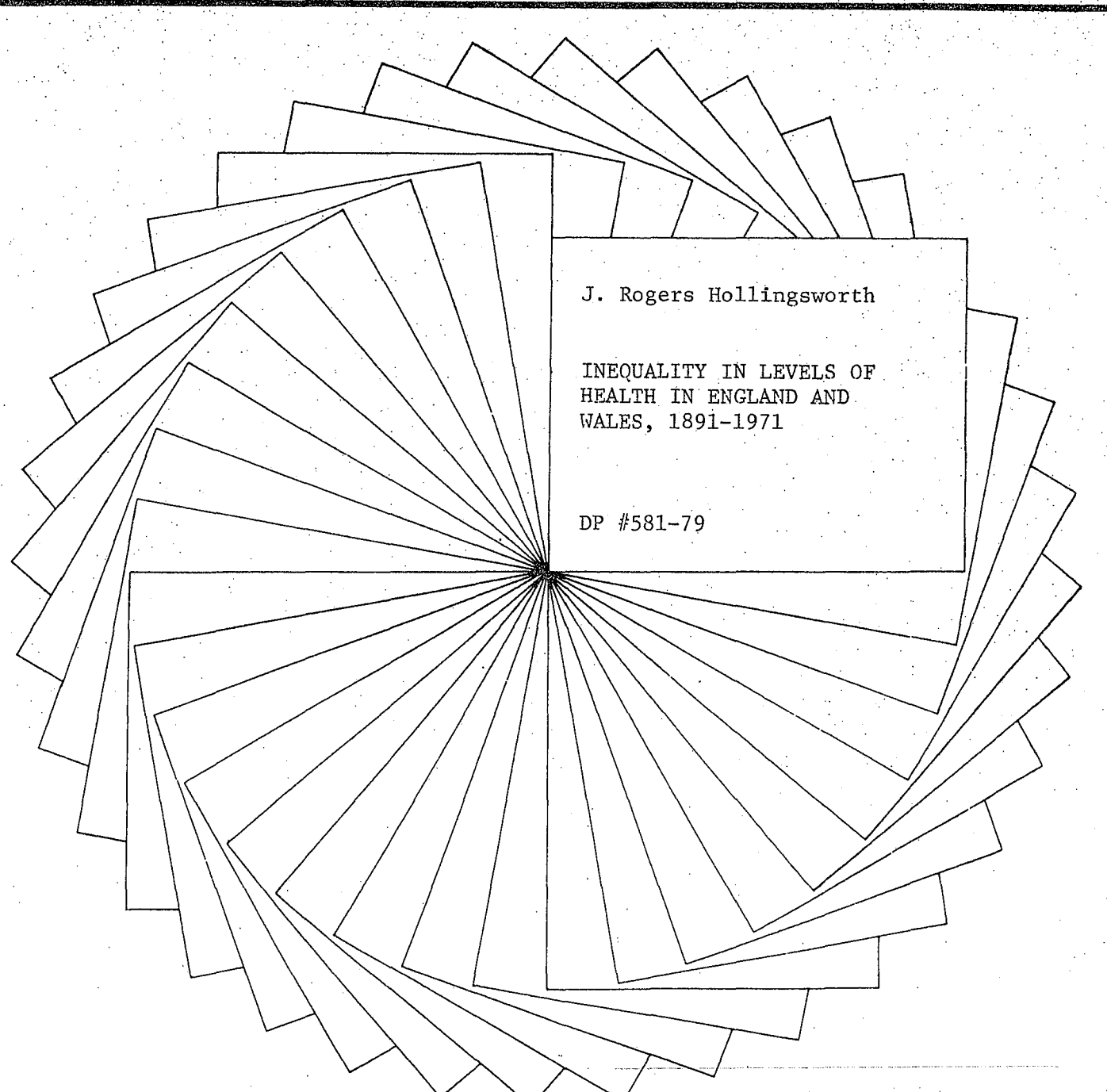# Institute for Research on Poverty

Discussion Papers

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INEQUALITY IN LEVELS OF
HEALTH IN ENGLAND AND
WALES, 1891-1971

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Inequality in Levels

of Health in

England and Wales, 1891-1971

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ABSTRACT

This paper has two purposes. First, it provides a theoretical perspective for understanding the interrelationships among increasing equality of rights, and of distribution and utilization of resources. Second, it confronts the question of whether the expansion of rights, and the more equal distribution and utilization of resources over several generations bring about equality of results.

Focusing on the structure of the British medical delivery system during the period between 1891 and 1971, the study concludes that increasing equality of access, distribution of resources, and utilization of services have not brought about more equality in levels of health across social classes. As the British National Health Service has the most egalitarian service of any highly industrial society, the conclusions of the paper have important implications for other societies that wish to equalize levels of health across social classes.

Inequality in Levels
of Health in
England and Wales, 1891-1971

Social science literature for some years has emphasized the impor-
tance of differentiating among types of equality. For example, there
is the right of equal access to some good. People are presumed to have
equal rights when they have equal access to goods such as education,
health, transportation, etc. In addition, there is equal distribution
of resources, when the same resources in health care, education, etc.,
are distributed to all individuals or groups. There is also equal
utilization of resources, which assumes not only that people have equal
access to some good which is equally distributed to all, but also that
people utilize the service equally. And finally, there is equality of
results, which confronts the question of whether people have the same
levels of health or levels of education even when there is equal access
to some good, equal distribution of resources, and equal utilization
rates. (Coleman et al., 1966; Coleman 1968, 1973; Jencks et al., 1972;
Bowles and Gintis, 1976).

There have been cross-sectional and relatively short-term longitu-
dinal studies which demonstrate that there are basic discrepancies
between the equality of results on the one hand, and the equality of
access, the distribution of resources, and the utilization of services
on the other (Coleman et al., 1966; Averch et al., 1972). But there
have been very few--if any--efforts to analyze, over generations, how
changes in equal rights to access, equal distribution of resources,
and equal utilization rates are interrelated and how these affect the
equality of results.

Therefore, this paper has two aims. First, it provides a theoretical perspective for understanding the interrelationships among the expanding equality of rights, distribution of resources, and the utilization of services. Its theoretical concern is with the delivery systems of consumption goods--e.g., health, education, transportation, etc. Too often, the theoretical literature treats each of these policy areas as though it is unique (Pauly and Redisch, 1973; Newhouse, 1970), though the social sciences very much need a theoretical perspective which is useful in explaining the behavior of multiple policy areas (Hage and Hollingsworth, 1977). Second, it confronts the question of whether the expanding equality in rights, in distribution, and in utilization of resources brings about equality of results or performances.

The theoretical argument assumes that when citizens believe that technology becomes efficacious, their demand for it will increase. If the technology is very complex and/or expensive, citizens will insist that they have a right to the good, which the state should guarantee. And as the demand for public rights expands, there is a widespread effort to have the state finance the technology, for otherwise many citizens would find the consumption of the technology to be prohibitively expensive. Once the provision of services is shifted from the private to the public sector, the delivery system, by definition, becomes more centralized.

