Journal of Medical
Screening

Editorial

Preventing neural tube defects: a major success story, with a chapter yet to be written

In a perfect world it would not be necessary for Morris and Wald to perform the intricate analyses that are reported elsewhere in this issue, aimed at more accurately defining incidence and birth prevalence of neural tube defects.[1] Health workers would diligently and reliably report every birth and stillbirth of a neural tube defect, and also record every termination due to one of these lesions. The numbers could then simply be tallied and printed, thereby providing all interested parties with reliable knowledge about patterns of incidence (number of conceptions affected by neural tube defects), antenatal detection and termination, and birth prevalence.

It will hardly come as a surprise, however, for the reader to learn that the world of antenatal and birth record data collection is not perfect. As with so many aspects of our lives, human behaviour is a major source of imperfection, and it is not likely that either persuasion or regulation will correct this problem. The good news is that the frequency of quirks in behaviour by health workers, which sometimes result in vital data not being entered, seems to be relatively constant over time. The authors have taken advantage of this consistency, firstly, by making use of published estimates of underreporting births (19% for anencephaly and 13% for spina bifida) and then by deriving an estimate of the underreporting of terminations of affected pregnancies (56%). These estimates make it possible to apply correction factors to births and terminations officially reported from England and Wales between 1965 and 1997.

Even before the present data became available, it was recognised that the birth prevalence of neural tube defects had declined dramatically since the early 1970s.[2] It was also recognised that this decline could be accounted for by a combination of a falling incidence and terminations resulting from antenatal screening and diagnosis. Morris and Wald's data provide a more accurate estimate of total affected pregnancies and also allow a more accurate apportionment of responsibility for the decline in birth prevalence. A lower incidence, probably due to general dietary improvements, accounts for 56% of the overall 96% decline, while antenatal screening, diagnosis, and termination account for 40%. The cornerstone for assessing any public heath effort that aims at preventing disease or disability is accurate baseline and monitoring information about rate of occurrence.

Neural tube defects are an excellent example as to why such information is so important. Even though major success has already been achieved in reducing the birth prevalence (and, by extension, the burden) of these disorders, the ultimate goal of reducing the incidence to a bare minium has not yet been reached, even though the role of folic acid in primary prevention is now well understood.[3] Morris and Wald show that reductions in incidence, which can be attributed to dietary improvements, have levelled off, meaning that fortification of the food supply (flour) by folate is the next logical step. Such fortification is already in use in the United States. Once that step has been taken, it will be possible to monitor the impact of fortification more reliably using the approach described in this issue.

JAMES HADDOW

Foundation for Blood Research,
PO Box 190,
Scarborough, Maine,
04074 USA

1 Morris JK, Wald NJ. Quantifying the decline in the birth prevalence of neural tube defects in England and Wales. *J Med Screen* 1999;**6**:000–000.
2 Wald NJ, Cuckle HS. In: Elwood JM, Little J, Elwood JH, eds. *Epidemiology and control of neural tube defects.* Oxford: Oxford University Press, 1992:725–6.
3 MRC Vitamin Study Research Group. Prevention of neural tube defects: results of the Medical Research Council Vitamin Study. *Lancet* 1991;**338**: 131–7.