STUDIES OF THE ELDERLY IN
HOSPITALS AND HOMES

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Submitted for the Degree of Doctor of Medicine

University of Leicester 1982
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This report is organised and presented in seven chapters.

The first chapter, the introduction, which is in three sections, begins by discussing the origins of and problems posed by the ageing population together with the implications for services (section 1.1). Section 1.2 reviews the literature on the assessment of incapacity in the elderly with particular emphasis on measures which deal with loss or impairment of function. The final section (1.3) of this introductory chapter traces the historical development of services for the elderly and concludes by raising the main themes of studies in the literature which have been concerned with the elderly in institutional care.

Chapter 2 sets out the aims of the present study and describes the methodology used.

There are three chapters of results. Chapter 3 describes the characteristics of people aged 65 years and over who were resident in all types of hospitals and homes in Leicestershire on one night in December of 1979. Chapter 4 compares this population with elderly people who were in the same range of institutions in December of 1976. Change in level of incapacity is examined in survivors who were con-
tinuously resident in the same type of care over the entire three-year period. Chapter 5 presents the data on outcomes for the institutional populations. The whole 1976 institutional population was followed up to determine broad outcomes by three years after initial enumeration. Mortality data are examined and presented in more detail using life-table analysis to relate survival to different time periods amongst different groups of patients and residents and indirect age-standardisation to compare the mortality experience of the institutional population with that of the general elderly population of Leicestershire. A shorter follow-up of the 1979 survey population, restricted to those who were in National Health Service hospitals and Social Services residential homes was carried out to provide information on outcome at six months related to that particular spell of care.

Chapter 6, which is the discussion, raises the main findings of the study, relates them to the relevant literature and discusses them in the context of policy documents where appropriate. The main theme of the chapter is the way in which the demands currently being posed by the ageing population must force the re-examination of the roles and relationships of the different components of the services provided for the elderly, particularly the different forms of institutionally-based services. In particular, three issues are developed.

Firstly, is the question of the acute hospital care of
the elderly and the relationship between general and geriatric medicine and the future organisation of the latter. Secondly, the place of the residential home for the elderly, largely provided by the Social Services department, and the potential conflict between its traditional role as a provider for the frail but not highly incapacitated elderly and the increasing levels of incapacity it is being called upon to deal with. Thirdly, the uses and limitations of outcome data to rationalise decisions about different forms of care are discussed.

Chapter 6 concludes with a brief statement of what are perceived as the main implications of the study for policy and future research.

Chapter 7 lists the references cited in the text.

The term "institution" is sometimes associated with the potentially adverse effects of long-term care on the individual. The term is widely used in the text here as a collective noun to describe any of the hospitals or homes covered in the survey and no such connotations are implied in its use.

ACKNOWLEDGEMENTS

In the conduct of these studies I am grateful to all nursing and care staff working within hospitals and homes administered by the National Health Service, local authority
Social Services Department and private and voluntary agencies within Leicestershire, for the conscientious effort put into supplying the information on the old people within their care.

I am especially indebted to the co-ordinators for the field work stage of the 1979 institutional elderly population whom I have listed by name in the methodology section (Chapter 2, Page 2-43); in particular, I would like to mention Dr. R. L. Palmer who provided extra assistance on a number of occasions. The Leicestershire Area Health Authority (Teaching) provided financial support to enable questionnaires to be printed and draft death returns to be archived.

I fully and warmly acknowledge the statistical advice and support that my colleague David Clayton has given me over the several years it has taken to conduct the analysis and interpret the data. Through him, I have also had access to generous help from Carol Jagger and John Woods who undertook computer programming to execute the analyses and statistical tests employed. John Taylor, the Leicestershire Area Health Authority Statistician has also provided kind help on a number of occasions.

A number of colleagues within the Medical School and the Health Service have provided comment and constructive criticism in particular Stephen Gale and Dr. Jim Jones.
Pauline Payne, Sandra King, Erica Statham and Elizabeth Hoskins have typed sections of the manuscript and I am most grateful to them, especially to Pauline Payne. I would also like to thank Angela Chorley and Hilary Revill who assisted in the preparation of art-work. Special thanks are due to Aileen Odell who has helped me with numerous routine checking tasks in her own time.

Professor Michael Clarke has allowed me access to data and provided support, advice and encouragement for the phases of the studies which I present here. I have been fortunate to work with him. He is by nature an applied epidemiologist and his concern and enthusiasm for the application of academic endeavours to the health services particularly in the local context has greatly influenced me.

Finally, through the long hours of toil in producing this final report, I have been a less than adequate husband and father. It is to my patient and supportive wife and three small boys that I dedicate this thesis.
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1.1 BRITAINS AGEING POPULATION

1.1.1 Demographic considerations

The population of Britain is ageing: there has been an increase, since the beginning of the century, in the proportion of people who are in its upper age groups. The mid-year estimate of the population of the United Kingdom in 1980 showed 8.33 million people aged 65 and over, (14.8% of the total) whilst the number aged 75 years and over was 3.14 million, representing 5.6% of the total population (Central Statistical Office, 1982).

A World Health Organisation Working Party (World Health Organisation, 1974) has recognised five important indices of population ageing:

a. the proportion of elderly people (whether defined as those over pensionable age or by arbitrary criteria);

b. the ratio of aged people to the population of working age and this indicates dependency;

c. the ratio of aged people to young people (an indication of the rate of renewal);

d. the proportion of the very old amongst the population which has been denoted 'elderly' e.g. over 85s amongst all over 65s;

e. the sex ratio (the number of males compared with the number of females of the same age).

Taking any of these five indices during the present century, the population of Britain has aged (see Table 1).
Table 1 - Changes in various indices of population ageing, United Kingdom 1901 - 1971

<table>
<thead>
<tr>
<th></th>
<th>1901</th>
<th>1931</th>
<th>1951</th>
<th>1971</th>
</tr>
</thead>
<tbody>
<tr>
<td>Proportion of over 65s</td>
<td>.05</td>
<td>.07</td>
<td>.11</td>
<td>.13</td>
</tr>
<tr>
<td>Ratio population pensionable age (1) to population working age (2)</td>
<td>.07</td>
<td>.11</td>
<td>.21</td>
<td>.27</td>
</tr>
<tr>
<td>Ratio old to young (3)</td>
<td>.15</td>
<td>.31</td>
<td>.48</td>
<td>.55</td>
</tr>
<tr>
<td>Sex ratio at various ages</td>
<td>See Table 3</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Ratio very old to old (4)</td>
<td>.03</td>
<td>.03</td>
<td>.04</td>
<td>.06</td>
</tr>
</tbody>
</table>

1. Males 65 years and over; females 60 years and over
2. Males 15-64 years; females 15-59 years
3. Old-65 years and over; young 0-14 years
4. Very old - 85 years and over; old-65 years and over.

Data extracted from reports of various censuses.

Many people believe that this is a consequence of modern medicine with its new drugs and high technology so that middle-aged and elderly people are being allowed to survive longer. This is not the case. Indeed, Evans (1978) has calculated that even if age-specific mortality rates over the last 25 years had remained at their 1951 levels, 95% of the current elderly population would still be in evidence.

For the real reason, it is necessary to look back to the turn of the century and beyond. The United Kingdom in 1901 contained about 5% elderly people (defined here as those aged 65 years and over) in its population and in this respect resembled present day developing countries such as Brazil or India (4%) rather than Britain's present age-structure. A male child born in 1901 could expect on average to live for a further 48 years; a male child born
in 1978 could expect a further 70 years of life. However a man aged 60 years in 1901 could expect to live for about 13 years, whereas his counterpart in 1978 could expect to live 16 more years (Central Statistical Office, 1981).

Thus, there has been very little alteration in survival now, compared to the turn of the century for people who have already reached middle-age, but a very dramatic change has occurred in expectation of life at birth. The great improvement in infant and child mortality is due as much to improvements in general living standards, public hygiene and nutrition, as advances in medical care.

Enhanced survival at birth and a bulge in births at the beginning of the century meant that many more people survived into adult life and grew old; falling birth-rates during the depression of the 1930s later served to increase the elderly as a proportion of the total population.

The decline in mortality over the last hundred years has been greater in females than in males, a factor which also has a bearing on the elderly. This is apparent from inspecting data for expectation of life or age-specific period rates for the two sexes. Indeed, male mortality has exceeded female mortality in nearly all age groups since the middle of the last century when certification and registration of deaths became a legal requirement. Thus, the ratio of male to female mortality has been increasing (see Table 2) and the greatest discrepancies have occurred in young
adulthood, where road accidents are the most important cause, and in middle and later life where ischaemic heart disease and lung cancer have increased as causes of death in men. Another component of the increase in the sex differential in mortality has been the decline in maternal mortality.

**TABLE 2 - Excess mortality as a percentage in males, England and Wales**

<table>
<thead>
<tr>
<th>Years</th>
<th>Infants (1 Yr)</th>
<th>Children (5 - 9 Yrs)</th>
<th>Young Adults (20 - 24 Yrs)</th>
<th>Middle-age (45 - 54 Yrs)</th>
<th>Early Old Age (64 - 74 Yrs)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1841 - 50</td>
<td>22</td>
<td>3</td>
<td>5</td>
<td>14</td>
<td>11</td>
</tr>
<tr>
<td>1871 - 80</td>
<td>22</td>
<td>8</td>
<td>8</td>
<td>29</td>
<td>14</td>
</tr>
<tr>
<td>1901 - 10</td>
<td>23</td>
<td>-3</td>
<td>19</td>
<td>30</td>
<td>20</td>
</tr>
<tr>
<td>1931 - 40</td>
<td>29</td>
<td>12</td>
<td>17</td>
<td>44</td>
<td>34</td>
</tr>
<tr>
<td>1961 - 70</td>
<td>29</td>
<td>47</td>
<td>124</td>
<td>66</td>
<td>86</td>
</tr>
</tbody>
</table>

Clayton (1979)

The importance of cultural and behavioural factors such as cigarette smoking and automobile use in maintaining this sex differential in mortality is emphasised by the fact that when female death rates have exceeded male death rates, it has most often been in non-industrialised countries (Waldron, 1976).

The result of these demographic changes is that there is developing a large population of elderly women who have outlived their husbands, most marked in the oldest age groups (see Table 3), and who are therefore, beset by the range of medical and social problems of old age without the usual first line of support: the spouse.
### Table 3 - Female to male ratios (Number of females per male) in the population of England and Wales

<table>
<thead>
<tr>
<th>Year</th>
<th>65-74</th>
<th>75-84</th>
<th>85+</th>
<th>All 65+</th>
</tr>
</thead>
<tbody>
<tr>
<td>1901</td>
<td>1.25</td>
<td>1.38</td>
<td>1.72</td>
<td>1.30</td>
</tr>
<tr>
<td>1951</td>
<td>1.36</td>
<td>1.54</td>
<td>2.25</td>
<td>1.45</td>
</tr>
<tr>
<td>1971</td>
<td>1.38</td>
<td>2.02</td>
<td>2.86</td>
<td>1.61</td>
</tr>
<tr>
<td>1981</td>
<td>1.30</td>
<td>1.91</td>
<td>3.27</td>
<td>1.55</td>
</tr>
<tr>
<td>1991</td>
<td>1.27</td>
<td>1.80</td>
<td>3.09</td>
<td>1.53</td>
</tr>
<tr>
<td>2001</td>
<td>1.22</td>
<td>1.73</td>
<td>2.96</td>
<td>1.50</td>
</tr>
</tbody>
</table>

Data extracted from various censuses and Office of Population, Censuses and Surveys (1979a) population projections.

### 1.1.2 Family composition and support

Other demographic forces have been at work which have a bearing on the position of elderly people in society, and the extent to which they may need services. Many of today's elderly people were alive at a time when a relatively high proportion of their generation remained single. For the cohort of females born in 1901, the proportion never-married by the age of 40 years was 19.2%. For women born in 1941, 4.9% had never married by the age of 40 years. (Office of Population, Censuses and Surveys, 1979b). The corresponding figures for males never-married were 12.4% (1901 birth cohort) and 8.4% (1941 birth cohort). The rise in the marriage rate tends to decrease the size of the pool of single elderly people, a vulnerable group, although of course, it reduces their potential to give support to others. Robertson, Gilmore and Caird (1975) found that 45% of unmarried elderly people live with a sibling and of those who did
not live with a sibling, but had one for whom it was possible to make a day visit, 9% were visited daily and 43% weekly or more often.

The rise in marriage rates during the present century has been to some extent counteracted by a fall in the size of completed families. This trend away from the large families of the Victorian era has affected not only the number of siblings available to give support to unmarried elderly people, but also the number of children, the traditional supporters of elderly parents.

The extent to which children do provide support for elderly parents was well described in Townsend's study of the Family Life of Old People (Townsend, 1957). Studying old people in the London Borough of Bethnel Green, he found that the extended family was the dominant interest of most old people and that those not actually living with relatives were rarely alone in a literal sense. How far the situation of elderly people in East London in the mid-1950's can be extended to other parts of Britain today, is open to question. Certainly there have been changes, not only demographic but social, over this time. Married women are now more likely to be in paid employment than in the past reducing their availability to care for elderly relatives: half the women between 45 and 60 years were in paid employment in 1971 compared to less than 10% in 1921 (Mellor, 1981).

It is generally held that the extended family network
has gradually been replaced by the nuclear family mode. How much this is a feature of fundamental changes in attitudes, values and the strength of affectional bonds and to what extent it has been forced by increased geographical mobility of sons and married daughters who are seeking employment is not generally known. Troll (1971) identified four general kinds of dimensions which have been used in the measurement of kin structure: a) residential propinquity - how close relatives live to each other; b) interaction frequency and type - how often relatives visit, phone or write; c) economic interdependence or mutual aid; d) a variety of qualitative measures which assess values of families.

Whilst it may seem plausible that urbanisation and widespread geographical mobility have had a negative effect on the family life of old people, there is little evidence in the recent British literature to substantiate or refute this hypothesis. Indeed it is possible that on the contrary in urban areas, where many interpersonal contacts are necessarily fleeting and specialised, that the lack of formation and maintenance of primary relationships enhances the importance of the immediate and extended family. The central issue then becomes how well the fact of enforced separation by geographical mobility producing limited face-to-face contact, loosens the cohesion of the kin group to the extent that it no longer buffers the detrimental effects of social isolation. It has been maintained by a number of workers (Litwak, 1960; Sussman, 1965) that a modified extended family using modern methods of communication and transport, can
maintain cohesion without close residential proximity.

The view of many service providers today of poor family support for the elderly is not borne out by the limited evidence which is available which shows that there is still a relatively high degree of involvement of many families with their elderly relations (Robertson, Gilmore and Caird, 1975; Abrams, 1978)

1.1.3 The elderly and society
There are many theories of ageing all of which, as well as explaining the process of ageing from a social gerontological perspective, have implications for the expectations of the elderly and society in terms of the status, and social roles which accompany old age. The process of growing old in most Western industrialised nations involves at some stage, retirement from employment and is central to many of the theories which explain the impact of the ageing process itself in terms of the phenomenon of 'disengagement' (Cumming and Henry, 1961). The concept of mutual withdrawal by the old person and society - society withdraws to place younger people in productive positions, thereby maintaining its equilibrium and the person himself realises his growing incapacity and completes the process - is now regarded as oversimplistic. Later perspectives in social gerontology have argued that the loss of life-long roles and responsibilities in the ageing person must be compensated for by active involvement: successful coping with the ageing process, the preservation of social and psychological 'fitness'
depends on such activity. For a fuller discussion of the 'activity' perspective on ageing see, for example, Blau (1973). This interactionist view of ageing lies at the heart of the informal and formal approaches to the post-retirement programmes of many countries. Latterly, a different view of interaction has emerged which sees the shared views, roles, status and values of the elderly together with the social stigma of being old as leading to a subculture of the aged (Rose and Peterson, 1965). Thus far there is little evidence of political consciousness or initiative arising from this postulated subculture but as it grows in size it could provide an important new dimension to the way in which needs of the elderly in society are interpreted and met.

Changes in the position of elderly people in society are also closely related to the economic effects of growing old. The Family Expenditure Survey (Department of Employment, 1980) covers a representative sample of households in the United Kingdom and collects information on the nature of the household, income and expenditure. In 1979 the household groups with disposable incomes below the overall mean on both a household and a personal basis were: the 'low income pensioner households' (defined as one in which the major proportion of income is derived from National Insurance Retirement and similar pensions, including benefits paid in supplement to or instead of such pensions); other retired couples and one parent households.
The median weekly disposable income for a household comprising one adult mainly dependent on State pensions in 1979 was £27.56 and for one man and one woman retired and mainly dependent on state pensions was £41.83. These figures compare with £56.61 and £109.63 for households comprising one adult (not retired) and one couple (not retired) respectively (Department of Employment 1980). Hunt's (1978) survey which applied to the situation of old people at home in England in 1976 found that half the elderly married couples who were living on their own had net annual incomes of less than £1500 and over two thirds of elderly people living alone had incomes of less than £1,000 per year.

The extent to which the elderly person's income falls compared to other age groups due to lack of earnings and the extent to which it is made up of State benefits is shown in Table 4.

<table>
<thead>
<tr>
<th>Household with head of House-</th>
<th>Normal weekly disposable income</th>
<th>Wages and Salaries</th>
<th>Self Employment</th>
<th>Investments</th>
<th>Annuities &amp; other pensions (excluding State Benefits)</th>
<th>Social Security Benefits</th>
<th>Subletting &amp; imputed income from owner/rent free occupancy</th>
<th>Other Sources</th>
</tr>
</thead>
<tbody>
<tr>
<td>Under 30</td>
<td>99.70</td>
<td>100.47</td>
<td>5.61</td>
<td>0.88</td>
<td>-</td>
<td>6.88</td>
<td>4.56</td>
<td>2.79</td>
</tr>
<tr>
<td>30 &amp; under 50 Years</td>
<td>127.28</td>
<td>123.41</td>
<td>9.88</td>
<td>1.67</td>
<td>0.28</td>
<td>9.89</td>
<td>7.15</td>
<td>2.50</td>
</tr>
<tr>
<td>50 &amp; under 65 Years</td>
<td>108.29</td>
<td>104.33</td>
<td>4.53</td>
<td>4.47</td>
<td>3.53</td>
<td>10.40</td>
<td>5.48</td>
<td>1.01</td>
</tr>
<tr>
<td>65 &amp; over</td>
<td>56.06</td>
<td>12.34</td>
<td>1.04</td>
<td>5.49</td>
<td>8.43</td>
<td>29.99</td>
<td>4.40</td>
<td>0.23</td>
</tr>
</tbody>
</table>

Department of Employment 1980
Townsend (1979) has also drawn attention to the inequalities experienced by the elderly as a social group in Britain. Table 5 expresses net income of elderly and non-elderly people in comparable terms (e.g. taking into account the high outgoings on accommodation in the young and the beneficial tax rates of the elderly), and shows that 20% of the elderly compared to 7% of the non-elderly fall within the State's definition of 'poverty'. Indeed, whilst the elderly comprise only one sixth of the total population, they comprised one third of those in 'poverty'.

| Net disposable income of income unit last year as % of supplementary benefit standard plus housing cost | Estimated number in Population (millions) |
|---|---|---|---|
| | Elderly | Non-elderly | Elderly | Non-elderly |
| Under 100 | 20 | 7 | 1.7 | 3.2 |
| 100 - 39 | 44 | 19 | 3.7 | 8.8 |
| 140 - 99 | 17 | 31 | 1.4 | 14.3 |
| 200+ | 19 | 43 | 1.6 | 19.9 |
|TOTAL | 100 | 100 | 8.2 | 46.2 |
|NUMBER | 851 | 4,949 | - | - |

Townsend (1979)
Townsend (1979) points out the inevitability of those inequalities, given that the vast majority of elderly people are separated from access to the high rates of income obtainable in paid employment and reliant on the relatively low rates of income obtainable through the State's social security system. Indeed he also points to the fact that these inequalities, firmly founded in past, have persisted over the past 25 years, and this is demonstrated by the relative stability of the proportion of average gross industrial earnings which is retirement pension or supplementary benefit.

Over two thirds as many old people again as were receiving supplementary benefits were eligible to do so and only half of those eligible were actually receiving them (Townsend, 1979) This must represent factors such as lack of knowledge, pride or the unwieldy process of applying for as-
sistance. The median weekly expenditure for a single adult mainly dependent on state pension in 1979 was £24.39 compared to £48.50 for a single adult who was not retired; the corresponding figures for a couple were £38.95 and £90.04 (Department of Employment, 1980). As a general rule, as households income rises, the proportion of expenditure allocated to each of three commodity groups – housing, fuel and food – decreases. In the group 'single low income pensioner', the proportion of all expenditure allocated to them was 70% (Department of Employment 1980).

1.2 ASSESSING THE NEEDS OF ELDERLY PEOPLE

1.2.1 Approaches to measuring health status

The concept of 'need' and its measurement has stimulated a wide discussion in the literature both in the sociological field and in the sphere of health service research. (See for example Donabedian, 1974; Marshall, 1973; Acheson, 1978; Culyer, Lavers and Williams, 1971) but has seldom made the transition from the theoretical to the applied.

Within the National Health Service, an early attempt to develop services in relation to the needs of the population was contained in the Hospital Plan (Ministry of Health, 1962). It relied, however, on the setting of norms or targets for beds. It has not always been evident how these
standards have been arrived at although the plan itself makes it clear that, in the case of the norm for geriatric beds, it came from studies conducted in areas where services for the elderly were well-developed and thus the level of provision was adopted as a national standard. A similar document on the development of community care (Ministry of Health, 1963) talked much more diffusely about the concept of need without stating how it should be measured.

The traditional medical approach to ill-health by history taking, physical examination and the application of other diagnostic techniques, seeks to identify an underlying pathological process and treat it. This disease orientation of the 'medical model' is matched by an approach to illness which is essentially technical (McKeown, 1976). The classification of a person by disease category is the basis of the International Classification of Diseases, now in its ninth revision (World Health Organisation, 1977) which was originally devised to classify causes of death but later broadened to include non-fatal conditions.

This classification based primarily on disease categories, by anatomical site or aetiology, has provided the basis for epidemiological surveillance of populations, and is closely intertwined with the development of vital statistics.

The application of a strictly 'medical model' of ill-health to consideration of the health problems of an
elderly person seems particularly inappropriate because many do not suffer from a single disease but several chronic degenerative processes either carried over from middle-age or arising for the first time in old age (Hobson and Pemberton, 1955; Williamson et al., 1964). Such diseases usually have their origins in adverse environmental factors, and unhealthy life-style of earlier life, hence there is limited scope for primary prevention in the elderly neither can a 'cure' often be effected. Thus, in addition to pursuing primary preventive strategies from the youngest ages to delay the onset of chronic degenerative diseases and treating the acute episode in the person who is already elderly, it is equally relevant to consider the needs of elderly people arising from the way such pathological processes manifest themselves in terms of interfering with their level of functioning.

These considerations were recognised by a World Health Organisation Study Group in 1959:

"Health in the elderly is best measured in terms of function ... degree of fitness rather than extent of pathology may be used as a measure of the amount of services the aged will require from the community."

The growing importance of chronic diseases has stimulated activity in developing methodologies to assess and classify its impact. In the United States, the Commission on Chronic Illness was established in 1949 to explore these issues particularly in the context of providing long-term
care (Commission on Chronic Illness, 1956).

In Great Britain the work of Harris (1971) represented an important step forward in clarifying the nomenclature and concepts involved. In adopting this approach, she defined 'impairment' as:

"i) lacking part or all of a limb or having a defective limb or ii) having a defective organ or mechanism of the body which stops or limits getting about, working or self-care."

Moreover, she points out that not all impairments lead to disability particularly if they are potentially correctable (e.g. short-sightedness and spectacles). The term 'handicap' was restricted to an impairment which placed the person at a disadvantage due to the loss or reduction of functional ability.

The interrelationship between disease, impairment, disability and handicap has been explored by Wood (1975) who has brought such a perspective into the International Classification of Diseases (World Health Organisation, 1980). In so doing he re-emphasises that the concept of illness which underlies the existing classification (and can be represented by the sequence aetiology - pathology - manifestation) stops short of taking account of the consequences of the disease. Such a process is seen as essential in approaching the classification of disorders which are not prevented or cured.
1.2.2 Assessment of limitation of function

Whilst assessment of functional capacity is of little value, in studying the origins of disease or its prevention, it has a number of important practical advantages. Akpom, Katz and Densen (1973) have highlighted them: a) levels of function can be measured relatively objectively and are sensitive to change in the course of illness; b) where the population to be classified has a mixture of disease conditions (and this is the situation par excellence in elderly populations), classification according to function offers a conceptual basis for homogeneous groupings; c) functional classification is useful in a multidisciplinary context; and d) it may be used for a variety of different purposes such as planning appropriate rehabilitation regimes, evaluation of different types of care and in longitudinal studies of patients with chronic diseases.

The activities which have been considered in the context of limitation of function are broad but include: a) those concerned with self-care (e.g. washing, dressing, eating and using the toilet); b) walking and other movements; c) mobility in the wider sense (e.g. the ability to move from house to shops); and d) the performance of socially-allocated roles.

Assessments have taken many forms incorporating these dimensions to a greater or lesser extent. Many studies involving clinical evaluation of elderly populations have in-
cluded only limited consideration of the consequences of illness or the ageing process on the lives of elderly people.

In terms of appraisal of functional limitation, joint function and lack of mobility are the most common inclusions (Sheldon, 1948; Hobson and Pemberton, 1955; Milne et al., 1972). The presentation of the findings of clinically-orientated studies in terms of level of 'disability' (Hobson and Pemberton, 1955; Williamson et al., 1964) is misleading when many of the so-called 'disabilities' are specific clinical entities (such as hiatus hernia or peptic ulcer) rather than the way in which they make their impact.

Akhtar et al. (1973) assessed elderly people living at home and defined 'disability' as a state in which existence at home without help was judged impossible. Disabilities were expressed in terms of capacities in five areas: mobility, continence, domestic care, self-care and psychiatric care; 'dependency' was defined as disability for self-care. Despite the inclusion of such an assessment based on level of function, the findings were discussed predominantly in relation to diagnostic categories. For example, neurological disorders were seen as 'contributing' to 93% of 'dependent' states. The authors, in this way, identified a group of clinical conditions to which they considered geriatric medicine should direct its attention. These conclusions of cause and effect were not justified on the
basis of their data alone. Moreover, they placed too great an emphasis on the role for a pathological mechanism to explain the incapacities of old age.

1.2.2.1 **Ability to perform the basic activities of daily living**

Another approach which appears, particularly in the American literature, is the description of problems of elderly and chronically-ill people in purely functional terms. In such assessments, an important feature is the extent to which the person can perform those basic activities necessary to daily living.

The term 'activities of daily living' has come to mean a wide variety of functions performed by the individual. The most basic activities necessary for a person to care for themselves physically have been assessed and reported in a series of publications, initially credited to the staff of a hospital for patients with chronic diseases in Cleveland, Ohio, by Katz and his colleagues (Staff of the Benjamin Rose Hospital, 1958; 1959; Katz et al., 1963). They established a functional assessment: the 'index of independence in activities of daily living', later to be referred to more simply as 'index of activities of daily living (index of ADL)'.

This index of ADL is based on an appraisal of the level of functional independence of patients in relation to six
activities: dressing, bathing, going to the toilet, continence of urine and faeces, transferring (i.e. movement in and out of bed or chair) and feeding. Patients were classified as either 'dependent' or 'independent' in relation to each of these activities (Katz et al., 1963). For example, in dressing an 'independent' person could: get clothes from closets and drawers; put on clothes, outer garments, braces; manage fasteners (act of tying shoes is excluded) whilst a 'dependent' person could not dress himself or would remain partly undressed. In assessing ability to transfer, an 'independent' person was one who could move in and out of a bed or chair independently (even though they might be using mechanical support) whilst the classification of 'dependent' would be made for a person who could not perform either transfer or required assistance in order to be safe to do so.

Each person assessed in this way was then ranked on a hierarchical scale as follows:

A - independent in feeding, continence, transferring, going to the toilet, dressing and bathing.

B - independent in all but one of these functions.

C - independent in all but bathing and one additional function.

D - independent in all but bathing, dressing and one additional function.

E - independent in all but bathing, dressing, going to the toilet and one additional activity.

F - independent in all but bathing, dressing, going to the toilet, transferring and one additional function.

G - dependent in all six functions.
Other - dependent in at least two functions, but not classifiable as C, D, E or F.

Katz et al. (1963).

The precise grading of this hierarchy was originally determined by observing patterns of functional dependence in a population of elderly people who had sustained a fracture of the hip (Staff of the Benjamin Rose Hospital, 1958; 1959). It has subsequently been validated in a range of disorders and different settings (Katz et al., 1966; Katz et al., 1972).

The fundamental nature of these activities of daily living have been emphasised by placing them in a sociobiological framework. The nature and order in which the components of the index of ADL are lost is similar to the ones which are acquired by children during their development and the biological primacy of the same functions has been deduced from anthropological studies (Katz and Akpom, 1976). Such an assessment of ADL is widely applicable, easily understood and communicated by staff in different settings (Katz and Akpom, 1976). In the Katz index of ADL however, independence in each activity is an all-or-nothing phenomenon; moreover, the activities included are the most basic and are less satisfactory in determining more minor degrees of disability.

This assessment of basic activities of daily living necessary to maintain adequate self-care can provide only the nucleus of an overall assessment of relative independence in
activities of daily living. Other workers have broadened the concept to include, for example, speech, hearing, sight, diet and medication (Linn, 1967) and there is wide variation in the scope and extent of similar assessments in the literature. Amongst studies involving geriatric in-patients, for example, the number of items included in rating scales varies between 5 (Neugarten, Havighurst and Tobin, 1961) and 112 (Burdock et al., 1960). If scales are included which are not restricted to use in studies of geriatric patients the variation is even greater with one scale including 150 items, (Burdock, 1960) and another 191 (Guertin and Krugman, 1959). The type of scoring used in such indices also varies: in some, a total score is used to categorise the patients (e.g. Linn, 1967; Dinnerstein, Lowenthal and Dexter, 1965). In others, individual items or activity are scored separately (e.g. Watson and Fulton, 1967; Gersten et al., 1970).

The physical self-maintenance scale developed by Lowenthal broadly encompasses the same activities as the Katz index (i.e. toilet, feeding, dressing, grooming, physical ambulation, bathing) but allows the measurement of degrees of dependence (Lowenthal, 1964). For instance, in 'dressing' a patient can be allocated to one of five categories ranging from complete independence, through needing minor, moderate or major assistance, to being completely unable to dress and resisting the efforts of others to help. However, to be of value outside the institutional setting, assessments of activities of daily living must go beyond
merely assessing the ability of elderly people to perform only the most basic tasks necessary for self-care and the maintenance of independence.

Lawton and Brody (1969) in their 'instrumental activities of daily living scale' have drawn a distinction between these minimum capacities for self-maintenance and competence in more complex tasks which are, nevertheless, essential to independent every-day living. They introduce items such as ability to: use the telephone, do shopping, prepare food, do housework and manage finances.

1.2.2.2 Incapacity in relation to need for care -

This more sophisticated interpretation of the concept of activities of daily living is close to that of Townsend (1962) who devised an index which took as its starting point those activities which an old person living alone would be obliged to perform and the faculties she would have to employ to maintain life, assuming she received no assistance. Thus, in his measure of activities necessary for self-care in addition to mobility and personal care, ability to perform housework, and communicate were also included.

Townsend (1962) then went further. In trying to make this assessment of functional capacity of direct value he combined the score for individual activities and using the total score, graded the results in terms of need for little, slight, substantial, very substantial or continuous help to
live alone (see Table 6).