Centralization refers to the level at which strategic decisions are made about personnel, budgets, programs, and standards. A delivery system in which all of these decisions are made in the private sector is more decentralized than one in which the decisions are made in the public sector. And in the public sector, a delivery system in which all deci-

sions are made by local authorities is less centralized than one in which the decisions are made at the national level.
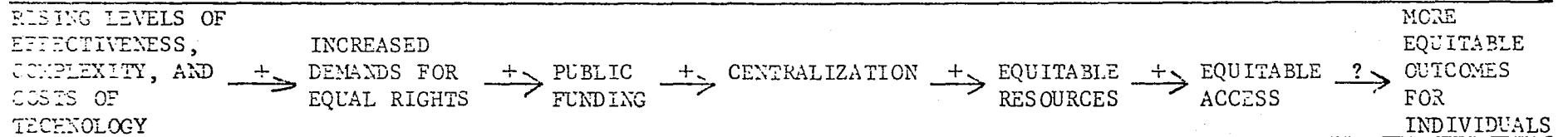
As the level of centralization increases, the behavior of delivery systems changes in regard to various types of equality. The major advantage of a more centralized system is that it allows for a considerable rationalization of the delivery of services. It can provide essentially the same services to all and at lower costs. Increases in the level of centralization tend to increase standardization of programs and services across regions, social classes, and groups. The familiar joke, that the same book is being read at the same hour throughout France by all children of the same age, nevertheless contains one of the principles of a centralized decision-making system: the same decision is made for all. In short, increases in the level of centralization tend to bring about increases in equality of access to services and distribution of resources, both across regions and across social classes and groups.

It remains problematic how changes in the level of centralization, more equal access to services, and more equal distribution of resources affect the quality of results. Will they, over several generations, lead to greater equality of results across social classes, groups, and regions? (See Figure 1.)

One body of literature tends to assume that greater equality of access and in the distribution of resources over a long period of time will promote greater equality of results. (See the discussion in various essays in Haveman, 1977.) Others, however, have suggested that the outcomes of a single delivery system will not be substantially influenced by its structure. Rather, equality of outcomes in education, health, etc., is influenced primarily by the total structure of the society.

FIGURE 1
THEORETICAL FRAMEWORK FOR HEALTH
AND OTHER CONSUMPTION POLICY AREAS

DELIVERY SYSTEM CHANGES

| RISING LEVELS OF EFFECTIVENESS, COMPLEXITY, AND COSTS OF TECHNOLOGY | +→ | INCREASED DEMANDS FOR EQUAL RIGHTS | +→ | PUBLIC FUNDING | +→ | CENTRALIZATION | +→ | EQUITABLE RESOURCES | +→ | EQUITABLE ACCESS | ?→ | MORE EQUITABLE OUTCOMES FOR INDIVIDUALS |

Even if a single delivery system is egalitarian in access and in the distribution of resources, outcomes will not be equal as long as there is fundamental inequality in the basic reward structure (income, occupational attainment, etc.) in the society. (Bowles and Gintis, 1976; Jencks et al., 1972.) In attempting to answer the question, this paper focuses on changes in the structure of the medical delivery system of England and Wales between 1891 and 1971, and on changes in levels of health (measured by mortality rates) across social classes and regions during the same time span.

1. EVALUATION OF THE MODEL

Technology and Centralization

At the turn of the century, much of medical knowledge could be applied with the contents of a little black bag. Over time, as medical care has become more complex and more efficacious, it has increasingly become concentrated in hospitals and large clinics that can carry out extensive and ever more expensive diagnostic procedures. Even those scholars who have tended to minimize the efficaciousness of twentieth-century technology acknowledge that much of it has been effective as well as complex (McKeown and Record, 1975; Powles, 1973; Thomas, 1977; Knowles, 1977). The consuming public since the late nineteenth century has certainly believed so, particularly for medical technology; and this has led to increasing demand for health services and to higher levels of centralization in the delivery of medical services (Stevens, 1966, 1971; Rothstein, 1972; Eckstein, 1958; Titmuss, 1950; Hollingsworth and Hanneman, 1978).

As centralization is a multidimensional concept, there are any number of indicators with which to measure its extent in the British medical delivery system. This paper defines centralization as the level at which decisions are made: by the central government, by local government, or by private mechanisms. A basic question, next, is to determine what kinds of decisions are critical for measuring centralization. The most important types of decisions are those involving the level at which funding occurs, personnel are appointed, standards are set, and clients are granted access rights to service. Previous efforts to measure the levels of centralization of the British medical delivery system suggest that all of these dimensions are highly correlated (Hollingsworth and Hanneman, 1978), and that the level at which funding occurs is actually a useful proxy for measuring the general level of centralization. Thus, from Table 1, we observe that over time the British system has become more centralized, changing after the introduction of the National Health Insurance system in 1912, and rather more dramatically after the implementation of the National Health Service in 1948.

Equality of Access to Medical Care

But has centralization led to greater equality of access to medical care? The data on access to medical resources by social class between 1890 and 1970 are unfortunately most imperfect, but are sufficient to enable us to conclude that the answer is yes. Before the introduction of the National Health Service (N.H.S.) in 1948, the development of a number of state programs (which meant an increase in centralization) led to greater access to and equalization of medical resources.

Table 1

Centralization in the Medical Delivery System of England
and Wales, Selected Year, 1901-1970

Year	Source of Revenue (%)				Concentration of Revenue Decisions (Gini Coefficient)[e]
	Private Individuals & Insurance[a]	Public & Private Hospitals[b]	Local Government[c]	Central Government[d]	
1901	70.3	26.1	3.6	0	.238
1911	68.7	25.6	5.7	0	.249
1921	44.0	28.0	6.6	21.4	.500
1931	40.1	32.3	3.4	24.2	.529
1950	15.4		5.7	78.9	.829
1960	17.0		6.4	76.7	.810
1970	16.7		5.6	77.8	.806

SOURCE: Hollingsworth and Hanneman, 1978.

[a] Net of central government contributions to N.H.I.

[b] Starting 1950, allocated to N.H.S. (central government).

[c] Net of central government subvention.

[d] Includes subventions to local authorities and to private insurance. Beginning 1950, includes N.H.S. nonfee receipts.

[e] The Gini concentration coefficients presented here vary from a minimum degree of concentration (zero) to a maximum of one. A score of zero indicates that each decision-making authority in the system controls an equal proportion of a given type of resource decisions. Conversely, Gini concentration coefficients approaching unity imply that a single decision-maker controls nearly all of a given resource flow. This would be the case, for example, if the central government provided 98% of the financial resources in medical care. Concentration coefficients have the major advantage of providing a comparable summary measure across time. For a discussion of the number of decision-making authorities, see Hollingsworth and Hanneman, 1978.

First, the medical inspection of school children (introduced in
1907) had become sufficiently institutionalized by 1920 that every school
child in Britain was assured of at least three medical inspections before
age 15. And when parents were unable to pay for the child's medical
care, most of the local authorities assumed the cost of the child's
treatment (McCleary, 1933; Political and Economic Planning, 1937).

Second, Parliament in 1918 urged the local authorities to provide
maternity clinics and infant welfare programs, with the result that by
1938, more than half of Britain's expectant mothers received free ante-
natal care, and a sizeable portion of mothers and infants received home
visiting and postnatal care (Political and Economic Planning, 1937).

Third, the introduction of the National Health Insurance (N.H.I.)
system in 1912 provided outpatient medical care for ten million low-
income working people who previously had not been covered by any form of
medical insurance. Data on the extent of care received are inexact, but
all of our studies indicate that the introduction of the N.H.I. system
substantially increased access to care for those who were insured; by
the 1930's, this included 77% of all men aged 14 to 64, or approximately
40% of the total population of all ages (Titmuss, 1958; Levy, 1944).

