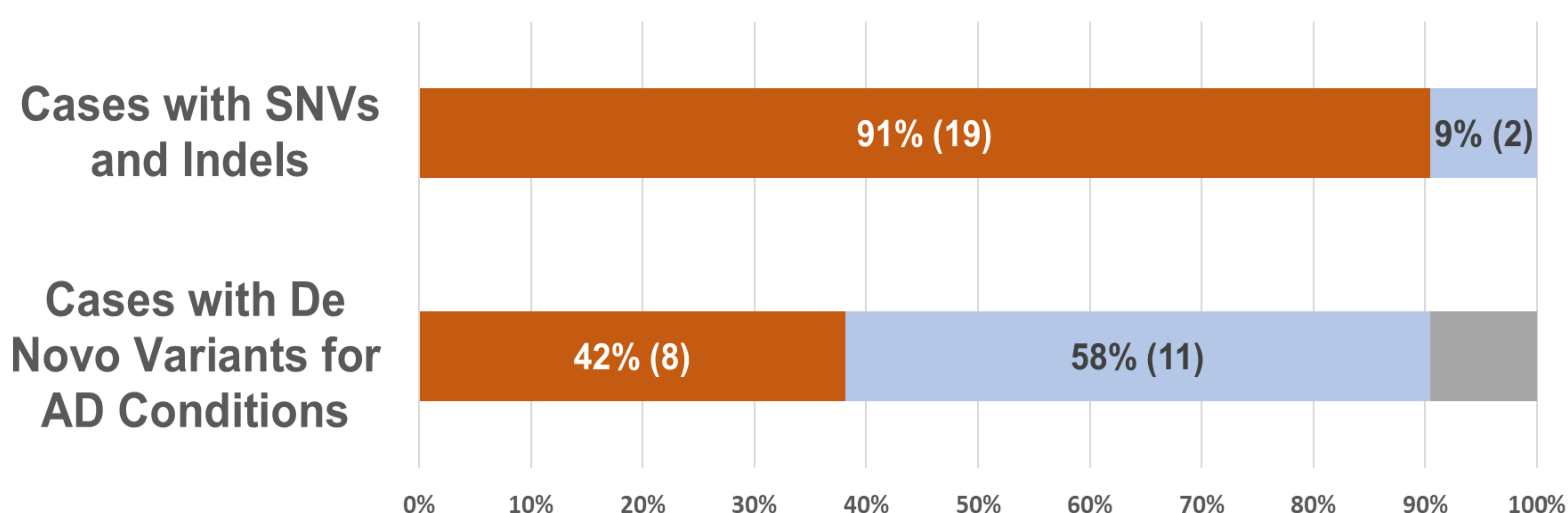
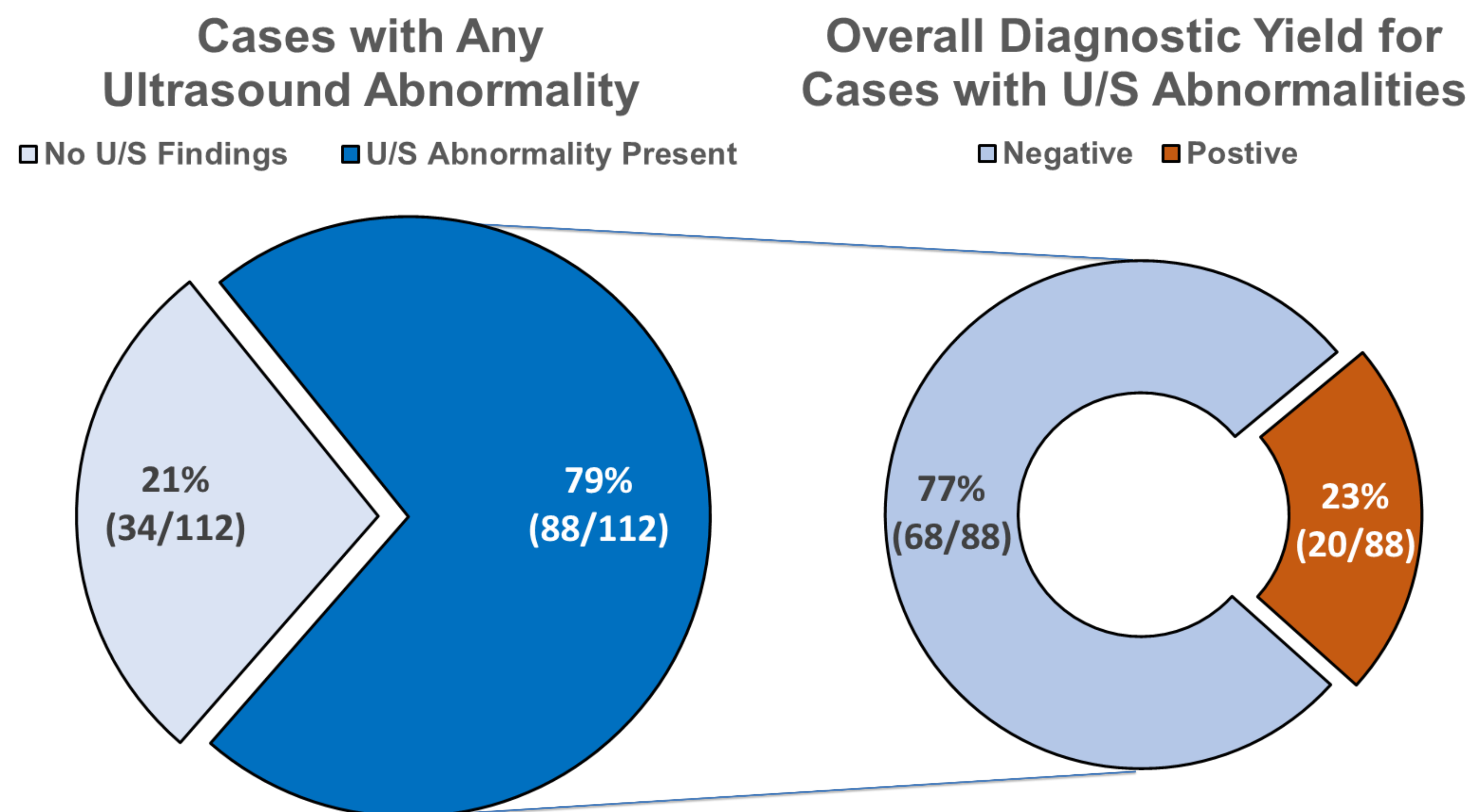
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BACKGROUND

