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agus Sóisialach

Health Services: The Implications of Demographic Change

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NATIONAL ECONOMIC AND SOCIAL COUNCIL

Health Services:

The Implications of Demographic Change

by
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PUBLISHED BY THE NATIONAL ECONOMIC AND SOCIAL COUNCIL

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THE NATIONAL ECONOMIC AND SOCIAL COUNCIL
Earl Court, Adelaide Rd., Dublin 2
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Price: £2.00

(Pl. 1756)

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COUNCIL PREFACE

HEALTH SERVICES: THE IMPLICATIONS OF DEMOGRAPHIC CHANGE

1. This study is part of a wider study of the implications of demographic change on the social services. Previous studies have examined housing, education and social welfare. The Council proposes to comment on the combined effects of these studies at a later date.
2. A similar exercise was attempted by the Council in the early 1970s and studies dealing with the implications of demographic change on housing (1) and education (2) were published. In the case of social welfare a detailed exploration was carried out of the services provided in the context of the debate over universality and selectivity.(3) The implications of demographic factors were not considered.
3. A report was planned on the implications of population projections for the health services but on the grounds that "considerations other than the projected growth in population were more important in determining the future development of health policy and health services" (4), a more general study, *Some Major Issues in Health Policy* (5) was undertaken and published in 1977. The present study goes further than the previous study in quantifying the effects that demographic change would have on health service requirements, assuming no change in utilisation patterns. The importance of non-demographic factors is acknowledged, however, in Chapter 3 which examines cost trends, and in Chapter 4 which provides detailed comparisons of health service provisions in Ireland and the various countries of the UK. The final Chapter addresses once again the major issues in the health services.

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Notes to Preface

- 1 NESC Report No. 14, *Population Projections 1971-86: The Implications for Social Planning – Dwellings Needs*.
- 2 NESC Report No. 18, *Population Projections 1971-86: The Implications for Education*.
- 3 NESC Report No. 36, *Universality and Selectivity: Strategies in Social Policy* and NESC Report No. 38, *Universality and Selectivity: Social Services in Ireland*.
- 4 NESC Report No. 29, *Some Major Issues in Health Policy*.
- 5 Ibid.

ACKNOWLEDGEMENTS

Grateful acknowledgement is made to the Department of Health for providing data, to Professor B Abel-Smith for insightful comments, to Paul Turpin for information and encouragement, and to members of the Social Policy Committee for suggestions. The author is responsible for any remaining errors.

CHAPTER 1

REVIEW OF IRISH HEALTH SERVICES

1.1 This chapter reviews the information available on public and private expenditure on health services. The share of national resources devoted to public health services is shown to have doubled during the 1970s. Changes in the method of financing public health services are noted. The overall demand for public health services is shown to have risen due to increased eligibility and continuously increasing hospital admissions and doctor consultations. The supply of services, particularly hospital beds, is also examined. Finally the availability of data on the demographic characteristics of the users of these services is reviewed and the methodology of assessing the implications of demographic change is outlined.

Total health service expenditure

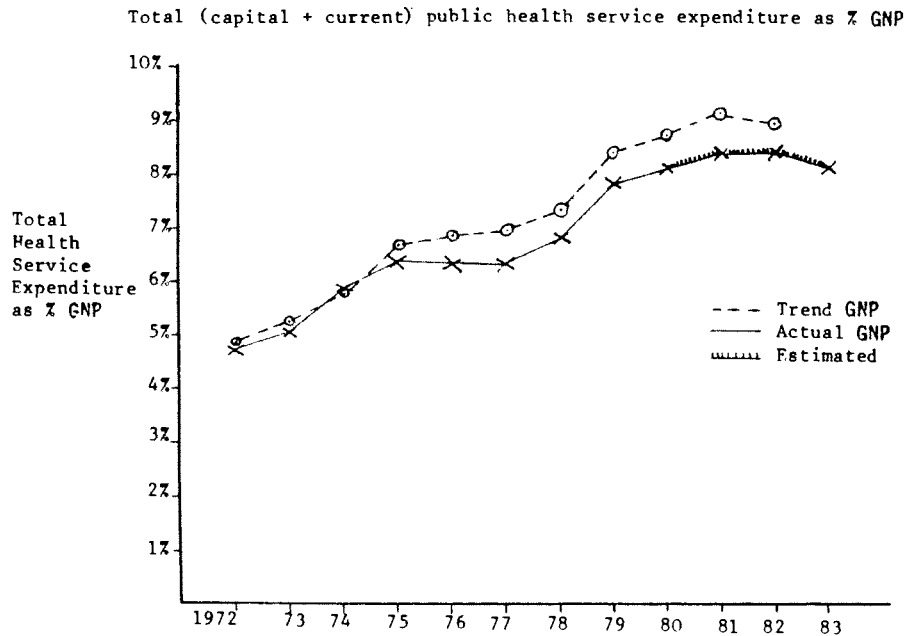
1.2 Total health service expenditure is made up of public and private components. Although detailed data on public expenditure are available, there is very little information on private health service expenditures. A 1974/1975 estimate, attributed to the Department of Health (1) put private health service expenditure at 0.8% GNP. Analysis of the 1980 Household Budget Survey yields an approximation of private health service expenditure of around 1% of GNP, close to the 1974/1975 estimate.(2) It seems reasonable to assume, then, that private health service expenditure has remained at a little under 1% of GNP in recent years.

1.3 Total (capital and current) public health service expenditure almost doubled as a share of GNP over the 1970s (Figure 1): from 4.7% of GNP in 1972 to 8.6% in 1980. The growth in public health service expenditure was arrested in 1981 and subsequent years. The sharp jumps in the share of public health service expenditure took place between 1973 and 1975 (from

1. See *Health, Health Policy and Poverty*, A D Tussing in *Poverty and Social Policy*, compiled by L Joyce and M McCashin, (Dublin 1981). See also *Health Needs versus Resources*, R. Maxwell in *A Review of the Irish Health Services: Seminar Proceedings*, Department of Health, (Dublin 1975).
2. Private health service expenditure was calculated from the 1980 Household Budget survey by grossing up expenditure on medical expenses (items 374 to 381) by the average household, weighted by the various eligibility categories in that household and allowing for social insurance coverage for dental and optical treatment.

5.0% to 6.4%) and between 1977 and 1980 (from 6.4% to 8.6%). In order to allow for cyclical changes in GNP distorting these figures, health service expenditure has also been expressed as a share of trend GNP.(3) The pattern of growth is very similar.

Figure 1.1



Sources: National Income and Expenditure 1981, Book of Estimates, 1983, and Appendix 3, Table A31 of this report.

1.4 It is sometimes objected (4) that use of the public health expenditure ratio to GNP is an unsuitable measure of health service costs. While it is true that the measure is highly aggregated, it nonetheless does indicate the growth in public health service costs. Some reasons for expecting to find a high value of this ratio in Ireland relative to other countries are suggested in Chapter 4.

1.5 Public health service expenditure is almost entirely financed out of general taxation. Persons with category II and III eligibility are liable for health contributions which, in total, amounted to 6.5% of current receipts in 1980,

3. Trend GNP is an estimate of what GNP would have been had it increased steadily. The use of trend GNP ensures that variations in the health service/GNP ratio are not due to cyclical changes in GNP.
4. Resolution of the Irish Medical Association, IMA annual conference, 1983.

while the Exchequer contributed 92% of total receipts. Up to 1973 health charges were levied on local authority rates. In that year health charges contributed 14% of the cost of the health services, health contributions contributed 4%, and the Exchequer was responsible for the remaining 82%. (5) As health charges on the rates were phased out, the Exchequer assumed increasing responsibility for health service finance. By contrast, twenty five years ago the health services were the responsibility of the local authorities, and were financed mainly from rates, aided by state funds.(6)

Eligibility

1.6 There are three categories of eligibility for public health services:(7) Category I, II and III with the following entitlements:

Category I Persons who are unable, without undue hardship, to arrange general practitioner services for themselves and their dependents. Such persons have full eligibility for all health services. They are issued with medical cards by the health boards. The health boards fix income guidelines to help in deciding on applications for medical cards. About 37% of the population are currently in this category.

Category II Persons together with their dependents, whose annual income is below a specified limit. On 1 June, 1983 this limit was set at £11,000. It relates to income for the year which ended on 5 April, 1983. Just under 50% of the population are in this category.

Category III Persons, together with their dependants, whose income is above the specified limit for Category II. About 15% of the population are in this category.

Services

The following is a list of the main services which each category is entitled to:

- Category I - Persons in this category are entitled to the full range of health services without charge. This includes in particular:
- free general practitioner and pharmaceutical services
 - free maintenance and treatment in public wards of hospitals
 - free specialist out-patient services at public clinics
 - free dental, ophthalmic and aural services

5. *The Health Services and their Administration*, B. Hensey, in *Unequal Achievement* ed F. Litton, p. 157. (Dublin 1983).
6. *Ibid.*
7. This list is based on *Statistical Information Relevant to the Health Services 1982*. (Stationery Office, Dublin 1983).

- Category II - free maintenance and treatment in public wards of hospitals,
- free specialist out-patient services at public clinics.
- assistance towards the cost of prescribed medicines,
- general practitioner maternity and infant care services,
- free drugs for certain long-term illness.

- Category III - free maintenance in public wards of hospitals (liable for consultants' fees),
- free specialist out-patient services at public clinics (excluding consultants' fees),
- assistance towards the cost of prescribed medicines,
- free drugs for certain long term illness.

1.7 The proportion of the population with Category I eligibility increased slightly during the 1970s, from 34% in 1973 rising to 37% in 1977 and falling to 36% in the period 1979 to 1982.(8) The proportion covered is sensitive to the income limit guidelines, which are administered with some discretion by the Health Boards, and there are significant inter-regional variations (9), due in part to variations in the manner of assessing means.(10) The range of services for which Category II and III are eligible has expanded over the 1970s, particularly with the introduction of free hospital services for all in 1979. Up to 1979, Category III patients were required to pay for hospital services. These payments were subsidised in a number of ways, however, through tax reliefs on health insurance premia and through charges to private patients at below the full economic cost.(11) In addition, the drug subsidy scheme was extended to include Category III from April 1979.

1.8 Increased usage of the health services has contributed to the rise in public health service expenditure. Acute hospital admissions increased from 266,000 in 1961 to 394,000 in 1971 and to 561,000 in 1979, (12) an annual growth rate of over 4% per annum during the past two decades, with the growth rate in the latter decade slightly above that of the 1960s. Admissions to acute hospitals in 1979 were equivalent to one in every six persons in the state. The general medical services were reorganised in 1972. Between 1974 and 1981 the number of doctor consultations under the

8. *General Medical Services (Payments) Boards*, annual reports, various years.
9. NESR Report 38 *Universality and Selectivity: Social Services in Ireland*, (Dublin, 1978).
10. Gormley in *Guide to Irish Health Services* (Galway 1980) discusses the problems of assessing means for determining Category I eligibility. For instance only the means of the applicant and spouse can be taken into account, regardless of the means of other members of the household. The lack of consistency across Health Boards in relation to Category I eligibility is also noted by Tussing, op.cit.
11. *Financing the Health Services*, A D Tussing, *New Exchange* (Dublin, 1982), p.5.
12. *Statistical Information Relevant to the Health Services*, various years, (Stationery Office, Dublin).

scheme grew from 5.35m to 7.17m, an increase, once again, of 4% per annum.(13) On average each person covered by the general medical services (Category I) consulted their general practitioner around six times in 1979. Admissions to psychiatric hospitals increased by just under 3% per annum between 1970 and 1980.(14)

1.9 While the demand for public health services increased steadily, the changes in the services supplied varied by service. The number of acute hospital beds showed little change (from 16,500 in 1974 to 17,600 in 1979, an increase of 7%). The increase in admissions was made possible by reductions in the average duration of stay (from 14.6 days in 1971 to 10.4 days in 1979). The number of doctors participating in the choice of doctor scheme in the general medical services increased from 1,123 in 1973 to 1,303 in 1979, an increase of 16%. By contrast the number of inpatients in psychiatric hospitals has been falling: from just over 15,000 in 1970 to just over 13,000 in 1981.(15) This however was accompanied by a growth in short stay psychiatric admissions.(16) Overall, then, the increase in the health services demanded has been met more by increased usage of existing facilities than by expansion of those facilities.

1.10 Between 1971 and 1979 the population of Ireland increased at a compounded annual rate of 1.6%. As noted above, both acute hospital admissions and general medical service consultations increased at close to 4% annually. It seems likely, a priori, that the growth in the size of the population contributed significantly to the increased usage of the health services. Other factors included increases in the proportion of the population eligible for "free" services, as well as increased expectations relating to both healthiness and the health services.

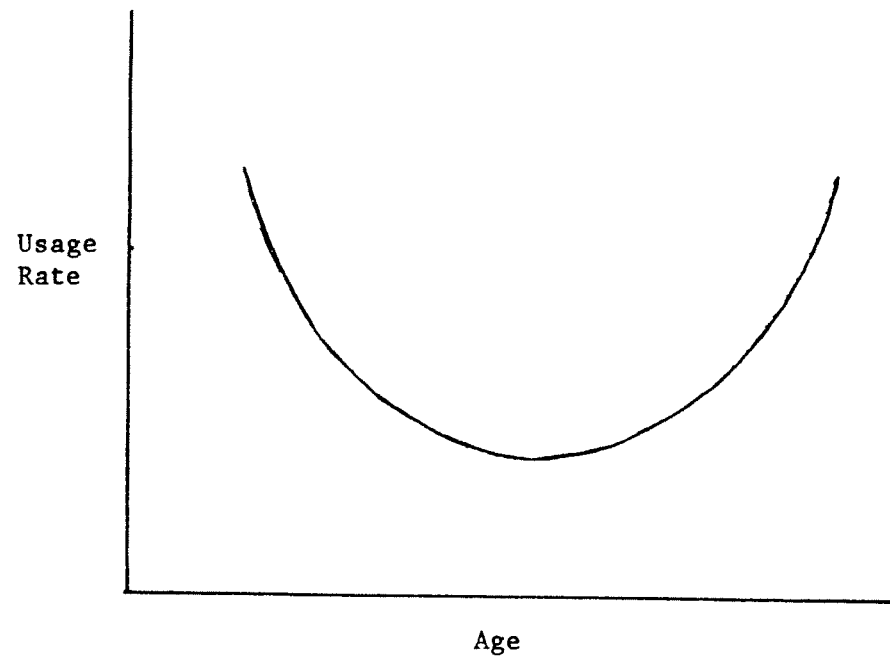
Demographic change and the health services

1.11 Usage of the various health services typically varies considerably by age. Specifically the very young and the old tend to be high users of the major health services. The variation in usage rates by age can be pictured as a U shaped curve (Figure 2). In this hypothetical example, the usage rate is high for the very young, declines with age for the intermediate age groups, but begins to rise with age beyond middle age.

13. *General Medical Services (Payments) Board*, Annual report, various years.
14. *Activities or Irish Psychiatric Hospitals and Units*, various years, Medico Social Research Board, Dublin.
15. *Statistical Information Relevant to the Health Services*, various years, Stationery Office, Dublin.
16. *Activities of Irish Psychiatric Hospitals and Units 1979*, Medico Social Research Board, (Dublin 1982).

Figure 1.2

Hypothesised variation of health services usage by age group



1.12 The usage rates for the health services also vary by sex due to greater longevity of females and their higher usage of the health service in their fertile years. Usage rates by sex can be derived for some services and are used in this study. Once age and sex specific usage rates have been estimated in relation to an existing population, the effects of population change on the overall requirements can be estimated. In this study the shape of the curve relating usage rates and age (and sex where possible) is presented for each of the major health services. The effects of population change are estimated on the basis of the curve remaining unchanged.

1.13 *The Hospital Inpatient Enquiry* (HIPE) collects data on the age and sex of users of the acute hospitals, while the annual report, *Activities of Irish Psychiatric Hospitals and Units* presents similar data on admissions to and discharges from psychiatric hospitals. The age and sex of the mentally handicapped is available from census returns of the Medico Social Research Board. A similar methodology has previously been used to examine the implications of demographic change in the report *Services for the Mentally Handicapped*. Information is available on the age profile of users of the

General Medical Services. Finally, the result of the 1980 *Census of Long Stay Geriatric Hospitals* provides the necessary data for this sector. These five services presently account for around 75% of current public health service expenditure. Clearly a study of the implications of demographic changes on these services will indicate the likely implications for the entire health services.

Chapter 2

PROJECTIONS FOR SPECIFIC HEALTH SERVICES

2.1 This chapter presents the results of the application of the Council's previously published demographic projections (1) to the age and, in some cases, sex specific usage rates for the major health services. The methodology (2) noted at the end of Chapter 1 has been used to assess the overall requirements for the health services on the basis of existing patterns of utilisation remaining unchanged. In addition, the effects of population size and age structure have been separated. The details of each of the services examined are provided in Appendix 2.

Intensity of care

2.2 Although a considerable body of information is available on health service utilisation by age group, very little is known about how the cost of service varies by age group. In other words we lack data on the "intensity" of care by age, (intensity here meaning those aspects of care that are not catered for by measures such as number of hospital days). It is possible that the assumption of constant intensity of care within services may result in an overestimate of costs for some groups such as the elderly. There is some evidence from the US (3) that the average intensity of care for the elderly is less than for other age groups but the variation involved is small. This study, like a number of comparable studies, (4) uses the assumption of constant intensity of care, in the absence of the requisite information.

1. *Population and Labour Force Projections 1981-1991*, NESC Report No. 63. Fertility I assumption (continuing decline) is used throughout this study and the high and low projections are based on Assumptions I and II on migration (zero and 5000 per net emigration respectively).
2. As outlined in Appendix 1 and also in *Health Expenditures in Canada and the Impact of Demographic Changes in Future Government Health Insurance Programme Expenditure* J A Boulet and G Grenier, Discussion Paper 123, Economic Council of Canada.
3. *Differences by Age Groups on Health Care Spending*, C Fisher in *Health Care Financing Review*, Spring 1980.
4. *Health Expenditures in Canada and the Impact of Demographic Changes on Future Government Health Insurance Programme Expenditures* Economic Council of Canada, Paper No. 123 and also the forthcoming OECD study on health services.

Acute hospitals

2.3 The data on acute hospitals presented here refers to those covered by the Hospital Inpatient Enquiry (HIPE). Since the term "acute hospitals" is used by the Department of Health to include maternity and some other discharges, (acute psychiatric assessment, geriatric assessment and some long stay geriatric), in the following paragraphs the term "acute" will be qualified by the addition of (HIPE) where it is meant to indicate the narrower meaning of those discharges covered by HIPE. Otherwise the term acute will be used in the wider sense, as it is used by the Department.

