

INEQUALITIES IN HEALTH IN IRELAND - HARD FACTS



Joe Barry – Hamish Sinclair – Alan Kelly
– Ros O’Loughlin – Deirdre Handy – Tom O’Dowd

Department of Community Health & General Practice, Trinity College, Dublin
September 2001

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THIS REPORT IS DEDICATED TO DR FIONA BRADLEY

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DETAILS: Courtesy of the Kerlin Gallery, Dublin
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National Mortality Dataset

Hugh Magee - Department of Health and Children

Perinatal Reporting System

Hugh Magee - Department of Health and Children

Hospital In-Patient Enquiry

Anne Clifton - Economic and Social Research Institute

National Psychiatric InPatient Reporting System

Ciaran Browne, Antoinette Daly - Health Research Board

National Drug Treatment Reporting System

Ros Moran, Mary O'Brien - Health Research Board

FOREWORD

I am delighted to be asked to write the foreword to this most important report on "Inequalities in Health in Ireland – Hard Facts" from the Department of Community Health and General Practice in Trinity College, Dublin.

Among the issues which have come to the forefront in recent times in the debate on health is that of "health inequalities", a concept which describes the differentials in health experience between different sections of our population by reference to such indicators as morbidity and premature mortality. Related to this also is the problem of inequitable access to health services based on need.

This report, while it recognises the genuine difficulties presented by incomplete and inadequate routine data, nevertheless confirms the broad international experience of significantly higher mortality rates for people from lower socio-economic groups for all causes and for ischaemic heart disease, cancer and injuries and poisonings. In the context in which the general Irish experience in this regard is significantly inferior to that of the rest of the European Union, the experience of poor Irish people must be regarded as intolerable.

Other indicators in the area of psychiatric admissions, perinatal health and drug treatment all point to the same differentials in experience as between the poorer and better off sections of our population.

While certain important conclusions can be drawn from the data, the report identifies the limitations of the routine data sets available. It suggests that routine data sets need to be altered so that health inequalities can be measured by reference to these data sets (a recommendation also made in the 1999 CMO's Report) and also that once-off major epidemiological studies from time to time would be appropriate. The report also suggests that these data and information deficits can best be addressed in the context of the emerging National Health Information Strategy.

To address the serious problems identified in this report, decisions need to be taken at the broad intersectoral policy level and also at health policy level. The existing partnership process and the National Anti-Poverty Strategy process within it, provide a platform and opportunity for broad policy action and the forthcoming Health Strategy will provide a framework for health sector responses.

Those interested in further analysing and, in particular, doing something about health inequalities will be grateful for this report and its authors are to be congratulated on its publication.

A handwritten signature in black ink that reads "James Kiely". The signature is written in a cursive, flowing style with a long horizontal stroke extending to the right.

Dr. James Kiely
Chief Medical Officer
Department of Health and Children



SUMMARY

The following are the principal findings of this report:

- In 1996 unskilled manual men were twice as likely to die as higher professional men (standardised ratio 122 versus 64).
- In 1996 unskilled manual men were eight times more likely to die from an accidental cause than higher professional men (standardised ratio 136 versus 17).
- In 1996 you were almost four times as likely to be admitted to hospital for the first time for schizophrenia if you were in the unskilled manual category than if you were a higher professional (standardised ratio of 130 versus 35).
- In the early 1990s women in the unemployed socio-economic group were over twice as likely to give birth to low birth weight babies as women in the higher professional group (standardised ratio of 140 versus 66).
- Persons with socio-economic group 'unskilled manual' have worse health than professional groups in all years and for all the conditions which are analysed in this report.
- Persons with socio-economic group 'unknown' have consistently worse health than those in socio-economic group 'unskilled manual'.
- The proportion of persons where socio-economic group is unknown is growing in each database.
- Mortality seems to be worse in medium sized towns than in cities or in rural areas.
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GLOSSARY OF TERMS

Confidence Interval (95%)

The range of values in which the true value of a parameter (e.g. proportion) is likely to be found. By convention a 95% confidence interval is usually calculated i.e. the range that will include the true value 95% of the time.

Database

A collection of values, usually containing several variables, which is constantly maintained and updated.

Health inequalities

Health inequality is the "differences in the prevalence or incidence of health problems between individual people of higher and lower socio-economic status."

Reference: World Health Organisation. *City Health Profiles*. Geneva 1998.

Health inequities

It is important to note that inequity is not the same as or synonymous with inequality. Health inequalities count as inequities only when they are avoidable, unnecessary, and unfair.

Reference: Goran Dahlgren and Margaret Whitehead, *Policies and Strategies to Promote Social Equality in Health* (Stockholm: Institute of Future Studies, 1991).

Hospital In-Patient Enquiry (HIPE)

The Hospital In-patient Enquiry scheme records details on deaths and discharges for all the acute public hospitals in the country. Information is collected on principal diagnoses and principal procedures performed.

National Mortality Dataset

Deaths classified by year of death, excluding late registrations but including deaths of non-residents. The Ninth Revision of the International Classification of Diseases, Injuries and Causes of Death (ICD-9) has been used to classify deaths in Ireland by cause since 1979. The Central Statistics Office is responsible for compiling registered deaths in computerised format.

National Psychiatric InPatient Reporting System

This system records information on discharges for all in-patient psychiatric admissions in the country through all public hospitals and some private hospitals. It gathers information by principal psychiatric diagnosis.

National Drug Treatment Reporting System (NDTRS)

The NDTRS is an epidemiological database providing information on treated drug misuse in the Republic of Ireland. Drug misuse which occurs outside the treatment context is not included. The database is maintained by the Drug Misuse Research Division of the Health Research Board. Reporting began in 1990 and for the first five years covered treated drug misuse in Dublin only. In 1995 the Reporting System was expanded to cover the entire country. Drug misuse in the NDTRS is defined as the taking of an illegal and/or legal drug or drugs (excluding alcohol other than as a secondary drug of misuse and tobacco) which harms the physical, mental or social well-being of the individual, the group or society.

Perinatal mortality rate

Number of stillbirths plus number of liveborn babies who die before the end of the first seven days of life per annum divided by total number of live and stillbirths.

Perinatal period

The time from 28 weeks gestation (28 weeks of pregnancy) or when the foetus reaches a weight of 500 grammes whichever occurs first, to 1 week after birth. In 1995 the definition changed and the relevant gestation period became 24 weeks.

Perinatal Reporting System

This system comprises a notification of birth form filled out by all maternity hospitals on the birth of each baby, collecting information on the mother, the pregnancy and the infant. These data form the Perinatal Reporting System database.

Qualitative research

Social research which is carried out in the field (natural settings) and analysed largely in non-statistical ways.

Quantitative research

The measurement and analysis of observations in a numerical way.

Routine data sources

This refers to data which are continually collected by various sources e.g. Perinatal Reporting System, Hospital In-Patient Enquiry (HIPE), National Psychiatric InPatient Reporting System, National Mortality Dataset.

Social class

Segments of the population sharing broadly similar types and levels of resources, broadly similar styles of living and some shared perception of their collective condition.

Socio-economic group (SEG)

A classification system used to bring together persons with similar social and economic status on the basis of the level of skill or educational attainment acquired. SEG of those 15 years and over is determined by their occupational and employment status. Persons on home duties or at school/college, who are members of a family unit are generally classified to the SEG of the person in the family on whom they were deemed dependant. SEG of married women is often determined by their husband's occupation.

Standardised mortality ratio (SMR)

Method of comparing mortality of one population with that of another. It is obtained by calculating the expected number of deaths in a given population (if the population had the same mortality as the standard population) and dividing the observed number of deaths by the expected number. Other standardised ratios (e.g. standardised low birth weight ratios) are calculated in the same way.

Unknowns

The Irish socio-economic group (SEG) classification is a nominal grouping of occupations comprising 11 categories plus a residual 'unknown' category for individuals who cannot be coded due to insufficient information. Occupations are grouped in each SEG on the basis that they are generally similar as regards the level of skill or educational attainment acquired. A major weakness of the Irish SEG classification is the lack of ordinality in the scaling of occupations and in particular the grouping of all farmers in one category irrespective of farm size or income accruing from the farm. It is also felt that some categories of the Irish SEG classification contain an inappropriate combination of occupations. (O'Hare 1991)

Variables

Measures of interest that vary across individuals, groups or geographic areas, for example, age, sex, socio-economic group, mortality rate.

CHAPTER ONE



INTRODUCTION

Fairness is good for health and unfairness is bad for health

Concerns about the health of the poor have existed in Ireland since the early 1800s. Structures were put in place through the Poor Law in 1838 and the Dispensary Service from 1851 to provide limited healthcare for poor people. The services fell far short of the needs of the people and the political debate about the Health Act of 1970 expressed concerns about 'injustice' in healthcare provision. Over the last two decades an international debate has moved from injustice to inequalities. There is now compelling international research indicating that health inequalities occur throughout the industrialised world.¹ Such inequalities are directly related to increased ill health and early death among significant numbers of our citizens. Medicine in general is beginning to realise that it can do little about inequalities in society without a wider political debate. However, commentators increasingly focus on equity in healthcare which introduces the concept of fairness in the distribution of medical care (Shaping a Healthier Future 1994).² Ireland is a good place to investigate the issue of fairness as it has well established systems of public and private medical care existing side by side. Such systems are revealing anecdotal cases of inequities where patients with similar illnesses only receive prompt care on the basis of ability to pay. Spending on health is important as in countries which spend much more on their health than Ireland, the better off live several years longer and have fewer illnesses than the poor. Indeed there is now evidence that health spending in the private sector in Ireland is above the EU average while spending in the public sector continues to lag behind the EU average (OECD).³ Politicians have not welcomed research on inequalities in health as was famously demonstrated when the seminal, British Government funded 'Black Report' on inequalities was released on an August bank holiday Monday in 1980 in restricted numbers to a restricted audience by Mrs. Thatcher's government.⁴

The Black Report on inequalities in health presented evidence of marked differentials in health outcomes "...from birth to old age those at the bottom of the social scale have much poorer health and quality of life than those at the top ... gender, area of residence and ethnic origin also have a deep impact". Ten years later researchers had concluded that socio-economic inequalities in health outcome had widened and "...suggest that further widening of mortality differentials may be expected."^{5,6} The existence of wide and widening socio-economic differences in health shows how extraordinarily sensitive health remains to socio-economic circumstances.^{7,8}

There is also evidence that unless medical care is targeted appropriately, that it may contribute to widening of differences between socio-economic groups because of the greater capacity of well off people to obtain medical care.⁹

Approaches to policy in Ireland - insufficient action

While the debate about inequalities in the United Kingdom has become polarised and politicised, in the Netherlands cross party agreement has led to a consensus based approach to addressing inequalities in health.¹⁰ The Dutch have set up a five year research programme with the aim of raising consciousness among the scientific community, to increase knowledge of inequalities and their causes and, crucially, to have an effect on health policy.

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The approach in Ireland has taken the Dutch rather than the UK approach, but without the robust structure to move from policy to action. In fairness there appears to be a seriousness of purpose that is severely handicapped by poor information systems, lack of research and difficulties in medium to long term planning. The Department of Health and Children's widely accepted strategy document *Shaping a Healthier Future*² has set the scene by defining the principles of equity, quality and accountability for the development of our health services. Considerable attention was drawn in the document to inequalities in health in selected sub-groups of the Irish population and indeed since the publication of the strategy the reduction in inequalities in healthcare has been a priority.

The first ever Chief Medical Officer's report¹¹ builds on this theme and acknowledges that research is urgently required to establish the extent of health inequality in Ireland and its complex causes. In the policy document *Programme for Prosperity and Fairness*¹² one objective is "to improve access to quality healthcare services in order to strengthen social inclusion and cohesion and also to monitor socio-economic health inequalities". The Programme document devotes further attention to marginalised groups and inequalities and states "resources will be allocated to health research as part of a comprehensive approach to ensuring adequate medium and long term planning of health provision. Data systems will be adapted to enable dis-aggregation of health access and outcomes across National Anti-Poverty Strategy target groups. This data will be monitored and reported on at national level." The Health Research Board's consultation document *Making Knowledge Work for Health*¹³ emphasises that epidemiological information needs to be available and translated into measures for the health of the population. The real test is, however, not in doing the research but in translating it into effective policy and action as an expression of our society's commitment to equity in healthcare.

This research

In 1998, through a Health Research Board grant, we obtained access to a range of databases from the Irish health services with a view to examining inequalities in health and healthcare in Ireland. Some databases make socio-economic differentiation possible; in others, data on differences in health are only examinable at a geographic level. Unfortunately no database provides analysis by social class.

Our project has two principal objectives. Using routine health information systems:

- To look for and present evidence of inequalities in health and healthcare in Ireland over the past twenty years.
- To make recommendations on data collection so that routine health information systems can be used to measure changes in health status and healthcare uptake, particularly in different social groups of the population.

HOW WE DID IT

On receipt of the Health Research Board grant the managers or custodians of five datasets were written to, stating the objectives of our exercise and seeking permission to access the data. In all cases permission was forthcoming. The datasets differ widely in their construction, their objectives, their legal status and their size. Five datasets are cited in this report. These are:

- **National Mortality Dataset**
- **Perinatal Reporting System**
- **National Psychiatric InPatient Reporting System**
- **Hospital In-Patient Enquiry**
- **National Drug Treatment Reporting System**

There is a risk with access to such large datasets that the data processing and analysis itself could take an inordinate length of time. Therefore data for each year for each dataset were not sought.

A summary description of each dataset is given in Table 0.1 and an outline of the variables that can show inequalities, collected in each dataset, is given in Table 0.2. A more detailed account of the analytical methods used and the reasons for using them are given in the Technical Annex, appendix A. A copy of the data entry sheet for four of the datasets is given in appendix B.

Table 0.1 Routine health datasets analysed for this report

DATABASE	ORGANISATION MAINTAINING DATABASE	APPROX ENTRIES PER ANNUM	ANNUAL REPORT AVAILABLE	MOST RECENT YEAR FOR WHICH PRINTED REPORT IS AVAILABLE	YEARS ANALYSED IN THIS PROJECT
NATIONAL MORTALITY DATASET	CENTRAL STATISTICS OFFICE	30,000	YES	1997	1981, 1986, 1991, 1994, 1995, 1996
PERINATAL REPORTING SYSTEM	ECONOMIC & SOCIAL RESEARCH INSTITUTE: (UP TO 1994 DEPT OF HEALTH)	53,000	YES	1993	1986 - 1993
NATIONAL PSYCHIATRIC INPATIENT REPORTING SYSTEM	HEALTH RESEARCH BOARD	7,500 (1ST ADMISSIONS)	YES	1998	1991, 1996
HOSPITAL IN-PATIENT ENQUIRY	ECONOMIC & SOCIAL RESEARCH INSTITUTE	675,000	NO	-	1997
NATIONAL DRUG TREATMENT REPORTING SYSTEM	HEALTH RESEARCH BOARD	5,000	YES	1998	1990 - 1996

Table 0.2 Content of the datasets

DATABASE	METHOD OF DATA COLLECTION	TYPE OF DATA COLLECTED	VARIABLES THAT CAN SHOW INEQUALITIES
NATIONAL MORTALITY DATASET	INFORMATION IS COLLECTED ON FOOT OF A DEATH CERTIFICATE COMPLETED BY THE ATTENDING DOCTOR.	DEMOGRAPHIC, CLINICAL	OCCUPATION (SEG), LOCAL DISTRICT
PERINATAL REPORTING SYSTEM	THE PERINATAL REPORTING SYSTEM COLLECTS INFORMATION THROUGH EVERY MATERNITY UNIT IN THE COUNTRY ON HEALTH FACTORS RELATED TO THE MOTHER, THE PREGNANCY AND THE INFANT.	DEMOGRAPHIC, PROCESS OF CARE, OUTCOMES	OCCUPATION (SEG), COUNTY
HOSPITAL IN-PATIENT ENQUIRY	THE HOSPITAL IN-PATIENT ENQUIRY SCHEME RECORDS DETAILS ON DEATHS AND DISCHARGES FOR ALL THE ACUTE PUBLIC HOSPITALS IN THE COUNTRY.	DEMOGRAPHIC, DIAGNOSTIC, PROCEDURAL	COUNTY, GMS STATUS
NATIONAL PSYCHIATRIC INPATIENT REPORTING SYSTEM	THIS SYSTEM RECORDS INFORMATION ON DISCHARGES FOR ALL IN-PATIENT PSYCHIATRIC ADMISSIONS IN THE COUNTRY THROUGH ALL PUBLIC HOSPITALS AND SOME PRIVATE HOSPITALS.	DEMOGRAPHIC, DIAGNOSTIC	OCCUPATION (SEG), COUNTY
NATIONAL DRUG TREATMENT REPORTING SYSTEM	THIS SYSTEM RECORDS INFORMATION ON ALL TREATMENT CONTACTS IN DRUG TREATMENT CENTRES	DEMOGRAPHIC, CLINICAL, BEHAVIOURAL	DISTRICT ELECTORAL DIVISION



CHAPTER TWO

Section 1- Results from National Mortality Dataset

NATIONAL MORTALITY DATASET

Deaths classified by year of death, excluding late registrations but including deaths of non-residents. The Ninth Revision of the International Classification of Diseases, Injuries and Causes of Death (ICD-9) has been used to classify deaths in Ireland by cause since 1979. The Central Statistics Office is responsible for compiling registered deaths in computerised format.

The results are presented in two formats;

- (i) socio-economic mortality for males aged 15-64 over a fifteen year timespan, using five year intervals

and

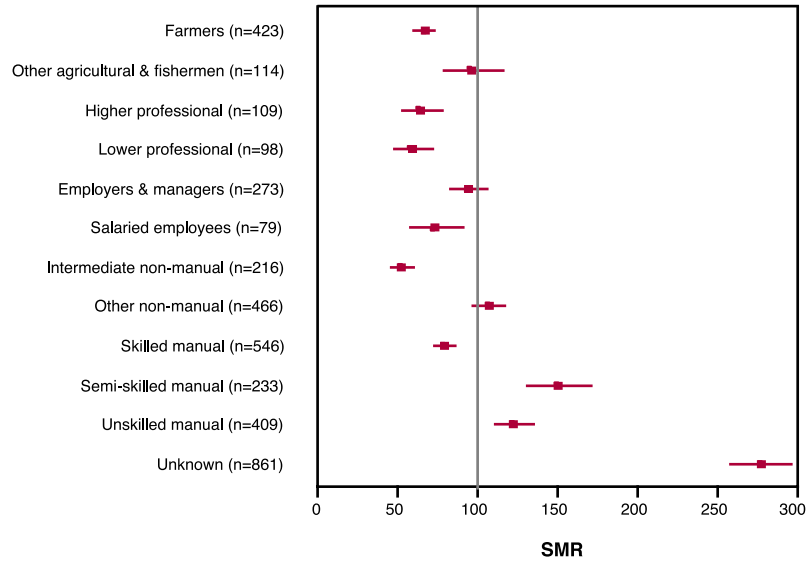
- (ii) geographic variations in mortality for both sexes combined, using 3 years' aggregated data (1994-1996), using the 26 counties of the Republic of Ireland and the 88 local districts as the units of analysis.

The measure of mortality used is the Standardised mortality ratio (SMR).

The standardised mortality ratio is a method of comparing death rates in different populations, such as amongst different socio-economic groups in Ireland. When using the standardised mortality ratio, the average for the whole population is 100. Any SMR greater than 100 means that that group has a higher mortality than the average and when the SMR is less than 100 it means that that group has a lower mortality than the average. We have used 95% confidence intervals in this report. If the 95% confidence interval does not include the value 100, it means that the SMR for that particular occupational group or county is statistically above or below the average. The standard population used is the male population of Ireland aged 15 to 64.