- The American College of Medical Genetics and Genomics (ACMG) recommends whole exome sequencing (WES) as a first-tier test for pediatric findings with a suspected genetic bases
- Prenatal WES captures variants that standard-of-care prenatal testing methods, such as karyotype and chromosomal microarray, would miss
- Information on the diagnostic yield of prenatal WES is more limited, and provider familiarity with prenatal WES varies considerably
- We describe a review of the diagnostic yield for a prenatal WES cohort tested through our laboratory

RESULTS



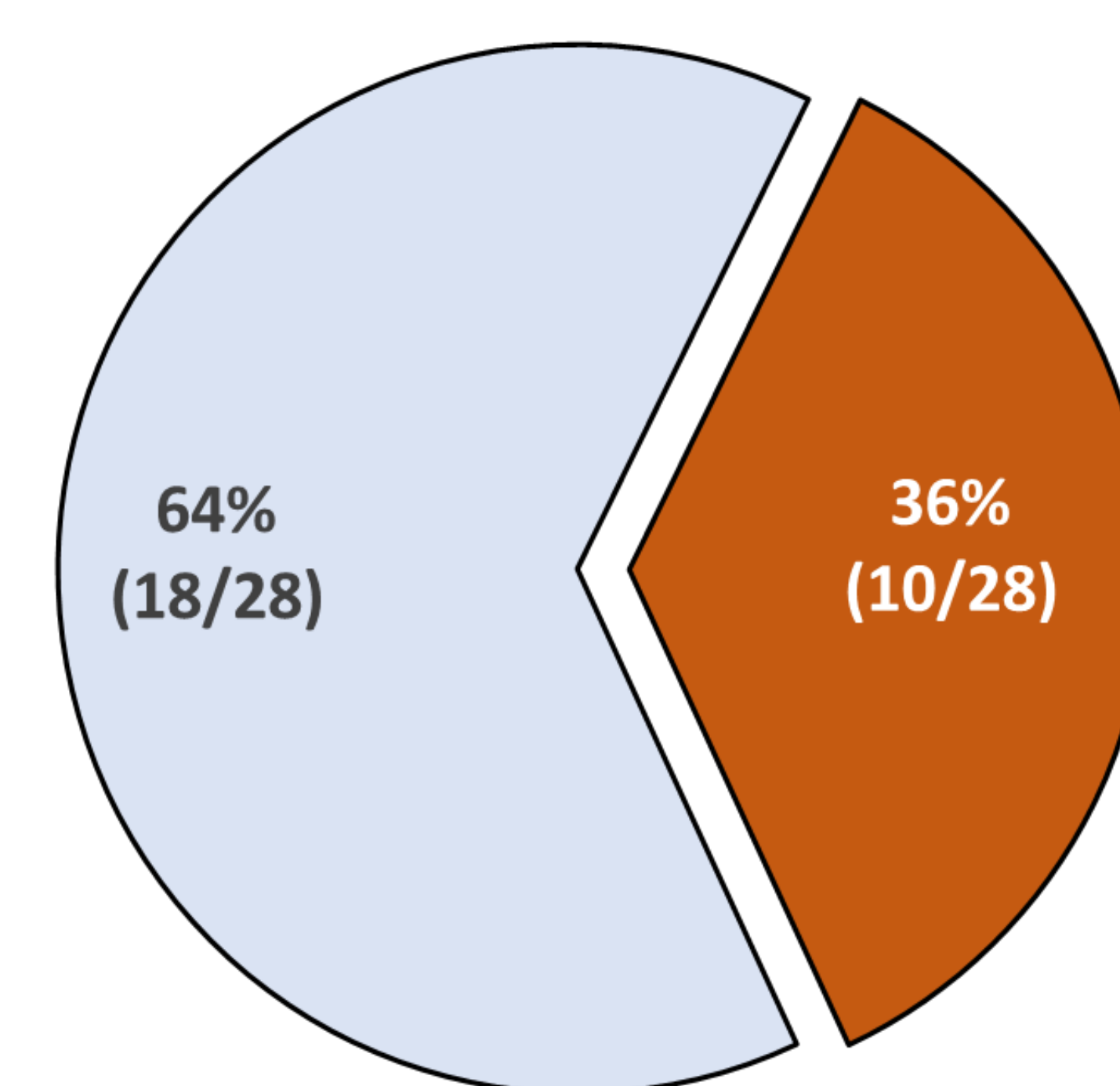
METHODS

A retrospective analysis of recent consecutive prenatal WES cases was performed, including review of:

