

# A Systematic Review of Colorado Newborn Hearing Screening Practices via the Virtual Site Visit Project

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## INTRODUCTION

- Approximately 1 to 3 per 1,000 infants in the United States are born with a permanent hearing loss in one or both ears (CDC, 2019).
- 1 out of 5 newborns with congenital cytomegalovirus (cCMV) are born with hearing loss (CDC, 2019).
- Undetected hearing loss can put children at risk for delays in speech and language development, academic achievement, and social and emotional development (Davis, Elfenbein & Bentler, 1986).
- Outcomes can be significantly improved by early diagnosis of hearing loss and timely intervention. (Yoshinaga-Itano et al., 1988).
- The current JCIH position statement, titled *JCIH Year 2019 Position Statement: Principles and Guidelines for Early Hearing Detection and Intervention Programs*, recommends that all infants be screened no later than 1 month of age (JCIH, 2019).
- Colo. Rev. Stat. § 25-4-1004.7 (1997, 2018) states that all newborns born in the state of Colorado shall receive a newborn hearing screening (NBHS).
- Data from the 2019 National CDC EHD Survey indicate 98.4% of total occurrent births received a newborn hearing screening (CDC, 2019).
- To gain knowledge about and monitor NBHS programs throughout the state, Colorado has historically conducted in-person site visits with birthing facilities.
- Current barriers to in-person site visits include: cost, time, and the COVID-19 pandemic.
- To overcome these barriers, a shift to a virtual format was necessary to maintain a systematic review of newborn hearing screening programs.
- Colorado adopted the Virtual Site Visit (VSV) curriculum led by Randi Winston-Gerson at the National Center for Hearing Assessment & Management (NCHAM).

## OBJECTIVE

The goal of the current project is to analyze the data gathered from the VSV's to address two main questions about statewide screening practices:

- (1). Is there consistency in knowledge and training of best practices in newborn hearing screening across Colorado birthing facilities?
- (2). If inconsistencies exist, how can the COEHDI program personnel support hospitals to enhance their newborn hearing screening programs?

Results will provide COEHDI staff with the information that can be used to promote standardized, evidence-based practices in newborn hearing screening programs in Colorado.