Fourth, the indigent and the elderly also received medical care from
the state, though the quality of care varied from place to place, and
over time. After the passage of the Old Age Pension Act in 1908, those
people who were eligible for old age pensions were also eligible to receive
the services of the poor law medical officer. As a result, many of the
elderly received poor law outdoor medical assistance. Following the
abolition of various poor law facilities, the quality of public medical
facilities and access to medical care improved for the indigent and the
elderly (Gilbert, 1966).

Even though access to medical care improved over time as the state
provided first one type of medical service for one group and then another,
the services prior to 1948 were a patchwork with considerable variation in
what the state provided from group to group. Once the N.H.S., a highly
centralized service, was introduced in 1948, however, everyone was
entitled to the same services without regard to means tests or other
restrictions (Stevens, 1966; Titmuss, 1958; Eckstein, 1958).

Table 2 provides information on the number of consultation rates for
individuals by income level before and after the introduction of the
National Health Service. As the lowest income group generally has more
medical needs than the highest income group, it is not surprising that in
the year before the introduction of the National Health Service (1947),
the lowest income group of males had 8.2 medical consultations, or 1.7
times as many consultations as the highest income group. One year after
the introduction of the N.H.S., when medical care was available to everyone
without a fee, the ratio of lowest to highest income group for both males
and females increased substantially.

There are no data on the consumption of medical care in England and
Wales by income group after 1952, but the British have collected medical
data by five occupational groupings, and with these data, it is possible
to observe the consumption of medical care by the British designations of
five social classes. Social class I (or occupational class I) consists
of higher professional and administrative occupations; class II of employers
in industry and retail trades, as well as the lesser professions; class III,
the skilled occupations; class IV, partly skilled occupations; and class V,
the unskilled occupations.

These data, also presented in Table 2, reveal, for the period between
1955 and 1975, the same pattern as the data on medical consumption by income

Table 2

Average Annual Rate of Medical Consultations, by Income or Social Class,
in England and Wales, Selected Years, 1947-71

Year, Age and Sex	Population Groups, by Weekly Earnings				
	10	7- 10	5- 7	3- 5	3
Aged 16 and older [a,b]					
1947 Males	4.7 [c]		4.1	4.6	8.2
	(1.0)		(0.9)	(1.0)	(1.7)
Females	5.9		5.0	4.6	6.6
	(1.0)		(0.8)	(0.8)	(1.1)
1949 Males	4.3		4.1	5.4	10.7
	(1.0)		(1.0)	(1.3)	(2.5)
Females	5.6		5.3	5.9	7.6
	(1.0)		(0.9)	(1.1)	(1.4)
Aged 21 and older [b,d]					
1951 Males	4.1	4.3	4.9	7.1	9.2
	(1.0)	(1.0)	(1.2)	(1.7)	(2.2)
Females	4.7	5.3	5.6	6.7	7.4
	(1.0)	(1.1)	(1.2)	(1.4)	(1.6)
1952 All	3.1	4.1	4.5	5.8	7.4
	(1.0)	(1.3)	(1.4)	(1.9)	(2.4)

	Population Groups, by Social Class					
	I	II	III		IV	V
Aged 15-64						
1955-56 Males	2.2	2.5	3.1 [e]		3.4	3.7
	(1.0)	(1.1)	(1.4)		(1.5)	(1.7)
Aged 16 and older						
1964 All	3.5	3.5	4.4	4.6	4.9	6.0
	(1.0)	(1.0)	(1.3)	(1.3)	(1.4)	(1.7)
Aged 15-64 [f]						
1970-71 Males	2.7		2.6	2.9	3.5	
	(1.0)		(1.0)	(1.1)	(1.3)	
Aged 15 and older [f]						
1970-71 Males	3.1		3.0	3.3	3.9	
	(1.0)		(1.0)	(1.1)	(1.3)	

Sources: Logan and Brooke, 1957, p. 57; Rein, 1969, p. 46; Great Britain, Office
of Population Censuses and Surveys, 1973, pp. 319, 342.

[a] Data for 1947 and 1949 refer to groups classified according to the weekly income
of the family's "chief wage earner."

[b] For 1947, 1949, and 1951 the annual average consultation rates are estimates
calculated from published data referring to average monthly consultation rates
per 100 persons.

[c] Average annual consultation rate per person. Ratio of rate for each group or
social class to rate for highest income group or social class I in parentheses.

[d] Data for 1951 and 1952 refer to groups classified according to the weekly income
of the head of the household.

[e] For 1970-72 the two categories of social class III data refer to nonmanual skilled
and manual skilled occupations, respectively. For 1955-56, these data were
collapsed in the source.

[f] Data referring to social classes I and II, and classes IV and V, were collapsed
in the source. Data for the age groups 15-64 and 15 and older were calculated
from published data referring to the age groups 15-44, 45-64, and 65 and older,
using sample populations as weights.

distribution: the National Health Service provided medical care somewhat in proportion to the level of individual need.

Spatial Distribution of Medical Resources

Even though the state provision of medical services has brought about more equal entitlements and use of medical services, increasing centralization has not eliminated, although it has reduced, inequality in the spatial distribution of medical services. Table 3 reveals the distribution of medical doctors and nurses in the regions of England and Wales between 1891 and 1971. Significantly, much of the variation among regions was reduced before the introduction of the N.H.S. For example, the index of regional variation for doctors had declined from 23.5 in 1891 to 12.4 in 1941, while the variation among nurses declined from 44.2 to 13.8 in the same period. On the other hand, there has been considerable reduction in the regional variation among doctors since 1951, and the N.H.S. is partly responsible for the more equitable distribution. In an effort to rationalize the distribution of doctors across the country, the N.H.S. instituted a system of "negative direction," by closing adequately served areas to newcomers. As a result, the percentage of the population living in areas which were officially designated as "under-doctored" fell from 52% in 1952 to less than 18% in 1961 (Cooper, 1975).

The National Health Insurance System provided medical care only from general practitioners; thus it did not affect the distribution of specialists and hospital beds, and there were considerable inequities in that distribution during the interwar years. The decentralized system of distributing specialists meant that their location was determined more by the opportunities for doctors to earn a high income than by the medical

Table 3

Regional Distribution of Medical Personnel in
England and Wales, Selected Years, 1891-1971

| | Medical Doctors per 100,000 Population | | | | | | | | |
	1891	1901	1911	1921	1931	1941	1951	1961	1971
Midlands	56	61	56	54	63	91	83	104	107
North	51	55	53	50	60	70	81	99	106
South	93	97	91	93	104	99	124	132	135
Wales	53	60	56	55	62	77	92	122	116
Mean	63.25	68.25	64	63	72.25	84.5	95	114.25	116
Mean absolute deviation X 100 Mean	23.5	21.06	20.3	23.8	21.97	12.42	15.26	11.15	8.18

| | Nurses per 100,000 Population | | | | | | | | |
	1891	1901	1911	1921	1931	1941	1951	1961	1971
Midlands	182	207	226	298	355	510	308	526	697
North	108	131	159	240	297	378	463	573	775
South	293	324	358	472	545	523	671	745	775
Wales	76	101	141	231	300	405	510	637	833
Mean	164.75	190.75	221	310.25	374.25	454	481.25	620.25	770
Mean absolute deviation X 100 Mean	44.23	39.18	32.12	34.12	22.81	13.76	21.29	11.42	4.74

Source: Great Britain, Decennial Census, 1891-1971.

needs of an area. Before 1940, many counties had no gynecologists, thoracic surgeons, dermatologists, pediatricians, or psychiatrists (Great Britain, Ministry of Health, 1945; Titmuss, 1950). Not only were there gross inequities in the distribution of hospital beds, but also the hospitals in many regions had grossly inadequate X-ray and pathology equipment.