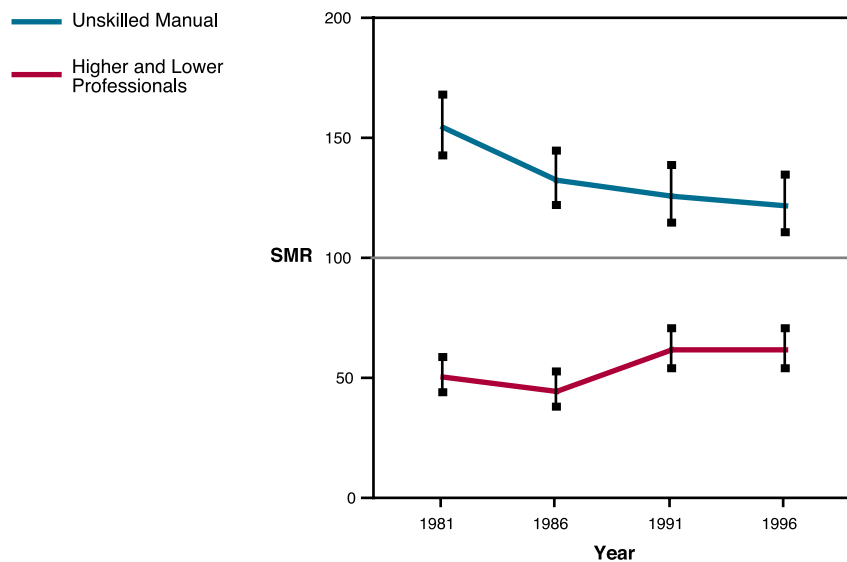
Occupation can be used as a proxy for socio-economic grouping in relation to mortality data only for males because occupation of females is not well recorded. It is also difficult to use this classification in persons over 65 because most people have retired from work by this age. For similar reasons mortality in the under 15 age group is not used. Accordingly the socio-economic mortality data that is presented relates to males aged 15-64. The data are presented for all causes and for specific named causes. The causes used are taken from the International Classification of Diseases (9th version) and include: all causes, ischaemic heart disease (410-414), neoplasms (140-239) and injuries and poisonings (800-999).

Figure 1.1 Standardised mortality ratios (SMRs) and 95% confidence intervals for all causes (males 15-64 years) by socio-economic group, Ireland 1996



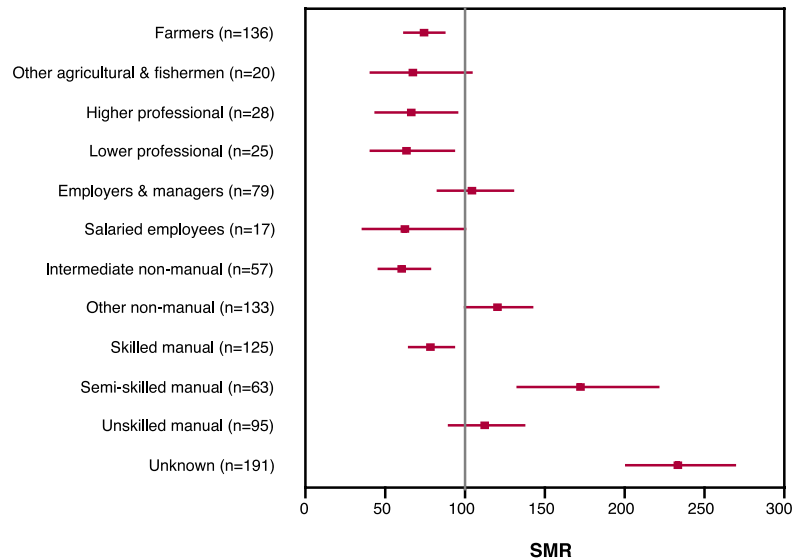
COMMENT: In 1996 there was a wide variation in the range of standardised mortality ratios among the socio-economic group with the lower SMRs occurring in professional and non-manual workers and also farmers. The highest SMR by a very large margin occurred in those men for whom a socio-economic group could not be assigned because it was not recorded on the data.

Figure 1.2 Standardised mortality ratios (SMRs) and 95% confidence intervals for all causes (males 15-64 years) for unskilled manual and professional (higher + lower) socio-economic groups, Ireland 1981, 1986, 1991, 1996



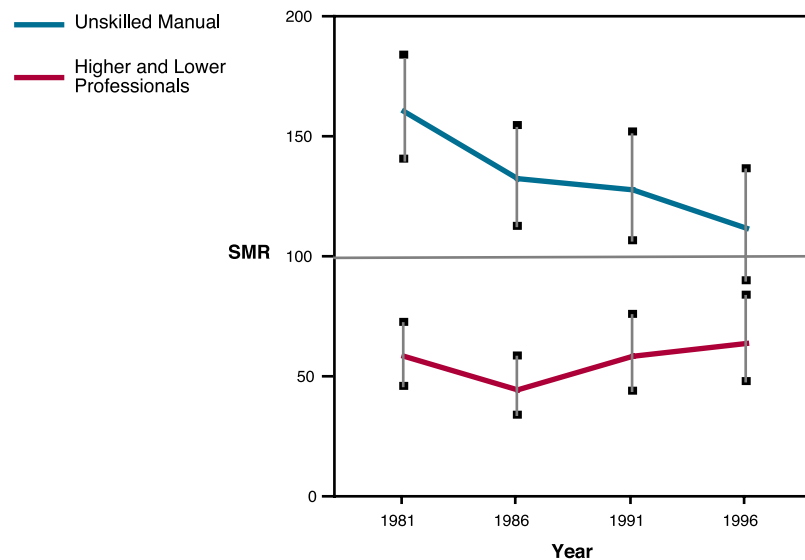
COMMENT: The trends over time (Figure 1.2) give the appearance of some convergence between the unskilled manual group and the combined professional group. However, the proportion of unknowns over this time has grown and the unknowns also have very high mortality. Further investigation is required to characterise better this unknown group before any inference could be drawn about a narrowing of the gap.

Figure 1.3 Standardised mortality ratios (SMRs) and 95% confidence intervals for ischaemic heart disease (ICD codes 410-414) (males 15-64 years) by socio-economic group, Ireland 1996



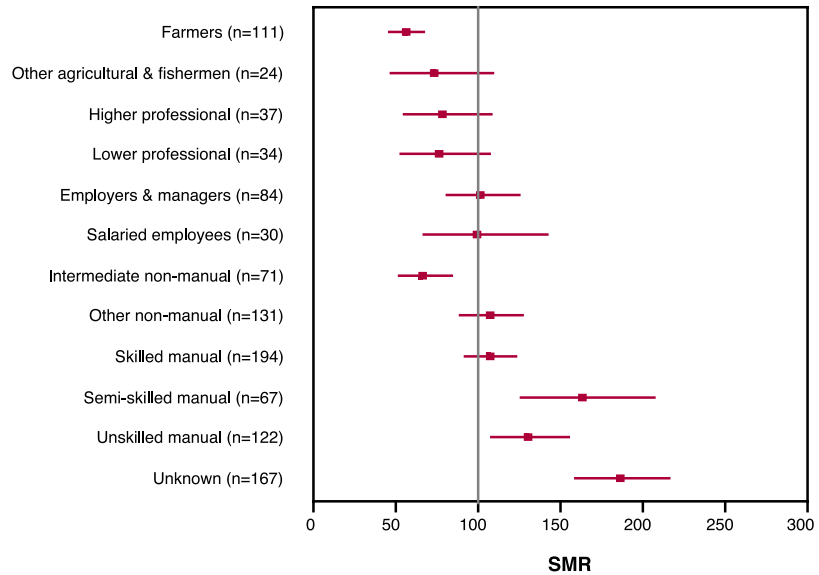
COMMENT: In 1996 the professional and non-manual groups and farmers have SMRs mostly under 100, whereas the unskilled manual groups, except the skilled manual group, have SMRs over 100. The highest SMR is in the unknown category.

Figure 1.4 Standardised mortality ratios (SMRs) and 95% confidence intervals for ischaemic heart disease (ICD codes 410-414) (males 15-64 years) for unskilled manual and professional (higher + lower) socio-economic groups, Ireland 1981, 1986, 1991, 1996



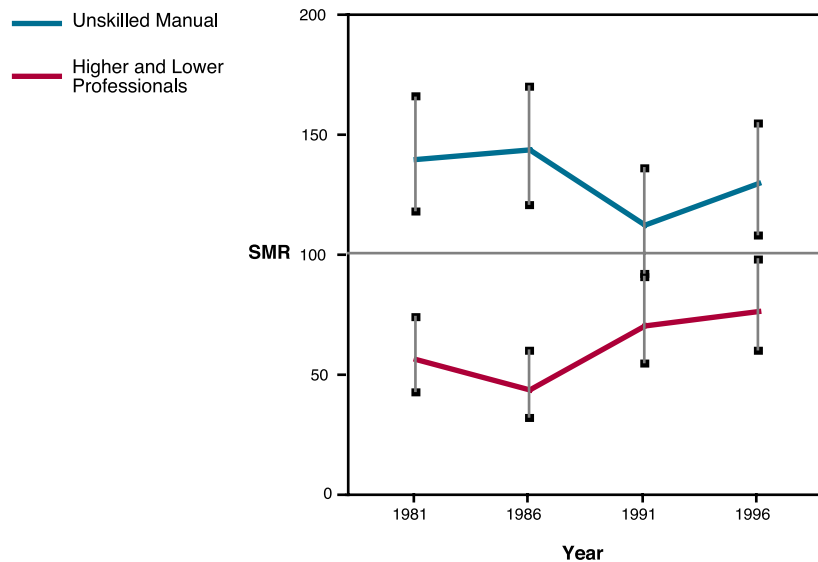
COMMENT: When looked at over the 15 year time interval, the SMR for the professional group is in the range of 50-60 but there has been a steady drop in the SMR for the unskilled manual group. However, we know that over the same time period, the proportion of those with 'unknown' socio-economic group has grown and we also know that the SMR in this group is considerably in excess of the next highest SMR. Therefore, until further characterisation of the unknown group is determined, the rising number of unknowns is a plausible explanation for the drop in the SMR of the unskilled manual group in the period 1981-1996.

Figure 1.5 Standardised mortality ratios (SMRs) and 95% confidence intervals for **neoplasms** (ICD codes 140-239)(males 15-64 years) by socio- economic group, Ireland 1996



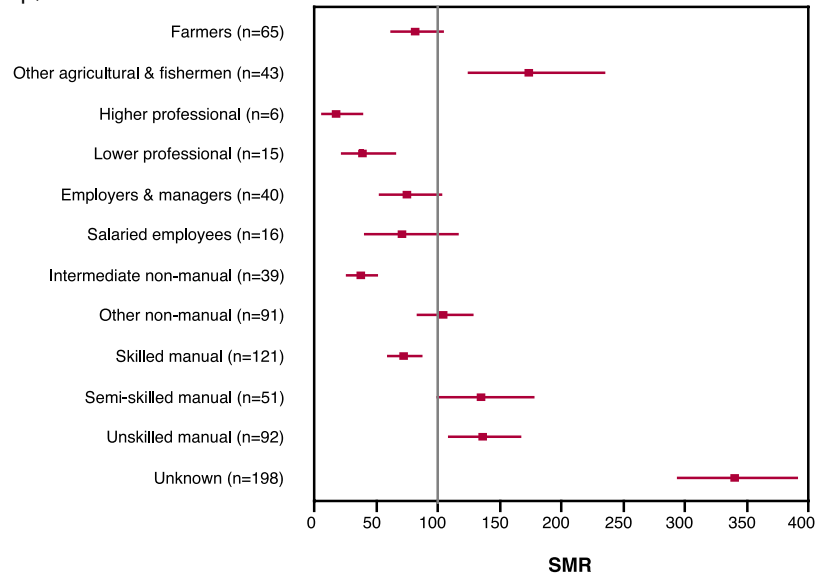
COMMENT: In 1996 farmers have the lowest SMR for neoplasms and the unknown category has the highest. By and large the professional groups are below SMR 100 and the unskilled manual and manual workers have SMRs greater than 100.

Figure 1.6 Standardised mortality ratios (SMRs) and 95% confidence intervals for **neoplasms** (ICD codes 140-239)(males 15-64 years) for unskilled manual and professional (higher + lower)socio-economic groups, Ireland 1981,1986, 1991, 1996



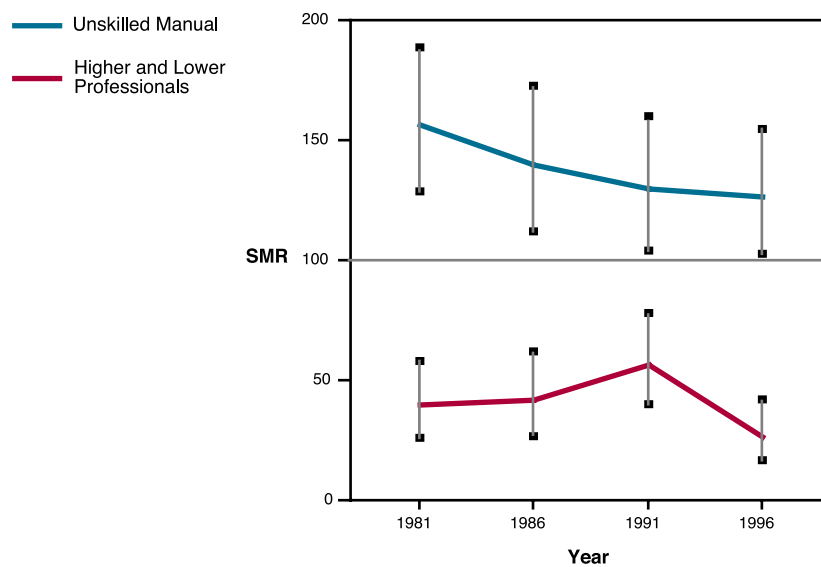
COMMENT: Over the 15 year interval 1981-1996 there has been a trend for the SMR in the professional groups to move from values of around 50 in the 1980s up to between 70 and 80 during the 1990s. There is no discernable trend in the SMR in the unskilled manual group which has been mostly in the range of 125 to 140.

Figure 1.7 Standardised mortality ratios (SMRs) and 95% confidence intervals for **injuries and poisonings** (ICD codes 800-999) (males 15-64 years) by socio-economic group, Ireland 1996



COMMENT: In 1996 apart from the unknown group whose SMR is almost 350, the next highest is amongst the category 'other agricultural and fishermen'. Professional groups have very low SMRs for injuries and poisonings. There is a health and safety issue to be addressed here.

Figure 1.8 Standardised mortality ratios (SMRs) and 95% confidence intervals for **injuries and poisonings** (ICD codes 800-999)(males 15-64 years) for unskilled manual and professional (higher + lower) socio-economic groups, Ireland 1981,1986, 1991, 1996



COMMENT: In the time interval from 1981-1996 SMR in the professional groups has been consistently low, in the range 30-50. In the unskilled manual group SMR has dropped from a relatively high 150 in 1981 to 130 in 1996. For unskilled manual groups however, there may be a transfer from unskilled manual to unknown in recent years explaining this apparent drop.

Table 1.1 Standardised mortality ratios (SMRs) and total deaths for **all causes**, by county, Ireland 1994-1996

ALL CAUSE MORTALITY			
The figures show ranked age/sex standardised mortality ratios (SMR) and total numbers of deaths for all causes in 1994-96 by county. National average SMR is 100.			
Rank		SMR	Deaths
1	Kilkenny	90.7	1871
2	Meath	91.4	2286
3	Galway	93.8	5121
4	Clare	93.9	2568
5	Roscommon	94.2	1828
6	Cavan	94.8	1632
7	Laois	94.9	1361
8	Donegal	96.1	3929
9	Waterford	97.6	2451
10	Sligo	98.6	1767
11	Dublin	98.9	23720
12	Monaghan	99.1	1452
13	Wicklow	99.7	2450
14	Longford	100.1	943
15	Kerry	100.6	4079
16	Offaly	100.8	1563
17	Limerick	102.4	4251
18	Louth	103.3	2288
19	Kildare	103.8	2456
20	Cork	104.0	11488
21	Mayo	104.8	4251
22	Wexford	105.9	2946
23	Tipperary	106.2	4090
24	Westmeath	108.5	1798
25	Leitrim	110.1	1091
26	Carlow	114.4	1163

Sig. Low
Non Sig.
Sig. High

Table 1.2 Standardised mortality ratios (SMRs) and total deaths for **ischaemic heart disease** (ICD codes 410-414), by county, Ireland 1994-1996

ISCHAEMIC HEART DISEASE			
The figures show ranked age/sex standardised mortality ratios (SMR) and total numbers of deaths for Ischaemic Heart Disease (ICD 410-414) in 1994-96 by county. National average SMR is 100.			
Rank		SMR	Deaths
1	Sligo	82.8	348
2	Clare	87.2	571
3	Dublin	88.1	5598
4	Laois	93.1	339
5	Limerick	94.1	1003
6	Kilkenny	95.9	508
7	Kildare	95.9	622
8	Waterford	96.9	626
9	Offaly	97.6	397
10	Wicklow	97.8	617
11	Louth	99.4	589
12	Meath	103.3	667
13	Cavan	103.7	436
14	Westmeath	104.6	447
15	Galway	104.7	1342
16	Wexford	105.8	752
17	Cork	108.3	3042
18	Tipperary	108.7	1061
19	Leitrim	109.4	247
20	Longford	109.5	250
21	Donegal	110.0	1018
22	Carlow	110.2	298
23	Kerry	110.3	1060
24	Mayo	111.5	1004
25	Roscommon	130.6	578
26	Monaghan	133.2	476

Sig. Low
Non Sig.
Sig. High

COMMENT: There is no obvious trend, i.e. East-West, North-South, in the overall county distribution of mortality. In the all cause mortality, there is no obvious explanation for why two neighbouring counties, Kilkenny and Carlow should be at opposite ends of the national mortality ratios. The SMR for Carlow at 114 is an outlier as the next highest, Leitrim, is 110. This is quite a large gap. If there has been some systematic coding of Kilkenny residents to Carlow, it would explain the pattern that is given in Table 1.1.