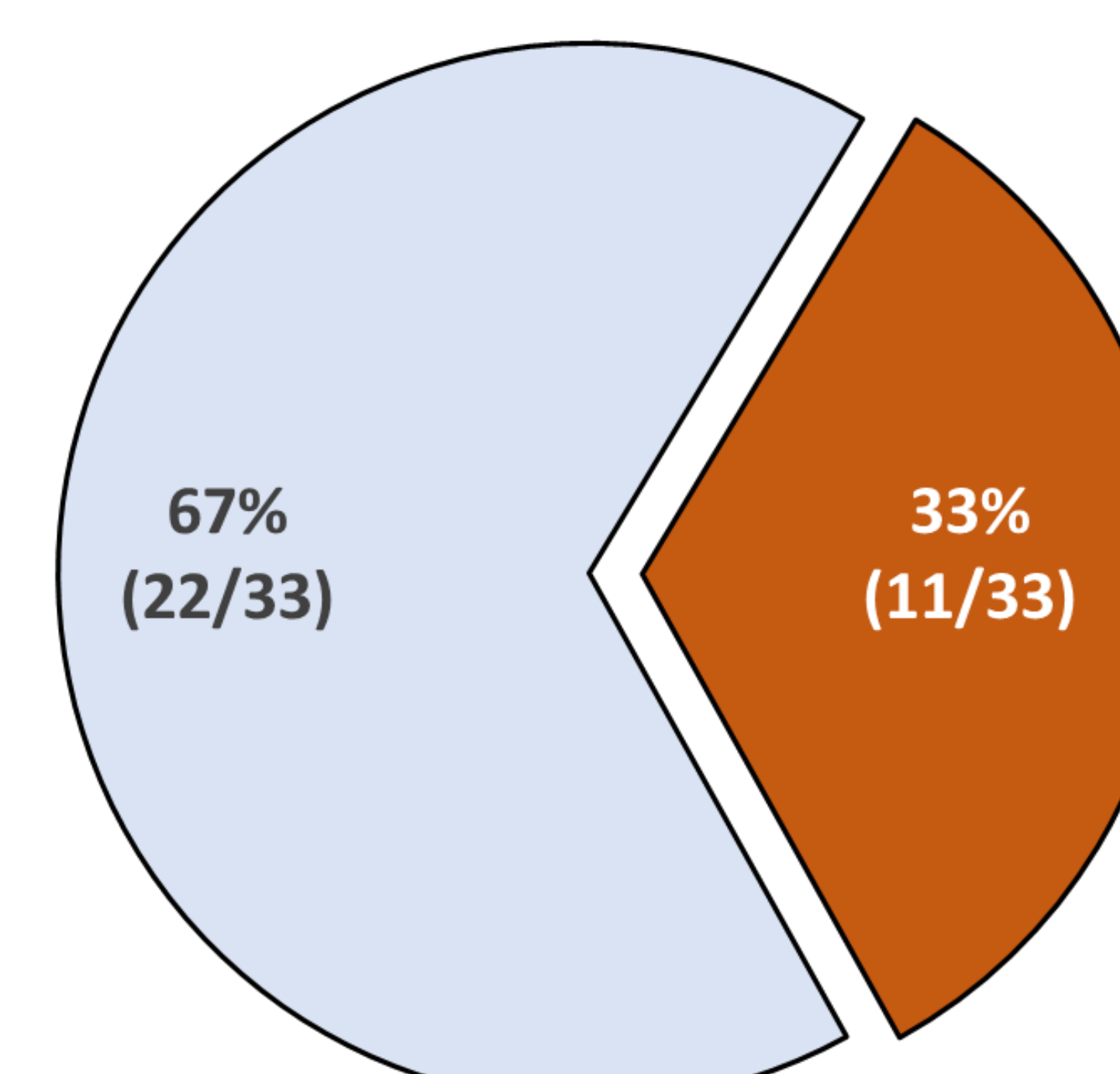
- Clinical indication for prenatal WES
- Previous prenatal testing, including genetic testing
- Overall result of testing, particularly positive calls with pathogenic or likely pathogenic variant(s)
- Gene and variant(s) identified, including type of variant (ie single nucleotide variant)

Indication Specific Diagnostic Yields:

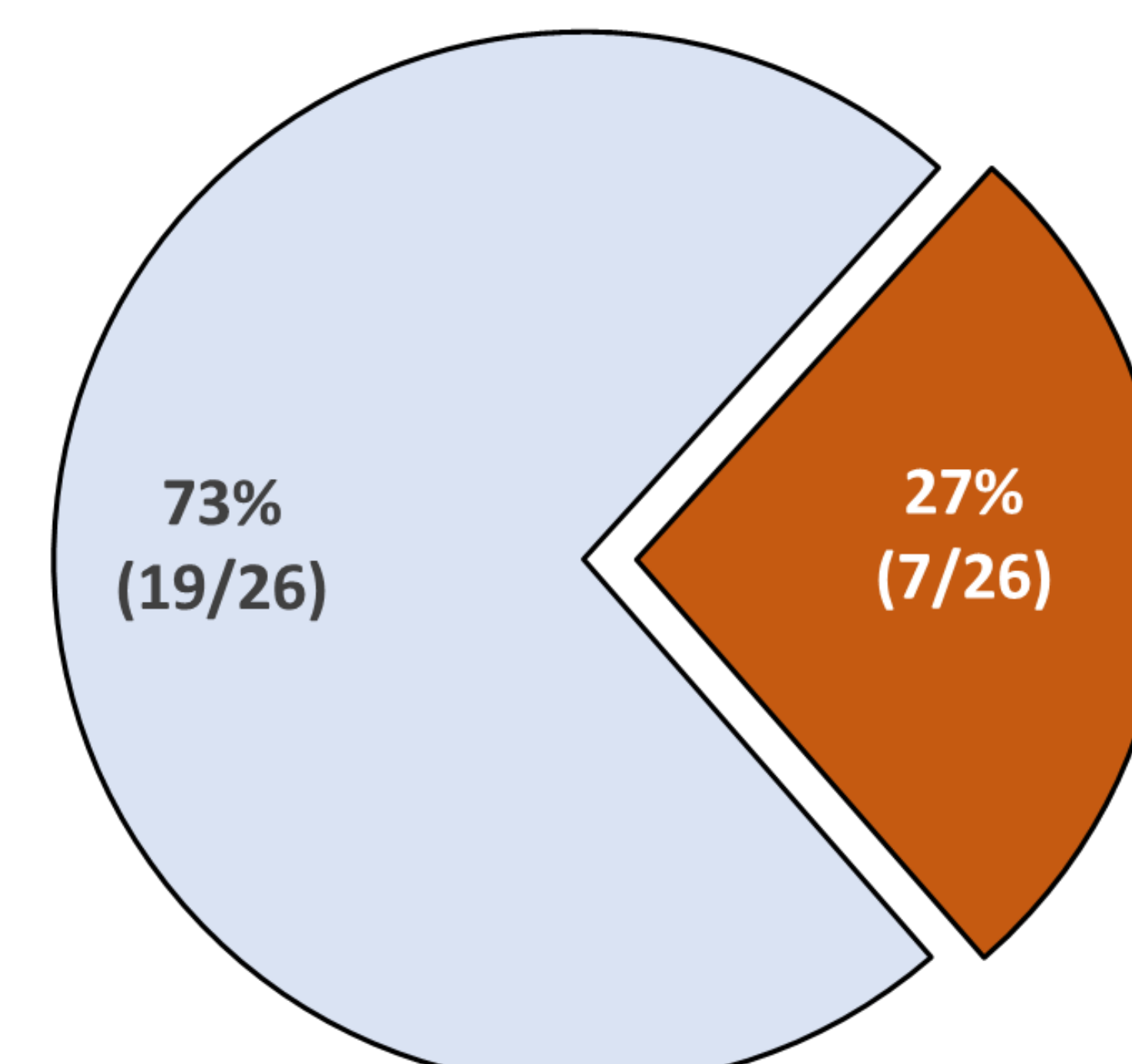
Neurological Abnormalities



Skeletal Abnormalities



Cardiac Abnormalities



□ Negative ■ Positive

The overall diagnostic yield for this cohort was 19% (21/112) - Includes one case where parents were known *CYP21A2* variant carriers

Conclusions:

- Prenatal WES yields a molecular diagnosis in a substantial number of cases, particularly those with ultrasound abnormalities
- Most diagnoses would not have been made through conventional prenatal diagnostic testing
- These findings lend support for prenatal WES to be ordered when providers and patients seek genetic testing that provides greater opportunity to obtain molecular diagnoses