The National Health Service, however, has changed the situation. Although it may not dictate where specialists may practice, it does specify where they may not practice, and this type of negative allocation of physician manpower has over time brought about a more equitable distribution of specialists in England and Wales. And while the inequities that existed before 1948 were difficult to reverse, the centralized allocation of resources has made the distribution of hospital beds more equitable over time. Moreover, the regional variations in the allocation of per capita expenditures for medical care and in the distribution of medical resources have diminished. The centralized structure of allocating resources has clearly narrowed spatial inequalities (Cooper, 1975; Lindsey, 1962; Stevens, 1966; Eckstein, 1958; Forsyth, 1966).

Equality of Results

Though the centralization of the medical delivery system has, over time, narrowed the legal inequality in entitlements to medical care and in the regional distribution of medical resources, the story is much more mixed when one analyzes inequality in levels of health. There is no direct measure of levels of health, but there are reliable mortality data across time, by region and social class. And while mortality is far from a perfect indicator of health, death statistics provide the most reliable data on health that are comparable over time.

Regional Inequality in Levels of Health

The data in Table 4 are somewhat consistent with the hypothesis that
equality in the distribution of health resources leads to equality of
results. A more centralized medical delivery system, with medical resources
more equitably distributed across regions, appears to lead to less varia-
tion in health across regions. For almost every age category there has
been a substantial reduction in regional variation in mortality since the
introduction of the N.H.S. Indeed, regional variation in infant mortality
had increased between 1891 and 1931, though between 1931 and 1971 it
declined substantially. This same pattern occurred with the age group
25-44, while with the group aged 45-64, most of the decline in regional
variation occurred after the introduction of the N.H.S., even though some
decline had occurred prior to 1951. Similarly, the age-standardized death
rates across regions encountered their most dramatic decline between 1951
and 1971, with modest decline occurring during the sixty years prior to
1951.

However, the data will not permit one to conclude that increased
equality in the distribution of medical resources across regions led to
increased equality in levels of health. The relationship may well be a
spurious one. Since the late nineteenth century, there has been a decrease
in the variation of per capita income and of the standard of living across
regions. Quite possibly, it is decreasing income variation that has most
efficiently contributed to the reduction in death rates across regions.
Fortunately, data on the United States provide some insight into this
process. The United States has a decentralized medical delivery system in
which variation in the distribution of medical resources across regions

Table 4

Regional Variation in Mortality Rates, England and Wales, Selected Years,
1891-1971
(Deaths per 100,000 Population)

Region	All Persons, Ages 0-1							
	1891	1901	1911	1921	1931	1951	1961	1971
Midlands	16,838	16,530	13,633	7,887	6,304	2,186	2,130	1,560
North	20,271	19,868	16,608	10,688	8,421	3,527	2,555	1,966
South	16,273	15,688	12,908	7,407	5,760	2,671	2,092	1,856
Wales	18,688	19,176	15,503	9,550	7,800	3,732	2,503	1,856
Mean	18,017.5	17,815.5	14,663	8,883	7,071.15	3,186.5	2,320	1,809.5
Mean absolute deviation X 100 / Mean	8.11	9.57	9.57	13.9	14.69	13.9	7.06	6.89

	All Persons, Ages 25-44							
Midlands	821	654	518	441	385	189	139	119
North	1,084	813	637	537	463	236	173	154
South	905	738	554	438	370	183	145	140
Wales	1,094	821	653	526	501	243	182	149
Mean	976	756.5	590.5	485.5	423	212.75	159.75	140.5
Mean absolute deviation X 100 / Mean	11.57	7.99	9.22	9.47	12.35	12.57	11.11	7.82

Region	All Persons, Ages 45-64							
	1891	1901	1911	1921	1931	1951	1961	1971
Midlands	2,277	1,871	1,596	1,286	1,328	1,084	973	903
North	3,137	2,500	2,119	1,634	1,610	1,325	1,188	1,141
South	2,510	2,050	1,698	1,367	1,358	1,083	971	1,027
Wales	2,828	2,209	1,887	1,509	1,574	1,334	1,147	1,124
Mean	2,688	2,157.5	1,825	1,449	1,467.5	1,206.5	1,069.75	1,048.74
Mean absolute deviation X 100 / Mean	10.95	9.13	9.13	8.45	8.48	10.19	7.98	6.89

Percent age reduction in deaths: 1891-1951 34%.
1951-1971 66%

	All Persons, Age-Standardized Population Structure[a]							
Midlands	1,977	1,669	1,452	1,174	1,151	913	826	713
North	2,515	2,075	1,796	1,445	1,384	1,062	937	841
South	2,079	1,733	1,478	1,186	1,133	897	798	800
Wales	2,370	1,953	1,640	1,330	1,347	1,071	909	831
Mean	2,235.25	1,857.5	1,591.5	1,283.75	1,253.75	985.5	867.5	796
Mean absolute deviation X 100 / Mean	9.27	8.42	7.94	8.08	8.91	8.19	6.39	5.4

Percent age reduction in deaths across regions: 1891-1951 78%
1951-1971 72%

Source: Great Britain; Decennial Census, 1891-1971; Great Britain, Registrar General, 1891-1971.

[a]Standardized on the population of England and Wales of 1931.

has diminished very little, but regional variations in mortality rates
have diminished, in association with declining regional variation in per
capita income (Hollingsworth and Hanneman, 1978).

Mortality by Social Class

The British have collected mortality by the same five occupational
classes for which we have already presented physician consultation rates.

1. _Infant Mortality._ The infant mortality data analyzed below are
presented by the occupation of the father. The social class data for
infants are somewhat more meaningful than the data which analyze the
mortality of adults by occupation. Most children are born when their
fathers are between ages 20 and 50, and engaged in their main occupations.
Thus the environment of the infant is likely to be a real reflection of the
father's social and economic status. The occupation of an adult at time
of death is slightly more problematic, for as an adult male gets older,
suffers from ill health, or becomes physically disabled, he may hold an
occupation which differs from that held throughout most of his adult life.
Though utilizing occupational groups of adults has some modest disadvan-
tages, it is useful for comparing mortality rates among people in the social
structure. The population was categorized into five broad social classes
in order to denote an economic grading from high to low incomes.