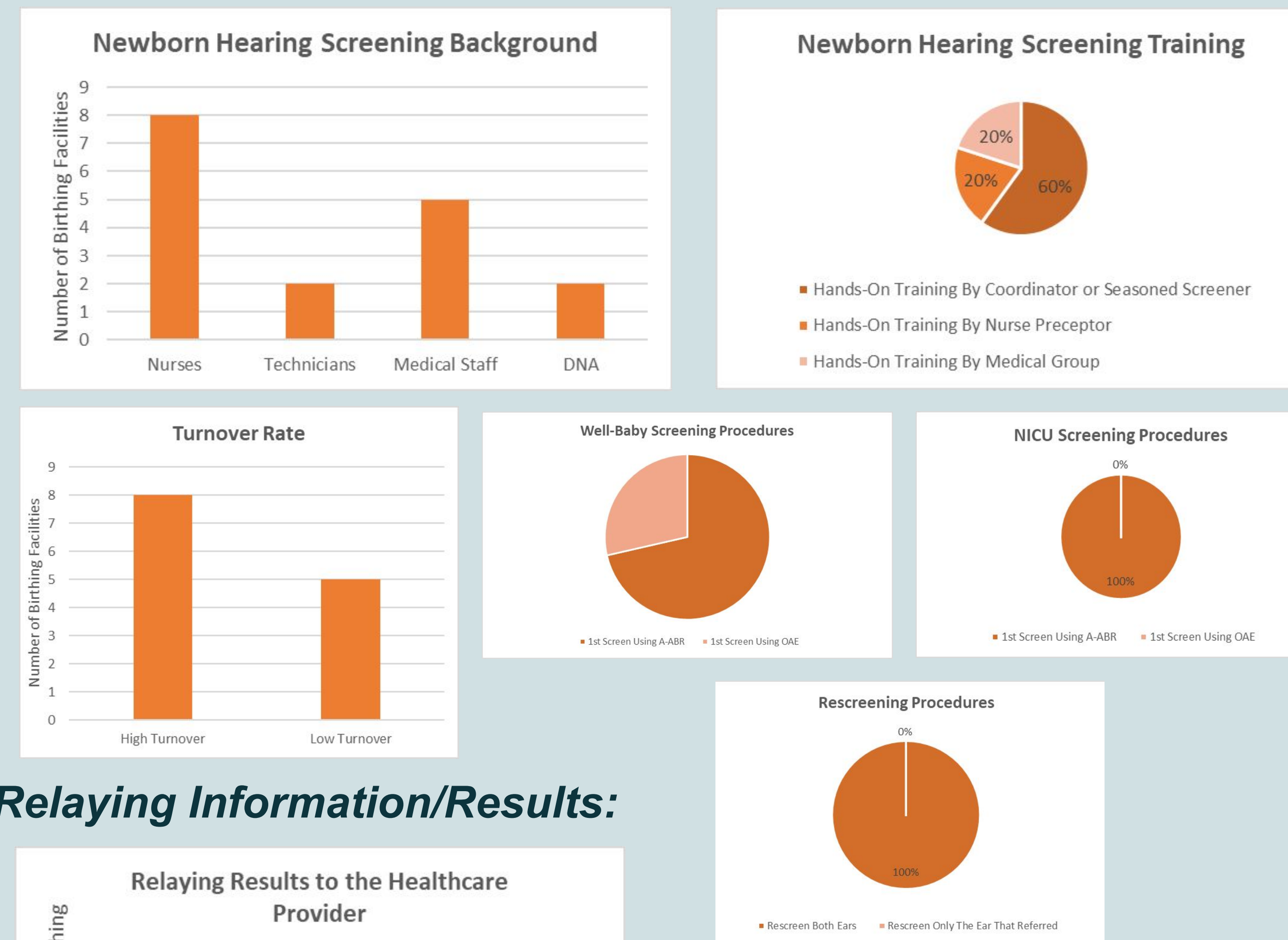
## METHODS

Survey development and data collection occurred over a 15-month period between September 2021 and December 2022:

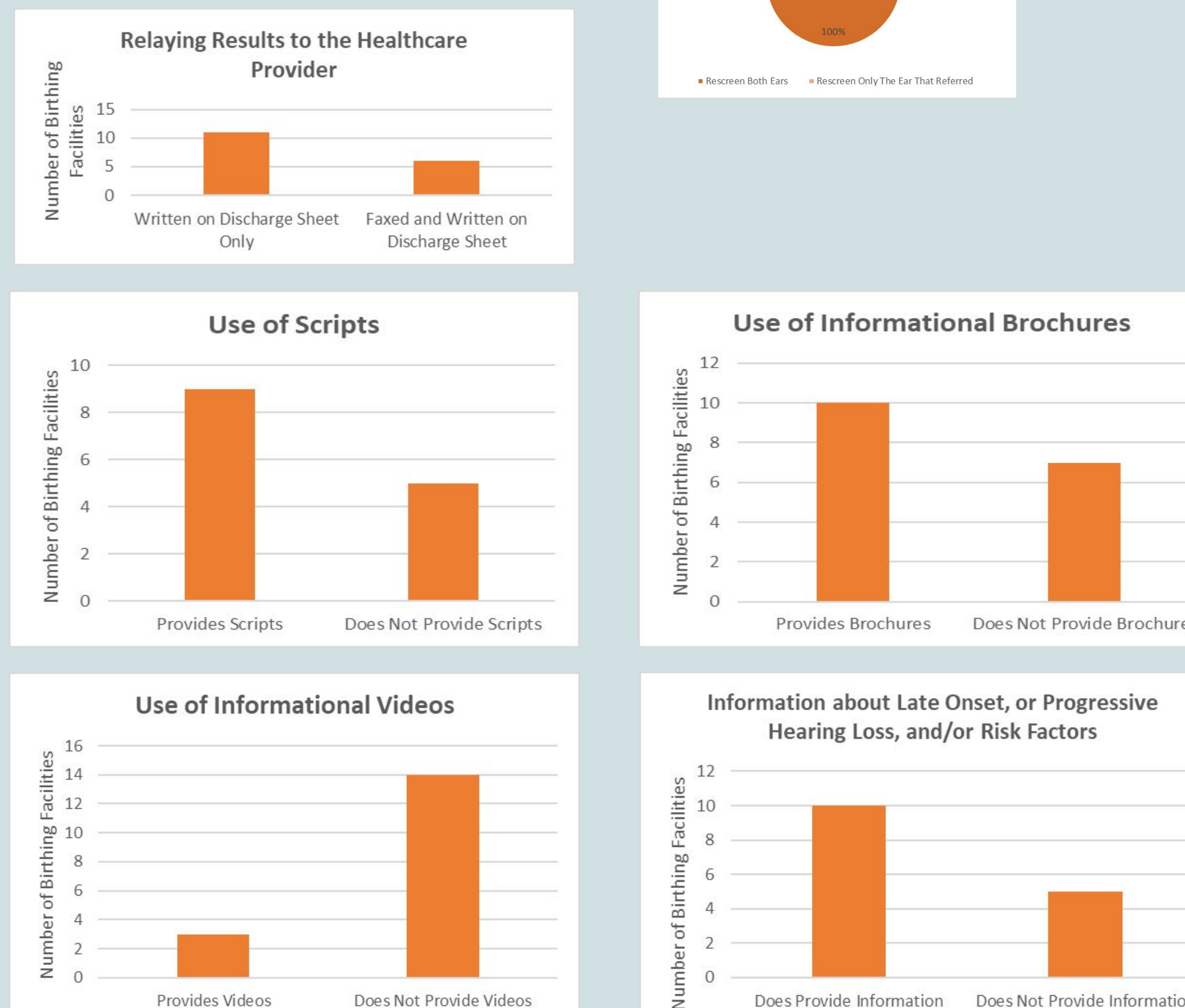
- 17 birthing facilities participated in the VSV project.