Table 1.3 Standardised mortality ratios (SMRs) and total deaths for **neoplasms** (ICD codes 140-239), by county, Ireland 1994-1996

NEOPLASMS			
The figures show ranked age/sex standardised mortality ratios (SMR) and total numbers of deaths for Neoplasms (ICD140-239) in 1994-96 by county. National average SMR is 100.			
Rank		SMR	Deaths
1	Roscommon	81.2	362
2	Clare	81.6	519
3	Kilkenny	83.7	413
4	Galway	88.7	1117
5	Meath	88.8	532
6	Kerry	89.1	840
7	Monaghan	89.5	307
8	Longford	90.9	201
9	Offaly	91.2	342
10	Wicklow	91.9	534
11	Sligo	92.1	382
12	Donegal	94.7	880
13	Waterford	97.4	583
14	Cavan	98.7	399
15	Laois	98.7	339
16	Leitrim	99.3	226
17	Westmeath	100.4	398
18	Tipperary	100.6	920
19	Mayo	100.6	923
20	Louth	101.5	543
21	Limerick	101.6	1002
22	Wexford	105.0	692
23	Cork	105.3	2756
24	Carlow	107.1	264
25	Kildare	109.6	630
26	Dublin	109.7	6309

Sig. Low
Non Sig.
Sig. High

Table 1.4 Standardised mortality ratios (SMRs) and total deaths for **injuries and poisonings** (ICD codes 800-999), by county, Ireland 1994-1996

INJURIES AND POISONINGS			
The figures show ranked age/sex standardised mortality ratios (SMR) and total numbers of deaths for Injuries and Poisonings (ICD 800+) in 1994-96 by county. National average SMR is 100.			
Rank		SMR	Deaths
1	Dublin	81.5	994
2	Wicklow	86.4	101
3	Roscommon	87.9	59
4	Limerick	92.5	180
5	Kilkenny	92.6	82
6	Sligo	93.3	64
7	Tipperary	97.6	156
8	Waterford	99.2	111
9	Kildare	99.3	144
10	Donegal	100.5	159
11	Laois	104.7	65
12	Cork	106.0	527
13	Offaly	109.5	75
14	Kerry	111.5	174
15	Wexford	113.6	139
16	Cavan	113.8	74
17	Clare	114.5	129
18	Mayo	115.2	163
19	Galway	115.2	263
20	Meath	116.5	143
21	Louth	117.7	124
22	Monaghan	127.4	78
23	Westmeath	128.1	94
24	Longford	130.4	48
25	Leitrim	136.0	45
26	Carlow	152.0	73

Sig. Low
Non Sig.
Sig. High

COMMENT: The range of SMRs is highest among injuries and poisonings, mainly due to the fact that there are smaller numbers of deaths from this cause. 'Injuries and Poisonings' are the ICD codes for what are more commonly referred to as accidents. The county with the lowest SMR from injuries and poisonings by a considerable margin, is Dublin and the county with the highest, again by a considerable margin, is Carlow. More detailed analysis of the primary data might help to elucidate the causes of these results

Table 1.5 Standardised mortality ratios (SMRs) and total deaths for all causes, for 88 rural and urban districts and county boroughs, Ireland 1994-1996

ALL CAUSES					ALL CAUSES continued				
The figures show ranked Bayesian-adjusted age/sex standardised mortality ratios (SMR) and total numbers of deaths for all causes in 1994-96 by urban/rural district. National average SMR is 100.									
Rank			SMR	Deaths	Rank		SMR	Deaths	
1	Meath RD	Rural	63.5	1437	46	Clonakilty UD	Urban	127.5	170
2	Louth RD	Rural	71.8	752	47	Letterkenny UD	Urban	128.8	225
3	Tipperary NR RD	Rural	72.7	907	48	Bray UD	Urban	131.1	735
4	Tipperary SR RD	Rural	77.3	1102	49	Castleblayney UD	Urban	138.8	143
5	Galway CB	Urban	79.7	942	50	Castlebar UD	Urban	139.5	392
6	Offaly RD	Rural	79.8	951	51	Cobh UD	Urban	145.7	230
7	Kilkenny RD	Rural	80.1	1437	52	Tipperary UD	Urban	147.7	232
8	Wexford RD	Rural	80.6	1757	53	Clonmel MB	Urban	151	486
9	Clare RD	Rural	81.3	2008	54	Naas UD	Urban	151.9	327
10	Monaghan RD	Rural	82.4	904	55	Dundalk MB	Urban	152.6	943
11	Cork RD	Rural	82.8	5534	56	Wexford MB	Urban	154.8	456
12	Mayo RD	Rural	84.8	2906	57	Athy UD	Urban	160.8	270
13	Kerry RD	Rural	85.4	2685	58	Tullamore UD	Urban	162.1	369
14	Wicklow RD	Rural	85.8	1342	59	Cashel UD	Urban	163.4	176
15	Dublin - Fingal	Urban	86.5	2113	60	Kilkenny MB	Urban	163.5	434
16	Dublin - Belgard	Urban	87.8	2531	61	Longford UD	Urban	165	155
17	Galway RD	Rural	88.2	3594	62	Killarney UD	Urban	172	490
18	Sligo MB	Urban	89.6	463	63	Kilrush UD	Urban	174.5	187
19	Dun L - Rathdown	Urban	89.7	4440	64	Carrick-on-Suir UD	Urban	180.3	235
20	Donegal RD	Rural	91.5	3434	65	New Ross UD	Urban	180.6	267
21	Longford RD	Rural	93	788	66	Templemore UD	Urban	181.2	116
22	Limerick RD	Rural	93.2	2662	67	Clones UD	Urban	184.1	71
23	Kildare RD	Rural	93.7	1859	68	Birr UD	Urban	186.7	243
24	Cavan RD	Rural	93.7	1532	69	Athlone UD	Urban	186.8	467
25	Roscommon County	Rural	94.2	1828	70	Kinsale UD	Urban	193.6	103
26	Westmeath RD	Rural	94.6	1331	71	Thurles UD	Urban	194.5	458
27	Laois County	Rural	95	1361	72	Midleton UD	Urban	203.9	238
28	Waterford CB	Urban	95.7	970	73	Macroom UD	Urban	208.9	204
29	Waterford RD	Rural	96.6	1220	74	Listowel UD	Urban	209.7	281
30	Wicklow UD	Urban	96.8	136	75	Fermoy UD	Urban	231.6	194
31	Buncrana UD	Urban	101.4	103	76	Nenagh UD	Urban	237.9	378
32	Sligo RD	Rural	102.6	1304	77	Ennis UD	Urban	239	373
33	Youghal UD	Urban	103.2	180	78	Trim UD	Urban	244.4	131
34	Monaghan UD	Urban	106	174	79	Westport UD	Urban	257.1	348
35	Dublin CB	Urban	106.8	14636	80	Carrickmacross UD	Urban	261.1	160
36	Drogheda MB	Urban	108.6	593	81	Skibbereen UD	Urban	271.2	196
37	Leitrim County	Rural	110.1	1091	82	Bundoran UD	Urban	287.2	167
38	Carlow RD	Rural	111.2	814	83	Ballina UD	Urban	287.9	605
39	Dungarvan UD	Urban	113.8	261	84	Enniscorthy UD	Urban	292.3	466
40	Cavan UD	Urban	117.5	100	85	Ballinasloe UD	Urban	293.5	585
41	Cork CB	Urban	118.3	3911	86	Mallow UD	Urban	298.8	528
42	Carlow UD	Urban	123	349	87	Kells UD	Urban	362.9	241
43	Limerick CB	Urban	123.1	1589	88	Navan UD	Urban	407.7	477
44	Arklow UD	Urban	124.8	237					
45	Tralee UD	Urban	126.5	623					

COMMENT: For all cause mortality among the 88 districts in the country, those with the highest SMRs are all medium sized towns. Most of the rural districts in the country have low SMRs. This is combined data for the years 1994-1996 and most of the towns have absolute numbers of deaths in the range of 200-500. One explanation for this urban/rural difference is that it is real and that people who live in towns have higher mortality than people who live in the countryside. However, when one looks at the rural district with the lowest SMR in the country, it is by a considerable margin, Meath, and when one looks at the towns with the highest mortality, the top two, again by considerable margins, are Navan and Kells. It could well be that for some reason residents of Meath are given an urban address when they die. We can see from Table 1.1 that overall Meath has a low SMR (91), the second lowest in the country. Checking of the primary data is necessary to clarify this.

Table 1.6 Standardised mortality ratios (SMRs) and total deaths for ischaemic heart disease (ICD codes 410-414), for 88 rural and urban districts and county boroughs, Ireland 1994-1996

ISCHAEMIC HEART DISEASE					ISCHAEMIC HEART DISEASE continued				
The figures show ranked Bayesian-adjusted age/sex standardised mortality ratios (SMR) and total numbers of deaths for Ischaemic Heart Disease (ICD 410-414) in 1994-96 by urban/rural area. National average SMR is 100.									
Rank			SMR	Deaths	Rank		SMR	Deaths	
1	Dublin-Belgard	Urban	64.1	573	46	Dungarvan UD	Urban	124.7	66
2	Louth RD	Rural	68.8	188	47	Longford UD	Urban	129.4	32
3	Tipperary NR RD	Rural	69.8	222	48	Roscommon County	Rural	130.6	578
4	Dublin-Fingal	Urban	71.8	505	49	Letterkenny UD	Urban	139.4	63
5	Meath RD	Rural	72.2	422	50	Cobh UD	Urban	139.5	58
6	Clare RD	Rural	73.3	431	51	Clonmel MB	Urban	141.9	119
7	Sligo MB	Urban	77.3	85	52	Bray UD	Urban	143.2	178
8	Offaly RD	Rural	78.4	251	53	Killarney UD	Urban	145.5	98
9	Dun L-Rathdown	Urban	80.3	1024	54	Monaghan UD	Urban	147.3	62
10	Wexford RD	Rural	81.1	461	55	Dundalk UD	Urban	147.8	248
11	Wicklow RD	Rural	83.4	343	56	Carrick-on-Suir UD	Urban	152.5	55
12	Galway MB	Urban	83.9	247	57	Tullamore UD	Urban	153.2	87
13	Sligo RD	Rural	86.1	263	58	Kilkenny MB	Urban	155.8	111
14	Westmeath RD	Rural	86.6	316	59	Kinsale UD	Urban	156.7	25
15	Kilkenny RD	Rural	86.8	397	60	Tipperary UD	Urban	157.1	59
16	Mayo RD	Rural	87.5	676	61	Castlebar UD	Urban	159.7	80
17	Tipperary SR RD	Rural	87.9	322	62	Athy UD	Urban	168.1	59
18	Limerick RD	Rural	88.1	627	63	Clones UD	Urban	177.8	19
19	Kildare RD	Rural	88.6	489	64	Middleton UD	Urban	197.8	52
20	Cork RD	Rural	88.7	1493	65	Ennis UD	Urban	205.5	90
21	Waterford CB	Urban	89.5	235	66	Athlone UD	Urban	208.9	131
22	Laois County	Rural	93.5	339	67	Birr UD	Urban	213.9	59
23	Wicklow UD	Urban	95.7	34	68	Nenagh UD	Urban	217.3	92
24	Waterford RD	Rural	99.3	325	69	Kilrush UD	Urban	229.3	50
25	Kerry RD	Rural	100.1	739	70	Thurles UD	Urban	229.7	121
26	Dublin County Borough	Urban	100.7	3496	71	Clonakilty UD	Urban	237.2	56
27	Galway RD	Rural	101.8	955	72	New Ross UD	Urban	238.0	78
28	Drogheda MB	Urban	103.3	153	73	Castleblayney UD	Urban	238.4	44
29	Cavan RD	Rural	103.5	414	74	Listowel UD	Urban	247.4	72
30	Donegal RD	Rural	104.9	885	75	Cashel UD	Urban	247.8	54
31	Buncrana UD	Urban	105.2	23	76	Skibereen UD	Urban	255.6	46
32	Carlow UD	Urban	106.2	80	77	Fermoy UD	Urban	255.7	51
33	Youghal UD	Urban	107.0	44	78	Westport UD	Urban	256.7	84
34	Longford RD	Rural	107.4	218	79	Trim UD	Urban	261.2	39
35	Limerick CB	Urban	107.5	376	80	Ballinasloe UD	Urban	286.8	140
36	Templemore UD	Urban	109.3	17	81	Carrickmacross UD	Urban	295.4	49
37	Cavan UD	Urban	109.3	22	82	Mallow UD	Urban	300.9	141
38	Leitrim County	Rural	110.0	247	83	Bundoran UD	Urban	313.6	47
39	Monaghan RD	Rural	111.1	302	84	Ballina UD	Urban	352.8	164
40	Arklow UD	Urban	111.2	62	85	Macroom UD	Urban	359.3	72
41	Carlow RD	Rural	112.3	218	86	Enniscorthy UD	Urban	364.0	120
42	Cork CB	Urban	114.6	1004	87	Kells UD	Urban	411.8	72
43	Wexford MB	Urban	121.4	93	88	Navan UD	Urban	456.9	134
44	Naas UD	Urban	121.7	74					
45	Tralee UD	Urban	121.9	151					

COMMENT: For ischaemic heart disease, Navan is the highest mortality town in the country followed by Kells. Meath rural district is fifth lowest. There is a similar pattern with most urban districts, representing medium sized towns, having much higher SMRs than rural districts. It could well be that for some reason residents of Meath are given an urban address when they die. Checking of the primary data is necessary to clarify this.

Table 1.7 Standardised mortality ratios (SMRs) and total deaths for neoplasms (ICD codes 140-239), for 88 rural and urban districts and county boroughs, Ireland 1994-1996

NEOPLASMS					NEOPLASMS continued				
The figures show ranked Bayesian-adjusted age/sex standardised mortality ratios (SMR) and total numbers of deaths for Neoplasms (ICD140-239) in 1994-96 by urban/rural area. National average SMR is 100.									
Rank			SMR	Deaths	Rank		SMR	Deaths	
1	Meath RD	Rural	62.6	338	46	Limerick CB	Urban	132.8	415
2	Louth RD	Rural	66.1	165	47	Dungarvan UD	Urban	133.3	70
3	Offaly RD	Rural	68.2	197	48	Cork CB	Urban	136.4	1082
4	Clare RD	Rural	68.7	394	49	Clonmel MB	Urban	140.6	109
5	Tipperary NR RD	Rural	68.9	203	50	Castlebar UD	Urban	143.0	83
6	Kerry RD	Rural	71.0	517	51	Clones UD	Urban	146.3	14
7	Tipperary SR RD	Rural	71.0	240	52	Dundalk UD	Urban	147.6	222
8	Kilkenny RD	Rural	73.3	311	53	Templemore UD	Urban	148.3	23
9	Monaghan RD	Rural	77.0	198	54	Cobh UD	Urban	150.2	57
10	Cork RD	Rural	77.2	1220	55	Castleblayney UD	Urban	154.8	33
11	Wexford RD	Rural	79.4	413	56	Kilkenny MB	Urban	156.9	102
12	Galway RD	Rural	80.7	752	57	Athlone UD	Urban	159.9	95
13	Wicklow RD	Rural	81.6	307	58	Longford UD	Urban	160.4	38
14	Roscommon County	Rural	81.6	362	59	Carrick-on-Suir UD	Urban	160.7	52
15	Galway MB	Urban	82.4	227	60	Tipperary UD	Urban	164.0	60
16	Longford RD	Rural	83.1	163	61	Naas UD	Urban	165.8	90
17	Mayo RD	Rural	83.7	654	62	Carrickmacross UD	Urban	166.9	25
18	Youghal UD	Urban	85.6	32	63	Kilrush UD	Urban	168.3	39
19	Limerick RD	Rural	87.5	587	64	Tullamore UD	Urban	170.5	92
20	Arklow UD	Urban	89.2	42	65	Wexford MB	Urban	175.2	125
21	Donegal RD	Rural	89.4	761	66	Killarney UD	Urban	175.6	117
22	Waterford CB	Urban	89.9	215	67	Cashel UD	Urban	176.5	42
23	Westmeath RD	Rural	90.2	303	68	Birr UD	Urban	179.7	53
24	Sligo MB	Urban	92.4	105	69	New Ross UD	Urban	181.4	60
25	Sligo RD	Rural	92.8	277	70	Thurles UD	Urban	195.7	104
26	Dublin-Fingal	Urban	93.8	569	71	Skibereen UD	Urban	201.4	35
27	Kildare RD	Rural	94.7	459	72	Trim UD	Urban	203.2	28
28	Dublin-Belgard	Urban	95.5	709	73	Listowel UD	Urban	203.9	61
29	Waterford RD	Rural	97.8	298	74	Westport UD	Urban	207.4	66
30	Monaghan UD	Urban	98.4	37	75	Macroom UD	Urban	211.3	46
31	Cavan RD	Rural	98.9	380	76	Kinsale UD	Urban	216.4	31
32	Laos County	Rural	99.0	339	77	Ennis UD	Urban	216.5	86
33	Leitrim County	Rural	100.2	226	78	Athy UD	Urban	218.1	81
34	Carlow RD	Rural	100.4	178	79	Nenagh UD	Urban	221.3	87
35	Dun L-Rathdown	Urban	101.0	1186	80	Middleton UD	Urban	222.2	60
36	Wicklow UD	Urban	101.6	33	81	Fermoy UD	Urban	240.9	48
37	Cavan UD	Urban	103.0	19	82	Mallow UD	Urban	253.7	109
38	Drogheda MB	Urban	118.0	156	83	Ballina UD	Urban	258.1	120
39	Dublin County Borough	Urban	119.2	3845	84	Bundoran UD	Urban	265.9	40
40	Letterkenny UD	Urban	122.8	51	85	Enniscorthy UD	Urban	270.6	94
41	Buncrana UD	Urban	122.9	28	86	Ballinasloe UD	Urban	289.9	138
42	Bray UD	Urban	124.2	152	87	Kells UD	Urban	337.9	56
43	Tralee UD	Urban	124.7	145	88	Navan UD	Urban	391.0	110
44	Carlow UD	Urban	125.7	86					
45	Clonakilty UD	Urban	130.7	36					

Sig. Low

Non Sig.

Sig. High

COMMENT: Of the 88 districts in the country, the highest 20 in terms of mortality from neoplasms are all medium sized towns. The lowest 13 are all rural districts. The county with the lowest standardised mortality ratio, by a considerable distance, is Meath while the 2 towns with the highest standardised mortality ratios, again by a considerable distance, are Navan and Kells. It would be necessary to check in all counties, but in particular in Meath, whether, on death, persons who would have actually resided in a rural district, are ascribed to an urban district when mortality statistics are being compiled.

Table 1.8 Standardised mortality ratios (SMRs) and total deaths for injuries and poisonings (ICD codes 800-999), for 88 rural and urban districts and county boroughs, Ireland 1994-1996

INJURIES AND POISONINGS					INJURIES AND POISONINGS continued				
The figures show ranked Bayesian-adjusted age/sex standardised mortality ratios (SMR) and total numbers of deaths for Injuries and Poisonings (ICD 800+) in 1994-96 by urban/rural area. National average SMR is 100.									
Rank			SMR	Deaths	Rank		SMR	Deaths	
1	Tipperary NR RD	Rural	61.2	29	46	Buncrana UD	Urban	124.1	5
2	Dublin-Belgard	Urban	62.1	134	47	Dungarvan UD	Urban	124.2	11
3	Dun L-Rathdown	Urban	66.6	149	48	Letterkenny UD	Urban	126.5	11
4	Dublin-Fingal	Urban	70.2	117	49	Naas UD	Urban	126.9	19
5	Galway MB	Urban	79.8	51	50	Birr UD	Urban	130.9	6
6	Limerick RD	Rural	80.1	105	51	Leitrim County	Rural	134.2	45
7	Wexford RD	Rural	81.0	79	52	Youghal UD	Urban	140.2	10
8	Waterford CB	Urban	83.4	40	53	Tullamore UD	Urban	141.1	15
9	Mayo RD	Rural	83.5	97	54	Carrick-on-Suir UD	Urban	142.1	9
10	Wicklow RD	Rural	84.3	64	55	Carlow RD	Rural	146.6	51
11	Tipperary SR RD	Rural	85.4	51	56	Tralee UD	Urban	147.9	34
12	Sligo MB	Urban	85.8	17	57	Carlow UD	Urban	151.7	22
13	Meath RD	Rural	86.9	97	58	Monaghan UD	Urban	155.0	11
14	Arklow UD	Urban	87.4	7	59	Nenagh UD	Urban	157.1	11
15	Kildare RD	Rural	87.7	108	60	Castlebar UD	Urban	161.3	15
16	Roscommon County	Rural	89.6	59	61	Dundalk UD	Urban	163.9	49
17	Kilkenny RD	Rural	89.7	69	62	Middleton UD	Urban	166.5	8
18	Cork RD	Rural	89.7	270	63	Clonmel MB	Urban	168.2	24
19	Westmeath RD	Rural	92.9	58	64	Cashel UD	Urban	173.1	7
20	Tipperary UD	Urban	93.5	4	65	Trim UD	Urban	173.5	5
21	Donegal RD	Rural	94.3	134	66	Longford UD	Urban	176.4	9
22	Kerry RD	Rural	95.7	113	67	Clones UD	Urban	177.7	4
23	Wicklow UD	Urban	97.0	6	68	Macroom UD	Urban	190.3	8
24	Monaghan RD	Rural	97.9	46	69	Cobh UD	Urban	192.4	16
25	Dublin County Borough	Urban	98.4	594	70	Thurles UD	Urban	200.3	19
26	Drogheda MB	Urban	99.3	26	71	Killarney UD	Urban	203.1	23
27	Clare RD	Rural	100.6	102	72	Castleblayney UD	Urban	208.3	8
28	Sligo RD	Rural	101.5	47	73	Ennis UD	Urban	208.9	17
29	Templemore UD	Urban	102.1	2	74	Kilrush UD	Urban	225.1	10
30	Louth RD	Rural	102.2	49	75	Skibereen UD	Urban	231.2	8
31	Clonakilty UD	Urban	102.4	3	76	Mallow UD	Urban	234.2	20
32	Offaly RD	Rural	102.7	54	77	Fermoy UD	Urban	245.9	10
33	Laois County	Rural	105.7	65	78	Athy UD	Urban	247.2	17
34	Listowel UD	Urban	107.8	4	79	Carrickmacross UD	Urban	261.5	9
35	Bray UD	Urban	110.7	24	80	Westport UD	Urban	287.3	18
36	Cork CB	Urban	112.0	172	81	Bundoran UD	Urban	292.9	9
37	Kinsale UD	Urban	112.5	2	82	New Ross UD	Urban	304.6	22
38	Waterford RD	Rural	113.6	60	83	Athlone UD	Urban	338.0	36
39	Cavan RD	Rural	115.1	70	84	Ballina UD	Urban	345.7	33
40	Cavan UD	Urban	116.7	4	85	Ballinasloe UD	Urban	348.6	29
41	Wexford MB	Urban	117.3	14	86	Kells UD	Urban	371.6	14
42	Galway RD	Rural	118.1	183	87	Enniscorthy UD	Urban	415.0	24
43	Longford RD	Rural	120.9	39	88	Navan UD	Urban	485.2	27
44	Kilkenny MB	Urban	122.4	13					
45	Limerick CB	Urban	123.5	75					

COMMENT: The pattern for injuries and poisonings is not the same as for the natural causes examined. While medium sized towns are at the top end of the SMR table, with Navan again having the highest SMR in the country, 3 of the lowest 4 places are occupied by Dublin districts, which is consistent with the fact that when comparing all counties (Table 1.4) Dublin has the lowest injuries and poisonings mortality in the country. Checking of the primary data is necessary to clarify if the high SMR for Navan is due to coding errors.



