

## SECTION 11

# CONTEXT, HISTORY AND THEORY

### 11.1 Introduction

The measurement of inequality does not take place in isolation; in many countries, there are established bodies of research. There is a sense of what are key questions from different academic and political perspectives, and theories on the nature of inequality and its causes.

It is hard to ignore this context when investigating inequalities and important to assess the extent to which existing approaches and prior results are influencing the work in hand. In this section, we introduce some theories on investigating inequality in the U.K., highlighting ways in which the choice of approach may influence the results.

### 11.2 Context

The existence and persistence of inequalities in health has been a matter of public record and commentary in the U.K. for a very long time, since the Registrar General's Social Class Classification was designed for use with the 1911 Census, to help search for an explanation for inequalities in death rates [1].

Discussion on the issue was re-ignited in 1980 by the partial suppression by the Conservative Government of the report on inequalities in health commissioned under the previous Labour Government (the Black Report). Scholars in other European countries quickly documented similar disparities and by 1987 the European region of the WHO adopted the reduction of 25% in health inequalities as the first target of its 'Health for All' by the Year 2000 programme.

More recent data from the ONS longitudinal study including figures for 1997–1999 shows that the gap between males in Social Class I (professionals) and males in Social Class V (manual workers) has narrowed

since 1992–1996. Life expectancy for males in Social Class V has risen at a faster rate than life expectancy for Social Class I males. Looking at the gradient, it seems as though the difference between I and V has reverted to how it was in the 1970s and 1980s, although with a higher average life expectancy, and that the figures in the early 1990s were the ones that were out of step with the trend.

### Distinguishing between methods and results

Although inequality may be readily recognised, the wide range of possible measures both of the dimension of (socio-economic) differentiation and of health itself, means that it is not easy to reach agreement over the level of inequality. Indeed, there may be a confusion of methods of measurement with analysis of the extent of inequalities, or of their causes themselves. Different methods of measurement, or different approaches to monitoring lead to different results. Many researchers who favour a particular conclusion or cause have therefore tended to privilege the method which leads to that conclusion.

Instead, an examination of methods and of their technical properties should be treated as a topic distinct from the findings of empirical analyses using those methods. However, the distinction cannot always be maintained:

- ◆ Any methods of summarising distributions of necessity imposes weights on different parts of the distribution and those weights can be disputed. Compare, for example, a ratio of rates at the top and bottom, with a measure like the Gini coefficient.
- ◆ The repeated use of one dimension for displaying differences tends to imply causality. For example, the persistent breakdown by age, race, and sex in the first U.S. social indicators implies that race was a causal factor leading to the observed differences.
- ◆ Some methods of measurement are best applied at an individual level and others at an area level, which can imply or constrain discussion of causation. For example, the discussion around Le Grand's [219] argument for the comparison of global measures of dispersion between individuals not between strata.

Clearly, issues like these cannot be ignored, but given the independent existence of the science of measurement, with a wide range of technical properties of measures and methods which are independent of the results and of their interpretation, it is important to respect scientific rigour in any such study undertaken.

## 11.3 The Principal Theoretical Frameworks for Approaching Inequalities

Although there has been no attempt in this handbook to explain the level and/or trends in inequalities in British Society, it is important to understand the existing theoretical interpretative framework within which these issues that are usually discussed. Much has now been published within the framework of the original four-fold choice of explanation in the Black Report. They proposed four kinds of explanation: the *artefactuality* of comparing Registrar General Social Class distributions over time, the role of *social-selection* in producing the observed distributions, the *material and structural conditions affecting health*, and the influence of different sub-cultural *patterns of health-related behaviour*. Although, with hindsight, this model now seems hardly ideal, it has been such common currency that it is hard to avoid making it the basis of any discussion.

This section therefore focuses mainly on the four approaches identified in the Black Report ([Sections 11.3.1–11.3.4](#)), but it also includes a discussion of the ideas behind presentations of inequalities in avoidable death ([Section 11.3.5](#)) and comparisons of income inequalities and health inequalities ([Section 11.3.6](#)).

### *The Original four-fold model*

#### **11.3.1 Artefactuality**

The Working Group on Inequalities in Health (WGIH) considered what it called the *artefact* issue – the reliability of the measurement tool itself, which can affect the validity of an SMR at a point in time.

