Editorial

Early Detection of Hearing Loss

In view of recent calls for the mass hearing screening of all newborn babies, it is perhaps not an inappropriate time to raise some serious issues concerning the much abused and much misunderstood concepts of screening for, and subsequently identifying, hearing loss in infants and children.

Our lead article for this issue of JAAA, "Modeling the Cost and Performance of Early Identification Protocols," by Robert Turner, could not be more timely. Turner first reminds us that the screening operation is only one of several important components in the process of early detection. He then observes, with perhaps some calculated underestimation, that there is a tendency to choose an early identification scheme on the basis of the screening component alone, without really appreciating the importance of the other components of the total identification protocol.

Turner re-emphasizes, for example, that, in addition to the well-known concepts of hit rate and false alarm rate, one must consider the probability that a child who fails the screen actually has a loss, and the probability that a child who passes the screen actually has a loss. He notes further that parameters like prevalence of the disorder, performance of the screening test, follow-up percentage, and the performance of the diagnostic protocol must all be factored in. Finally, he shows how costs can be estimated, and how such estimates must necessarily impact the efficacy of any early detection program.

Certainly all of this has been known for a long time. Indeed, such considerations provided much of the motivation for the concept of the high-risk registry. What Turner has done, however, is to show, in a simple and straightforward way, how the entire identification process may be quantitatively modeled. Using this quantitative model, he carries out calculations on an illustrative identification program and produces what must surely be a sobering number. The cost of identifying a single hearing-impaired baby, in this hypothetical example, is $5500.

Some would say that no price is too high to pay for the early identification of a handicapping loss, in terms of quality of life, realization of human potential, and ultimate costs to society in lost tax revenue and increased social services. Others would ask how long society's finite resources can cope with such expenses.

In the long run, answers to such questions must come from society, not from audiologists. The important point for us to absorb is that there is much more to early identification than finding a screening instrument with a high hit rate. But that, alas, is the limited vision that still persists among many of our colleagues. Turner's quantitative approach is important for a number of reasons, not the least of which is the extent to which it illuminates the hard decisions confronting anyone seeking to implement an early identification program.

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