

to produce a measure of relative differences in each country. The figure combines the data for neonatal and postneonatal mortality and shows that England and Wales have a steeper and more consistent gradient of mortality across social classes than Sweden. The width of the "steps" is proportional to each class's share of total live births.

The differences in total mortality and its socio-economic distribution in the two countries are both consistent with the suggestion that Sweden's more egalitarian income distribution might be influential.<sup>1</sup> Mortality in each social class will be affected by the scale of relative deprivation in each. Social classes are heterogeneous with respect to income: there are unemployed and low paid workers in social class I occupations just as there are occasional well paid unskilled workers in social class V. Therefore, while having its greatest impact lower down the social scale, a more egalitarian income distribution may be expected to produce a small reduction in the burden of relative deprivation on mortality even in the upper classes. Though Leon and colleagues seem to assume that smaller differences in income should lead to a relative rather than an absolute diminution in differentials in mortality, if relative deprivation is regarded as a risk factor like any other, an absolute effect may be more plausible. This would also be consistent with its impact on total mortality.

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EDITOR,—D A Leon and colleagues found that in the mid-1980s social class differences in infant mortality were largely similar, in relative terms, in Sweden and in England and Wales, even though neonatal and post-neonatal mortality differed considerably in the two areas.<sup>1</sup> Babies born to mothers of lower social class had about an 80% increased risk of death during the first year of life compared with babies born to women of higher social class.

Evidence largely consistent with these findings emerges from analysis of Italian data on all births and infant deaths routinely collected and published by strata of maternal education (a rough approximation to social class) by the Italian Central Institute of Statistics.<sup>2,3</sup> Infant mortality in women reporting no education or only primary education was 23.7/1000 live births in 1975 and 14.8/1000 in the four years 1980/3. In comparison, the rates in women with college education were 9.2 and 8.1/1000 live births respectively (table). The mortality ratio tended to decrease from the mid-1970s to early 1980s, but in 1980-3 it was still 1.8 for babies born to women with no or primary education compared with those born to women with a college education.

These differences between less and more educated women were not attributable to birth

Numbers of registered deaths of infants, infant mortality, and mortality ratio according to maternal education in Italy, 1975 and 1980-3

Maternal education (years)	1975			1980-3		
	No of registered deaths	Rate/1000 live births	Mortality ratio	No of registered deaths	Rate/1000 live births	Mortality ratio
College	184	9.2	1*	902	8.1	1*
≥12 (high school)	1 079	11.5	1.3	4 615	8.9	1.1
8-11 (secondary school)	3 510	16.7	1.8	11 255	11.6	1.3
<7 (primary school or none)	11 431	23.7	2.6	17 820	14.8	1.8

\*Reference category.

weight—for example, in 1980-3 infant mortality adjusted for birth weight was 14.4/1000 for women with no or primary education and 8.7/1000 for women educated at college. The proportion of infant deaths that would have been avoided if all babies experienced the mortality of the babies of women educated at college was 55% in 1975 and 32% in 1980-3; this estimate for 1980-3 is consistent with findings from Sweden and England and Wales.<sup>1</sup>

This evidence suggests that the differences among groups classified by social class or education are largely similar in relative terms in populations characterised by important differences in stillbirth rates and infant mortality (mortality in the first year of life was 13.5/1000 live births in Italy in 1980-3 and 9.5/1000 live births in England and Wales in 1983-5<sup>1</sup>). This supports Leon and colleagues' suggestion that differences in the home environments of infants, rather than inequalities in health care, are the main determinants of mortality in the first year of life in babies born to women of lower social class.

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## Screening for Down's syndrome

EDITOR,—Tower Hamlets was one of the districts that participated in the demonstration project for antenatal maternal serum screening for Down's syndrome.<sup>1</sup> When the research funding ended we were asked for £40 000 to continue the service. An audit of Down's syndrome cases in Tower Hamlets revealed a cautionary tale that supports some of the concerns raised by correspondents.<sup>2</sup>

In Tower Hamlets the screening programme did not reduce the prevalence of Down's syndrome during the 18 months of the study. All five cases in this period had had the triple test. One woman requested amniocentesis on the basis of her age alone before the results of her test were known and terminated her pregnancy. Two women were offered amniocentesis on the basis of a high risk estimate (one on age alone) but declined. The remaining two women had a low risk estimate on the triple test but subsequently delivered babies with Down's syndrome. One of these is exploring the possibility of litigation (as in the case of Michelle Huberman<sup>3</sup>).

One major reason for the low detection rate was the low uptake of amniocentesis. The acceptance of amniocentesis following a positive triple test was 53% in Tower Hamlets and 75% in the demonstration project overall. This raises important questions about how the test is being offered, especially to non-English speaking women: nearly

half the babies born in the district are to Bangladeshi women.

In a survey of women using the maternity services in Tower Hamlets, less than 10% of non-English women knew they were having a test for a congenital abnormality.<sup>1</sup> In a separate survey conducted by the community health council, only 30% of English speaking women knew they were having a blood test for congenital abnormalities.

The funding quoted does not include the costs of staff training, counselling, costs to women and families, or the opportunity costs. The original estimates quoted in Wald's article also excluded the cost of routinely offering amniocentesis to women 37 years and over. We do not think it is ethical to withdraw a screening programme that detects 100% of cases and replace it with one that detects only 70% of cases, and therefore we will continue to offer amniocentesis to women over the age of 37 years. This increases the costs.

Finally, like other correspondents, we questioned whether the results supported the conclusions that every district in the NHS should give priority to funding the programme.

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- 2 Correspondence. Antenatal screening for Down's syndrome. *BMJ* 1992;305:768-70. (26 September.)
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EDITOR,—N J Wald and colleagues' paper on antenatal screening for Down's syndrome<sup>1</sup> has provoked copious correspondence.<sup>2</sup> None of it considers the individual pregnant woman's view. When confronted with the simple information that if her fetus has Down's syndrome the biochemical risk assessment (not a screening test in itself) plus a midtrimester invasive procedure has only a one in two chance of diagnosing this and, even if it hasn't, a one in 20 chance of recommending an amniocentesis, most women decline the test. Population statistics are all very well, but what we are dealing with is one woman and her pregnancy. People want facts, not probabilities.

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- 1 Wald NJ, Kennard A, Densen JW, Cuckle HS, Chard T, Butler L. Antenatal maternal serum screening for Down's syndrome: results of a demonstration project. *BMJ* 1992;305:391-4. (15 August.)
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## Decreasing quality of semen

EDITOR,—The investigation by Elisabeth Carlsen and colleagues<sup>1</sup> sounds alarm bells and has received worldwide attention. The authors assert that there has been a genuine decline in sperm quality during the past 50 years. However, whether such a conclusion is valid depends on the quality of semen analyses performed more than 30 years ago. How good was quality control in andrology laboratories in the 1940s and 1950s? Today few andrology laboratories have ongoing quality control programmes for sperm concentration determinations, and even using contemporary techniques there can be an error of about 25% in measurements.<sup>2,3</sup>

The authors doubted the existence of a secular trend in technique based on comparison with