CHAPTER TWO

Section 2 - Results from Perinatal Reporting System

PERINATAL REPORTING SYSTEM

This system comprises a notification of birth form filled out by all maternity hospitals on the birth of each baby, collecting information on the mother, the pregnancy and the infant. These data form the Perinatal Reporting System database.

From the perinatal reporting system the outcome measures which are analysed are perinatal mortality and low birth weight. This has been done for all counties and for socio-economic groups. Indirectly standardised rates have been calculated. There are increasing difficulties in using the father's occupation as the marker of socio-economic group for the infant, particularly with the rising proportion of births to single mothers and births to mothers with their own jobs and careers. The rising trend in births to mothers under the age of 18 and the county distribution of this phenomenon are also presented.

The best predictor of outcome in perinatal epidemiology is birth weight. In this report, low birth weight is defined as birth weight less than 2.5 kilogrammes. International research has shown that on an aggregate level, babies born with low birth weight have poorer health outcomes in the long term than babies of normal weight. Perinatal mortality is an internationally accepted measure of the quality of maternity services.

Figure 2.1 Standardised perinatal mortality ratios and 95% confidence intervals by socio-economic group, Ireland 1990-1993

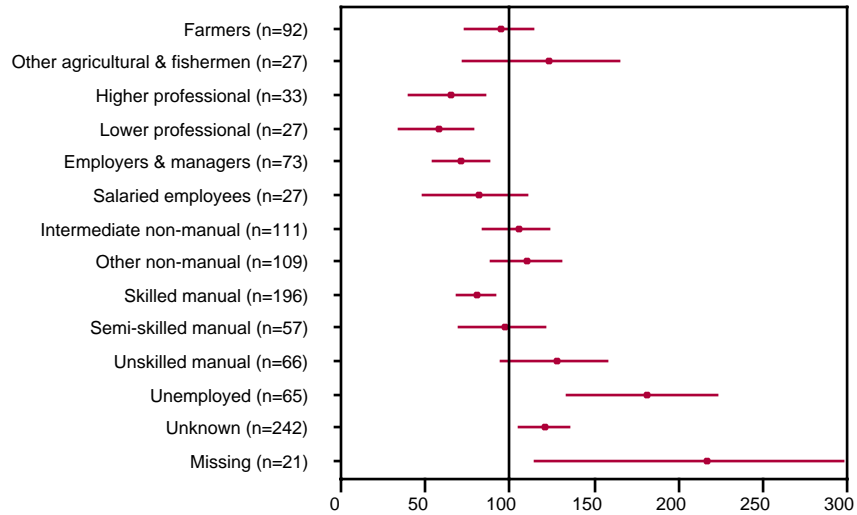
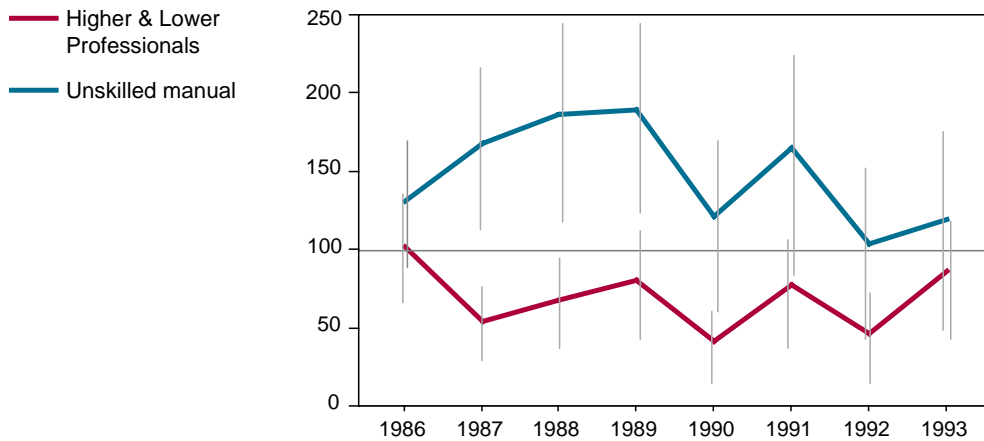
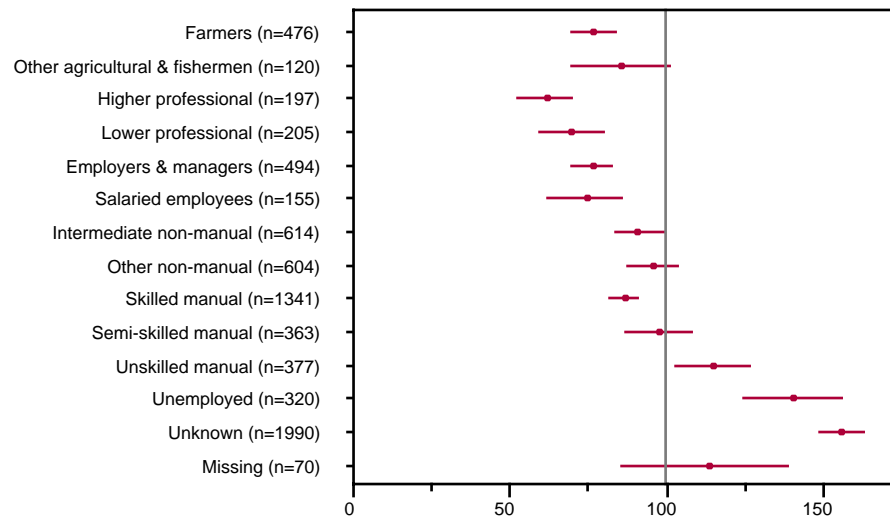


Figure 2.2 Standardised perinatal mortality ratios and 95% confidence intervals for unskilled manual and professional (higher + lower) socio-economic groups, Ireland 1986-1993



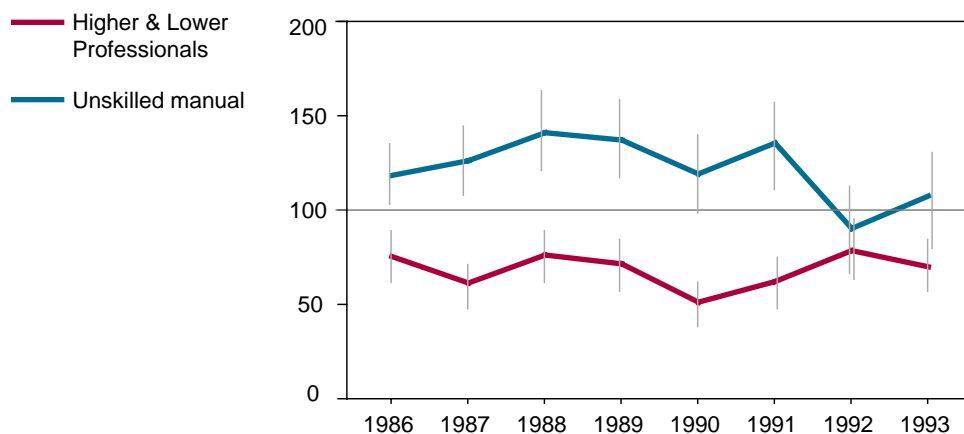
COMMENT: Professional and salaried persons have lower standardised mortality ratios for perinatal mortality, and the highest is in the unemployed category followed by the unskilled manual. There is some evidence of a convergence from 1986-1993 when the SMRs of the unskilled manual were compared to the combined professional. The high SMR in the unemployed, unknown and miscellaneous groups would need to be examined further to determine whether this would account for the drop in the SMR in the unskilled manual category in the early 1990s.

Figure 2.3 Standardised low birth weight ratios and 95% confidence intervals by socio-economic group, Ireland 1990-1993



COMMENT: The unknown category has the highest SMR for low birth weight and the various professional groups and managerial categories together with farmers, have the lowest SMRs. Apart from the unknowns, the unemployed and unskilled manual categories are the only other two categories with SMRs statistically significantly above the national average.

Figure 2.4 Standardised low birth weight ratios and 95% confidence intervals for unskilled manual and professional (higher + lower) socio-economic groups, Ireland 1986-1993



COMMENT: Over the time interval 1986-1993 the SMRs for the combined professional groups was in the range of 50-80, whereas the SMR range for the unskilled manual group was, between 1986 and 1991 within the range of 115-140; within the last 2 years of the time period examined, it had just tipped below 100 in 1992 and had just risen again above 100 in 1993. This phenomenon could be explained by a transfer from those who might be in the unskilled manual group into the unknown group.

Table 2.1 Standardised perinatal mortality ratios (SPMRs) and perinatal deaths by county, Ireland 1986-1993

PERINATAL MORTALITY			
The figures show ranked age standardised perinatal mortality ratios (SPMR) and total numbers of perinatal deaths between 1986 and 1993. National average SPMR is 100.			
Rank		SPMR	Deaths
1	Galway	68	91
2	Leitrim	85	15
3	Limerick	89	112
4	Cork	91	273
5	Meath	95	80
6	Clare	96	64
7	Kildare	96	102
8	Dublin	97	752
9	Kilkenny	97	53
10	Sligo	100	40
11	Tipperary	100	95
12	Waterford	100	65
13	Mayo	102	80
14	Donegal	104	103
15	Louth	104	69
16	Roscommon	104	35
17	Monaghan	106	39
18	Westmeath	108	52
19	Laois	109	42
20	Offaly	112	48
21	Longford	115	26
22	Cavan	118	48
23	Carlow	125	44
24	Wicklow	126	102
25	Kerry	127	104
26	Wexford	145	118

Sig. Low
Non Sig.
Sig. High

COMMENT: Only one county, Galway, is significantly below the national average with three counties, Wicklow, Kerry and Wexford significantly above.

Table 2.2 Standardised low birth weight ratios (SLBWRs) and number of low birth weight births, by county, Ireland 1986-1993

LOW BIRTH WEIGHT (LBW)			
The figures show ranked age standardised ratio of LBW (SLBWR) and total numbers of low birth weight births in 1991 and 1996. National average SMR is 100.			
Rank		SLBWR	No.
1	Monaghan	78	165
2	Donegal	83	478
3	Mayo	83	371
4	Kilkenny	89	281
5	Meath	89	433
6	Kildare	91	563
7	Cavan	92	217
8	Kerry	92	437
9	Leitrim	93	95
10	Carlow	94	190
11	Longford	94	122
12	Wicklow	94	440
13	Roscommon	95	183
14	Galway	96	748
15	Laois	96	213
16	Limerick	96	701
17	Cork	98	1706
18	Sligo	98	226
19	Westmeath	98	273
20	Tipperary	100	550
21	Waterford	100	377
22	Clare	101	387
23	Offaly	102	251
24	Wexford	104	491
25	Louth	109	417
26	Dublin	112	5044

Sig. Low
Non Sig.
Sig. High

COMMENT: Six counties; Monaghan, Donegal, Mayo, Kilkenny, Meath and Kildare are significantly below the national average in terms of standardised ratios of low birth weight and one county, Dublin, is significantly above

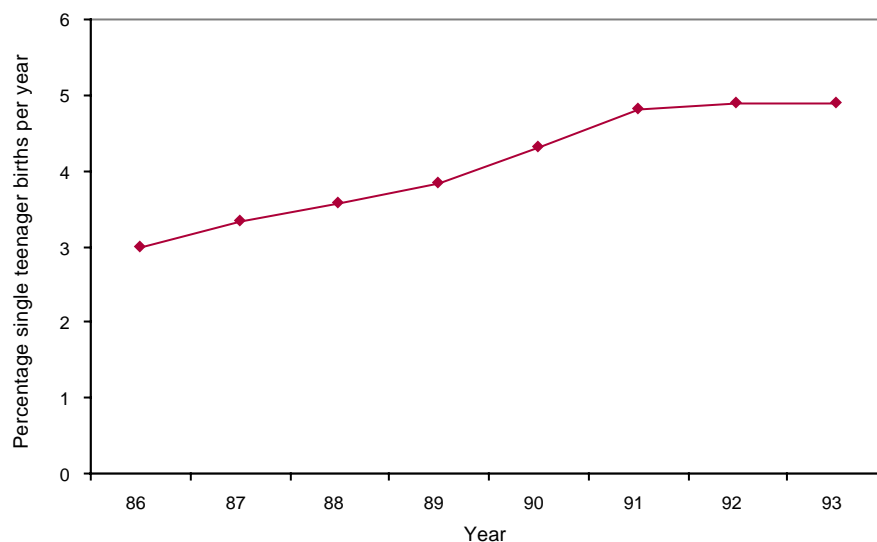
Table 2.3 Age standardised incidence (ASI) of births to single teenagers aged 15-17 by county, 1986-1993

COMMENT: There is a marked geographic variation in the standardised ratio of single teenage births with the counties of the western seaboard having much lower incidence than the counties of the eastern half of the country.

BIRTHS TO SINGLE TEENAGERS AGED 15-17			
The figures show ranked age standardised incidence (ASI) of birth rates and total numbers of births among single girls aged 15, 16 and 17 between 1986-1993 by county. National average ASI is 100.			
Rank		ASI	Births
1	Leitrim	6	2
2	Roscommon	24	18
3	Mayo	43	72
4	Monaghan	50	37
5	Kerry	51	91
6	Galway	54	146
7	Sligo	58	46
8	Clare	65	90
9	Kilkenny	66	73
10	Cavan	69	52
11	Cork	71	420
12	Offaly	76	72
13	Laois	77	58
14	Tipperary	78	160
15	Westmeath	82	81
16	Longford	82	36
17	Donegal	90	173
18	Waterford	97	133
19	Kildare	113	214
20	Wicklow	114	167
21	Louth	117	162
22	Limerick	119	296
23	Wexford	124	186
24	Meath	130	217
25	Dublin	146	2039
26	Carlow	153	92

Sig. Low
Non Sig.
Sig. High

Figure 2.5 Percentage of births to single teenagers aged 15-17 as a proportion of all births by year, 1986-1993



COMMENT: There was a gradual increase in the percentage of births to single teenagers between 1986 and 1991 in each of the years under investigation.



CHAPTER TWO

Section 3 - Results from National Psychiatric
InPatient Reporting System

NATIONAL PSYCHIATRIC INPATIENT REPORTING SYSTEM

This system records information on discharges for all in-patient psychiatric admissions in the country through all public hospitals and some private hospitals. It gathers information by principal psychiatric diagnosis.

Data from the National Psychiatric InPatient Reporting System in 1991 and 1996 were examined. All first admission data were analysed and this is used as a proxy for incidence of severe mental illness. All acute admissions were examined and data are presented for four subsets of this; schizophrenia, depressive disorders, alcoholic disorders and personality disorder. In all psychiatric conditions there is an increasing socio-economic gradient in incidence from professional to unskilled manual. However, the gradient is not as steep as with mortality or perinatal events and indeed employers generally have the lowest SMRs for psychiatric illness. What is more marked in the psychiatric database is that the proportion where the socio-economic status is unknown is greater than with the other datasets and the SDRs for psychiatric conditions for socio-economic group 'unknown' are very high.

In all psychiatric conditions there is an increasing socio-economic gradient in incidence from professional to unskilled manual.

Figure 3.1 Standardised discharge ratios and 95% confidence intervals for all 1st psychiatric admissions (males 15-64 years) by socio-economic group, Ireland 1996

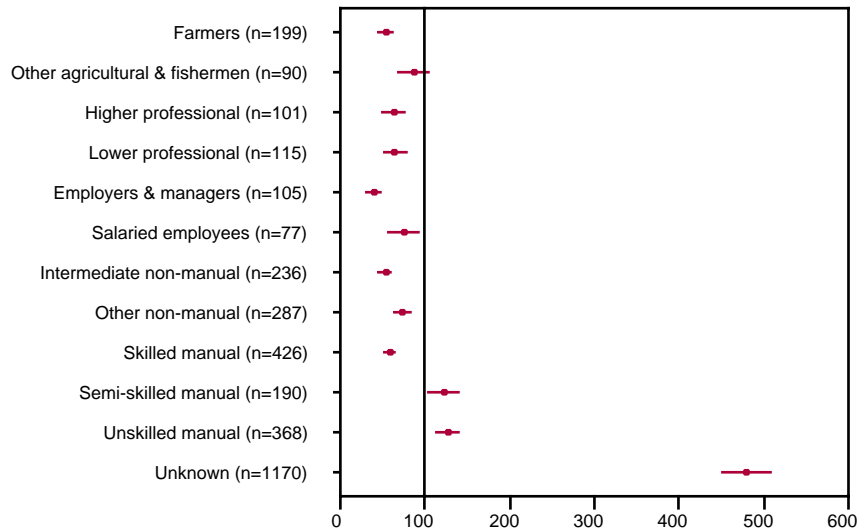
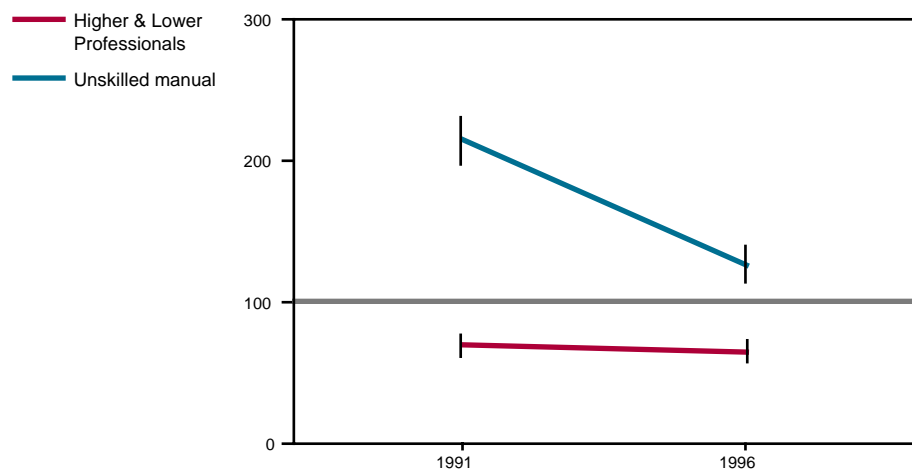


Figure 3.2 Standardised discharge ratios and 95% confidence intervals for all 1st psychiatric admissions (males 15-64 years) for unskilled manual and professional (higher + lower) socio-economic groups, Ireland 1991 and 1996



COMMENT: Discharge ratios for all psychiatric conditions among males are statistically below average for professional groups and above average for unskilled manual in 1996. The category with the greatest number in it is the 'unknown' and the standardised discharge ratio for these is almost 500. The drop in the standardised ratio for the unskilled manual between 1991 and 1996 could be explained by the increase in 'unknowns', together with the very high standardised ratio for the unknowns.

