SOME PROBLEMS IN HEALTH STATISTICS

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I recently looked briefly at the following question: "How do the risks associated with giving birth (stillbirths, maternal deaths, peri- and post-natal mortality, infantile handicaps, etc) vary with the age and social class of the mather?" I was particularly interested to see whether the risks associated with, say, a middle-class 35 year-old were greater or less than those associated with a working-class 30 year-old.

This short paper describes some of the problems encountered, principally those due to (a) my own inexperience in the area, and (b) the apparent lack of official data relating the variables of interest to social class. Presumably (b) is common to many sorts of class-based analyses (so is (a)!) - the ruling ideology does not define social class as an important influencing factor, and therefore the ruling statisticians do not ask the relevant questions (is this what Hindess meant?). Perhaps our subgroups could look at the data problems associated with class-based analysis and aggravated by governmental policy - I was sorry not to see this carried further in the Health Group pamphlet.

The first thing I found was that while The Registrar General's Statistical Review of England and Wales is generous on age data, it does not provide information suitable for a class-based analysis. However, the corresponding Scottish publication does have some data, and that will be used here. The following table summarises the data for 1972.

Stillbirths etc. for Scotland 1972 (per 10,000)[1]

Social Class	Abortions (1)	Perinatal deaths (2)	Still births (3)	Neonatal deaths (4)	Post-neonatal deaths (5)	Live births (absolute numbers)
I	292		77	75	23	5,172
II	731	167	106	94	40	10,986
III	794	230	129	123	58	40,593
IV	566		153	126	75	14,307
V	709	280	178	155	120	7,024
N.S.	45,170					468
All	967	229	132	118	62	78,550

[1] More precisely, the rates calculated are as follows:

(1), (4), (5) abortions, neonatal deaths, post-neonatal deaths ÷ live births

(2) legitimate perinatal deaths ÷ legitimate live and still births

(3) still births ÷ total births

'Neonatal' means under 1 month, and 'Postneonatal' means between 1 month and 1 year.

(Editorial note: John Bibby adds that a reassessment of some of the points made may be forthcoming as a result of reading articles collected in A M Adelstein et al (1976) "Child Health; a Collection of Studies" and OPCS "Studies on Medical Population Subjects" No 31 (106pp).)

It will be noted that while only 0.6% of live births are "class not specified", almost 28% of abortions are in this category. Hence, even though class data purports to exist, its reliability is dubious.

All these figures show a clear increase of risk with social class. The following "risk ratios" may be obtained (naively) by dividing the rate for social class V by that for social class I:

abortions	2.4
perinatal deaths	1.7
still births	2.3
neonatal deaths	2.1
postneonatal deaths	4.4

Perinatal deaths and stillbirths can also be analysed by class and age of mather (and number of previous children born, but we will ignore that little finesse here). For stillbirths, this leads to the following table.

Stillbirths by age and class (Scotland 1972, per 10,000 live births)

		Age				
		<20	20-24	25-29	30-34	35-39
	I	132	66	63	111	108
	II	67	84	104	118	128
Class	III	128	117	114	150	208
	IV	183	114	138	173	270
	V	143	184	123	214	287

Except in the under 20 age group, the class effect seems just as pronounced as the age effect. ("Risk-ratios" are 1.1, 2.8, 2.0, 1.0 and 2.7 for class, but only 0.8, 1.9, 1.6, 1.5 and 2.0 for age).

Mort pertinent perhaps is to ask by how much stillbirths would be reduced if the rates were reduced to the lowest class - or age-specific rate. Calculations not shown here indicate that a reduction of age-specific rates to the lowest figure in each row would reduce the number of still-births by 221, whereas a corresponding reduction of class-specific rates would reduce the number by 469. Hence, in this sense, the class effect is "twice as important" as the age effect. Moreover, presumably class-specific rates are more amenable to change by environmental improvements. Hence the class effect indicates a real possibility, given the political will, whereas the age-specific figure is a statistical artefact. On the other hand, for any given individual perhaps age is a more relevant decision variable than class.