2.4 Since the number of births is projected to show little change to 1986 and since the 1991 projections vary between +5% and -10%, depending on the assumptions (5) made about fertility, it has been assumed that the maternity hospital requirements will remain unchanged. However, it is likely that, as smaller maternity units in the (non-HIPE) acute hospitals are rationalised, there will be a growth on the number of maternity beds in the acute (HIPE) hospitals. This factor is not examined in the study.

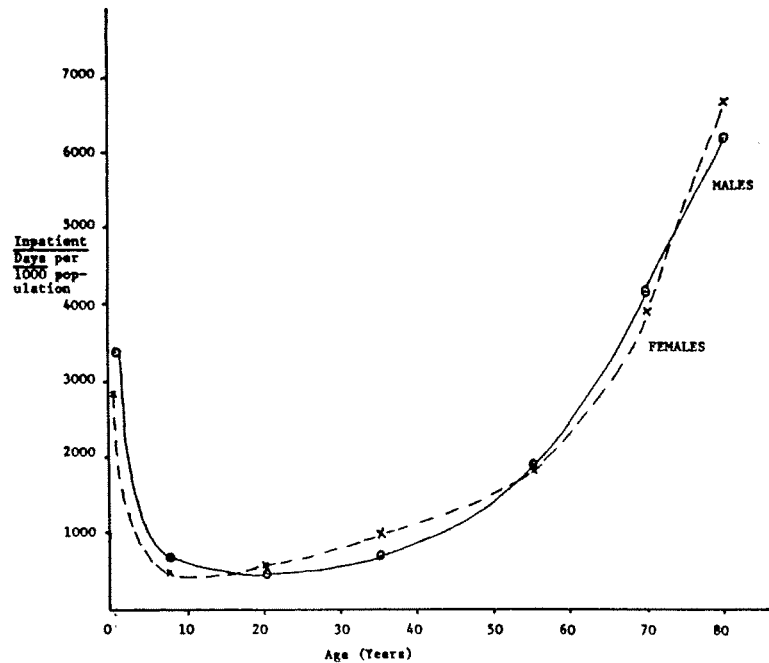
2.5 The usage or consumption rate of acute (HIPE) hospital inpatient hospital days by age and sex is illustrated in Figure 2.1 which exhibits the U shaped pattern referred to in Chapter 1. The rates for males and females are broadly similar. The female usage rates are, however, higher in the intermediate, child bearing years and for the over 70 age group. The rates for both males and females aged 65 and over, and particularly for the 75 plus, age groups are very high, at over 4000 and over 6000 inpatient days per 1000 persons respectively.

2.6 The application of the demographic projections of the 1979 consumption pattern of acute (HIPE) hospital inpatient services by age and sex (Tables A2.1 to A2.6) show that increases in inpatient days of between 5.3% and 6.3% by 1986 and between 10.0% and 11.9% by 1991 will be required to maintain the 1979 pattern. The projected increases in inpatient days is slightly higher for females than for males (Tables A4, A5). The high usage of acute (HIPE) hospitals by the elderly is evident. The male, over 65, age group accounted for 35% of all inpatient days consumed by males in 1979 and the proportion accounted for by females aged over 65 years was 40%.

5. *NESC Report No. 71, Education: the Implications of Demographic Change*, (forthcoming) Table C1. On the assumptions of a continuing decline in fertility, births by 1991 will decline by around 5% on 1979. On the assumption of unchanged fertility, births would increase by around 10% by 1991.

Figure 2.1

Usage of acute (HIPE) hospital services by age and sex,
(inpatient days per 1000 persons in relevant age and sex group)



Source: Table A2.3

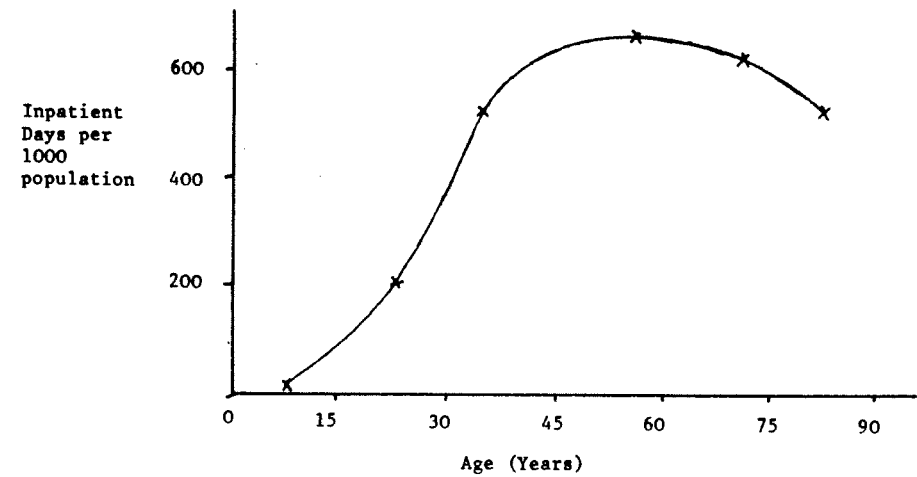
Psychiatric hospitals

2.7 The psychiatric hospitals pose particular problems due to their dual structure of inpatient usage. Some 80% of the places in psychiatric hospitals are occupied by long stay inpatients (over one year) while the remaining 20% of places cater for a high turnover of short stay patients, whose average duration of stay is around six weeks.(6) The age specific usage pattern of short stay psychiatric admissions is illustrated in Figure 2.2. Unlike the acute (HIPE) hospitals, the usage rate for psychiatric hospitals is very low for those aged under 15 and increases with age to over 500 inpatient days per 1000 for the 25-44 year age group, and peaks at around 650 inpatient days per 1,000 for the 45-64 age group before declining for the 65-74 and over 75 age groups.

6. *Activities of Irish Psychiatric Hospitals and Units in 1979*, Medico Social Research Board.

Figure 2.2

Distribution of short stay psychiatric admission rates by age, 1979



Source: Derived from *Activities of Irish Psychiatric Hospitals and Units in 1979*, MSRB.

2.8 The procedure adopted was to apply population projections by age to the short stay patients in order to estimate the change in provisions required by 1986 and 1991, ceteris paribus. Because the requisite detailed information is not available on the age profile of new entrants to the long stay psychiatric sector, it has been assumed that requirements in this sector will increase in proportion to the short stay sector. This assumption is based on the switch from a net outflow to a net inflow into this sector in the mid 1970s (Table A2.11).(7) Long stay psychiatric inpatients are no longer predominantly elderly: only 36% were aged over 65 in 1981. A comparison of the proportion of psychiatric inpatients who are long stay shows that the proportion did not change significantly in Ireland between 1971 and 1981. The proportion who are long stay in Ireland is identical to that of Northern Ireland and not much greater than the UK average. (see Appendix 2.2).

2.9 The projected increase in psychiatric requirements is between 7.9% and 8.9% by 1986 and between 14.8% and 16.8% by 1991, over the

7. The decline in the number of psychiatric inpatients up to 1971 has been shown to have been due largely to the re-classification of certain geriatric patients. "Since the largest proportion of these patients were long term schizophrenics, it is difficult to understand why they ceased being schizophrenic once they reached 65th birthdays" D. Walsh, and A. O'Hare, *Patients in Irish Psychiatric Hospitals and Units in 1971 - and in the future*, *Journal of the Irish Medical Association* May 14, 1977 p. 221.

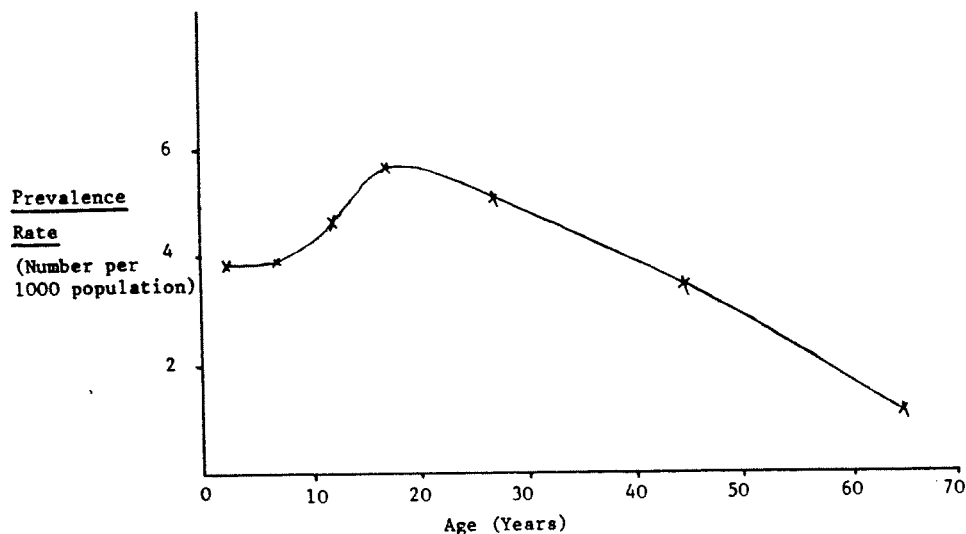
1979 level of provision, assuming the usage pattern by age remains unchanged.

Residential care for the mentally handicapped.

2.10 Turning to the residential centres for the mentally handicapped, the procedure adopted was to project the numbers of mentally handicapped persons in both 1986 and 1991 and to assume that the provision of places in residential centres will increase accordingly. Prevalence rates (8) of mental handicap by age are illustrated in Figure 2.3 which shows the rates as low for the very young, increasing to a peak for the 15 to 19 age group and declining to a low level for those aged over 55 due to the lower life expectancy of those so handicapped. The lower prevalence rates for the younger age groups are due partly to delayed recognition of mental handicap.

Figure 2.3

Prevalence rates by age for mentally handicapped, 1981



Source: Derived from N Mulcahy, S O'Connor, A Reynolds. Census of the Mentally Handicapped in Ireland in 1981, Irish Medical Journal, February 1983.

8. The prevalence rates are derived from the 1974 and 1981 Census of the Mentally Handicapped, carried out by the Medico Social Research Board. See *Census of the Mentally Handicapped in the Republic of Ireland 1981* N Mulcahy, S O'Connor, A Reynolds, *Irish Medical Journal* February 1983. The prevalence rates have been recalculated using the 1974 and 1981 population data rather than 1971 and 1979 data as used in the studies referred to.

2.11 Although the method adopted is in keeping with the aims of this exercise, namely the projection of the 1979 consumption patterns into the future as a base line, it must be noted that the official report *Services for the Mentally Handicapped* (9) counselled caution in adopting a policy of providing extra residential places. This counsel was based on the serious mismatch between the needs of the mentally handicapped (judged by degree of handicap) and those presently receiving residential care. The above report estimated that around half of those receiving residential care could be catered for in the community, if appropriate facilities were made available, and that there was an approximately equal number of mentally handicapped persons in need of residential care who are at present being cared for outside the residential centres. In this study it has been assumed that the number of residential places will be increased in proportion to the increased numbers of mentally handicapped persons on the grounds that

- (a) there may be difficulties in moving from residential to community care many of those who could in theory be catered for in the community
- (b) that even if increased numbers were cared for in the community, there would be approximately equal costs entailed as those of providing residential care.(10)

2.12 The projected increase in residential care places for the mentally handicapped (in line with the numbers so handicapped) is between 5.1% and 5.9% by 1986 and between 9.9% and 11.9% by 1991. The projected number of mentally handicapped persons has been estimated by extrapolating the percentage changes in prevalence rates for mental handicap per 1,000 persons between 1974 and 1981, derived from the census of mentally handicapped in each of those years.(11) The projected increases show declines for the younger age groups due to lower maternity ages and improved preventive measures.(12) Increased life expectancy boosts the projections for the middle age groups (Table A13).

General medical services

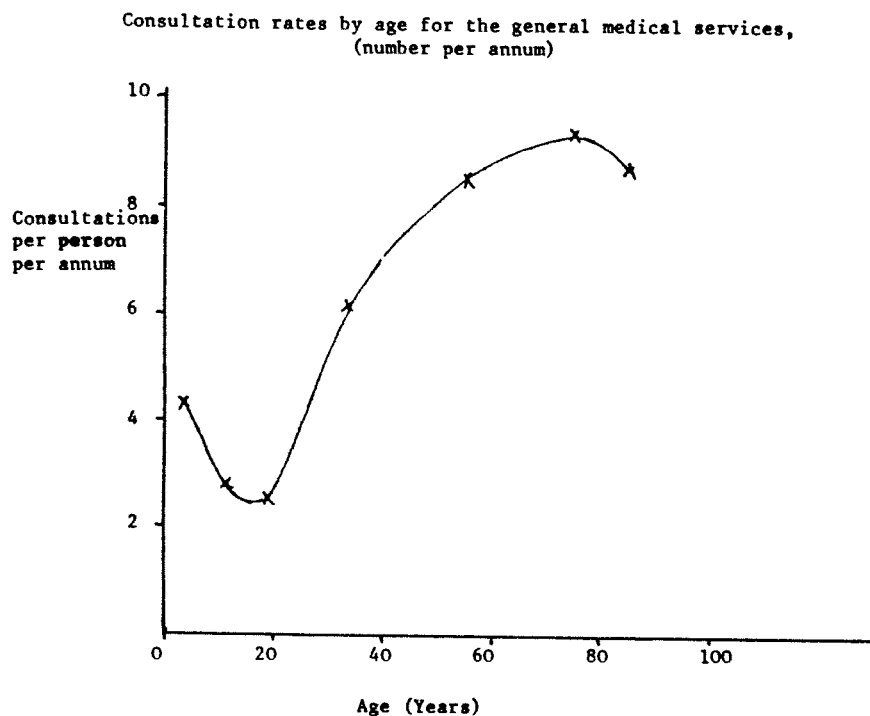
2.13 In projecting usage of the general medical services it has been assumed that the proportion of the population holding Category I eligibility will remain unchanged. On this basis, the number of consultations in 1986

9. *Services for the Mentally Handicapped*, Department of Health, 1980.
10. The costs of out-patient facilities for the mentally handicapped in England are similar to the cost of residential care - see *Health Services Costing Returns 1978/79*, HMSO London 1981. It is arguable that there is a need to consider forms of care which are intermediate to both institutional and community care.
11. *Census of the Mentally Handicapped 1974* Medico Social Research Board.
12. See *Services for the Mentally Handicapped* for a discussion of these factors.

and 1991 have been calculated using consultation rates by age only.(13) The consultation rate is shown in Figure 2.4 to vary by age in a U shaped curve, falling from around four consultations per annum for the under 1 age group to around two for the 15 to 20 age group before rising sharply with age. The consultation rate declines somewhat however for the over 75s, due perhaps to their greater reliance on institutional care.

2.14 The application of the demographic projections to these consultation rates shows an increase in the number of consultations of between 5.1% and 6.0% by 1986 and between 9.4% and 11.3% by 1991 (Tables A14, A15, A16). The relative significance of the over 65 age group comes out clearly with this group accounting for just over 36% of all GMS consultations in 1979. Application of more highly specific age-consultation rates and the inclusion of rates for each sex would enable greater precision in the results.

Figure 2.4



13. Although data is collected on consultations by age, sex and marital status by the General Medical Services (Payments) Board, it is not readily available.

Geriatric long stay care

2.15 In projecting the impact of demographic change on the institutional provision of geriatric long stay places, it was assumed that the 1980 relationship between the number of places and the 65 to 74 and the 75 and over age groups would remain unchanged. The number of long stay geriatric places per 1,000 of population varies sharply with age. The provision for the 75 and over age group is between four and five times that for the 65 to 74 age group.(14) The age specific provisions, available for the long stay geriatric units surveyed by the Department of Health in 1980, have been extended to include the long stay District Hospitals.

2.16 The results show an increase of between 6.5% and 7.7% by 1986, and between 13.3% and 15.8% by 1991, in geriatric long stay requirements. By contrast, the overall projected increase for the over 65 age group is considerably lower, indicating the high relative significance of the over 75 age group. Details of geriatric provisions by sex are not available for each age group.

Overall expenditure implications

2.17 The results of the projections for each service are summarised in Table 2.1 which also shows the projected increase in the combined expenditure on the services examined. The projected changes in the requirements for each service have been weighted by expenditure on that service in 1979 (15). This assumes that expenditure is related directly to the quantity of service used. The results indicate an increase in overall health service provision reasonably close to that of the projected population increase. On the high population projection of an increase of 8.1% by 1986 and 13.6% by 1991, the equivalent increases in health services expenditure are estimated at 6.8% and 13.1% respectively. The low population projection of an increase of between 7.3% and 11.2% in 1986 and 1991, respectively, involves an increase in health service expenditure of 5.8% by 1986 and 11.1% by 1991. The reason for the less-than-proportionate increase in health service

14. Information received from the Department of Health based on the *Census of Long Stay Geriatric Units, 1980*.

15. The weights used are based on the 1979 estimated expenditure on each of the main services, viz:

| | £ |
|-------------------|--------|
| Acute (HIPE) beds | 194.0m |
| Psychiatric | 72.5m |
| Mental Handicap | |
| Residential | 22.0m |
| GMS | 49.0m |
| Geriatric | 36.0m |
| | <hr/> |
| | 373.5m |

Net public expenditure on the health services was £505m in 1979.

expenditure by 1986 is that the population structure is becoming more favourable from the point of view of the age-related usage of most of the health services examined. This effect will no longer apply by 1991.

Age structure effect

2.18 Since the usage pattern of some health services is highly age specific, the changing age structure of the population may moderate or exaggerate the effects of the changing size of the total population. By using the methodology outlined in Appendix 1 it is possible to separate the effect of population size increases from that of the age structure of the same population. The results of this exercise, presented in Table 2.2, show that the age structure overall has a significant moderating effect on the consumption of these health services in 1986. A negative sign before the value for the age structure effect indicates that this factor is having a moderating influence on the projected total increase. The combined total increase in projected requirements for the services examined is shown as increasing at between 0.8% and 0.9% annually by 1986 and by between 1.0% and 1.2% annually by 1991. These increases are below the growth rate of total population by 1986 and above it by 1991, due to a switch in the age structure effect. The only services in which the age structure is projected not to have a moderating impact in 1986 are psychiatric hospitals and geriatric long stay. By 1991 the picture is less clear and depends more on the population assumptions.

2.19 To summarise then, the health services required to maintain 1979 consumption patterns will involve overall increases of between 6% and 7% by 1986 and between 11% and 13% by 1991. The projected increases are less than those in total population due to the relatively more favourable age structure by 1986 but this effect no longer applies by 1991.