<table>
<thead>
<tr>
<th>Score</th>
<th>Interpretation</th>
</tr>
</thead>
<tbody>
<tr>
<td>0-2</td>
<td>Needs little or no help to live alone in own home</td>
</tr>
<tr>
<td>3-5</td>
<td>Needs slight amount of help to live alone in own home</td>
</tr>
<tr>
<td>6-8</td>
<td>Needs substantial help to live alone in own home</td>
</tr>
<tr>
<td>9+</td>
<td>Needs very substantial and continuous help from others living at home or close at hand.</td>
</tr>
</tbody>
</table>

Townsend (1962)

A similar approach has been used by Isaacs and Neville (1976) who took a functional capacity perspective in studying 'potential need'. This they defined as:

"inability, as a result of physical or mental disease or disability, to perform for himself all or some of the basic activities of daily living, namely the provision of food, warmth, cleanliness and security. Potential need is to be distinguished from 'actual' need of social services, since many subjects with potential need have their needs met by a family member or a friend."

The sub-division of potential need into three degrees of severity ('long-interval', 'short-interval' and 'critical-interval') was an attempt to provide an assessment of need which could be matched to the types of care available to meet it. The method of measurement was based on the 'interval' of time which elapsed between necessary periods of help. For example, certain tasks such as shopping or cleaning need to be carried out only once every twenty-four hours or less and no special skills are required of the helper - the inability to perform these tasks results in need or disability of the 'long-interval' type. In con-
An elderly person severely disabled and unable to rise from the chair has needs (e.g. assistance in going to the toilet) which arise at short or unpredictable intervals ('critical interval' type) and thus requires continuous help. Other basic tasks such as preparing food or drink must be carried out every few hours during the day ('short interval' needs) but are not critical in the sense that they need not be undertaken at precise times and could be provided by non-skilled personnel.

Applying this approach to the items of self-care contained in a measure such as the Katz index of ADL, many points in the hierarchy and certainly those which included dependence in transferring, continence or going to the toilet would represent critical need. On the other hand, the inability to perform Lawton and Brody's 'instrumental' activities of daily living would constitute short interval (e.g. food preparation) or long interval (e.g. shopping, laundry) need. As Isaacs and Neville (1976) argue, these different types of need can be met in different ways and with different types of services. Critical need, for example, is presently largely being met by relatives, and professional help is usually in the form of institutionally-based care.

Another approach which seeks to classify elderly people directly by their needs for care is embraced by the concept of 'dependency'. The study of nursing dependency has developed over the last two decades, and has come to mean the amount of care needed by the patient. A number of approaches
to measuring such dependency have been made (see for example, Barr, 1967) but are of limited usefulness in determining the needs of elderly people who are not in the hospital setting and given the range of types of care in which elderly people are found, it is probably better to infer dependency from functional capacity.

1.2.2.3 Methods of obtaining data -

A number of approaches have been used to obtain data once the areas of function to be assessed have been chosen. Self-reporting by the elderly person may be the only practical option in community surveys and a number of workers have used interviews with elderly people to determine levels of function (Townsend, 1962; Shanas et al., 1968; Bennett, Garrad and Halil, 1970; Jette and Deniston, 1978).

Townsend (1973) has drawn attention to the tendency of old people to make unrealistic assessments of their ability to perform tasks. This reservation about self-reporting of functional capacity does not appear to be borne out by investigators who have formally examined validity. Garrad and Bennett (1971) examined the validity of their own questionnaire, comparing data obtained by interviewers with those obtained in clinical records, they found levels of agreement of between 90% and 100%. It is possible however, that the figure may have been lower had they included very elderly people in their survey.
In a smaller number of studies, functional capacity has been tested by direct measurement of motor function (Carroll, 1965; Jefferys et al., 1969; Fitzpatrick and Donovan, 1979). Jefferys et al. (1969) used a simple scoring based on the individual's ability to perform specific movements of the limbs and trunk when asked so to do. The tests had been devised on the assumption that inability to perform them would indicate a similar incapacity with respect to the normal activities of daily living. When 89 individuals were subjected to motor capacity tests and to an assessment of the extent of performance of activities of daily living on the Katz scale (Katz et al., 1963), overall the association between scores on motor capacity tests and ADL score was high. The authors noted however, that whilst this association held at the extreme, those scores in the middle showed poorer association, suggesting that for individuals with motor impairment scores in the middle ranges, other factors played a greater part in determining level of independence in activities of daily living.

Thus, whilst direct tests of functioning may provide reliable and objective measures of functional capacity, they may not always reflect the consequences in terms of limitation of everyday activities. Moreover, and particularly in the elderly, such tests may be time-consuming to perform and may not achieve co-operation of the subjects. Indeed, since they assess potential functioning they can vary according to the observer, the subject's level of motivation or the setting in which the evaluation is carried out (Kel-
man and Willner, 1962). For example, a person may regard a particular test as a challenge or may wish to please the examiner but may not continue to function at a higher level beyond the time-span of the test.

Thus, perhaps the commonest approach is the collection of information from a third party, usually a health professional or trained observer, in contact with the elderly person. This is the method which has been used in many of the scales discussed in detail above (e.g. Katz et al., 1963; Lawton and Brody, 1969). The objective assessment of the elderly is more conveniently carried out in institutional settings because the elderly person is in close contact with staff who have the opportunity to observe their level of ability at close quarters over a period of time. Thus, assessment of functional capacity here need not rely either on the person's own reporting of their disability or the time-consuming and high resource-using examination.

A more general point is made by Jette (1980): the assumption underlying most assessments based on an appraisal of functional capacity is that an increase in dependency in a particular activity necessarily means a loss of health although, as he points out, in the community, the use of mechanical support, for example, a walking stick, although increasing a person's dependency, could in fact lead to a diminution of pain, enhanced mobility and life satisfaction.
1.2.2.4 Assessments of psychosocial functioning

Whilst measures of functional capacity based on activities of daily living of the sort described above appear to have evolved a sound methodological base, the area of psychosocial functioning is much less clear-cut.

Some assessments of elderly people particularly those in hospitals have combined assessments of physical self-care or activities of daily living with ratings of the elderly person's mental status or behaviour. The Stockton Geriatric Rating Scale (Meer and Baker, 1966) is an early example and was originally developed to include all aspects of function in geriatric patients which were considered important when assessing fitness for discharge. Two independent factor analyses yielded four stable factors:

a) physical disability;

b) apathy;

c) communication failure and

d) socially irritating behaviour. They reported that the scale had predictive validity based on a significant relationship between movement out of the hospital and level of incapacity on the rating. Even though the physicians managing the cases were unaware of the results of the assessments of individual patients it is possible that the outcomes are
capable of being influenced by the participants in any study.

More recently, a shortened version of the Stockton scale reduced the original 33 item scale to 18 items, was used on a sample of 400 elderly people in hospital and social service settings in Britain and showed that the scale distinguished between different diagnostic groups (e.g. functional and organic conditions). (Gilleard and Pattie, 1977).

Other assessments have incorporated assessments of cognitive functioning (Hodkinson, 1972; Pattie and Gilleard, 1976) which are closer to the approach which might be used to assess orientation in an elderly person with psychiatric illness.

The introduction of the concept of social capacity considerably increases the difficulty in attaining a satisfactory measure. One important aspect of the appraisal of an elderly person is her ability to perform socially-allocated roles. A rudimentary assessment of social behaviour was provided by presenting the subject with a variety of basic social stimuli (such as a greeting or an invitation to sit down) and assessing the appropriateness of response (Farina, Arenberg and Guskin, 1957; Lawton, 1971). Havighurst has developed a set of role activity ratings - which assess activity objectively in a number of specified roles from the point of view of both quality and quantity (see for example,
Havighurst, Neugarten and Tobin, 1968). Chambers et al. (1976) have reviewed ten social function instruments, some clinically orientated and primarily devised for use in an institutional setting, whilst others were devised for a household survey approach. As a result of this they have devised their own indices of social function, for use as part of a general health index questionnaire, which were generally applicable, acceptable and valid compared with concurrent assessments by a health professional.

Closely linked with ability of an elderly person's role performance is the concept of social isolation. It has assumed increasing importance over recent years as the demographic changes discussed earlier have increased the proportion of elderly people who live alone. It does not of course, automatically follow that an elderly person living alone is socially isolated.

Tunstall (1966) in his study of elderly people in Britain identified four forms of being alone and elderly: a. living alone; b. socially isolated - closely but not invariably connected to the former; c. loneliness - a subjective impression by the elderly person which again did not always overlap with social isolation; and d. anomie - a feeling of being cut off from the broad social values of society. His assessment of social isolation was based on a scoring of the type and frequency of social contacts and used a modification of the measure originally used by Townsend (1957) in Bethnal Green. Of elderly people living
alone, 64% of men and 69% of women had a social score which led to them being categorised as 'socially isolated'. This emphasises the impact of the physical fact of living alone on the level of social functioning.

Hunt's (1978) more recent survey of 2,622 elderly people living in private households in England, although it did not derive a comparable measure of social isolation found that the groups most severely isolated in terms of social contacts were: a. the housebound; b. the bedfast; c. the divorced and d. the very elderly (those aged 85 years and over).

These findings suggest discernible vulnerable target groups at which to direct measures aimed at ameliorating social isolation with its effects. There is only limited evidence about the extent to which this is already taking place and some of it is disquieting. Hunt (1978) for example, showed that 28% of elderly people living alone, 20% of those aged 85 years and over and 7% of bedfast/housebound elderly people had received no visit during the previous six months from any health service (including doctor, health visitor, nurse) social services (including home-helps, meals-on-wheels) or voluntary organisation personnel.

Feelings of loneliness, are common and important though highly subjective and difficult to measure with any certainty of the degree of validity. Shanas et al. (1968) in their study of elderly people in three industrial societies in
response to the question "are you lonely?" found that: a) significantly more widowed than single persons said they were lonely, and b) the effect was most marked for those widowed more recently.

This raises the question of the importance of the nature of social contacts (as opposed to their number) in the lives of elderly people. Little work has been undertaken in the context of the elderly although the apparent importance of the quality of relationships to the development of depression in young women (Brown, Bhrolchain and Harris, 1976) suggests that it might be profitably pursued. It also points to another (admittedly complex) dimension to be considered when services are responding to need: is it possible to artificially reconstruct or build upon relationships characterised by intimacy?

The question of anomie is even more difficult to quantify. It is generally acknowledged that many elderly people adapt less easily to change than do the young which could contribute to feelings of distance or alienation from a wider society. Tunstall (1966) using a scale of anomie originally used in the United States found that the anomic elderly people tended to belong to the lower social class and to have a low participation in social and religious activities, although there was no significant correlation with social isolation. This association with social class, is difficult to interpret since its valid assessment in retirement populations is notoriously difficult.
Even if the concept of anomie were clearer it would require more fundamental, often intangible changes in the nature of society itself, in order to bring about any influence on its occurrence.

1.2.3 Increasing frailty and ill-health

The physiological, pathological and social facets of the ageing process lead to a position of increasing frailty and susceptibility to illness or accident from which it is no longer possible to function adequately without some level of support. The issue of the most appropriate and useful measures of illness or incapacity in the elderly population has been discussed in the previous section. Despite differences in the way in which it has been measured, three main themes emerge from surveys of elderly populations.

Firstly, that whilst the prevalence of illness and incapacity is greatest in institutional elderly populations, in numerical terms the problem is greatest in the community. The cross-national study reported by Shanas et al. (1968) was part of a wider enquiry which examined health and incapacity amongst elderly people in Britain, Denmark and the United States. The proportion of old people who were either bedfast or housebound and living at home was greater than the proportion of all old people in each country who were in institutions. In the original survey of the prevalence of old age mental disorders in Newcastle-upon-Tyne (Kay, Beamish and Roth, 1964), 10% of elderly people living at home were
found to be suffering from organic brain syndrome and 31% from a functional psychiatric disorder. The major finding however, was that only a small fraction of old people with psychiatric disorder were being cared for in hospitals or homes: the ratio of community to institutional cases was 8 for all forms of psychoses and 23 for mild forms of brain syndrome, neuroses and character disorders (Kay, Beamish and Roth, 1964). The authors point out that the setting for interviews in the home is quite different from that in hospital and particularly in the elderly diagnostic criteria (e.g. ability to maintain employment) may be different from the young. Nevertheless, the relatively high prevalence of some degree of mental disorder in elderly people living in the community has major implications for services attempting to meet their present needs and to prevent deterioration and possible future admission to care.

Secondly, that incapacity increases with greater age and the major transition is between the 65-74 year old's and the older age groups. Harris's (1971) study of handicapped and impaired people in Great Britain was not restricted to the elderly, but nevertheless, showed the relationship between impairment, handicap (the terms are defined earlier in the context of assessment of disability) and age. Nearly 60% of the impaired population were elderly and the proportion of people in each age group with some degree of impairment rose with increasing age. In terms of estimated total number of very severely handicapped people, the greatest number were aged 75 years and over, although the proportion
of very severely handicapped people in the age group was higher in the 16-29 year old age group than subsequent age groups until 75 years. Bennett, Garrad and Halil (1970) reported the results of using a short self-administered questionnaire to illicit evidence of dependence in a random sample of households based on a private census in Lambeth. They found that 18.5% of men and 14.5% of women aged between 65 and 74 years were 'disabled' by virtue of their response to one or more questions. Over 75 years of age however, these figures increased to 34.4% (men) and 41.7% (women). Hunt (1978) in her national sample of 1,975 private households in England, containing 2622 people aged 65 years and over also examined health and disability in addition to factors such as social circumstances and structure of the household (which were discussed above). This survey again emphasised the strong relationship between increasing illness, incapacity and advancing age: for example the proportion of women who were unable to go out without help was 6.6% in the 65 - 74 years age group and 30.5% in the age group 85 years and over. A similar relationship was observed between the inability to perform household and self-care tasks and increasing age.

Thirdly, is the fact that a high proportion of these problems in the elderly are unknown to services. Williamson et al. (1964) studied a random sample of people aged 65 years and over drawn from the lists of three general practices in the Edinburgh area, each elderly person being examined by a mult-disciplinary team (geriatrician, psychia-
trist, social worker). Multiple physical disabilities (loss of mobility or disability related to a specific system) were the rule: men had a mean of 3.26 disabilities of which 1.87 were unknown to the family doctor; women had a mean of 3.42 disabilities of which 2.03 were unrecognised. Despite the reservations expressed earlier about the definition of disability used in this study it is cited because it clearly demonstrated apparent 'unmet need' amongst the elderly. It was concluded that a high proportion of elderly people would have benefited from extra medical or nursing care or improvements in their social circumstances.

1.3 EVOLUTION OF SERVICES FOR THE ELDERLY

1.3.1 Origins
Prior to Elizabeth the I there had been little formal provision of assistance for the poor, the elderly or the sick although monasteries (before their dissolution) and churches raised funds and distributed them for the relief of the destitute. Laws against vagrancy were the origins of the poor relief (Fraser, 1973): the fear of social disorder was probably the most potent force in the evolution of State provision for the maintenance of the poor. Whenever economic conditions encouraged men to be mobile in search of jobs, the State sought to restrict this mobility for fear of the social consequences. In the Tudor period, a more constructive attitude to vagrancy emerged as the State began to recognise some degree of responsibility for those who were un-
able to work.

The special economic condition of the sixteenth century brought to a head the problems of distress in old age. As well as the general causes of poverty, the dissolution of the religious fraternities and bodies left large numbers of old and sick people without any means of subsistence. The two economic processes which increased the numbers of those without subsistence (Fraser, 1973) were: a) the process of enclosure which by connecting arable to pasture land produced depopulation on a large scale; and b) the massive inflation (the 'price revolution') deriving from the import of precious metals from the New World. Writing in 1516 in Utopia, about the problems of the dispossessed farmers, (i.e. as a result of the enclosures) Thomas More had mentioned the economic vulnerability of the working man:

".... these silly poor wretches be presently tormented with barren and unfruitful labour, and the remembrance of their poor, indigent and barren old age killeth them up. For their daily wage is so little, it will not suffice for the same day much less it yieldeth any overplus, that may be daily laid up for the relief of old age".

The many pieces of legislation passed during the Elizabethan period were brought together in 1601 as the Elizabethan Poor Law, often referred to as the fortieth of Elizabeth or the Old Poor Law. This was to remain basically unchanged for the next two hundred and fifty years. The Elizabethan poor law recognised three main groups of poor: a) the 'impotent poor' (eg the aged, the sick) who were to be cared for in 'poor-houses' or 'alms-houses'; b) the
'able-bodied pauper' who was provided with work in a house of correction; and c) the 'able-bodied pauper' who refused to work and was punished in a house of correction. The Old Poor Law placed great reliance on the parish as the basic unit of administration of the Law. Of necessity, this meant that the service provided by individual parishes for their poor varied greatly. Much was made of the tyranny of some overseers, but in other places their local knowledge undoubtedly led to greater compassion in the treatment of the poor. In practice, the development of 'outdoor relief' in the form of payment in cash or kind was often the simplest and indeed the most appropriate to administer and it was this system, open to the greatest abuses, which was later to be so heavily criticised.

In the last quarter of the eighteenth century, the growth of population, greater social mobility, industrialisation and economic fluctuations imposed a strain on the Poor Law system. At the simplest level, the system of relief had proven and was still proving a very costly exercise. Bad harvests and war resulted in not only the unemployed requiring support but also those in work because of widespread food shortages and the escalation of prices. The tendency was for different parishes to supplement inadequate wages or give allowances to families with children. Moreover, in the climate of moral and political thought which was developing at the beginning of the nineteenth century, charity except in cases of genuine need was seen as a way of encouraging idleness and moral degeneration. This
chain of thought was fuelled and given a scientific respectability by the Reverend Thomas Malthus whose influential "Essay on the Principle of Population" first appeared in 1798 and was enlarged in later editions. The central element of Malthus' theory on population growth was that the increase in population, if left unchecked, would always outstrip the means of subsistence. That the Poor Law was seen as encouraging population growth was put forward as an argument for its abolition.

The debate on the Old Poor Law ended not in its abolition but with the establishment of a Royal Commission of Inquiry into the Poor Law and the subsequent Poor Law Amendment Act 1834. Many commentators regard the views and conclusions of this, perhaps the most celebrated of all Royal Commission as being strongly aligned to the utilitarianist philosophy of Jeremy Bentham; indeed, Edwin Chadwick, himself an ardent Benthamite and his former secretary was an author of the report. Both men believed that the essence of the problem was the allowance system which they regarded as the root cause of demoralisation and pauperism of the rural labourer: allowances interfered with wage levels and offer an open invitation to idleness (Fraser, 1973).

Typical of the evidence received by the Commission was the submission of the porter of the St Pancras workhouse:

"it is a common remark among our paupers that they live better in the house than they ever lived before; and looking to the cleanliness, the airiness and roominess of the apartments, the goodness of the beds and bedding and the wholesomeness and quantity of the food, this is probably the case" (Royal Commission on the Poor Law, 1834).
Evidence like this gave rise to one of the central tenets of the new approach to pauperism: that of "less eligibility":

"The first and most essential of all conditions, a principle which we find universally admitted, even by those whose practice is at variance with it is that his (the individual relieved) situation on the whole shall not be made really or apparently so eligible as the situation of the indigent labourer of the lowest class".

(Royal Commission on the Poor Law, 1834).

Thus, it was not possible through the proposed system of poor relief, for the recipient to be better off than the worst paid independent labourer. This principle was enforced by prohibiting outdoor relief to the able-bodied pauper who was instead offered the workhouse, a harsh and austere regime specifically designed to deter. It was reasoned that by refusing to give relief except in the form of the workhouse, those who were 'offered the House' and chose to accept, could truly be considered needy.

The sick, the aged and the infirm were to continue to receive relief mainly in the form of outdoor relief.

1.3.2 Poverty and old age

Under the New Poor Law, power was taken out of the hands of some 15,000 separate parishes which were forged into large unions (for the purpose of workhouse management)
and placed under a rigid central authority, (Central Board of Poor Law Commission) the aim being to create a national uniformity in the treatment of the poor which had not hitherto existed. Any person desiring relief had to apply personally to the relieving officer of the district in which he resided. The relieving officer after examining the cases would place a report before the Board of Guardians of the Poor (elected by the rate payers) who would meet to consider the applicants. The Royal Commission of 1834 devoted little space in their report to the problems of the elderly but did recognise them as a special group in their classification of paupers:

"At least four classes are necessary:—1. The aged and really impotent; 2. the children; 3. the able-bodied females, 4. the able-bodied males, of whom we trust that the two latter will be the least numerous classes. It appears to us what both the requisite classification and the requisite superintendence may be better obtained in separate buildings than under a single roof ... Each class might thus receive an appropriate treatment; the old might enjoy their indulgences without torment from the boisterous; the children be educated and the able-bodied be subjected to such courses of labour and discipline as will repel the indolent and the vicious"

Thus, although not explicitly stated, the Commission took a compassionate view of the problems of old age, at least compared to other types of paupers: the elderly were to be helped mainly in the form of outdoor relief but if they were so infirm that institutional care was necessary, then this should not be in the workhouse but in more congenial surroundings. The reality was very different, few Unions allowed themselves the expensive luxury of special poor houses for the elderly and many old people thus found them-
selves in the general mixed workhouse with the able-bodied pauper, the sick, imbeciles and children.

Although the evidence had long been there it was not until the end of the nineteenth century that it was widely realised that the states of old age and poverty were so closely intertwined. Charles Booth, the noted social reformer in his investigation into the Aged Poor in England and Wales in 1894 noted it and when he joined a Royal Commission of Enquiry on the Aged Poor hopes must have been high that special means to aid the elderly were on the way.

The statistics relating to paupers to age group quoted by this Royal Commission emphasised the strong relationship between pauperism and advancing age and the Commission's observations on the origins of pauperism in old age seem surprisingly modern in their perception:

"It must be remembered that much of the pauperism of the aged is not due simply to failure of earning power resulting from advancing years but the sickness and chronic infirmities, needing special care, which must accompany old age to a much larger extent than the period of middle life."

Given these observations, the position of the elderly poor in Britain at the turn of the century was changed little by the report which recommended no fundamental alterations in the system of poor law relief as it affected the aged. In particular there was firm rejection of the pension scheme which Booth (1899) on the basis of the same evidence, had championed as the only just solution.
The evolution of a system of support for the elderly in British society is inextricably linked to the events which contributed to the formation of the Welfare State. Although these events can be traced back to the Poor Law, they have their foundations in the social policy pursued by the Liberal governments between 1905 and 1914. Uppermost was the first Old Age Pensions Act of 1908. Until 1908, people in need had no alternative to the Poor Law and before they could receive it had to face a test of destitution. Henceforth, payments were to be made to a group of the population in need, the very old, as a matter of right; moreover, the system of payments was undertaken by the Post Office, thus removing it from the stigma of the Poor Law. Old Age Pensions were the first truly social service. Not surprisingly, the number of old people who applied for pensions was far in excess of that which had been anticipated by the government.

This non-contributory pension scheme was amended by further legislation but was recognised as too costly to be viable in the long-term, and a contributory scheme was established against a backcloth of Contributory National Health Insurance ("the Lloyd George Act" of 1911) and unemployment schemes which had been introduced in the sixteen years since the initial Old Age Pensions Act had been passed. Under the new contributory scheme the pensionable age was reduced to 65 years and the means test was dropped.
1.3.3 The dismantling of the Poor Law

Another issue, still keenly debated, was the Poor Law which despite the Liberal reforms still continued to play a key role in social policy.

A Poor Law Commission in 1909 had published majority and minority reports (the latter being instigated by the noted social reformer Beatrice Webb) which had been concerned with reform of Poor Law administration. The minority report recommended the abolition of the Board of Guardians and the dismantling of the entire parochial system of relief, the functions of the Poor Law to be taken over by Local Government. There is a trap, however, of assuming a 'progressive' and a 'reactionary' camp in relation to the reports: there were strong punitive elements in them both. Nevertheless, much of the minority report was in fact implemented in the Local Government Act 1929 which transferred the powers, duties and assets of the 625 Poor Law Unions to a much smaller number of County and County Borough Councils, each of which was to form a Public Assistance Committee.

Despite this change and the increasing attention and effort given in the intervening years to improving old age pensions, the government's efforts to care adequately for the aged were not a success. The numbers receiving poor law relief (a term which persisted in official reports) showed a regular increase of about five percent per year between 1931 and 1939 in people aged 65 years and over (Gilbert, 1970).
In 1941, Lord (then Sir William) Beveridge was asked by the government to conduct "a survey of the existing national schemes of social insurance and allied services". His report produced the following year dealt specifically with the problem of financing old age. Despite delay in implementing the plan on the part of the war-time coalition government, the Labour government which swept to victory in 1945 enacted much of Beveridge's recommendations in three Acts of Parliament which provided the foundation of the present welfare state: a) the National Insurance Act 1946 which brought the majority of the population under the umbrella of a comprehensive social insurance scheme; b) the National Assistance Act 1948 which finally dismantled the Poor Law; and c) the National Health Service Act 1946 which made a comprehensive health service available to all. This great package of legislation had important consequences for the elderly in terms of their financial status, health and social welfare.

1.3.4 The foundations of the hospital service

Prior to the passing of the National Health Service Act of 1946, the health services in Britain were provided by a variety of institutions which had come into existence to meet demand as it arose. There were two distinct types of public hospital provision: the voluntary hospital and the municipal hospital. The earliest hospitals had been provided by ecclesiastical bodies: St Bartholomew's Hospital was founded by Rahere in 1123 and provided for eight brethren and four sisters to tend the sick and to observe the rule of
From these charitable origins arose the great voluntary hospital movement, run by independent bodies on the basis of finance from charitable subscriptions, donation or endowments. The voluntary hospitals were staffed in the main by doctors who were in private practice and did not receive payment for providing their service. The generous initially retained the right to select inpatients by the issue of subscribers letters which were the traditional inducement to the public to subscribe to the hospital. The right of the subscriber to nominate suitable people for admission tended to encourage the longer stay chronic cases to the exclusion of the acutely ill; however, as the interest of the medical staff in the affairs of the hospital grew and their attention turned to teaching and research, so the number of shorter-stay acute cases increased (Abel-Smith, 1964). This change in emphasis by the voluntary hospitals reflects an attitude to the elderly and chronic sick which still lies at the heart of modern debates on priorities in health care.

The Municipal hospital service ran as a parallel provision to the voluntary hospitals and had completely different origins and traditions. This service embraced a wide variety of facilities: the hospitals and institutions administered under the Poor Law; the general hospitals maintained by local health authorities under their public health powers and in addition infectious disease and isolation hospitals, tuberculosis sanatoria, mental hospitals and institutions
for the mentally handicapped. Mention has already been made of the mixed nature of many workhouses where despite official policy to the contrary, in many instances no provision in separate buildings was made for the elderly and chronic sick; indeed, aged paupers many too feeble to lift patients, were frequently employed in nursing as they were likely to remain in the workhouse for long periods (Abel-Smith, 1964). Nevertheless, many workhouses did set aside areas of the building for the care of the aged and sick paupers but often under conditions of extreme discomfort and deplorable sanitation. Public concern was being voiced about conditions in the so called "workhouse infirmaries" and this was reflected in a number of reports by a commission established by the Lancet (1866) to investigate the state of the infirmaries of the workhouse.

As a result of this concern, and other enquiries, old workhouses were adapted and extended to house the sick poor, and new infirmaries were built to form the cornerstone of the Poor Law medical service. The Poor Law especially after 1847 had found itself in the unanticipated role of a provider of medical services on a very wide scale. The division between poverty and sickness was indistinct: sickness, as was the case with old age, was itself a major cause of pauperism. The Poor Law medical service continued to grow in response to failure of the voluntary sector to meet demand and outdoor medical services also came to be offered. As the standard of the infirmaries improved so they became used by patients who clearly would not be classed as destitute
The transfer of the powers and institutions of the Poor Law to local government following the Act of 1929 is seen by Townsend (1962) as "only a half-hearted step along the path to reform". Indeed, a survey of the problems of aging and the care of old people under the chairmanship of Seebohm Rowntree, saw it as one of a series of further blows to establishing adequate institutional provision for the sick elderly.

"This universality of provision in cases of extreme need has been perhaps, the best feature of Poor Law administration, and it is much to be regretted as far as sick and infirm old people are concerned it has now broken down in many districts in England and Wales. The reasons for this break down are threefold: first, the appropriation from 1930 onwards of hospitals belonging to Institutions and their use by local authorities for the general body of citizens; second, the transfer since 1939 of many Poor Law establishments to the Emergency Medical Service and the war damage sustained by others; third, the present acute shortage of nursing and other staffs. The result has been to inflict a serious hardship on old people; cases have come to the notice of members of the Committee of aged persons dying in circumstances of great squalor and loneliness because local authorities, although asked, have been unable to fulfill their legal obligations to receive them into an Institution."

Nuffield Foundation (1947).

Local authorities elected to concentrate their resources on the acutely ill and in their development of the municipal hospital to rival the standard of care set by their voluntary counterparts, left the care of the chronic sick neglected.
During the Second World War, the Emergency Hospital Scheme, anticipating large numbers of civilian casualties, had an important effect on the development of hospital services not only through the creation of new hospital beds (by erection of new buildings or extension and modification of old ones), but also through its organisation by providing the blueprint for an integrated national hospital service. Once again however, this was at the expense of the chronic sick whose number included a high proportion of elderly people.

1.3.5 Hospital care for the elderly

When, under the influence of Beveridge, the National Health Service came into being optimism that conditions for the elderly chronic sick would immediately improve seemed ill-founded. In 1951, a long waiting period for admission to hospital for the aged sick was found to be an almost universal problem with, for example, eighty percent of general practitioners complaining of difficulties (Hadfield, 1953). The problem was not merely due to a shortage of beds in hospitals but primarily due to administrative divisions which made one authority responsible for those needing medical treatment and another for the frail who needed 'care and attention'. The anxiety about the position is reflected by a motion passed at the Annual Representative Meeting of the British Medical Association in the same year expressing serious concern at the difficulties encountered by general practitioners in trying to find institutional accommodation
for certain types of 'chronic geriatric cases' (British Medical Association, 1951).

The then Minister of Health, Mr. Iain Macleod, acknowledged the seriousness of the problem and indicated the route for future government strategies in seeing the solution as a strongly community-orientated system of care (British Medical Journal, 1953).

Between 1954 and 1955 a survey was carried out of the services available to the elderly chronic sick in England and Wales (Boucher, 1957). At the time of the survey, hospital authorities in England and Wales provided 56,010 beds for the chronic sick, 54,737 of which were in the National Health Service Hospitals and the remainder (1273) beds were provided under contractual arrangements with voluntary and private homes. This represented 11.2 beds per 1000 population aged 65 years and over, although there was considerable regional variation, from 6.1 in the North-West Metropolitan Region to 14 in the Oxford Region. This survey also found a wide diversity in attitudes to the specialty of geriatrics and the provision of care for the elderly chronic sick with considerable prejudice against geriatric appointments and ignorance of the possibilities of rehabilitation. The report made tentative recommendations about the need for the establishment of a separate geriatric service.

The Guillebaud Committee (1956) had made a more direct recommendation about hospital provision for the elderly
"The hospital authorities should aim to provide sufficient geriatric units where old people referred for treatment might be sorted into two main categories: i) those who will need prolonged treatment and attention. ii) those who can be rehabilitated and returned either to their homes or to residential accommodation provided by local welfare authorities."

The specialty of geriatrics had in fact emerged in Britain in the war years and immediately after. From this beginning the specialty had grown so that by 1977 there were 401 consultant geriatricians in post in Great Britain: an increase of 111% on the 1966 figure of 190 (Royal Commission on the National Health Service, 1979). Nevertheless, the specialty has never quite gained respectability even within the profession. Too often geriatric physicians are regarded by their colleagues as people who have failed to make the grade in more competitive disciplines.