### *The numerator–denominator bias*

The numerator is based on the occupational distribution among those who die during the period considered. The denominator is based on the occupational distribution at the most recent Census.

Indeed, an earlier Decennial Supplement on Occupational Mortality (OPCS, 1986) advised against the comparison of SMRs over time for this reason. They illustrated their argument for Social Class V, focussing on labourers and unskilled workers not elsewhere classified (*nec*). They present the comparison of SMRs calculated at the two Censuses apparently showing how the SMRs for Social Class V had increased substantially, but showing that this was because of the contribution of those not elsewhere classified ([Table 11.1](#)). If those groups are excluded the rates for Social Class V fall substantially. They suggested that, “the most likely explanation is that the power of the Census to classify persons to more specific occupations improved to a greater extent than death registration over the period”. But an estimate from the Longitudinal Study (a cohort of

approximately 1% of the population followed up from Census to Census with replacement) over the same period does not show these dramatic differences; so that can be only part of the explanation.

These ‘technical’ difficulties are serious and cannot be dismissed. There is, perhaps, a more damning criticism of using the RG Social Class Classification in this context; it is simply that the occupational mortality tables give peculiar results.

**Table 11.1.** Mortality for labourers and unskilled workers and Social Class V England and Wales (1970–1972, 1979–1980, and 1982–1983)

Occupation/class	Standardised mortality ratio (all men = 100)		
	1970–1972	1979–1980 1982–1983*	1971–1981
Labourers and unskilled workers nec-other (114,160.8)	201	355	129
Labourers and unskilled workers nec-total (XVIII, 160)	141	242	124
Social class V	137	163	124
Social class V excluding labourers and unskilled workers nec total	106	73	124

Note: nec, not elsewhere classified.

Source: OPCS [114].

### Demographic shifts in the social classes

The more serious contention is simply that the size of the RG Social Classes has changed over time and that this invalidates any over-time comparisons between the death rates of different RG Social Classes. Despite assertions that “the change in the distribution of the population between the classes, and especially the ‘decline’ in the proportion of Class V, has been believed to be larger than in fact it has been” [225]. There have actually been rather large shifts.

For example, between 1931 and 1991: RG Class 1 increased nearly four-fold, from 2 to 8% of the economically active male population, whilst RG Class V more than halved, falling from about 13 to about 5%. In the intermediate Classes II and IV from 1971 to 1981, the proportionate changes were +86 and –38% [217]. These are significant changes; the ratio of Class V to Class I has changed from 7.2 in 1931 to 3.6 in 1951 to 1.7 in 1971 and 1.4 in 1991. The shifts have been even larger in the ‘at risk’ age groups (Table 11.2).

Moreover, these movements had not previously been related to age. For example, between 1951 and 1981; Class 1 increased from 2.1 to 7.3% of the economically active males aged 25–34, (+248%), while Class V fell from 8.6 to 5.0% (–42%). Between 1951 and 1991 the relative size of

**Table 11.2.** Percent distributions of economically active men by occupational class 1931–1991

	I	II	III	IV	V	All classes
1931	1.8	12.0	47.8	25.5	12.9	100
1951	2.7	12.8	51.5	23.3	9.7	100
1971	5.0	18.2	50.5	18.0	8.4	100
1991	7.8	28.0	41.7	15.0	4.6	100

Source: Illsley [6] and own calculations from OPCS.

Occupational Class V to Class I aged 55–64 changed from 8.2 to 1.2%. Again, these are substantial changes over a 30-year period allowing for considerable changes in the composition of each class. Clearly, for classes defined in terms of an occupational classification (the classification used to demonstrate the ‘unchanging’ gap between the social classes), the balance is dynamic. Specifically, in the ‘at-risk’ age groups:

- ◆ The classes with high death rates now form a much smaller segment of our society.
- ◆ The classes with lower death rates form a much larger segment of society.
- ◆ The composition of each class, especially in terms of health status, might have changed substantially as a consequence, making it difficult to interpret a comparison of rates over time.

The impact these changes have on an assessment of inequalities in death depends upon the definition of inequality employed. A definition based solely in terms of class (assuming that class death rates do not change) leads to the conclusion that inequality is unchanged. It might also be argued that inequality has decreased, because a smaller proportion of the population is subject to the highest risks of death. In practice, class-specific death rates change for other reasons than their change in size.