Table 2.1

Projections of public health services utilisation and expenditure, with low and high demographic growth, constant prices and constant consumption patterns, 1986 and 1991.

| | | 1986 | 1991 |
|---------------------------------------|---|-------------------|-------------------|
| | | \$ change on 1979 | \$ change on 1979 |
| <u>Assumption I - high</u> | | | |
| 1 | Acute (HIPE) hospitals | 6.3 | 11.9 |
| 2 | Psychiatric hospitals | 8.9 | 16.8 |
| 3 | Residential care for mentally handicapped | 5.9 | 11.9 |
| 4 | General medical services | 6.0 | 11.3 |
| 5 | Geriatric long stay provisions | 7.4 | 15.7 |
| Total expenditure (on above services) | | 6.8 | 13.1 |
| Population change | | 8.1 | 13.6 |
| <u>Assumption II - low</u> | | | |
| 1 | Acute (HIPE) hospitals | 5.3 | 10.0 |
| 2 | Psychiatric hospitals | 7.9 | 14.8 |
| 3 | Residential care for mentally handicapped | 5.1 | 9.9 |
| 4 | General medical services | 5.1 | 9.4 |
| 5 | Geriatric long stay provisions | 6.4 | 13.3 |
| Total expenditure (on above services) | | 5.8 | 11.1 |
| Population change | | 7.3 | 11.2 |

Table 2.2

Average annual growth rates of certain public health services
broken down by component, 1986 and 1991

| Population assumption I high growth | | 1986 | 1991 |
|--|----------------------|--------|--------|
| | | § p.a. | § p.a. |
| Acute (HIPE) hospitals | | | |
| | Age structure effect | -0.257 | +0.023 |
| | Total Increase | +0.863 | +1.027 |
| Psychiatric hospitals | | | |
| | Age structure effect | +0.096 | +0.425 |
| | Total Increase | +1.216 | +1.429 |
| Mentally handicapped (residential) | | | |
| | Age structure effect | -0.462 | +0.111 |
| | Total Increase | +0.658 | +1.115 |
| General medical services | | | |
| | Age structure effect | -0.282 | -0.026 |
| | Total Increase | +0.838 | 0.978 |
| Geriatric longstay | | | |
| | Age structure effect | -0.110 | +0.041 |
| | Total Increase | +1.010 | +1.045 |
| Total | | | |
| | Age structure effect | -0.176 | +0.152 |
| | Total Increase | +0.944 | +1.156 |
| Population change (projected) | | +1.120 | +1.004 |
| Population assumption II low growth | | | |
| Acute (HIPE) hospitals | | | |
| | Age structure effect | -0.283 | 0.000 |
| | Total Increase | +0.726 | +0.865 |
| Psychiatric hospitals | | | |
| | Age structure effect | -0.078 | +0.407 |
| | Total Increase | +0.931 | +1.272 |
| Mentally handicapped | | | |
| | Age structure effect | -0.447 | -0.039 |
| | Total Increase | +0.562 | -0.826 |
| General medical services | | | |
| | Age structure effect | -0.298 | -0.026 |
| | Total Increase | +0.711 | +0.811 |
| Geriatric long stay | | | |
| | Age structure effect | 0.000 | +0.148 |
| | Total Increase | +1.009 | +1.013 |
| Total | | | |
| | Age structure effect | -0.170 | +0.123 |
| | Total | +0.839 | +0.988 |
| Population change (projected) | | +1.009 | +0.865 |

Note: Assumption I: Zero net emigration 1981-91.
Assumption II: 5,000 p.a. net emigration 1981-91.

CHAPTER 3

IRISH PUBLIC HEALTH SERVICE EXPENDITURE TRENDS

3.1 This chapter traces the growth in Irish public health service expenditure by programme from 1977 to 1982 and provides estimates of the cost per unit of service (as measured in inpatient days and visits to the doctor). The implications of a continuation of the recent trend in unit costs for the share of public health service expenditure in GNP are outlined.

Irish public health service expenditure, by programme

3.2 Data on Irish public health service current expenditure has been provided by programme since 1976. Seven broad programmes are distinguished: (1)

1. *Community - covering: Protection*
Prevention of infectious diseases,
Child health examinations,
Food hygiene and standards,
Drugs Advisory Board,
Health Education,
Other preventive services.
2. *Community - covering: Health*
General Practitioner Services,
Drug subsidy and refund schemes
Home nursing services,
Domiciliary maternity services,
Family planning,
Dental Services,
Ophthalmic Services,
Aural Services.
3. *Community - covering: Welfare*
Cash payments to disabled persons,
Mobility allowances,
Cash payments to persons with certain
infectious diseases,
Maternity cash grants,

1. Detailed data on expenditures on each of these subprogrammes are published each year in *Statistical Information Relevant to the Health Services* (Department of Health). Current expenditure does not include the costs of servicing capital expenditure funded by borrowing.

Allowances for "constant care" of handicapped children,
 Cash payments to blind persons,
 Home help services,
 Meals-on-Wheels Services,
 Grants to voluntary welfare agencies,
 Supply of free milk,
 Boarding out of children,
 Payments for children in approved schools,
 Welfare homes for the aged.

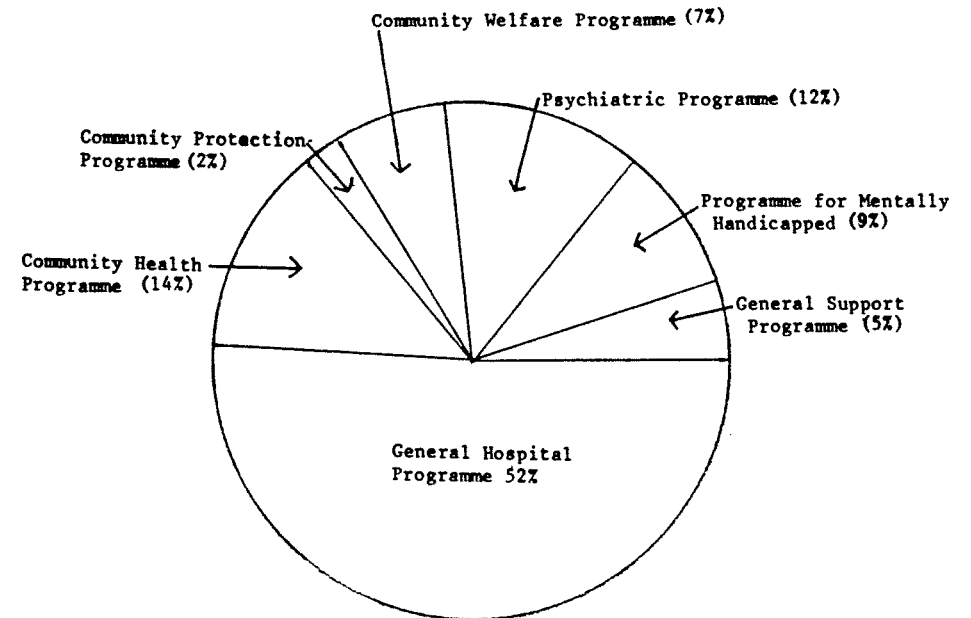
4. *Psychiatric* - covering: Services for diagnosis, care and prevention of psychiatric ailments
5. *Handicapped* - covering: Care in special homes for mentally handicapped, Care of mentally handicapped persons in psychiatric hospitals, Care in day centres for mentally handicapped, Assessment and care of blind, Assessment and care of deaf, Assessment and care of persons otherwise handicapped, Rehabilitation service.
6. *General - covering: Hospitals* Services in regional hospitals, Services in public voluntary hospitals, Services in health board county hospitals and homes, Contributions to patients in private hospitals, Services in district hospitals, Services in health board long-stay hospitals, Ambulance services.
7. *General - covering: Support* Central administration, Local administration (Health Boards), Research, Superannuation, Finance charges (including interest on borrowings, insurances), etc.

3.3 Expenditure by programme in 1981 is shown in figure 3.1. The General Hospital programme clearly dominates public health service current expenditure, accounting for just over half gross current expenditure. The Community Health Programme was the second largest programme in

expenditure terms (14% of current expenditure) followed by the Psychiatric and Handicapped programmes which absorbed 12% and 9% of current expenditure, respectively. (The detailed data on expenditure by programme is provided in Appendix 3, Table 3.1).

Figure 3.1

Public health service expenditure by programme, 1981

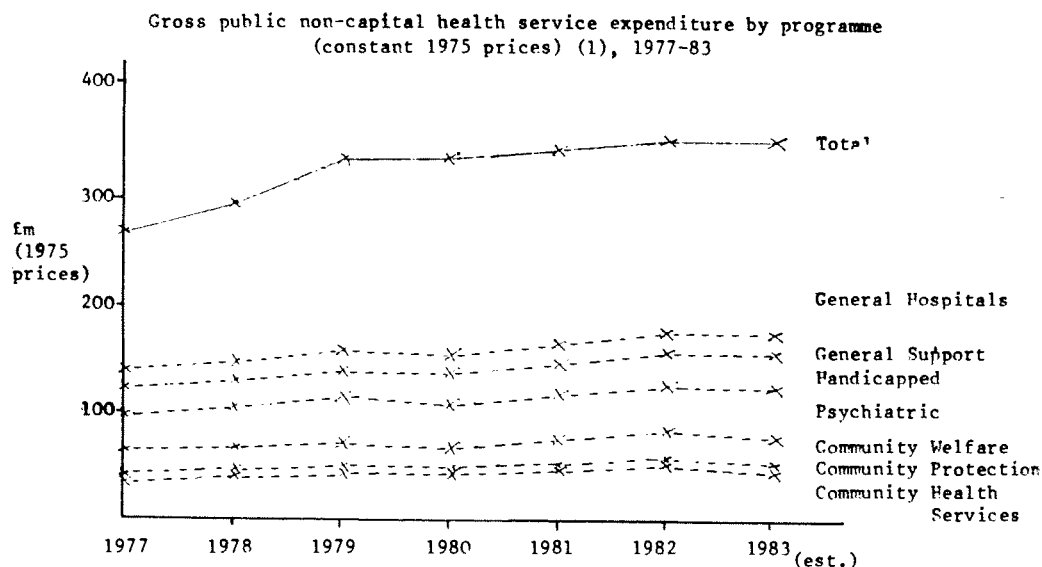


Source: Statistical Information relevant to the Health Services, 1982.

3.4 Expenditure by programme in constant prices is shown in Figure 3.2. Between 1977 and 1982, net real expenditure (2) grew by just over 36%. Most of the increase was between 1977 and 1979 (11% and 17% increases respectively), after which the rate of increase slowed to under 2% in each year to 1982. As shown, a drop in real expenditure of some 1% is implied in current estimates for 1983. The greatest growth between 1977

2. There is no price index available for health expenditure per se. In order to translate current expenditure into real terms i.e. expenditure at constant prices, the implicit price index for public authorities net current expenditure has been used. A more refined deflator is required to analyse small changes in real expenditure. Consequently the trends noted here are approximations. Around 66% of current health service expenditure is made up of wage costs, compared to around 50% for current public expenditure.

Figure 3.2



Note: (1) Deflated by the implicit price index for current public expenditure.

Source: Appendix 3.

and 1982 was in the Community Health Service, (45%), the Programme for the Handicapped, (43%) and the General Hospitals Programme, (39%). The other major programmes, the Psychiatric and the Community Welfare Programmes grew by just over 20% each. Much smaller increases were recorded in the remaining programmes.

3.5 Although expenditure on the General Hospital Programme has been falling by small amounts in real terms since 1980, because of its large share in public health service expenditure, this programme accounted for 56% of the increase in real expenditure on current health services between 1977 and 1982.

3.6 A breakdown of expenditure on the General Hospital Programme highlights the importance of Health Board County hospitals and homes in the increased real expenditure programme (Appendix 3, Table A3.3). Expenditure in these hospitals grew by 66% in real terms between 1977 and 1982. Increases of over 40% were recorded in the Regional Hospitals. Expenditure increases in the other hospitals were below average.

3.7 The particularly high increase in real expenditure in health board county hospitals and homes may have been due to the Government's decision in the 1975 *National Hospital Development Plan* (3) to develop 22 general hospitals. This led to increased expenditure with the upgrading of mainly county hospitals. No estimates appear to have been made of the cost implications of this decision, nor of the optimum size for general hospitals.

3.8 The Fitzgerald Report (4) recommended the development of 12 general hospital centres, each serving a population of at least 100,000. It has been estimated that 16 out of the 22 centres finally chosen serve populations of less than 100,000.(5)

Cost per unit of service

3.9 Very little information is available on the average costs per unit of service, whether measured in inpatient days or doctor consultations. The available information is examined in Appendix 3, (Tables A3.4 to A3.7) and the results are presented in summary form in Table 3.1.

Table 3.1

Cost per inpatient day and GP consultation, various institutions, 1980, and cost trends 1977-80

| | Cost per IP day (current prices) | Cost Increase p.a. 1977-80 (current prices) | Cost Increase p.a. 1977-80 (1975 prices) (1) |
|--|----------------------------------|---|--|
| | £ | £ | £ |
| Acute hospitals | 61.3 | 29.1 | 11.5 |
| Special centres for the mentally handicapped | 18.1 | 32.8 | 14.6 |
| Psychiatric hospitals | 22.4 | 30.2 | 12.5 |
| General medical services (per consultation) | 8.1 | 11.7 | n.a. |

Note (1) Using the implicit price deflator for net current expenditure by public authorities.

Source: Appendix 3, this report

3. *National Hospital Development Plan*, Department of Health 1975.
4. *Report of the Consultative Council of the General Hospital Services, 1968*, Stationery Office.
5. *Grasping the Nettle - Locational Strategies for Irish Hospitals*, A Homer and A Taylor, Administration, Vol 27, No. 3, 1979.

3.10 The high cost per inpatient day in acute hospitals is striking: at £61 per day in 1980, it is some three times the cost of maintaining a person in a special home for the mentally handicapped or in a psychiatric hospital. The annual average trend in costs between 1977 and 1980 is presented both in nominal and real terms due to the difficulty of using a single price index, particularly in the case of GMS consultations where the cost of a consultation is made up of disparate items, the largest of which is the cost of drugs (See Table A3.7 in Appendix 3 for details)

3.11 The cost increases in nominal terms are highest for residential centres for the mentally handicapped at 32.8% p.a. followed by 30.2% p.a. for psychiatric hospitals and 29.1% p.a. for the acute hospitals. The cost increases in the GMS were considerably lower at 11.7% p.a.

3.12 The cost increases have been expressed in real terms for the inpatient provisions where a single price index is more appropriate. The real cost increases vary between 11.5% p.a. in the acute hospitals to 14.6% in the residential centres for the mentally handicapped.

3.13 The high cost increases for inpatient facilities were affected by the 1980 pay settlement in the health services. The 1977 to 1979 trend was lower: at around 7% in real terms for acute (HIPE) and psychiatric hospitals, and somewhat higher for residential care for the mentally handicapped. Although it is dangerous to generalise on the basis of the evidence of only four years data, there does appear to be evidence of significant cost inflation in the provision of inpatient facilities. In turn, inpatient expenditure accounts for over two thirds of net public health service expenditure.

3.14 It can be argued on a priori basis that real cost inflation is to be expected in certain labour intensive sectors where there is little opportunity for productivity increases. This is most likely to arise in the services sector. If such a sector is located in an economy where productivity increases in other sectors offset wage increases so that unit costs in the other sectors remain constant, then the application of economy-wide levels of wage increases will relentlessly push up unit costs in the low productivity sector. This phenomenon is known as Baumol's Disease.⁽⁶⁾ It has been suggested that such an explanation applies to educational costs in Ireland.⁽⁷⁾ It has not been possible to devise any measures of health service productivity in Ireland with which to test whether productivity growth has been low relative to other sectors.

6. *Macroeconomics of Unbalanced Growth*, W J Baumol, *American Economic Review* 1967.

7. See *Irish Educational Expenditure: Past, Present and Future* A D Tussing, ESRI Paper 92 1978. and *Education: the Implications of Demographic Change*, D Murphy, NESC Report 71, forthcoming.

3.15 It is also possible that unit costs have increased because of an increase in the number of personnel employed per unit of service. The number of persons employed by the Health Boards and by Voluntary Public Hospitals increased by almost 33% between 1975 and 1981. (See Table A.6.8 in Appendix 3). The category, Nursing and Allied, (8) which accounted for 52% of those employed in 1981, showed the largest increase since 1975: a jump of 45%. Unfortunately, details of personnel employed by service are not available. However, it is possible to obtain a rough overall estimate of the ratio between nurses and inpatient places by dividing the number classified as Nursing and Allied (9) by the number of places in acute, psychiatric and geriatric hospitals. In 1975 there were an average 0.53 nurses per inpatient place and by 1980 this had increased to 0.76, a rise of 43% (See Appendix 3, Table A3.9). The increases in the ratio of nurses to inpatient places is likely however, to be due in part to reduced working hours per nurses.

3.16 The share of public health service expenditure in GNP depends on the cost per unit of service and the per capita usage of the service. Real increases in unit costs will inevitably increase the share of health service expenditure in GNP unless GNP per capita grows or per capita usage falls. A matrix of growth rates for public health expenditure for a variety of assumptions on unit costs and GNP per capita trends, and constant per capita usage (10) are outlined in Appendix 3 (Table A3.10). If GNP per capita remained unchanged to 1986, a 5% growth in per unit costs would increase the share of health service expenditure in GNP by 36%. Only a zero rate of increase in unit costs could reduce the health service/GNP ratio in this scenario. At the other extreme, a GNP per capita growth rate of 3% (equivalent to a GNP growth rate of 4% because of continuing population growth) would involve significant declines in the health service/GNP ratio if the growth in unit costs was less than 3% p.a. However if unit costs grew by more than 3% p.a., the ratio of health services/GNP would once again increase rapidly. Thus the future share of health service expenditure is highly sensitive to unit cost trends. Increased attention to these trends and to the factors which determine productivity would seem to warrant a high priority in further research.

8. Nurses comprise about 85% of the category Nursing and Allied, with the remainder being made up of nursing aids, attendants and orderlies.

9. Nurses employed in special residential Homes for the Handicapped are not included in the data on personnel employed.

10. The results are approximate in that the methodology is based on differential calculus and thus is strictly true only for very small changes in the variables.

CHAPTER 4

INTERNATIONAL COMPARISONS

4.1 This chapter first compares the level of Irish health service expenditure as a proportion of national income (1) with the levels in OECD and EEC countries and in more detail with the countries within the UK (2). Comparison is made of health service provisions, their pattern of utilisation and unit costs in the latter group of countries. Finally the question of "need" for health services is examined in relation to UK official studies of relative needs by country as measured by various morbidity indicators. The main morbidity indicators are shown to be similar in Northern Ireland and Ireland. It is suggested that acute (HIPE) bed provisions in both Northern Ireland and Ireland are excessive in relation to need.