The lowly position of geriatrics is evidenced by the fact that it enjoys poor status in the eyes of career aspirants: in 1978, 84.6% of registrars and 54% of appointees to consultant posts in geriatrics were born overseas; moreover, in 1977 consultant geriatricians appointed to first posts had spent an average of four years in the specialty as against a figure of seven years for all specialties (Royal Commission on the National Health Service, 1979).

An old debate regarding the place of geriatric medicine has recently been re-awakened. It has been argued that
whilst there is a place for specialisation in the medical care of the elderly, this should usually be a part-time commitment with the doctor concerned being a physician with a special interest in geriatrics, (Royal College of Physicians of London, 1977; Royal Commission on the National Health Service, 1979).

1.3.6 Non-Medical Residential Services

The concept of homes for the elderly is also intertwined with the origins and development of the Poor Law. From earliest times alms houses had been provided, mainly by religious orders, for the elderly and infirm poor to live in a protected environment. This arrangement was formalised with the passage of the Elizabethan Poor Law but by the time the New Poor Law was passed in 1834 the elderly, as has already been discussed, often found themselves in the mixed workhouse. However, in a few enlightened Unions separate institutional provision was made for them, as had been stipulated under the 1834 Law, for it had never been intended to treat the old harshly. Nevertheless, the dread and hatred of the workhouse which persists in the minds of many elderly people even today, was sufficient to deter many of the aged from applying for poor relief even when they needed it. Townsend (1961) illustrates the persisting stigma of the workhouse vividly by the contemporary example of an elderly man who, despite the need for admission resisted all attempts by a social worker to persuade him to enter an old people's home saying: "leopards never change their spots
and them leopards are still here."

When introducing the National Assistance Bill in 1947, the Minister of Health, Aneurin Bevan said:

"we have decided to make a great departure in the treatment of old people. The workhouse is to go. Although many people have tried to humanize it, it was in many respects an evil institution. We have determined that the right way to approach this problem is to give the welfare authorities as we shall now describe them, the power to establish separate Homes ... If we have an institution too large, we might have a reproduction of the workhouse atmosphere ... and all the regimentation and the rules that have to be obeyed, and therefore, it seems to us that the optimum limit for these homes must be 25 or 30 persons."

These remarks were embodied in the legislation by the National Assistance Act 1948 which in Part III charged local authorities with; providing accommodation for 'persons who by reasons of age, infirmity or any other circumstances are in need of care and attention which is not otherwise available to them'.

Thus while the provision of residential accommodation for old people was seen as of major importance in 1948, it was to be of a fundamentally different type to that which had existed under the Poor Law. Large, old institutions were to be phased out and be replaced by smaller homes. In addition under the Act, local authorities were allowed to make use of voluntary bodies as their agents in the provision of homes, providing suitable funds where necessary.
However, progress was slow. This was in part due to government restrictions on capital expenditure and also by shortage of building materials in the immediate post-war years. Between the end of the Second World War and 1st January 1955, 798 small homes had been opened with accommodation for about 23,000 people; however, only 43 of these homes were in new buildings, the remainder being adapted premises (Boucher, 1957). The severe restriction on expenditure led to fluctuations in government policy towards residential care for the elderly. At one point, the Ministry of Health recommended that in heavily populated areas homes for up to 60 residents and not the smaller 30-35 bedded homes, should be built (Ministry of Health, 1955). They also supported a higher proportion of multi-bedded rooms and a reduction in size of living rooms.

The Ministry survey of facilities in 1954/55 found in some communal homes an atmosphere of enforced idleness which fuelled an attitude of despair and apathy. The attitude of one welfare officer is summarised in the quote that old people in welfare homes "should be fed, housed and left alone" (Boucher, 1957). This was hardly the spirit of the 1948 National Assistance Act, which urged that local authorities should provide care and attention which is "a substitute for a normal home."

Townsend (1962) noted that by 1960 a total of 1100 residential homes had been opened by local authorities since 1948 in England and Wales. Of these 207 had been newly
Moreover, the fact was that in 1949 of the 42,000 residents in local authority accommodation some 39-40,000 were in former public assistance institutions, whereas in 1960 the comparable figure was 35,000. However, it was the findings of the survey reported by Townsend (1962) in his evocatively titled "The Last Refuge" relating to the quality of life of old people in residential care which had the greatest impact. In a measure of quality (which took into account: physical facilities; staffing and services available; pastimes and activities engaged in; freedom in daily life; and social provisions), a high proportion of homes, even amongst the post-war local authority homes fell into the 'poor', 'very poor' or 'bad' categories. The voluntary homes scored better and in general the smallest homes tended to rate better in quality than the largest (see Table 7), having more staff, more toilet facilities, a greater number of single or double rooms and providing an environment where self-determination was greater.
### TABLE 7 - A MEASURE OF THE OVERALL QUALITY OF PROVISION IN DIFFERENT TYPES OF RESIDENTIAL HOME
(Sample of 174 Homes)

<table>
<thead>
<tr>
<th>Quality of Provision Score (maximum 100)</th>
<th>Number of institutions and Homes of different type</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Local Authority</td>
</tr>
<tr>
<td></td>
<td>Large Medium Small</td>
</tr>
<tr>
<td>Bad 0 - 29</td>
<td>5 3 0</td>
</tr>
<tr>
<td>Very Poor 30 - 39</td>
<td>6 11 6</td>
</tr>
<tr>
<td>Poor 40 - 49</td>
<td>0 3 5</td>
</tr>
<tr>
<td>Fair 50 - 59</td>
<td>0 0 0</td>
</tr>
<tr>
<td>Good 60 - 69</td>
<td>0 0 0</td>
</tr>
<tr>
<td>Very Good 70 or over</td>
<td>0 0 0</td>
</tr>
<tr>
<td>TOTAL number of homes</td>
<td>11 17 11</td>
</tr>
</tbody>
</table>

Note: The 'large' former public assistance institutions were those with 250 or more residents of pensionable age and the 'small' institutions were those with fewer than 100. Townsend (1962).

Townsend concluded from his survey that the main aim of policy should be to reduce, progressively, the number of communal homes for the elderly and to increase the amount of sheltered housing, the scope of domiciliary and general practitioner services. In this way, more elderly people might remain in their own homes in the community. He envisaged an extension of the hospital service to encompass the remaining communal homes for the elderly containing the more infirm residents.

There is no evidence that this proposal has found favour in government policy. Although there has been a further shift towards the modern purpose-built old people's home, the number of elderly people in such accommodation during
the 1960's and 1970's has steadily risen (Central Statistical Office, 1981) reflecting the impact of the aging population on a service which has its origin firmly founded in residentially-based legislation. The responsibilities of local authorities for care of the elderly set out in Part III of the National Assistance Act 1948 placed undue emphasis on residential care, neglecting the alternative of domiciliary services.

1.3.7 Community Services

The National Health Service Act 1946 required local health authorities to provide health visitors, home nurses and empowered them to make arrangements for providing domestic help for households where such help is required, including the elderly. It was envisaged that services such as hot meals taken to elderly peoples' homes would be provided by voluntary organisations and that local authorities would make grants to voluntary bodies for this and other services. Other domiciliary services such as chiropody and laundry could be provided to elderly people within the scope of the National Health Service Act where approval of the Ministry of Health had been sought. Community services have been seen by successive modern governments as the way of reducing the need for institutional care of the elderly. The concept of community care, in Britain, embraces a wide variety of services only part of which is statutory, provided by a wide range of agencies. Provision such as day care, meals on wheels, home helps, district nursing, social work mechanical
aids and adaptations of dwellings is often supplemented by services provided by voluntary agencies and neighbourhood self-help groups. In practice there is generally little attempt to develop a truly integrated approach to the delivery of this multifaceted support to old people in their own homes.

There is often confusion over what policy-makers mean by community care. In a bizarre interpretation of the concept, a recent government policy document stated:

"the term 'community' covers a whole range of provision including community hospitals, hostels, day hospitals, residential homes, day centres and domiciliary support" (Department of Health and Social Security, 1977a).

In the latest government White Paper ("Growing Older") on policy for the elderly community care is seen as a way of preventing admission to institutional care:

"community care services play a vital role in enabling elderly people to remain in their own homes and in preventing or deferring the need for long-term care in a residential home or hospital".

Although even in rectifying the anomaly the confusion over whether community services can also be institutions is perpetuated by the fact that a section on residential homes appears within a chapter headed "community care services".

The idea that elderly people should be maintained in their own homes for as long as possible may seem beyond reproach. However, the motives of those who cry for more resources to be direct to the community are not always pure. The community is seen by many as a way of cutting the costs
of expensive residential care. Community care, however, may not be the cheap option that many people believe it to be and to do it properly may be an expensive exercise.

Indeed, the whole notion of community care and institutional care as options for some groups of elderly people may be ill-founded. Little is known about the ways in which domiciliary services effectively meet need and the point at which it becomes unreasonable on economic or humanitarian grounds to continue to maintain an elderly person in her own home. This raises the question of whether there is a hard core of frail and incapacitated elderly people who will always need some form of institutional care and what options should be available.

Two important pieces of legislation were enacted in the early 1970's - the Local Authority Social Services Act 1970 and the National Health Service Re-organisation Act 1973 which theoretically made integration of care easier.

The former was the result of the adoption by the Government of many of the recommendations made in the report of the Committee on local authority and allied personal social services chaired by Frederic, now Lord Seebohm (1968). The Seebohm report had recognised many of the shortcomings of the existing personal social services for elderly people and saw the solution in the creation of a unified social services department.
The unification of the three parts of the health service under single health authorities in 1974 (Department of Health and Social Security, 1972) not only laid the foundation for integration and co-ordination of community- and hospital-based services, but also formalised links between health and social services. Moreover, it provided for the first time, the machinery to allow a truly integrated approach to the provision of services for individual client groups. No group has greater need for such an approach or stands to benefit more from integration of hospital with community and health with social services, than does the elderly.

However, this integration was on a superficial level, the division of responsibilities between health and social services remained, and perpetuated all the old arguments which have constantly resurfaced in developments of services since the Poor Law. In the context of institutional care, the most intractable of these is the need, brought about by the structure of services, to address the issue of which problems of old age are 'illness' and which are 'infirmity'. To put it crudely and in the everyday parlance of the services: which elderly people are 'medical problems' and which are 'social problems'. These artificial subdivisions of responsibility which belie an integrated approach to the care of the elderly are again subject of debate as the impending and disproportionate increase in the very elderly has partially been realised.
1.3.8 Planning services for the elderly

The immediacy of the problems posed by the elderly population is highlighted by a simple demographic fact: the elderly are not a homogenous group. Although the predicted increase in the over 65's between 1979 and 1991 is of the order of 4%, the greatest increase will occur amongst the very elderly where the number of over - 75's will increase by 19% and the number of over 85's by 38% (Office of Population, Censuses and Surveys, 1979a). The elderly make much heavier demands on health and social services than do the young and the very elderly made the greatest demands of all. Death and discharge rates and lengths of stay for hospital in-patients increase sharply with each succeeding age group amongst the over 65's (see Table 8).

### TABLE 8

**The Pattern of Use of Hospital Inpatient Facilities by Patients Aged 65 Years and Over, England and Wales 1977**

<table>
<thead>
<tr>
<th>Age Group (Years)</th>
<th>65-69</th>
<th>70-74</th>
<th>75-79</th>
<th>80-84</th>
<th>85+</th>
<th>All Ages</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Discharge rate</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>per 10,000 population</td>
<td>1,260.3</td>
<td>1,552.6</td>
<td>1,928.0</td>
<td>2,337.8</td>
<td>3,072.1</td>
<td>863.9</td>
</tr>
<tr>
<td><strong>Mean Duration</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>of stay (Days)</td>
<td>17.7</td>
<td>22.1</td>
<td>27.8</td>
<td>38.1</td>
<td>52.9</td>
<td>13.6</td>
</tr>
</tbody>
</table>


Moreover, whilst the proportion of elderly people who were in some form of institutional care in Leicestershire in 1976
was only four percent for the over 65's as a whole, it was
21% for those aged between 85 and 94 years and 50 percent
for those aged 95 years and over (see Figure 1).
Figure 1 - Proportion of the elderly population of Leicestershire who were in any type of institutional care in 1976 by age group.

Two main approaches could be used in determining what way services for the elderly should be developed. On the one hand, the normative approach could be used: examining nationally-produced norms for different types of provision, assessing shortfall locally and allocating resources to meet this shortfall. Norms exist to allow a health or local authority to determine, for example, what should be the desirable provision of geriatric beds, residential home places, home helps, meals-on-wheels or day centre places for their population. In some contexts 'norms' are averages of (say)
national level of provision of a particular service. In others (and most of the 'norms' for institutional provision for the elderly fall into this category), they are a 'recommended' level of provision.

Although not arbitrarily defined, the precise method by which such norms are derived is often far from evident. Isaacs and Neville (1976), commenting on services for the elderly, have put it more directly: "the norms promulgated by government departments have come to enjoy a veneration quite unjustified by their research-free origins". Thus this approach, the traditional route for planners, has led to the adoption of guidelines which may result in a service which does not reflect either the correct level of, or most appropriate response to need. Norms which are provided for the varying types of services available to the elderly have usually been arrived at independently, often at different times and by different advisory bodies. The recommended ratio of one service to another, that is the balance of overall care suggested by the norms could be viewed as much as anything as an accident of history. Moreover, planning based on making adjustments to defined services does little to encourage consideration of some of the other care options which are frequently raised.

An alternative and more fundamental approach seeks to assess need for services amongst elderly people, to review the ways in which this need is currently being met and the extent to which it is not being met. From this basic infor-
mation decisions could be made on the most efficient and effective ways of meeting present and future needs.

Perhaps the most telling criticism of the normative approach to planning for the elderly apart from the fact that it acts as a force against integration, is the extent to which it has failed to take account of the heterogeneity of the demands for services posed by the elderly population.

It may seem obvious to point out that planning should take account of differing age structures of populations, indeed it is such a fundamental epidemiological principle that it is surprising that it has thus far had no concrete impact on policy-making at a central level. As has been discussed, it is already well known that whilst the proportion of the whole elderly population in any form of institutionally-based care at any one time is relatively small, with increasing age that proportion rises. Yet, since their inception, government norms for hospitals and residential homes have related numbers of places to the whole population aged 65 years and over. The early norm for geriatric beds of 10 geriatric beds per 1000 population aged 65 years and over which appeared in the 1962 Hospital Plan for England and Wales (Ministry of Health, 1963) has persisted (Department of Health and Social Security, 1976) although recommendations have been made about the balance of different types of geriatric beds within this and about extra provision for the elderly mentally ill.
In studying such data it is only too easy to lose sight of the practical implications for the service in individual areas. I, Donaldson (1980) have used data from the present study to contrast two methods of forecasting geriatric bed requirements and places in homes for the elderly (see Figure 2). Both take as the starting point the level of provision in Leicestershire in 1976 which is depicted in the figure as 100%, although this is not meant to suggest that the provision in Leicestershire is up even to the normative level, (in fact Leicestershire has historically been under-provided).
Figure 2 - Estimated requirements for geriatric beds and places in homes for the elderly using DHSS norms compared with Leicestershire 1976 level of provision.

Thus, regarding 1976 as a baseline level for forecasts, applying the Department of Social Security norms (for geriatric beds and social services homes for the elderly) to projected over-65 populations of Leicestershire in 1985 and
1990 suggests an increased requirement of about 9 - 11% in each type of provision. However, if the proportions of the different age groups within the elderly population of Leicestershire who were actually enumerated in the two types of care in December 1976 (Clarke et al., 1979) are applied to the same age groups in the projected populations, an increase of between 27 and 29% would be required to accommodate the same proportions. Thus, the latter approach has assumed the 1976 level of institutionalisation will be held constant, but with the crucial difference that in contrast to the government norm, it has taken account of greater demand for care with increasing age. To assume the 1976 pattern will persist may be fallacious but it could be argued that by so doing the projection is an under-estimate, since moves to rectify underprovision are being made. The problem is brought most sharply into focus by noting that the discrepancy between the two approaches amounts to the size of about 8 fifty-bedded old peoples homes and 130 geriatric beds.

These calculations and observations serve to make two main points. Firstly, if norms continue to be used for planning purposes, to apply them to the population aged 65 years and over is insensitive and even irrelevant. Secondly, particularly in a climate where public expenditure cuts are used to regulate an ailing economy, it is undesirable to strive uncritically for a massive increase in institutional provision, without re-examining the ways in which we attempt to meet the needs of our elderly people.
With the increase in the number of moderately and severely incapacitated elderly people already under way, there is what amounts to a crisis in the provision of care facing policy makers. There is a need to re-appraise the provision of services in a number of ways: to determine what should be the correct balance of care between community and institutionally based services; to determine the roles and relationships between hospitals and homes for the Elderly; and to determine the most appropriate and efficient way of measuring need and matching it to the right type of care from amongst the range available.

1.3.9 Studies of the elderly in care

Many studies have been conducted over recent years which have examined the demographic features and levels of mental and physical incapacity of elderly people in different care setting. British studies of old people in hospitals have mainly included impairment of mobility incontinence, and mental confusion when they have turned their attention to functional incapacity. Generalisations are made more difficult because of variations between localities and time periods in interpretation of the terms used to describe elderly in-patient populations.

There is perhaps greater uniformity in the meaning attached to the term 'geriatric' hospital but in considering studies of such populations which have included measures of functional capacity (Maggs, 1964; Isaacs and
Walk ey, 1964; Smith and Irvine, 1971), it is necessary to be clear whether the facilities being described are those concerned primarily with acute admissions or with longer term care. Similarly, with studies of psychiatric in-patients differences might be expected between populations comprising wholly elderly people admitted for the first time suffering from psychiatric disorders of old age and those containing a group which had been admitted earlier in life and grown old within the institution.

Other difficulties are raised by differences in study design. Studies have examined serial admissions or have been cross-sectional. Different levels of incapacity might be expected depending on which approach is used. Moreover, in the former there is the danger that the participation of (say) a geriatric unit over a period of six months may focus attention on admission policy which in turn may influence the type of patient who is selected. Further, is the question of the criteria used to define particular incapacities. The definition of incontinence, for example, has varied considerably and in particular whether urinary and faecal incontinence have been described together or as separate entities.

There have been a greater number of studies in populations of homes for the elderly. Some of these have been carried out on a national basis (for example: Townsend, 1962; Carstairs and Morrison, 1971; Department of Health and Social Security 1970). Others (for example: Rae, 1962; Masterton, Holloway, and Timbury, 1980; Clarke et al., 1979)
have been conducted in individual areas and have been published in the medical literature, whilst there have been studies conducted for local planning purposes which do not appear in the literature (for example: Warwickshire County Council 1978). Comparisons between these studies must also be made with great caution, because criteria of assessment (for example: of physical incapacity) may vary widely. Whilst there is probably greater homogeneity in the populations of residential homes in different parts of the country, levels of incapacity in different types of care will inevitably reflect availability and organisation of all types of services at a local level. This a particular problem in comparing present day studies with those in even the recent past, notwithstanding the effects of the ageing of the population.

The approach to care of the elderly has been based largely on identifying presumed homogenous groups of elderly people for whom particular types of institutional care are provided. To some extent, the issue has been highlighted by the realities: the heterogeneity of even seemingly clear-cut groups of elderly people; the dynamic aspects of elderly populations in care in terms of their potential to deteriorate or improve and the lack of co-ordination of services whereby degree of illness or incapacity is not always matched to appropriate type of care at the onset of deterioration in function.

A number of reports in the 1950's and early 1960's sug-
gested that many elderly people were in types of care which were not best suited to their needs, implying that they were 'misplaced' (McKeown 1961; McKeown, Mackintosh and Lowe 1961; McKeown and Cross, 1969; Townsend 1962; Kay, Beamish and Roth 1962; Kidd, 1962a; 1962b; Mezey, Hodkinson and Evans, 1968). These practical considerations have led to a re-examination of the roles of the different types of institutionally-based care provided. Many of the earlier studies on misplacement or inappropriate placement were, for example, undertaken at a time when the particular problem of how best to meet the needs of the psychogeriatric patient was prominent. Comparisons of data on misplacement between studies are also made difficult by variations between studies in: a) criteria for defining misplacement; b) the choice of study populations; c) the time periods in which they were carried out; d) structure and availability of services locally. Indeed, despite a similar approach to the classification of misplacement between three British studies (Kidd, 1962a; Mezey, Hodkinson and Evans, 1968; Langley and Simpson, 1970) there were differences between them in the proportions of misplaced patients.

In so far as misplacement in these types of care has been seen as a 'problem', solutions suggested have mainly dealt with possible ways of integrating or improving links between psychiatric and geriatric services. Kay, Beamish and Roth (1962) proposed units attached to a general hospital in which initial screening of elderly people could embrace both medical and psychiatric investigation. Langley
and Simpson (1970) suggested the establishment of a joint service for long-stay as well as acute cases. Mezey, Hodkinson and Evans (1968) saw as a more urgent need than the establishment of special units, close liaison between the two branches of the hospital service and of both with the local authority services. Their lack of enthusiasm for psychogeriatric units may have been brought about by the relatively low proportion of misplaced patients identified in their own study.

Later studies of misplacement have included residential homes and a number of these (see, for example, Warwickshire County Council, 1978) have been carried out for local planning purposes. In the literature, two types of misplaced residents of such homes have been recognised: those who would be more appropriately cared for in a hospital and those who are sufficiently independent to be in a sheltered housing scheme or in a private dwelling with community services support (Townsend, 1962; Carstairs and Morrison, 1971; Dodd, Clarke and Palmer, 1980).

Most recently, the issue of appropriateness of different types of care for elderly people is expressed nowhere more directly than in the emotive and even hostile term, 'blocked bed' (see for example: Rubin and Davies, 1975). It is usually used to describe the occupation of a bed, in an acute specialty, by an elderly person who is judged not to be acutely ill or deemed to have stayed there longer than what is perceived as within the confines of an acute
illness. This debate has heightened as the population has aged.

The concept of misplacement poses the question of what the purpose of various types of institutional care for the elderly should be. It has been argued that the whole notion, with its emphasis on seeking out individuals who do not fit into a particular form of care, may be wrong. Rather attention ought perhaps to be directed to the way in which institutions might be flexible enough to respond to an elderly population with differing and changing needs (Dodd, Clarke and Palmer, 1980).

This becomes a particularly serious issue if it is believed that the effect of moving an old person from one care environment to another is deleterious in terms of mortality, change in physical and mental functioning or life satisfaction. The bulk of the literature in the field of 'relocation' is American and may be classified in terms of those studies which have examined the degree of choice on the part of the elderly person: voluntary relocation (Zweig and Csank, 1975) or involuntary relocation (Aldrich and Mendkoff, 1963; Bourestom and Tars, 1974; Gutman and Herbert, 1976) and the type of move involved: home to institution (Lieberman 1961; Camargo and Preston 1945; Whittier and Williams, 1956) one institution to another (Aldrich and Mendkoff, 1963; Killian 1970).

Mortality has been the principal index used to assess
its effects. Aldrich and Mendkoff (1963) found a mortality of 32% in a relocated group of elderly people, compared with an expected mortality of 19%; moreover, the highest mortality was seen in the first three months following transfer. The advantage of this study was that it examined elderly people relocated because of the closure of an old people's home (i.e. administrative convenience) not because of their state of health. However, the expected mortality was derived from study records of the same home in the ten years before the closure, a comparison group less satisfactory than concurrent controls. Gutman and Herbert (1976) studied mortality in the elderly population of a male-extended care ward relocated due to closure prior to demolition of the building. The control population was again drawn from past records of the same home; moreover, the relocated group consisted entirely of elderly males, no females being included, and whilst the control population was similar in age-structure to the relocated group, no age-matching of individuals was used.

Whilst it has been argued that relocation has adverse effects particularly when there is a relatively large difference between pre- and post-location environments (Tobin and Lieberman, 1976), there are few studies from which firm generalisable conclusions can be drawn. In the main this is because of the difficulty of obtaining a study design which can measure the effect of relocation on outcome without the influence of confounding variables. In particular, there have been few studies of relocation of elderly
people in Britain and, because of the very different patterns of care between the two countries, American studies are of limited relevance to the organisation of services for the elderly in this country.

Longitudinal studies of elderly people in care have placed their emphasis mainly on observing mortality and attempting to identify various factors which might predict it. Studies of deterioration or improvement in physical and mental functioning have been much less frequent.
CHAPTER 2
AIMS AND METHODS
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<td>2.3 OVERALL PLAN OF SURVEY: THE NATURE OF THE STUDY POPULATION</td>
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<td>2.7 STATISTICAL METHODS EMPLOYED</td>
<td>2-55</td>
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</table>
2.1 AIMS OF THE PRESENT INVESTIGATION

The provision of health services for the elderly is a priority at national, regional and local level. Moreover, hospital and residentially based services for the elderly consume a large and increasing proportion of the health and social services budget. A study of the elderly in institutional care alone cannot be the approach to the problems posed by the elderly population as a whole, and must be seen as contributing to such studies. However, provided that its limitations are fully appreciated, the study provides a basis for the examination and appraisal of different forms of institutional provision in the care of the elderly.

The aims of this study are as follows:

1. To determine the demographic characteristics and patterns of incapacity of all people aged 65 years and over residing in December of 1979 in any type of hospital or home provided within or outside the National Health Service in Leicestershire.

2. To determine the outcome by the end of a three-year period for the entire elderly population who were residing in December of 1976, in the same range of institutions.

3. To relate the above outcomes to different types of care, age-groups and initial levels of incapacity.
4. To examine survival in the same institutional elderly population in relation to level of incapacity, type and appropriateness of care and also compare its mortality experience with the entire elderly population of Leicestershire.

5. In particular, to identify those characteristics which are strong predictors of mortality.

6. To determine changing levels of incapacity amongst elderly people, surviving and continuously resident in institutional care in the three year interval between cross-sectional studies (in 1976 and 1979), and to explore factors which influence it.

7. To examine overall changes in patterns of incapacity and in the characteristics of elderly people in different types of institutional care over a three year period.

8. Using a six month follow-up of the 1979 institutional elderly population in NHS hospitals and social services department homes for the elderly, to examine outcome in relation to that particular spell of care and by relating it to type of care, level of incapacity and age, to build up a more detailed picture of the likelihood of particular outcomes for different groups of elderly people.

9. To examine, initially through staff's perceptions on whether old people were suitably-placed, the appropriate-
ness of different settings of treatment and care for elderly people with different characteristics.

10. To explore the policy implications of these findings in the light of the relevant literature and to make recommendations regarding the organisation and delivery of services for the elderly.

2.2 PROFILE OF LEICESTERSHIRE

The Leicestershire Area Health Authority (Teaching) is coterminous with the County of Leicestershire which consists of nine county district councils. The health authority is managed within three health districts; East Leicestershire; South-West Leicestershire; North-West Leicestershire. Leicestershire is the southernmost Area Health Authority (AHA) within the Trent Region and is bordered by Nottingham AHA (Teaching), Derbyshire AHA and Lincolnshire AHA which are also within that same region. It also adjoined Areas within three other Regional Health Authorities (RHA's): West Midlands RHA (Staffordshire AHA and Warwickshire AHA); Oxfordshire RHA (Northampton AHA); East Anglian RHA (Cambridgeshire AHA).
The main centre of population, the City of Leicester, is situated centrally within the Area and it is here that the two district general hospitals (DGHs) and one large general hospital two of which contain geriatric beds, are situated. Other centres of population are concentrated around the periphery in smaller towns: Oakham, Market Harborough, Lutterworth, Hinckley, Ashby de la Zouch, Coalville, Loughborough, Melton Mowbray. Smaller hospitals exist in or near many of these towns and in particular, smaller geriatric hospitals are to be found there.
The Office of Population, Censuses and Surveys (OPCS) estimated that in mid-1976, Leicestershire had a population of 837,000 and in mid 1979, 836,300 (Trent Regional Health Authority, 1981).

The OPCS estimate of the population aged 65 years and over in mid-1979 was 112,500 and represented 13.5% of the total population for that year, a figure slightly below the proportion of over 65's for the whole of England in the same year (14.9%). The proportion of people aged 75 years and over in Leicestershire in the mid-1979 estimate was 5.0%, again slightly lower than the corresponding proportion for the whole of England in the same time period (5.6%) - Trent Regional Health Authority (1981).

From various statistical returns submitted and collated by the Department of Health and Social Security (DHSS), the Trent RHA and the Leicestershire AHA (Teaching), a broad impression of the level of resources of relevance to the provision of services for the elderly is given. A 'normative' level of provision is cited whenever appropriate. A critical discussion of the concept of 'norms' is given earlier (see Chapter 1, Pl-65), but in the context of planning for the elderly they are usually taken to be a recommended level of a particular service as perceived by the relevant government department. Thus, they do not usually imply an 'average' level of provision: the national data are cited separately where they are available.
Leicestershire has traditionally been an under-resourced area, but recently there has been considerable capital expansion particularly on acute services. The geriatric beds per thousand elderly population are below the figure for England and the same is true for acute beds. The numbers on waiting list for geriatric in-patient care in Leicestershire are slightly higher than the national figure.

<table>
<thead>
<tr>
<th>Hospital In-patient Services¹</th>
<th>All geriatric beds per 1,000 popn. aged 65 yrs. &amp; over</th>
<th>Geriatric beds in D.G.Hs. per 1,000 popn. aged 65 yrs. &amp; over</th>
<th>No. on geriatric waiting list per 100 popn. of all ages available beds ages</th>
<th>Acute General beds per 1,000 popn. of all ages</th>
</tr>
</thead>
<tbody>
<tr>
<td>Leics. 1979</td>
<td>7.7</td>
<td>1.8</td>
<td>10.3</td>
<td>2.18</td>
</tr>
<tr>
<td>England 1979</td>
<td>8.1</td>
<td>Not available</td>
<td>8.5</td>
<td>2.46</td>
</tr>
<tr>
<td>Normative level</td>
<td>10.0²</td>
<td>5³</td>
<td>Not applicable</td>
<td>2.8²</td>
</tr>
</tbody>
</table>

¹ Trent Regional Health Authority (1981)
² Department of Health and Social Security (1977a)
³ Department of Health and Social Security (1981a)

Similarly, the level of provision of geriatric outpatient and day places appears to be relatively low, although in terms of staffing levels Leicestershire compares favourably with the limited national figures which are available.
### Staff in the Geriatric Specialty

<table>
<thead>
<tr>
<th></th>
<th>Consultant Geriatricians</th>
<th>Medical Geriatric Staff</th>
<th>Total Nurses per 100,000 popn. aged 65 &amp; over</th>
<th>Total Nurses per Specialty per 1,000 popn. aged 65 &amp; over</th>
<th>Geriatric Beds per 100,000 popn.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Leics. 1979</td>
<td>5.3</td>
<td>25.9</td>
<td>4.7</td>
<td>61.6</td>
<td></td>
</tr>
<tr>
<td>England 1979</td>
<td>5.1</td>
<td>19.7</td>
<td>Not available</td>
<td>Not available</td>
<td></td>
</tr>
</tbody>
</table>

Whole time equivalents; source: Trent Regional Health Authority (1981)

### Hospital Out-patient and Day Places

<table>
<thead>
<tr>
<th></th>
<th>Number of Geriatric Clinic Sessions per 1000 popn. aged 65 years and over</th>
<th>Number of Geriatric Day Places per 1000 popn. aged 65 years and over</th>
</tr>
</thead>
<tbody>
<tr>
<td>Leics. 1979</td>
<td>2.6</td>
<td>0.8</td>
</tr>
<tr>
<td>England 1979</td>
<td>3.5</td>
<td>Not available</td>
</tr>
</tbody>
</table>

Normative level: Not applicable

1 Trent Regional Health Authority (1981)

2 Department of Health and Social Security (1977a)
<table>
<thead>
<tr>
<th></th>
<th>Residential Places per Thousand Popu. aged 65 years and over</th>
<th>Day Centre Places per Thousand Popu. aged 65 years and over</th>
</tr>
</thead>
<tbody>
<tr>
<td>Leics. 1979</td>
<td>20.3</td>
<td>5.4</td>
</tr>
<tr>
<td>England 1979</td>
<td>18.6&lt;sup&gt;2&lt;/sup&gt;</td>
<td>Not available</td>
</tr>
<tr>
<td>Normative Level</td>
<td>25.0&lt;sup&gt;3&lt;/sup&gt;</td>
<td>3-4&lt;sup&gt;3&lt;/sup&gt;</td>
</tr>
</tbody>
</table>

<sup>1</sup> Trent Regional Health Authority (1981)

<sup>2</sup> 1977 Figures

<sup>3</sup> Department of Health and Social Security (1977a)

In the case of local authority residential and community services, Leicestershire levels compared favourably with national levels although it should be noted that there is a waiting list for residential care (400 in January 1981—Leicestershire Social Services Department, personal communication).
## Selected Community Services

<table>
<thead>
<tr>
<th></th>
<th>Leics. 1979</th>
<th>England 1979</th>
<th>Normative Level</th>
</tr>
</thead>
<tbody>
<tr>
<td>Number of Home Helps per 1000</td>
<td>6.5</td>
<td>6.4</td>
<td>12.0²</td>
</tr>
<tr>
<td>Health Visitors per 1000 Popu. aged 65 years</td>
<td>1.6</td>
<td>1.5</td>
<td>*</td>
</tr>
<tr>
<td>Number of Home Nurses per 1000 Popu. aged 65 years and over</td>
<td>2.8</td>
<td>2.3</td>
<td>*</td>
</tr>
<tr>
<td>Average Number of people aged 65 years and over per Principal in General Practice</td>
<td>316</td>
<td>340</td>
<td>Not applicable</td>
</tr>
</tbody>
</table>

1 Source: Trent Regional Health Authority (1981)
2 Department of Health and Social Security (1977a)
3 Applies to whole time equivalents 30.9.78 Leicestershire, 1977 England

* Norms quoted for total population only.