Figure 3.3 Standardised discharge ratios and 95% confidence intervals for schizophrenia 1st admissions (males 15-64 years) by socio-economic group, Ireland 1996

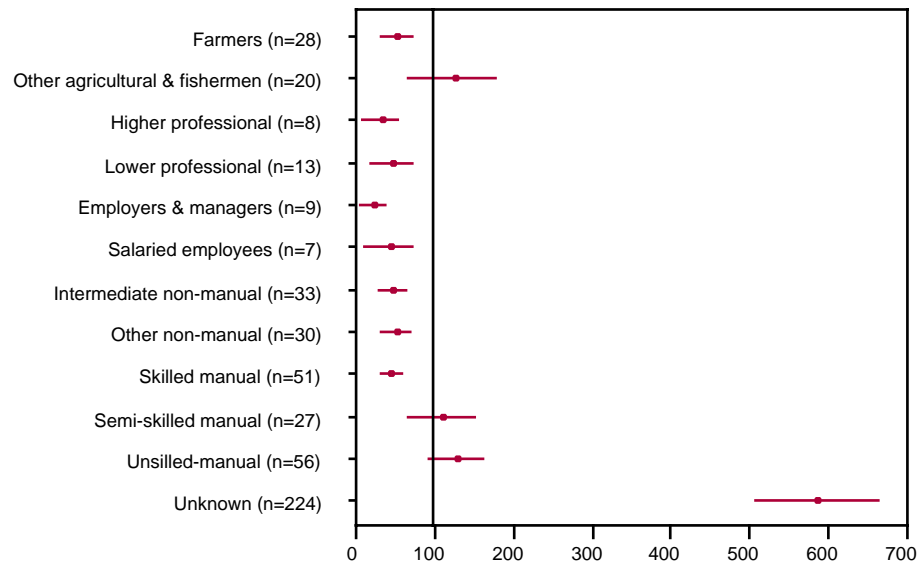
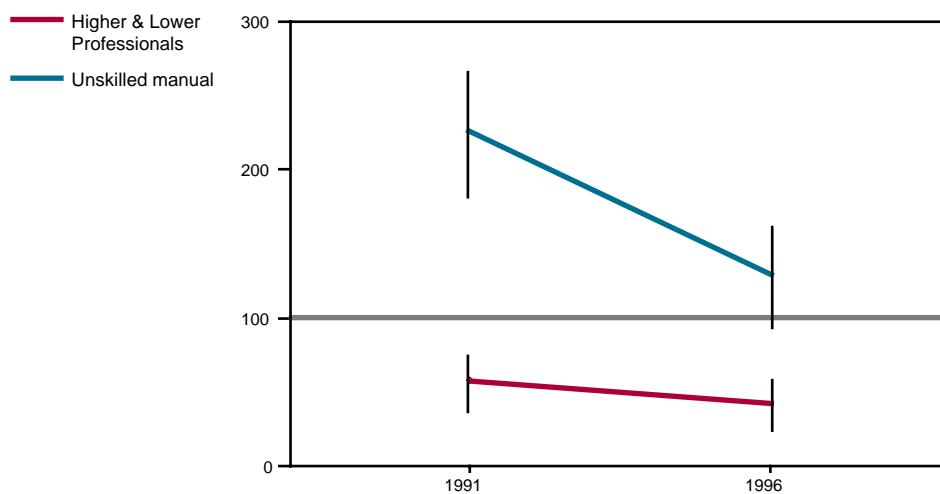


Figure 3.4 Standardised discharge ratios and 95% confidence intervals for schizophrenia 1st admissions (males 15-64 years) for unskilled manual and professional (higher + lower) socio-economic groups, Ireland 1991 and 1996



COMMENT: The professional groups are statistically below the average for schizophrenia and no group is above the average apart from the unknowns where the standardised rate is almost 600 i.e. 6 times higher than average. Almost half of all discharges had an unknown socio-economic category. The drop in the standardised ratio for the unskilled manual between 1991 and 1996 could be explained by the increase in 'unknowns', together with the very high standardised ratio for the unknowns.

Figure 3.5 Standardised discharge ratios and 95% confidence intervals for **depressive disorders** 1st admissions (males 15-64 years) by socio-economic group, Ireland 1996

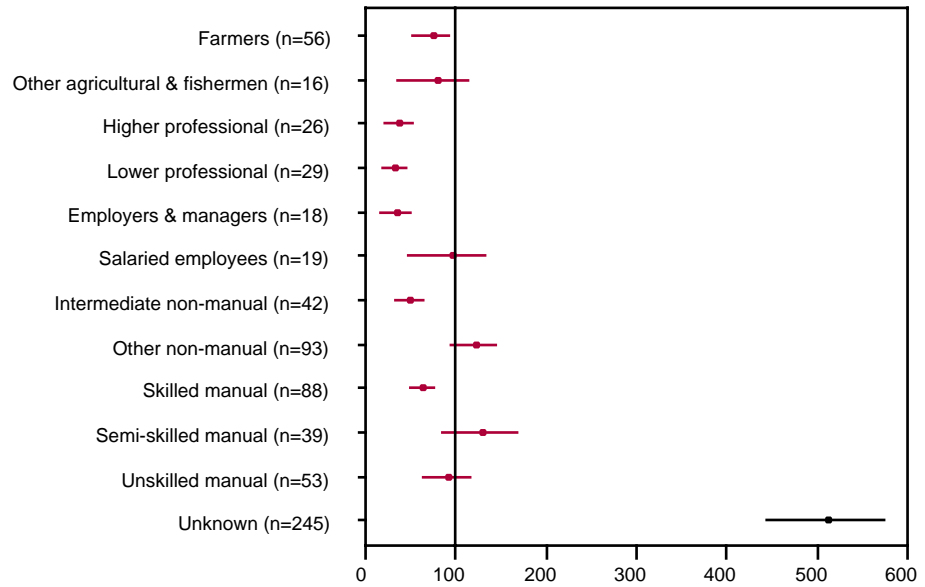
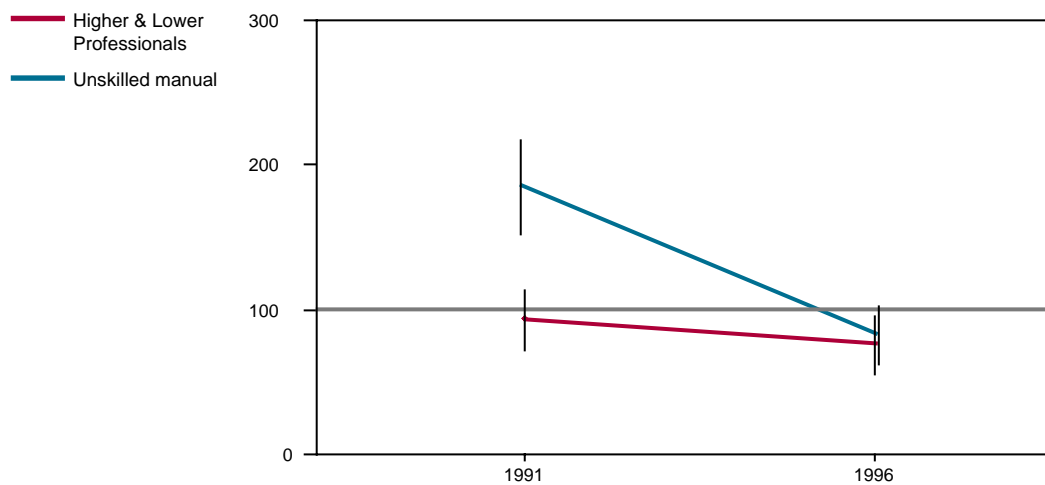


Figure 3.6 Standardised discharge ratios and 95% confidence intervals for **depressive disorders** 1st admissions (males 15-64 years) for unskilled manual and professional (higher + lower) socio-economic groups, Ireland 1991 and 1996



COMMENT: The standardised discharge ratio for depressed males with unknown socio-economic categorisation was over 500 in 1996. The drop in the standardised ratio for the unskilled manual between 1991 and 1996 could be explained by the increase in 'unknowns', together with the very high standardised ratio for the unknowns.

Figure 3.7 Standardised discharge ratios and 95% confidence intervals for **alcoholic disorders** 1st admissions (males 15-64 years) by socio-economic group, Ireland 1996

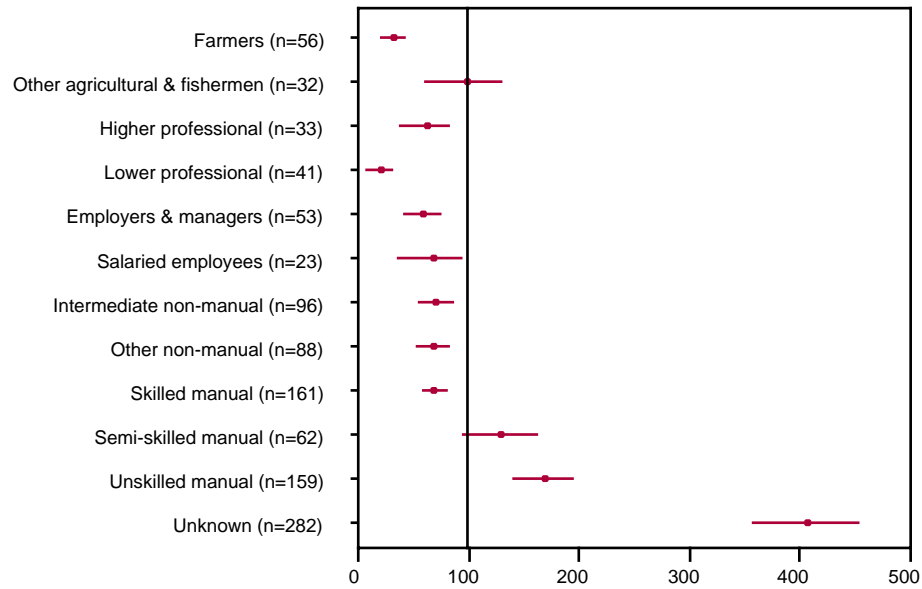
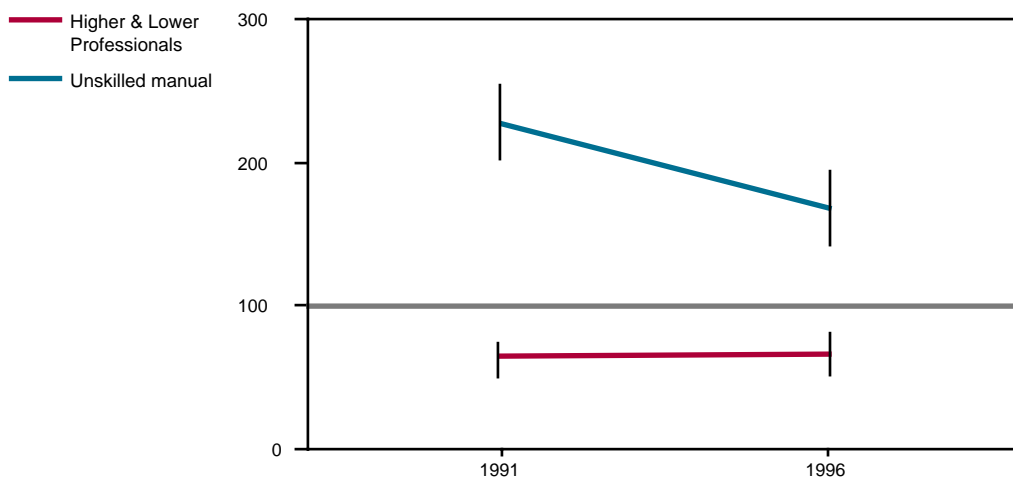


Figure 3.8 Standardised discharge ratios and 95% confidence intervals for **alcoholic disorders** 1st admissions (males 15-64 years) for unskilled manual and professional (higher + lower) socio-economic groups, Ireland 1991 and 1996



COMMENT: The unskilled manual group is the only socio-economic group with a discharge ratio significantly statistically greater than 100 apart from the unknown category where it is over 400. The standardised ratio for the professional groups is almost unchanged between 1991 and 1996. The drop in the standardised ratio for the unskilled manual between 1991 and 1996 could be explained by the increase in 'unknowns', together with the very high standardised ratio for the unknowns.

Figure 3.9 Standardised discharge ratios and 95% confidence intervals for **personality disorders** 1st admissions (males 15-64 years) by socio-economic group, Ireland 1996

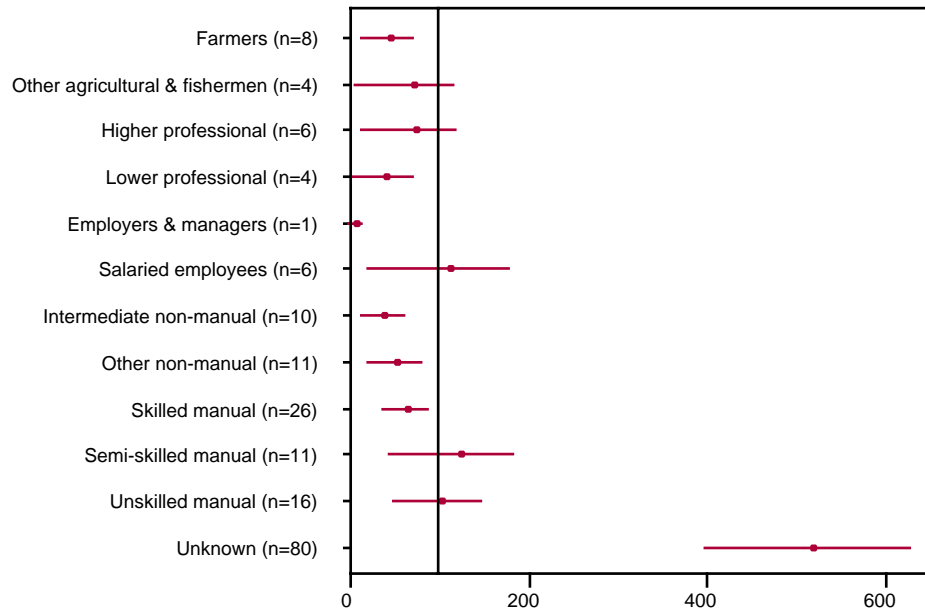
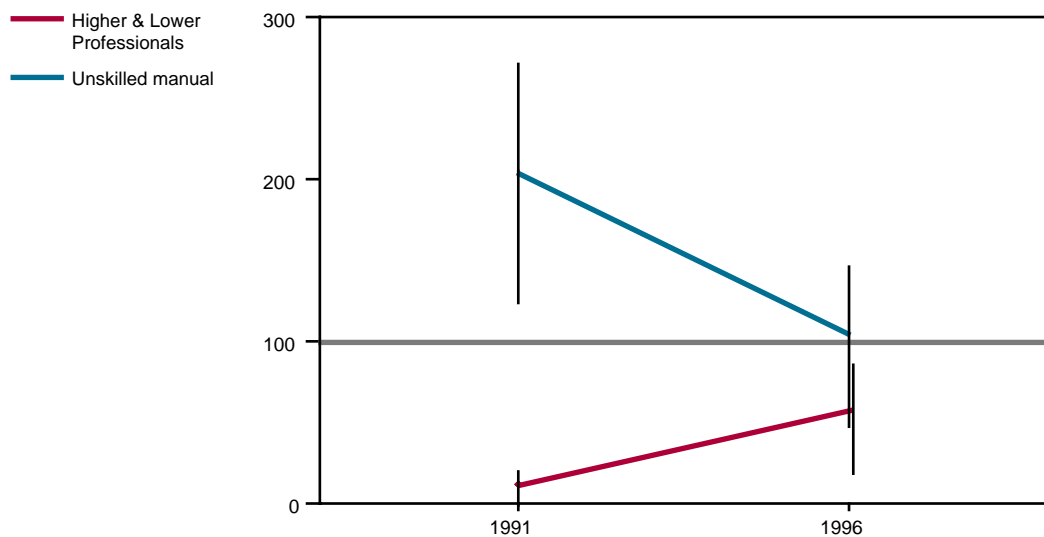


Figure 3.10 Standardised discharge ratios and 95% confidence intervals for **personality disorders** 1st admissions (males 15-64 years) for unskilled manual and professional (higher + lower) socio-economic groups, Ireland 1991 and 1996



COMMENT: Numbers with a diagnosis of personality disorder are small. The highest discharge ratio is in the unknown category where it is just over 500. Almost 60% of all discharges for this diagnosis have 'unknown' socio-economic categorisation. The drop in the standardised ratio for the unskilled manual between 1991 and 1996 could be explained by the increase in 'unknowns', together with the very high standardised ratio for the unknowns.

Table 3.1 Standardised discharge ratios (SDRs) and total discharges for all 1st psychiatric admissions (male and female) by county, Ireland 1991 and 1996 combined

ALL PSYCHIATRIC CONDITIONS			
The figures show ranked age/sex standardised discharge ratios (SDR) for all 1st psychiatric admissions (male and female) and total numbers of discharges in 1991 and 1996. National average SDR is 100.			
Rank		SDR	Discharges
1	Mayo	46	198
2	Monaghan	62	121
3	Laois	70	142
4	Kildare	76	388
5	Offaly	80	179
6	Meath	84	348
7	Leitrim	85	84
8	Wexford	86	343
9	Cork	87	1432
10	Kilkenny	87	253
11	Sligo	92	201
12	Wicklow	96	377
13	Kerry	97	477
14	Carlow	104	165
15	Clare	104	376
16	Donegal	106	520
17	Limerick	106	680
18	Louth	107	379
19	Dublin	107	4497
20	Longford	108	124
21	Waterford	110	403
22	Galway	119	870
23	Cavan	119	242
24	Westmeath	120	290
25	Roscommon	134	271
26	Tipperary	142	733

Sig. Low
Non Sig.
Sig. High

COMMENT: There is no discernible geographic pattern for discharges for all psychiatric conditions. The county with the highest discharge ratio is Tipperary and the county with the lowest is Mayo.

Table 3.2 Standardised discharge ratios (SDRs) and total discharges for all 1st admissions for **schizophrenia** (male and female) by county, Ireland 1991 and 1996 combined

SCHIZOPHRENIA			
The figures show ranked age/sex standardised discharge ratios (SDR) of patients with schizophrenia (male and female) and total numbers of discharges in 1991 and 1996. National average SDR is 100.			
Rank		SDR	Discharges
1	Mayo	31	18
2	Laois	46	13
3	Carlow	62	14
4	Offaly	63	20
5	Louth	64	32
6	Wicklow	72	40
7	Cork	76	178
8	Meath	79	46
9	Westmeath	79	27
10	Monaghan	81	22
11	Donegal	82	56
12	Wexford	84	47
13	Waterford	88	46
14	Kildare	98	72
15	Kilkenny	99	40
16	Roscommon	102	28
17	Kerry	104	71
18	Galway	107	111
19	Limerick	108	99
20	Dublin	118	720
21	Tipperary	118	85
22	Longford	126	20
23	Clare	131	66
24	Sligo	172	52
25	Cavan	179	50
26	Leitrim	195	26

Sig. Low

Non Sig.

Sig. High

COMMENT: Only four counties have a standardised discharge ratio statistically greater than average; Leitrim, Cavan, Sligo and Dublin. Counties with a discharge ratio statistically less than average are Mayo, Laois, Carlow, Offaly, Louth, Wicklow and Cork.

Table 3.3 Standardised discharge ratios (SDRs) and total discharges for all 1st admissions for **depressive disorders** (male and female) by county, Ireland 1991 and 1996 combined

DEPRESSION			
The figures show ranked age/sex standardised discharge ratios (SDR) of patients with depression (male and female) and total numbers of discharges in 1991 and 1996. National average SDR is 100.			
Rank		SDR	Discharges
1	Leitrim	47	14
2	Mayo	51	66
3	Laois	69	41
4	Monaghan	75	43
5	Kildare	78	114
6	Kilkenny	79	67
7	Wexford	84	99
8	Kerry	86	125
9	Donegal	86	126
10	Clare	87	92
11	Offaly	91	60
12	Sligo	91	59
13	Meath	95	114
14	Dublin	96	1178
15	Wicklow	97	112
16	Longford	100	34
17	Cavan	104	62
18	Limerick	109	203
19	Louth	109	113
20	Carlow	110	51
21	Westmeath	111	79
22	Galway	113	243
23	Waterford	115	124
24	Cork	116	559
25	Roscommon	147	89
26	Tipperary	175	265

Sig. Low

Non Sig.

Sig. High

COMMENT: There is no discernible county pattern. The two counties with the lowest discharge ratios are Mayo and Leitrim and two with the highest ratios are Tipperary and Roscommon.

Table 3.4 Standardised discharge ratios (SDRs) and total discharges for all 1st admissions for **alcoholic disorders** (male and female) by county, Ireland 1991 and 1996 combined

ALCOHOLIC DISORDERS			
The figures show ranked age/sex standardised discharge ratios (SDR) of patients with alcoholic disorders (male and female) and total numbers of discharges in 1991 and 1996. National average SDR is 100.			
Rank		SDR	Discharges
1	Monaghan	48	24
2	Mayo	51	55
3	Kildare	68	93
4	Laois	68	36
5	Cork	69	291
6	Meath	82	90
7	Cavan	84	44
8	Clare	89	84
9	Offaly	90	52
10	Wexford	92	95
11	Limerick	94	155
12	Dublin	97	1032
13	Wicklow	98	101
14	Sligo	98	54
15	Kilkenny	103	78
16	Waterford	111	105
17	Kerry	112	142
18	Carlow	114	47
19	Louth	115	105
20	Leitrim	119	30
21	Longford	141	42
22	Galway	144	267
23	Tipperary	149	198
24	Roscommon	158	82
25	Westmeath	163	101
26	Donegal	174	216

Sig. Low
Non Sig.
Sig. High

COMMENT: Monaghan has the lowest ratio and Donegal has the highest.