Selected international comparisons and trends

4.2 All the studies on international health service expenditure show Ireland to have a high share of national resources devoted to health services. An earlier NESC report, *Some Major Issues in Health Policy* (3) showed Irish health care expenditure in 1971/72 expressed as a percentage of GNP, to be on a par with that of the UK despite less-than-universal coverage. The OECD study *Public Expenditure on Health* (4) put Ireland's health service expenditure ratio above the OECD average in 1975 and close to the top of the EEC group of countries. A later EEC study (5) argued that Ireland had had the most rapid growth in the EEC of its health service - GNP ratio up to 1975. A 1981 survey (6) showed a tapering off of growth in health service expenditure in a number of EEC countries by the late 1970s. It was shown in

1. Both GNP and GDP is used in international comparisons. GNP is arguably the more relevant indicator for Ireland where GNP is now significantly below GDP due to servicing of foreign borrowing and repatriation of profits by overseas companies. However, variations in interest rates will cause both net factor income from abroad and GNP to vary, but will not directly affect GDP. Hence GDP is a more stable aggregate and is used where possible.
2. The term "countries within the UK" is based on HMSO usage.
3. NESC Report No. 29 *Some Major Issues in Health Policy* p.34. Stationery Office, Dublin 1977.
4. *Public Expenditure on Health* p. 18, OECD, Paris 1977.
5. *The Organisation, Financing and Cost of Health Care in the European Community*, B Abel Smith and A Maynard, Social Policy Series No. 36, Brussels 1978.
6. *Trends in European Health Spending*, Office of Health Economics, Briefing No. 14, 1981, London.

an earlier chapter that Ireland's public health service/GNP ratio continued to grow rapidly in the late 1970s, with the result that Ireland's ratio became further out of line. The most recent EEC government accounts (7) do not include more recent data but it is likely that continued growth in Irish health service expenditure into the 1980s has further increased the disparity.

4.3 The health service expenditure/GDP (9) ratio is a highly complex and aggregated statistic and needs to be interpreted with care for several reasons:

Firstly, the ratio is likely to be related to GDP per capita since health service expenditure typically increases with income. An examination of the OECD data for 1975 confirms this hypothesis (10) showing that the more prosperous countries tend to have high health service/GDP ratios and vice versa.

Secondly, lower income countries may tend to have higher-than-expected health service expenditure/GDP ratios if standards of health services are set by those prevailing in neighbouring, higher income, countries. The close relationship between Ireland and the UK is likely to have contributed to health service expectations above those justified by Ireland's relative GDP per capita.

Thirdly, to the degree that health service inputs, including drugs, are imported at internationally traded prices, a relatively greater share of resources will be devoted to health services in poorer countries. Similarly, it may be necessary to pay wages at international levels to retain certain categories of internationally mobile health service personnel.

Fourthly, a country with a relatively high dependency ratio will tend to have a high demand for health services which has to be financed from a relatively small workforce. Consequently, the share of national income devoted to the health services will be high due to both higher levels of need and lower GDP per capita. Ireland has a high dependency ratio and low GDP per capita by EEC standards.

4.4 For the above reasons one would expect Ireland to have a high health service/GDP ratio and one would expect to find similarly high ratios in Northern Ireland, Scotland and Wales where GDP per capita is relatively low and dependency ratios are relatively high. Table 4.1 confirms this hypothesis

7. *General Government Accounts and Statistics*, Eurostat, Brussels 1983.
8. It is understood that a forthcoming OECD study of health service expenditure trends will confirm this point.
9. The same point applies with even more force to health service expenditure/GNP comparisons for the reasons noted in footnote 1.
10. *Public Expenditure on Health*, OECD, 1977. See also Tussing AD, *Health, Health Policy and Poverty in Poverty and Social Policy*, L Joyce and A McCashin, Dublin 1982.

by showing that public health service/GDP ratios are considerably higher for Northern Ireland, Scotland and Wales than for England. In this comparison, Ireland exhibits a ratio which, while above that of England, is below that of the other countries. Because of the difficulties of ensuring like is being compared with like, health service/GDP ratios are shown including and excluding personal social services for the UK (11), and for Ireland, including and excluding the Community Welfare Programme and the Programme for the Handicapped and several sub-programmes to do with the community protection. On either measure, the statistic for Ireland is below those of Wales, Scotland and Northern Ireland and is only slightly above that for England. The ratio for Northern Ireland, on the broad definition, (including personal social services) is extremely high at 10.4% GDP in 1979/80 and 12.0% in 1980/81 (12).

UK comparisons of health service provisions

4.5 International comparisons are particularly difficult in health service provision, both because of different health service systems (with, for example, different community/ institutional emphases), and also because morbidity is likely to vary by country, in response to climate, income levels, diet, housing, etc. The similarity of climate, diet and culture is likely to have produced similar patterns of morbidity across the UK and Ireland, and particularly in Northern Ireland and Ireland. The following paragraphs compare health service provision by UK country with Ireland.

Bed population ratios

4.6 The ratios of beds occupied per 1,000 population are presented in Table 4.2, divided by acute (HIPE) specialties, maternity, psychiatric and mental handicap and geriatric beds. A wide degree of variation in the overall ratio is evident with the ratio for England the lowest at 9.1 and the ratios highest for Scotland, 11.9, and Northern Ireland, 11.4. The ratio for Ireland, at 13.5, is considerably above any of the UK countries.

11. Personal social services in the UK cover: residential accommodation provided by or on behalf of local authorities for the elderly and the handicapped; homes, hostels, day care and training centres for the mentally handicapped; nurseries, child minding and mother and baby homes; home help services, meals services, certain other aids to households; assistance by local authorities in the provision of holidays; children in care of local authorities.
In Ireland exclusion of the Community Welfare Programme and the Programme for the Handicapped along with such programmes as those dealing with food hygiene, the Drugs Advisory Board and the Health Education Bureau, would approximate to the exclusion of the personal social services. Exclusion of the entire programme for the Handicapped is debatable since the more acute care provided under this Programme is provided in hospitals in the UK. However, it is not possible to separate out this element from the available data. Thus, the revised statistic for Ireland may be an under-estimate.
12. Data for health service expenditure, excluding personal social services is not available for Northern Ireland.

Table 4.1
Current public health service expenditure as % GDP, UK countries and Ireland 1979/80, 1980/81

| | | England | Wales | Scotland | Northern Ireland | Ireland (1) |
|---|-----------|---------|-------|----------|------------------|-------------|
| <u>Public health service expenditure as % GDP (wide definition (2))</u> | (1979-80) | 6.2 | 7.1 | 8.1 | 10.7 | 7.1 |
| | (1980-81) | 6.9 | 8.3 | 9.0 | 12.0 | 8.0 |
| <u>Public health service expenditure as % GDP (narrow definition (3))</u> | (1979-80) | 5.0 | 6.0 | 6.4 | n.a. | 5.9 |
| | (1980-81) | 5.7 | 7.0 | 7.3 | n.a. | 6.6 |

Notes: (1) Ireland's data for 1979, 1980 and 1981 combined to estimate fiscal years data.

(2) Including personal social services in the UK and Department of Health current expenditure in Ireland.

(3) Excluding personal social services in the UK and programmes for Community Welfare, the mentally handicapped etc. in Ireland (programmes numbered 1.3, 1.4, 1.5, 2.4, 2.5, 3.1, to 3.12, and 5.1 to 5.7 in the Department of Health's expenditures by programme).

Source: Derived from Regional Trends 1982 Tables 10.1 and 10.10 and Statistical Information Relevant to the Health Services 1980, 1981.

TABLE 4.2

Occupied(1) beds in hospitals and residential centres, numbers per 1,000 population, UK countries and Ireland, 1979

| | England | Wales | Scotland | Northern Ireland | Ireland |
|--|--------------|--------------|--------------|------------------|--------------|
| Acute specialties (2) | 2.1 (2.8) | 2.1 (3.1) | 2.5 (3.5) | 3.5 (4.2) | 3.2 (3.8) |
| Maternity per 1,000 females aged 15-44 (3) | 1.4 (1.9) | 1.4 (2.1) | 1.9 (2.6) | 2.2 (2.9) | 2.2 (2.7) |
| Psychiatric mental illness (4) mental handicap | 3.1 (3.5) | 3.1 (3.4) | 4.7 (5.1) | 3.8(7) (4.6) | 5.2 |
| Geriatric (5) per 1,000 persons aged 65+ | 24.7 | 31.3 | 30.7 | 33.3 | 39.5 |
| Other (6) | - | - | - | - | 0.4 |
| Total beds per 1,000 population | 9.1 | 10.3 | 11.9 | 11.4(7) | 13.5 |

Notes: (1) "Occupied" rather than "available" bed population ratios have been used because data on the latter are not collected in all cases. The figures in brackets show ratios for "available" beds, where possible.

(2) UK data from *Regional Trends 1982*, HMSO, Table 4.4

Ireland's data from *Statistical Information Relevant to the Health Services 1981*, Table G1, excluding maternity, psychiatric and geriatric assessment beds, all district hospitals, cottage hospitals and all private hospitals.

(3) UK data as (2). Ireland's data: *Statistical Information Relevant to the Health Services*.

(4) UK data by combining Table 4.4 and 4.15 *Regional Trends 1982*.

Ireland's statistic was derived by combining Health Board Psychiatric Hospitals and Units, Special Psychiatric Hospitals, acute psychiatric beds, Special Residential Centres for the Mentally Handicapped.

(5) UK data as for (4). Ireland's statistic was derived by combining acute geriatric assessment beds, longstay District Hospitals and the 1980 data on Health Board Geriatric Units (including private and voluntary Hospitals and Homes) in *Statistical Information Relevant to the Health Services, 1982*.

(6) "Other" comprises Short Stay District Hospitals and Cottage Hospitals, which do not fit easily into any of the other categories

(7) Northern Ireland's statistic excludes mentally handicapped

4.7 The acute hospital bed ratios are similar in Ireland and Northern Ireland at 3.2 and 3.5 respectively but are considerably above the ratio of 2.1 in both England and Wales. The maternity bed ratios are identical in Ireland and Northern Ireland at 2.2 per 1,000 females of child bearing age and once again the ratios for England and Wales were considerably lower at 1.4. It should be noted that birth rates are significantly higher in Ireland and Northern Ireland than in Britain, however. The ratio for psychiatric and mental handicap beds is also high in Ireland, 5.2 relative to the figure of 3.1 for England and Wales. In each of these comparisons Scotland exhibits an intermediate ratio.

4.8 The ratios for geriatric beds follow the same pattern, with the ratio of 39.5 for Ireland the highest, followed by that for Northern Ireland, 33.3 and dropping to a low of 24.7 for England. The ratios for geriatric provision are complicated by the varying extent of voluntary and private residential accommodation in each country. If such provision is excluded, the ratio for Ireland falls to 27.0, compared with 28.3 for Northern Ireland, 24.6 for Scotland, 25.6 for Wales and 22.3 for England. Thus while the disparity is lessened, the pattern remains broadly the same.

Medical Personnel

4.9 The number of various categories of nursing and medical personnel per 100,000 population are shown in Table 4.3 for the UK countries and for

Table 4.3

Medical staff comparisons, UK countries and Ireland, 1979
(numbers per 100,000 population)

| | England | Wales | Scotland | N. Ireland | Ireland |
|---|---------|-------|----------|------------|---------|
| Hospital nurses and midwives per 100,000 | 753 | 807 | 1,084 | 1,061 | 899(1) |
| Hospital consultants per 100,000 | 23 | 22 | 33 | 29 | 28 |
| GPs per 100,000 | 47 | 50 | 58 | 49 | 48 |
| Non consultant hospital doctors (per 1,000) | 44 | 44 | 68 | n.a. | 48 |

Notes: (1) The Irish statistic is based on the number of qualified nurses and student nurses employed by Health Boards and Voluntary Public Hospitals, plus an estimate of the number of nurses employed in residential homes for the mentally handicapped.

Source: Office of Health Economics *Compendium of Health Statistics 1981* (London, 1981) and *Statistical Information Relevant to the Health Services, 1980, 1981*.

Ireland. The ratio of 899 nurses per 100,000 population in Ireland, while considerably above the rates of 753 for England and 807 for Wales, is appreciably below the figures of 1084 for Scotland and 1061 for Northern Ireland.

4.10 The number of hospital consultants per 100,000 population was 28 in Ireland in 1979 compared to 23 in England, 22 in Wales and 33 in Scotland. The number of non-consultant hospital doctors per 100,000 was 48 for Ireland compared to 44 in both England and Wales and 68 in Scotland. Finally, the number of GPs per 100,000 population at 48 for Ireland was close to the English figure and was exceeded by each of the other countries. The conclusion then would appear to be that Ireland has high bed-population ratios and personnel-population ratios relative to levels in England and Wales but has similar ratios in many cases to those of Scotland and Northern Ireland.

Utilisation of services

4.11 There are difficulties in comparing utilisation rates due to the differences between the universalist National Health Services in the UK and the mixed eligibility system in Ireland. The comparison of acute (HIPE) hospital discharges is reasonable, however, since the provision of this service in Ireland is universally available. Discharge rates from acute hospitals can be calculated for England and Wales and for Ireland using the Hospital Inpatient Enquiries.

4.12 Irish acute (HIPE) hospital discharge rates are higher than those for England and Wales, classified by age and sex, as shown in Table 4.4 for 1978. The rates for Ireland are significantly higher for all age groups and for both sexes: 40% higher overall for males and almost 30% higher overall for females than the English/Welsh rates. It is noticeable that the discharge rates for men between 15 and 64 are considerably above the English/Welsh rates while the rates for the females aged 75 plus are close to the English/Welsh levels. For women the discharge rates in Ireland are highest relative to England for the 45-64 and the 65-74 age groups. The relatively higher discharge rates in Ireland appear to be related here to the relatively greater acute (HIPE) bed-population ratios (noted in Table 4.2) rather than to shorter lengths of stay in hospital.

4.13 Comparison of numbers of consultations with general practitioners and prescriptions issued per person per annum is made difficult by the fact that, in the UK, the entire population is eligible for those services, either free or at a nominal charge, while in Ireland only those with Category I eligibility are so entitled. Since Category I eligibility is confined to low income groups and covers almost 80% of those aged 65 or over, it is likely that Category I levels of morbidity, and hence utilisation of the service, would be relatively

Table 4.4

Discharge rates from acute (HIPE) hospitals by sex and age, Ireland, England and Wales, (1978)

(number of discharges per 1000 population)

| Age | Ireland | | England and Wales | | Irish rate as % of English and Welsh rate | |
|---------|---------|--------|-------------------|--------|---|--------|
| | Male | Female | Male | Female | Male | Female |
| 0-14 | 111 | 83 | 86 | 62 | 129 | 134 |
| 15-24 | 86 | 100 | 53 | 76 | 162 | 132 |
| 25-44 | 94 | 122 | 51 | 96 | 184 | 127 |
| 45-64 | 146 | 136 | 93 | 83 | 186 | 164 |
| 65-74 | 245 | 186 | 170 | 118 | 144 | 157 |
| 75+ | 287 | 217 | 279 | 200 | 103 | 109 |
| Average | 123 | 118 | 87 | 92 | 141 | 128 |

Source: Derived from Hospital Inpatient Inquiry 1978 Medico Social Research Board; Hospital Inpatient Inquiry England and Wales 1978, HMSO, 1981.

high. Consultation rates in the UK vary considerably by age and are higher for the aged. The consultation rate for Ireland at 5.6 per person per annum in 1979 was above the average for Great Britain of 4.2 (13). The figure for Great Britain would rise to 4.6 if it was adjusted solely to take account of the differences in the proportion of the over 65 age group eligible for "free" GP consultations (14).

4.14 Prescriptions per person (the prescription rate) are closely related to the consultation rate. In addition, the cost of the drugs prescribed greatly exceeds the cost of providing the doctors services. Although data on consultation rates by UK countries are not readily available, prescription rates are. The Irish prescription rate of 9.0 (15) is considerably above the UK rate of 6.7 and corresponds with the higher consultation rates. The prescription rate varies considerably, however, by UK country and was 8.7 for Wales, 6.5 for Scotland and 8.2 for Northern Ireland in 1979. Bearing in mind the likelihood of higher morbidity among the Category I population in Ireland, the prescription rate does not appear to be unduly high.

Cost comparison

4.15 Although the cost data for Ireland are neither so abundant nor detailed as that for the UK, an attempt is made to compare costs for the major broad services in Table 4.5. The cost per inpatient day in Ireland, relative to England, was 89% for acute hospitals, 84% for psychiatric hospitals and 81% for special residential centres for the mentally handicapped. These figures are for 1978/79 (16), before the break of the link between the Irish pound and sterling. Although a comparison of wage and salary level of public health service personnel has not been possible due to the meagre information available, average earnings in each country can be approximated by GDP per employed person. In 1979, although GDP per capita in Ireland was 61% of that in the UK, the GDP per employed person in Ireland was 89% of that in the UK (17). This would seem to indicate that health service costs in Ireland in 1978/79 were no higher than one might expect on the basis of a comparison of GDP per employed person in the two countries. More recent data would be required to monitor trends since those years.

13. *Social Trends*, Table 7.9, HMSO, London 1981.

14. The UK consultation rate adjustment for the 65+ age group has been achieved by estimating the effect of increasing the proportion of the population aged over 65 in the UK to the proportion of that age group in Ireland's Category I.

15. The Irish prescription rate is derived from the annual report of the *General Medical Services (Payments) Board* and UK rates from *Regional Trends 1982*, Table 4.11.

16. 1978/79 is the latest year for which data is available.

17. *Review 1970-1979*, Eurostat 1981

Table 4.5
Cost per Inpatient day for Ireland and England by type of hospital, 1978/1979

| Type of Hospital | Ireland (1) | England (2) | Ireland as % England |
|----------------------|-------------|-------------|----------------------|
| Acute | £ 35.8 | £ 39.9 | 89% |
| Psychiatric | 13.1 | 15.6 | 84% |
| Mentally Handicapped | 10.9 | 13.4 | 81% |
| Geriatric | n.a. | 17.8 | n.a. |

Notes: (1) Data for Ireland taken from Appendix 3, Tables A3.5, 6, 7 and converted to fiscal year 1978/79.
(2) Derived by combining all acute hospitals.
n.a. not available

Sources: (1) Appendix 3, this Report:
Health Services Costing Returns, 1978/79, HMSO.

Need comparisons.

4.16 There is a considerable body of official work in the UK on the relative need for health services in each of the UK countries and on the relationship between the distribution of need and the distribution of public health service resources (18). In these studies considerable reliance was placed on mortality rates, standardised by age and sex, since these rates vary systematically both by socio-economic group and by region. Standardised mortality ratios (SMRs) have been produced for each of the UK countries, which show actual deaths in that country as a percentage of the hypothetical number of deaths which would have occurred, had that country experienced the age/sex specific death rates for the UK in that year. It was hypothesised that the variations in SMRs were related to morbidity and hence to need. In addition, other proxies for morbidity, like certified numbers of days absence from work, hospital beds occupied and number of prescriptions issued were used. It has been argued that the relatively high ranking by several regions on these indicators goes some way to explaining the relatively more generous health service provisions in these regions. The values of these morbidity proxies for each of the UK countries is shown in Table 4.6 along with comparable estimates for Ireland.