It is difficult in Leicestershire to identify specific facilities for the elderly, mentally ill and relate them to national and normative levels since these old people are treated in a variety of settings rather than a single 'psychogeriatric' unit.

Such comparisons are crude and give no indication of what is an appropriate level of provision of a particular service. This issue and the particular arrangement of services in Leicestershire will be raised at appropriate points in the discussion of the results.
2.3 OVERALL PLAN OF SURVEY: THE NATURE OF THE STUDY POPULATION

2.3.1 Original institutional population (1976)

In December of 1976, the Departments of Community Health and Psychiatry, University of Leicester, in conjunction with the Leicestershire Area Health Authority (Teaching) and the Leicestershire Social Services Department, carried out a census of all people aged 65 years and over who were resident in any type of care provided by the National Health Service, the Local Authority Social Services Department or private and voluntary agencies within Leicestershire (Clarke et al., 1979). It undertook to record, for each elderly person: personal and administrative details; an assessment of the extent to which basic activities of daily living were performed; and the opinions of nurses/officers-in-charge as to the appropriateness of care provided for each person.
This institutional elderly population served as the basis for:

(i) a longitudinal study (component B figure 3) to determine changes in the level of incapacity amongst elderly residents in a three-year period;

(ii) a cohort study (components A and D, figure 3) to identify those elderly people who died and those who had
2.3.2 Second Population (1979)

In December of 1979, in collaboration with the same agencies, a second one-day census was carried out to enumerate all people aged 65 years and over throughout the same range of institutional care within Leicestershire.

The second census of the elderly served four main purposes:

(i) it allowed a longitudinal study of incapacity amongst elderly people continuously resident in institutional care (either of the same or different type) in the three year period (component B, figure 3);

(ii) it permitted an analysis of the changing pattern and distribution of elderly people in institutional care in the three-year period (component C, figure 3);

(iii) it allowed the study of other variables (such as mental confusion, source of admission) which were not assessed in the original institutional population; and

(iv) by carrying out a six month study following the entire population in NHS wards and hospitals and social services homes (component E, figure 3), it permitted the study of detailed discharge and transfer patterns within different
types of facility related to that spell of care which were not possible from the follow-up of the original population.

2.4 1979 CENSUS OF ELDERLY PEOPLE IN CARE

In describing in detail the 1979 survey, differences with the 1976 survey, in the type of data, its mode of collection or in the coverage of institutions will be identified and described at the appropriate points in the text.

2.4.1 Defining the population

The population comprised all men and women born on or
before 11 December 1914 (i.e. 65 years and older) who were resident at midnight on 11-12 December 1979 in any ward, hospital, home, or hostel provided within the health or social services or by private and voluntary agencies in Leicestershire. Leicestershire was defined as that area contained within the Leicestershire Area Health Authority (Teaching) boundary and therefore, included both the City of Leicester and the County of Leicestershire. People usually resident but temporarily absent on the night of the census were also included. The types of accommodation covered were:- NHS acute beds (i.e. all beds in NHS hospitals except those in psychiatric, geriatric, paediatric or obstetric specialties) NHS geriatric beds; NHS hospitals with psychiatric, mental illness, mental subnormality beds; homes for the elderly run by the social services department or voluntary and private agencies; private nursing homes; homes for the physically handicapped; staffed hostels for the mentally handicapped.

2.4.2 Organisation of data collection

a. Establishing contact and gaining co-operation

Initial approval for the 1979 census of the elderly in care in Leicestershire was sought and obtained from the Area Team of Officers of the Leicestershire Area Health Authority (Teaching) and from the Director of Social Services for Leicestershire.
A letter (see appendix 2.6.3) was first sent to the district administrator in each of the three districts of Leicestershire. This letter informed the recipients of the nature of the survey, its intended date of occurrence and asked them to brief relevant nursing and administrative staff of these intentions.

After drawing up a list of wards, hospitals and hostels owned by the National Health Service in Leicestershire, further letters were sent, this time to the Divisional Nursing Officers (see appendix 2.6.4) and to the sector administrators (see appendix 2.6.5) in each district asking them to alert relevant staff and to check on the completeness and accuracy of the list of NHS premises in their districts. As a result of the responses to these letters, the computer file of 1976 listings was brought fully up-to-date with respect to NHS premises in Leicestershire.

Contact was made with the individual social services premises via the officer in charge of the care branch at County Hall. A memorandum was sent by this officer, together with a short account of the 1976 census which had recently been published (Dodd, Holden, and Reed, 1979) in a social work journal. The 1976 computer file of social services premises was brought up-to-date using the social services department's own listing of premises.

A list of all private and voluntary homes and hospitals within Leicestershire, which might have contained elderly
people, was drawn up using the Leicestershire Area Health Authority's list of registered premises and a similar listing held by the social services department. In addition checks were made of the telephone directory in an attempt to identify unlisted premises. Once this list of premises, owned by private and voluntary agencies, had been drawn up, it was scrutinised by social work staff who maintained links and regular contacts with these sectors, and amendments were made. The details of these listings were then incorporated into the 1976 computer file.

A letter (see appendix 2.6.6) was then sent to the person in charge of each type of premises. In some cases, the person was responsible for a group of old people's homes.

b. The Conduct of the Survey

For the purposes of data collection, Leicestershire was divided up into 10 geographical areas each of which contained a mixture of different types of accommodation. Each geographical area had allocated to it a co-ordinator (see appendix 2.6.1) who was, in the main, a senior medical or nursing staff member who had been asked to undertake this task. The areas were as follows:

Area 1 - North Leicestershire
Area 2 - East Leicestershire
Area 3 - South Leicestershire
Area 4 - West Leicestershire
Area 5 - City of Leicester around General Hospital
Area 6 - City of Leicester around Groby Road Hospital
Area 7 - City of Leicester around Leicester Royal Infirmary
Area 8 - City of Leicester around Carlton Hayes Hospital
Area 9 - City of Leicester around the Towers Hospital
Area 10 - City of Leicester around old Hillcrest Hospital

Each co-ordinator was sent a preliminary letter (see appendix 2.6.7) and a letter containing more detailed instructions (see appendix 2.6.8) closer to the day of the census. The co-ordinator visited each institution in his area in the few days before census night. During this visit he delivered a packet of questionnaires and ran through the questionnaire with staff in the ward, home or hostel. In the Leicester Royal Infirmary and the Leicester General Hospital co-ordinators conducted a midnight ward round with the night nursing officer to retrieve completed questionnaires. In all other institutions, the co-ordinator had collected all completed questionnaires within three days of the census point. Social services own staff collected completed questionnaires from all social services accommodation.

In addition to geographical co-ordinators each type of accommodation had a defined co-ordinator (see appendix 2.6.2) to deal with any difficulties that might be encountered by survey staff in that setting. These co-ordinators were allocated to the following types of accommodation.

1. NHS Acute beds
2. NHS Psychiatric beds
3. NHS Geriatric beds
4. Social Services accommodation
5. Private and voluntary accommodation

In the event, very few difficulties were encountered. In one instance, a geriatric hospital was extremely
short-staffed and I and another member of the survey staff helped nursing staff by completing administrative details on 100 questionnaires. Two private nursing homes would not divulge the names of patients in their care but agreed to complete all other sections of the questionnaire. c. Control of the accuracy of the fieldwork

The most important element in the process of ensuring that forms were completed as accurately as possible was the relationship established by the survey co-ordinators with staff completing them. The fact that co-ordinators were chosen who were in the main senior professionals in the health or social services emphasised to caring staff that the information being collected was perceived as both important and relevant to the organisation of services. A full briefing and explanation of the form together with the importance of accuracy was given to staff by the co-ordinator during his/her initial visit to deliver the form.

d. Follow-up in the case of non-response

The first stage of the checking process was undertaken by each co-ordinator before or shortly after he/she left the institution in question and omissions were drawn to the attention of and rectified by the staff in the type of accommodation concerned. The second stage of this process consisted of checking each individual card for non-response on any section when they were collected from the co-ordinators. These omissions and errors were then rectified by personal
visits to the institutions concerned, by further visits by co-ordinators or, if the omission was straightforward (e.g. missing date of birth) by telephone.

At the end of the checking process some omissions remained. These fell into three main categories:-

a) where the patient or resident had been discharged and it was not considered valid for staff to complete sections on incapacity;

b) in certain private institutions where on the grounds of privacy, names had been left off the cards, it was not possible then to complete other sections of the form which had been omitted; and

c) in a small number of instances omissions were not detected until the data came to be coded, by which time it was too late to obtain it in a valid form.

The extent of non-response in a particular variable is indicated when it is presented in a table of results.

e) Confidentiality

Questionnaires were handled only by members of survey staff. They were stored in a locked data storage cupboard in the Department of Community Health, University of Leicester. The data from the 1976 census of the elderly were
stored in a similar secure fashion and no issues relating to breaches of confidentiality had arisen over a three year period.

In a few instances, confidentiality became a major issue during the conduct of the survey. The importance of giving adequate assurances in advance about confidentiality to staff at all levels is particularly necessary when refusal to co-operate by one institution in a hierarchical organisation can quickly spread to similar settings and put the whole survey in jeopardy. Such preliminary assurances appeared to ensure satisfactory co-operation in the N.H.S. and social service settings. However, in two private nursing homes despite personal intervention by myself and other senior survey staff, and after much persuasion, the most that could be gained was survey cards with patient identification information omitted. This posed a problem not merely in terms of linkage but, where other information was not recorded, it was not possible to go back to staff with a named patient to ask, for example, for a missing date of birth. The two nursing homes in question had refused even to put a coded identification on the survey card which only they themselves would know.

The extent to which confidentiality, though obviously a fundamental inviolable principle can become an emotional issue rather than a practical one in the field, is illustrated by the experience with two private nursing homes. Both had maintained the same matrons for the time period in
which the two surveys were carried out. The first had refused to divulge patients' names at the time of the first survey in 1976, but completed them without raising the issue of confidentiality in 1979. The second, (one of the two mentioned above) despite having supplied names without question in 1976 refused to do so three years later. Another relevant practical problem which arose after the fieldwork had been carried out and was not anticipated, related to the conduct of the survey in social services department's homes for the elderly. Here the department's care branch staff at County Hall had helped to collect completed forms from the homes in their sector. They had then aided the survey team by checking forms for completeness in all relevant sections. This was later perceived by officers-in-charge at their regular meeting as a clear breach of confidentiality and in a series of angry telephone calls they threatened not to co-operate in future surveys. They were eventually able to be reassured. However, it may seem surprising that when staff in homes were co-operating on the instructions of their Director of Social Services they should perceive their professional colleagues viewing of the forms in this way. On the contrary, individual officers-in-charge saw their participation on the basis of their relationship with the survey co-ordinators.

These issues would seem to be important considerations when carrying out similar studies in the future.
(f) **Range of Institutions Surveyed**

The number and type of institutions covered in the 1976 and 1979 surveys is shown below:

### Geriatric Wards and Hospitals

<table>
<thead>
<tr>
<th></th>
<th>1976 (No.)</th>
<th>1979 (No.)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Wards within</td>
<td></td>
<td></td>
</tr>
<tr>
<td>General Hospitals</td>
<td>13</td>
<td>11*</td>
</tr>
<tr>
<td>Peripheral Hospitals</td>
<td>8</td>
<td>8</td>
</tr>
<tr>
<td>Community Hospitals</td>
<td>-</td>
<td>1</td>
</tr>
</tbody>
</table>

*Includes two wards closed for indeterminate length of time.

### Psychiatric Wards and Hospitals

<table>
<thead>
<tr>
<th></th>
<th>1976</th>
<th>1979</th>
</tr>
</thead>
<tbody>
<tr>
<td>Psychiatric Hospitals</td>
<td>2</td>
<td>2</td>
</tr>
<tr>
<td>Psychogeriatric Ward</td>
<td>1</td>
<td>1</td>
</tr>
<tr>
<td>Small-bedded acute</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Psychiatric Unit</td>
<td>-</td>
<td>1</td>
</tr>
<tr>
<td>Mental Handicap Hospitals/N.H.S. Hostels</td>
<td>2</td>
<td>2</td>
</tr>
</tbody>
</table>

### Acute Wards and Hospitals

<table>
<thead>
<tr>
<th></th>
<th>1976</th>
<th>1979</th>
</tr>
</thead>
<tbody>
<tr>
<td>Wards within</td>
<td></td>
<td></td>
</tr>
<tr>
<td>General Hospitals</td>
<td>41</td>
<td>57</td>
</tr>
<tr>
<td>Other acute hospitals</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Preconvalescent or rehabilitation units</td>
<td>9</td>
<td>9</td>
</tr>
<tr>
<td></td>
<td>3</td>
<td>3</td>
</tr>
</tbody>
</table>

### Homes for the Elderly

<table>
<thead>
<tr>
<th></th>
<th>1976</th>
<th>1979</th>
</tr>
</thead>
<tbody>
<tr>
<td>Social Services Dept. (SSD)</td>
<td>43</td>
<td>43</td>
</tr>
<tr>
<td>Run by voluntary agencies for</td>
<td>15</td>
<td>15</td>
</tr>
<tr>
<td>Run by private agencies for</td>
<td>13</td>
<td>12</td>
</tr>
</tbody>
</table>
Homes for the Handicapped

- Homes for physically handicapped (SSD/voluntary) 1976: 5, 1979: 5
- Hostels for mentally ill (SSD) 1976: 3, 1979: 3
  ~No elderly people were resident on the night of the survey.
  *Only one elderly person was resident on the night of the survey.

Private Nursing Homes

1976: 14, 1979: 16

(g) Contents of the Questionnaire

The questionnaire used in the 1979 survey is shown in Appendix 2.6.9. It collected the following information:

(i) **Demographic administrative information** - name, address, date of birth, sex, marital status, date of admission, source of admission, length of stay in previous care setting, diagnosis or reason for admission.

(ii) **Assessment of incapacity** - activities of daily living (mobility, continence of urine, faecal incontinence, washing and dressing, feeding); behaviour during day and at night, vision and hearing.

(iii) **Assessment of staff's opinion of misplacement** - whether suitably placed, type of alternative care which would be better.
Each of these items will now be discussed in more detail with differences from and additions to the 1976 survey being described.

**Surname and Forenames**

This information was obtained in the same fashion in the 1979 survey except that provision was allowed for more than one forename (to facilitate linkage) which was not the case on the 1976 questionnaire.

**Address and Source of Admission**

The 1976 questionnaire obtained this information by asking for: "address (from which admitted)". The resulting responses had varied in stating the elderly person's home address or the address of a hospital or home in cases where this had been the situation immediately prior to admission to the survey institution. As a result, the information gathered was of little value either in terms of delineating catchment areas for individual institutions (an item of information the Social Services Department had wanted) or indicating the proportion of people who were admitted to an institution from another type of institution or from a private dwelling. The 1979 questionnaire sought to overcome these difficulties and obtain more valuable information by
introducing three new questions. Firstly, staff were asked for "permanent address (before admission)" and co-ordinators were asked to explain to staff completing the forms that this meant the person's last address before admission to care. Secondly, the precise category of place from which admitted was elicited by a structured question "place from which admitted (ring as appropriate) - own home (alone); own home (not alone); own home (circumstances not known); relative's home" etc. Where the place from which admitted was National Health Service accommodation, respondents were asked to name it, so that it could be classified later into, for example, geriatric, acute, psychiatric. Thirdly, to distinguish people who were admitted from another form of care after a long period of time there and those in which the stay had been relatively short, a question was asked about approximate length of time in a home or hospital from which admitted. This latter question was not a success - in some instances, the information was supplied, in other instances it was not completed and when staff were approached for missing information, some hostility was encountered. Seemingly these data were difficult and time-consuming to obtain; in many cases it involved looking through a whole set of case notes. Staff were unwilling to undertake this task.

Sex, Marital Status, Date of Birth

This information was obtained in the same fashion in
Date of Admission

The 1976 questionnaire had asked for "date of admission" and there had been some ambiguity in response. In some cases it was clear that the respondents had understood the question to mean date of admission to care, not merely to survey institution. In the 1979 questionnaire, to overcome this difficulty, the question was re-phrased as: "date of admission to your hospital/home".

Diagnosis or Reason for Admission

A question asking for the elderly person's "diagnosis or reason for admission" had yielded little information of value in the 1976 census. Some respondents had entered, for example, "social problems" whilst others had stated precise diagnoses such as "left ventricular failure". Consideration was given to the possibility of structuring the question so as to separate the concepts of medical diagnosis and reason for admission. Despite the unsatisfactory nature of the original question, local clinicians wished to keep it in the existing form to allow comparison between the two time periods. Data was of poor quality, however, and was not included in the analysis.
Activities of Daily Living

To allow for the longitudinal study of incapacity it was necessary to replicate the 1976 questions on activities of daily living. The assessment of activities of daily living was based on a modified version of a scale originally validated in a population of chronic schizophrenics (Wing and Brown, 1970). It was later used, and further validated, in a mixed population of schizophrenics and other patients with other long-standing disorders (Philip and McKechnie, 1969) and, most recently, in a population of more than a thousand elderly long-stay psychiatric patients (Clarke, Waller and Webster, 1975). The question of validity is further discussed in the next section.

The staff immediately concerned with the care of the elderly person were asked to come to a consensus decision on the statement within each of the five activities - mobility, urinary continence, faecal incontinence, washing/dressing and feeding - which most closely described the individual concerned. Within each category points were allotted to each statement (see schedule in Appendix 2.6.9) so that, by addition, it was possible to obtain a total activities of daily living (A.D.L.) score. On this scale, the maximum score of 11 indicated relatively high incapacity and the minimum score of 0, relative independence. All patients and residents who had been admitted less than 28 days prior to the census were excluded from the assessment: it was reasoned that with such short durations of stay, staff would
not have had the opportunity to fully appreciate their level of function. It should be pointed out, however, that by so doing, a group with probably higher levels of acute illness were excluded from this part of the assessment.

**Behaviour During Day and at Night**

In structuring the questionnaire for the 1979 survey, it was necessary to preserve much of the 1976 questionnaire to allow comparisons over time to be made. However, it was felt that a serious omission from the 1976 survey had been any measure of mental confusion. It was felt impractical to ask staff to administer one of the validated geriatric confusion rating scales which are available. Feedback on the conduct of the 1976 census had indicated that a major attraction of the questionnaire used at that time was its brevity - a powerful tool in obtaining the co-operation and goodwill of busy nursing staff. The lengthening of the questionnaire to include such a rating scale might have jeopardised that co-operation; moreover, it would have been different to the rest of the questionnaire since it would have required, not an assessment by staff, but an interaction between patients and staff members to obtain the information. Given the large number of patients and residents involved would have been very time-consuming and the quality of the information obtained might have been questionable. There was some discussion about using observers to examine a sample with such a schedule but it was felt that there was
such a wide variety in the types of care and that one of the appeals of the survey was that it looked at every elderly person in all types of care at a point in time. In the end, it was decided to include two questions from a modification of such a standardised schedule (the Stockton Geriatric Rating Scale - Meer and Baker, 1966) which it was felt would be easily understood by staff in all settings. A study of a sample of residents in the same homes for the elderly was carried out shortly afterwards by local psychiatrists (ref xx) who used a standardised schedule of mental status and the results of the present study were compared to this. These issues of validity are discussed further in the next section.

**Vision and Hearing**

Questions on vision and hearing were chosen by the Department of Psychiatry, University of Leicester, who were participating in the study and put in at their request for a sub-study they were undertaking. They were not included, therefore, in the analyses for the present study.

**Suitability of Placement (Misplacement, Inappropriate Placement)**

The question on the 1976 questionnaire asking staff whether the person was appropriately placed had not proved
entirely satisfactory. In a follow-up of this group of patients, it was apparent that some staff were unwilling to label someone as "inappropriately placed" since it carried a stigmatising impression (Dodd, Palmer and Clarke, 1980). Despite losing some comparability over time, it was felt to be better to rephrase this question to ask "is your ward/home a suitable place in which to meet this particular person's needs?" thereby relieving staff of the need to possibly stigmatise the person in their care. Moreover, the supplementary question for staff responding "No" to the above question was structured to provide a range of choices compared with the unstructured nature of the 1976 question. Finally, a further modification placed the question on "inappropriate" placement after the A.D.L. assessment permitting the assessment to be made before this judgement was taken.

**Validity and Reliability of the Assessment**

The scale used to assess capacity to perform essential activities of daily living evolved from a scale of ward behaviour originally by Wing (1961), to distinguish between three clinical sub-groups of schizophrenia. The social withdrawal component of the scale included such items as speed of movement, conversational ability, leisure activity, continence and the ability to wash, dress and feed oneself. Behaviour was rated on a three-point scale for each activity. Wing and Brown (1970) further demonstrated the clinical
validity of the scale in distinguishing between clinical severity in chronic schizophrenia. Philip and McKechnie (1969) used the scale on a mixed population of chronic schizophrenics and patients suffering from other long-standing disorders and found an inter-rater reliability of 0.71. The use of two nurses to make the rating, however, increased its reliability from 0.71 to 0.83.

Clarke, Waller and Webster (1975) introduced the assessment in a population of over a thousand elderly and long-stay patients in a large psychiatric hospital. They found that the scale was a good predictor of discharge or continuing residence or death.

Using the modification of the assessment that was used in the first Leicestershire Census of the Elderly in Institutional Care (Clarke et al., 1979), Donaldson, Clayton and Clarke (1980) found that increasing incapacity in total activities of daily living (ADL) score which was arrived at by summing scores for individual activities was a strong predictor of increasing mortality. Moreover, survival figures using the scale in Leicestershire were similar to those obtained at the same periods for comparable incapacity groupings in an American Study, Jones, Densen and McNitt, (1978) which had used the Katz index of ADL (Katz et al., 1963) as a measure of incapacity.

However, the Katz index is a hierarchical scale arrived at by application of the Guttman analysis (Guttman, 1951).
Baxandall (1980) has carried out a Guttman analysis of data from the first Leicestershire Census of the Elderly and concluded that the order of the hierarchy is very sensitive to the cut-off point between independent and dependent categories. Ultimately, the determination of such cut-off points is the investigator's decision and to a certain extent this throws some doubt on the Katz approach.

The present ADL assessment has no such cut-off points and the data are mainly presented in terms of descriptive statements of function in individual activities. The addition of scores for individual activities to produce a total score of incapacity (total ADL) scores has evolved from the other studies mentioned and appears to have validity at least in terms of predicting mortality (Donaldson, Clayton and Clarke, 1980).

The particularly difficult question in considering the validity of the present assessment, and others like it, is the extent of the possible discrepancy between 'potential' to perform a particular activity and 'actual' performance. This is an issue discussed at greater length when the results are being interpreted (see Chapter 6, P.6-31). Bearing in mind the observation by Philip and McKechnie (1969) of the increase in reliability with more than one rater, the present study has used a consensus approach by staff to assessment. As has been discussed already the two questions on behaviour/confusion were introduced because it was felt to be such an important disability. Other workers
in similar situations have used a range of simple descriptive statements: "mentally alert", "often somewhat confused", "occasionally forgetful", "severely confused" (Carstairs and Morrison, 1971): "mentally alert", "mildly confused", "severely confused" (Department of Health and Social Security, 1970).

In the present investigation similar statements were taken but were drawn from a modification of the Stockton Geriatric Rating Scale (Meer and Baker, 1966) and related to confusion during the day and at night. Removal of questions from an entire validated schedule does not mean that they are valid when administered in isolation. Nevertheless, opportunity was taken to relate the findings of these questions (on behaviour during the day and at night) to a small study of six homes for the elderly containing 289 of the same residents who were enumerated in the 1979 survey by local psychiatrists (Clarke, Williams and Jones, 1981) who were conducting a study of levels of mental capacity and use of medication in these homes. This study which was carried out approximately a fortnight after the 1979 survey of all institutions involved, as part of the examination by a psychiatrist, the administration of the Information/Orientation (I/O) test of the Clifton Assessment Schedule (Pattie and Gilleard, 1976) to each resident. This latter scale consists of twelve single questions, scores of 7 or less usually being found in patients with a diagnosis of dementia or acute organic brain syndrome.
The results of the level of behaviour in the daytime and at night in the present study were then compared to the level of disability on the I/O assessment by the psychiatrists on the same residents. Using the Spearman Rank Correlation test, the correlation between the level of confusion in the present study and the psychiatrists' study was significant at the 5% level for disturbed behaviour at night ($r_s = .236; \ p<.05$) and the 1% level for confused behaviour during the day ($r_s = .237; \ p<.01$).

This, of course, is only limited justification of the validity of the questions used since it was not possible to compare them with psychiatric examination in all settings.

The issue of the validity of the questions on misplacement are discussed in the results section in the context of interpretation of the results on misplacement.

2.4.3 Conversion of Data into a Machine-Readable Form

A list of coding instructions was drawn up for coding the questionnaire and the coding of all its sections undertaken. I carried out some of the coding personally and the remainder I supervised and checked for accuracy.

2.5 FOLLOW-UP STUDIES
2.5.1 Mortality Follow-up (1976 Population)

2.5.1.1 Source of Information -

Copies of draft death returns, applying to all Leicestershire residents are held by the Leicestershire Area Health Authority (Teaching). These returns were maintained by the authority in chronological order by week of death, and then alphabetically within that week, an arrangement which facilitated the system of notifications to the Office of Population Censuses and Surveys. In total there were approximately 10,000 deaths for each year.

It was clearly not practicable to maintain the death index in chronological order for the purpose of matching to survey records. An alphabetical index of surnames on death returns was created, therefore, for each of four years: 1976, 1977, 1978 and 1979. It is pointed out that this seemingly trivial clerical exercise proved to be a major undertaking in terms of manpower and the limited financial resources available to the survey. It was felt to be justifiable however, in view of the fact that the index, once created, could be used by other workers in Leicestershire wishing to undertake mortality studies based on record linkage.

Several checks were carried out to ensure that the filing had been executed correctly before searches were undertaken, since the whole of the linkage operation depended upon it.
The 1976 institutional elderly population, was recorded on the questionnaires used at that time which were filed alphabetically by the patients' or residents' surname.

2.5.1.2 Linkage of Records -

Newcombe and Kennedy (1962) have identified the two basic steps in the linkage process as: firstly, a searching operation in which potentially linkable records are brought together for scrutiny; followed by, a detailed comparison to decide whether the person or persons referred to on each document are in fact the same. In the second stage, the two kinds of error, acceptance of false linkages, and rejections of potentially genuine linkages must be kept to a minimum.


Where surnames on the two documents coincided, they were compared to decide whether they belonged to the same person. When surname, forenames, sex and date of birth coincided, it was decided that the two documents derived from the same person and a match was said to exist. Difficulties arose when there were discrepancies in this information on the two documents. It was not, for example, rare to find that the order of forenames on the two documents was reversed so that "Jessie Winifred Taylor" appeared on the draft death return, whilst "Winifred Jessie Taylor" was the
name stated on the survey card. In such cases, provided that sex and date of birth and surname were identical, the documents were scrutinised for additional information in the form of home address or place of death and if either of these items also coincided, a match was said to exist.

Another source of discrepancy was that of date of birth where day, month or year of birth were discrepant whilst surname, forename and sex were identical. Acheson (1967) has pointed out that whilst discrepancies between quoted years of birth in pairs of records derived from the same person were around 7% of a sample, the weight which this or other discrepant factors give in favour or against a match depends on the frequency of concordant items of identification in the population. Using the method of Newcombe and Kennedy (1962), Acheson (1967) examined two hypothetical examples of pairs of records in which the year of birth disagrees by one year.
Two Hypothetical Examples of Pairs of Discrepant Records

Giving the Binit Weights for Each Agreement and Disagreement

| PAIR A | | | | | |
|--------|--------|--------|--------|--------|
| Surname | Sex | First Name | Date of Birth | Birthplace |
| Record 1 | Smith | M | John | 10.01.62 | London |
| Record 2 | Smith | M | John | 10.01.61 | London |
| Binit | +6 | +1 | +3 | +8 - 1 | +3 - +20 |

| PAIR B | | | | | |
|--------|--------|--------|--------|--------|
| Surname | Sex | First Name | Date of Birth | Birthplace |
| Record 1 | Funk | M | Xerxes | 10.01.62 | Abingdon |
| Record 2 | Funk | M | Xerxes | 10.01.61 | Abingdon |
| Binit | +13 | +1 | +11 | +8 - 1 | +10 - +43 |

Acheson (1967)

The term 'binit' refers to the algebraic sum of the logarithms worked out for each item of identification and this gives the overall probability in favour of, or against, the records being derived from the same individual. A high score indicates a stronger likelihood that the came from the same individual.

In the present study, the discrepancies over date of birth were most commonly due to differences in the year of birth, very few being in month and day of birth. In all these instances a judgement was made as to whether to count the documents as a match on the basis of other information such as address or place of death and of a subjective judgement of the rarity of the surname and forenames.

Aside from possible errors of under- or over-matching of documents initially brought together on the basis of identical surname, there remains the potentially more seri-
ous problem of under-matching due to differences in the spelling of surnames. In other studies, these discrepancies have been minimised by use of a soundex system in which groups of names are filed phonetically (Philips, Bahn and Miyasaki, 1962). Such a system would be necessary for the very large population data banks these authors discuss. However, in the present study where the number of records involved was relatively small, it was possible to search manually for alternative spellings of similar sounding names by searching to the end of the relevant section of the alphabet.

2.5.1.3 Data Recorded -

Once the two documents had been linked, the following information was copied from the draft death return on to the elderly person's questionnaire:

i) Date of death
ii) Cause of death
iii) Place of death

The information on cause of death was coded to underlying cause of death using both the International Classification of Diseases, Eighth and Ninth revisions (World Health Organisation, 1967; 1977) by the medical statistics section of the OPCS.
The mortality follow-up was carried out in stages, the first year (1977's deaths) in 1978 and so on. Each stage involved linkage of the extra information to the original computer record. Date of death was collected for all deaths over the three years. Because payment was being made to the OPCS for coding and cause of death information was being used to show broad causes of death only, it was not felt justifiable to collect more than two years information on cause.

