Editorial

Toward Universal Screening

March 3, 1993, will be remembered as a significant milestone in our long struggle to counter the effects of hearing impairment in children. On that date a consensus panel, assembled by the National Institutes of Health in Washington, DC, announced its recommendation that all newborn babies be screened for hearing prior to hospital discharge. This was certainly a day that many of us had long awaited. Although high-risk babies have been screened in many locales for a number of years, it has become apparent that such limited screening misses at least 50% of congenital losses. Only through universal screening will it be possible to detect the thousands of babies with significant impairment who do not meet criteria for inclusion on the high-risk register.

We are acutely aware, however, that this important advance carries with it a daunting responsibility. Every year, in the United States, there are more than 4 million live births. Screening every one of these babies will require a massive investment in time and resources. It is important, therefore, that we take advantage of technological advances that promise to lighten this heavy burden. Such an advance is maximum length sequence analysis (MLSA), a mathematical technique, which serves to deconvolve overlapping waveforms. Kurt Hecox and his research group at the University of Wisconsin pioneered the application of MLSA to the auditory brainstem response (ABR). They showed how it was possible to test at extraordinarily high click rates, as high as 900 to 1000 clicks per second, and still recover an ABR waveform.

In this issue of JAAA, Bruce Weber and Patricia Roush report on the application of the MLSA technique to premature babies in the NICU. They compared ABR responses obtained at the conventional rate of 33.3/sec with responses at rates of 227.3/sec, 454.5/sec, and 909.1/sec. Results were surprisingly similar. With the exception of the fastest rate, 909.1/sec, there was virtually no difference across rate. In fact, results were slightly better at 227.3/sec than at 33.3/sec. The potential speed advantage provided by the MLSA technique could be a significant factor in controlling the cost of universal screening.

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