18. Department of Health and Social Security, "*Resource Allocation Working Party in England*" (RAWP) HMSO, 1976; The Welsh Office, "*Working Group and Steering Committee on Resources Allocation in Wales*" (SCRAW), HMSO, 1981; Scottish Home and Health Department, "*Working Party on Revenue Resource Allocation in Scotland*" (SHARE), HMSO, 1977; Department of Health and Social Services, Northern Ireland, "*Proposals for the Allocation of Revenue Resources for Health and Personal Social Services*", (PARR), 1978.

Table 4.6

Indicators of relative morbidity, UK countries and Ireland

| | England | Wales | Scotland | Northern Ireland | UK | Ireland |
|--|--------------|----------------|----------|---------------------|-----|---------|
| Standardised mortality ratios, (1) | | | | | | |
| 1978 | (males) 98 | 109 | 111 | 110 | 100 | 104 |
| (UK = 100) | | | | | | |
| | (Females) 98 | 103 | 109 | 110 | 100 | 115 |
| Sickness absence (days per head of working population) (2) (1978-1979) | | 16.9 (Britain) | | 26.0 | - | 23.2 |
| Occupied Hospital beds (3) (Number per 1,000 population) | 9.1 | 10.3 | 11.9 | 11.4 | - | 13.5 |
| Prescriptions (Number per person) 1980 | 6.6 | 8.7 | 6.5 | 8.2 | 6.7 | 9.0(4) |

Notes: (1) Derived from Social Trends 1982 Table 1.10 (HMSO, 1983) and Vital Statistics 1978 (Stationery Office, 1982).

(2) The figures are all derived from G Hughes Social Insurance and Absence from Work in Ireland except the figure of 23.8 which is derived by allowing for the distortion to the Irish data by the high claim rates and the high average duration of claims by married women.

(3) Based on Table 4.2. Northern Ireland's statistic excludes mentally handicapped beds.

(4) GMS (Payments) Board Annual Report, 1979.

Sources: Public Expenditure Priorities Health and Personal Social Services, NIEC Paper No. 24; Social Trends 1982, (HMSO, 1983); Regional Trends 1982 (HMSO, 1983); and as noted above for Ireland.

4.17 The standardised mortality rates for males in Ireland at 104 is close to that of the UK but the female rate is surprisingly high at 115 (19). The combined rate is 109 which is close to Northern Ireland's combined rate of 110. The data for days lost from work due to sickness is more difficult to interpret since the gross overall figure for Ireland is relatively high but if an

19. The SMRs for females are high relative to the UK particularly for the older age groups.

adjusted figure is used (to allow for particularly high claim rates and lengthy claims for Disability Benefit by married women) (20) the rate drops to close to the Northern Ireland rate. Turning to occupied hospital beds, the provision in Ireland is high compared to the figures for the UK countries. Finally, while the number of prescriptions issued in Ireland, as already noted, is considerably above the UK average of 6.7, it is close to Northern Ireland's figure of 8.2 and Wales 8.7.

4.18 The indications, then, are that the level of morbidity in Ireland is similar to that in Northern Ireland. It is also close to that in Scotland and Wales and higher than that in England. The UK working parties on resource allocation took the view that standardised mortality rates were the most suitable proxy for morbidity.

4.19 An examination of death rates by cause of death confirms the similarity between Northern Ireland and Ireland. The death rates by cause of death are set out for the four countries of the UK and for Ireland in Appendix 4 (Table A4.1). Ireland has a relatively low death rate from heart disease, the major cause of death and which particularly affects the elderly. Death rates from cancer, pneumonia and bronchitis are also relatively low in Ireland. The rates for death from cerebrovascular diseases, congenital abnormalities, infective diseases and motor accidents are all relatively high. Generally death rates in Ireland are more similar to those in Northern Ireland than in the other countries.

4.20 Data on births and infant mortality rates are presented on Table 4.7 which show Ireland to have both the highest birth rate and highest perinatal mortality rate of the five countries, closely followed in each case by Northern Ireland. The infant mortality however was lowest in Ireland along with Wales.

4.21 The *Needs Assessment Study (21)* in the UK attempted to combine the various indicators of morbidity as proxies for social need in order to estimate the expenditure levels required to provide the same levels of service relative to need in the different countries of the UK. A majority and minority view emerged, each attaching different weights to morbidity. The majority view put the overall index of relative need for health services in Northern Ireland at 107 while the minority view put the index at 121, (England = 100).

20. The data on absence from work due to certified illness has been adjusted by attributing to married women the same claim rates and duration of claim as for the rest of the population so insured. Claim rates are based on NESC Report 70, *Economic and Social Report 1982*, and the average duration of claim for married women is taken as greater than one year, based on preliminary estimates from the Department of Social Welfare.

21. *"Needs Assessment Study - Report"*, H M Treasury, London, 1979.

Table 4.7

Births, still-births, infant mortality and perinatal mortality rates, 1979

| | Births per 1,000 population | Infant mortality rate (1) | Perinatal mortality rate (2) |
|------------------|--------------------------------|------------------------------|------------------------------------|
| England | 13.0 | 12.8 | 14.6 |
| Wales | 13.0 | 12.4 | 15.6 |
| Scotland | 13.2 | 12.8 | 14.1 |
| Northern Ireland | 18.2 | 14.8 | 18.1 |
| Ireland | 21.5 | 12.4 | 17.6(3) |

- Notes:
1. Deaths of infants under 1 year of age per 1,000 live births.
 2. Still births and Deaths under 1 week of age per 1000 live and still births.
 3. 1978 figure.

Source: (1) Regional Trends, 1982, (HMSO, 1982); Statistical Information Relevant to the Health Services, 1981, (Stationery Office, 1982).

4.22 Since the provision of acute hospital beds in Northern Ireland was some 50% above the English level in 1979 compared with a relative need that was between 7% and 21% greater, the *Needs Assessment Study* concluded that there was over-provision of this particular service. As a consequence, the study argued that there was a low relative need in Northern Ireland for capital expenditure on the health services, particularly on hospitals. Family practitioner services in Northern Ireland, by contrast, received the highest priority in the study.

Conclusions

4.23 This chapter has indicated some of the hazards of international comparisons of health service/GDP ratios and has suggested reasons why there might be high ratios for countries with relatively low GDP per capita and high dependency ratios. A comparison of health service/GDP ratios by UK country and Ireland showed much higher than average values for Northern Ireland, Scotland and Wales. The ratio for Ireland was below each of these countries with the exception of England.

4.24 Examination of bed-population ratios by UK country also showed wide variation, with the ratio for Ireland being relatively high and close to that of Northern Ireland and Scotland. The provision of medical personnel per 100,000 population in Ireland was shown to be above England and Wales and below Scotland and N. Ireland. The discharge rates from acute (HIPE) hospitals was shown to be considerably above that of England and Wales, both by sex and age group, as might be expected from the higher acute (HIPE) bed provisions in Ireland. The cost per inpatient day was shown to vary between 81% and 89% of the English figure and it was suggested that these costs were similar to what one might expect from the levels of GDP per person employed in each of the countries.

4.25 A review of UK studies of relative health service need, as measured by morbidity proxies, particularly standardised mortality ratios, indicated a level of morbidity in Ireland similar to that of Northern Ireland and Scotland, and above that of England and Wales. The death rates by cause of death were also shown to be very similar in Northern Ireland and Ireland. On the basis of the *Needs Assessment Study*, which argued that there was over-provision of acute (HIPE) hospital beds in Northern Ireland relative to its morbidity levels, it was suggested that a similar conclusion might apply to Ireland, due to the similarity of both morbidity indicators and bed-population ratios.

CHAPTER 5

MAIN POLICY ISSUES FOR HEALTH SERVICE EXPENDITURE

5.1 There are few statements of the overall strategy of Government in relation to the health services. The attempts to define objectives have been consistently vague. (1) The most recent statement (2) of objectives was in the White Paper *National Development 1977-1980*:

“policy will aim at providing a first-class general service which will secure the highest possible standard of physical and mental health for all the people to ensure that no person will be denied medical care because of his inability to provide for it out of his own resources.” (p.58)

5.2 To state the objective of the health services as the achievement of a certain level of health in the community provides little guidance to policy formulation. There are two general reasons for this. Firstly, there is not a direct relationship between the level of health services provision and the healthiness of the community. Secondly, it is not possible to measure health in a definitive manner. A clear statement of the objective of the health services would include consideration of the following:

- the relationship between health and the health services,
- the main factors determining levels of demand for health services, including the role of the doctor,
- the resources society is prepared to allocate to public health services.

1. NESO Report No. 29 *Major Issues in Health Policy*, p. 22-23.
2. The White Paper, *The Way Forward* (1982) outlined basic principles of the ongoing *capital* programme in the health services as follows:
 - to continue the desirable shift from institutional to community care in the provision of psychiatric services while ensuring that the institutional care which will continue to be required is of an acceptable standard;
 - to provide proper and appropriate institutional facilities for the mentally handicapped of all ages;
 - to ensure that adequate provision, in facilities of acceptable standards, is made for the needs of the growing elderly sector of the population;
 - to continue to meet the needs of other sectors of the population, particularly in new townships, through the provision of health centres, community centres, clinics etc.;
 - to so develop institutional and community health services in the overall, that the nation's health needs can be catered for adequately within the limitations imposed by prospective economic conditions.

Health and the Health Services

5.3 Factors other than the health services play a large part in explaining the level of the community's health. The socio-economic environment in which people live appears to be a crucial determinant of their states of health. Factors such as occupation, housing conditions, air pollution and income levels have been shown in the UK to explain a larger part of the variation in mortality and morbidity than variations in medical care. A recent survey of these studies suggest that income level appears to be the most important variable (3). Because of this it has been argued (4) that the main lesson to be drawn from international comparisons of health care inputs and health outcomes is that more expenditure on health care appears to do little to eradicate the causes of premature death.

5.4 With the virtual elimination of most infectious diseases in the developed countries, the major fatal diseases now are heart diseases and cancer. These diseases particularly affect the elderly. Medical science, it has been argued (5), has been able to do little to prevent or cure these diseases. Similarly many of the non-fatal diseases like rheumatism, arthritis, glaucoma and most respiratory diseases, it is argued (6), do not seem to be curable by medical science. The sources of morbidity and mortality have resulted increasingly from lifestyle choices (such as diet and smoking) and environment which, in turn, are related to income levels. A useful distinction can be made between natural morbidity e.g infectious diseases, and social morbidity which is a result of social factors like life style and environment. Besides the diet-related illnesses, accidents are a major component of social morbidity (notably traffic accidents, industrial accidents and accidents in the home).

5.5 Internationally, there has been much concern about the apparently uncontrollable escalation in the costs of the health services. The available data indicates a slowdown in the growth of public health service expenditures in many countries in the late 1970s (7), but, as shown in Chapter 1, this slowdown occurred in Ireland only in the 1980s. In each year over the period 1973-1981, large supplementary estimates were added to the original budgets for the financing of public expenditure on the health services. The need to supplement estimates did reflect, in part, over-

3. *The Strategy of Equality*, J Legrand, (London 1982) p. 42, see also *Inequalities in Health*, Black and Townsend, (London 1982) which emphasises economic and social factors in explaining inequalities in health.
4. *Privatising the National Health Service*, A Maynard *Lloyds Bank Review*, April 1983.
5. Legrand op. cit. p.40, see also *The Political Economy of Social Policy*, A J Culyer (London 1980).
6. *Ibid*.
7. *Trends in European Health Spending*, Office of Health Economics Briefing, No. 14, (London 1981).

optimism with regard to the rate of cost increases and particularly the settlement of wage claims for nurses. It also reflected underestimates of the rate of increase in the demand for public health services.

Demand for Health Services.

5.6 Demand for the public health services has been increasing rapidly as measured by hospital admissions and GP consultations. Although changes in eligibility have undoubtedly played a part, the rate of increase in acute hospital admissions at 4% annually was the same in the 1970s as it was during the 1960s. The number of consultations per person covered by the General Medical Services has also increased steadily at around 4% annually since the inception of the scheme in 1973. Psychiatric hospital admissions increased at close to 3% annually during the 1970s.

5.7 In addition to the demand as measured by these indices, there is also evidence of significant unmet need for health services in the community. It has been shown that a large proportion of elderly persons surveyed in Dublin were suffering from untreated treatable illness (8). It is also likely that the utilisation of "free" health services varies by socio-economic group, depending on factors like health expectations, awareness of treatments available, relationship with doctor, peer group experiences, etc.

5.8 It has been demonstrated (9) in the UK that while the lower income socio-economic groups score relatively highly on the indicators of morbidity, their use of the publicly provided health services is relatively low. The fragmentary evidence of higher morbidity rates among the lower socio-economic groups in Ireland has been reviewed elsewhere (10).

5.9 The relationship between need and demand for the health services is complex and is conditioned by the varying propensities of different socio-economic groups to express their needs as demands as well as by the role of the doctor in distinguishing health and illness. The doctor is in a unique position to determine both the demand for and the supply of his or her services.

The Role of the Doctor

5.10 A previous NESC study (11) pointed out that the rationing function in the health services tends to be left to physicians who not only have a clear

8. *Previously Unrecognised Treatable Illness in an Irish Elderly Population*, J B Walsh, Irish Medical Journal, February 1980.

9. *Inequalities in Health*, Black and Townsend. Penguin, 1983.

10. *Health, Health Policy and Poverty*, A D Tussing in *Poverty and Social Policy*, L Joyce and A McCodhin, Dublin, 1982.

11. *NESC, Report No. 29, Major Issues in Health Policy*, Dublin 1977.

incentive to press always for more resources but are provided with no clear instructions from society as to how their rationing function is to be discharged. There is substantial evidence showing that an increase in the number of doctors leads to an increase in the services provided and authorised (12). It has been argued (13) that the expansion of medical education in the 1960s and 1970s has been a major cause of the increase in health service costs internationally. Consequently, the limiting of entry to both medical schools and specialist training may be an important policy measure in relation to control of public health service expenditure (14).

5.11 The remuneration system for doctors has also been shown in other countries to significantly affect their behaviour. Tussing has suggested that the Irish system of remuneration encourages over-use of GP services in the GMS via the fee for service method of payment and over-use of hospitals by the payment of consultants in proportion to the number of days a patient spends in hospital (15). The method of payment of consultants has, however, been changed recently in this respect.

5.12 The international evidence on doctor consultation rates and prescription rates per person shows a clear association with the method of remuneration, with fee-for-service remuneration generating rates around double those evidenced under a capitation system (16). In these comparisons, particularly when the UK countries are included, (Chapter 4) Ireland appears to have lower usage rates than might be expected.

Resource Implications

5.13 The present study has the limited objective of measuring the impact of demographic change on the health services. To assess the implications for policy it was necessary to set the trends in population size and structure in the context of the other major factors which operate to shape the health services. The key policy issue facing the health services is the amount of resources which society is willing to devote to them. A simple projection of usage patterns into the future would ignore the crucial interactions of supply and demand. The future demand for health services will, of necessity, adjust to the quantity supplied. For this reason the study also illustrates the resource implications of health services growth under certain assumptions.

12. B Abel Smith, *Economic Efficiency in Health Care Delivery: Improving Cost Effectiveness in Health Care*, International Social Security Association, (Geneva, 1983)

13. Ibid.

14. Ibid.

15. *Financing the Health Services*, A D Tussing *New Exchange*, 1982.

16. B Abel Smith, *Economic Efficiency in Health Care Delivery: Improving Cost Effectiveness in Health Care*, International Social Security Association, (Geneva, 1983)

5.14 The estimates of future demand are confined to five major areas: acute hospitals, psychiatric hospitals, residential care for the mentally handicapped, the general medical services and provision of geriatric long stay places. The projections to 1991 on the basis of meeting demand at current patterns of health services usage by age and sex result in demand increasing by between 11.1% and 13.1% over the period 1979-1991. This is close to the projected increases, from 11.2% to 13.6%, in total population.

5.15 It is not possible to project future allocations of public resources to the health services with any confidence. The many ways that demand and supply for services could interact makes the outcome highly uncertain, particularly when coupled with a budgetary strategy over the medium term which seeks to redress the imbalance in the public finances. In this study, a variety of very simple combinations, based on historical trends, are considered. A 5% rate of increase in real costs per unit, although not high by the standards in recent years, would result in a large increase in the share of national resources devoted to public health services. If it is assumed that there will be no increases in real costs per unit and that existing patterns of usage will remain unchanged, the share of health expenditure in GDP could fall, depending on the GDP per capita growth rate.

5.16 It is only reasonable however, to assume that the real cost per unit of health services, will continue to rise. To expect otherwise would require the highly unlikely assumption of no increases in expenditure in the context of new medical technologies, (17) rising standards of care, existing unmet needs and rising expectations. Perhaps, even more importantly, it would also mean that real wages would only rise where they could be fully compensated by productivity improvements in the health services. The prospects of significant growth in GDP per capita also appear to be poor. Thus there is likely to be considerable pressure for the share of health service expenditure in GDP to increase. Against this, efforts to balance public finances will put strong downward pressure on public health expenditure.

5.17 The projection of the future cost of the health services, based on past trends, would result in an allocation of public resources which appears unrealistically high. A number of options must therefore be considered. They can be divided into two broad types:

- options which could reduce the demand in public health services, which could include: charges for services, changes in the method of doctor's remuneration, reduced eligibility for services, and improved education for both health service personnel and health

17. Unless, of course, new technologies are rigorously evaluated in respect of their cost effectiveness.

service users about health services costs and the prevention of illness.

- options which could reduce the cost to the exchequer of supplying health services, which could include: increased efficiency, compulsory health service insurance, limiting the range of services provided, restricting the number of doctors, substitution of high cost by low cost personnel (e.g. nurses for doctors).

Acute (HIPE) Hospital Services

5.18 Since the acute (HIPE) hospitals account for around 40% of current health service expenditure they must be the gateway to any measures aimed at curbing the trend of increasing health service expenditure. As noted in Chapter 3, these hospitals accounted for over half of the real increase in public health service expenditure in the period 1977-1981.

5.19 The application of the demographic projections to the 1979 pattern of usage of acute hospitals showed an increase of between 5.3% and 6.3% by 1986 and between 10.0% and 11.9% by 1991. The average cost per inpatient per day increased in real terms by 11.5% p.a. between 1977 and 1980. There has been a trend of increasing discharge rates, which have been compensated for by reductions in the average duration of stay so that per capita consumption of acute hospital services, as measured in inpatient days, has shown little change over the period 1976-1980. In relation to need, as measured by various morbidity indicators, it has been argued that Ireland, like Northern Ireland, has a provision of acute hospital beds which is relatively high.

5.20 A reduction in the present level of acute (HIPE) hospital services provided suggests itself as a policy option. This would necessarily involve a reassessment of the 1975 National Hospital Development Plan (18), which laid the basis of the present hospital structure.