2.5.2 Follow-up of Remainder of 1976 Population

After arranging the cards for the 1979 survey alphabetically, a search was made of the 1976 population against the 1979 population to determine elderly people who were in some form of institutional care on both occasions. The criteria for matching were the same as those used in the mortality follow-up. In this way, a group of elderly people who were in institutional care on the occasion of both surveys was identified. By using date of admission on the census cards three groups of linked records were identified:

'Continuously resident' - those who had been in the same institution without interruption over the entire three-year period.

'Transferred' - those who had been in institutional care over the entire three-year period, but at some time during it had undergone transfer to a different type of care from the one in which they were resident in the 1976 survey.
'Readmitted' - those who were in an institution in 1976 and also in one in 1979 but who had been out in the community for varying lengths of time in the interim.

These categories are further described in Chapter 5, P5-2.

The 1976 computer file was updated with this information so that relevant records from the two surveys could be linked.

The residue of patients, i.e. those presumed discharged, was checked in most of the institutions and in this way a very small proportion of additional deaths and continuously resident elderly people were identified who had not been detected in the linkage and follow-up procedure.

2.5.3 Follow-up of 1979 Population

In order to detect detailed admission, discharge and transfer patterns amongst National Health Service patients and residents in social services homes, a six month follow-up was undertaken amongst all 3,916 elderly people enumerated in 1979 who fell into this category. Visits were made to individual hospital records departments and to social services departments records and for each elderly person a note was made of their status six months after the census as to:-

i) Dead
ii) Still resident

iii) Discharged or transferred

For those in category (i), a note was made of the relevant date and for those in category (iii) a note was made of the place to which they had been discharged or transferred. This information was added to the 1979 survey computer file for each elderly person. The categories are described in more detail in Chapter 5, P5-3.

2.6 APPENDICES TO METHODOLOGY

2.6.1 List of geographical co-ordinators

Area 1- Professor S. Brandon/Dr. M. G. Clarke
Area 2- Mrs. Susan Clarke
Area 3- Dr. W. D. Revill
Area 4- Dr. L. J. Donaldson/Miss A. M. Odell
Area 5- Dr. R. L. Palmer
Area 6- Dr. W. R. Kind/Mr. M. Baxandall
Area 7- Dr. (now Professor) Michael Clarke
Area 8- Mr. J. Dykes
Area 9- Dr. A. Williams
Area 10- Mrs. K. Dodd

2.6.2 List of co-ordinators for types of care

NHS geriatric beds- Dr. M. Castleden
NHS psychiatric beds- Dr. R. L. Palmer
NHS acute beds- Dr. L. J. Donaldson
Social Services accommodation- Mr. J. Hensen
Private and Voluntary sector- Mr. S. Cardy

2.6.3 Letter to District Administrators

Dear

You may recall that in 1976, together with the Depart-
We undertook a census of all people aged over 65 years in both N.H.S., Social Service, private and voluntary care. As you may know the results have been published in medical and social work journals and have been used by numerous local groups including the Working Party on the Care of the Elderly. It is our view that a further census should be undertaken in December of this year, and in this we have the support of the Area Team of Officers. The objective of this resurvey would be to firstly identify changes in the demographic and disability state of the institutional elderly and secondly, to finalise our follow-up from the first census.

We hope the census will have your support and that if so in the next few weeks we will be able to contact your Operational Service Manager to discuss the detailed arrangements.

Yours sincerely,

Dr L.J. Donaldson MSc, FRCS(Ed),
Lecturer in Community Medicine.
2.6.4 Letter to Divisional Nursing Officers

Leicestershire Geriatric Census - 1979

At the suggestion of the District Nursing Officer, I am writing to make contact with you about the above census.

You may recall that in December 1976, a census of the elderly was carried out in which every person aged 65 years and over, resident in any type of accommodation provided by the National Health Service, Social Services Department or private and voluntary agencies within Leicestershire was identified. Nursing and other staff immediately concerned in the care of the patient/resident were asked to complete a short pro-forma which included a brief assessment of the person's functional capacity.

It is intended to carry out a similar census in December 1979 to allow the assessment of changes over time in the demographic and disability state of the institutional elderly and secondly to finalise the follow-up from the first census. The success of such an undertaking depends on the completeness and the accuracy with which the elderly people are recorded. One of the hallmarks of the last census was the high quality of the response of nursing staff in these two areas.

Census point will technically be at midnight on 11/12 December 1979. Census forms will be delivered by co-ordinators a few days in advance and will be collected during Wednesday 12 December. These co-ordinators, who will in the main be senior medical staff, will be available to deal with any problems experienced by nursing staff in the completion of the forms.

The institutions involved in the [East] District are of three types:-

1. N.H.S. acute beds in non-psychiatric, non-geriatric, non-paediatric or non-obstetric specialty.

2. N.H.S. wards or hospitals with geriatric beds.

3. N.H.S. wards, hospitals or hostels with psychiatric/mental illness/mental subnormality beds or places.
I have prepared a list which I enclose in the form of a computer printout of all such places in your district.

I hope to have a more detailed protocol to send to you in the next week but I would be most grateful if in the meantime you could alert relevant staff about the arrangements.

With many thanks for your help.

Yours sincerely,

Dr L.J. Donaldson MSc, FRCS(Ed),
Lecturer in Community Medicine.
2.6.5 Letter to Sector Administrators

Leicestershire Geriatric Census - 1979

The District Administrator has suggested that you might be kind enough to help us with some aspects of the arrangements of this survey.

Every person aged 65 years and over resident in any type of accommodation provided by the National Health Service, Social Services or voluntary and private agencies will be counted. Nursing and other staff immediately concerned in the care of the patient/resident will be asked to complete a short pro-forma which will include a brief assessment of the person's functional capacity. More detailed information will follow but at this stage it would be a great help to us if we could update our file on relevant N.H.S. accommodation within the District. In effect this includes three type of accommodation:-

1. N.H.S. acute beds in non-psychiatric, non-geriatric, non-paediatric or non-obstetric specialty.

2. N.H.S. wards or hospitals with geriatric beds.

3. N.H.S. wards, hospitals or hostels with psychiatric/mental illness/mental subnormality beds or places.

I have prepared a computer printout, which I enclose, of our most up-to-date information on these facilities in your District. Could I please ask you to amend it with respect to the following points:-

(a) Are there any omissions bearing in mind the three categories?

(b) Have there been any closures amongst the facilities listed?

(c) Is the number of beds/places listed reasonably accurate in each case?

Please feel free to write directly onto the computer printout rather than prepare a special tabulation.
I should add that census point is a midnight on 11/12 December 1979. Census forms will be delivered a few days in advance and collected during Wednesday 12 December.

With many thanks for your help.

Yours sincerely,

Dr L.J. Donaldson MSc, FRCS(Ed),
Lecturer in Community Health.

2.6.6 Letter to Homes and Hospitals in Private and Voluntary Sector

Leicestershire Census of the Elderly - 1979

You may remember that in December 1976 your home/hospital participated in the first Leicestershire Census of the Elderly. The census included all people over the age of 65 years resident in any type of accommodation provided by the N.H.S, Social Services and private and voluntary agencies within Leicestershire. Staff immediately concerned in the care of elderly residents/patients completed a short pro-forma for each person which included a brief assessment of their functional capacity.

The results of this study have been used by numerous local groups including the Working Party on the Care of the Elderly and published in medical and social work journals (a copy of an article in Social Work Today was sent to you recently). In order to obtain an up to date picture and complete the follow-up of the 1976 census, a second census of the elderly is to be undertaken on December 11/12, 1979, again organised by the Departments of Community Health and Psychiatry, Leicester Medical School; the Leicestershire Social Services Department and the Leicestershire Area Health Authority (Teaching).

On of the hallmarks of the 1976 census was the completeness of its coverage and in particular the great co-operation of the private and voluntary sector which allowed the total problem to be described.

We look forward to your help again on this occasion and
our staff will be in contact with you nearer the time.

Yours sincerely,

Dr L.J. Donaldson MSc, FRCS(Ed),
Lecturer in Community Health.
2.6.7 Letter to Geographical Co-ordinators

Leicestershire Geriatric Census - 1979

Thank you for agreeing to act as a co-ordinator in the forthcoming census of the elderly in Leicestershire. The census will be conducted along the same lines as the 1976 census of the elderly: every person aged 65 years and over in any accommodation provided by the National Health Service, Social Services or voluntary and private agencies within Leicestershire will be counted. Staff immediately concerned in the care of each elderly patient/resident will be asked to complete a short pro-forma which will include a brief assessment of the person's functional capacity.

For purposes of data collection we have divided Leicestershire into ten areas each of which will contain a range of types of institutions. There will be a geographical co-ordinator(s), like yourself, for each area. The area you have agreed to be responsible for is ........

You will be responsible for delivery and collection of census forms to each institution in your area. It is almost certain that Social Services will collect forms from their institutions in all areas and I will confirm this with you as soon as possible. In the previous census the only serious difficulty related to staff who were unhappy about completing forms without reassurances about confidentiality. I have therefore appended some notes for your guidance on why we need to identify the patient/resident by name and how we intend to assure confidentiality. It is crucial to the success of the census that we obtain as complete coverage as possible (ie. all over 65s enumerated) and that census forms are fully completed for each person. I would ask you to please check on these points when collecting forms from each institution.

Census point is technically at midnight on December 11/12, 1979. Census forms will be delivered to you by 3 December 1979, packaged for each place in your area. You are asked to distribute these packages to each institution during the week commencing 3 December 1979. Completed forms should then be collected commencing Wednesday 12.

I enclose a more detailed description of the census for your information, together with a listing of the institu-
tions in your area. There will be a few changes to this list before census day and I will let you have these amendments as they arise.

Once again very many thanks for your help, it is much appreciated.

Kind regards.

Yours sincerely,

Dr L.J. Donaldson MSc, FRCS(Ed),
Lecturer in Community Medicine.
2.6.8 Letter to Geographical Co-ordinators

Leicestershire Geriatric Census - 1979

I now enclose further details with respect to your role of geographical co-ordinator for Area........ ..

Please note the following instructions:-

1. An up to date list of institutions in your area is contained in the enclosed computer printout.

2. You will note that there have been changes to the previous listings I sent you. This new list, the computer printout, supersedes all previous listings and is the one you should work from.

3. A package of census cards already prepared for each listing will be delivered to you shortly.

4. Could you please deliver the package for each place on your list by hand during the week commencing 3 December 1979 (in the case of the larger hospitals it might be better to liaise with the appropriate nursing officer rather than calling on the wards directly).

5. Census point is midnight 11/12 December 1979.

6. Could you please collect completed forms during Wednesday 12 December.

7. When collecting the forms please check with staff that a) all patients/residents aged 65 years and over have been included (including temporary absentees); b) both sides of each form have been completed; c) all sections of each form have been completed.

8. You are not required to collect (although you must deliver to) forms from Social Services accommodation (ie. type 10); this will be done by Social Services staff themselves.

9. Please replace completed forms in their original packages and keep them. They will be collected from you, together with the summary of your return, by me in the days following the census.
Once again very many thanks for your help, without which it would be impossible to undertake this exercise.

Kind regards.

Yours sincerely,

Dr L.J. Donaldson MSc, FRCS(Ed),
Lecturer in Community Medicine.
2.6.9 The survey schedule
LEICESTERSHIRE CENSUS OF THE ELDERLY 1979

This form to be completed for each person in your ward/hospital/home who is 65 years or older (i.e. born on or before 11th December 1914). The information obtained will be treated in the strictest confidence.

Surname: ___________________________ Forenames: ___________________________

Permanent address (before admission): ______________________________________

Date of admission __________ to your hospital/home

Date of birth: __________

Hospital/Unit No.: ____________________________

Sex: 1. Male 2. Female (ring as appropriate)

Marital Status: 0 Single 1 Married 2 Widowed 3 Divorced 4 Separated 9 Not Known (ring as appropriate)

Place from which admitted (ring as appropriate)

0 Own home (alone) 1 Own home (not alone) 2 Own home (circumstances not known)
3 Relatives home 4 Sheltered housing (i.e. with warden)
5 Local authority residential home 6 Voluntary or private residential home
7 NHS accommodation (please give name of hospital and ward if known): ____________________________
8 Other (please specify):
9 Not known

If admitted from 5, 6 or 7 (as above) approximately how long had the person been there:

Diagnosis or reason for admission ____________________________________________

__________________________________________
__________________________________________
__________________________________________
__________________________________________

When completing the questions overleaf, consider the patient's/resident's activities during the last week only. When answering the questions, please consult others caring for the patient/resident in the last week as to his/her activities.
To indicate the correct answer to a question, tick the relevant box. Please tick only one answer for each question. If there are difficulties in answering these questions, for example, a patient in a coma, please complete as many as possible and comment below as necessary.

1. MOBILITY
   - Bedfast 3
   - Mobile with attendant or mechanical aid 2
   - Fully ambulant 0
   - Ambulant apart from stairs 1

2. CONTINENCE OF URINE
   - Was frequently incontinent during the week 3
   - Was incontinent at least once during the week 2
   - Needed raising at night or sending to the lavatory during the day in case of incontinence, but was not actually incontinent when this was done 1
   - Needed no raising or sending and was not incontinent 0

3. FAECAL INCONTINENCE
   - YES 1
   - NO 0

4. WASHING—DRESSING
   - Was shaved, washed or dressed at least once 2
   - Was supervised 1
   - Had no supervision 0
   - Could shave, wash and dress but was not supervised 0

5. FEEDING
   - Was spoon fed at least once during the week 2
   - Was not spoon fed but required supervision 1
   - Was neither spoon fed nor supervised 0

6. BEHAVIOUR
   - At Night
     - almost never restless 2
     - sometimes restless 3
     - almost always restless 4
   - During Day
     - He/she is confused (unable to find way around, loses possessions, etc.):
       - almost never confused 2
       - sometimes confused 3
       - almost always confused 4

7. VISION AND HEARING
   - Eyesight
     - can see (or can see with glasses) 2
     - partially blind 3
     - totally blind 4
   - Hearing
     - can hear (or can hear with hearing aid) 2
     - has hearing difficulty which interferes with communication 3
     - very deaf 4

Is your ward/home a suitable place in which to meet this particular person's needs?
   - 1. YES
   - 2. NO (ring as appropriate)

If NO, which of the following would better meet his/her needs (make one choice only from the list below):
   - 0 Own home (with domiciliary support if necessary)
   - 1 Relatives home
   - 2 Sheltered housing (i.e. with warden)
   - 3 Local authority, private or voluntary residential home
   - 4 N.H.S. psychiatric ward or hospital
   - 5 N.H.S. geriatric ward or hospital
   - 6 Other N.H.S. ward (medical, surgical or other)
   - 7 N.H.S. ward or hospital (not possible to specify type)
   - 8 Sub-normality hospital/hostel
   - 9 Other, specify: _________________________________________________________________________

Why does She/He need the alternative care you suggest?

__________________________________________________________________________________________

COMMENT (if appropriate):

__________________________________________________________________________________________

FORM COMPLETED BY: ___________________________ POSITION: ___________________________
2.7 STATISTICAL METHODS EMPLOYED

2.7.1 Life Table Analysis of Mortality

A life-table analysis of the mortality data was carried out to produce survival times from the time of the initial survey (for data on level of incapacity) and to estimate survival from the time of admission (for data on type of care, age and sex). The results are presented in Chapter 5, P5-43.

The basis of this standard life-table approach is that exposure to the risk of death is grouped into a number of person-months of observation. For each patient or resident, it is known whether or not they died and the time from admission or enumeration. The exposure time then, runs from the starting date (whether admission or enumeration) to the date of death or if they did not die, to the end of the corresponding follow-up period. The model takes each exposure interval and assumes a constant incidence rate of death in the interval.

The standard error of the estimates of the proportion survival was calculated using Greenwood's formula (Greenwood, 1926). For the purposes of setting confidence intervals, a complementary log-log transformation was used to impose normality.

A regression analysis of the life-table was carried out
using the generalised linear interactive modelling (GLIM) (Royal Statistical Society, 1978) to compare differences in survival in different groups taking account of other factors which significantly affected survival.

2.7.2 Age standardisation of mortality data

The mortality experience of the December 1976 institutional elderly population of Leicestershire and the various sub-groups within it (eg different types of care or incapacity groups) was compared to the general elderly population of Leicestershire using a conventional approach of indirect age-standardisation. Age- and sex-specific death rates for three age groups in Leicestershire: 65 - 74 years; 75 - 84 years and 85 years and over - were applied to the numbers in the same age and sex groups in the corresponding sub-group of the institutional elderly population, to produce 'expected' number of deaths for both sexes. The total numbers for the two sexes were then combined. The observed number of deaths, (ie those which actually occurred in the same sub-groups of the institutional population at the end of the time-period under study) was noted. The ratio of the observed to the expected deaths expressed as a percentage was then the standardised mortality ratio (SMR). The standard error of the natural logarithm of the SMR was calculated from the formula $\sqrt{\frac{1}{D}}$ where D was the observed number of deaths. Ninety-five per cent confidence intervals for the natural logarithm were expressed as $\log_e \text{SMR} \pm 2\sqrt{\frac{1}{D}}$. The antilogarithm was then taken and the confidence interval
expressed. The denominator for the standard population's age-specific rates chosen in each case was the population of Leicestershire at mid-1977, the OPCS (Trent Regional Health Authority, 1981) final estimate for it. However, it should be noted that they not routinely publish estimates which include the numbers in the very elderly population because of the potential unreliability of these estimates which, in small areas, may be based on very small numbers. The population of Leicestershire, however is around 850,000 and the number of over 85s was estimated by the OPCS to be 7400 in mid-1977 (Trent Regional Health Authority, 1981). Thus, it is hoped that gross unreliability due to small numbers will not be a problem in the context of Leicestershire. The numerator of age-specific death rate of the standard population varied according to the length of follow-up period. For the mortality experience of the 1976 institutional elderly population, a three year mortality rate for the standard population was applied, as in the case in the Registrar General's occupational mortality (Office of Population, Censuses and Surveys, 1978). For the first year follow-up a one-year mortality rate was applied and for the cause of death in which information on two years mortality by cause was collected on the institutional population, the two year mortality rate of the standard population was applied.

2.7.3 Changes over Time

Tests of significance between levels of incapacity and age-structure of the two institutional populations (1976 and
1979) who had been resident for less than a year (i.e., independent samples) were undertaken using the method of Clayton (1974) for the analysis of ordered categorical data using odds ratio statistics. This method was also used to test for a trend with age in the ratio of deterioration to improvement in functional capacity in surviving continuously resident old people whose status changed in the three year study interval. The results are presented in Chapter 4, P4-17. In order to compare the extent of deterioration in this same group of continuously resident patients in different types of care taking account of other variables which significantly influenced deterioration in those who changed, a regression analysis model was applied using the Generalised Linear Interactive Modelling system (GLIM) (Royal Statistical Society, 1978) utilising the method of Clayton (1982).

The model had as its dependent variable: deterioration or improvement, expressed as log odds in favour of deterioration. The factors considered were age, sex, length of stay, initial total A.D.L. score and type of institution.

To investigate the effects of a large number of variables both singly and together on an event such as deterioration in function would traditionally be approached by multiple cross-tabulation. This becomes impractical with large numbers of variables because the numbers in each cell of such a table become too small, thus the need for a more powerful analytical tool such as regression analysis.
2.7.4 Calculation of Relative Risk for Outcome Data

The six month follow-up of the 1979 elderly population who had been in N.H.S. hospitals or social services homes for the elderly yielded two alternative outcomes in each of three groups of patients:

a) For all patients, death versus survival
b) For survivors, still resident versus discharged or transferred; and
c) For survivors who were no longer still resident, discharge home versus transfer to another institution.

In each of the three groups, outcome was expressed as odds in favour of the particular alternative outcome (eg. odds of death as against survival). In examining the effect of different variables (eg. age) on these outcomes a measure of relative risk was constructed from the ratio of these odds. For each variable, the results were expressed as the relative risk of a particular alternative outcome (eg. death versus survival) for the particular level of the variable under study in relation to a fixed variable (eg. those aged 85-94 years compared to those aged 65-74 years), this fixed variable was then by definition unity (ie. 100%). Ninety-five percent confidence limits for the odds ratios were calculated by the usual method, ie. by adding and subtracting two standard errors to the log of the odds ratio and then converting back to the arithmetic scale.
In examining the difference between institutions an additional analysis was carried out to take account of differences in some other variables which significantly affected outcome. This was a regression analysis again employing GLIM (Royal Statistical Society, 1978).
CHAPTER 3

RESULTS: CHARACTERISTICS OF 1979 POPULATION.
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<td>3-24</td>
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</tbody>
</table>
This chapter of results describes the characteristics of elderly people in institutional care in Leicestershire at the time of the one day survey in December of 1979.

The section is organised into three parts. Section 3.1 describes the demographic (age, sex, marital status) characteristics and factors relating to the admission (length of stay, source of admission) of patients and residents in each of six types of care: NHS geriatric beds, NHS psychiatric beds, NHS acute beds, homes for the elderly (social services department, private and voluntary), homes for the handicapped (social services department and voluntary) and private nursing homes. Data are related to the population of Leicestershire where possible.

Section 3.2 examines patterns of incapacity in the same six types of care using staff's assessment of the elderly person's level of function in relation to five basic activities of daily living (mobility, urinary and faecal incontinence, washing and dressing and feeding) and their behaviour during the day and at night. Each item of assessment contained a number of descriptive categories and data are presented as the frequency and relative frequency of people in each category. In addition, similar data are presented in relation to a total activities of daily living (total ADL) score which was the sum of scores allocated to different categories of the five individual items and had a possible range of 0-11, with a score of 11 denoting highest incapacity.
Section 3.3 presents the results of the response of nursing and care staff to being asked "is your ward/home a suitable place in which to meet this particular person's needs?". It reports the extent of 'misplacement' in each type of care, contrasts levels of incapacity in misplaced and suitably-placed patients and residents and, for the misplaced group, describes staff's opinion on what sort of care "would better meet his/her needs".

3.1 DEMOGRAPHIC CHARACTERISTICS

3.1.1 Age and Sex

It can be seen (Figure 4) that the proportion of over-65s in Leicestershire who were in some form of care on the day of the survey was relatively small: the 4,678 elderly people enumerated in hospitals and homes in December 1979 represented 4% of the estimated population of Leicestershire aged 65 years and over in mid-1979. Within the different age groups amongst the over-65s, this proportion increased with greater age, so that for example 22% of over-85s were in some form of care.
Figure 4: Proportion of Elderly Population of Leicestershire in all Types of Care in December 1979

Age-specific residency ratios (per thousand population) for males (Figure 5) showed that similar proportions of the population in the age-group 65-74 years were resident in homes for the elderly, acute beds and psychiatric beds. The proportion in geriatric beds was lower.
Figure 5: Age-specific Residency Ratios (Log Ratio per Thousand Population) for Elderly Males by Different Types of Care, 1979*

*Homes for the handicapped and private nursing homes have been excluded because of relatively small numbers.

For the two older male age-groups, the proportion of the respective populations in homes for the elderly was greater in each case than those in other types of care. The pattern for females (Figure 6) was similar, although a higher proportion of the population in the youngest female age-group was also in homes for the elderly.
Figure 6: Age-specific Residency Ratios (Log Ratio per Thousand Population) for Elderly Females by Different Types of Care, 1979*

*Homes for the handicapped and private nursing homes have been excluded because of relatively small numbers.

A similar or slightly higher proportion of the female population was in the different forms of care, with the exception of the N.H.S. acute beds. Here, a higher proportion of the male population in each age-group was in acute beds than in the females.
Figure 7: Age Structures of Elderly Populations in Different Types of Care* and for the Whole of Leicestershire, 1979

<table>
<thead>
<tr>
<th>Age (years)</th>
<th>Males</th>
<th>Percentage</th>
<th>Females</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>85 &amp; over</td>
<td>100</td>
<td>50</td>
<td>0</td>
<td>50</td>
</tr>
<tr>
<td>75-84</td>
<td>100</td>
<td>50</td>
<td>0</td>
<td>50</td>
</tr>
<tr>
<td>65-74</td>
<td>100</td>
<td>50</td>
<td>0</td>
<td>50</td>
</tr>
</tbody>
</table>

- Geriatric
- Psychiatric
- Acute
- Homes for Elderly
- Handicapped
- Private

<table>
<thead>
<tr>
<th>Total numbers in each group</th>
<th>Leicestershire</th>
</tr>
</thead>
<tbody>
<tr>
<td>802,694</td>
<td>485</td>
</tr>
<tr>
<td>343</td>
<td></td>
</tr>
<tr>
<td>143,637</td>
<td></td>
</tr>
</tbody>
</table>

*Twenty two people in institutions whose date of birth was not recorded have been excluded.

The institutional population was older than the elderly population of Leicestershire as a whole (Figure 7) and the oldest population was in the homes for the handicapped although the numbers were the smallest in this setting (Table 9).
The elderly population of psychiatric hospitals contained two distinct groups: those who were admitted earlier in life and had grown old within the institution (the so-called 'graduate' elderly) and those who were admitted with mental illness when already elderly. In the present study the two populations differed in age-structure: in psychiatric hospitals, 48% of elderly people admitted more than five years previously were aged 75 years or older whilst the corresponding figure for those who had been resident for less than five years was 70%.

In both groups, the female population was older but in the 'graduate' elderly, although there was an excess of females, it was lower (2.0 to one) than in the more recently admitted elderly (2.5 to one).
This is reflected in the analysis by age at admission to care.

A small proportion (7% overall) of the institutional population was younger than 65 years at the time of admission (Table 10) but in the N.H.S. psychiatric wards and hospitals, a quarter had been admitted under 45 years of age.

Table 10: Distribution of 1979 elderly institutional population by age at admission to types of care: percentages

<table>
<thead>
<tr>
<th>TYPE OF CARE</th>
<th>Age(Years) at admission</th>
<th>NHS Geriatric beds</th>
<th>NHS Psychiatric beds</th>
<th>NHS Acute beds</th>
<th>Homes for the Elderly</th>
<th>Homes for the Handicapped</th>
<th>Private Nursing Homes</th>
<th>All Types of Care</th>
</tr>
</thead>
<tbody>
<tr>
<td>Less than 45</td>
<td>1</td>
<td>24</td>
<td>0</td>
<td>&lt;1</td>
<td>1</td>
<td>0</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td>45 - 64</td>
<td>2</td>
<td>16</td>
<td>1</td>
<td>2</td>
<td>4</td>
<td>2</td>
<td>4</td>
<td>4</td>
</tr>
<tr>
<td>65 - 74</td>
<td>19</td>
<td>21</td>
<td>47</td>
<td>20</td>
<td>15</td>
<td>13</td>
<td>22</td>
<td></td>
</tr>
<tr>
<td>75 - 84</td>
<td>47</td>
<td>30</td>
<td>39</td>
<td>45</td>
<td>39</td>
<td>43</td>
<td>43</td>
<td></td>
</tr>
<tr>
<td>85 and over</td>
<td>32</td>
<td>9</td>
<td>13</td>
<td>32</td>
<td>41</td>
<td>42</td>
<td>28</td>
<td></td>
</tr>
<tr>
<td>All age groups</td>
<td>100</td>
<td>100</td>
<td>100</td>
<td>100</td>
<td>100</td>
<td>100</td>
<td>100</td>
<td></td>
</tr>
<tr>
<td>N(100%)</td>
<td>802</td>
<td>694</td>
<td>485</td>
<td>2252</td>
<td>80</td>
<td>343</td>
<td>4656</td>
<td></td>
</tr>
</tbody>
</table>

1 22 people (0.5% of total) whose date of birth was not recorded have been excluded.

At the other extreme of the age distribution, N.H.S. geriatric wards and hospitals and the three non-N.H.S. facilities contained a higher proportion (between a third and two fifths) of patients and residents who had been very elderly (85 years or older) at the time of their admission.

The elderly population in any type of geriatric care has been grouped together for purposes of comparison with...
the other major types of care. However, in the 1979 elderly population of Leicestershire it was possible to identify three different types of geriatric care: those geriatric beds within general hospitals; beds in the single large geriatric 'community' hospital (which was opened in Leicestershire after the 1976 survey had been carried out); and beds in smaller 'peripheral' geriatric hospitals located in the more peripheral parts of the Leicestershire area. These types of care are described more fully in the discussion (see chapter 6, page 6-5).

The populations of peripheral geriatric units and the community hospital were similar in age structure and both were generally older than that in geriatric beds within general hospitals (Table 11).

Table 11: Cumulative percentages of elderly people in different kinds of geriatric care by age group, 1979.

<table>
<thead>
<tr>
<th>Age (years)</th>
<th>Type of Geriatric Care</th>
<th>All Geriatric</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>General</td>
<td>Community</td>
</tr>
<tr>
<td>95 and over</td>
<td>2</td>
<td>5</td>
</tr>
<tr>
<td>85 and over</td>
<td>28</td>
<td>36</td>
</tr>
<tr>
<td>75 and over</td>
<td>76</td>
<td>84</td>
</tr>
<tr>
<td>65 and over</td>
<td>100 (168)</td>
<td>100 (162)</td>
</tr>
</tbody>
</table>

3 people have been excluded because age was not recorded.

3.1.2 Marital status

Sixty one per cent of patients and residents were widowed whilst the next largest group (one fifth) was single elderly people, the psychiatric hospital population contain-
ing the highest proportion of these (Table 12). Other major differences in marital status were the very high proportion (about half) of married elderly people in the NHS acute beds and the very low proportions (5-7%) in this category in homes for the elderly and private nursing homes.

### TABLE 12: Distribution of 1979 elderly institutional population by marital status in different types of care: percentages (numbers)

<table>
<thead>
<tr>
<th>Marital Status</th>
<th>NHS Geriatric beds</th>
<th>NHS Psychiatric beds</th>
<th>NHS Acute beds</th>
<th>Homes for the Elderly</th>
<th>Homes for the Handicapped</th>
<th>Private Nursing Homes</th>
<th>All Types of Care</th>
</tr>
</thead>
<tbody>
<tr>
<td>Single</td>
<td>12 (97)</td>
<td>34 (240)</td>
<td>9 (46)</td>
<td>21 (467)</td>
<td>16 (15)</td>
<td>22 (76)</td>
<td>20 (941)</td>
</tr>
<tr>
<td>Married</td>
<td>20 (159)</td>
<td>20 (138)</td>
<td>43 (209)</td>
<td>5 (105)</td>
<td>2 (2)</td>
<td>7 (24)</td>
<td>14 (637)</td>
</tr>
<tr>
<td>Widowed</td>
<td>62 (500)</td>
<td>39 (270)</td>
<td>39 (189)</td>
<td>70 (1589)</td>
<td>60 (51)</td>
<td>68 (237)</td>
<td>61 (2836)</td>
</tr>
<tr>
<td>Divorced</td>
<td>1 (5)</td>
<td>3 (20)</td>
<td>1 (5)</td>
<td>1 (25)</td>
<td>-</td>
<td>1 (4)</td>
<td>1 (59)</td>
</tr>
<tr>
<td>Separated</td>
<td>1 (4)</td>
<td>1 (6)</td>
<td>1 (2)</td>
<td>1 (19)</td>
<td>-</td>
<td>-</td>
<td>1 (31)</td>
</tr>
<tr>
<td>Not Known</td>
<td>4 (40)</td>
<td>3 (24)</td>
<td>8 (34)</td>
<td>2 (53)</td>
<td>20 (17)</td>
<td>2 (6)</td>
<td>3 (174)</td>
</tr>
<tr>
<td>Total</td>
<td>100 (806)</td>
<td>100 (698)</td>
<td>100 (485)</td>
<td>100 (2258)</td>
<td>100 (85)</td>
<td>100 (347)</td>
<td>100 (4678)</td>
</tr>
</tbody>
</table>
Corresponding data for the whole of Leicestershire were not yet available from the 1981 census and comparison of the 1979 institutional population with the 1971 census data for Leicestershire is crude because of the difference in time periods, in which ageing of the population had taken place. Data from the 1971 census were available in two elderly age-groups (65-74 years and 75 years and over) and three marital status groups (married, single, and widowed/divorced) - Leicestershire County Council (1981).