### A worked example

**Table 11.3** compares changes in the infant mortality rates in Class 1 as compared to Class V. For both classes, rates fell sharply, but the fall was sharper in Class 1 until 1970–1972. Townsend and Davidson [213], interpreted the rates as diverging (the increasing ‘gap’). Yet the *number* of infant deaths in Class 1 increased and the number in Class V was only 4% of its 1931 level.

In the last decade, the rates have fallen faster in Class V, but inequality, assessed in terms of the ratio of class death rates, is still large. If current

**Table 11.3.** Infant mortality rates for Classes I and V

Social Class	1930–1932	1949–1953	1970–1972	1978–1979	1982	1996
I	32	19	12	10	6.7	4.3
V	80	42	31	18	12.4	8.2

trends continue, the ‘gap’ is almost certain to widen, even though the number of deaths in Class V is shrinking because Class V is itself disappearing!

The message is two-fold:

- ◆ *There has been a very substantial change in class size.* Where it is possible to use a method that controls changes in class size (such as quintile method), this is preferable. Where this cannot be done, these changes should be taken into account routinely in any commentary upon the inequalities in health.<sup>9</sup>
- ◆ *These analyses have all been based on inequalities in death rates.* The usual ratio of rates can be derived from [Table 11.3](#). The difference in ratios and the proportion of preventable deaths in Social Class V computed as the excess compared to Social Class I are shown in Part (a) of [Table 11.4](#). All three have declined, but at different rates. Moreover, if inequalities in health were to be measured in terms of the numbers and proportion who survive rather than the numbers and rates of death, the picture is very different (Part (b) of [Table 11.4](#)).

The point is that as a negative outcome becomes more rare, it is more and more likely to occur disproportionately among the less advantaged groups. Conversely, as a valued outcome becomes relatively rarer, it is likely to be concentrated among the elite. This is a simple consequence of the statistical distributions [\[226\]](#), rather than another example of inequalities.

<sup>9</sup> The only thorough analysis is that of Pamuk [\[224\]](#) who also argues that inequalities in health (as measured by social class death rates before 65) have increased since the Second World War. She addresses the problems of changes in classification by experimenting with a uniform ranking across the 50 years, and the so-called ‘numerator–denominator’ problem by successively excluding the groups most likely to be affected. Her analysis shows whilst these two factors do make a difference, they cannot account for the trends. However, she is unable to take account of occupational selection accompanying changes in class size using this method and the same is true for the frequently quoted analysis of Koskinen [\[227\]](#). More importantly, in this context, her analysis is once again restricted to social class death rates before 65 and therefore to only a small and decreasing fraction of all deaths.

**Table 11.4.** Comparisons of trends in inequality between Social Classes I and V in terms of infant mortality and survival

	1930–1932	1978–1979	1984
<i>(a) Approach based on infant mortality rates (per 1000)</i>			
Difference of rates (V – I)	44	8	6.5
Ratio of rates for V:I	2.5	1.8	2.0
Alternatively,			
Ratio of rates for I:V	0.43	0.56	0.5
And so,			
Proportion of preventable deaths in social class V	57%	44%	50%
<i>(b) Approach based on rates of infant survival</i>			
Survival of Social Class V (per 1000)	923	982	987
Survival of Social Class I (per 1000)	967	990	993.5
Ratio of survival rates V:I	0.95	0.99	0.993
Percentage possible improvement	5%	1%	0.7%

### 11.3.2 Social Selection

The process of social mobility discriminates in favour of the healthy and against the unhealthy [228]. This has been formalised in terms of a theoretical model, showing how under various assumptions, social class differences in health could occur simply as a result of the healthy moving up and the unhealthy moving down the social scale [229].

Any selection effect, whether directly because of health or indirectly because of factors associated with health, has been claimed to be *marginal* because of two reasons. First, only a very small proportion of those seriously ill in adulthood had suffered downward mobility as a result of previous childhood illness. However, this is incorrect. Any of those who are downwardly mobile through illness in childhood are at risk of early death before 65, whilst those who are upwardly mobile have a smaller risk. The only obvious way of measuring risk is by health status. Given the relatively small numbers who die before 65 the issue is whether social mobility discriminates in favour of the healthy and against the unhealthy, by even a small amount. Data from the National Survey of Health and Development demonstrates both a shift in the balance of classes and how a gap of 3% in the incidence of serious illness has more than doubled to 7% by the process of selection [230]. Second, social mobility might discriminate indirectly between the healthy and the unhealthy according to characteristics associated with health, so that the interpretation in terms of social selection is flawed. This is a particularly complex issue. Sometimes, the ‘selection’ argument is produced without any justification.

