documented in the narrative of the notes they may not be apparent on a rapid skim through the notes and an entry about resuscitation status that is not the most up to date may be found. A sheet at the back of the notes giving sequential decisions on resuscitation status perhaps solves this problem, but if the sheet is not updated the information can be misleading.

I would be interested to know whether any other departments have managed to find a system that really works in a busy department (at least 1100 admissions a year per consultant). I also wonder whether, if communication between doctors and nurses is accurate (and this can easily be audited), the requirement for the consultant to generate updates in the notes each day results in unnecessary bureaucracy.

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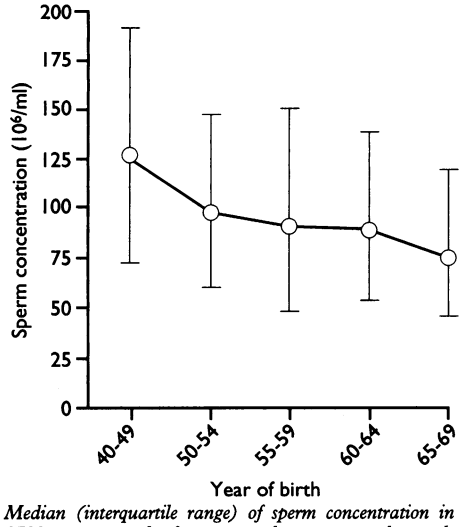
Falling sperm quality

EDITOR,—It has been suggested that environmental factors, possibly acting in fetal and early neonatal life, may be having long term adverse effects on the male reproductive system,[1] and that this is leading to an observed deterioration in semen quality[2] together with an increase in the incidence of congenital malformations of the male reproductive tract, and in the incidence of testicular cancer. Although this is currently little more than a compelling hypothesis, if true it has very profound implications for those involved in fundamental research as well as those involved in the clinical care of men with reproductive disorders. We thus read with great interest the paper by Peter Bromwich and colleagues,[3] together with the associated editorial by Stephen Farrow.[4]

Bromwich and colleagues make much of the statistical observation, well known to workers in the field of andrology, that measures of human semen quality are seldom normally distributed, and thus correctly point out that the mean is an inappropriate measure of central tendency to use. We entirely agree, although it is interesting that the authors do not in fact test their own observation that a sample of 235 sperm concentrations is log normally distributed; thus their advocacy of the geometric mean (the antilog of the mean of the log data) as the preferred measure of central tendency is open to discussion.

The hypothesis advanced by Sharpe and Skakkebaeck was that factors active in fetal and early neonatal life may adversely affect the subsequent spermatogenic capacity of a given individual.[1] If this is true, and if the effect is genuinely becoming more pronounced, the trend in semen quality would be related to the time of the man's birth, rather than the time of any one ejaculation.

To examine this issue, we have looked at data on 3729 semen samples submitted by a large group of semen donors born between 1940 and 1969. These donors were selected only on the basis that they had an initial sperm concentration greater than 20 $\times 10^6$/ml, and all semen analyses were performed in one laboratory, using the same technique throughout.[5] When the distribution of the data was examined, it did not differ from a gamma distribution (Kolmogorov-Smirnov $d=0{\cdot}011$, $P>0{\cdot}05$). We then grouped the samples by year of donor's birth, and plotted the median (interquartile range) sperm concentration for each group (figure). When we compared these groups by using Kruskal-Wallis analysis of variance by ranks, the apparent fall in sperm concentration from a



Median (interquartile range) of sperm concentration in 3729 semen samples from semen donors, grouped according to the donor's year of birth.

median of 128 in men born in the 1940s to a median of 75 in men born in the late 1960s was significant ($H=99{\cdot}85$, $P<0{\cdot}0005$). Thus we do not accept that the evidence for a fall in sperm concentrations is unconvincing.

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Smoking during pregnancy and congenital limb deficiency

EDITOR,—Using a multivariate analysis that adjusted for education and birth order and showed an association cited as significant at $P=0{\cdot}017$, Andrew E Czeizel and colleagues conclude that "maternal smoking during pregnancy raises the relative odds for terminal transverse limb deficiencies."[1] The relative odds cited for this association is 1·48, but the lower limit of the 95% confidence interval for the relative odds is 0·98, which implies non-significance. Testing for the significance of the association with the method referenced[2] should entail use of a χ^2 statistic with one degree of freedom. Use of a χ^2 statistic with 52 degrees of freedom suggests that they were testing something else, probably the significance of the goodness of fit to the model used. If so, their conclusions are unjustified.

Use of the word "raises" in the main conclusion implies that causality has been shown. This is surprising since elsewhere Czeizel and colleagues state that the association "may or may not" reflect a causal relation. The conclusion is also incorrect since confounding has not been excluded as a possible explanation. The fact that the odds ratio fell from 2·14 to 1·48 after adjustment for just two factors suggests that residual confounding may be important. So also does the observation that various factors (for example, poor diet, coffee intake, and socioeconomic status) were noted to differ in frequency between the cases and the controls and yet no attempt was made to adjust for them. Using cigarette related markers in a further study will not, as the authors suggest, help to resolve whether the relation is causal unless confounding variables are properly controlled for. It remains unproved that smoking during pregnancy is teratogenic.

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Cervical smear uptake rates

EDITOR,—F Azeem Majeed and colleagues highlighted substantial variations in cervical smear uptake rates between practices in Merton, Sutton, and Wandsworth Family Health Services Authority.[1]

Our analysis of cervical smear uptake rates in practices in the City and East London Family Health Services Authority area shows very similar results. In the 5·5 years preceding 30 June 1993, 66% of women in City and East London had a cervical smear, compared with 64% in Merton, Sutton, and Wandsworth for 5·5 years preceding 31 March 1992. Our data also show clear "target heaping": 40% of practices achieved the 50% target, 31% achieved the 80% target, and 29% failed to reach a target (the figures for Merton, Sutton, and Wandsworth were 47%, 22%, and 31%, respectively).

The similarity in the figures for City and East London and those for Merton, Sutton, and Wandsworth are particularly interesting given the considerable differences between the two areas. For example, the 1991 Jarman underprivileged area scores[2] for the constituent boroughs in East London were 62 for Hackney, 55 for Newham, and 73 for Tower Hamlets; the figures for Merton, Sutton, and Wandsworth were 14, 1, and 25 (St Mary's Hospital Medical School, personal communication), suggesting a much lower overall level of deprivation.

It is important to consider a wider range of practice characteristics than were examined by Majeed and colleagues. We have identified further large differentials in the uptake rate by introducing other measures of practice resourcing and population deprivation (table). Combining variables produces even greater differentials. For example, practices with (at least) one female principal, one nurse, and one practice manager have an uptake rate of 77%, while those with no female principal, nurse, and no practice manager have a rate of 47%.

Cervical smear uptake rates in City and East London and Merton, Sutton, and Wandsworth

Practice characteristics	Uptake rate (%) (No of practices) in City and East London	Uptake rate (%) in Merton, Sutton, and Wandsworth
No of female principals:	70 (72)	67
None	56 (91)	49
Computerised:	67 (98)	65
No	55 (65)	51
No of principals:	58 (68)	51
2	59 (48)	56
≥3	72 (47)	72
No of nurses:	69 (98)	
None	53 (65)	
No of practice managers:	72 (75)	
None	54 (88)	
Proportion of practice list attracting deprivation payments:	76 (15)	
<% ≥90%	58 (69)	