

Objective:

To evaluate 18-year quality assurance of newborn hearing screening (NHS) in Dutch NICU's.

Study design:

Results of the 2-stage automated auditory brainstem response (AABR) screening and diagnostic examination in NICU graduates centrally registered between 1998 and 2017 at TNO Leiden.

This registration facilitates screening, tracking and follow-up after abnormal screening results.

Outcome measures are (trends of)

1. Coverage rates
2. Referral rates
3. Timing of screening (1st AABR < 1 month, 2nd AABR < 6 weeks, and diagnosis < 3 months)
4. Prevalence of hearing loss (HL)

Results:

63140 NICU graduates have been screened.

Coverage rates: 98.9% at 1st, 94.9% at 2nd stage; 93.9% for diagnostic examination.

Referral rates of 1st and 2nd stage were 11.9% and 23.1%.

After correction for gestational age, 95.8% of the infants had 1st AABR < 1 month,

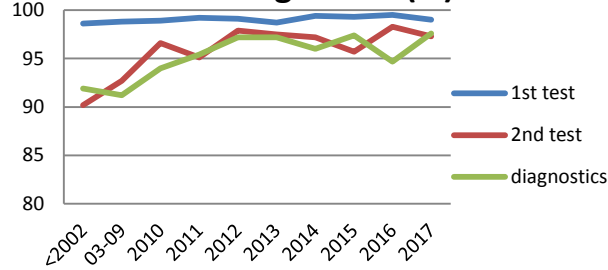
84.0% had 2nd AABR < 6 weeks and 72.6% were diagnosed < 3 months.

Total Prevalence of HL was 2,5% (1631 infants); 1213 (1.9%) with bilateral HL and

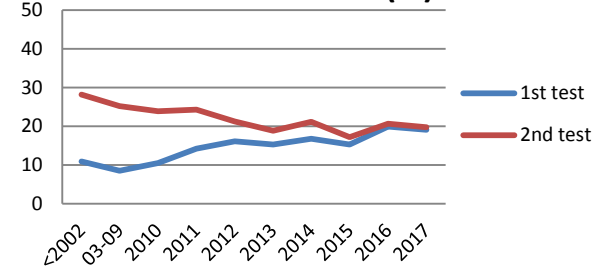
418 (0.7%) with unilateral HL.

For trend analysis see Figure 1 to 4

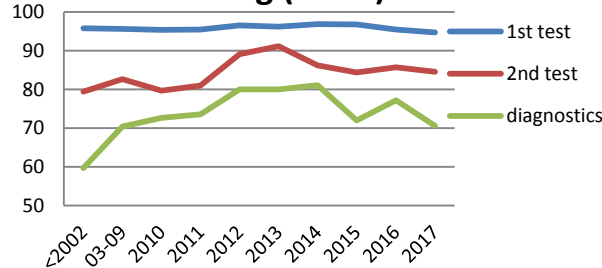
Trend Coverage rates(%)



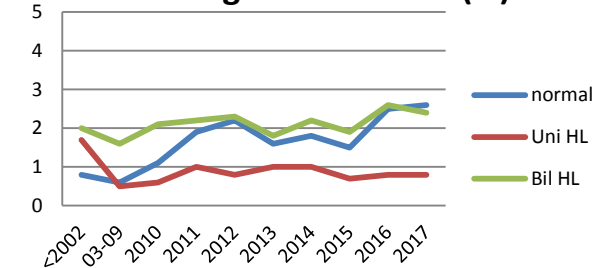
Trend Referral rates(%)



Trend Timing (% OK)



Trend Diagnostic Results (%)



Conclusion

The NHS in Dutch NICU's is a high quality AABR hearing screening program.

The positive predictive value of HL was 69%.

Coverage rates are improving over time.