Table 3.5 Standardised discharge ratios (SDRs) and total discharges for all 1st admissions for **personality disorders** (male and female) by county, Ireland 1991 and 1996 combined

PERSONALITY DISORDERS			
The figures show ranked age/sex standardised discharge ratios (SDR) of patients with personality disorders (male and female) and total numbers of discharges in 1991 and 1996. National average SDR is 100.			
Rank		SDR	Discharges
1	Sligo	19	3
2	Leitrim	28	2
3	Laois	29	4
4	Mayo	31	10
5	Offaly	33	5
6	Cork	35	41
7	Clare	35	9
8	Donegal	37	14
9	Meath	46	13
10	Monaghan	49	7
11	Kerry	51	18
12	Kildare	59	20
13	Kilkenny	60	12
14	Roscommon	60	9
15	Cavan	70	10
16	Wexford	74	21
17	Waterford	80	21
18	Limerick	80	37
19	Carlow	82	9
20	Wicklow	89	25
21	Dublin	89	266
22	Galway	92	49
23	Tipperary	100	37
24	Westmeath	107	18
25	Longford	109	9
26	Louth	135	33

Sig. Low
Non Sig.
Sig. High

COMMENT: The numbers of discharges with personality disorder for most counties is quite small. The lowest ratio is in Sligo and the highest is in Louth



CHAPTER TWO

Section 4 - Results from Hospital In-Patient Enquiry

HOSPITAL IN-PATIENT ENQUIRY (HIPE)

The Hospital In-patient Enquiry scheme records details on deaths and discharges for all the acute public hospitals in the country. Information is collected on principal diagnoses and principal procedures performed. It is the largest volume morbidity database in Ireland but it does not collect information on socio-economic group.

The interpretation of the HIPE data is more difficult than the interpretation of the mortality, perinatal or psychiatric data because it is more difficult to use HIPE as a proxy for incidence of illness. It is also more difficult to use HIPE for commenting on inequalities because socio-economic group is not collected in HIPE. GMS status is collected but we decided that, as entry criteria are discretionary where a person has an illness, interpretation would be compromised. The unit of analysis which we have chosen is the county and five tables are presented showing discharge and procedure data for ischaemic heart disease and discharge data for neoplasms and injuries and poisonings.

Of all the databases we examined, HIPE is the most difficult to interpret and it contributes least to the demonstration of inequalities. Private hospitals do not contribute to HIPE data.

Table 4.1 Standardised discharge ratios for ischaemic heart disease (ICD codes 410-414) by county, Ireland 1997.

ISCHAEMIC HEART DISEASE			
The figures show ranked age/sex standardised discharge ratios (SDR) and total numbers of cases for Ischaemic Heart Disease (ICD 410 - 414) in 1997 by county. National average SDR is 100.			
Rank		SDR	Discharges
1	Kerry	55	714
2	Mayo	73	886
3	Wicklow	74	617
4	Kilkenny	79	551
5	Galway	80	1383
6	Leitrim	82	250
7	Tipperary	84	1081
8	Clare	86	757
9	Carlow	91	322
10	Donegal	92	1155
11	Roscommon	93	552
12	Waterford	102	865
13	Dublin	102	8374
14	Cavan	103	571
15	Cork	107	3953
16	Wexford	107	1001
17	Laois	109	525
18	Longford	113	342
19	Meath	114	983
20	Kildare	118	1008
21	Offaly	120	633
22	Sligo	125	705
23	Limerick	127	1774
24	Westmeath	132	736
25	Monaghan	138	654
26	Louth	143	1095

Sig. Low
Non Sig.
Sig. High

COMMENT: The county with the lowest discharge ratio for Ischaemic Heart Disease is Kerry. The ratio is significantly below the national average. The highest standardised discharge ratio in the country is in Louth.

Table 4.2 Standardised discharge ratios for neoplasms (ICD codes 140-239) by county, Ireland 1997.

NEOPLASMS			
The figures show ranked age/sex standardised discharge ratios (SDR) and total numbers of neoplasms (ICD 140-239) in 1997 by county. National average SDR is 100.			
Rank		SDR	Discharges
1	Clare	73	1696
2	Roscommon	83	1202
3	Leitrim	85	604
4	Monaghan	85	1071
5	Meath	86	2144
6	Mayo	88	2642
7	Waterford	88	2026
8	Kerry	89	2908
9	Limerick	91	3535
10	Kilkenny	92	1705
11	Sligo	92	1328
12	Kildare	92	2566
13	Wicklow	92	2195
14	Cavan	94	1296
15	Dublin	96	23220
16	Tipperary	98	3264
17	Wexford	101	2527
18	Galway	102	4680
19	Louth	105	2258
20	Offaly	106	1508
21	Longford	107	825
22	Laois	109	1404
23	Carlow	111	1086
24	Westmeath	115	1743
25	Donegal	122	3951
26	Cork	130	13140

Sig. Low
Non Sig.
Sig. High

COMMENT: The highest ratio in the country for discharge for neoplasms is Cork and the lowest is Clare. Because of the large numbers, the ratios are statistically significant in all except four counties.

Table 4.3 Standardised discharge ratios for injuries and poisonings (ICD codes 800-999) by county, Ireland 1997.

INJURIES AND POISONINGS			
The figures show ranked age/sex standardised discharge ratios (SDR) and total numbers of cases of injuries and poisonings (ICD 800+) in 1997 by county. National average SDR is 100.			
Rank		SDR	Discharges
1	Kerry	79	2030
2	Donegal	84	2252
3	Clare	85	1620
4	Limerick	87	2871
5	Dublin	88	18060
6	Laois	91	975
7	Cork	92	7677
8	Meath	94	2033
9	Kildare	98	2540
10	Roscommon	98	1070
11	Wicklow	104	2106
12	Galway	108	4101
13	Leitrim	111	590

INJURIES AND POISONINGS contd.			
Rank		SDR	Discharges
14	Sligo	111	1266
15	Waterford	112	2112
16	Tipperary	113	3049
17	Mayo	116	2703
18	Cavan	117	1281
19	Offaly	120	1422
20	Kilkenny	121	1832
21	Carlow	123	1021
22	Wexford	126	2626
23	Louth	131	2384
24	Longford	144	895
25	Monaghan	152	1583
26	Westmeath	162	2048

Sig. Low
Non Sig.
Sig. High

COMMENT: The lowest discharge ratio for injuries and poisonings is in Kerry and the highest is in Westmeath.

Table 4.4 Standardised discharge ratios for coronary artery bypass graft by county, Ireland 1997

CORONARY ARTERY BYPASS GRAFT				
The figures show ranked age/sex standardised discharge ratios (SDR) and total numbers of cases of Coronary Artery Bypass Grafts (CABG) (ICD 9 CM 36.1 - 36.19) in 1997 by county. National average SDR is 100.				
Rank		SDR		Discharges
1	Kilkenny	38		9
2	Mayo	49		19
3	Laois	55		9
4	Carlow	56		7
5	Leitrim	61		6
6	Clare	61		18
7	Meath	63		19
8	Kerry	66		28
9	Offaly	66		12
10	Donegal	68		28
11	Kildare	68		21
12	Westmeath	73		14
13	Wexford	74		24
14	Waterford	75		22
15	Galway	77		44
16	Wicklow	80		23
17	Monaghan	82		13
18	Roscommon	83		16
19	Sligo	92		17
20	Limerick	101		49
21	Tipperary	105		46
22	Cavan	114		21
23	Louth	120		32
24	Dublin	120		345
25	Longford	149		15
26	Cork	173		219

Sig. Low Non Sig. Sig. High

COMMENT: The wide range in the standardised incidence ratios for coronary artery bypass grafts could be a reflection of service provision rather than degree of need. In particular the two major urban centres in the country, Cork and Dublin are in the top three in terms of coronary artery bypass grafts carried out.

Table 4.5 Standardised discharge ratios for angioplasty by county, Ireland 1997

ANGIOPLASTY				
The figures show ranked age/sex standardised discharge ratios (SDR) and total numbers of cases of Angioplasty (ICD 9 CM 36.00 - 36.09) in 1997 by county. National average SDR is 100.				
Rank		SDR		Discharges
1	Mayo	11		5
2	Kerry	22		11
3	Galway	25		17
4	Clare	29		10
5	Roscommon	50		11
6	Limerick	56		32
7	Carlow	62		9
8	Laois	63		12
9	Cork	70		104
10	Kilkenny	72		20
11	Donegal	73		35
12	Monaghan	76		14
13	Leitrim	81		9
14	Tipperary	83		42
15	Wicklow	89		31
16	Sligo	107		37
17	Louth	107		34
18	Waterford	107		23
19	Cavan	109		23
20	Kildare	110		42
21	Wexford	110		42
22	Longford	137		16
23	Offaly	146		31
24	Meath	147		53
25	Westmeath	165		37
26	Dublin	165		572

Sig. Low Non Sig. Sig. High

COMMENT: The county with the highest ratio is Dublin which may reflect access to provision. The six counties with the lowest ratios are all in the western half of the country.



CHAPTER TWO

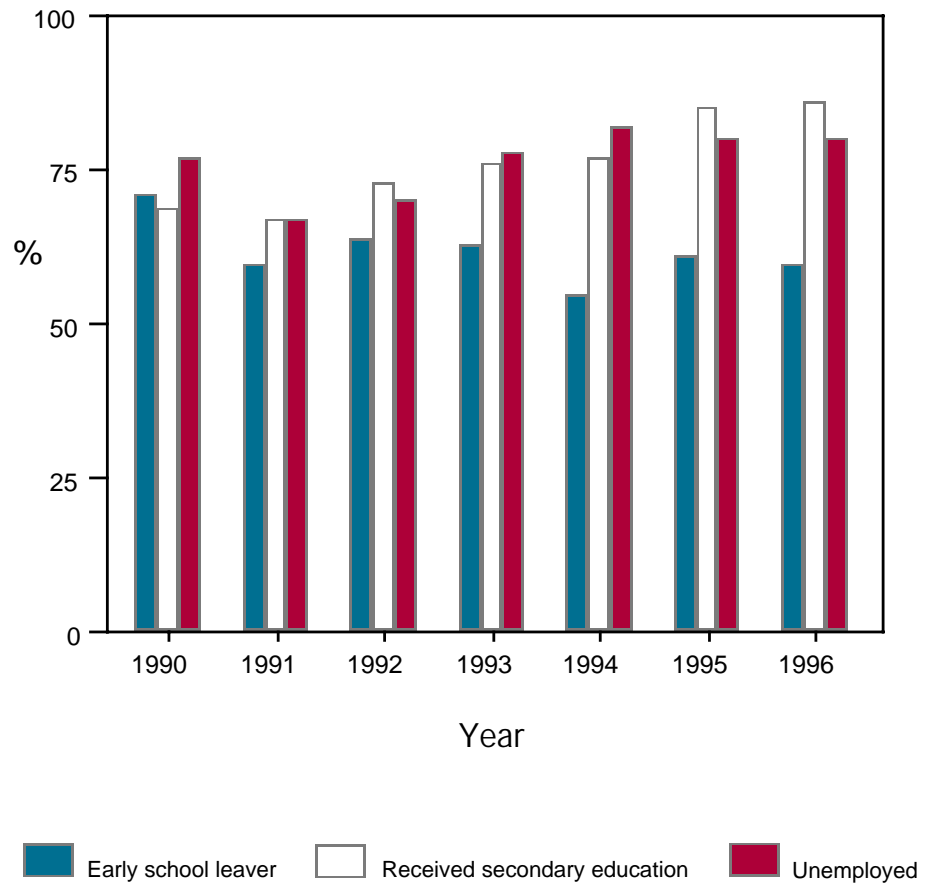
Section 5 - Results from The National Drug Treatment Reporting System

THE NATIONAL DRUG TREATMENT REPORTING SYSTEM (NDTRS)

The NDTRS is an epidemiological database providing information on treated drug misuse in the Republic of Ireland. Drug misuse which occurs outside the treatment context is not included. The database is maintained by the Drug Misuse Research Division of the Health Research Board. Reporting began in 1990 and for the first five years covered treated drug misuse in Dublin only. In 1995 the Reporting System was expanded to cover the entire country. Drug misuse in the NDTRS is defined as the taking of an illegal and/or legal drug or drugs (excluding alcohol other than as a secondary drug of misuse and tobacco) which harms the physical, mental or social well-being of the individual, the group or society.

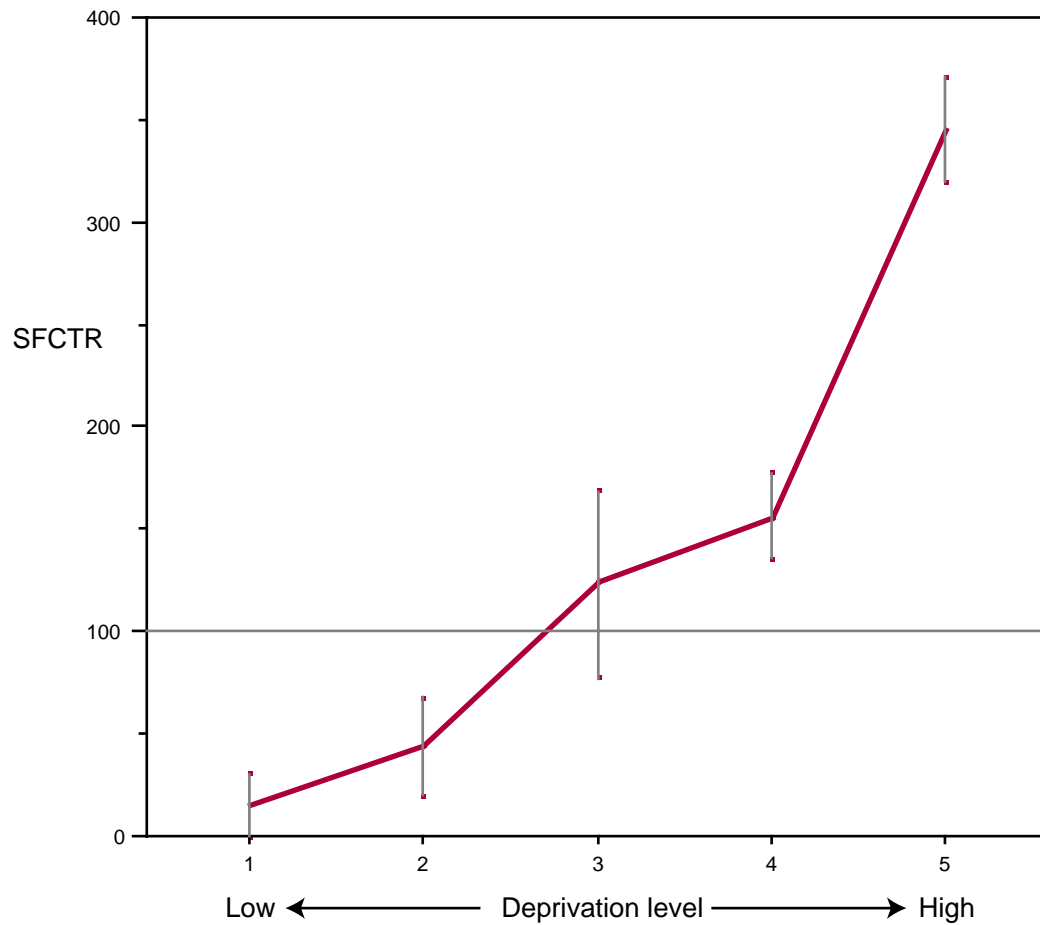
The NDTRS is a smaller database than the other four analysed in this report and the units of analysis are educational achievement and district electoral division of residence. For this report, first treatment contacts for opiates have been analysed.

Figure 5.1 Trends in measures of education and employment for first time treatment contacts (opiates) 1990-1996, Dublin only



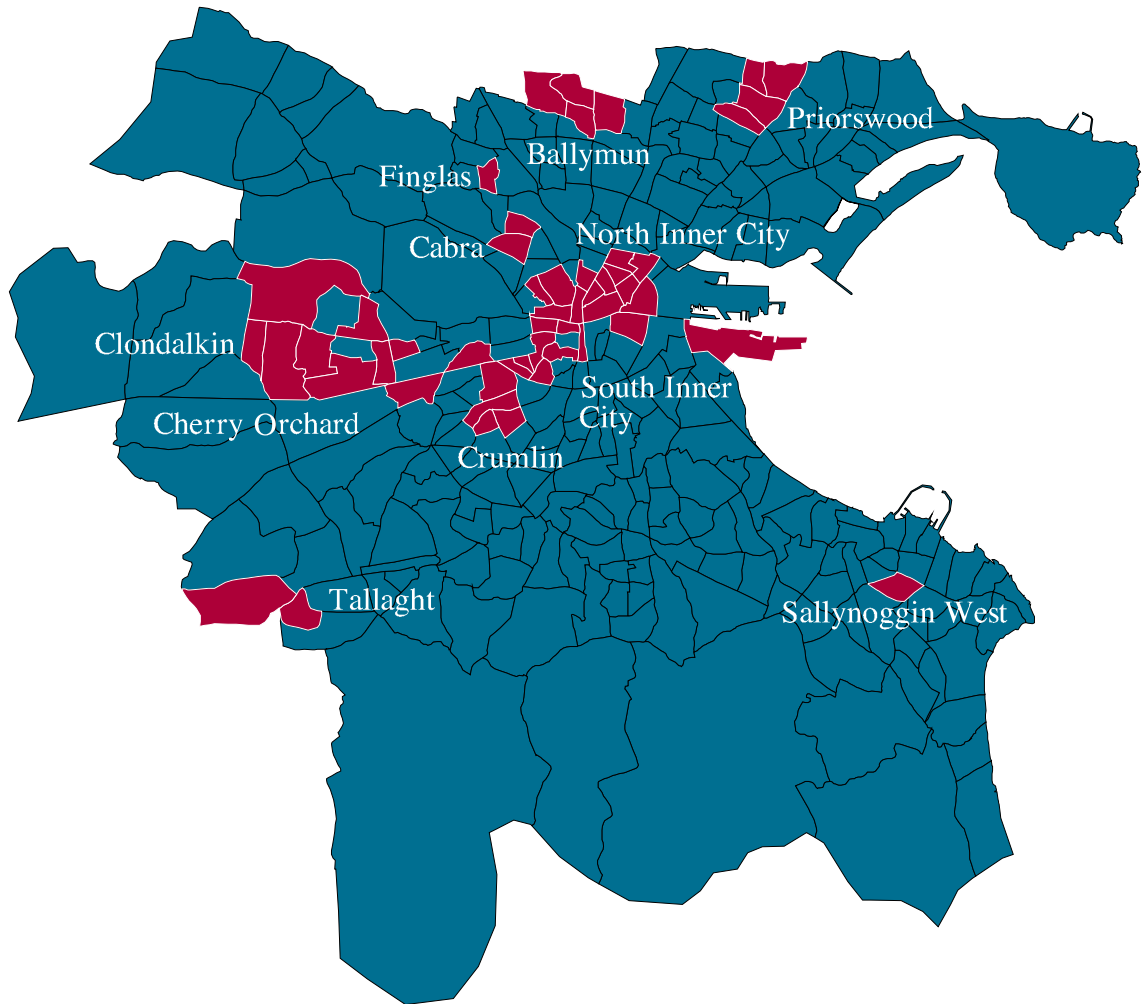
COMMENT: There was an increase in educational attainment but a decrease in employment rate

Figure 5.2 Plot of the relationship between a DED's deprivation level and the mean standardised first treatment contact ratio (SFCTR) value, with 95% confidence intervals, for opiate misuse 15-34 year olds in the greater Dublin area, 1995-1996



COMMENT: There is a very steep gradient of the probability of entering treatment for drug misuse as one moves from a district electoral division with a low deprivation level to one with a high deprivation level. Area deprivation was measured using the Small Area Health Research Unit deprivation index, which is an index of material deprivation. It is scaled from 1 to 5 where 5 is the highest level of deprivation.