5.21 In recent years eligibility for so called "free hospitalisation" has been extended so that such services are now provided to all (with the exception of consultant services for the top 15% income earners who have Category III eligibility). Despite this, some 30% of the population is insured with the VHI, many combining their insurance with their general eligibility in order to secure private or semi-private accommodation in hospitals. Besides tax relief on VHI insurance contributions, private care is subsidised in a number of other ways (19). The option of restricting eligibility for "free" hospitalisation,

18. *General Hospital Development Plan*, Government Information Service, 21/10/1975. Current hospital planning, according to the Department of Health, provides for a reduction in the numbers of acute hospital beds relative to population.

19. NESC Report No. 61, *Priorities for Irish Social Policy Development*. (Dublin 1981)

accompanied perhaps by the extension of health service insurance, would appear to be worthy of consideration.

5.22 Improved managerial control (20) would appear to be a prerequisite to greater cost efficiency within hospitals. Irish hospitals are remunerated mainly on an annual budget basis. Very little information is publicly available on how funds are used within hospitals, particularly within the voluntary hospitals which comprise around half the acute (HIPE) beds. Although there is international evidence of wide variations in the cost of hospital stays by diagnostic categories, it is not possible to assess such costs across Irish hospitals. It has been suggested that the annual budget remuneration system can generate inefficient use of resources and that there is consequently a case for experimentation with various alternative payment systems (21) as well as improved information systems. A detailed recent study of one hospital has suggested that at least 40% of short stay patients, equivalent to close to 18% of all patients, could have been dealt with in other than an acute care ward (22)

The Psychiatric Hospital Services

5.23 The application of demographic projections to the 1979 usage pattern of psychiatric hospital services indicated an increase of between 7.9% and 8.9% by 1986 and between 14.8% and 16.8% by 1991.

5.24 Short stay admissions to psychiatric hospitals increased rapidly in the early 1970s but have stabilised in recent years. Only around one third of total admissions are new admissions, which may indicate that the decline in numbers of long stay inpatients was achieved at the cost of a considerable increase in multiple admissions. Alcoholism accounts for more admissions than any other diagnostic category and accounted for one quarter of all admissions and almost 40% of male admissions in 1979. By contrast alcoholism accounted for under 7% of all admissions in England, (23) which suggests that the necessity of treating alcoholism in hospital is questionable. Because alcoholism is generally the result of consumption choices, it can be classified under social morbidity. The more general question may be raised of whether the care and treatment of ailments resulting from social morbidity should be financed by the state to the same extent as those based on natural

20. See *Health, Health Policy and Poverty*, A Tussing op. cit. for a critique of managerial control in Irish hospitals.

21. B Abel Smith, *Economic Efficiency in Health Care Delivery: Improving Cost Effectiveness in Health Care*, International Social Security Association, (Geneva, 1983), includes the examples of France which is experimenting with two alternative remuneration systems.

22. *An Analysis, is of Short Stay Hospital Cases*, R A Hamill, *Irish Medical Journal*, (December 1982, Dublin).

23. *Health and Personal Social Service Statistics for England*, (London, 1978, HMSO, Table 9.6, (the 7% statistic quoted refers to 1976).

morbidity. Most public health services were originally designed to cater mainly for natural morbidities. The treatment of social morbidity ailments should, arguably, be financed, at least partly, by the patient.

5.25 With regard to cost efficiency in mental hospitals, virtually no information is available on the costs of the various services provided either by sub-programme, by hospital, or between inpatient and outpatient facilities. Although it is often assumed that outpatient treatment is cheaper, the evidence from the UK (24) points to similar costs for both inpatient and outpatient care. The same points made about management of acute hospitals above are likely to apply to the psychiatric hospitals.

Residential Care for the Mentally Handicapped

5.26 The results of the projected demographic changes show an increase in the number of mentally handicapped persons of between 5.1% and 5.9% by 1986 and between 9.9% and 11.9% by 1991. There are problems in translating this increase in numbers of mentally handicapped persons into residential requirements because of the existing mismatch between residential places and those who need them. It is possible that the difficulties in relocating those at present in residential care may require additional expenditure on community based facilities. Although no information is available in Ireland on the relative costs of inpatient and outpatient facilities, the English experience suggests costs are similar for each type of facility (25). Unlike most of the other programmes examined here, the total number of residential places required for the mentally handicapped can be measured with some precision. Consequently, there would appear to be little scope for reduction of the services provided.

The General Medical Services

5.27 Demographic changes imply, *ceteris paribus*, an increase in consultations of between 5.1% and 6.0% by 1986 and between 9.4% and 11.3% by 1991. The provision of the general medical services is determined largely by the income guidelines for Category I eligibility. Once the income guidelines have been decided, the provision of service is determined largely by the consultation and prescription rates, in other words by demand. Recent policy changes have concentrated on limiting the list of prescribable drugs. A more recent development has been the setting of drug trade prices at British levels, due to an agreement between the Department of Health and the drugs industry. A number of other policy options could be considered:

- reduction of the consultation and prescription rates by changing the method of payment of doctors,

24. *Health Services Costing Returns, 1979*, HMSO, (London 1981) p. 36 and p.50.

25. *ibid.*

- substitution of generic drugs for branded names by chemists, and
- restrictions of sales promotions by pharmaceutical firms (26).

With regard to the provision of insurance for GP services it is worth noting that this is already provided to those with non-Category I eligibility, subject to a deductible, under the VHI. Consequently extension of the insurance principle for these services is another option.

Geriatric Long Stay Provisions

5.28 The growth in the number of elderly persons would require an increase in places of between 6.4% and 7.4% by 1986 and between 13.3% and 15.7% by 1991 to maintain existing facilities. In Ireland the provision by the public authorities (27) of long stay geriatric places is less generous than for acute illness or for mental illness or handicap, relative to many of the UK countries. Consequently the scope for reduction of existing public provisions is limited. Although just over one quarter of the geriatric places currently available in Ireland is provided in private and voluntary hostels and homes, very little is known about the operation of this sector. Inpatients in this sector are eligible to a subsidy of up to £30 per week, subject to a means test, from the Health Boards. This subsidy amounts to considerably less than the average weekly cost of public provision of places. The quality and the location of many of the places publicly provided are poor. If the option of reducing the provision of acute (HIPE) hospital provisions was adopted, some of the hospitals concerned could be turned into geriatric hospital homes.

Other Issues Affecting Future Health Service Expenditure

5.29 There are a number of other issues, not discussed in this study, which may affect future health service expenditure and which are important to any analysis of the social policy implications of the health services.

Health Service and Equity.

5.30 Very little information is available on either morbidity patterns or usage of health services by socio-economic group (28). A considerable body of evidence exists in the UK on this topic, where it is clear that people from lower socio-economic groups are more likely to have medical problems. The evidence on the relationship between poverty and health is comprehensively reviewed in the Black Report (29). Morbidity patterns were shown to be clearly related to socio-economic group with the result that the lower income groups tended to suffer most from ill health. However, the usage of certain

26. B Abel Smith - speech to Pharmaceutical Society of Ireland, Trinity College, 9/4/1983.
27. The provision in private and voluntary hostels and homes is ignored in this comparison due to lack of information and the difficulty of making comparisons.
28. See *Data Deficiencies in the Social Services*, NESCS Report No. 70, Appendix 1. (Dublin, 1982)
29. *Inequalities in Health*, Black and Townsend, et. al., London 1983.

major public health services by lower income groups was less than proportionate to their degree of ill health. Although no comparable data is available for Ireland, it seems likely that similar patterns of use might apply for the hospital services, which are provided "free to all". Collection of data on the socio-economic background of users of, particularly the acute hospital services, is a basic prerequisite for any assessment of the social policy implications of health service expenditure.

Management Information Systems

5.31 In comparison with the UK, the management information available on the health services in Ireland is very poor. A recent official study of health services information in the UK (30) indicated the need for much improved data. Data on specialty costs, length of stay, mortality, etc, by consultant and the constant monitoring of doctor's work patterns have been suggested as basic requirements for effective management (31). Development of much improved management information systems in the health services must then be seen as a high priority in Ireland.

Technology

5.32 Medical technology has been developing rapidly and in such a way that hospital care has become simultaneously more labour and technologically intensive. There is a growing body of work internationally on the evaluation of the new technologies and their cost effectiveness. A particularly important field, because of the extremely high costs involved, is diagnostic imaging. X rays are an elementary form of diagnostic imaging, which are now being supplemented by CAT (computer-assisted tomographical) scanning. A number of other, much more sophisticated, scanners are coming into use. Because of the extremely high costs involved in this technology, there is a need for greatly improved evaluation of the medical, economic and social implications of decisions to purchase this equipment.

Social Factors Affecting Health Service Demand

5.33 Factors which are likely to lead to increased demands on the health services include urbanisation and its associated life-styles, patterns of employment and unemployment, increased awareness of the capabilities of medical technology, increased expectations, rising social morbidity, etc. Consideration of these and other factors is clearly beyond the scope of this study.

30. Komer Report (1982) *Steering Group on Health Services Information, First Report to the Secretary of State*, HMSO.
31. *Privatising the National Health service*, A Culyer, *Llyods Bank Review*, April 1983.

Conclusions

5.34 The reasons for the growth in public expenditure on the health services involve a complex interaction of demand for and supply of these services. Projections of the future level of resources required to fund the health services suggest that, if past trends and patterns of organisation continue, there will be a rapid growth in public expenditure on the health services. In this study an attempt was made to quantify the impact of demographic change up to 1991. A complete picture would require further study of a number of other key factors: in particular, trends in productivity, the impact of new technology and medical practices and the factors underlying the rapid growth in admissions to acute hospitals.

5.35 The key policy issue in the years ahead will be the amount of resources which society will be willing, and able, to devote to the public health services. Present indications are that a growth in resources similar to that which took place over the past fifteen years is unlikely. It is therefore important to consider the options available to maintain the level and quality of service in a situation of frozen or even declining real budgets. This chapter has discussed areas where a change in emphasis in the delivery of health services would allow a more efficient allocation of resources.

5.36 An immediate option with the acute (HIPE) hospitals is the reduction of the number of beds provided. The provision of acute (HIPE) beds appears high both by comparisons with the UK group of countries particularly in relation to indicators of need. The options of restricting eligibility for "free hospitalisation" and the extension of health service insurance are also suggested. Many of the same options are relevant to the psychiatric hospitals. In addition it must be questioned whether alcoholism should properly be treated to its current extent by inpatient psychiatric hospitalisation. Since alcoholism can be classified under social morbidity, there may be scope for extending at least some of the direct costs of treatment to the patient, whether by charges, insurance, increased taxation or the like. There appears to be little scope for reduction of the provision of residential care for the mentally handicapped. It has also been suggested that the cost of providing community, non-institutional services may be similar to those costs in institutional care. A number of options have been outlined for the general medical services, including changing the method of payment for doctors, substitution of generic drugs for branded names by pharmacists, and restrictions on sales promotions of branded drugs

5.37 Further information is required on the substantial proportion of institutional geriatric places provided in private and voluntary hostels and homes. The number of places provided by the public authorities is low in relation to most of the countries in the UK. Some of the places currently

provided are of poor quality and are badly located. It has been suggested that the option of transforming some acute hospitals into geriatric institutions be considered.

5.38 Finally, it is important to recognise the long lead time required to alter the emphasis in the pattern of health services delivery. This fact is reflected in recent statements by the Minister for Health that he intends to provide a blueprint for the health services in 1995. The present study provides a particular snapshot of projected demand for the services in 1991.

5.39 If significant changes are to be made to the health services, then the pace of change must be considered. Many present day initiatives would only begin to take effect at the beginning of the next decade. The students who are now entering medical schools will be seeking their first employment as registered doctors at that time. There will be few acute hospital beds then which are not already written into the plans of the Department of Health and the health boards. Many of the programmes designed to encourage more healthy lifestyles, either through education or changed economic incentives, will not effect the demand on the health services until well into the next decade. It will be even longer if the necessary choices are not made soon.

APPENDICES

- Appendix 1 Methodology
- Appendix 2 Utilisation Patterns by Age and Sex and Detailed Projection Results
- Appendix 3 Expenditure and Personnel Trends
- Appendix 4 Death Rates by UK Country and Ireland, 1978.

APPENDIX 1

METHODOLOGY

A1.1 The basic method used in studies of this type (1) involves the estimation of age and sex specific per capita ratios relating costs of existing health services to a given population. Once derived, these ratios can be applied to projected populations.

A1.2 Starting with the basic identity that total cost = cost per item multiplied by number of items, the method can be expressed symbolically as:

$$\begin{aligned}
 \text{(Total Cost) G} &= \sum_{ij} \frac{\text{(Cost)}}{\text{(persons)}} \times \text{persons} \\
 \text{where } i &= \text{age} \\
 j &= \text{sex} \\
 \text{and } \sum &= \text{"the sum of"}
 \end{aligned}$$

As applied to hospitals, this formula can be written:

$$\text{(Total Cost) G} = \sum_{ij} \frac{\text{(discharges)}}{\text{(persons)}} \times \frac{\text{(cost)}}{\text{(discharges)}} \times \text{(persons)}$$

As applied to physicians services:

$$\text{(Total Cost) G} = \sum_{ij} \frac{\text{(services)}}{\text{(persons)}} \times \frac{\text{(cost)}}{\text{(services)}} \times \text{(persons)}$$

This extended model allows analysis, in the case of hospitals, of the effects of changes in discharge rates, the cost per day, as well as changes in both the size and age structure of the population. Similarly in the case of physicians' services, changes in the number of services provided (consultations) and the cost per consultation can be included in the analysis.

1 This section relies heavily on *Health Expenditures in Canada and the Impact of Demographic Changes on Future Government Health Insurance Programme Expenditures*, J A Boulet and G Grenier, Discussion Paper No. 123, Economic Council of Canada, 1978.

A1.3 The analysis of expenditure on specific health services can be extended to distinguish the effects of increased population size and changed age structure in the following way. Let G be the cost of public health services, C be the per capita cost and P the total population. Total cost can be expressed, as before as

$$G = CP \quad (1)$$

Taking natural logarithms, we have

$$\ln G = \ln C + \ln P \quad (2)$$

and differentiating with respect to time,

$$\frac{d \ln G}{dt} = \frac{d \ln C}{dt} + \frac{d \ln P}{dt} \quad (3)$$

or

$$\frac{dG}{G} = \frac{dC}{C} + \frac{dP}{P}$$

or (% increase in G) = (% increase in C) + (% increase in P) (2)

A1.4 In other words, the percentage increase in public health expenditure is equal to the sum of the percentage increase in expenditure per capita cost and the percentage increase in total population. With this equation we can break down the increase in health expenditure into two components: one reflecting the increase in population size and the other reflecting the changes in the per capita cost of the service. Where per capita cost is assumed to be invariant with respect to age, the per capita cost will reflect the age structure of the population.

A1.5 In order to examine the effects of changing relative prices for health services, the following method can be used to estimate the relationship between changes in prices and changes in the share of public health care as a % GDP. In order to carry out this analysis, it is convenient to derive further results from equation (1), defined above. This equation expresses the cost of health services (in this case, public health services) as the product of per capita cost and population: $G = CP$. Per capita cost (C) can be broken down further into two parts: the number of services per capita (s) and the cost per service (q): We then have

$$G = sqP \quad (7)$$

2 Since growth rates have to be defined in continuous time for this operation to be correct, the results are applicable only to low growth rates.

and the growth rate of that expression can be written as

$$\frac{d \ln G}{dt} = \frac{d \ln s}{dt} + \frac{d \ln q}{dt} + \frac{d \ln P}{dt} \quad (8)$$

A1.6 Note that, in all the above equations it was assumed that relative prices are constant, i.e. $d \log q = 0$, and that the growth in per capita cost was due entirely to increases in the number of services per capita (caused, for example, by increases in the proportion of aged). Thus, equation (8) indicates how changes in relative prices will affect real public health expenditures. Trends in the number of services dispensed per capita can also be analysed in this framework.

A1.7 It is interesting to relate this last equation to the rate of change of the share of public health care as a percentage of GNP. Let h be the share of these health expenditures, G , as a percentage of GNP, and Y be the GDP, we have,

$$h = G/Y \quad (9)$$

whose growth rate can be expressed as:

$$\frac{d \ln h}{dt} = \frac{d \ln G}{dt} - \frac{d \ln Y}{dt} \quad (10)$$

Defining now GNP per capita as

$$y = Y/P \quad (11)$$

we have

$$\frac{d \ln y}{dt} = \frac{d \ln Y}{dt} - \frac{d \ln P}{dt} \quad (12)$$

or

$$\frac{d \ln Y}{dt} = \frac{d \ln y}{dt} + \frac{d \ln P}{dt} \quad (13)$$

Substituting in (10) the expression in (8) for

$$\frac{d \ln G}{dt}$$

and the expression in (12) for $\frac{d \ln Y}{dt}$

the term $\frac{d \ln P}{dt}$

disappears and we get:

$$\frac{d \ln h}{dt} = \frac{d \ln s}{dt} + \frac{d \ln q}{dt} - \frac{d \log y}{dt} \quad (13)$$

This expression is useful to analyse possible future trends in the share of public health care as a percentage of GNP. Note that,

in estimating $\frac{d \ln C}{dt}$

we have estimated $\frac{d \ln s}{dt}$

under different assumptions.

This is simply the growth rate in per capita public health expenditure in constant relative prices.

APPENDIX 2

UTILISATION PATTERNS BY AGE AND SEX AND DETAILED PROJECTION RESULTS

A2.1 The Acute Hospitals

Data on discharges and average duration of stay is collected for acute (short stay, acute illness) hospitals by the annual Hospital Inpatient Enquiry (HIPE) of the Medico Social Research Board. Data on maternity patients are excluded. HIPE was instigated in 1971 with the aim of collecting data on a census rather than a survey basis. Initially however coverage was only around 20%, increasing to 51% in 1976, 56% in 1977, 69% in 1978, 76% in 1979 and 82% in 1980.

A2.2 The HIPE data can be used to estimate discharge rates per 1,000 population but caution must be exercised in grossing up HIPE data to 100% coverage. Because the data is not collected on a survey basis, it is likely that the coverage is biased towards certain hospitals and thus towards certain age groups. When discharge rates were calculated by a simple grossing up, the results showed a large decline over time in the discharge rates for children. It is likely that this was due to the high coverage by HIPE of the Childrens Hospitals, which, with low overall coverage in the earlier years, inflated the grossed-up discharge rates for this age group. Consequently, the HIPE discharge rates have been estimated using data on discharges, grossed up by type of hospital, with adjustments suggested by the Medico Social Research Board to account for some double counting etc. The results are shown in Table A2.1 which shows high discharge rates (i.e. number discharged as a percentage of the total population on that age group) for the under 1 age group of over 200 discharges per 1,000. The rate drops sharply for the intermediate age groups to below 100 per 1,000 and rises to around 250 per 1,000 for the 65-74 age group and 300 per 1,000 for the over 75 age group.