Taking the elderly population (65 years and over) as a whole for Leicestershire in 1971, 54% were married, 35% were widowed or divorced and 11% were single. Only for the institutional population in acute beds was the proportion of marital statuses near to this figure and it had the youngest age-structure, closest to the general population. In the population aged 75 years and over in Leicestershire in 1971, 35% were married, 53% were widowed or divorced and 12% were single. The striking feature in comparing this group to the institutional population is the extent to which married people were scarce in the homes for the elderly compared to the general population and the extent to which the proportions of widowed/divorced and single people were in excess, even for the over 75s. The private nursing homes had a similar pattern to the homes for the elderly with an excess of single, divorced and widowed people compared to the general population aged 75 years and over. The populations of both types of care were relatively old, however.
3.1.3 **Length of Stay**

For all types of care taken together, more than half the patients and residents fell into two lengths of stay groups. Just over a quarter had been admitted to care under three months before the survey and a quarter had been in care for between two and five years (Table 13).

**Table 13: Cumulative percentages of elderly people in different types of care in 1979 by length of stay**

<table>
<thead>
<tr>
<th>Length of Stay</th>
<th>NHS Geriatric beds</th>
<th>NHS Psychiatric beds</th>
<th>NHS Acute beds</th>
<th>Homes for the Elderly</th>
<th>Homes for the Handicapped</th>
<th>Private Nursing Homes</th>
<th>All Types of Care</th>
</tr>
</thead>
<tbody>
<tr>
<td>&lt; 3 mths</td>
<td>48</td>
<td>13</td>
<td>94</td>
<td>13</td>
<td>13</td>
<td>19</td>
<td>28</td>
</tr>
<tr>
<td>&lt; 6 mths</td>
<td>58</td>
<td>16</td>
<td>97</td>
<td>19</td>
<td>18</td>
<td>27</td>
<td>34</td>
</tr>
<tr>
<td>&lt; 9 mths</td>
<td>64</td>
<td>19</td>
<td>98</td>
<td>24</td>
<td>24</td>
<td>36</td>
<td>39</td>
</tr>
<tr>
<td>&lt; 1 year</td>
<td>69</td>
<td>23</td>
<td>99</td>
<td>29</td>
<td>30</td>
<td>43</td>
<td>44</td>
</tr>
<tr>
<td>&lt; 2 years</td>
<td>81</td>
<td>35</td>
<td>100</td>
<td>47</td>
<td>47</td>
<td>59</td>
<td>58</td>
</tr>
<tr>
<td>&lt; 5 years</td>
<td>96</td>
<td>53</td>
<td>100</td>
<td>82</td>
<td>78</td>
<td>89</td>
<td>83</td>
</tr>
<tr>
<td>&lt; 10 years</td>
<td>99</td>
<td>59</td>
<td>100</td>
<td>96</td>
<td>96</td>
<td>99</td>
<td>92</td>
</tr>
<tr>
<td>&lt; 40 years</td>
<td>100</td>
<td>100</td>
<td>100</td>
<td>100</td>
<td>100</td>
<td>100</td>
<td>100</td>
</tr>
</tbody>
</table>

N(100%) = 805 698 485 2258 85 347 4678

In geriatric wards and hospitals nearly half had been admitted within the previous three months and over four fifths within two years of the survey. As would be expected from the observations above in age at admission, psychiatric wards and hospitals contained a much higher proportion of longer-stay patients than any of the other types of care: almost two thirds had been admitted more than two years previously and almost a half longer than five years. Outside the NHS, just under half and about four fifths had been ad-
mitted within the previous two and five years respectively in both homes for the elderly and handicapped and, whilst in private nursing homes there was a shift towards more recent dates of admission, the population there was still relatively long-stay compared to the NHS geriatric facilities.

3.1.4 Source of Admission

Within the NHS premises (Fig. 8) the highest proportion (79%) admitted directly from the community (their own or a relative's home) was in the acute beds. In the psychiatric hospital population, however, a higher proportion (9%) were admitted from a relative's home than compared to elderly people in acute or geriatric beds. Within NHS accommodation, aside from the community, source of admission was most often another type of NHS facility. Indeed 39% of patients in geriatric beds had themselves been admitted directly from other geriatric beds. This was largely accounted for by transfer of elderly people from geriatric wards in general hospitals to peripheral geriatric units. Similar within type of facility transfer was seen in other NHS populations, although on a smaller scale. Elderly people who were in psychiatric beds came more often directly from homes for the elderly (10% of cases) than did those in geriatric beds (5%) or acute beds (3%).

Within the three types of geriatric care, a much higher proportion (77%) of patients in geriatric units within general hospitals had been admitted directly from the community,
whereas the corresponding proportions in the other two types were similar and lower: 27% (community hospital), 28% (peripheral geriatric units). Similarly, with respect to the other sources of admission, the community hospital and peripheral geriatric units took a higher and similar proportion of admissions (45% and 46% respectively) from geriatric beds within general hospitals or from NHS acute beds (20% and 16% respectively) than was the case for geriatric units within general hospitals. In the latter, only 7% were admitted from NHS acute beds.
Figure 8: Source of admission (percentages) of elderly patients in NHS premises in 1979.
For old people in private nursing homes and homes for the handicapped, a greater proportion had been admitted from the community than had residents of homes for the elderly (Figure 9). However, in this latter group, the proportion (15%) admitted from a relative's home was greater than any other type of accommodation both outside or within the NHS.

For the non-NHS facilities, greater proportions of elderly people had been admitted from NHS wards and hospitals than vice versa. Indeed, almost a quarter of residents in homes for the elderly had been admitted from NHS facilities...
(14% from geriatric beds), a figure considerably greater than the 5% of patients in geriatric beds who had come directly from homes for the elderly. In the case of the relationship between psychiatric beds and homes for the elderly, the situation was more evenly balanced.

Admission from the same type of facility did occur in the case of homes for the elderly, and comments of staff on the survey cards indicated that transfers between homes were commonly to allow residents to be closer to relative's or friend's dwellings, although a smaller proportion were due to closure of homes.

In both NHS and non-NHS premises, a very small proportion of elderly people had been admitted directly from sheltered housing schemes. The relatively high figure of 7% for people in homes for the handicapped undoubtedly reflected a tendency for such homes to be in close proximity to sheltered housing schemes run by the same organisations. There were differences in the proportion of all admissions from the community who had been living alone and whilst the highest proportion was in homes for the handicapped, 62% of people admitted from the community to homes for the elderly had been living alone. The corresponding proportion for the geriatric hospital population was 41%.

3.2 LEVELS OF INCAPACITY
3.2.1 Mobility

Of the entire population of elderly people assessed in institutional care in December 1979, 10% were bedfast and 33% fully ambulant (Table 14).

Table 14 - Distribution of Elderly People with different degrees of incapacity in mobility: percentages (numbers) in each type of care, 1979.

<table>
<thead>
<tr>
<th>Degree of Incapacity</th>
<th>NHS Geriatric Beds</th>
<th>NHS Psychiatric beds</th>
<th>NHS Acute Beds</th>
<th>Homes for the Elderly</th>
<th>Homes for the Handicapped</th>
<th>Private Nursing Homes</th>
<th>All Types of Care</th>
</tr>
</thead>
<tbody>
<tr>
<td>Fully ambulant</td>
<td>7 (43)</td>
<td>55 (365)</td>
<td>10 (10)</td>
<td>36 (781)</td>
<td>36 (29)</td>
<td>23 (73)</td>
<td>33 (1301)</td>
</tr>
<tr>
<td>Ambulant except stairs</td>
<td>7 (42)</td>
<td>14 (94)</td>
<td>9 (9)</td>
<td>17 (372)</td>
<td>8 (6)</td>
<td>8 (26)</td>
<td>14 (549)</td>
</tr>
<tr>
<td>Mobile with attendant or aid</td>
<td>48 (293)</td>
<td>25 (164)</td>
<td>56 (56)</td>
<td>44 (940)</td>
<td>51 (41)</td>
<td>54 (172)</td>
<td>43 (1666)</td>
</tr>
<tr>
<td>Bedfast</td>
<td>38 (236)</td>
<td>6 (36)</td>
<td>25 (25)</td>
<td>3 (54)</td>
<td>5 (4)</td>
<td>15 (49)</td>
<td>10 (404)</td>
</tr>
<tr>
<td>All Degrees</td>
<td>100 (614)</td>
<td>100 (659)</td>
<td>100 (100)</td>
<td>100 (2147)</td>
<td>100 (90)</td>
<td>100 (320)</td>
<td>100 (3920)</td>
</tr>
</tbody>
</table>

* Excludes all people resident for less than 28 days.

Much of the variation between types of care was contained in the high proportion of bedfast patients in NHS geriatric wards and hospitals and the relatively low proportion of similarly incapacitated residents of homes for the elderly and psychiatric hospitals. The population in psychiatric hospitals contained the highest proportion (just over one half) of elderly people who were fully ambulant (Fig 10) and the geriatric hospital population the lowest: under a tenth.

Within the psychiatric hospitals, 67% of those admitted more than five years previously were fully ambulant, whilst for those admitted less than five years before, the corres-
ponding figure was 44%.

**Figure 10: Percentage of Elderly People in each type of care in 1979 who were fully ambulant**

The most highly incapacitated population overall was the geriatric but because homes for the elderly represented the largest of all institutional populations, it is important to take account of absolute numbers of people with different levels of incapacity in this setting as well as proportions.

### 3.2.2 Urinary Incontinence

Twenty-seven per cent of the elderly people enumerated in institutions in Leicestershire in December 1979 were fre-
quently incontinent of urine during one week period preceding the census (in relation to which staff were asked to make their assessment)—Table 15. Over half of the patients and residents in all types of institution were completely free of any degree of urinary incontinence.

Table 15 - Distribution of Elderly people with different degrees of urinary incontinence: percentages (numbers) in each type of care, 1979.

<table>
<thead>
<tr>
<th>Type of Care</th>
<th>Degree of Incapacity</th>
<th>NHS Geriatric beds</th>
<th>NHS Psychiatric beds</th>
<th>NHS Acute Beds</th>
<th>Homes for the Elderly</th>
<th>Homes for the Handicapped</th>
<th>Private Nursing Homes</th>
<th>All Types of Care</th>
</tr>
</thead>
<tbody>
<tr>
<td>Not incontinent</td>
<td>22</td>
<td>(134)</td>
<td>39</td>
<td>(257)</td>
<td>56</td>
<td>(55)</td>
<td>68</td>
<td>(1464)</td>
</tr>
<tr>
<td>Needed raising or sending</td>
<td>10</td>
<td>(60)</td>
<td>10</td>
<td>(65)</td>
<td>10</td>
<td>(10)</td>
<td>6</td>
<td>(129)</td>
</tr>
<tr>
<td>Incontinent once during week</td>
<td>15</td>
<td>(87)</td>
<td>12</td>
<td>(79)</td>
<td>7</td>
<td>(7)</td>
<td>10</td>
<td>(204)</td>
</tr>
<tr>
<td>Frequently incontinent</td>
<td>53</td>
<td>(320)</td>
<td>39</td>
<td>(257)</td>
<td>27</td>
<td>(27)</td>
<td>16</td>
<td>(350)</td>
</tr>
<tr>
<td>All Degrees</td>
<td>100</td>
<td>(601)</td>
<td>100</td>
<td>(658)</td>
<td>100</td>
<td>(99)</td>
<td>100</td>
<td>(2147)</td>
</tr>
</tbody>
</table>

* Excludes all people residents for less than 28 days and 17 for whom no information was recorded.

Overall, homes for the elderly contained the highest proportion of elderly people who were fully continent of urine (Fig 11) and the NHS geriatric beds the least. The consideration of absolute numbers in the context of homes for the elderly is however, worthy of re-emphasis: the 350 frequently incontinent old people in this setting was the highest number of any of the types of care studied.
Next to geriatric facilities, the highest proportion of frequently incontinent elderly people (nearly two-fifths) was in the NHS psychiatric hospitals but again this population was not homogeneous. In elderly psychiatric patients with lengths of stay under five years, an identical proportion (53%) as in the geriatric hospitals were frequently incontinent of urine. In the longer-stay group, the corresponding figure was 24%; this latter proportion represented 78 'graduate' elderly people.

Other institutions contained lower proportions of fre-
ently incontinent patients but overall the proportion scoring highest in terms of this activity of daily living was relatively high, more so, for example, than the proportions assessed as most highly incapacitated for mobility.

3.2.3 Faecal Incontinence

Twenty-four per cent of the elderly people enumerated in institutions in Leicestershire in December 1979 were incontinent of faeces (Table 16).

<table>
<thead>
<tr>
<th>Degree of Incapacity</th>
<th>Type of Care</th>
<th>All Types of Care</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>NHS Geriatric beds</td>
<td>(386) (2988)</td>
</tr>
<tr>
<td></td>
<td>NHS Psychiatric beds</td>
<td>(394) (2988)</td>
</tr>
<tr>
<td></td>
<td>NHS Acute beds</td>
<td>(83) (100)</td>
</tr>
<tr>
<td></td>
<td>Homes for the Elderly</td>
<td>(1862) (100)</td>
</tr>
<tr>
<td></td>
<td>Homes for the Handicapped</td>
<td>(49) (100)</td>
</tr>
<tr>
<td></td>
<td>Private Nursing Homes</td>
<td>(224) (100)</td>
</tr>
<tr>
<td>No faecal incontinence</td>
<td></td>
<td>76 (100)</td>
</tr>
<tr>
<td>Incontinent of faeces</td>
<td></td>
<td>24 (100)</td>
</tr>
</tbody>
</table>

* Excludes all people resident for less than 28 days and 10 on whom no information was recorded.

The greatest proportion of faecally incontinent elderly people was in the psychiatric hospital population where the prevalence in the elderly with lengths of stay under five years was particularly high (53%) relative to other types of care. Amongst the 'graduate' elderly, the number of faecally incontinent patients was 87 (27% of the total in that group).
A lower proportion of faecally incontinent patients was noted in the geriatric wards and hospitals than in the shorter stay psychiatric patients whilst the lowest prevalence was in homes for the elderly where 14% of residents were incapacitated in this way.

3.2.4 Double Incontinence

Almost a fifth of the population of elderly patients and residents in Leicestershire in December 1979 were doubly incontinent (i.e. faecal plus frequent urinary, incontinence (Table 17).

<table>
<thead>
<tr>
<th>Degree of Incapacity</th>
<th>NHS Geriatric Beds</th>
<th>NHS Psychiatric Beds</th>
<th>NHS Acute Beds</th>
<th>Homes for the Elderly</th>
<th>Homes for the Handicapped</th>
<th>Private Nursing Homes</th>
<th>All Types of Care</th>
</tr>
</thead>
<tbody>
<tr>
<td>Double Incontinence</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Absent</td>
<td>68 (409)</td>
<td>66 (435)</td>
<td>89 (88)</td>
<td>90 (1932)</td>
<td>76 (54)</td>
<td>74 (236)</td>
<td>81 (3154)</td>
</tr>
<tr>
<td>Present</td>
<td>32 (192)</td>
<td>34 (223)</td>
<td>11 (11)</td>
<td>10 (215)</td>
<td>24 (17)</td>
<td>26 (84)</td>
<td>19 (742)</td>
</tr>
<tr>
<td>Both Categories</td>
<td>100 (601)</td>
<td>100 (658)</td>
<td>100 (99)</td>
<td>100 (2147)</td>
<td>100 (71)</td>
<td>100 (320)</td>
<td>100 (3896)²</td>
</tr>
</tbody>
</table>

Frequently incontinent of urine together with faecal incontinence

² Excludes all people resident for less than 28 days and 24 on whom no information was recorded.

The major differences between the different populations were the relatively high percentage of double incontinence amongst elderly patients in geriatric and psychiatric beds (but again this was greatest, 47% for the shorter stay psychiatric patients) and the relatively low proportion of re-
sidents in homes for the elderly with this degree of incapacity. Nevertheless, the latter exceeded in absolute numbers patients in geriatric hospitals with double incontinence (215 compared with 192).

3.2.5 Washing and Dressing

Forty-two percent of the population of elderly people enumerated in institutions in Leicestershire in December 1979 were washed, dressed or shaved by staff at least once during the previous week whilst a further 24% had supervision in this activity (Table 18).

Table 18: Distribution of Elderly people with different degrees of incapacity in washing and dressing: percentages (numbers) in each type of care, 1979.

<table>
<thead>
<tr>
<th>Degree of Incapacity</th>
<th>Type of Care</th>
<th>NHS geriatric beds</th>
<th>NHS psychiatric beds</th>
<th>NHS acute beds</th>
<th>Homes for the elderly</th>
<th>Homes for the handicapped</th>
<th>Private nursing homes</th>
<th>All types of care</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>No supervision</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>13</td>
<td>12</td>
<td>23</td>
<td>17</td>
<td>46</td>
<td>56</td>
<td>14</td>
<td>34</td>
<td>34</td>
</tr>
<tr>
<td></td>
<td>(81)</td>
<td>(153)</td>
<td>(17)</td>
<td>(976)</td>
<td>(44)</td>
<td>(44)</td>
<td>(1315)</td>
<td></td>
</tr>
<tr>
<td>Supervised</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>25</td>
<td>25</td>
<td>20</td>
<td>41</td>
<td>24</td>
<td>25</td>
<td>26</td>
<td>26</td>
<td>24</td>
</tr>
<tr>
<td></td>
<td>(156)</td>
<td>(132)</td>
<td>(41)</td>
<td>(524)</td>
<td>(20)</td>
<td>(82)</td>
<td>(955)</td>
<td></td>
</tr>
<tr>
<td>Washed,dressed or shaved</td>
<td>62</td>
<td>57</td>
<td>42</td>
<td>30</td>
<td>19</td>
<td>60</td>
<td>60</td>
<td>42</td>
</tr>
<tr>
<td></td>
<td>(377)</td>
<td>(374)</td>
<td>(42)</td>
<td>(647)</td>
<td>(15)</td>
<td>(194)</td>
<td>(1649)</td>
<td></td>
</tr>
<tr>
<td>All degrees</td>
<td>100</td>
<td>100</td>
<td>100</td>
<td>100</td>
<td>100</td>
<td>100</td>
<td>100</td>
<td>100</td>
</tr>
<tr>
<td></td>
<td>(614)</td>
<td>(659)</td>
<td>(100)</td>
<td>(2147)</td>
<td>(79)</td>
<td>(320)</td>
<td>(3919)</td>
<td></td>
</tr>
</tbody>
</table>

Excludes all people resident for less than 28 days including 1 person on whom no information was recorded.

The most incapacitated groups were in geriatric facilities and private nursing homes. The proportion in psychiatric wards and hospitals was almost as high with 41% and 71% of
patients being washed, dressed or shaved amongst the 'graduate' and 'non-graduate' elderly respectively. The comparable figure for homes for the elderly was lower, but at 30% was the highest proportion in the severest incapacity category of any of the activities of daily living which were included in the assessment.

3.2.6 Feeding

In terms of capacity for self-care in feeding, 67% of patients and residents fed themselves without help or supervision whilst 11% were spoonfed in the previous week (Table 19).

Table 19: Distribution of elderly people with different degrees of incapacity in feeding: percentages (numbers) in each type of care, 1979.

<table>
<thead>
<tr>
<th>Degree of Incapacity</th>
<th>Type of Care</th>
<th>NHS geriatric beds</th>
<th>NHS psychiatric beds</th>
<th>NHS acute beds</th>
<th>Homes for the elderly</th>
<th>Homes for the handicapped</th>
<th>Private nursing homes</th>
<th>All types of care</th>
</tr>
</thead>
<tbody>
<tr>
<td>No supervision required</td>
<td>49 (303)</td>
<td>52 (342)</td>
<td>69 (68)</td>
<td>79 (1705)</td>
<td>68 (54)</td>
<td>51 (163)</td>
<td>67 (2675)</td>
<td></td>
</tr>
<tr>
<td>Supervision required</td>
<td>29 (176)</td>
<td>35 (229)</td>
<td>20 (20)</td>
<td>15 (323)</td>
<td>29 (23)</td>
<td>30 (97)</td>
<td>22 (868)</td>
<td></td>
</tr>
<tr>
<td>Spoonfed</td>
<td>22 (135)</td>
<td>13 (88)</td>
<td>11 (11)</td>
<td>6 (119)</td>
<td>3 (3)</td>
<td>19 (60)</td>
<td>11 (416)</td>
<td></td>
</tr>
<tr>
<td>All degrees</td>
<td>100 (614)</td>
<td>100 (659)</td>
<td>100 (99)</td>
<td>100 (2147)</td>
<td>100 (80)</td>
<td>100 (320)</td>
<td>100 (3919f)</td>
<td></td>
</tr>
</tbody>
</table>

Excludes all people resident for less than 28 days and one on whom no information was recorded.

Within the three types of NHS premises, the population in geriatric wards and hospitals was the most incapacitated:
22% had been spoon-fed. Although this proportion was much lower in NHS psychiatric facilities, the proportion of elderly people who had required supervision whilst eating was greater here than in the geriatric sector. Again, the elderly population who had been in psychiatric care for a shorter time was more incapacitated than their longer-stay counterparts. In the NHS acute beds, about a tenth of the elderly people had been spoonfed. In the institutions outside the NHS, the most incapacitated group was in private nursing homes. Only 6% of elderly people in homes for the elderly and 3% of those in homes for the handicapped were spoonfed.

3.2.7 **Total activities of daily living score**

The summation of scores allocated to levels of incapacity for individual activities yielded a total activities of daily living (total ADL) score ranging from zero (indicating relative independence) to eleven (indicating maximum incapacity).

| TABLE 20 Distribution of elderly people with different levels of incapacity on total activities of daily living (total ADL) score by age group in 1979: percentages (numbers in brackets). |
|---|---|---|---|---|
| Total ADL Score | AGE GROUP (YEARS) | 65 - 74 | 75 - 84 | 85 and over |
| 0 - 2 | 49 (365) | 40 (635) | 37 (554) | 40 (1572) |
| 3 - 6 | 27 (202) | 32 (535) | 33 (502) | 32 (1239) |
| 7 - 11 | 24 (170) | 28 (463) | 30 (446) | 28 (1069) |
| All Scores | 100 (737) | 100 (1641) | 100 (1502) | 100 (3880)* |

* Total excludes those residents under 28 days, 16 cases where age was not recorded and 24 cases where part of the information on activities was not completed.
By grouping the total ADL score into three categories, representing low (0-2) intermediate (3-6) and high (7-11) levels of incapacity, it can be seen that with greater age incapacity increased (Table 20). The increase in incapacity in moving between the two oldest age groups was relatively small.

### Table 21: Cumulative percentages of elderly people with different levels of incapacity on total activities of daily living (total ADL) score by type of care in 1979.

<table>
<thead>
<tr>
<th>Total ADL score</th>
<th>Type of Care</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>NHS geriatric beds</td>
</tr>
<tr>
<td>9 and above</td>
<td>36.0% 20.0%</td>
</tr>
<tr>
<td>7 and above</td>
<td>57.0% 36.0%</td>
</tr>
<tr>
<td>5 and above</td>
<td>75.0% 49.0%</td>
</tr>
<tr>
<td>3 and above</td>
<td>88.0% 63.0%</td>
</tr>
<tr>
<td>1 and above</td>
<td>98.0% 82.0%</td>
</tr>
<tr>
<td>0 and above</td>
<td>100.0% 100.0%</td>
</tr>
</tbody>
</table>

N(100X) = 601 658 99 2147 71 320 3896

Total excludes all those resident under 28 days and 24 cases where part of information on activities was not completed.

Whilst for all types of care, the proportion in the highest capacity group (total ADL score: of 9 or above) was 16%, this proportion varied between 36% for patients in NHS geriatric beds to 7% for residents of homes for the elderly (Table 21).

Within the NHS hospitals, the population in geriatric care was the most highly incapacitated, indeed it was overall, and that in acute beds the least. Outside the NHS, the highest levels were in the private nursing homes: this po-
population was second only to the NHS geriatric wards and hospitals in showing overall high levels of incapacity. The population in homes for the elderly was the least incapacitated overall, but the absolute number of elderly people with a total ADL score of seven or above was remarkably similar between all homes for the elderly and all geriatric wards and hospitals in Leicestershire: 337 and 335 respectively.

There were differences between the population in the three types of geriatric care (Table 22)

<table>
<thead>
<tr>
<th>Total ADL score</th>
<th>Type of care</th>
<th>General</th>
<th>Community</th>
<th>Peripheral</th>
<th>All geriatric</th>
</tr>
</thead>
<tbody>
<tr>
<td>9 and above</td>
<td></td>
<td>21</td>
<td>39</td>
<td>35</td>
<td>36</td>
</tr>
<tr>
<td>7 and above</td>
<td></td>
<td>43</td>
<td>52</td>
<td>57</td>
<td>57</td>
</tr>
<tr>
<td>5 and above</td>
<td></td>
<td>71</td>
<td>68</td>
<td>74</td>
<td>75</td>
</tr>
<tr>
<td>3 and above</td>
<td></td>
<td>86</td>
<td>83</td>
<td>86</td>
<td>88</td>
</tr>
<tr>
<td>1 and above</td>
<td></td>
<td>95</td>
<td>97</td>
<td>94</td>
<td>98</td>
</tr>
<tr>
<td>0 and above</td>
<td></td>
<td>100</td>
<td>100</td>
<td>100</td>
<td>100</td>
</tr>
<tr>
<td>N (100%) =</td>
<td></td>
<td>(67)</td>
<td>(133)</td>
<td>(401)</td>
<td>(601)</td>
</tr>
</tbody>
</table>

*All people resident for less than 28 days have been excluded as have 13 on whom part of information on activity was not recorded.*

Elderly people in peripheral geriatric units and the geriatric community hospital were broadly similar but with the population of the peripheral units being slightly more incapacitated at all levels except the most severe.
In contrast, the population in geriatric units within general hospitals although still more incapacitated than all other types of care, was less so in comparison to the populations in other two types of geriatric care.

Table 23: Cumulative percentages of elderly people in psychiatric hospitals with different levels of incapacity on total activities of daily living (ADL) score by length of stay in 1979

<table>
<thead>
<tr>
<th>Total ADL Score</th>
<th>Length of Stay</th>
<th>All Psychiatric</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>less than 5 years</td>
<td>more than 5 years</td>
</tr>
<tr>
<td>9 and above</td>
<td>28</td>
<td>13</td>
</tr>
<tr>
<td>7 and above</td>
<td>48</td>
<td>23</td>
</tr>
<tr>
<td>5 and above</td>
<td>63</td>
<td>34</td>
</tr>
<tr>
<td>3 and above</td>
<td>76</td>
<td>49</td>
</tr>
<tr>
<td>1 and above</td>
<td>99</td>
<td>74</td>
</tr>
<tr>
<td>0 and above</td>
<td>100</td>
<td>100</td>
</tr>
<tr>
<td></td>
<td>(N 100%) = (339)</td>
<td>(319)</td>
</tr>
</tbody>
</table>

1 Total excludes all patients resident under 28 days and 1 on whom part of information on activities was not completed.

As was the case in the individual activities, the total ADL score indicated that the elderly who had been admitted to psychiatric hospitals more recently were more severely incapacitated than their longer-stay counterparts (Table 23).
3.2.8 Behaviour: during day and at night

Figure 12: Percentage of elderly people in each type of care in 1979 with different degrees of disturbance of behaviour during the daytime

*Excludes all people resident for less than 28 days and 18 on whom no information was provided.

For all types of care 21% of elderly people were said by staff to be "almost always confused" during the day (Figure 12). The highest proportion in this most severe category was in the psychiatric hospitals (34%) but only slightly exceeded the similarly high levels in geriatric hospitals.
(28%) and private nursing homes (31%). Within the two groups in the psychiatric hospitals, the corresponding figures were 49% (stay less than five years) and 18% (stay more than five years). The corresponding figure for residents of homes for the elderly who were "almost always confused" during the day was lower: 17%.

Levels of disturbed behaviour at night were lower overall than those during the daytime (Figure 13). In all types of care, 9% of elderly people were, in the opinion of staff caring for them, "almost always restless at night." There was only slight variation between institutions in the extent of disturbed behaviour at night. No information was collected on the use of medication in the different types of care and this could clearly have influenced the pattern of this variable.
Figure 13: Percentage of elderly people in each type of care in 1979 with different degrees of disturbance of behaviour at night

*Excludes all people resident for less than 28 days and 2 people for whom no information was recorded.

3.3 MISPLACEMENT

Of the total 4,678 people aged 65 years and over who were enumerated in the Survey, 603 (13%) were, in the opinion of staff caring for them, in a setting which was not "a suitable place in which to meet this particular person's needs".
In the N.H.S. premises the figure for misplacement was 18%, whilst in the non-N.H.S. establishments it was lower, 9%. In the N.H.S. facilities the highest figures were found in the acute (23%) and geriatric (19%) hospitals and wards and the lowest for patients in psychiatric beds (13%). In the non-N.H.S. premises, 10% of residents in homes for the elderly were judged misplaced, 29% of those in homes for the handicapped and only a small proportion (3%) of those in private nursing homes.

When measures of incapacity were examined for the different types of care, all levels of incapacity were represented in the misplaced group in each type of care. However, there was variation in the extent to which different degrees of incapacity (as measured by the total activities of daily living score or the score for individual activities) were associated with misplacement or suitable placement (Table 24).
### TABLE 24: Mean activity score for misplaced and suitably placed patients and residents by place of residence.

<table>
<thead>
<tr>
<th>TYPE OF ACCOMMODATION</th>
<th>Activity</th>
<th>NHS Geriatric Beds</th>
<th>NHS Psychiatric Beds</th>
<th>NHS Acute</th>
<th>Homes for the elderly</th>
<th>Activity</th>
<th>Activity</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>TOTAL ADL</td>
<td>7.252</td>
<td>4.946</td>
<td>4.404</td>
<td>2.818</td>
<td>TOTAL ADL</td>
<td></td>
</tr>
<tr>
<td></td>
<td>MOBILITY</td>
<td>2.279</td>
<td>.8576</td>
<td>1.894</td>
<td>1.091</td>
<td>MOBILITY</td>
<td></td>
</tr>
<tr>
<td></td>
<td>URINARY INCONTINENCE</td>
<td>2.172</td>
<td>1.612</td>
<td>.9149</td>
<td>.6293</td>
<td>URINARY INCONTINENCE</td>
<td></td>
</tr>
<tr>
<td></td>
<td>FAECAL INCONTINENCE</td>
<td>.3975</td>
<td>.4339</td>
<td>.1489</td>
<td>.1007</td>
<td>FAECAL INCONTINENCE</td>
<td></td>
</tr>
<tr>
<td></td>
<td>WASHING AND DRESSING</td>
<td>1.611</td>
<td>1.402</td>
<td>1.064</td>
<td>.7919</td>
<td>WASHING AND DRESSING</td>
<td></td>
</tr>
<tr>
<td></td>
<td>FEEDING</td>
<td>.7930</td>
<td>.6407</td>
<td>.383</td>
<td>.2050</td>
<td>FEEDING</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>480</td>
<td>590</td>
<td>47</td>
<td>1938</td>
<td></td>
<td></td>
</tr>
<tr>
<td>MISPLACED</td>
<td>TOTAL ADL</td>
<td>4.402</td>
<td>2.235</td>
<td>5.231</td>
<td>5.818</td>
<td>TOTAL ADL</td>
<td></td>
</tr>
<tr>
<td></td>
<td>MOBILITY</td>
<td>1.670</td>
<td>.3235</td>
<td>2.0</td>
<td>1.431</td>
<td>MOBILITY</td>
<td></td>
</tr>
<tr>
<td></td>
<td>URINARY INCONTINENCE</td>
<td>1.196</td>
<td>.6324</td>
<td>1.192</td>
<td>1.761</td>
<td>URINARY INCONTINENCE</td>
<td></td>
</tr>
<tr>
<td></td>
<td>FAECAL INCONTINENCE</td>
<td>.2143</td>
<td>.1176</td>
<td>.1731</td>
<td>.4785</td>
<td>FAECAL INCONTINENCE</td>
<td></td>
</tr>
<tr>
<td></td>
<td>WASHING AND DRESSING</td>
<td>.9107</td>
<td>.7941</td>
<td>1.404</td>
<td>1.364</td>
<td>WASHING AND DRESSING</td>
<td></td>
</tr>
<tr>
<td></td>
<td>FEEDING</td>
<td>.4107</td>
<td>.3676</td>
<td>.4615</td>
<td>.7847</td>
<td>FEEDING</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>112</td>
<td>68</td>
<td>52</td>
<td>209</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

1 Private Nursing Homes and Homes for the Handicapped contained only small numbers of misplaced patients and residents and have therefore been excluded from the analysis.

