Adherence to Audiology Screening Recommendations Following Pediatric Bacterial Meningitis

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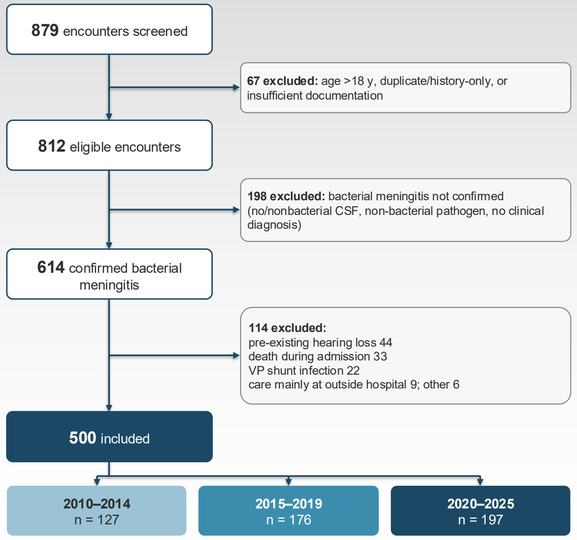
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BACKGROUND & OBJECTIVES

- Bacterial meningitis is a leading cause of acquired sensorineural hearing loss (SNHL) in children, affecting ~10–30%.
- Loss can be **delayed or progressive**, and labyrinthitis ossificans can develop within weeks, which closes the window for cochlear implantation.
- WHO (2025) recommends audiology **before discharge** plus repeat testing, yet delayed and incomplete follow-up is widely reported.
- **Objective:** describe how hearing surveillance changed across three time periods (2011–2025) looking at inpatient test modalities, outpatient recommendations and timeframes, and attendance at recommended follow-up.

METHODS

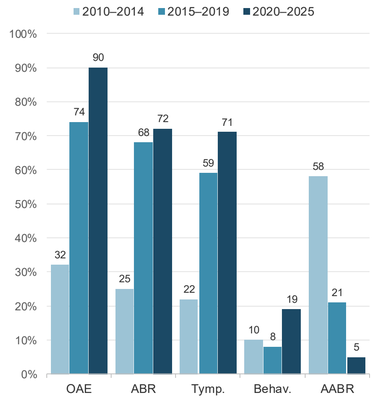
- Retrospective cohort, Texas Children's Hospital (IRB H-57972); children ≤18 y with bacterial meningitis.
- Eras by admission year; χ^2 tests. Dates shifted 0–365 days (intervals preserved).
- **Follow-up**: first ENT/audiology visit; on time = ≤ end of recommended window + 1 mo. PCP-only screens shown separately. Windows not elapsed at extraction excluded
- Note: Hearing outcomes and their predictors in this cohort are presented separately (see Poster #879)



RESULTS

Inpatient hearing tests

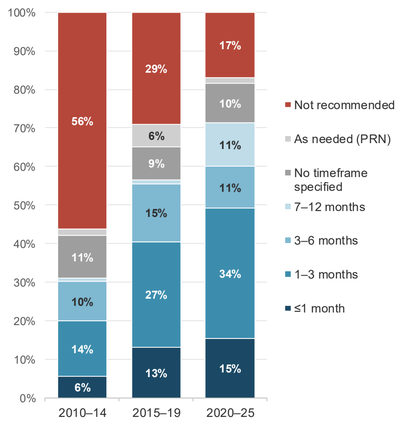
% of tested children receiving each test (n = 100 / 133 / 140); all p < 0.02



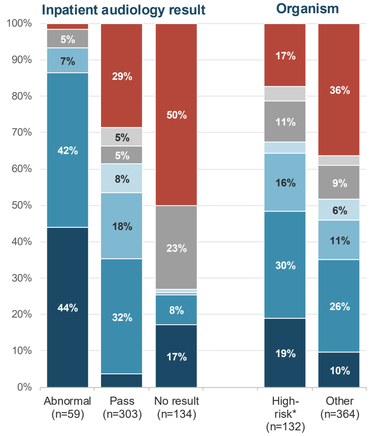
No diagnostic test: neonates 82% → 43% → 27% (p < 0.001); older 29% → 36% → 36% (p = 0.52)