Table 5 presents data for neonatal (the first 28 days of life) and
post-neonatal (months 1-12 of life) mortality rates for England and Wales
between 1911 and 1970-1972. A high proportion of neonatal deaths results
from congenital defects and complications in childbirth, although these
have declined markedly, as improvements have occurred in prenatal care as
well as in the delivery of medical services during childbirth. The number

Table 5

Neonatal and Post-Neonatal Mortality, by Social Class in England and Wales, Selected Years, 1911-1970/72

Year	Neonatal, by Social Class					Post-Neonatal by Social Class				
	I	II	III	IV	V	I	II	III	IV	V
1911	30.26	36.5	36.8	38.6	42.5	46.2	69.9	75.9	82.9	110
	(1.0)	(1.2)	(1.2)	(1.3)	(1.4)	(1.0)	(1.5)	(1.6)	(1.8)	(2.4)
1921	23.4	28.3	33.7	36.7	36.9	15.0	27.2	43.1	52.7	60.1
	(1.0)	(1.2)	(1.4)	(1.6)	(1.6)	(1.0)	(1.8)	(2.8)	(3.5)	(4.0)
1930-32	21.7	27.2	29.4	31.9	32.5	11.0	17.8	28.2	34.9	44.6
	(1.0)	(1.3)	(1.4)	(1.5)	(1.5)	(1.0)	(1.6)	(2.6)	(3.2)	(4.1)
1939	18.9	23.4	25.4	27.7	30.1	7.9	11.0	19.0	23.7	30.0
	(1.0)	(1.2)	(1.3)	(1.5)	(1.6)	(1.0)	(1.4)	(2.4)	(3.0)	(3.8)
1950	12.9	16.2	17.6	19.8	21.9	4.9	6.0	10.5	13.9	18.8
	(1.0)	(1.3)	(1.4)	(1.5)	(1.7)	(1.0)	(1.2)	(2.1)	(2.8)	(3.8)
1964-65[b]	9.2 ⏜ (I+II)		11.8	13.2 ⏜ (IV+V)		3.5 ⏜ (I+II)		5.4	7.6 ⏜ (IV+V)	
	(1.0)		(1.3)	(1.4)		(1.0)		(1.5)	(2.2)	
1970-72[c]										
Males	8.9	9.7	10.7 11.0	12.7	17.0	3.5	4.1	4.6 6.2	7.3	14.6
	(1.0)	(1.1)	(1.2) (1.2)	(1.4)	(1.9)	(1.0)	(1.2) (1.3)	(1.8)	(2.1)	(4.2)
Females	6.3	7.4	7.6 8.2	9.1	12.6	2.3	3.2	3.1 5.0	6.0	11.6
	(1.0)	(1.2)	(1.2) (1.3)	(1.4)	(2.0)	(1.0)	(1.4) (1.3)	(2.2)	(2.6)	(5.1)

Sources: Titmuss, 1943, p. 37; Great Britain, Registrar General, 1938; 1954, p. 24; Spicer and Lipworth, 1966, pp. 21, 26; Great Britain, Office of Population Censuses and Surveys, 1978, p. 157.

[a]Deaths per 1,000 births. Ratio of mortality rate in each social class to mortality rate of social class I in parentheses.

[b]For 1964-65 data references to social classes I and II, and classes IV and V, were collapsed in the source.

[c]For 1970-72 the two categories of social class III data refer to nonmanual skilled and manual skilled occupations respectively, and post-neonatal mortality refers to infants aged 1-11 months rather than 1-12 months.

of post-neonatal deaths is more susceptible to decline as a result of im-
provements both in the socioeconomic environment of children and in the
delivery of medical services, and of course, these improvements have gen-
erated a remarkable decline. Whereas in 1905, one third of infant deaths
were in the neonatal category, and two thirds were post-neonatal, by the
early 1930's more than half of the infant deaths were neonatal. And by
1970, the trend was a complete reversal of that which existed at the turn
of the century: two thirds of the infant deaths were in the neonatal,
one third in the post-neonatal category.

Even though every occupational grouping benefited by a substantial
decline in the neonatal and post-neonatal mortality rates over time, there
has not been much equalization of mortality for this age group across the
various classes. The ratio between class V and class I in neonatal mortal-
ity rates in 1911 was 1.4, whereas it was 1.7 in 1950, and approximately 2
in 1970-1972. But the post-neonatal rates over time are even more inter-
esting. In 1911, the ratio between class V and class I was 2.4, while in
1950 it was 3.8, and in 1970-1972, it was between 4 and 5. In other words,
the data suggest that there had been no narrowing of neonatal and post-
neonatal mortality rates, but rather an increase in inequality between
these two classes.

Over time, however, the size of the population in class V has declined
while that in classes II, III, and IV has increased somewhat, and for these
reasons it is especially useful to observe the trends in these middle
classes. The trend is less distinct among the neonatal rates, but for the
post-neonatal rates, there does seem to be some narrowing of inequality
since 1921. For example, the ratio for the post-neonatal rates between
class IV and class I changed from 3.5 in 1921 to 2.8 in 1950 and to approx-

imately 2.4 in 1970-1972. This type of narrowing also occurred for classes
II and III, suggesting that improving the access to medical care may have
led to greater equality of health for the middle classes, though greater
inequality resulted for those at the bottom of the social scale.

The infant mortality rates, as presented in Table 6, of course reveal
a similar pattern, since they are the sum of the neonatal and the post-
neonatal mortality rates. The data for 1899 are only for York, but in that
city, the ratio of infant mortality rates between class V and class I was
2.6. For 1911, however, the data were for all of England and Wales, and
the ratio was 2. Across time, there was no significant improvement in the
ratios between these two classes. Rather there was some decline in the
level of health of class V relative to class I. When one compares classes
II, III, and IV with class I in both 1920-1923 and 1970-1972, one observes
that there was some shift toward equality in levels of health.

Table 7 presents cross-temporal data on stillbirths for 1939-1971,
the only period, unfortunately, for which data are available. It indicates
that there was no movement toward equality in classes IV and V, though
classes II and III did move somewhat closer to class I.

2. _Mortality of Women._ There are no reliable data on the mortality of
women for the entire period between 1890 and 1970, nor are there time-
series data on the occupational mortality of women, other than data coded
by the husband's occupation. The data which are available are presented in
Table 8A. Between 1930 and 1950, there was some movement toward equality
across the various classes. The N.H.S. had been in existence for only two
years in 1950, and one must conclude that it would have had little effect
in narrowing the inequality which one observes between these two time
points. Between 1950 and 1970, the trend was somewhat mixed, but in general

Table 6

Infant Mortality by Social Class in England and Wales,
Selected Years, 1911-1972

Year	I	II	Social Class III	IV	V
1899[a]	94[b] (1.0)	—	173 (1.8)	184 (2.0)	247 (2.6)
1911	76 (1.0)	106 (1.4)	113 (1.5)	122 (1.6)	153 (2.0)
1921-23	38 (1.0)	55 (1.4)	77 (2.0)	89 (2.3)	97 (2.6)
1930-32	33 (1.0)	45 (1.4)	58 (1.8)	67 (2.0)	77 (2.3)
1939	27 (1.0)	34 (1.3)	44 (1.6)	51 (1.9)	60 (2.2)
1949-1953	19 (1.0)	22 (1.2)	29 (1.5)	34 (1.8)	41 (2.2)
1964-65	12.7 (1.0)		17.2 (1.4)	20.8 (1.6)	
1970-72	12 (1.0)	14 (1.2)	15 (1.3) 17 (1.4)	(1.7)	(2.6)

Sources: Great Britain, Office of Population Censuses and Surveys 1978, p. 182; Great Britain, Registrar General, 1923, 1927, 1938; United Nations, 1954; Parker et al., 1972; Rowntree, 1908, pp. 198-208.

[a]The 1899 data were provided by a source and computed by a method different from the data between 1911 and 1970. However, it is useful to compare the 1899 data with the other years for which we have available data. For 1899 data refer to the servant-keeping class of York and to selected districts in York coded by Rowntree (1908) according to the proportion of families living in primary and secondary poverty as determined by a comparison of family income and minimum budgets. Rowntree defined primary poverty as a state in which family income was insufficient to purchase the physical necessities of life. Families in secondary poverty could potentially afford necessities, though in fact a portion of their income was absorbed by "useful or wasteful" expenditures. The population of Rowntree's area A consisted of 6803 people (1642 families) of whom 70% lived in primary or secondary poverty. Thirty-seven percent of the 9945 inhabitants of area B lived in primary or secondary poverty. None of the 5336 people in area C lived in primary or secondary poverty. In this table, area A data is coded as class V, area B data as class IV, area C data as class III, and the servant-keeping class as class I.