A2.3 The product of the data on discharge rates and average duration of stay gives the usage, in inpatient days, by age group per 1,000 of population. The data on average duration of stay by age group is provided in Table A2.2. Table A2.3 shows the usage pattern, by age, of acute hospital services.

Table A2.1

Discharge rates for acute (HIPE) hospitals 1979

Numbers of discharge per 1,000 persons

| | Males | Females | Persons |
|-------|-------|---------|---------|
| <1 | 278 | 209 | 244 |
| 1-14 | 99 | 74 | 87 |
| 15-24 | 87 | 107 | 97 |
| 25-44 | 96 | 149 | 122 |
| 45-64 | 165 | 154 | 159 |
| 65-74 | 278 | 219 | 247 |
| 75+ | 351 | 266 | 301 |
| Total | 131 | 133 | 132 |

Source: Derived from Hospital Inpatient Enquiry (HIPE) 1979. (Medico Social Research Board) and 1979 Census.

Table A2.2

Average duration of stay, (HIPE) acute hospitals, Ireland 1979

(Days per age group)

| Age Group (Years) | Males | Females | Persons |
|-------------------|-------|---------|---------|
| <1 | 12.0 | 13.7 | 12.7 |
| 1-14 | 6.2 | 6.6 | 6.3 |
| 15-24 | 6.8 | 6.1 | 6.4 |
| 25-44 | 7.2 | 6.7 | 6.9 |
| 45-64 | 11.5 | 11.9 | 11.7 |
| 65-74 | 14.9 | 17.8 | 16.2 |
| 75+ | 17.6 | 24.9 | 21.5 |
| Total | 10.0 | 10.8 | 10.4 |

Source: Hospital Inpatient Enquiry 1979, and Statistical Information Relevant to the Health Services, 1980

Table A2.3

Consumption of acute (HIPE) hospital services by age group.

(Inpatient days, per 1,000 persons)
1979

| Age | Males | Females | Total |
|-------|--------|---------|--------|
| <1 | 3336.0 | 2863.3 | 3098.8 |
| 1-14 | 613.8 | 488.4 | 548.1 |
| 15-24 | 591.6 | 652.7 | 620.8 |
| 25-44 | 691.2 | 998.3 | 841.8 |
| 45-64 | 1897.5 | 1832.6 | 1860.3 |
| 65-74 | 4142.2 | 3898.2 | 4001.4 |
| 75+ | 6177.6 | 6623.4 | 6471.5 |
| Total | 1310.0 | 1436.4 | 1372.8 |

Source: Tables A2.1 and A2.2

Table A2.4

Actual 1979 and projected 1986 and 1991 consumption by age for males of acute (HIPE) hospital services in inpatient days, and % changes on 1979 total consumption

| Age | 1979 | 1986 | | 1991 | |
|----------------------------|------------|------------|------------|------------|------------|
| | | I | II | I | II |
| <1 | 120763.20 | 124432.80 | 123765.60 | 119095.20 | 118761.60 |
| 1-14 | 301314.42 | 317764.26 | 315922.86 | 321753.96 | 318132.54 |
| 15-24 | 176355.96 | 189252.84 | 188187.96 | 195642.12 | 193512.36 |
| 25-44 | 281940.48 | 338411.52 | 335923.20 | 376842.24 | 371865.60 |
| 45-64 | 564126.75 | 562039.50 | 555208.50 | 596763.75 | 583481.25 |
| 65-74 | 458955.76 | 454399.34 | 450257.14 | 450671.36 | 441972.74 |
| 75+ | 322470.72 | 358918.56 | 353358.72 | 387953.28 | 377451.36 |
| Total | 2225927.20 | 2345218.70 | 2322623.90 | 2448721.70 | 2405177.30 |
| % Change over 1979 figures | - | 5.36 | 4.34 | 10.01 | 8.05 |

Table A2.5

Actual 1979 and projected 1986 and 1991 consumption by age for females of acute (HIPE) hospital services in inpatient days, and % changes on 1979 consumption

| Age | 1979 | 1986 | | 1991 | |
|----------------------------|------------|------------|------------|------------|------------|
| | | 1 | 11 | 1 | 11 |
| <1 | 100788.16 | 101074.49 | 100501.83 | 96779.54 | 96206.88 |
| 1-14 | 228424.68 | 241513.80 | 240048.60 | 243711.60 | 241074.24 |
| 15-24 | 186411.12 | 199856.74 | 198681.88 | 206514.28 | 204164.56 |
| 25-44 | 388837.85 | 468502.19 | 464908.31 | 522110.90 | 514823.31 |
| 45-64 | 547214.36 | 541350.04 | 534752.68 | 567922.74 | 554911.28 |
| 65-74 | 472851.66 | 502088.16 | 498579.78 | 511443.84 | 502867.80 |
| 75+ | 510664.14 | 554378.58 | 548417.52 | 617300.88 | 606041.10 |
| Total | 2435191.80 | 2608763.80 | 2585890.40 | 2765783.60 | 2720089.00 |
| % Change over 1979 figures | - | 7.13 | 6.19 | 13.58 | 11.70 |

Table A2.6

Projected increase in consumption for males and females of acute (HIPE) hospital services 1986 and 1991 over 1979

| | 1979 | 1986 | | 1991 | |
|----------------------------|------------|------------|------------|------------|------------|
| | | 1 | 11 | 1 | 11 |
| Totals | 4661119.00 | 4953982.50 | 4908514.30 | 5214505.30 | 5125266.30 |
| % change over 1979 figures | - | 6.28 | 5.31 | 11.87 | 9.96 |

A2.4 Usage by age group is high for the under one age group at around three inpatient days per person, falls to under one inpatient day per person for those aged under 44, under two days per person up to 64 and then rises sharply to four days per person for the 65 to 74 age group and approaches seven days per person for the over 75s.

A2.5 In 1979 just over one in four of the 65 plus age group were discharged from acute hospitals. These discharges total under 3% of the entire population but account for 34% of all in-patient days "consumed" in 1979. (These figures assume no multiple discharges by the same person: multiple discharges would concentrate hospital usage on an even smaller proportion of the population).

A2.6 The data for usage of acute (HIPE) hospital service by age can be applied to the 1979 population and to the projected 1986 and 1991 populations, classified by age, and sex, in order to show the changes in 1986 and 1991 due to demographic factors. The results of this exercise are presented in Tables A2.4, A2.5, and A2.6. The aggregate results for all persons in Table A2.6 show an increase in inpatient days consumed of between 5.3% and 6.3% by 1986 and of between 10.0% and 11.9% by 1991. The results for males in Table A2.4 show slightly lower increases while the results for females (Table A2.5) show increases slightly above those for the entire population. The higher female figures are due to longer life expectancy of females.

Psychiatric hospitals

A2.7 Detailed data is available on admissions to and discharges from psychiatric hospitals in the annual publication by the Medico Social Research Board, *Activities of Irish Psychiatric Hospitals and Units*. There is however a dual structure in psychiatric hospitals: the short stay sector and the long stay sector. In 1981, 78% of all psychiatric inpatients had been there for over one year and 62% of all inpatients had been in hospital for more than 5 years. Thirty nine per cent of those resident over 5 years were aged 65 or over. Among the long stay patients were 2,400 mentally handicapped persons, making up 31% of long stay patients.

Short stay sector

A2.8 Admission rates per 1,000 population by age to Irish psychiatric hospitals and units are shown in Table A2.7. The rates are highest for the 45-64 age group and are lowest for the under 15 and over 75 age groups.

The average duration of stay by age groups is shown in Tables A2.8 for live discharges who have remained as inpatients for less than one year. These figures are derived from data showing the frequency of various sets of stay in hospital. The use of mid-range measures involves some imprecision. The degree to which the long and short stay sectors are separate is indicated by

Table A2.7

Admission rates by age to psychiatric hospitals and units 1979

All admissions per 1,000 persons

| Age | Admission Rate |
|-------|----------------|
| <15 | 0.1 |
| 15-24 | 4.2 |
| 25-44 | 13.6 |
| 45-64 | 16.1 |
| 65-74 | 13.5 |
| 75+ | 9.6 |
| Total | 8.1 |

Source: Activities of Psychiatric Hospitals and Units, 1979 Table 1. Medico Social Research Board.

Table A2.8

Average duration of stay of live discharges from psychiatric hospitals and units, 1979
(days)

| Age | Average duration of stay |
|-------|--------------------------|
| <15 | 67 |
| 15-24 | 48 |
| 25-44 | 39 |
| 45-64 | 41 |
| 65-74 | 47 |
| 75+ | 55 |
| Total | 42 |

Source: Derived from "Activities of Psychiatric Hospitals and Units 1979" Table 18 P.36

Table A2.9

Usage rates of psychiatric hospital services by age, 1979

| Age | In-Patient Days per 1000 population |
|---------|-------------------------------------|
| <15 | 6.7 |
| 15-24 | 201.6 |
| 25-44 | 530.4 |
| 45-64 | 660.1 |
| 65-74 | 634.5 |
| 75 | 528.0 |
| Average | 340.2 |

Source: Tables A2.8 and A2.9

Table A2.10

Usage of short stay psychiatric inpatient hospital services, 1979, and projected 1986 and 1991 consumption and % changes

| Age | 1979 | 1986 | | 1991 | |
|----------------------------|------------|-----------|-----------|-----------|-----------|
| | | I | II | I | II |
| <15 | 6900.38 | 7266.82 | 7223.94 | 7317.74 | 7240.69 |
| 15-24 | 117673.92 | 126221.76 | 125496.00 | 130455.36 | 129003.84 |
| 25-44 | 422940.96 | 508600.56 | 504781.68 | 566573.28 | 559200.72 |
| 45-64 | 393353.39 | 390515.16 | 385762.44 | 412166.44 | 402859.03 |
| 65-74 | 147267.45 | 151264.80 | 150122.70 | 152280.00 | 149044.05 |
| 75+ | 68270.40 | 74870.40 | 73920.00 | 82368.00 | 80572.80 |
| Total | 1156406.70 | 1258739.5 | 1247306.7 | 1351160.8 | 1327921.0 |
| % Change over 1979 figures | | 8.85 | 7.86 | 16.84 | 14.83 |

Sources: Table A2.9 and NESC Report No. 63.

Table A2.11

Activities of psychiatric short and long stay sectors 1973-80

| | Total admissions | Short stay | | | Long stay | | |
|------|------------------|-----------------|------------------|--------------|-----------------|--------|------------|
| | | Live discharges | Total discharges | Gross Inflow | Live discharges | Deaths | Net Inflow |
| 1980 | 27098 | 29472 | 25788 | 1310 | 595 | 605 | 112 |
| 1979 | 27358 | 29673 | 29975 | 1383 | 523 | 564 | 296 |
| 1978 | 27662 | 29067 | 29386 | 2276 | 1617 | 549 | 110 |
| 1977 | 26385 | 24790 | 25161 | 1224 | 603 | 554 | 67 |
| 1976 | 26434 | 24952 | 25303 | 1131 | 713 | 577 | -159 |
| 1975 | 26892 | 24117 | 24473 | 1419 | 679 | 585 | 155 |
| 1974 | 24964 | 23226 | 23597 | 1367 | 793 | 687 | -113 |
| 1973 | 24036 | 22419 | 22829 | 1207 | 691 | 681 | -165 |

Source: Activities of Irish Psychiatric Hospitals and Units (various years) Medico Social Research Board

the fact that 98% of live discharges occur in less than one year. The average duration of stay for all age groups is 42 days with little systematic variation by age group.

A2.9 The product of Tables A2.7 and A2.8 yields the usage in in-patient days per 1,000 population, classified by age group, Table A2.9. The consumption of inpatient days in psychiatric hospitals clearly increases with age up to 25 and then levels off, and falls slightly for the over 75 age group.

2.10 Application of Table A2.9 to the 1979 and projected 1986 and 1991 populations, classified by similar age groups, gives Table A2.10 which shows a projected increase in the consumption of inpatient days of between 8.4% and 9.4% by 1986 and by between 15.5% and 17.5% by 1991.

Long stay (> 1 year) psychiatric sector

A2.11 In 1971, 77% of all psychiatric inpatients were long stay, a figure almost identical to the 78% who were so classified in 1981. This ratio is not particularly high by international standards; the comparable percentages being 78% for Northern Ireland 74% for Scotland, 66% for Wales and 66% for England in 1979¹. Further the proportion of psychiatric inpatients aged 65 and over was 36% in 1981, compared to an average of 50% for the UK in 1979².

A2.12 In recent years there has been a small net inflow into the long stay sector as shown in Table A2.11. Up to the mid 1970s the net inflow was negative but this pattern then reversed. It is not possible to obtain an age profile of these new entrants from either of the main data sources. It is understood that the Medico Social Research Board is about to commence a study on this and related topics.

A2.13 Until more detailed information on the age profile on new admissions to the long stay sector is available, it is not possible to estimate the impact of demographic change on this sector. Consequently it has been assumed that the relationship between short and long stay places will remain constant, which implies that the percentage increase in long stay requirements in 1986 and 1991 will be identical to that of the short stay sector. This appears to be the most plausible assumption on the basis that the proportion of elderly psychiatric long stay inpatients has been declining so that the number of deaths is likely to decline, thereby increasing the net inflow to the long stay sector.

Services for the mentally handicapped

A2.14 The procedure adopted in estimating the effect of demographic change on the services required for the mentally handicapped is the same as

1 *Regional Trends, 1982*, Table 4.7, HMSO, 1982.

2 *ibid.*

Table A2.12

Prevalence rates for moderate, severe and profound mental handicap (numbers per 1,000 population), by age group, various years

| | Prevalence rates | | |
|-------|------------------|-------------------|-------------------|
| | 1981 Actual | 1986 Projected | 1991 Projected |
| 0-4 | 3.92 | 3.29 | 2.76 |
| 5-9 | 3.92 | 3.29 | 2.76 |
| 10-14 | 4.65 | 4.29 | 3.96 |
| 15-19 | 5.71 | 6.43 | 7.23 |
| 20-34 | 5.13 | 5.38 | 5.64 |
| 35-54 | 3.45 | 3.48 | 3.51 |
| 55+ | 1.52 | 1.42 | 1.32 |

Source: The 1981 rates are derived from Census of Mental Handicap 1981 (Irish Medical Journal, February 1983) and the estimated 1981 population by age. The 1986 and 1991 rates are derived by extrapolation of the 1974 to 1981 trends in prevalence rates.

Table A2.13

Mentally handicapped

Projected number of persons 1986-1991 and percentage change on estimated 1979 number

| Ages | 1986 | | 1991 | |
|---|-------|-------|-------|-------|
| | I | II | I | II |
| 0-4 | 1205 | 1196 | 982 | 972 |
| 5-9 | 1185 | 1179 | 1025 | 1013 |
| 10-14 | 1539 | 1531 | 1449 | 1435 |
| 15-19 | 2117 | 2106 | 2514 | 2488 |
| 20-34 | 4412 | 4383 | 4856 | 4795 |
| 35-54 | 2589 | 2564 | 3000 | 2949 |
| 55+ | 938 | 928 | 952 | 866 |
| Total | 13985 | 13887 | 14778 | 14518 |
| % Change over 1979 estimated total of 13210 (1) | 5.9 | 5.1 | 11.9 | 9.9 |

Notes: (1) The totals for 1979, 1986 and 1991 have been estimated on the assumption that the prevalence rate for the 0-4 age group is the same as that for the 5-9 age group.

for the other services. Prevalence rates showing the numbers of mentally handicapped persons per 1,000 population, classified by age group, have been estimated for 1981 based on the 1981 Census of Mental Handicap. Projected prevalence rates for 1986 and 1991 were estimated by extrapolating the percentage change in prevalence rates over the period 1974-1981, 1974 being the year of the previous Census of Mental Handicap. Prevalence rates for the 0-4 age group have been taken as identical to those for the 5-9 age group since the rates for the younger age group are low due to understandable delays in labelling young children as mentally handicapped.

A2.15 Table A2.12 shows the 1981 prevalence rates for moderate, severe and profound mental handicap by age group, along with estimated prevalence rates for 1986 and 1991.

A2.16 The results of applying the actual 1981 and the projected 1986 and 1991 populations to these prevalence rates are set out in Table A2.13 along with the estimated 1979 numbers of mentally handicapped persons. The overall result of an increase in the number of persons who are mentally handicapped from around 13,200 in 1979 to almost 14,000 in 1986 and around 14,600 by 1991, or of an increase of between 5.1% and 5.9% by 1986 and between 9.9% and 11.9% by 1991. The results are based on the reasonable expectation of a decrease in the number of mentally handicapped children (due to lower maternal age, improvements in obstetric and neo-natal care and increased genetic counselling) as well as a rise in the number of mentally handicapped adults due to their increasing life expectancy.

The general medical services

A2.17 The age composition of medical card holders is available from a 1977 Medical Card Survey carried out by the Department of Health and is shown in Table A2.14. It is assumed that the same proportion of each age group was covered by medical cards in 1979.

A2.18 Data on consultation rates by age in 1981 have been made available by the Department of Health and are presented in Table A2.15 which shows consultation rates increasing with age so that the rates for the under 15 age group are 53% of average, those for the 45-64 age group are 140% of the average and those for the over 75s are 150% of the average. The average number of consultations by medical card holders is available each year in the annual reports of the General Medical Services (Payments) Board. In 1979 the average number of consultations was 5.59.

A2.19 By combining table A14 and A15 with the actual 1979 population and the projected 1986 and 1991 populations, the changes in the number of consultations due to demographic change can be derived, assuming the

Table A2.14

Age distribution of medical card holders and % of population by age group covered by medical cards

| | % Medical Card Holders | % Age Group Covered by Medical Cards in 1977 |
|---------|------------------------|--|
| 0 - 15 | 31.5 | 34.5 |
| 16 - 44 | 27.7 | 24.5 |
| 45 - 64 | 17.2 | 35.9 |
| 65+ | 23.6 | 79.0 |
| | 100.0 | 35.4 |

Source: Medical Card Survey, 1977 Department of Health.

Table A2.15

Ratio of consultation rates by age to average consultation rate per person pa for General Medical Services

| Age | Ratio |
|---------|-------|
| 0 - 15 | 0.53 |
| 16 - 44 | 0.84 |
| 45 - 64 | 1.41 |
| 65+ | 1.50 |
| Average | 1.00 |

Source: Department of Health, based on 1981 data.