Scores for individual activities were those which had been allotted to each descriptive category to derive the total activities of daily living score (see chapter 2, page 2-54) and therefore, as with the total score, a higher mean score in this context meant higher incapacity.

The misplaced group in geriatric wards and hospitals had a lower mean score (i.e. lower levels of incapacity).
for total activities of daily living than the suitably placed group. This relationship held for the mean scores of each individual activity: all were lower in the misplaced than the suitably placed group. In the psychiatric facilities, a similar pattern was seen.

In homes for the elderly, the reverse was the case with consistently higher mean scores in the misplaced group compared to the suitably placed group. In the N.H.S. acute beds a pattern, similar to that in homes for the elderly emerged.

The relative magnitude of these differences for the various activities in the four types of institution, is shown in Figure 14. The mean score for the misplaced group has been subtracted from the mean score of the suitably placed group and the resulting difference expressed as the number of standard errors contained within it using the formula $\frac{\bar{A}_1 - \bar{A}_2}{\sqrt{\frac{\sigma_1^2}{n_1} + \frac{\sigma_2^2}{n_2}}}$ where $\sigma$ is the standard deviation and $n_1$ and $n_2$ are the sample sizes of the misplaced group and the suitably placed group. Thus, a positive value on the scale in figure 14 indicates that for the given activity in the particular type of care, the level of incapacity in the suitably placed group exceeded that in the misplaced group. A negative value indicated that the level of incapacity was greater in the misplaced group. The values (expressed as number of standard errors) thus assess the probability of the differences arising by chance on the hypothesis that there is no real difference in level of incapacity between the two gro-
In the acute beds, it was only in respect of washing and dressing that the differences in mean scores between misplaced and suitably placed groups exceeded two standard errors (i.e. where the probability of chance occurrence was less than five per cent).

For all other types of care the probability of the differences arising by chance was considerably less than 0.1%. In the geriatric hospital population the largest

Figure 14: Mean activity score suitably placed group minus mean activity score misplaced group in each type of care. Difference is expressed as number of standard errors
differences were seen for total activities of daily living, urinary incontinence and washing and dressing and smallest for faecal incontinence.

In the psychiatric wards and hospitals, the difference between mean scores between the two groups was of the order of six standard errors except for mobility where it was lower (about four standard errors). In homes for the elderly, the differences between mean scores for the misplaced and the suitably placed residents were greater (although obviously in the opposite direction) than in either the geriatric or psychiatric facilities. The difference for total activities of daily living, urinary and faecal incontinence and feeding lay between 12 and 14 standard errors but for mobility it was smaller (about five standard errors).

The questions on behaviour during the day and at night had not been included in the original total ADL score. For purposes of comparing levels of incapacity in these two activities between misplaced and suitably placed groups, a score of 0, 1, or 2 was allocated to each of the three descriptive statements within the two behaviour categories. Here, again, higher score denoted higher incapacity.

In the geriatric and psychiatric populations there was a lower mean level of disturbed behaviour both during the day and at night in the misplaced patients. When this difference was expressed in terms of standard errors (Figure 15), it was only for day time behaviour that the difference
exceeded two standard errors: three and five for the geriatric and psychiatric facilities respectively.
Figure 15: Mean activity score suitably placed group minus mean activity score misplaced group in each type of care. Difference is expressed as number of standard errors.

Misplaced patients in N.H.S. acute wards, had higher mean levels of disturbed behaviour than their suitably placed counterparts but this differences only exceeded two standard errors for night-time behaviour.

The largest differences occurred in homes for the elderly where higher mean scores for the misplaced group were highly significant for both day-time behaviour disturbance (eight standard errors) and night-time behaviour disturbance (ten standard errors).
Figure 16: Mean age of suitably placed group minus mean age of misplaced group in each type of care.

*Difference is expressed as number of standard errors*

A lower mean age was observed in the misplaced group in geriatric and psychiatric facilities and also in homes for the elderly. Only in the last two did this difference just exceed two standard errors. Misplaced patients in N.H.S. acute wards had a higher mean age than the suitably placed group and the difference achieved seven standard errors.

Caring staff were asked to choose a type of care or setting which they considered would better meet the needs of the elderly person whom they had deemed misplaced in their
ward, hospital or home.

Overall, without taking account of the type of care in which the misplaced elderly person was resident, 30% were considered to be in need of geriatric care and a further 28% better suited to life in the community, either in their own or relative's home (with domiciliary support if necessary) or in a sheltered housing scheme. Sixteen percent were considered to require care in a psychiatric hospital and a similar proportion in a home for the elderly.
The principal source of variation with age was in the proportions who were judged to be better suited to geriatric care or care in the community. Indeed the proportions judged to in need of care in homes for the elderly, psychiatric wards or another type of N.H.S. bed (other than geriatric), differed only slightly (Figures 17). There was an increase however, with each successively older age group in the proportion judged to be in need of geriatric care and a corresponding fall in the proportion who were judged to be suitable for life in the community. It should be noted, however, that even amongst the 85s and over, 21% of patients...
and residents were judged to be suitable for care in their own or relative's home (with service support if necessary) or in a sheltered housing scheme.
Figure 18: Type of alternative care judged by staff to be more appropriate for misplaced patients and residents, by total activities of daily living (ADL) score

In the least incapacitated group (total ADL score 0-2), just under half were judged suitable for discharge to the community and only a small proportion in need of care in a geriatric facility (Figure 18). In the highest incapacity group (total ADL score 7-11), over a half and over a quarter of misplaced patients and residents were seen to need geriatric and psychiatric care respectively.
For patients misplaced in the geriatric sector, almost equal proportions, about 36%, were said to be better suited to a home for the elderly and living in the community (Figure 19). In psychiatric facilities, smaller proportions (about a quarter in each case) were considered better suited to a home for the elderly or a more independent life in the community.

For misplaced residents of homes for the elderly, 19%
were judged to be suitable for discharge to the community, although in the greatest proportion of these sheltered housing schemes was the preferred destination. For the majority of elderly people misplaced in such homes, it was considered that their needs would be better met in a type of care within the NHS. In just under half the cases the alternative chosen was geriatric care.

Because of small numbers it was not possible to make valid comparisons between different age or incapacity groups within the various types of care.

The extent to which misplaced hospital patients were considered to need a type of NHS care (other than their own) also varied. Sixteen percent of misplaced patients in geriatric wards and hospitals, were thought more suited to a psychiatric setting. Of those misplaced in psychiatric care, 31% were felt to need geriatric care. In the acute sector, misplaced patients were most often seen as needing geriatric care (41%).

Apparent anomalies whereby a small proportion of misplaced people in NHS geriatric premises or homes for the elderly were stated as requiring the same type of care as they appeared to be in, were partly explained by analysis of staff's comments on the proforma. In these instances staff often suggested models of care which did not necessarily exist locally (e.g. specialised home for the elderly mentally ill).
CHAPTER 4

RESULTS: CHANGES OVER TIME.
<table>
<thead>
<tr>
<th>CONTENTS</th>
<th>PAGE NUMBER</th>
</tr>
</thead>
<tbody>
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<td>4.1 OVERALL CHANGES</td>
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</tr>
<tr>
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<td>4-12</td>
</tr>
<tr>
<td>4.2.1 Mobility</td>
<td>4-12</td>
</tr>
<tr>
<td>4.2.2 Urinary Incontinence</td>
<td>4-17</td>
</tr>
<tr>
<td>4.2.3 Faecal Incontinence</td>
<td>4-24</td>
</tr>
<tr>
<td>4.2.4 Washing and Dressing</td>
<td>4-30</td>
</tr>
<tr>
<td>4.2.5 Feeding</td>
<td>4-36</td>
</tr>
<tr>
<td>4.2.6 All Activities</td>
<td>4-43</td>
</tr>
<tr>
<td>4.3 CHANGES IN THE CONTINUOUSLY RESIDENT IN LONG-STAY SETTINGS</td>
<td>4-48</td>
</tr>
</tbody>
</table>
This chapter of results is concerned with the change in a three year interval (1976 to 1979) in the size, demographic characteristics and levels of incapacity of the elderly population in institutional care in Leicestershire.

There are three parts within the chapter. Section 4.1 describes the overall changes in size and age-structure within each type of care and presents age-specific hospitalisation and residency ratios for the elderly population of Leicestershire in the two time periods.

Section 4.2 examines the changing pattern of incapacity in relation to each of the five activities of daily living (mobility, urinary and faecal incontinence, washing and dressing and feeding). For each activity, change is viewed from three perspectives: a) comparison of the proportions with different degrees of incapacity in each cross-sectional population; b) comparison of the proportions with different degrees of incapacity in each cross-sectional population but restricted to people with lengths of stay under a year, an approximation of recent admissions; and c) comparison of the degree of incapacity at the two time intervals (three years apart) for individuals who survived and were continuously resident within the same type of care. In this last series of analyses, the results are presented in terms of the proportions who had improved, remained unchanged or deteriorated and for those who had changed, as the odds in favour of deterioration. These continuously resident survivors represented 32% of the total population as originally
enumerated (see Chapter 5 P5-3).

Section 4.3 presents comparisons of the extent and nature of the change in total incapacity for surviving continuously resident people in the three long-stay settings (geriatric and psychiatric hospitals and homes for the elderly). Using regression analysis, differences in the extent of deterioration between these types of care (for people whose status had changed) are presented adjusted for differences in other significant variables (age, sex, length of stay and initial level of incapacity) which influenced change.

4.1 OVERALL CHANGES

The 4,678 elderly patients and residents enumerated in hospitals and homes in Leicestershire in December of 1979 represented an increase of 4.2% on the 4,490 elderly people enumerated in institutions in the same geographical area exactly three years earlier in December of 1976 (Table 25).
Table 25: Numbers of Elderly People Enumerated in Different Types of Care: 1976 Compared to 1979

<table>
<thead>
<tr>
<th>Type of Institution</th>
<th>1976</th>
<th>1979</th>
<th>1976-1979</th>
</tr>
</thead>
<tbody>
<tr>
<td>NHS Geriatric Beds</td>
<td>764</td>
<td>805</td>
<td>+ 5.4</td>
</tr>
<tr>
<td>NHS Psychiatric Beds</td>
<td>722</td>
<td>698</td>
<td>- 3.3</td>
</tr>
<tr>
<td>NHS Acute Beds</td>
<td>393</td>
<td>485</td>
<td>+23.4</td>
</tr>
<tr>
<td>Homes the Elderly</td>
<td>2,236</td>
<td>2,258</td>
<td>+ 1.0</td>
</tr>
<tr>
<td>Homes for the Handicapped</td>
<td>83</td>
<td>85</td>
<td>+ 1.0</td>
</tr>
<tr>
<td>Private Nursing Homes</td>
<td>292</td>
<td>347</td>
<td>+18.8</td>
</tr>
<tr>
<td><strong>All Types</strong></td>
<td>4,490</td>
<td>4,678</td>
<td>+ 4.2</td>
</tr>
</tbody>
</table>

There were differences in the direction and extent to which change occurred. The greatest change in numbers of elderly people in hospitals and homes in Leicestershire between the two one-day surveys were shown in the increases in the N.H.S. acute beds and private nursing homes. Over the same three-year period, a planned expansion of services led to the number of acute general beds in Leicestershire (available to all age groups) increasing by the order of 26% (Table 26).
Table 26: Average Daily Available Beds for all Age Groups in Geriatric, Psychiatric and Acute Specialties in Leicestershire: 1976 Compared to 1979. Data Taken from Local SH3 Returns

<table>
<thead>
<tr>
<th>Type of Care</th>
<th>1976</th>
<th>1979</th>
<th>1976-1979</th>
</tr>
</thead>
<tbody>
<tr>
<td>NHS Geriatric Beds</td>
<td>851.7</td>
<td>856.0</td>
<td>+ 1%</td>
</tr>
<tr>
<td>NHS Psychiatric Beds</td>
<td>2,127.9</td>
<td>1,612.1</td>
<td>-17%</td>
</tr>
<tr>
<td>NHS Acute beds**</td>
<td>1,625.2</td>
<td>2,053.3</td>
<td>+26%~</td>
</tr>
</tbody>
</table>

*Average over the whole year  **Excludes non-relevant specialties (eg. maternity, paediatrics).  ~Medical specialties increased by 10%, surgical specialties by 13%.

The figures for available beds averaged over a whole year can only be regarded as an approximate means of comparison with the present study where surveys were carried out in December of each year. Nevertheless, it appears that when more acute beds became available, the elderly maintained their share of them relative to other age-groups. In the psychiatric hospital sector, due to the closure of some long-stay wards, the average available daily beds between the time periods fell substantially. The fall in the number of elderly people within psychiatric beds was not of the same magnitude. Thus, even allowing for the approximate nature of the bed availability figures it appears that whilst
psychiatric beds available to all age groups fell, the proportion of elderly people within them increased slightly.

Table 27: Age-specific residency ratios (per thousand population) for the elderly population of Leicestershire¹ in 1976 and 1979.

<table>
<thead>
<tr>
<th>Age Groups (Years)</th>
<th>National Health Service Beds</th>
<th>Non-NHS Homes</th>
<th>All Types</th>
</tr>
</thead>
<tbody>
<tr>
<td>65-74</td>
<td>2.2 2.1</td>
<td>4.9 3.9</td>
<td>2.9 3.3</td>
</tr>
<tr>
<td>75-84</td>
<td>10.3 10.7</td>
<td>8.5 9.2</td>
<td>4.5 5.5</td>
</tr>
<tr>
<td>85 and over</td>
<td>38.9 37.7</td>
<td>15.0 13.5</td>
<td>7.1 8.5</td>
</tr>
<tr>
<td>65 and over</td>
<td>7.0 7.2</td>
<td>6.7 6.2</td>
<td>3.6 4.3</td>
</tr>
</tbody>
</table>

¹ Base population derived from Office of Population, Censuses and Surveys’ estimates (Trent Regional Health Authority 1981)

For the over 65s in Leicestershire as a whole the proportion who were in any type of care was similar in December 1976 compared to December 1979 (Table 27). The denominators for these ratios are based on the final population estimates for Leicestershire produced by the Office of Population Censuses and Surveys (OPCS)– (Trent Regional Health Authority, 1931). The projections for the over 85s do not routinely appear in official publications and are only supplied by the OPCS for individual Areas on the understanding that they should be interpreted with caution since they are based on relatively small numbers. Given this limitation there appear to be differences between different types of care which are consistent with the earlier observations based on abso-
In interpreting changes in such age-specific ratios over time, there is also a need to beware of the effect of relatively wide age intervals so that shifts in the age-structure within them may distort comparisons. This potentially applies to the open-ended age-group 85 years and over. Mid-year population estimates do not break down ages above the age of 85 years, as is discussed above. In the present study, though possible, it seems unlikely that in the three year interval in which comparisons were being made, a major shift in the age-structure of the over 85's in Leicestershire would have taken place.

A greater proportion of the elderly population of Leicestershire in each of the three age-groups was in N.H.S. acute beds in 1979. In the very elderly population (85 years and over) more were in homes for the elderly and private nursing homes in the latter time period and less in psychiatric or geriatric beds.
For all types of care, the population had become slightly older (Table 28). This was also true for homes for the elderly and handicapped, private nursing homes and (to a lesser extent) NHS acute beds. There was little change in the age structure of the population within N.H.S. geriatric beds but for psychiatric beds, there was an increase in over 75s but not of the older age groups.
Table 28: Cumulative percentages of elderly people in different kinds of care by age group: 1976 compared to 1979.

<table>
<thead>
<tr>
<th>Age in Years</th>
<th>NHS Geriatric Beds</th>
<th>NHS Psychiatric Beds</th>
<th>NHS Acute Beds</th>
<th>Homes for the Elderly</th>
<th>Homes for the Handicapped</th>
<th>Private Nursing Homes</th>
<th>All Types of Care</th>
</tr>
</thead>
<tbody>
<tr>
<td>85 and over</td>
<td>5 5</td>
<td>1 2</td>
<td>40 44</td>
<td>49 58</td>
<td>46 51</td>
<td>34 36</td>
<td></td>
</tr>
<tr>
<td>75 and over</td>
<td>37 35</td>
<td>15 15</td>
<td>49 53</td>
<td>83 86</td>
<td>84 88</td>
<td>75 78</td>
<td></td>
</tr>
<tr>
<td>65 and over</td>
<td>100 (763) (1802)</td>
<td>100 (729) (694)</td>
<td>100 (393) (485)</td>
<td>100 (2219) (2252)</td>
<td>100 (83) (80)</td>
<td>100 (284) (343)</td>
<td>100 (4462) (4656)</td>
</tr>
</tbody>
</table>

1 Excludes 28 people in whom age was not recorded
2 Excludes 22 people in whom age was not recorded
The population with lengths of stay under one year was little different in 1979 compared to 1976 (Table 29) when considered for all types of care together. In homes for the elderly, however, there a statistically significant ($\chi^2_{1\text{df}} = 6.91; P < .01$) increase in the age of the population. The test used in this section is cited in chapter 2 (see page 2-57).
Table 29 - Cumulative percentages of elderly people in each age group within each type of care: 1976 compared to 1979. Lengths of stay under one year only.

<table>
<thead>
<tr>
<th>Age in Years’</th>
<th>NHS Geriatric Beds</th>
<th>NHS Psychiatric Beds</th>
<th>NHS Acute Beds</th>
<th>Homes for the Elderly</th>
<th>Homes for the Handicapped</th>
<th>Private Nursing Homes</th>
<th>All Types of Care</th>
</tr>
</thead>
<tbody>
<tr>
<td>85 years and over</td>
<td>33 32</td>
<td>14 13</td>
<td>13 13</td>
<td>33 40</td>
<td>42 39</td>
<td>10 14</td>
<td>28 29</td>
</tr>
<tr>
<td>75 years and over</td>
<td>78 81</td>
<td>65 65</td>
<td>49 52</td>
<td>82 85</td>
<td>90 83</td>
<td>57 61</td>
<td>73 74</td>
</tr>
<tr>
<td>65 years and over</td>
<td>100 100</td>
<td>100 100</td>
<td>100 100</td>
<td>100 100</td>
<td>100 100</td>
<td>100 100</td>
<td>100 100</td>
</tr>
</tbody>
</table>

*’ 95 years and over has not been chosen for the upper limit because of relatively small numbers in this age group for one year admissions
4.2 CHANGES IN LEVELS OF INCAPACITY

4.2.1 Mobility

4.2.1.1 Comparison of the Composition of the Two Populations -

Sixty-seven percent of people were less than fully ambulant in 1979 compared to 64 percent in 1976 (Figure 20). There was only a slight difference, however, in the proportion most highly incapacitated (i.e. bedfast) which was slightly greater (10.4%) in the 1979 population than in the 1976 population (9.4%).
Figure 20: Distribution of Elderly People with Different Degrees of Loss of Mobility in Each Type of Care, 1976 Compared to 1979

Amongst the NHS wards and hospitals, the shift towards higher degrees of incapacity, in 1979 compared to 1976, was greatest in the geriatric and acute sectors. A similar though smaller general increase in incapacity was observed in non-NHS premises. The proportion of bedfast elderly people increased slightly in homes for the elderly and private nursing homes and fell slightly in homes for the handicapped although in this group the numbers involved were small.
4.2.1.2 Comparison of Recent Admissions for the Two Time Periods -

Changes in the level of mobility were then compared for elderly people in each survey with lengths of stay under one year (Table 30). Overall there was a slight shift towards higher levels of incapacity over the three year period, except in the psychiatric hospital population where there was less incapacity in terms of mobility in 1979 than in 1976. The individual changes for different types of institutions did not achieve statistical significance.
## Table 30: Distribution of people with different degrees of loss of mobility: numbers (percentages): in each type of care 1976 compared to 1979. Lengths of stay under one year only

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Fully Ambulant</td>
<td>51 (15.6) 31 (9.0)</td>
<td>65 (55.1) 71 (62.3)</td>
<td>14 (15.7) 10 (10.9)</td>
<td>230 (39.0) 197 (40.6)</td>
<td>7 ( ) 4 ( )</td>
<td>22 (24.2) 29 (26.6)</td>
<td>389 (31.6) 342 (29.5)</td>
</tr>
<tr>
<td>Ambulant Except Stairs</td>
<td>24 (7.4) 32 (9.3)</td>
<td>18 (15.3) 19 (16.7)</td>
<td>8 (9.0) 7 (7.6)</td>
<td>118 (20.0) 80 (16.5)</td>
<td>3 ( ) 2 ( )</td>
<td>11 (12.1) 14 (12.8)</td>
<td>182 (14.8) 154 (13.3)</td>
</tr>
<tr>
<td>Mobile with Attendant or Aid</td>
<td>160 (49.1) 184 (53.5)</td>
<td>28 (23.7) 22 (19.3)</td>
<td>49 (55.1) 52 (56.5)</td>
<td>232 (39.4) 201 (41.4)</td>
<td>7 ( ) 10 ( )</td>
<td>44 (40.4) 57 (52.3)</td>
<td>520 (42.3) 526 (45.3)</td>
</tr>
<tr>
<td>Bedfast</td>
<td>91 (27.9) 97 (28.2)</td>
<td>7 (5.9) 2 (1.8)</td>
<td>18 (20.2) 23 (25.0)</td>
<td>9 (1.5) 7 (1.4)</td>
<td>0 ( ) 1 ( )</td>
<td>14 (15.4) 9 (8.3)</td>
<td>139 (11.3) 139 (12.0)</td>
</tr>
</tbody>
</table>

All degrees 326 344 118 114 89 92 589 485 17 17 91 109 1230 1161

---

1. all people resident less than 28 days and 32 (3% of the total) people on whom no information was recorded have been excluded.

2. all people resident less than 28 days have been excluded.
4.2.1.3 Longitudinal Changes in Individual Patients and Residents -

Longitudinal changes in degrees of mobility for individuals who survived and were continuously resident in the same type of care over the entire three year period are shown in Table 31.

Table 31: Change in level of mobility of continuously resident people between 1976 and 1979, by age group. Percentages with numbers shown in brackets.

| Age group (years) | Status in 1979 | | | | | Odds in favour of deterioration for those who changed |
|-------------------|---------------|-----------|-----------|-----------|
|                   | Improved      | Unchanged | Deteriorated | Total     |
| 65-74             | 7.8 (30)      | 74.5 (288)| 17.7 (68)  | 100 (386) | 2.3 : 1   |
| 75-84             | 7.3 (40)      | 63.3 (347)| 29.4 (161) | 100 (548) | 4.0 : 1   |
| 85 and over       | 8.3 (31)      | 57.5 (214)| 34.2 (127) | 100 (372) | 4.1 : 1   |
| 65 and over       | 7.7 (101)     | 55.0 (649)| 27.3 (156) | 100 (1306)| 3.5 : 1   |

*Excludes all people initially resident for less than 28 days and also, for this series of analyses, those with missing information for any activity in 1976 or 1979 (82 in total). Nine people for whom age was not recorded have also been excluded.

Nearly two thirds of elderly people remained unchanged, just over a quarter deteriorated and nearly eight percent improved. For those whose status had changed, the extent and direction of this change was indicated by the odds in favour of deterioration which were three and a half to one. Change was age-related with a fall in proportion of unchanged patients and residents and an increase in the odds in favour of deterioration compared to improvement with increasing age. For the two younger age groups, the deterioration was greater in males than in females. For the over
85s, deterioration was greater in females.

The trend in these odds with age achieved significance at the 10% level ($\chi^2_{df}= 3.22; \ P<.1$). When comparison was made for the two sexes individually there was no significant increase (with age) in the odds of deterioration to improvement in the case of males ($\chi^2_{df}= .55; \ NS$) but for females the increase was significant at the 1% level ($\chi^2_{df}= 6.65; \ P<.01$).

4.2.2 Urinary Incontinence

4.2.2.1 Comparison of the Composition of the Two Populations

The proportion of elderly people in all types of care who were classified as frequently incontinent in the week prior to each census increased from 23% in 1976 to 29% in 1979, whilst the proportion of those rated as not incontinent of urine fell from 58% in 1976 to 54% in 1979 (Figure 21).
Figure 21: Distribution of Elderly People with Different Degrees of Urinary Incontinence in each Type of Care, 1976 Compared to 1979

Within the NHS facilities, there was a general increase in incapacity due to urinary incontinence in all three types of care most marked in the geriatric wards and hospitals where the proportion of frequently incontinent patients increased from 39% (1976) to 53% (1979).

In the non-NHS facilities, there was a similar increase in the number of elderly people with more severe degrees of urinary incontinence between the two time periods. However,
with the exception of the populations in homes for the handicapped (where the numbers were relatively small) the increases were not as large as those in the NHS facilities. It must be emphasised, however, as it was in the previous chapter of results, that in the homes for the elderly, although the proportion incontinent at least once or more frequently during the one week reference period increased by only 2%, this, in absolute numbers, was fifty and would represent a considerable extra workload for staff in this setting.
4.2.2.2 Comparison of Recent Admissions for the Two Time Periods -

For all types of accommodation there was a shift towards higher degrees of urinary incontinence in people with lengths of stay under one year (Table 32), a difference which was statistically significant ($\chi^2_{1df} = 5.16; \ P<.05$). Within individual types of care, however, it was only within geriatric hospitals that a significant increase ($\chi^2_{1df}=8.58; \ P<.01$) occurred.
Table 32: Distribution of people with different degrees of urinary incontinence: number (percentages):
in each type of care 1976 compared to 1979. Lengths of stay under one year only.

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>121 (36.7)</td>
<td>88 (26.0)</td>
<td>48 (40.7)</td>
<td>51 (62.2)</td>
<td>412 (70.2)</td>
<td>14 (9)</td>
<td>39 (44.3)</td>
</tr>
<tr>
<td>Not incontinent</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Needed raising or</td>
<td>32 (9.7)</td>
<td>41 (12.1)</td>
<td>11 (9.3)</td>
<td>7 (8.5)</td>
<td>54 (9.2)</td>
<td>2 (1)</td>
<td>21 (17)</td>
</tr>
<tr>
<td>sending</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Incontinent once during week</td>
<td>56 (17.0)</td>
<td>53 (15.6)</td>
<td>18 (15.3)</td>
<td>7 (9.0)</td>
<td>39 (6.6)</td>
<td>1 (1)</td>
<td>1 (2)</td>
</tr>
<tr>
<td>Frequently</td>
<td>121 (36.7)</td>
<td>357 (46.3)</td>
<td>41 (34.7)</td>
<td>19 (23.2)</td>
<td>82 (12.2)</td>
<td>1 (1)</td>
<td>20 (22.7)</td>
</tr>
<tr>
<td>incontinent</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>All degrees</td>
<td>330 (100)</td>
<td>339 (100)</td>
<td>118 (100)</td>
<td>91 (100)</td>
<td>587 (100)</td>
<td>18 (100)</td>
<td>88 (100)</td>
</tr>
</tbody>
</table>

1 All people resident less than 28 days and 39 people (3%) of the total on whom no information was recorded have been excluded.

2 All people resident less than 28 days and 8 people (0.64%) of the total on whom no information was recorded have been excluded.
4.2.2.3 Longitudinal Changes in Individual Patients and Residents -

Table 33: Change in degree of urinary incontinence of continuously resident people between 1976 and 1979, by age group. Percentages with numbers shown in brackets.

<table>
<thead>
<tr>
<th>Age group (years) in 1976</th>
<th>Status in 1979</th>
<th>Odds in favour of deterioration in those who changed</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Improved</td>
<td>Unchanged</td>
</tr>
<tr>
<td>65-74</td>
<td>7.8</td>
<td>69.4</td>
</tr>
<tr>
<td></td>
<td>(31)</td>
<td>(267)</td>
</tr>
<tr>
<td>75-84</td>
<td>6.6</td>
<td>63.0</td>
</tr>
<tr>
<td></td>
<td>(36)</td>
<td>(346)</td>
</tr>
<tr>
<td>85 and over</td>
<td>7.3</td>
<td>57.0</td>
</tr>
<tr>
<td></td>
<td>(27)</td>
<td>(212)</td>
</tr>
<tr>
<td>65 and over</td>
<td>7.1</td>
<td>63.2</td>
</tr>
<tr>
<td></td>
<td>(94)</td>
<td>(824)</td>
</tr>
</tbody>
</table>

*Excludes all people initially resident for less than 28 days and also, for this series of analyses, those with missing information for any activity in 1976 or 1979 (82 in total). Nine people for whom age was not recorded have also been excluded.

Sixty-three percent of continuously resident old people were unchanged three years after their original assessment (Table 33). Amongst those who had changed, more than four times as many had deteriorated over the three year period as had improved.

Whilst the proportion of elderly people who had improved their degree of urinary incontinence varied little with age (7-8%), with greater age in the proportion unchanged fell and the proportion who had deteriorated increased. Thus, there was an increase from nearly three to one in the youngest age group to nearly five to one in those aged 85 years and over in the odds in favour of deteriora-
tion. The extent of deterioration for this activity was similar between the two sexes in the two younger age groups, but in the oldest was greater in males.

The trend in these odds with age was significant at the 10% level \( \chi^2_{1 df} = 3.18; \ P < .1 \) for the two sexes combined. However, for males it only achieved significance at the 20% level \( \chi^2_{1 df} = 2.64; \ P < .2 \) and did not achieve significance for females alone \( \chi^2_{1 df} = 0.99; \text{NS} \).
RESULTS: CHANGES OVER TIME.

4.2.3 Faecal Incontinence

4.2.3.1 Comparison of the Composition of the Two Populations

Figure 22: Distribution of Elderly People with Faecal Incontinence in each type of Care, 1976 compared to 1979

In all three types of NHS facilities there was an increase of between 7 and 9% in patients who were faecally incontinent in 1979 compared to 1976 (Figure 22). There was no such consistent pattern for the non-NHS homes and hospitals. Although the proportion of faecally incontinent resi-
dents in homes for the elderly increased by just 1%, a slight fall of a similar magnitude was observed for the elderly population of private nursing homes. The largest increase was in the population of homes for the handicapped but it is possible that this comparison again was distorted by the relatively small numbers involved.
4.2.3.2 Comparison of Recent Admissions for the Two Time Periods -

With respect to the populations in the two surveys with lengths of stay under a year (Table 34) the geriatric hospitals and wards contained a significantly higher proportion of faecally incontinent patients ($\chi^2_{1df} = 6.48; P < .025$) in 1979 than in 1976. In the psychiatric facilities the reverse was the case with a fall in the proportion of faecally incontinent patients which was significant at the 10% level ($\chi^2_{1df} = 3.55; P < .1$). In the acute beds the change was towards a greater incapacity in the later time-period but the numbers were small and the results did not achieve significance.