[b]Deaths per 1,000 live, legitimate births. Ratio of mortality rate of each class to mortality rate of class I in parentheses. For 1964-65 data referring to social classes I and II, and classes IV and V, are collapsed. For 1970-72, the two categories of social class III data refer to nonmanual skilled and manual skilled occupations respectively.

. Table 7

Stillbirths by Social Class in England and Wales,
Selected Years, 1939–1970/72

| Year | | Social Class | | | | |
	I	II	III		IV	V
1939[a]	24.4[b] (1.0)	33.4 (1.4)	35.6 (1.5)		37.6 (1.5)	39.7 (1.6)
1950[a]	16.6 (1.0)	19.4 (1.2)	21.9 (1.3)		24.2 (1.5)	26.0 (1.6)
1964-65[c,d]		11.8 (1.0)		15.6 (1.3)		17.2 (1.5)
1970-72[c,e] Male	8.6 (1.0)	10.2 (1.2)	11.2 (1.3)	12.3 (1.4)	12.7 (1.5)	17.2 (2.0)
Female	8.9 (1.0)	10.0 (1.1)	11.5 (1.3)	12.8 (1.4)	13.4 (1.5)	17.8 (2.0)

Sources: Great Britain, Registrar General, 1954, p. 30; Great Britain, Office of Population Censuses and Surveys, 1978, p. 157; Heady and Heasman, 1959, p. 31; Spicer and Lipworth, 1966, p. 31.

[a]Stillbirths per 1,000 live legitimate births.

[b]Rate per 1,000 stillbirths. Ratio of stillbirth rate in each social class to stillbirth rate in social class I in parentheses.

[c]Stillbirths per 1,000 total live and stillbirths.

[d]For 1964–65, data referring to social classes I and II, and classes IV and V, are collapsed.

[e]For 1970-72, the two categories of social class III data refer to nonmanual skilled and manual skilled occupations respectively.

Table 8

Mortality and Maternal Mortality of Married Women by Social Class in
England Wales, Selected Years, 1930-1972

	A. Mortality				
	Social Class				
Year	I	II	III	IV	V
1930-32[a]	81[b] (1.0)	89 (1.1)	99 (1.2)	103 (1.3)	113 (1.4)
1951[a]	96 (1.0)	84 (.9)	101 (1.1)	104 (1.1)	117 (1.2)
1961[c]	77 (1.0)	83 (1.1)	102 (1.3)	105 (1.4)	141 (1.8)
1970-72[c,d]	82 (1.0)	87 (1.06)	92 (1.12) ⏜ 115 (1.4)	119 (1.5)	135 (1.6)

	B. Maternal Mortality				
1930-32[a]	79[b] (1.0)	85 (1.1)	97 (1.2)	107 (1.4)	115 (1.5)
1950	117 (1.0)	88 (.8)	95 (.8)	107 (.9)	137 (1.1)
1970-72[e]	79 (1.0)	63 (.8)	86 (1.1) ⏜ 99 (1.3)	147 (1.9)	144 (1.8)

Sources: Great Britain, Registrar General, 1938; 1954, pp. 17,20; 1961;
1978, p. 156.

Note: All social classes coded by husband's occupation.

[a]Data for women aged 20-64. Ratio of SMR of each class to SMR of class I
in parentheses.

[b]Standard Mortality Ratios (SMR).

[c]Data for women aged 15-64.

[d]For 1970-72 the two categories of social class III data refer to non-
manual skilled and manual skilled occupations.

[e]Data for women aged 15 and over.

there was an increase in inequality, greater in some cases than in others.

Among women who died in childbirth there was between 1930 and 1950 a marked trend toward equality for each class--indeed, maternal mortality was even lower for classes II, III, and IV than for class I (see Table 8B). It is impossible to determine how much of this trend was due to the improvement in antenatal care and birth delivery services before the introduction of the N.H.S. Between 1950 and 1970, however, the trend was reversed, toward greater inequality among classes III, IV, and V.

3. _Adult male mortality._ The occupational mortality data for adult males reveal no distinct movement toward equality over time (see Table 9). At best, the inequality between classes V and I has been stable throughout the entire period between 1890 and 1970. But if one uses 1930 for the point of comparison, the data suggest a distinct increase in inequality. And since the introduction of the N.H.S., it would appear that instead of a narrowing of inequality across the various classes, there has been a distinct increase in the ratios between classes III, IV, V and class I.

As do aggregate mortality data, the data by particular diseases reveal the same general trend over recent decades, though specific causes of death vary across social classes. In the case of leukemia, mortality rates for classes II, III, IV, and V are lower than for class I; this has been the situation for the entire period between 1930 and 1970. For death by other types of cancer, however, there has been a general trend toward greater inequality since 1930, especially pronounced since 1950. Moreover, deaths due to cancer of the respiratory system reveal a more marked trend toward inequality than all cancer deaths grouped together (for all these figures, see Appendix Table A1).

Table 9

Mortality of Men by Social Class in England and Wales,
Selected Years, 1890-1971

Year	Social Class				
	I	II	III	IV	V
1890-1892	83[a]				125
	(1.0)				(1.5)
1900-1902	89				154
	(1.0)				(1.7)
1910-1912	88	94	96	93	142
	(1.0)	(1.07)	(1.09)	(1.06)	(1.6)
1921-1923	82	94	95	101	125
	(1.0)	(1.15)	(1.16)	(1.23)	(1.52)
1930-1932	90	94	97	102	111
	(1.0)	(1.04)	(1.07)	(1.13)	(1.2)
1951	103	108	117	119	136
	(1.0)	(1.04)	(1.14)	(1.16)	(1.32)
1961	77	85	105	108	134
	(1.0)	(1.1)	(1.36)	(1.4)	(1.74)
1970-1972	78	81	104	113	123
	(1.0)	(1.04)	(1.33)	(1.45)	(1.58)

Sources: Great Britain, Office of Population Censuses and Surveys,
1978, p. 174; Great Britain, Parliament, 1897, 1905, 1911; Great
Britain, Registrar General, 1927, 1938, 1954.

[a]Comparative or standard mortality ratio (CMR or SMR). Ratio of CMR
or SMR of each class to CMR or SMR of class I in parentheses.

Note: Data usually cover men aged 15 or 20 to 64 or 65. Data for 1890
       and 1900 were calculated by the indirect (SMR) method for this
       table using the Registrar General's 1910 occupational coding for
       assigning occupations to classes. Data for 1910-12, 1921-23, and
       1930-32 are as originally published, taking no account of classi-
       ficatory or other changes. Mortality ratios for 1910-12 and
       1920-22 are comparative mortality figures (direct method). Data
       for 1930-32 are SMRs. Data for 1951, 1961, and 1971 are as revised
       by the Registrar General, taking account of occupational classifi-
       cations in 1951 and thereafter. The revised data were calculated
       by the direct method, using the 1971 male population as the stan-
       dard.

The remaining tables in the Appendix, presenting data on hypertensive diseases, diabetes, bronchitis, tuberculosis, and suicide, reveal the same pattern: a general trend toward inequality of distribution--indeed, in the case of diabetes and tuberculosis, a very sharp increase. When the N.H.S. was introduced, the death rate from diabetes in class I was greater than in any other class; in recent years the pattern has been reversed.