Figure 5.3 Map of greater Dublin area district electoral divisions (DEDs) with both significantly high standardised first treatment contact ratios (SFTCR) and high deprivation



COMMENT: Fifty one District Electoral Divisions have both high first treatment contact ratios and high deprivation.





CHAPTER TWO

Section 6 - Unknowns - Results from National Mortality Dataset, Perinatal Reporting System & National Psychiatric InPatient Reporting System

'UNKNOWNNS'

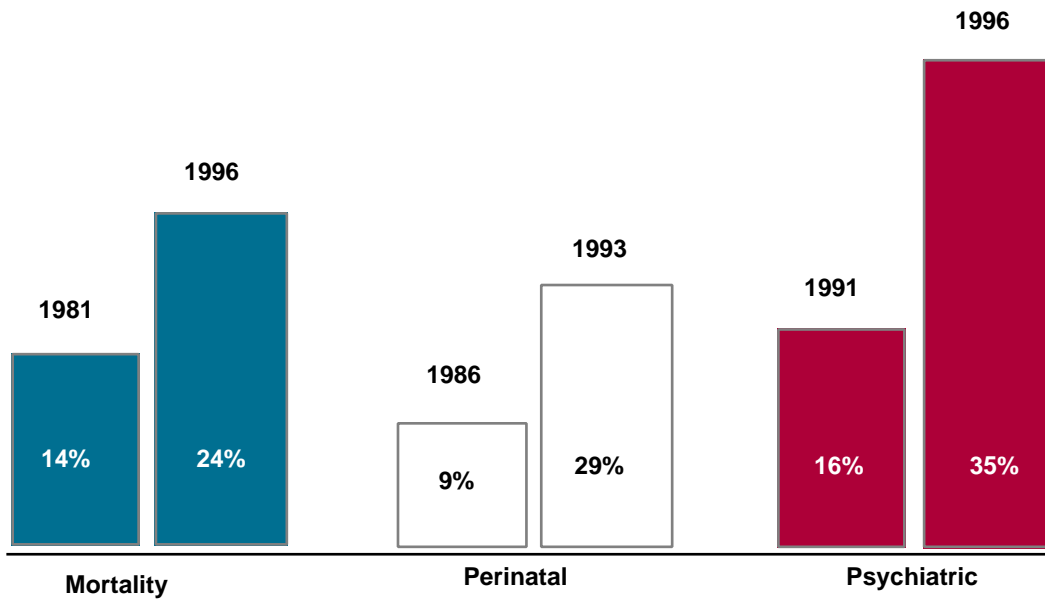
In the previous sections we have highlighted where possible differences in health between well-off and poor people, mainly by comparing men aged 15-64 in the professional socio-economic group with men of the same age in the unskilled manual group. A number of patterns emerge. In all datasets for all the years those in the unskilled manual category have worse health status than those in the professional category. There has been an increase in the proportion of people who are in the 'unknown' category as time has gone on, in each of the three datasets where this information is recorded. The 'unknown' category is also the category with the worst health index in nearly all analyses. What we present in this chapter is a summary of the disease ratios for the 'unknown' category together with a demonstration of the increased proportion of the unknowns in the later years of the analyses and some categorisation of the unknowns from the three datasets.

The 'unknowns' are growing, they have the worst health of all and single males in Dublin are over-represented in this category.

Table 6.1 Assorted standardised ratios for 'unknown' category, National Mortality Dataset (1996), Perinatal Reporting System (1993) and National Psychiatric InPatient Reporting System (1996)

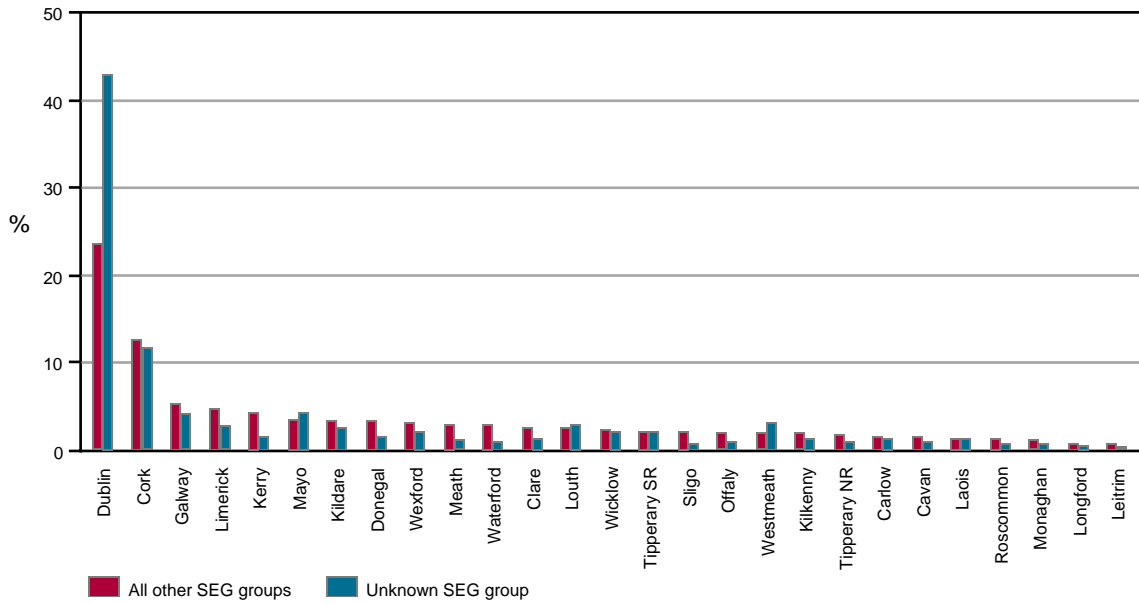
NATIONAL MORTALITY DATASET (1996)	Compared with average for the country of 100
SMR all causes	277
SMR ischaemic heart disease	233
SMR neoplasms	186
SMR injuries & poisonings	340
PERINATAL REPORTING SYSTEM (1993)	
Standardised perinatal mortality ratio	122
Standardised low birth weight ratio	156
NATIONAL PSYCHIATRIC INPATIENT REPORTING SYSTEM (1996)	
SDR all 1st admissions (males)	480
SDR schizophrenia (males)	589
SDR depressive disorders (males)	513
SDR alcoholic disorders (males)	408
SDR personality disorder (males)	520

Figure 6.1 Percentages of persons with unknown socio-economic group , National Mortality Data (males 15-64) 1981 and 1996, Perinatal Reporting System (females) 1986 and 1993, National Psychiatric InPatient Reporting System (males 15-64) 1991 and 1996



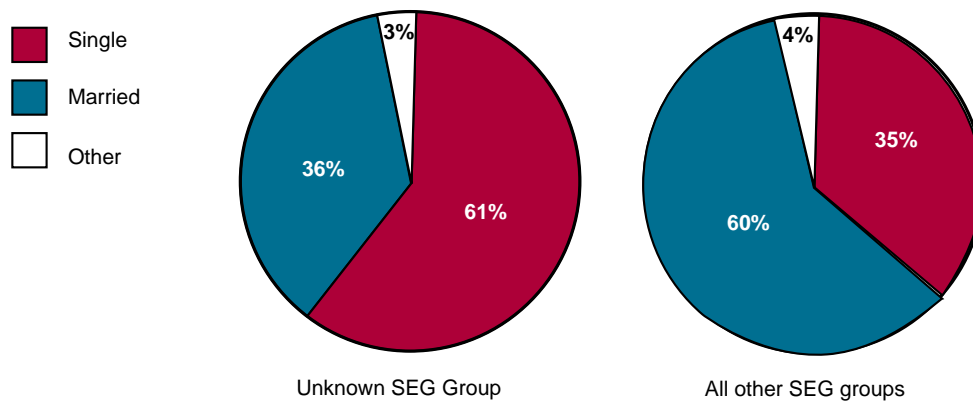
COMMENT: There is a considerable increase in the percentage of persons with unknown socio-economic group in each database as time has gone on.

Figure 6.2 Percentage of male deaths (15-64 years) in the 'unknown' socio-economic group compared to all other socio-economic groups by county, Ireland 1996 (National Mortality Dataset)



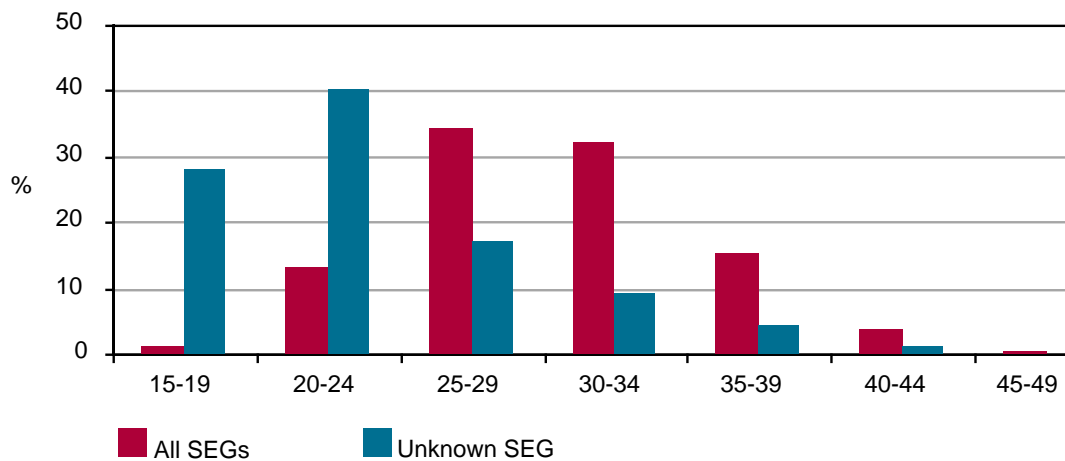
COMMENT: Almost half of all deaths in the unknown socio-economic group occurred in Dublin in 1996.

Figure 6.3 Marital status within the 'unknown' socio-economic group compared to all other socio-economic groups (National Mortality Dataset)



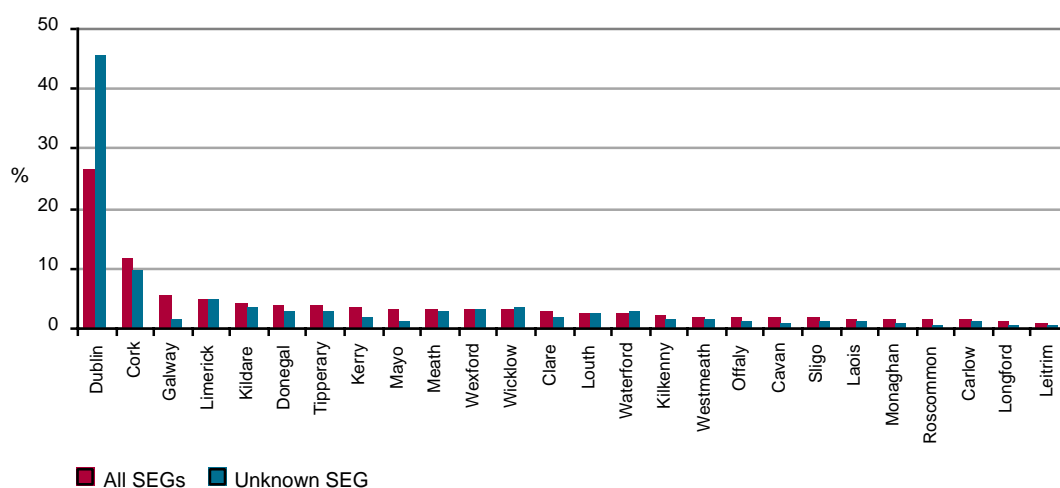
COMMENT: The majority of deaths in the unknown socio-economic group were single whereas for all other socio-economic groups the majority were married.

Figure 6.4 Percentage of women in the 'unknown' socio-economic group compared to all other socio-economic groups by age, Ireland 1986-1993 (Perinatal Reporting System)



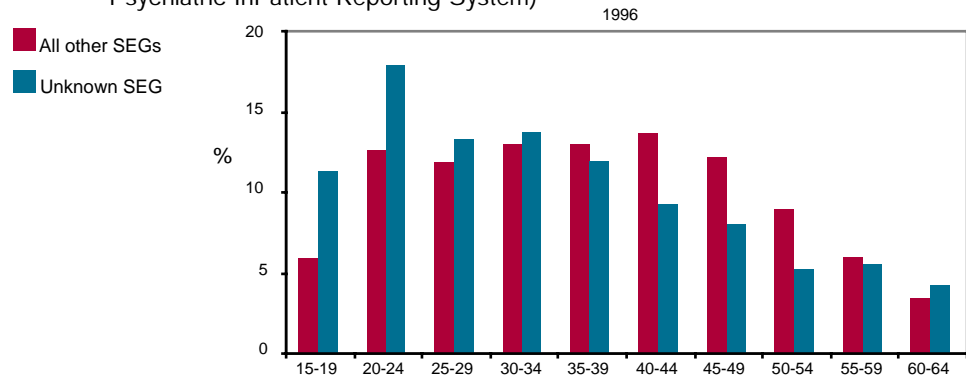
COMMENT: The women in the 'unknown' SEG were more likely to be in the younger age groups.

Figure 6.5 Percentage of women in the 'unknown' socio-economic group compared to all other socio-economic groups by county, Ireland 1986-1993 (Perinatal Reporting System)



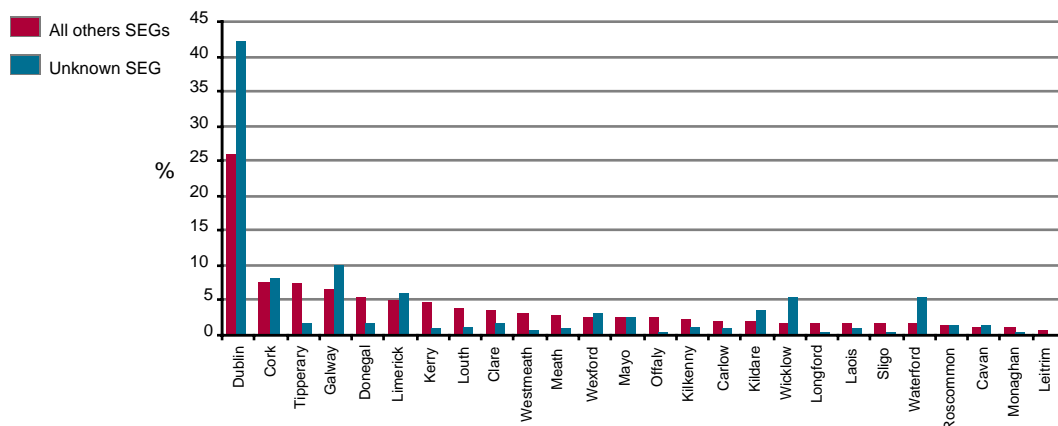
COMMENT: Almost half of all women in the unknown socio-economic group were resident in Dublin.

Figure 6.6 Percentage of males (15-64 years) in the 'unknown' socio-economic group compared to all other socio-economic groups by age, Ireland 1996 (National Psychiatric InPatient Reporting System)



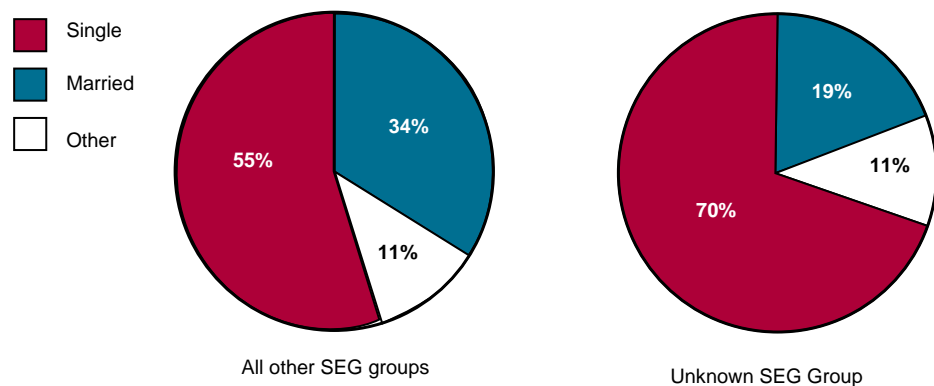
COMMENT: The men in the 'unknown' SEG were more likely to be in the younger age groups.

Figure 6.7 Percentage of males (15-64 years) in the 'unknown' socio-economic group compared to all other socio-economic groups by county, Ireland 1996 (National Psychiatric InPatient Reporting System)



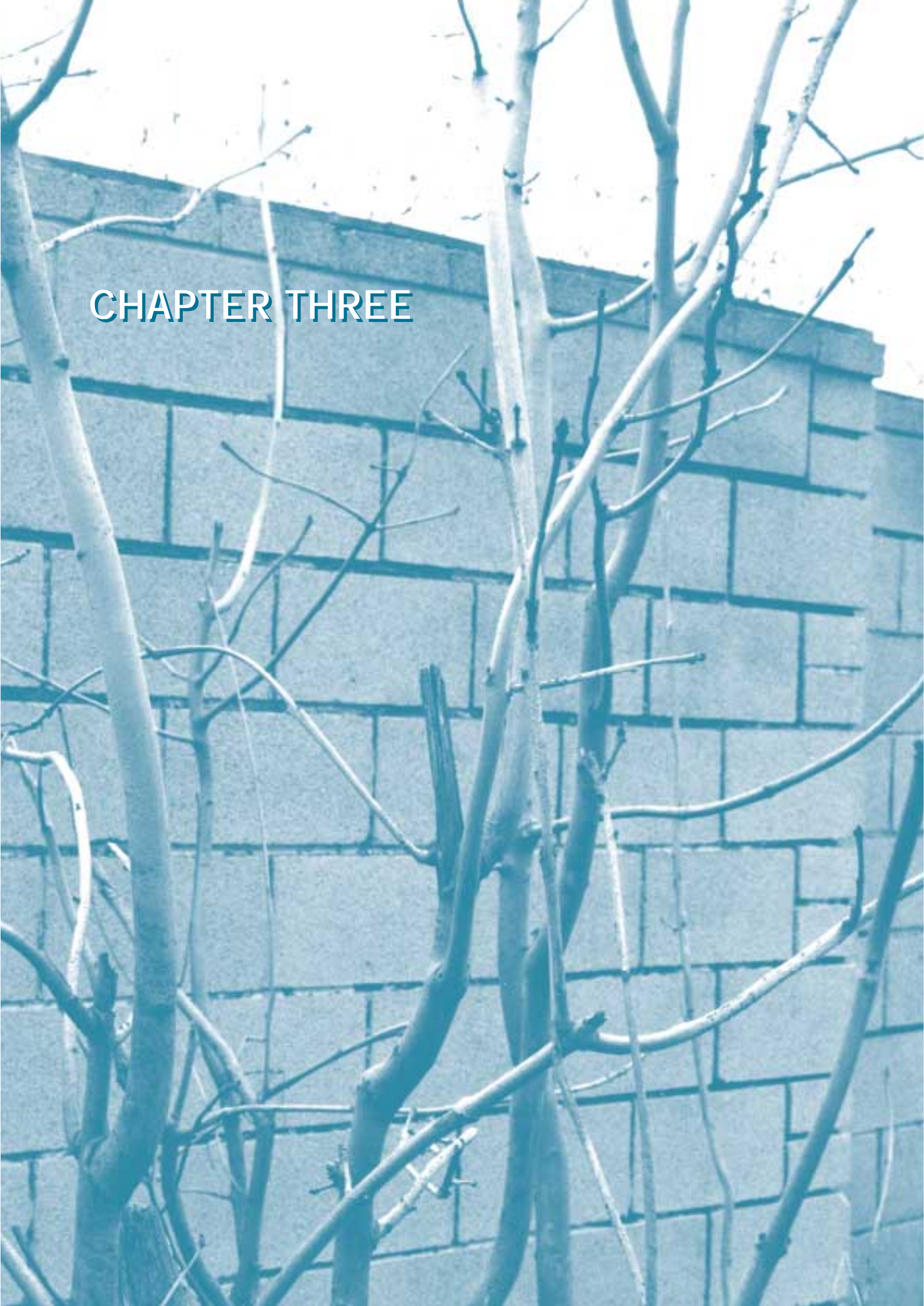
COMMENT: Almost half of all males in the unknown socio-economic group were resident in Dublin. Over two thirds of all persons in the unknown socio-economic group were single, whereas for other socio-economic groups it was just over one half.