### Example

In discussions of the relative rates of self-reported illness according to occupation, order and sex from the GHS, it has been claimed that certain illness ratios may reflect selection factors as much as they do actual occupational hazards, and that the reason why men in clerical and related work have slightly raised ratios could suggest such selection factors, given that women in these occupations have low ratios. The consistently high ratios for both men and women in personal service and jobs involving repetitive assembling and packing are interpreted as reflecting the selection of people with chronic illness into occupations which are less physically demanding.

The first interpretation about the way in which poor people are selected into hazardous occupations is plausible and the inference about the selection of women into low-paid occupations is unexceptionable; but the authors do not support interpretation that the high ratios of long-standing illness in personal service reflect selection rather than the working conditions.

It is right to criticise any claim that all social class differences can be explained by selective mobility. But there is an effect which should not be ignored; the size of the effect could be substantial, but it cannot be estimated properly without a lifelong longitudinal study for one particular birth cohort.

### **11.3.3 Material and Structural Explanations**

Material and structural explanations are amongst the most obvious, as those who live in bad housing, or with low incomes, have a lower quality of life in general and are therefore likely to have poorer health. The relationship is not as straightforward as this, however.

On a 'macro' level there is a seemingly clear statistical relationship between current resources and ill health or mortality: [231]

- ◆ Comparing several countries, a relationship has been demonstrated between mortality and GNP.
- ◆ There is a relationship between occupational grouping and age-adjusted death rates.

In addition, there is a temporal relationship between:

- ◆ Relative income and mortality on the basis of analyses of percentage changes in mean occupational earnings and occupation-specific death rates ( $N = 22$ ).
- ◆ Between the level of state pensions and mortality among the elderly ( $N = 16$ ).
- ◆ The narrowing of class differences in incomes and post-neonatal mortality.

Not only are these numbers very small, the correlations are at a very macro level and do not permit a causal inference. However, a connection between income and mortality does exist.

### Which connection?

The problem is which connection? The relationship between health and poverty (or wealth) stretches over a long time span even considering only 'direct' effects. Health during early working years may well affect motivation and prospects for occupational and earnings mobility. And family background whilst a child, as well as own status in previous years, may well affect present health status.

In effect, there are three connections here, between:

- ◆ Current resources and health status.
- ◆ Socio-economic status in early adulthood and current health status.
- ◆ Childhood household resources and current health status.

The initial evidence on the long-term nature of these relationships came from the series of papers by Barker and Osmond [232–234]. They argued that “past differences in maternal health and physique and in the post-natal environment, particularly infant feeding, housing and overcrowding, may be determinants of current differences in adult mortality” [234].

### The connection between unemployment and health

There has been extensive research about the disadvantages of being unemployed, much of which is 'ideological' in the sense that unemployment is assumed to be 'bad': (Box 28)

- ◆ Unemployment usually leads to a severe drop in income for those already in poorly paid jobs, usually with adverse consequences.
- ◆ However, the claim that unemployment per se has effects on physical health is rarely evidenced.
- ◆ Yet considerable effort is made to refute the existence of a 'healthy worker' effect, whereby ill health tends to be associated with job loss [235].
- ◆ Most studies show immediate short-term effects of unemployment on self-reported health which are diffused over time [236]; none of which have controlled for income [21].
- ◆ The most important and well-known evidence is the follow-up material from the OPCS longitudinal study, which show that unemployment is associated with a higher death rate in subsequent years.

**Box 28****Employment kills?**

Apart from the caveat that the observation of unemployment is based on one week in 1971 [19], the apparent *increase* in SMRs during the second five years after unemployment is curious. Perhaps, those unemployed in 1971 later took a badly paid job with poor working conditions – in other words, employment kills.