Figure 2, summarizing mortality ratios across time, shows that, for all seven of the diseases for which data are available, mortality ratios between social classes I and V have not narrowed since the introduction of the N.H.S. but, with the exception of bronchitis, have widened.

2. CONCLUDING OBSERVATIONS

The data reported here do not permit any definitive conclusions about the relationships between changes in the organization and technology of medical services and changes in health across social classes and regions, but they are suggestive. The history of a centralizing medical delivery system is clearly one of increasing equality both in the access to medical resources and in their spatial distribution. Moreover, there is evidence that over time lower-income groups do utilize medical services more than upper-income groups (see Table 2). It should be noted, however, that needs of lower-income groups are greater than those of upper-income groups. The evidence is very clear: the National Health Service has not brought about a marked convergence in the levels of mortality across occupations, though there is some convergence over time in mortality rates on a regional basis.

Why has an increase in the equality of access to medical resources across social classes not narrowed the variation of deaths across occupa-

FIGURE 2
CAUSES OF DEATH OF MALES AGED 20-65 IN SOCIAL CLASSES I AND V
IN ENGLAND AND WALES, 1910-1970
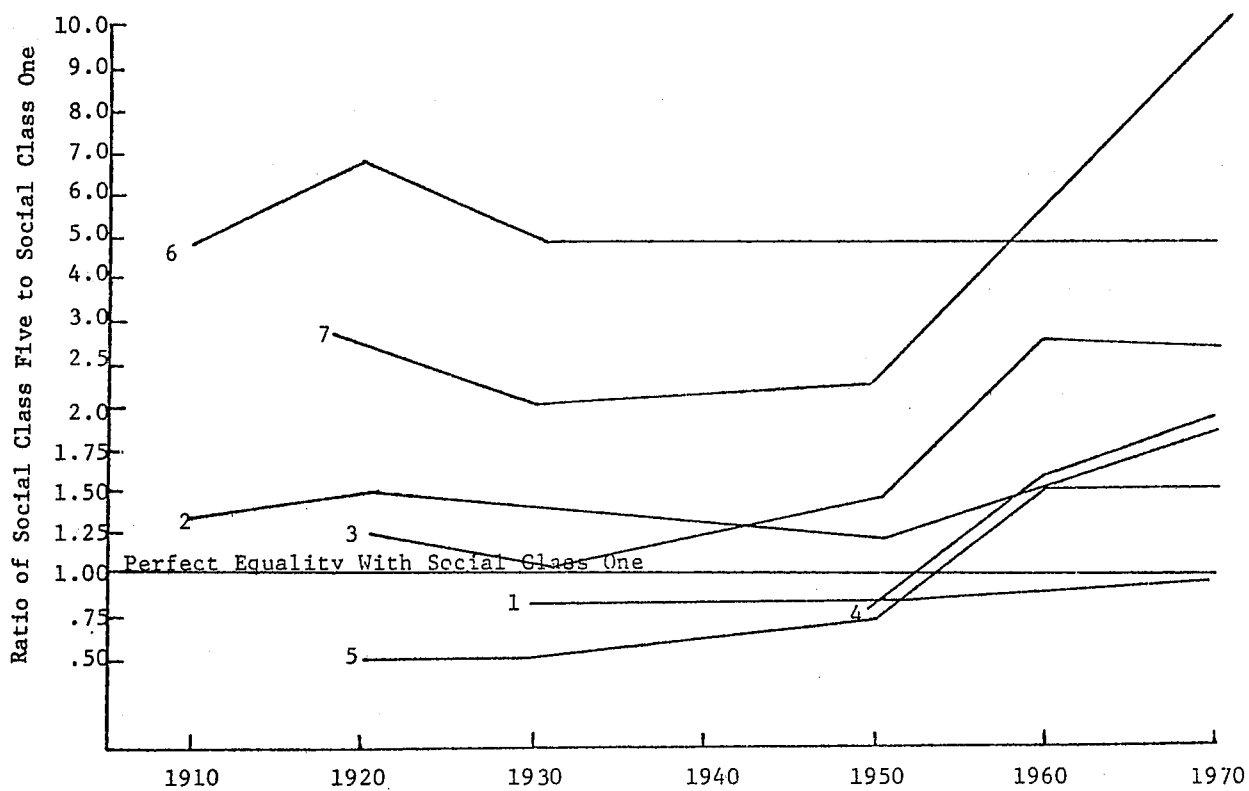
1 = Leukemia mortality
2 = Cancer mortality
3 = Mortality from malignant neoplasms of lung, bronchus, and trachea
4 = Hypertensive disease mortality
5 = Diabetes mortality
6 = Bronchitis mortality
7 = Respiratory tuberculosis mortality

tions? The answer must be somewhat speculative in nature. Of course, levels of health have improved over time for every social group, but they have improved less rapidly for the lower occupational grouping. This raises some interesting problems about the efficacy of medical technology: equalizing access to medical care and medical resources over a period of several generations has not equalized results.

Social and environmental factors are of great importance in explaining levels of health across social classes. Income is still very inequitably distributed in Great Britain, although there has been some narrowing among social classes. This inequitable distribution of income is strongly reflected in gross variations in life styles across social classes, and that variation is important in understanding class differences in mortality. Education, too, is still very inequitably distributed in Britain, as Tables 10 and 11 demonstrate. This has probably contributed to the continuing inequality in health across social classes. Indeed, there are studies which indicate that level of education is more important than level of income in explaining health (Lefcowitz, 1973). There are also studies which indicate that the more education individuals have, the more frequently they see a physician, the more medical services they consume, and the more they adopt a life style consistent with good health. These studies, when considered in conjunction with the data presented above, suggest that even though the British National Health Service is the most egalitarian one in the western world, gross inequalities in levels of health are likely to persist across social classes as long as gross inequities in the distribution of income and education persist.

Table 10

University Attendance, by Social Class,
in England and Wales

Year of birth	Social Class			All Classes
	I and II	III	IV and V	
Before 1910				
Males	4.5%	1%	.5%	2.0%
	(1.0)	(.22)	(.11)	
Females	2.0	0	0	.5
All	3.0	.5	0	1.5
	(1.0)	(.17)		
1910-1929				
Males	8.5	1.5	1	3.5
	(1.0)	(.18)	(.12)	
Females	4.0	0	0	1.5
All	6.0	1	.5	2.5
	(1.0)	(.17)	(.08)	
Late 1930's				
Males	19	3.5	1	5.5
	(1.0)	(.18)	(.05)	
Females	9.5	1	.5	2.5
	(1.0)	(.11)	(.05)	
All	14.5	2.5	.5	4.0
	(1.0)	(.17)	(.03)	
Approximaely 1950				
All	47	n.a.	2	7.0
	(1.0)		(.04)	

Sources: Floud, 1954; Committee on Higher Education, 1967; Little and
Westergaard, 1964.

Table 11

Grammar School Education, by Social Class, in England and Wales

Year of birth	Social Class			All Classes
	I and II	III	IV and V	
Before 1910				
Boys	37%	7%	2%	12%
Girls	37	7	1	
1910–1919				
Boys	44	13	4	16
Girls	50	13	3	
1920–1928				
Boys	54	15	9	19
Girls	50	16	5	
1929–1939				
Boys	62	20	10	23
Girls	62	20	10	

Sources: Floud, 1954; ch. 5; Little and Westergaard, 1964.