## RESULTS

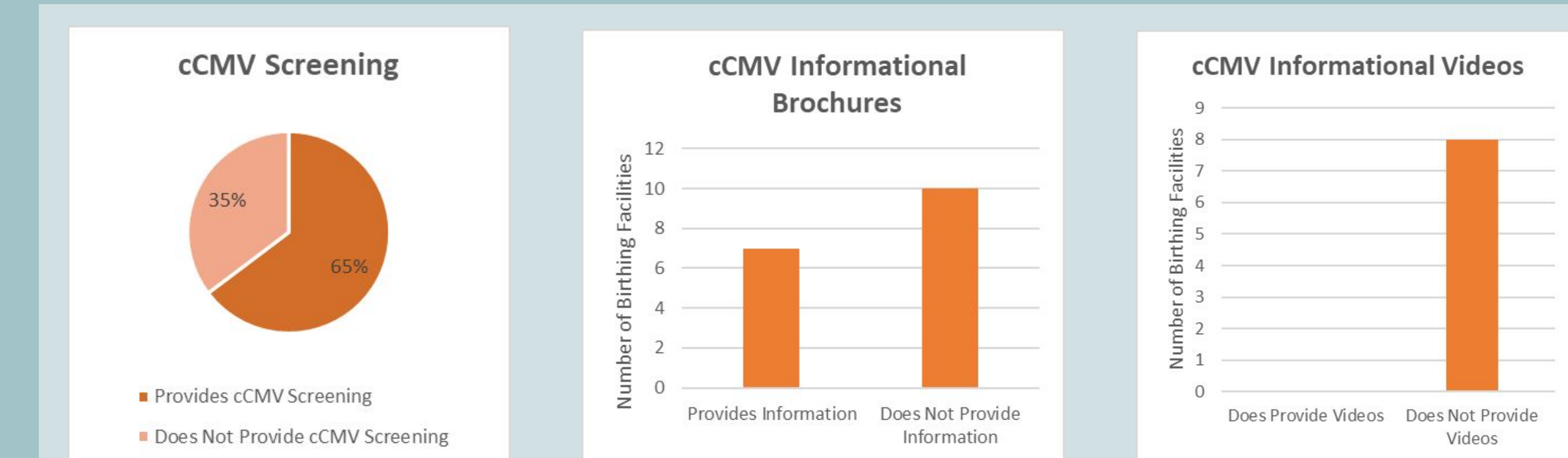
### Screener Demographics and Procedures:



### Relaying Information/Results:



## RESULTS



## DISCUSSION

### Areas of success:

- Colorado birthing facilities are following JCIH best practice guidelines for screening technology in the well-baby nursery and in the NICU (JCIH, 2019).
- Colorado birthing facilities are following JCIH best practice guidelines for rescreening if a neonate refers on a screening in one ear (JCIH, 2019).
- All Colorado birthing facilities provide hands-on training for newborn hearing screeners (JCIH, 2019).

### Areas of improvement:

- **Screener background:** Nurses are performing NBHS in 53% of cases in Colorado. However, Roberts & Jones, 2017 suggests that nurses are not comfortable performing NBHS (Robert & Jones, 2017).
- **Training:** Type of hands-on training varies among birthing facilities. JCIH 2019 and Robert & Jones 2017 recommend the use of the NCHAM Newborn Hearing Screening Training Curriculum (JCIH, 2019; Robert & Jones, 2017).
- **High turnover:** A majority of birthing facilities indicated a high screener turnover, which can impact quality of NBHS program (Low et al., 2005)
- **Scripts:** Scripts are free and available resources for all birthing facilities, however, these resources are largely unused in Colorado. JCIH 2019 recommends use of scripting to maximize follow-up (JCIH, 2019).
- **Use of informational brochures/ videos:** These are free and available resources for all birthing facilities, however, these resources are largely unused in Colorado. JCIH 2019 promotes use of informational brochures/videos to help families retain information and to maximize follow-up (JCIH, 2019).
- **Relaying results to the healthcare provider:** Suggestion to standardize how results are provided to healthcare providers to ensure facilitation of appropriate follow-up (Shulman et al., 2010; Russ et al., 2010).
- **cCMV:** Congenital CMV is the most common congenital viral infection in the United States (CDC, 2019). There are currently no routine protocols regarding the screening of newborns for cCMV at birth (National CMV Foundation, 2023). cCMV screening may facilitate early detection and intervention for hearing loss and developmental delays.

## REFERENCES

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