Recommended follow-up by era

% of all included children per era (p < 0.001)



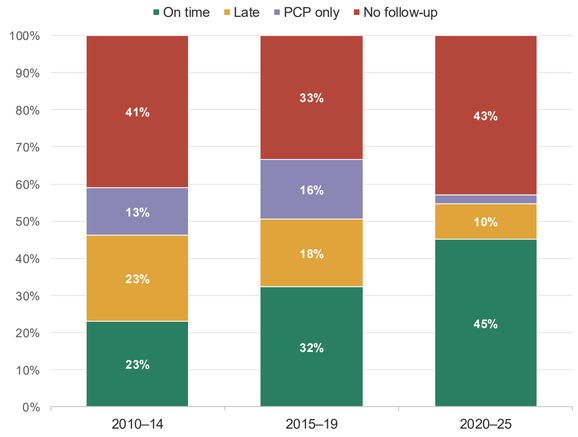
Recommended follow-up by risk group



*High risk: *S. pneumoniae, N. meningitidis, H. influenzae*

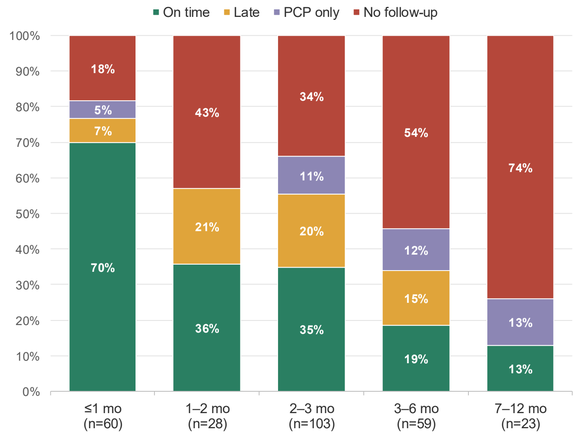
Attendance by era

Children with a timed recommendation (n = 39 / 99 / 135; p < 0.001)



Attendance by recommended window

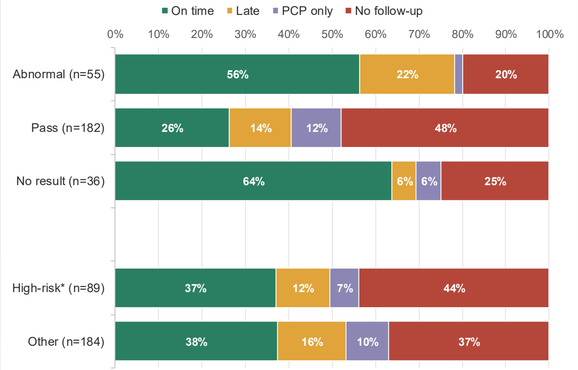
Pooled across eras (p < 0.001)



RESULTS (CONTINUED)

Attendance by risk group

Timed recommendations only; result p < 0.001, pathogen p = 0.61



*No result = not tested or not documented. *S. pneumoniae, N. meningitidis, H. influenzae*

CONCLUSIONS

- Diagnostic inpatient testing improved as AABR gave way to OAE/ABR, driven by neonates, but **~1 in 3 older children still leave untested**, with no improvement.
- Audiology referral rose from 42% to 81%, with more near-term windows; PCP-only screening largely disappeared.
- **Attendance is the weak link:** on-time follow-up doubled (23% → 45%), but ~40% of referred children had no follow-up at all.
- Referral tracks risk, attendance does not. Shorter windows and scheduling before discharge may help.

LIMITATIONS

- Single-center, retrospective; testing at outside facilities not captured (unknown/outside follow-up: 36% → 19%).
- Most recent era has shorter observation time; era boundaries approximate after date shifting.

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