Figure 6.8 Marital status within the 'unknown' socio-economic group compared to all other socio-economic groups, Ireland 1996 (National Psychiatric InPatient Reporting System)





CHAPTER THREE



REPORTS GATHERING DUST

We are conscious that in the past there have been examples of papers, reports and documents highlighting inequalities in health and healthcare uptake in Ireland which have not been followed up by action to lessen these inequalities. Apart from the National Health Strategy in 1994 and the Chief Medical Officer's report of 1999, Nolan and colleagues in 1994 found higher rates of perinatal mortality in infants born to mothers from poorer socio-economic groups.¹⁴ O'Shea in 1997 when examining male mortality found an excess of deaths in unskilled manual workers.¹⁵ O'Shea concluded his paper by commenting on the size of the 'unknown' category. He had found a deterioration in the quality of the measurement of that data between 1991 and 1996. He called for the reasons for this to be explored. We have found a pattern where the proportion of unknowns in each dataset is increasing with passing years, for all datasets examined. While it is not possible to show national socio-economic differentials in infant mortality, Ryan and colleagues in the Southern Health Board used Cork city as a proxy for deprived areas, based on SAHRU deprivation index scores, and found higher infant mortality in deprived areas of the Southern Health Board.¹⁶

Limitations of our work

We have confined our analysis in this report to inequalities by economic group (as denoted by occupational status) and by geographic location. The capacity of this approach to identify inequalities is limited by the data collected.

Socio-economic categories used in datasets in Ireland:

- Farmers
- Other agricultural workers and fishermen
- Higher professional
- Lower professional
- Employers and managers
- Salaried employees
- Intermediate non-manual
- Other non-manual
- Skilled manual
- Semi-skilled manual
- Unskilled manual
- Unknown

Because our analysis is wholly quantitative we have not been able to explore the nuances which might explain some of the differences; these can best be determined by qualitative methods.

You are better off to be better off

There is a consistency across datasets examined in this report in terms of the picture of socio-economic differentials in health in Ireland. As a general rule persons with higher paid occupations, such as professional groups and employers, tend to have lower standardised ratios for all causes. They also have lower ratios than persons whose socio-economic group is lower income, such as manual workers or unskilled manual workers. This differential has existed over the past fifteen years.

Unknowns - unclassifiable?

There is one major caveat that needs to be entered when describing a possible narrowing of the gap in inequalities in health. The proportion of persons where the socio-economic group could not be determined has increased dramatically from the 1980s to the mid-1990s. The standardised ratios in every dataset we have examined are considerably higher in the 'unknown' group than in any of the economic groups that have been classifiable, even 'unskilled manual'. In-depth analysis of the category 'unknown' is required as a matter of urgency to determine whether or not there is a genuine narrowing of the gap between rich and poor in Ireland. The determination of what exactly this unknown group stands for is probably the most critically important finding to be examined further as a matter of urgency. It could be that it reflects just a lessening of standards in data collection and coding or that there is a genuine increase in persons with very poor health for whom the socio-economic group cannot be described. Equally, it could be a combination of these two factors, but without further detailed examination this cannot be determined.

The socially excluded - very unhealthy

Much public comment is being made on the concept of social exclusion. Addressing social exclusion is one of the main challenges for the health services and for the wider social partners. People who are socially excluded are not easily catered for in the partnership model that has evolved in Ireland in the last decade. There is a worrying and unnecessary trend in our data of being unable to categorise people by socio-economic group. At the same time people who are not easy to classify socio-economically have demonstrably poorer health and health care uptake than the majority of the population. This very unhealthy subset of the population could well be the proportion of the population who are being left behind by economic development and who are referred to in literature in other countries as an underclass. Our current routine health information systems are not adequately describing this subset of the population beyond saying that they are very unhealthy. Major adjustment to current routine data collection methods are required to address this problem.

People who are socially excluded are not easily catered for in the partnership model that has evolved in Ireland in the last decade.

Females - still dependent

Basing inferences on the health of different socio-economic groups in the country on the basis of occupational status alone means that it is difficult to quantify socio-economic differentials in the health status of females of whatever age. A move from a socio-economic to a social class system of recording would mean a female's social class in its own right could be used to show differences in health across different social groups. The social class scale is also an ordinal scale and comment on the relative health of different sectors of the population by social class could be made if social class was the category analysed rather than socio-economic group.

NATIONAL HEALTH INFORMATION STRATEGY - end of unhealthy data?

Our findings should inform discussions on the drafting of the National Health Information Strategy. They are also complementary to the findings of the recently published all-Ireland mortality report from the Institute of Public Health in Ireland, which found large social gradients in mortality between the poorest and the richest in Ireland, North and South.¹⁷ The measurement and the elimination of inequalities in health are stated as policy objectives by the Department of Health and Children and were specifically highlighted in the report of the Chief Medical Officer. While much data are collected in the Irish health services, drawing of inferences on inequalities is not straightforward, primarily because of weaknesses in data collection systems. Routine data sources need to be adapted so that inequalities in health can be measured by analysis of these data sources.

In some situations it may be that routine data sources are not the ideal method of measuring inequalities in health and that one-off epidemiological studies, from time to time, may provide more appropriate information.

We welcome comment from any sector on our findings and interpretations. Health information systems will only become more accurate and useful if used and if analysis of them is published. In particular we would welcome comment from people who generate data in the first place, i.e. clinicians, and from data managers, data coders and those responsible for data input.

We plan to put this report on our website in the next couple of months. We hope this will allow greater access to the findings for a wider national and international audience.

Website address: www.tcd.ie/Community_Health/

A blue-tinted photograph of bare tree branches in front of a brick wall. The branches are thin and leafless, creating a complex network of lines against the grid of the brickwork. The overall mood is stark and wintry.

CHAPTER FOUR

RECOMMENDATIONS

- Annual reports on datasets should be available no later than two years after the end of the year in question.
- There should be a move from socio-economic group to social class for the social categorisation of health related data.
- Data on social class of females should be collected in such a way that it can be analysed.
- Data on private healthcare usage should be incorporated into any national health information system.
- As a matter of urgency an investigation should be carried out to determine whether the 'unknowns' phenomenon is as a result of poor data quality or represents real deterioration in health in socially excluded people.
- The quality control of data should be a priority.
- HIPE should collect data on social status.
- An annual report from the HIPE dataset should be published.
- We recommend that improvements to all routine datasets should be a priority for the forthcoming National Health Strategy and National Health Information Strategy.

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APPENDIX A



TECHNICAL ANNEX

The basis of this report was to use routine data sources to determine the extent of inequalities and inequities in Irish health and healthcare. As each dataset is constructed differently, the method employed to analyse the data varies accordingly.

National Mortality Dataset

For reasons given in Chapter 2 (Section 1), only data on males aged 15-64 were analysed. Trends over four time periods were used for the socio-economic categorisation. For the geographic categorisation three years' pooled data were used. In this section we used the three most recent years available.

For the Census years 1981, 1986, 1991, and 1996 deaths by age, sex, region, socio-economic group (SEG) and cause of death were extracted from anonymised computer files obtained from the Central Statistics Office. The analysis was confined to men aged 15 to 64 years. Women were excluded because over 40% of deaths had an 'unknown' socio-economic group. Age standardised mortality ratios (SMRs) were calculated. This is a summary measure which standardises for differing age composition by calculating what the expected number of deaths for a particular SEG would be if the actual population in that SEG in each age range experienced the average death rate over all the SEGs for that age range. The actual total of deaths for that SEG is then expressed as a percentage of the expected deaths. A SMR of over 100 means that a SEG has had more more deaths than would be expected and vice versa.

Perinatal Reporting System

The Perinatal Reporting System has long been used for planning maternal and infant healthcare services and it is regrettable that no data have been published from it since 1993. For this report, eight consecutive years' data were obtained (1986-1993). The outcome indicators chosen were low birth weight and perinatal mortality. For some analyses the last four years were pooled and for some others data from each year has been presented.

In addition to the 12 main socio-economic groups described earlier in this report the perinatal reporting system has an additional two categories, 'unemployed' and 'missing'. The fact that the baby's father's socio-economic group is used to categorise the mother causes further complications as this is often not reflective of the mother's socio-economic group and is often left unspecified.

National Psychiatric InPatient Reporting System

There were changes in how data for this system were collected between the late 1980s and the early 1990s and accordingly it was decided to confine the analysis to the data from the 1990s. It had been intended to use a third year's data from the middle 90s but completeness of socio-economic group data was not sufficient to enable analysis to be carried out. Therefore data from two years only, 1991 and 1996, were used. We have taken first admissions as a proxy for incidences of acute psychiatric illness but varying admission criteria in different parts of the country could affect the validity of this approach. Repeat admissions, which accounted for 72% of the discharges in 1991 and 1996, were excluded.

Diagnosis is recorded at both admission and discharge. There was very little difference between the two recordings and as discharge diagnosis is considered to be more reflective of the true condition, this was used for the analysis. Nine specific conditions are documented with a further two categories of 'other psychosis' and 'unspecified'. Four conditions were chosen for more detailed analysis which together made up over 75% of all first admissions. These were; alcoholic disorders, depressive disorders, schizophrenia and personality disorder.

HIPE

This very large volume dataset of hospital activity is not as useful for demonstrating inequalities as no socio-economic data are collected. The possibility of using the presence or absence of a medical card, which is recorded in the dataset, as a proxy for lower socio-economic groups was considered. However it was thought that this would not adequately reflect socio-economic group differences, particularly as private healthcare was not generally covered by HIPE during the years analysed. Although data were obtained for three years, 1993, 1995 and 1997, only data from the most recent year, 1997 are presented as this is sufficient to give an indication of the variability by county.

Data are presented for the discharge rates of three of the main causes of hospitalisation in Ireland; ischaemic heart disease, neoplasms and accidents and poisonings. In addition, incidence of two cardiac procedures are presented; coronary artery bypass graft and angioplasty, as these were found to vary significantly by county and other data in relation to ischaemic heart disease are presented in the report.

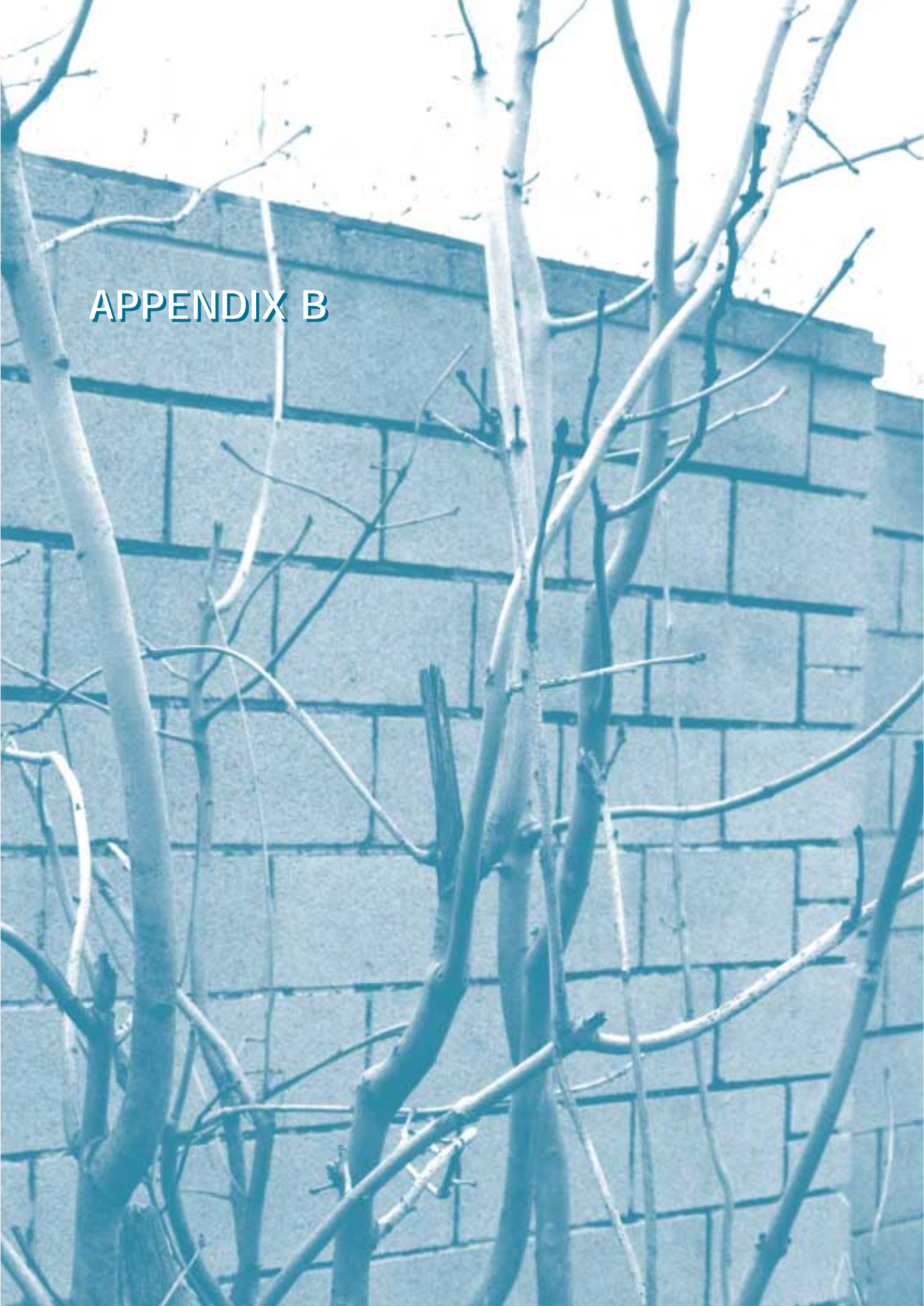
National Drug Treatment Reporting System

The National Drug Treatment Reporting System (NDTRS) is an epidemiological database providing information on treated drug misuse in the Republic of Ireland. Drug misuse which occurs outside the treatment context is not included. The database is maintained by the Drug Misuse Research Division of the Health Research Board. Reporting began in 1990 and for the first five years covered treated drug misuse in Dublin only. In 1995 the Reporting System was expanded to cover the entire country. Drug misuse in the NDTRS is defined as the taking of an illegal and/or legal drug or drugs (excluding alcohol other than as a secondary drug of misuse and tobacco) which harms the physical, mental or social well-being of the individual, the group or society. Drug treatment for the purposes of the NDTRS is any activity which is targeted directly at people who have a problem with their drug use and which aims to ameliorate the psychological, medical or social state of individuals who seek help for their drug problems. For the time in question, needle exchange was not classified as treatment.

The present analysis concentrates on first treatment contacts for opiate misuse in the Greater Dublin Area for the years 1995 and 1996. A first treatment contact (FTC) is defined as a person who receives treatment for the first time ever and who is not being treated anywhere else for their problem drug use. The term 'opiate' refers to opiates and opioids, both natural and synthetic. The Greater Dublin Area was chosen because FTC addresses are coded by District Electoral Division (DED) only for this area in the NDTRS.



APPENDIX B



DATA INPUT FORMS

1. PERINATAL REPORTING SYSTEM
2. NATIONAL PSYCHIATRIC INPATIENT REPORTING SYSTEM
3. HOSPITAL IN-PATIENT ENQUIRY (HIPE)
4. NATIONAL DRUG TREATMENT REPORTING SYSTEM

1. PERINATAL REPORTING SYSTEM

NOTIFICATION OF BIRTH - To: The Registrar of Births

TYPE OF BIRTH: Stillborn, SR = 2
 PLACE OF BIRTH (Hospital = 1, Home = 2, Day Nursery = 3)

HOSPITAL NO. CASE NO.

NAME AND ADDRESS OF _____

DEWLET: DATE OF BIRTH:

IF MULTIPLE BIRTH: ORDER OF BIRTH: NO. of DATE OF BIRTH:

FORNAMES: _____
 SURNAME:

SEX (Male = 1, Female = 2, Indeterminate = 3)

SET (MARRIAGE)

PERIOD OF RESIDENCE:

FATHER: FORNAMES, SURNAME: _____
 FORMER SURNAMES: _____
 ADDRESS: _____
 COUNTY:

OCCUPATION:

DATE OF BIRTH:

MOTHER: FORNAMES, SURNAME: _____
 FORMER SURNAMES: _____
 ADDRESS: _____
 COUNTY:

OCCUPATION:

DATE OF BIRTH:

MARITAL STATUS (Married = 1, Single = 2, Widowed = 3, Separated = 4, Divorced = 5)

DATE OF PRESENT MARRIAGE:

DATE OF LAST BIRTH (See 4th):

NO. OF PREVIOUS: LIVE BIRTHS:
 STILLBORN STILLBORN:

SPONTANEOUS ABORTIONS:

PERINATAL DEATH: TYPE OF DEATH (Early Neonatal = 1, Stillborn = 2)

HAS AUTOPSY PERFORMED (Yes = 1, No = 2)

AGE OF DEATH:

PLACE OF BIRTH:

IF STILLBORN: (a) DEATH OCCUR BEFORE LABOUR (1)
 (b) DURING LABOUR (2)

CAUSE OF DEATH: (a) INFECTION OR COMBINATION OF INFECTIONS
 (b) _____

OTHER REASONS OR CONDITIONS IN FETUS OR INFANT: _____

SIGNATURE: _____ DATE: _____

CONFIDENTIAL: This form is required for registration and statistical purposes and will be treated as strictly confidential. It should be filled in by the person receiving the birth or stillborn or by the Registrar in accordance with the Vital Statistics Regulations, 1954 and the Vital Statistics (Births) Regulations, 1957 or the Vital Statistics (Statistical) Regulations, 1984.

THIS SECTION TO BE COMPLETED BY THE REGISTRAR OF BIRTHS ONLY

DATE OF REGISTRATION:

BIRTH NO. REGISTERED:

(for live births only)

REGISTRAR'S STAMP

SIGNATURE OF REGISTRAR OF BIRTHS: _____

The Registrar should forward this form to the District Statistical Office as soon as possible after the registration of the event in the Register of Births or the Register of Stillbirths as appropriate.

In the case of abortion, the Registrar should submit the Medical Certificate Form to the DSO of a District Case & File No.

3. HOSPITAL IN-PATIENT ENQUIRY (HIPE)

HOSPITAL INPATIENT ENQUIRY (HIPE) - RECORD SUMMARY SHEET Medical - In confidence
 For use with discharges on or after 1 January 1995 using 1995 Codes

Hospital No.

Administrative Details

Chart Number <input type="text"/>	Admitting Consultant <input type="text"/>
Patient Name <input type="text"/>	Date of Discharge <input type="text"/>
Date of Admission <input type="text"/>	Discharge Code <input type="text"/>
Admission Source <input type="text"/>	To (Hosp No.) <input type="text"/> Em (Y/N) <input type="text"/>
From (Hosp No.) <input type="text"/> Em (Y/N) <input type="text"/>	Day Case (Y/N) <input type="text"/>
Date of Birth <input type="text"/>	Medical Chart (Y/N) <input type="text"/>
Sex <input type="text"/>	
Marital Status <input type="text"/>	
Area of Residence <input type="text"/>	

1995 Clinical Details

Diagnosis (Principal Diagnosis to be Principal reason for care)	ICD9CM Diagnosis Code	Consultant	Specialty
(1) <input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>
(2) <input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>
(3) <input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>
(4) <input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>
(5) <input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>
(6) <input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>

Operation(s) / Procedure(s)	ICD9CM Op Code	Consultant
(1) <input type="text"/>	<input type="text"/>	<input type="text"/>
(2) <input type="text"/>	<input type="text"/>	<input type="text"/>
(3) <input type="text"/>	<input type="text"/>	<input type="text"/>
(4) <input type="text"/>	<input type="text"/>	<input type="text"/>

Date of 1st Procedure Date of Principal Procedure

Case entered on P.C. (Y/N) Comment

Source: HIPE Unit, ESRL 4 Burlington Road, Dublin 8. Tel: (01) 667 1525 Fax: (01) 668 6251

1995 CODING