An opposite interpretation is supported by a longitudinal study from France, which compared mortality among men aged 55 to 65 between 1975 and 1980 [237]. The findings from this study suggest that:

- ◆ Mortality is higher for those not employed than for those in work.
- ◆ The difference is largest amongst those between 55 and 60 which, at the time, was below the usual age for retirement, except for civil servants.
- ◆ Among other occupational groups, the retired group had retired early, possibly for health reasons, and this is supported by the pattern of mortality according to previous occupation.

The British and French results appear, then, to have different interpretations which may of course be the result of ‘selection effects’, though such conclusions may be politically unacceptable. However, even the case for showing a direct connection between *unemployment* and (ill) health, is not robust.

**Points to Remember**

- ◆ Although ill health might *directly* play a part in job loss, unemployment can only indirectly affect health *through* poverty.
- ◆ Although the ‘poverty’ effect of being unemployed may be large, it is not limited to the status of unemployment.

**Box 29****Does unemployment equal deprivation?**

“It is, we believe, mistaken to treat being unemployed as part of the definition of deprivation. Even if many among this minority are deprived, some are not and the point is to find out how many are deprived rather than operate as if all were in that condition. It is the form their deprivation takes and not their status which has to be measured” [211].

### **11.3.4 Behavioural Explanations**

The final group of explanations considered by the WGIH focussed on the behavioural patterns in different 'sub-cultures' in the U.K., with a particular focus upon the deleterious effects of alcohol and tobacco consumption. Regional concerns on diet and quality of food consumed were also raised.

#### ***Interpreting the Data Relating Alcohol and Tobacco Consumption with Death Rates***

Materialist or structural explanations contend that the concentration of alcohol and tobacco consumption and households with inadequate diet is a consequence of poverty. The relation between alcohol and tobacco consumption and death rates over time is difficult to interpret because patterns of consumption have changed. Analysis of results from the GHS shows the variation in patterns of consumption over the 'lifetime' of the survey:

- ◆ The proportionate decline in cigarette smoking has been greater in non-manual than in manual workers.
- ◆ The SMRs from lung cancer have dropped by 20% for non-manual compared to 10% for manual workers.
- ◆ It is nevertheless still difficult to determine what the link is meant to be between smoking and deaths from lung cancer in the *same period*.

#### ***The Food Connection***

Commenting on the report by Townsend et al. [211] on health inequalities in the Northern region, Edwina Currie, then junior Minister for Health, said:

"I honestly don't think the problem has anything to do with poverty. My family grew up in Liverpool and they didn't have two beans, but as a result of good food, good family and good rest, they grew up fit and well. The problem very often is, I think, just ignorance. . . ." (Hansard, 1986).

There is some evidence available about the ability of those who are relatively poor now to feed themselves as compared with previous periods.

Table 11.5 presents estimates of the cost of Seebohm Rowntree's Dietary and overall subsistence income. The following points should be noted:

- ◆ A scaling up of £31 (the cost of the 1950 basket today) gives an estimated subsistence income of £137.
- ◆ The relative proportion Rowntree allowed in 1950 for food (41%) was close to the weight given to food in the retail price index basket of goods used to calculate the RPI (35%).

**Table 11.5.** The cost of the 1950 Dietary, its price index Rowntree's subsistence income level, the equivalent subsistence income, based on the relative weight assigned to food in the RPI, and the scales of social security benefit excluding rent

Year	Cost of 1950 dietary (£)	Index of cost of 1950 dietary (£)	Rowntree actual subsistence Income <sup>a</sup> (£)	Outdoor relief national assistance/SB/IS (£)	Equivalent subsistence income level <sup>b</sup> (£)
1899	0.97	100	1.08	–	–
1936	1.18	142	2.65	1.90	–
1950	2.17	244	5.76	4.43	6.20
1985	30.95	3191	–	90.00	106.75
1998	31.15	3216	–	139.00	137.00

<sup>a</sup> Rowntree included rent in his discussion of the poverty line in 1899 and 1936; in 1950, he estimated the subsistence income at £5.01 excluding rent, but we have added on the median rent of 15s paid by class 'A' and class 'B' families, which was also the average rent for five rooms plus a bathroom.

<sup>b</sup> 1950 estimates based on the weight of food in the average RPI (350/100); 1985 and 1998 estimates based on weight of food in expenditure patterns of lowest income quintiles in family expenditure surveys for those years (29 and 22.7%, respectively).