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APPENDIX TABLES

Mortality from Various Types of Cancer for Men, by Social Class, in England and Wales, Selected Years, 1910-1972

A. Leukemia

			Social Class			
Year	I	II	III		IV	V
1930-1932[a]	153[b] (1.0)	125 (.82)	96 (.62)		94 (.61)	85 (.56)
1950[a]	153 (1.0)	101 (.66)	107 (.70)		81 (.53)	88 (.58)
1970-1972[c]	113 (1.0)	100 (.88)	107 (.95)	101 (.89)	104 (.92)	95 (.84)

B. Cancer

Year	I	II	III		IV	V
1910-1912[d]	99 (1.0)	91 (.92)	101 (1.02)		96 (.97)	131 (1.32)
1921-1923[a]	80 (1.0)	92 (1.15)	99 (1.24)		96 (1.2)	123 (1.54)
1930-1932[a]	83 (1.0)	92 (1.11)	99 (1.19)		102 (1.23)	115 (1.39)
1949-1953[a]	94 (1.0)	86 (.91)	104 (1.11)		95 (1.01)	113 (1.2)
1970-1972[c]	73 (1.0)	80 (1.1)	91 (1.25)	113 (1.55)	116 (1.59)	131 (1.79)

C. Malignant Neoplasms of Lung, Bronchus, and Trachea

Year	I	II	III		IV	V
1921-1923[e]	100 (1.0)	109 (1.09)	97 (.97)		79 (.79)	124 (1.24)
1930-1932[e]	107 (1.0)	95 (.82)	100 (.93)		92 (.86)	114 (1.07)
1949-1953[a]	81 (1.0)	82 (1.01)	107 (1.32)		91 (1.12)	118 (1.46)
1959-1963[c]	53 (1.0)	72 (1.36)	107 (2.02)		104 (1.96)	148 (2.8)
1970-1972[c]	53 (1.0)	68 (1.28)	84 (1.58)	118 (2.2)	123 (2.32)	143 (2.7)

Sources: Great Britain, Office of Population Censuses and Surveys, 1978, pp. 53, 60; Great Britain, Registrar General, 1927, 1938, 1954, p. 13; Parker et al., 1972, p. 342; Todd, 1978, p. 20.

[a]Data for men aged 20-64 inclusive.

[b]Standard Mortality Ratio (SMR). Ratio of SMR of each social class to SMR of social class I in parentheses.

[c]Data for men aged 15-64. For 1970-72, the two categories of social class III refer to nonmanual skilled and manual skilled occupations, respectively.

[d]Data for men aged 25-64 inclusive.

[e]Data for men aged 20-65 inclusive.

Appendix Table A2

Hypertensive Disease Mortality of Men, by Social Class, in
England and Wales, 1949/53-1970/72

Year	Social Class						
	I	II	III			IV	V
1949-1953[a]	123[b] (1.0)	106 (.9)		103 (.8)		83 (.7)	101 (.8)
1959-1963[a]	85 (1.0)	96 (1.1)		99 (1.2)		96 (1.1)	138 (1.6)
1970-1972[c]	71 (1.0)	85 (1.2)	104 (1.5)		104 (1.5)	112 (1.6)	141 (2.0)

Sources: Great Britain, Office of Population Censuses and Surveys, 1978, p. 56; Great Britain, Registrar General, 1938.

[a]Data for men aged 20-64.

[b]Standard Mortality Rates (SMR). Ratio of SMR of each class to SMR of social class I in parentheses.

[c]Data for men aged 15-64. The two categories of social class III data refer to non-manual skilled and manual skilled occupations, respectively.

Appendix Table A3

Diabetes Mortality of Men by Social Class, England and Wales, 1921-1970

Year	I	II	III		IV	V
			Social Class			
1921-1923[a]	129[b] (1.0)	149 (1.2)	93 (.72)		75 (.58)	66 (.5)
1930-1932[a]	122 (1.0)	155 (1.3)	95 (.78)		82 (.67)	69 (.57)
1949-1953[a]	134 (1.0)	100 (.75)	99 (.74)		85 (.63)	105 (.78)
1959-1963[c]	81 (1.0)	103 (1.3)	100 (1.2)		98 (1.2)	122 (1.5)
1970-1972[c]	83 (1.0)	93 (1.1)	111 (1.3)	98 (1.2)	111 (1.3)	128 (1.5)

Sources: Great Britain, Office of Publication Censuses and Surveys, 1978, p. 53; Great Britain, Registrar General, 1927, 1938.

[a]Data for men aged 20-64 inclusive.

[b]Standard Mortality Ratio (SMR). Ratio of SMR of each social class to SMR of social class I in parentheses.

[c]Data for men aged 15-64. For 1970-72, the two categories of social class III data refer to nonmanual skilled and manual skilled occupations respectively.

Bronchitis and Respiratory Tuberculosis Mortality of Men Aged 20-64,
by Social Class, in England and Wales, 1921/23-1970/72

Year	I	II	III		IV	V
A. Bronchitis						
1910-1912[a]	41[b] (1.0)	68 (1.7)	95 (2.3)		98 (2.4)	184 (4.5)
1921-1923	26 (1.0)	55 (2.1)	94 (3.6)		121 (4.7)	177 (6.8)
1930-1932	31 (1.0)	57 (1.6)	91 (2.9)		124 (4.0)	156 (5.0)
1950	33 (1.0)	53 (1.6)	97 (2.9)		103 (3.1)	172 (5.2)
1970-1972[c]	36 (1.0)	51 (1.4)	82 (2.3)	113 (3.1)	128 (3.6)	188 (5.2)
B. Respiratory Tuberculosis						
1921-1923	49 (1.0)	81 (1.7)	95 (1.9)		97 (2.0)	137 (2.8)
1930-1932	61 (1.0)	70 (1.1)	100 (1.6)		104 (1.7)	125 (2.0)
1950	64 (1.0)	62 (1.0)	103 (1.6)		95 (1.5)	149 (2.3)
1970-1972	26 (1.0)	41 (1.6)	84 (3.2)	89 (3.4)	124 (4.8)	254 (9.8)

Sources: Great Britain, Office of Population Censuses and Surveys, 1978, p. 60; Great Britain, Registrar General, 1927, 1938, 1954, p. 13; Parker et al., 1972, p. 342.

[a]Data for men aged 25-64.

[b]Standard Mortality Ratio (SMR). Ratio of SMR of each class to SMR of social class I in parentheses.

[c]The two categories of class III data refer to nonmanual skilled and manual skilled occupations respectively.

Appendix Table A5

Suicide Mortality of Men Aged 20-64, by Social Class, in
England and Wales, 1921/23-1970/72

Year	I	II	III		IV	V
			Social Class			
1921-1923	116[a] (1.0)	128 (1.1)	91 (.78)		89 (.77)	98 (.84)
1930-1932	120 (1.0)	137 (1.1)	95 (.79)		87 (.73)	87 (.73)
1950	134 (1.0)	110 (.82)	89 (.66)		99 (.74)	119 (.89)
1970-1972[b]	110 (1.0)	89 (.81)	113 (1.0)	77 (.7)	117 (1.1)	184 (1.7)

Sources: Great Britain, Office of Population Censuses and Surveys, 1978, p. 60;
Great Britain, Registrar General, 1927, 1938; 1954, p. 13.

[a] Standard Mortality Ratio (SMR).

[b] Data refer to men aged 15-64. The two categories of social class III data for
1970-72 refer to non-manual skilled and manual skilled occupations respectively.