Table A2.16

General medical services, projected number of consultations in 1986 and 1991

| Ages | 1979 | 1986 | | 1991 | |
|--------------------|--------|--------|--------|--------|--------|
| | | I | II | I | II |
| <15 | 1121.2 | 1174.9 | 1167.8 | 1186.4 | 1173.8 |
| 16 - 44 | 1512.0 | 1749.2 | 1737.4 | 1894.9 | 1871.0 |
| 45 - 64 | 1685.8 | 1673.3 | 1652.9 | 1766.4 | 1726.5 |
| 65+ | 2395.4 | 2520.0 | 2496.8 | 2624.7 | 2574.3 |
| Total | 6713.4 | 7117.4 | 7054.9 | 7472.4 | 7345.5 |
| % Change over 1979 | - | 6.02 | 5.9 | 11.31 | 9.42 |

Table A2.17

Geriatric long stay places by institution, 1980

| | Places |
|---|--------|
| Health Board Welfare Homes | 1185 |
| District Hospitals (long stay) | 1471 |
| Health Board Long Stay Hospitals | 7541 |
| Geriatric Assessment | 297 |
| Voluntary and Private Hospitals and Homes | 4700 |
| Total | 15194 |

Source: Statistical Information Relevant to the Health Services 1982, 1981, Department of Health.

same proportion of each age group retain Category 1 status and the consultation rate for each age group remains unchanged. The results, presented in Table A16 show an increase in consultations of between 5.1% and 6.0% by 1986 and of between 9.4% and 11.3% by 1991.

Geriatric long stay residential provisions

A2.20 The number of geriatric long stay residential places in 1980 is shown in Table A2.17, including long stay district hospitals. Over one quarter of the total places were in voluntary and private hospitals and homes. The distribution of places by age is available excluding District Hospitals: it has been assumed that the same distribution applies to the latter. The age distribution is shown in Table A2.18 which indicates that over two thirds of all places were occupied by the over 75 age group.

A2.21 The number of places per 1000 persons was 13.2 for the 65- 74 age group and 66.5 for the 75+ age group. Because of the differential use of geriatric provisions by age group it is necessary to apply the population projections separately to each age group. This is done in Table A2.18 which shows an increase of 6.5% and 7.7% in total requirements by 1986 and between 13.3% and 15.8% by 1991. The methodology employed simply estimates the effects of demographic change on existing geriatric provision which is equally applicable to the total provision or to either the public or private sector, assuming their shares remain constant.

Table A2.18

Application of demographic projections to 1980 distribution of geriatric long-stay institutional places

| Age group | % Distribution of places in 1980 | Projected requirements | | | |
|------------|----------------------------------|------------------------|-------|-------|-------|
| | | 1986 | | 1991 | |
| | | I | II | I | II |
| 75+ | 67.3 | 73.8 | 72.9 | 81.2 | 79.4 |
| 65-74 | 23.5 | 24.7 | 24.5 | 24.8 | 24.4 |
| 45-64 (1) | 9.0 | 9.0 | 8.9 | 9.6 | 9.3 |
| Totals (2) | 100.0 | 107.7 | 106.5 | 115.8 | 113.3 |

Notes: (1) The entire under 64 age group has been assigned to the 45-64 age group since the proportion in this category aged under 45 is very small.

(2) Total do not add due to rounding.

Sources: Statistical Information Relevant to the Health Services, 1982, Table G20 and NESR Report 63. Pages 24, 25.

APPENDIX 3

EXPENDITURE AND PERSONNEL TRENDS

Contents

- Table A3.1 Current public expenditure on health services by programme, 1976-1982
- Table A3.2 Health services current expenditure by programme (constant prices), 1977-1983.
- Table A3.3 General hospital programme expenditure by service, 1981, and change in constant prices, 1977 to 1981
- Table A3.4 Acute hospitals: average cost per inpatient day
- Table A3.5 Average cost per place in special centres for the mentally handicapped
- Table A3.6 Psychiatric hospitals; average cost per inpatient place
- Table A3.7 Cost per consultation in the general medical services and by component, various years (current prices)
- Table A3.8 Manpower - number employed by health boards and voluntary hospitals 1975 and 1977-1981.
- Table A3.9 Nurses per inpatient place 1975-1980
- Table A3.10 Change in health service expenditure as % GNP, 1986 under various assumptions.

Table A3.1

A. Current public expenditure on health services by programme, 1976-1982

| | 1976 | 1977 | 1978 | 1979 | 1980 | 1981 | 1982 | 1983(e) |
|-------------------------------|-------|-------|-------|-------|-------|-------|-------|---------|
| Community protection | 6.1 | 7.6 | 9.4 | 12.3 | 13.9 | 15.5 | 16.4 | 17.5 |
| Community health | 45.1 | 46.5 | 57.6 | 70.0 | 82.7 | 115.1 | 143.0 | 139.8 |
| Community welfare | 16.9 | 27.6 | 30.0 | 36.2 | 43.5 | 54.8 | 72.0 | 79.7 |
| Total community | 68.1 | 81.7 | 97.0 | 118.6 | 140.1 | 185.4 | 231.4 | 237.0 |
| Psychiatric programme | 39.1 | 46.5 | 55.6 | 69.0 | 85.5 | 105.7 | 120.0 | 132.0 |
| Programme for the handicapped | 22.2 | 30.1 | 37.1 | 47.8 | 61.0 | 65.6 | 91.4 | 102.0 |
| General hospital programme | 139.5 | 173.0 | 213.2 | 306.4 | 378.5 | 458.4 | 507.7 | 547.4 |
| General support programme | 21.7 | 24.3 | 26.1 | 30.8 | 32.0 | 42.9 | 48.2 | 52.1 |
| Gross expenditure | 290.6 | 355.6 | 429.0 | 572.5 | 697.0 | 858.0 | 988.7 | 1070.5 |
| Income | 16.0 | 27.1 | 29.0 | 32.5 | 31.0 | 35.3 | 50.7 | 57.5 |
| Net expenditure | 274.6 | 328.5 | 400.0 | 540.0 | 666.0 | 822.7 | 948.0 | 1013.0 |

B. Percentage share of gross current public expenditure on health

| | 1976 | 1977 | 1978 | 1979 | 1980 | 1981 | 1982 | 1983(e) |
|-------------------------------|------|------|------|------|------|------|------|---------|
| Community protection | 2.1 | 2.1 | 2.2 | 2.2 | 2.0 | 1.6 | 1.6 | 1.6 |
| Community health | 15.5 | 13.1 | 13.4 | 12.2 | 11.9 | 14.2 | 14.3 | 13.1 |
| Community care | 5.8 | 7.8 | 7.0 | 6.3 | 6.2 | 7.1 | 7.2 | 7.5 |
| Total community | 23.4 | 23.0 | 22.6 | 20.7 | 20.1 | 22.9 | 23.2 | 22.1 |
| Psychiatric programme | 13.5 | 13.1 | 13.0 | 12.1 | 12.3 | 11.9 | 12.0 | 12.3 |
| Programme for the handicapped | 7.6 | 8.5 | 8.6 | 8.3 | 8.8 | 8.9 | 9.2 | 9.5 |
| General hospital programme | 48.0 | 48.6 | 49.7 | 53.5 | 54.3 | 51.6 | 50.9 | 51.1 |
| General support programme | 7.5 | 6.8 | 6.1 | 5.4 | 4.6 | 4.7 | 4.8 | 4.9 |

Note: e = estimate

The figures given in the fourth row of each table, Total Community, comprise the sum of the first three rows. There are also community aspects to both the Psychiatric and Handicapped Programmes.

Source: Department of Health. The 1979 and 1980 data has been adjusted to include under 1979 pay increases awarded in 1980 but back dated to 1979.

Table A3.2

Health services current expenditure by programme (constant 1975 prices) 1977-1983, (1).

| Programme | 1977 | 1978 | 1979 | 1980 | 1981 | 1982 | 1983 | % Change 1977-1983 |
|-------------------------------|------------------|-------|-------|-------|-------|-------|-------|-----------------------|
| | £m (1975 prices) | | | | | | | |
| Community protection | 5.8 | 6.4 | 7.3 | 6.8 | 6.3 | 5.9 | 5.8 | + 1.7 |
| Community health services | 35.3 | 39.5 | 41.5 | 40.2 | 46.6 | 51.3 | 46.4 | + 45.3 |
| Community welfare | 20.9 | 20.6 | 21.5 | 21.2 | 22.2 | 25.8 | 26.5 | + 22.4 |
| Psychiatric | 35.3 | 38.1 | 40.9 | 41.6 | 42.8 | 43.0 | 43.8 | + 21.8 |
| Programme for the handicapped | 22.8 | 25.4 | 28.3 | 29.7 | 26.6 | 32.8 | 33.9 | + 43.4 |
| General hospital programme | 131.3 | 146.0 | 181.5 | 184.0 | 185.5 | 182.0 | 181.7 | + 38.6 |
| General support programme | 18.4 | 17.9 | 18.3 | 15.6 | 17.4 | 17.3 | 17.3 | - 6.0 |
| Gross expenditure | 269.8 | 293.8 | 339.2 | 338.8 | 347.2 | 358.1 | 355.4 | + 32.7 |
| Less income | 20.6 | 19.9 | 19.3 | 15.1 | 14.3 | 18.2 | 19.1 | - 11.7 |
| Total | 249.2 | 274.0 | 319.9 | 323.8 | 332.9 | 339.9 | 336.3 | + 36.4 |

Note: (1) Deflated by implicit price index of public authorities net current expenditure, derived from Economic Review and Outlook, 1983

Source: Table A3.1.

Table A3.3

General hospital programme expenditure by service, 1981,
and change in constant prices, 1977 to 1981

| | 1981 | 1977 | 1981 | % Change 1977-81 |
|---|-------------------|-----------------------|-----------------------|---------------------|
| | Current prices | Constant prices(1) | Constant prices(1) | |
| | £m | £m | £m | % |
| 6.1 Services in regional hospitals | 103.0 | 25.8 | 36.9 | + 43.0 |
| 6.2 Services in public voluntary hospitals | 207.7 | 55.6 | 74.5 | + 34.0 |
| 6.3 Services in health board county hospitals and homes | 107.0 | 22.7 | 38.4 | + 59.1 |
| 6.4 Contributions to patients in private hospitals | 11.8 | 3.5 | 4.2 | + 20.0 |
| 6.5 Services in district hospitals | 20.5 | 6.0 | 7.4 | + 23.3 |
| 6.6 Services in health board long stay hospitals | 45.4 | 14.9 | 16.3 | + 9.4 |
| 6.7 Ambulance services | 12.3 | 2.9 | 4.4 | + 51.7 |
| Total | 507.7 | 130.5(2) | 182.0 | + 37.9 |

Note: (1) Deflator as for Table A3.2.

(2) Excludes services in voluntary long stay hospitals.

Source: Statistical Information Relevant to the Health Services, 1981 and 1977.

TABLE A3.4

Acute hospitals; average cost per inpatient day

| | Cost per IP day (1) (current prices) | Cost per IP day (1975 prices) (2) |
|----------------------------|--|---|
| | £ | £ |
| 1977 | 28.3 | 21.5 |
| 1978 | 33.9 | 23.2 |
| 1979 | 41.6 | 24.6 |
| 1980 | 61.3 | 29.8 |
| Average Annual Increase | 29.1% | 11.5% |

Notes: (1) the figures were derived by weighting the average cost for each type of hospital by that hospital's share of total inpatient days.
(2) Deflator as for A3.2.

Source: (i) Derived from Statistical Information Relevant to the Health Services, various years.

TABLE A3.5

Average cost per place in special centres for the mentally handicapped

| | Cost per residential place (1) per annum, current prices £ | Cost per residential place per annum, 1975 prices (2) £ |
|------------------------------|---|--|
| 1980 | 6572 | 3190 |
| 1979 | 4708 | 2786 |
| 1978 | 3735 | 2557 |
| 1977 | 2780 | 2111 |
| Average Annual % increase | 32.8 | 14.6 |

Notes: (1) Data on public expenditure on special centres for Mentally Handicapped was obtained from the Department of Health and was divided by the number of residential places in these centres.

(2) Deflated by the implicit price index for current public expenditure.

Source: (i) Statistical Information Relevant to the Health Services, various years; Department of Health.

Table A3.6

Psychiatric hospitals; average cost per inpatient place

| | Cost per inpatient p.a. (current prices) (1) | Cost per inpatient p.a. (1975 prices) |
|---------------------|---|--|
| 1977 | 3657 | 2777 |
| 1978 | 4575 | 3131 |
| 1979 | 5328 | 3153 |
| 1980 | 8135 | 3949 |
| % Increases p.a. | 30.2% | 12.5% |

Notes: (1) Data on gross expenditure on District Mental Hospitals was obtained from the Department of Health and was divided by the number of inpatients in these hospitals.
(2) Deflator as for Table A3.5.

Source: (i) Statistical Information Relevant to the Health Services various years; Department of Health.

Table A3.7

Cost per consultation in the general medical services and by component, various years (current prices)

| Year | £ | | | | |
|-------------------------------|---------------------------|-------------|----------------|-----------------|------------------------|
| | Overall cost per visit | Doctor cost | Dispensing fee | Ingredient cost | VAT and administration |
| 1981 | 9.74 | 2.83 | 1.53 | 5.15 | 0.23 |
| 1980 | 8.11 | 2.57 | 1.34 | 4.09 | 0.11 |
| 1979 | 6.91 | 2.25 | 1.17 | 3.35 | 0.14 |
| 1978 | 5.85 | 1.94 | 1.01 | 2.84 | 0.06 |
| 1977 | 5.17 | 1.67 | 0.89 | 2.44 | 0.17 |
| 1976 | 4.54 | 1.61 | 0.81 | 1.97 | 0.15 |
| 1975 | 4.00 | 1.38 | 0.71 | 1.65 | 0.26 |
| 1974 | 3.22 | 1.14 | 0.57 | 1.31 | 0.20 |
| 1973 | 2.72 | 0.92 | 0.40 | 1.09 | 0.31 |
| % Change 1973-1981 P.a. | 11.7 | 11.5 | 11.8 | 21.4 | -2.9 |

Source: General Medical Services Payments Board

Table A3.8

Manpower (1) - number employed by health boards and voluntary hospitals 1975 and 1977-1981

| Medical | 1975 | 1977 | 1978 | 1979 | 1980 | 1981 | % Change 1975-1981 |
|---------------------------|--------|--------|--------|--------|--------|--------|-----------------------|
| Dental/Medical | 3,600 | 3,739 | 3,835 | 4,200 | 4,348 | 4,436 | 23.2 |
| Nursing and allied | 21,000 | 25,146 | 27,005 | 28,350 | 29,742 | 30,433 | 44.9 |
| Paramedical | 2,200 | 2,370 | 2,588 | 2,747 | 2,814 | 3,152 | 43.3 |
| Catering and housekeeping | 9,300 | 7,626 | 8,232 | 8,533 | 3,806 | 9,208 | 7.0 |
| Maintenance | 2,400 | 2,038 | 2,208 | 2,211 | 2,158 | 2,337 | -2.6 |
| Administration/Clerical | 4,000 | 4,265 | 4,821 | 5,312 | 5,443 | 5,891 | +47.3 |
| Other | 1,200 | 2,325 | 2,263 | 2,538 | 2,606 | 2,573 | +214.4 |
| Total | 43,700 | 47,509 | 50,922 | 53,891 | 55,645 | 58,030 | + 32.8 |

Note (1) - excludes employment in Special Residential Homes for Mentally Handicapped and other health bodies.

Source: Statistical information relevant to the Health Services, 1975, 1980 and 1981 and Department of Health.

Table A3.9

Nurses per inpatient place 1975-1980

| Inpatient Places/beds | 1975 | 1980 |
|---------------------------------------|--------|--------|
| Acute | 16,810 | 17,665 |
| Psychiatric | 13,874 | 12,212 |
| Geriatric (health board) | 9,307 | 8,726 |
| Total places/beds | 39,991 | 38,767 |
| Total nurses and allied | 21,000 | 29,472 |
| Nurses and allied per inpatient place | 0.53 | 0.76 |

Source: Statistical information relevant to the health services and Table A3.8.

Table A3.10

Change in health service expenditure as % GNP, 1986 under various assumptions

| GNP per capita % change | Change in % unit costs % p.a. | | | | | |
|----------------------------|-------------------------------------|--------|--------|--------|--------|--------|
| | 0 % | 1 % | 2 % | 3 % | 5 % | 8 % |
| 0 | -3.3 | +3.2 | +10.7 | +18.5 | +35.7 | +65.4 |
| 1 | -9.9 | -3.3 | +3.2 | +10.7 | +26.9 | +55.0 |
| 2 | -16.1 | -9.9 | -3.3 | +3.3 | +18.5 | +45.1 |
| 3 | -22.0 | -16.1 | -9.9 | -3.3 | +10.7 | -35.7 |

Source: The data was derived by use of formula 13, Appendix 1 and Table 2.2. The results are approximate because the methodology is based on very small changes in the variables.

APPENDIX 4

DEATH RATES BY UK COUNTRY AND IRELAND 1978

Table A4.1
Death rates by cause of death, 1978
Rate per 100,000 population

| Cause | | England | Wales | Scotland | N. Ireland | Ireland |
|--|---|---------|-------|----------|------------|---------|
| Heart disease | M | 440 | 535 | 479 | 435 | 388 |
| | F | 357 | 384 | 397 | 344 | 294 |
| Cancer including leukaemia | M | 283 | 290 | 287 | 204 | 207 |
| | F | 232 | 230 | 244 | 184 | 175 |
| Cerebrovascular disease | M | 116 | 142 | 141 | 123 | 150 |
| | F | 178 | 223 | 209 | 178 | 186 |
| Pneumonia | M | 91 | 85 | 61 | 57 | 61 |
| | F | 122 | 121 | 77 | 71 | 60 |
| Bronchitis | M | 69 | 88 | 63 | 43 | 67 |
| | F | 23 | 26 | 23 | 18 | 34 |
| Congenital anomalies | M | 8 | 8 | 8 | 10 | 13 |
| | F | 6 | 6 | 7 | 10 | 15 |
| Infective diseases | M | 6 | 7 | 7 | 8 | 13 |
| | F | 4 | 4 | 6 | 5 | 8 |
| Perinatal mortality (certain causes) | M | 8 | 9 | 9 | 12 | 14 |
| | F | 5 | 5 | 5 | 9 | 10 |
| Motor vehicle accidents | M | 19 | 20 | 22 | 33 | 30 |
| | F | 8 | 7 | 10 | 12 | 8 |
| All other accidents | M | 16 | 22 | 38 | 35 | 28 |
| | F | 18 | 29 | 36 | 32 | 26 |
| Suicide | M | 10 | 12 | 7 | 5 | 6 |
| | F | 6 | 6 | 6 | 4 | 4 |
| All other causes | M | 156 | 171 | 178 | 147 | 115 |
| | F | 185 | 184 | 196 | 133 | 112 |
| Total all causes | M | 1220 | 1389 | 1300 | 1100 | 1107 |
| | F | 1145 | 1215 | 1218 | 990 | 932 |

Source: Regional Trends, 1981. Vital Statistics, 1978

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