- ◆ The RPI averages across families of all incomes.
- ◆ The latest family expenditure survey shows that 5-person households in the lowest income bracket spend 29% of their budget on food (compared to 20% for all families).
- ◆ Applying this proportion to the £31 food cost gives an estimated subsistence income of £107.
- ◆ The level of supplementary benefit was about £90 for a family of five plus an average allowance for rent and rates of £24.60.

It may be clear from the above that despite several government claims to the contrary, it is actually difficult to buy the contemporary equivalent of Rowntree's 'no better than workhouse' diet, with important implications for the connection between poverty, poor diet, and ill health.

### Our estimates

On this basis, the price of the 1950 Dietary, suggests that the same minimal basket of goods would cost £31.15 today. In the previous exercise in 1985, the estimated cost was £30.95 – only 20 pence less. We attribute the small difference from 1985 to the spread of relatively aggressive competition between supermarkets regardless of quality.

Rowntree's estimate of the minimum expenditure, including that on housing, necessary to enable a family with three children to subsist is

given in column 4. The cost of the 1950 Dietary (£2.17) was only part of what Rowntree adjudged to be the poverty line. For the same family of two adults and three children, we have estimated an overall figure of £5.76 including rent. The column 5 gives the scale of social security benefit prevailing in the same years. Our estimates of what a family of five would require if they subsisted on Rowntree's 1950 Dietary is given in the last column. The present supplementary benefit levels allow about £139 for a family of five, (£79.00 + £17.30 + £17.30 + £25.35) plus a family premium of £11.05 rent and rates are paid in full up to a limit set locally (Table 11.5).

### 11.3.5 Income Inequality and Health Inequalities

The model for the association between income *inequality* and inequalities in health suggests that it is high levels of income inequalities throughout society – a polarisation of communities between concentrations of affluence and poverty – which lead in turn to social disorganisation and a deterioration of community involvement, values, and interpersonal trust within poorer, economically disadvantaged areas.

Wilkinson [18] argues that mortality in developed countries is affected more by relative than absolute living standards because:

- ◆ Mortality rates are related more closely to relative income within countries than to differences in absolute income between them.
- ◆ National mortality rates tend to be lowest in countries that have smaller income differences and thus have lower levels of *relative* deprivation.
- ◆ Most of the long-term rise in life expectancy seems unrelated to long-term economic growth rates.

Kawachi and Kennedy [238] suggest that the effect of greater income inequality may be mediated by:

- ◆ Under-investment in public or social goods such as public education and healthcare.
- ◆ Disruption of social cohesion and the erosion of social capital.
- ◆ Harmful psychological effect of social comparisons.

This process is argued to have serious deleterious psycho-social as well as material consequences, finding their broadest expression in the physical health of a community and its members, and its psychological health in terms of interpersonal and community relations – perhaps most graphically seen in high levels of crime such as vandalism, robberies and violent assaults.

Disparities are observed not only in higher total mortality rates as a whole, but also from specific pathologies such as coronary heart disease, malignant neoplasms, and homicide. Income inequality together with 'poverty' could therefore account for around 25% of state variations in overall mortality and over 50% of the variation in homicide rates [238].

The Wilkinson thesis has become rather a proxy for the 'psycho-social' explanation as a whole, as it uses predominantly psycho-social pathways for the explanation of how the dynamics of local community interactions influence social cohesion and thereby health. There is a rather inevitable gradient between the level of the community as a whole and of the individual who lives in it. A number of different studies have explored aspects of this spectrum of psycho-social influence, some dealing more explicitly with psycho-social mechanisms as they influence individuals [239,240].

Although it is near impossible to divorce individual psycho-social explanations for ill health from social capital explanations, as it is to divorce the individuals themselves from the communities in which they live, the psycho-social explanations for the persistence of health inequalities is gaining much currency in recent years. The pathways that mediate these relationships, however, prove more difficult to determine precisely. Whilst wide inequalities in income (or wealth) mean that there are more (relatively) poor people who are also ill, it is (relative) poverty not the inequalities in income that is the cause.

