

Meeting Joint Commission on Infant Hearing Year 2000 Position Statement: Principles and Guidelines for Early Hearing Detection and Intervention Programs¹

THE NATUS FAMILY OF HEARING SCREENING PRODUCTS HELPS YOU COMPLY WITH JCIH GUIDELINES:

IDENTIFYING TARGETED HEARING LOSS

*"JCIH defines the targeted hearing loss for UNHS programs as permanent bilateral or unilateral, sensory or conductive hearing loss, averaging **30-40 dB or more** in the frequency region important for speech recognition (approx. 500-4000 Hz)." ¹*

"The JCIH recommends that all infants with the targeted hearing loss be identified so that appropriate intervention and monitoring be initiated." ¹

- The **ALGO**® **Newborn Hearing Screener** with proprietary Natus **AABR**® technology yields accurate results in the targeted range of 30–40 dB.
- The **ALGO** system minimizes the risk of missing children with hearing loss by providing > 99% sensitivity. It also minimizes unnecessary rescreens by providing > 96% specificity.²

APPROPRIATE SCREENING TECHNOLOGIES

*"Both **OAE** and **ABR** technologies have been successfully implemented for UNHS..." ¹*

"OAEs are sensitive to outer hair cell dysfunction. The technology can be used to detect sensory (i.e. inner ear hearing loss..." ¹

*"Because OAE responses are generated within the cochlea by the outer hair cells, **OAE evaluation does not detect neural dysfunction. Infants with auditory neuropathy or neural conduction disorders will not be detected by OAEs.**" ¹*

*"...the **ABR** will detect auditory neuropathy or neural conduction disorders in newborns." ¹*

- The **ALGO** system utilizes **AABR** technology, which screens the entire hearing pathway. The ALGO system can be used to screen for sensory hearing loss, as well as auditory neuropathy or neural conduction disorders.
- Only the **Echo-Screen** system combines advanced **TEOAE**, **DPOAE**, and **AABR** hearing screening techniques. The Echo-Screen may be used in a variety of technology configurations to screen for sensory hearing loss, as well as auditory neuropathy or neural conduction disorders.

(continued on reverse)

APPROPRIATE SCREENING TECHNOLOGIES (continued)

*“Development of a program includes the establishment of the interpretive criteria for pass and refer. Interpretive criteria should be founded on a clear scientific rationale. Such rationale may be based in **signal statistics and signal detection theory**...”¹*

- Natus’ proprietary **AOAE**® and **AABR**® technologies are based on a patented, clinically validated binomial statistics algorithm, which provides fully automated pass/refer results with fixed screening parameters. All results are based on the same, standardized, objective criteria.

*“Screening technologies that incorporate automated response detection are preferred over those that require operator interpretation and decision-making. **Automated algorithms** eliminate the need for individual test interpretation, reduce the effects of screener bias and errors on test outcome, and ensure test consistency across all infants, test conditions, and screening personnel.”¹*

- The **Echo-Screen** and **ALGO** devices are fully automated systems — providing automatic pass/refer results with fixed parameters that cannot be adjusted. This removes the risk of user error and test variability.

*“...the screening program must ensure that the algorithms have been **validated by rigorous scientific methods and that those results have been reported in peer-reviewed publications**.”¹*

- The performance of the ALGO system has been clinically validated and documented in numerous peer-reviewed, published studies:²
 - Sensitivity > 99%: minimizing false pass results
 - Specificity > 96%: minimizing false refer results

SURVEILLANCE OF INFANTS & TODDLERS

“... infants with < 30 dB hearing loss or with hearing loss related to auditory neuropathy or neural conduction disorders may not be detected in a UNHS program.”¹

“... because normal hearing at birth does not preclude delayed onset or acquired hearing loss, risk indicators help identify infants who should receive on-going audiologic and medical monitoring and surveillance.”¹

- The **Echo-Screen** system is optimized to screen newborns, infants, toddlers, and children for hearing loss. It is the ideal surveillance screening tool for the pediatrician’s office or audiologist’s clinic.

References

- 1 Joint Committee on Infant Hearing. Year 2000 position statement: Principles and guidelines for early hearing detection and intervention programs. *Pediatrics*. 2000; 106(4):798-817.
- 2 References on file at Natus.

