



### Background

- Prenatal detection (PND) of congenital heart disease (CHD) varies across the nation and is dependent on many factors, including by diagnosis
- Nationwide prenatal detection rates average about 50%
- Quartermain et al. study (2006-2012) estimated AZ prenatal detection to be 40%
- In 2013 prenatal screening ultrasound guidelines were changed to include outflow tract sweeps
- Prenatal diagnosis allows for appropriate delivery planning and direction for postnatal management

## **Study Design**

- Retrospective study, 1075 patients in Arizona from 2012-2018; collected from the Society of Thoracic Surgeons Database
- Infants with hemodynamically significant CHD requiring cardiac surgery prior to 1 year
- Primary Aims:
  - Estimate the prenatal detection rate of CHD in Arizona based on a single center's experience
  - Describe various factors that may influence detection rates
- Secondary Aims:
  - Assess if there is an association between prenatal detection and outcomes
  - Investigate descriptors of primary and secondary aims (such as type of cardiac lesion, presence of chromosomal abnormalities, time until surgery)

# Improvement in Rate of Prenatal Detection of Congenital Heart Disease in Arizona

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- Overall prenatal detection rate of 51%
- Improvement in detection rate every year, with a rate of 61% in 2018
- High risk pregnancies and those with chromosomal abnormalities had higher detection rates
- Single ventricle lesions are detected at a higher rate compared to other congenital heart defects (79.9%)
- Patients with prenatally detected HLHS had 3 days shorter time to surgery (7.5 vs. 10.2 days P 0.04)
- Lesions requiring 4 chamber view for detection have significantly higher prenatal detection

Echo View	PND rate
4 chamber view	76%
Outflow view	61%
Other	33%

### Results

#### **PND By Lesion Before and After 2013 Cardiac Screening** Guidelines



## Conclusions

- Higher prenatal detection rate was seen compared to what had previously been reported in Arizona.
- Yearly improvement in PND may be an effect of 2013 screening guidelines. Improvement in diagnosis of CHD lesions seen on outflow sweeps.
- Interventions to improve prenatal detection should include continued education on outflow tract and three vessel views on prenatal screening.





#### References

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