### **11.3.6 Inequalities in Avoidable Death**

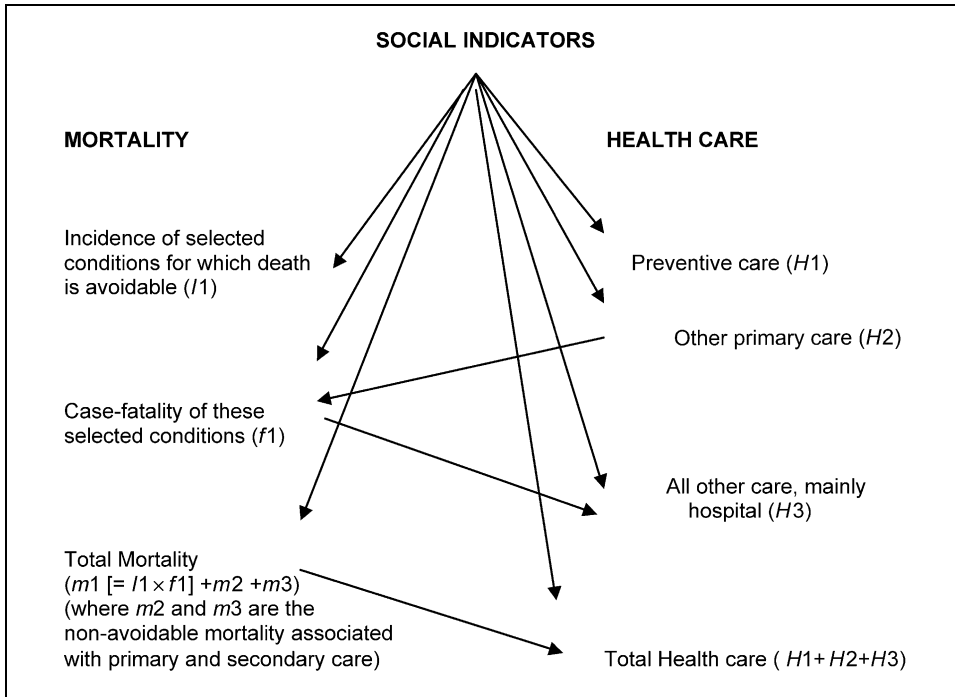
There have been attempts to associate relative distribution of healthcare resources with early death and social deprivation, like unemployment with mortality. This has been proposed as an explanation for inequalities in health rather than inequalities in access to healthcare.

It is almost impossible to specify a complete model linking together all the factors that play a part in the process. The problem is illustrated in [Figure 11.1](#). We need to be able to estimate the weight that should be attached to each arrow, but without a precise specification of the causal links being proposed and of the lag structure (the delay between a cause and its effect). It is impossible to make any more definitive statements than that we know certain conditions are associated with early death ([Table 11.6](#)).

## **11.4 Summary and Conclusions**

Although many categories have been used to sub-divide populations when investigating health inequalities, social class has perhaps received

**Figure 11.1.** Factors associated with mortality that might be considered in health service resource allocation.



the most attention in the U.K. This may simply be because it has provided the longest lasting set of data on social differentiation. Many mechanisms have been advanced to account for variations in health, and mortality, with class. Most of these can be understood within the

**Table 11.6.** Mechanisms investigated for explaining differences in health between classes

<i>Mechanism</i>	<i>References</i>
Environment exposures	[241–247]
Occupational exposures	[248,249]
Personal risk factors, e.g. smoking, alcohol	[250–256]
Genetic difference	[257]
Social stress/Biological fight-or-flight response	[66,258,259]
Differences in disease detection/differences in survival	[260–262]
Disease related social mobility/health-related selection in employment	[263–265,76,266–268]
Nutrition	[269,270]
Early life conditions	[271,272]
Community structure	[273–277]
Race and/or gender	[278–282]

framework described in this chapter and the four approaches identified by the Black Report:

- ◆ Artefactuality (socio-economic class and SMRs).
- ◆ Social selection.
- ◆ Material and structural.
- ◆ Health-related behavioural.

We have also described a more recent psycho-social perspective ([Section 11.3.5](#)). And we have introduced a model that might be used to associate the distribution of healthcare resources with inequalities in health ([Section 11.3.6](#)).

These perspectives, and the differences between them, are fundamental to understanding reported inequalities in health. Many of the health and social surveys, health questionnaires, and indexes described in this book have been developed in the context these approaches. Again, it is hard to understate the importance of analytically separating methods and results, in order to assess the influence of the former on the latter.