For the types of facility outside the NHS, there was little change in the proportion of faecally incontinent residents of homes for the elderly amongst those who had been there for less than a year whilst in private nursing homes there was significant fall ($\chi^2_{1df} = 5.12; P < .025$) in the proportion with faecal incontinence.
TABLE 34: Distribution of people with faecal incontinence: numbers (percentages): in each type of care 1976 compared to 1979. Lengths of stay under 1 year only.

<table>
<thead>
<tr>
<th>TYPE OF CARE</th>
<th>Faecal Incontinence</th>
<th>NHS Geriatric beds</th>
<th>NHS Psychiatric beds</th>
<th>NHS Acute beds</th>
<th>Homes for the Elderly</th>
<th>Homes for the Handicapped</th>
<th>Private Nursing Homes</th>
<th>All Types of Accommodation</th>
</tr>
</thead>
<tbody>
<tr>
<td>Absent</td>
<td>253 (75.1)</td>
<td>227 (66.2)</td>
<td>66 (58.4)</td>
<td>78 (68.4)</td>
<td>78 (90.7)</td>
<td>77 (83.7)</td>
<td>522 (79.2)</td>
<td>434 (89.5)</td>
</tr>
<tr>
<td>Present</td>
<td>84 (24.9)</td>
<td>116 (33.8)</td>
<td>51 (43.6)</td>
<td>36 (31.6)</td>
<td>8 (9.3)</td>
<td>15 (16.3)</td>
<td>63 (10.8)</td>
<td>51 (10.5)</td>
</tr>
<tr>
<td>Both Categories</td>
<td>337 (100)</td>
<td>343 (100)</td>
<td>117 (100)</td>
<td>116 (100)</td>
<td>86 (100)</td>
<td>92 (100)</td>
<td>595 (100)</td>
<td>485 (100)</td>
</tr>
</tbody>
</table>

1 all people resident for less than 28 days and 34 (3% of total) on whom no information has been recorded have been excluded.

2 all people resident for less than 28 days and 5 (0.4% of total) on whom no information has been recorded have been excluded.
4.2.3.3 Longitudinal Changes in Individual Patients and Residents -

For those continuously resident in the same type of care over the three year period (Table 35), overall nearly 82% remained unchanged, whilst 16% deteriorated and 2% improved. The odds in favour of deterioration in patients and residents whose status had changed was nearly seven to one, greater at all ages in males.

<table>
<thead>
<tr>
<th>Age group (Years)</th>
<th>Status in 1979</th>
<th>Odds in favour of deterioration in those who changed</th>
</tr>
</thead>
<tbody>
<tr>
<td>65 - 74</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Improved</td>
<td>Unchanged</td>
</tr>
<tr>
<td></td>
<td>2.4</td>
<td>85.5</td>
</tr>
<tr>
<td></td>
<td>(9)</td>
<td>(329)</td>
</tr>
<tr>
<td>75 - 84</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>2.4</td>
<td>82.1</td>
</tr>
<tr>
<td></td>
<td>(13)</td>
<td>(450)</td>
</tr>
<tr>
<td>85 and over</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>2.4</td>
<td>77.2</td>
</tr>
<tr>
<td></td>
<td>(9)</td>
<td>(287)</td>
</tr>
<tr>
<td>65 and over</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>2.4</td>
<td>81.7</td>
</tr>
<tr>
<td></td>
<td>(31)</td>
<td>(1066)</td>
</tr>
</tbody>
</table>

* Excludes all people initially resident for less than 28 days and also, for this series of analyses, those with missing information for any activity in 1976 or 1979 (82 in total). Ten people for whom age was not recorded have also been excluded.

Within age groups the proportion who improved remained similar but the proportion who were unchanged fell with increasing age whilst the proportion who had deteriorated increased. The odds in favour of deterioration (compared to improvement) for the group whose status changed showed a corresponding increase with greater age although this effect did not prove statistically significant for the two sexes.
combined or males and females as separate groups.
4.2.4 Washing and Dressing

4.2.4.1 Comparison of the Composition of the Two Populations -

For all types of accommodation together there was an increase in people most severely incapacitated with respect to washing and dressing (Figure 23): the proportion who were washed, dressed or shaved by staff at least once during the week before each survey increased from 37% in 1976 to 42% in 1979.
Within the three types of NHS facilities there was a fall, between 1976 and 1979, in the proportion of elderly patients who were fully independent in washing and dressing and an increase in the proportion who had supervision or actual help to wash, dress or shave.

For the population in homes for the elderly in the two time periods there was a fall in the proportion fully inde-
pendent and an increase in the proportion who had supervision and help between 1976 and 1979, although this was of a smaller magnitude than the increases in the NHS premises. The private nursing home population showed little change in the proportion of elderly patients supervised although there was an increase of 11% in the proportion actually received help with washing, dressing or shaving.
4.2.4.2 Comparison of Recent Admissions for the Two Time Periods -

On comparing the changes in level of incapacity in washing and dressing for elderly people with lengths of stay under one year in each census, it can be seen (Table 36) that overall there was a slight increase in incapacity amongst recent admissions in 1979 compared to 1976; this achieved significance at the 10% level ($X^2_{1 df} = 2.81; P < .1$).

Within the NHS facilities, the geriatric population was more greatly incapacitated in 1979 compared to 1976, but this was a change which was only significant at the 20% level ($X^2_{1 df} = 2.42; P < .2$). There was a similar but not significant increase in the proportion of higher levels of incapacity in the acute hospital population. The psychiatric hospital population changed in the general direction of lower incapacity between 1976 and 1979 but this did not prove to be statistically significant.

In the non-NHS facilities, there were no significant changes in levels of incapacity in this activity in the populations with lengths of stay under one year between the two time periods.
### Table 36: Distribution of people with different degrees of incapacity in washing and dressing: numbers (percentages): In each type of care, 1976 compared to 1979. Lengths of stay under one year only.

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>No Supervised</td>
<td>75</td>
<td>(23.3)</td>
<td>56</td>
<td>(16.3)</td>
<td>24</td>
<td>(20.3)</td>
<td>32</td>
</tr>
<tr>
<td>Supervised</td>
<td>93</td>
<td>(27.6)</td>
<td>101</td>
<td>(29.4)</td>
<td>28</td>
<td>(23.7)</td>
<td>18</td>
</tr>
<tr>
<td>Washed, dressed or shaved</td>
<td>169</td>
<td>(50.1)</td>
<td>187</td>
<td>(54.4)</td>
<td>66</td>
<td>(55.9)</td>
<td>64</td>
</tr>
<tr>
<td>All degrees</td>
<td>337</td>
<td></td>
<td>344</td>
<td></td>
<td>110</td>
<td></td>
<td>114</td>
</tr>
</tbody>
</table>

1 all people resident for less than 28 days and 37(3% of total) for whom no information was recorded have been excluded.

2 all people resident for less than 28 days have been excluded.
4.2.4.3 Longitudinal Changes in Individual Patients and Residents

Scrutiny of patients and residents who had been continuously in care between 1976 and 1979 (Table 37) showed that 58% had remained unchanged, whilst nearly a third had deteriorated leaving 10% in which there had been improvement in their ability to wash and dress themselves.

**TABLE 37** Change in degree of independence in washing and dressing of continuously resident people between 1976 and 1979, by age group. Percentages with numbers in brackets.

<table>
<thead>
<tr>
<th>Age group (years)</th>
<th>Status in 1979</th>
<th>Odds in favour of deterioration in those who changed</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Improved</td>
<td>Unchanged</td>
</tr>
<tr>
<td>65 - 74</td>
<td>10.7</td>
<td>63.9</td>
</tr>
<tr>
<td></td>
<td>(41)</td>
<td>(246)</td>
</tr>
<tr>
<td>75 - 84</td>
<td>11.7</td>
<td>56.2</td>
</tr>
<tr>
<td></td>
<td>(64)</td>
<td>(308)</td>
</tr>
<tr>
<td>85 and over</td>
<td>7.3</td>
<td>54.6</td>
</tr>
<tr>
<td></td>
<td>(27)</td>
<td>(203)</td>
</tr>
<tr>
<td>65 and over</td>
<td>10.1</td>
<td>58.0</td>
</tr>
<tr>
<td></td>
<td>(132)</td>
<td>(757)</td>
</tr>
</tbody>
</table>

* Excludes all people initially resident for less than 28 days and also, for this series of analyses, those with missing information for any activity in 1976 or 1979 (82 in total). Ten people for whom age was not recorded have been excluded.

The proportion who improved was similar for the younger age groups but fell slightly in the 85s and over. The proportion unchanged fell by nearly 10% between the age of 65-74 and 85 and over. This was reflected by a corresponding increase in the proportion who deteriorated and the direction of change: the odds in favour of deterioration more than doubled from the youngest to the oldest age group. The
extent of deterioration in males of each age group was similar to that in females. The increase in deterioration with age increase was highly significant ($\chi^2_{df} = 8.19; P < .005$) for the two sexes combined and for females ($\chi^2_{df} = 8.91; P < .005$) but not for males alone ($\chi^2_{df} = 0.8; NS$).

4.2.5 Feeding

4.2.5.1 Comparison of the Composition of the Two Populations -

For all types of care, over the three year period in terms of the activity of feeding, the population of elderly people had become more incapacitated (Figure 24). There was a small increase (from 9 to 11%) in the proportion of elderly people who were spoon-fed.
RESULTS: CHANGES OVER TIME.

Figure 24: Distribution of Elderly People with Different Degrees of Independence in Feeding, 1976 Compared to 1979

Within the three types of NHS facilities, the geriatric and psychiatric hospital populations were more incapacitated in feeding in 1979 compared to 1976. This was most marked in the geriatric group whilst for elderly people in acute beds there was a fall in incapacity arising from this activity when the 1979 population was compared to the 1976 population.
In the facilities outside the NHS, for the populations in homes of the elderly and private nursing homes there was a general increase in incapacity between 1976 and 1979, most marked in the private nursing home population where, for example, the proportion of patients who were spoon-fed increased from 13% (1976) to 19% (1979).
4.2.5.2 Comparison of recent admissions for the two time periods -

There was little overall change in the level of incapacity in feeding amongst people with lengths of stay under one year in each survey (Table 38) except in geriatric hospitals where a significant increase in incapacity with respect to this activity took place between 1976 and 1979 ($X^2_{1df} = 8.61; P<.01$).
Table 38. Distribution of people with different degrees of incapacity in feeding: numbers (percentages): in each type of care, 1976 compared to 1979. Lengths of stay under one year only.

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>No Supervision required</td>
<td>222 (65.9)</td>
<td>189 (54.9)</td>
<td>59 (50.9)</td>
<td>67 (58.8)</td>
<td>55 (63.2)</td>
<td>64 (70.3)</td>
<td>473 (81.7)</td>
<td>410 (84.5)</td>
<td>11 (-)</td>
<td>13 (-)</td>
<td>43 (47.3)</td>
<td>60 (55.1)</td>
<td>863 (70.4)</td>
<td>803 (69.2)</td>
</tr>
<tr>
<td>Supervision required</td>
<td>69 (20.5)</td>
<td>96 (27.9)</td>
<td>42 (36.2)</td>
<td>36 (31.6)</td>
<td>19 (21.8)</td>
<td>18 (19.8)</td>
<td>50 (15.6)</td>
<td>57 (11.8)</td>
<td>4 (-)</td>
<td>3 (-)</td>
<td>33 (36.3)</td>
<td>35 (32.1)</td>
<td>257 (21.0)</td>
<td>245 (21.1)</td>
</tr>
<tr>
<td>Spoonfed</td>
<td>46 (13.6)</td>
<td>59 (17.2)</td>
<td>15 (12.9)</td>
<td>9 (9.6)</td>
<td>13 (14.9)</td>
<td>9 (9.9)</td>
<td>16 (2.8)</td>
<td>18 (2.7)</td>
<td>1 (-)</td>
<td>1 (-)</td>
<td>15 (16.5)</td>
<td>14 (17.8)</td>
<td>106 (8.6)</td>
<td>112 (9.7)</td>
</tr>
<tr>
<td>All degrees</td>
<td>337 (100.0)</td>
<td>344 (100.0)</td>
<td>116 (100.0)</td>
<td>114 (100.0)</td>
<td>87 (100.0)</td>
<td>91 (100.0)</td>
<td>579 (100.0)</td>
<td>405 (100.0)</td>
<td>16 (-)</td>
<td>17 (-)</td>
<td>91 (100.0)</td>
<td>109 (100.0)</td>
<td>1226 (100.0)</td>
<td>1160 (100.0)</td>
</tr>
</tbody>
</table>

* All people resident for less than 28 days and 36 (3% of the total) for who no information was recorded

2 All people resident for less than 28 days and 1 for whom no information was recorded.
4.2.5.3 Longitudinal Changes in Individual Patients and Residents -

Changes in levels of independence in feeding for individual elderly people continuously resident in the same type of care over the entire three year period are shown in Table 39.

<table>
<thead>
<tr>
<th>Age group (years) in 1976</th>
<th>Status in 1979</th>
<th>Odds in favour of deterioration in those who changed</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Improved</td>
<td>Unchanged</td>
</tr>
<tr>
<td>65 - 74</td>
<td>8.3</td>
<td>71.7</td>
</tr>
<tr>
<td></td>
<td>(32 )</td>
<td>(276 )</td>
</tr>
<tr>
<td>75 - 84</td>
<td>6.2</td>
<td>72.6</td>
</tr>
<tr>
<td></td>
<td>(34 )</td>
<td>(396 )</td>
</tr>
<tr>
<td>85 and over</td>
<td>5.6</td>
<td>66.4</td>
</tr>
<tr>
<td></td>
<td>(21 )</td>
<td>(247 )</td>
</tr>
<tr>
<td>65 and over</td>
<td>6.7</td>
<td>70.6</td>
</tr>
<tr>
<td></td>
<td>(87 )</td>
<td>(921 )</td>
</tr>
</tbody>
</table>

Excludes all people initially resident for less than 28 days and also, for this series of analyses, those with missing information for any activity in 1976 or 1979 (82 in total). Ten people for whom age was not recorded have also been excluded.

Overall, 71% of patients and residents were unchanged when reassessed three years later, 23% had deteriorated and 7% had improved. Almost three and a half as many had deteriorated as improved, with deterioration being slightly greater for males than females at each age.

As with the other activities there was an aged-related increase in this change from nearly two and a half to one in
favour of deterioration in the youngest age group to five to one in those aged 85 years and older: this increase with age proved significant at the 2% level ($\chi^2_{1df} = 5.22; \ P<.02$). Whilst this was the case for data for the two sexes taken together, it was only for females, not males, that the trend was significant ($\chi^2_{1df} = 4.67; \ P<.05$).
4.2.6 All Activities

When the two cross-sectional populations were examined in relation to incapacity in all activities as indicated by total activities of daily living (ADL) score (Table 40), there was, for all types of care an increase in incapacity.

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>9 and above</td>
<td>28 36</td>
<td>19 20</td>
<td>17 12</td>
<td>6 7</td>
<td>10 28</td>
<td>22 25</td>
<td>14 16</td>
</tr>
<tr>
<td>7 and above</td>
<td>45 57</td>
<td>30 36</td>
<td>28 33</td>
<td>15 16</td>
<td>10 28</td>
<td>38 37</td>
<td>24 28</td>
</tr>
<tr>
<td>5 and above</td>
<td>64 75</td>
<td>40 49</td>
<td>40 47</td>
<td>26 28</td>
<td>26 46</td>
<td>51 53</td>
<td>36 42</td>
</tr>
<tr>
<td>3 and above</td>
<td>79 88</td>
<td>52 63</td>
<td>63 83</td>
<td>44 47</td>
<td>53 56</td>
<td>74 76</td>
<td>53 60</td>
</tr>
<tr>
<td>1 and above</td>
<td>91 98</td>
<td>77 82</td>
<td>87 93</td>
<td>73 75</td>
<td>64 75</td>
<td>88 91</td>
<td>77 82</td>
</tr>
<tr>
<td>0 and above</td>
<td>100 100</td>
<td>100 100</td>
<td>100 100</td>
<td>100 100</td>
<td>100 100</td>
<td>100 100</td>
<td>100 100</td>
</tr>
<tr>
<td>N (100%)</td>
<td>545 601</td>
<td>660 658</td>
<td>82 99</td>
<td>1989 2147</td>
<td>61 71</td>
<td>225 320</td>
<td>3562 3896</td>
</tr>
</tbody>
</table>

1 all people resident for less than 28 days are excluded as are those in whom part of information was not recorded: 289(8% of total) in 1976; 24(0.6% of total) in 1979.

This was most marked for the populations in the NHS geriatric beds: the proportion of patients scoring seven and above (highly incapacitated) increased from 45% in 1976 to 57% in 1979 and in homes for the handicapped where the increase was from 13% to 35%.
Consideration of the same groupings of total ADL score for patients and residents who had been admitted in the year preceding each survey are shown in Table 41.

<table>
<thead>
<tr>
<th>ADL score</th>
<th>National Health Service Beds</th>
<th>Non-NHS Homes</th>
<th>All types</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Geriatric %</td>
<td>Psychiatric %</td>
<td>Acute %</td>
</tr>
<tr>
<td>9 and above</td>
<td>13 17 10 6 10 7</td>
<td>2 2 * *</td>
<td>14 10 8 8</td>
</tr>
<tr>
<td>7 and above</td>
<td>32 38 19 22 19 22</td>
<td>8 7 * *</td>
<td>30 23 19 20</td>
</tr>
<tr>
<td>5 and above</td>
<td>47 57 33 37 33 35</td>
<td>18 16 * *</td>
<td>36 39 31 34</td>
</tr>
<tr>
<td>3 and above</td>
<td>66 74 52 50 52 58</td>
<td>33 33 * *</td>
<td>69 55 48 52</td>
</tr>
<tr>
<td>1 and above</td>
<td>84 92 85 71 84 87</td>
<td>61 59 * *</td>
<td>80 80 71 75</td>
</tr>
<tr>
<td>0 and above</td>
<td>100 100 100 100 100 100</td>
<td>* *</td>
<td>100 100 100 100</td>
</tr>
<tr>
<td>N(100%)</td>
<td>314 344 116 114 79 91 557 485</td>
<td>* *</td>
<td>79 109 1157 1155</td>
</tr>
</tbody>
</table>

1 All people resident under 28 days and 105 (8% of total) people in whom part of information was not recorded have been excluded.
2 All people resident under 28 days and 6 (0.5% of total) people in whom part of information was not recorded have been excluded.
* Excluded because of small numbers

For people with lengths of stay under one year in the two survey populations, overall the population in 1979 was slightly more highly incapacitated than that in 1976. The changes within individual types of care were slight, however, except in the geriatric hospital populations where relatively large increases in incapacity took place.
Table 42 shows changes in all activities for individual elderly people continuously resident in the same type of care over the entire three year period.

<table>
<thead>
<tr>
<th>Age group (years)</th>
<th>Status in 1979</th>
<th>Odds in favour of deterioration</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Improved</td>
<td>Unchanged</td>
</tr>
<tr>
<td>65-74</td>
<td>18.4 (71)</td>
<td>38.4 (148)</td>
</tr>
<tr>
<td>75-84</td>
<td>17.2 (94)</td>
<td>28.8 (158)</td>
</tr>
<tr>
<td>85 and over</td>
<td>16.7 (62)</td>
<td>19.9 (74)</td>
</tr>
<tr>
<td>65 and over</td>
<td>17.4 (227)</td>
<td>29.1 (380)</td>
</tr>
</tbody>
</table>

Excludes all people initially resident for less than 28 days and also for this series of analyses, those with missing information for any activity in 1976 or 1979 (82 in total). Ten people for whom age was not recorded have also been excluded.

It can be seen that overall under a third remained unchanged, over half deteriorated and under a fifth improved. The degree of change was greater for all activities than it had been for individual activities as might be expected since, by including the whole scale, there was more opportunity for change. However, the nature of the change with a three to one deterioration amongst those elderly people whose status had changed, was of the same order of magnitude for all activities as it had been for individual activities.
The extent of deterioration in males (3.7 to one) of all ages was greater than that of females (2.9 to one), but this effect was restricted to the 65-74 and 85 and over age groups.

The increase in the extent of deterioration with age was significant at the 2% level for the two sexes combined ($\chi^2_{1\text{df}} = 6.14; \ P<.02$), for females alone at the 1% level ($\chi^2_{1\text{df}} = 7.47; \ P<.01$) but was not significant for males alone.
When the longitudinal changes in all activities were examined in relation to initial incapacity level (Table 43) least change was seen in the lowest incapacity group: amongst those with total ADL scores between 0 and 2, 38% remained unchanged compared to a figure of 14-15% for higher total ADL score groups. When change did occur, however, there was markedly more deterioration in the least incapacitated group: almost seven to one compared to less than two to one. This analysis was also undertaken for each of the activities of daily living but no clear-cut pattern emerged so the results were not presented in the individual sections above.

Table 43 Change in overall incapacity amongst people continuously resident between 1976 and 1979 by initial total activities (ADL) score. Percentages

<table>
<thead>
<tr>
<th>Total ADL score in 1976</th>
<th>Status in 1979</th>
<th>Odds in favour of deterioration in those who changed</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Improved</td>
<td>Unchanged</td>
</tr>
<tr>
<td>0-2</td>
<td>8</td>
<td>38</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>3-6</td>
<td>30</td>
<td>15</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>7-11</td>
<td>38</td>
<td>14</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
4.3 CHANGES IN THE CONTINUOUSLY RESIDENT IN LONG-STAY SETTINGS

Between the three types of care: NHS geriatric beds, NHS psychiatric beds and homes for the elderly: in which there were large enough numbers of continuously resident elderly people to study, there were differences in the extent and nature of change.

Less change in status and a significant fall ($\chi^2$ = 6.66; $P<.01$) in the extent of deterioration occurred with increasing length of stay prior to initial assessment (Table 44).

<table>
<thead>
<tr>
<th>Length of stay prior to 1976</th>
<th>Status in 1979</th>
<th>Odds in favour of deterioration in those who changed</th>
<th>N (100%)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Improved</td>
<td>Unchanged</td>
<td>Deteriorated</td>
</tr>
<tr>
<td>Less than 1 year</td>
<td>17</td>
<td>25</td>
<td>58</td>
</tr>
<tr>
<td>Less than 2 years</td>
<td>14</td>
<td>26</td>
<td>60</td>
</tr>
<tr>
<td>Less than 5 years</td>
<td>15</td>
<td>30</td>
<td>54</td>
</tr>
<tr>
<td>Less than 10 years</td>
<td>22</td>
<td>31</td>
<td>48</td>
</tr>
<tr>
<td>More than 10 years</td>
<td>21</td>
<td>35</td>
<td>44</td>
</tr>
<tr>
<td>All lengths of stay</td>
<td>17</td>
<td>29</td>
<td>54</td>
</tr>
<tr>
<td>N (100%)</td>
<td>(227)</td>
<td>(380)</td>
<td>(698)</td>
</tr>
</tbody>
</table>

Excludes all people initially resident for less than 28 days and also, for this series of analyses, those with missing information for any activity in 1976 (82 in total). Ten people for whom age was not recorded have also been excluded.
The difference was mainly between the long-stay group (five years or more) who changed and deteriorated less than the shorter stay group (five years or less) and therefore was an issue mainly in the context of the psychiatric hospitals, where nearly all of this long stay group were resident (Table 45).

### TABLE 45
Change in all activities of daily living for elderly people continuously resident in psychiatric care by previous length of stay. Percentages with numbers shown in brackets.

<table>
<thead>
<tr>
<th>Length of stay prior to 1976</th>
<th>Status in 1979</th>
<th>Total</th>
<th>Odds in favour of deterioration in those who changed</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Improved</td>
<td>Unchanged</td>
<td>Deteriorated</td>
</tr>
<tr>
<td>Less than 5 Years</td>
<td>18</td>
<td>16</td>
<td>66</td>
</tr>
<tr>
<td></td>
<td>(16)</td>
<td>(15)</td>
<td>(60)</td>
</tr>
<tr>
<td>More than 5 Years</td>
<td>22</td>
<td>33</td>
<td>45</td>
</tr>
<tr>
<td></td>
<td>(49)</td>
<td>(75)</td>
<td>(102)</td>
</tr>
<tr>
<td>Total</td>
<td>20</td>
<td>29</td>
<td>51</td>
</tr>
<tr>
<td></td>
<td>(65)</td>
<td>(90)</td>
<td>(162)</td>
</tr>
</tbody>
</table>

Table 46 compares the proportion: remaining unchanged, improving and deteriorating together with the odds in favour of deterioration for patients and residents who had undergone change, in the three types of care in which there were sufficiently large numbers of continuously resident old people to study.
The greatest change was in continuously resident geriatric hospital patients - 23% were unchanged three years after initial assessment, a lower value than the corresponding figure for the populations in psychiatric beds (28%) and homes for the elderly (30%). Similarly, for the elderly people whose status had changed, greatest deterioration occurred in the geriatric hospital population and least in the psychiatric hospital patients.

The three types of care, however, were different in terms of age and sex structure, lengths of stay, and initial levels of incapacity all of which as was shown above significantly affected change in status over the three year peri-
In order to compare the extent of deterioration amongst individuals who were in these three settings whose status had changed and who were similar with respect to these variables, a regression analysis model was applied. The details of this are described in chapter 2 (see page 2-58).

A final model which included total ADL score, institution type, age, sex and length of stay gave a reasonable fit indicating that differences were largely explicable on the basis of these factors. After adjustment for the other factors using regression analysis, there was no longer any significant difference between patients in geriatric hospital and those in psychiatric hospitals. However, even after adjustment there was a greater degree of deterioration amongst patients in both hospitals, whose status changed, than for their counterparts in homes for the elderly. The details of these comparisons are as follows:

(a) Geriatric Hospital Patients Versus Psychiatric Hospital Patients

Log odds deterioration for geriatric hosp. patients = .3387 (standard error = .4644, not significant)

Thus, continuously resident patients in geriatric hospital
and those in psychiatric hospitals, similar with respect to age, sex, previous length of stay and total ADL score and whose status changed, deteriorated to a similar extent over the three year period.

(b) Geriatric Hospital Patients Versus Residents of Homes for the Elderly

Log odds deterioration for geriatric hosp. patients = 1.326 (standard error = .4031; P<.05)

Thus, continuously resident patients in geriatric hospitals who were otherwise similar with respect to age, sex, length of stay and total ADL score and whose status changed, showed a significantly greater deterioration than did their counterparts in homes for the elderly.

(c) Psychiatric Hospital Patients Versus Residents of Homes for the Elderly

Log odds deterioration for psychiatric hospital patients = .9873 (standard error = .331; P<.05)
Thus, continuously resident patients in psychiatric hospitals who were otherwise similar with respect to age, sex, length of stay and total ADL score and whose status changed, showed a significantly greater deterioration than did their counterparts in homes for the elderly.
CHAPTER 5

RESULTS: OUTCOMES.
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<tr>
<th>CONTENTS</th>
<th>PAGE NUMBER</th>
</tr>
</thead>
<tbody>
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<td>5-2</td>
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<td>5-4</td>
</tr>
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<td>5-5</td>
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<tr>
<td>5.2.2 Outcome and Level of Incapacity</td>
<td>5-9</td>
</tr>
<tr>
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<td>5-16</td>
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<tr>
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<td>5-22</td>
</tr>
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<td>5-24</td>
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<td>5-29</td>
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<tr>
<td>5.5.1 Mortality Experience Compared to Leicestershire Population</td>
<td>5-29</td>
</tr>
<tr>
<td>5.5.2 Mortality by Cause</td>
<td>5-38</td>
</tr>
<tr>
<td>5.5.3 Place of Death</td>
<td>5-42</td>
</tr>
<tr>
<td>5.5.4 Survival from Time of Admission and Time of Assessment</td>
<td>5-43</td>
</tr>
</tbody>
</table>
This chapter of results presents the follow-up of the entire population of 4490 elderly people present in all forms of institutional care in Leicestershire in December 1976 to determine their outcome by December 1979, three years later. It also describes a shorter (six month) follow-up of the 3916 patients and residents who were enumerated in NHS premises and social services homes for the elderly in December 1979 to enable outcome to be examined for a particular admission.

The chapter is organised and presented in five parts. Section 5.1 is a short account of the relative frequency of people in different outcome categories in the two follow-ups. Section 5.2 describes the inter-relationship of outcome and the elderly person's characteristics (age, level of incapacity). Section 5.3 examines outcomes within different types of care and Section 5.4 in relation to misplacement. Section 5.5 describes the mortality data in more detail using life table analysis to compare survival in different groups and indirect age-standardisation to compare with the elderly population of Leicestershire as a whole.

5.1 OVERALL PATTERNS

Follow-up of the population of 4490 elderly people present in all forms of institutional care in Leicestershire on 1st December 1976 up to December 1979 yielded five categories of outcome. The five categories were as follows:

a. Died
b. Continuously resident - this term was only applied to an elderly person who did not die and resided in the same institution over the entire three year period without interruption.

c. Transfer - this term was applied to a person who did not die and, though continuously resident in institutional care over the three year period had moved from their institution of residence in 1976 to a different institution or type of care at some point over the three year period without being first discharged into the community.

d. Re-admitted - this term was used for an elderly person who did not die and though in institutional care again at the time of the survey in December 1979, had been discharged into the community for a varying length of time in between.

e. Discharged - this term was used for a person who was resident in care in December 1976 and was discharged into the community at some point before December 1979 and was not resident in an institution in December 1979 or dead.

The 1976 institutional elderly population broke down by outcome into these five categories as follows:

a. Died - 2416 (53%);  
b. Continuously resident - 1435 (32%)

c. Transfer - 209 (5%)  
d. Re-admitted - 41 (1%)  
e. Discharged - 389 (9%)

This information was then supplemented by data from a
shorter follow-up (to six months) of the population of elderly patients and residents in all types of NHS premises and social services homes for the elderly in December 1979. As might be expected from a relatively short follow-up period, a high proportion were still resident in the same institution at the six-month point. However, the collection of these data on immediate outcome of a particular residence amplified the broad outcome categories for the follow-up of the 1976 population. In the follow-up of the 3916 elderly people resident in NHS wards and hospitals and social services department homes for the elderly in December of 1979, follow-up to six months gave the following outcomes:

- a. Still resident - 2495 (64%)
- b. Died - 502 (13%)
- c. Went home - 443 (11%)
- d. Transferred to other institution - 370 (9%)
- e. Other and not traceable - 106 (3%)

5.2 OUTCOME IN RELATION TO VARIOUS CHARACTERISTICS

Data on outcome in this series of analyses are presented in three ways:

a. the relative frequency of the five outcome categories (died, continuously resident, transferred, re-admitted, discharged) at the three year point for the 1976 population;

b. the relative frequency of the five outcome categories (died, still resident, transferred to another institution, went home, other and not traceable) at the end of six months for the 1979 population in NHS and social services
c. the likelihood of various alternative outcomes in each of three groups in the follow-up of the 1979 population: firstly, for all patients, the odds of death versus survival; secondly, for survivors, the odds of being still resident versus discharged or transferred; and thirdly, for survivors who were no longer still resident, the odds of being discharged home versus transferred to another institution. The effect of different variables are expressed as the relative risk (percentage) for one level of the variable under study compared to a fixed level of the variable (e.g. those aged 85-94 years compared to those aged 65-74 years). This fixed level is then, (by definition) 100%. This is described in more detail in the chapter 2 (see P.2-59).

5.2.1 Outcome and age

There were highly significant differences between the age groups in the distribution of the various possible outcomes for the 1976 population ($\chi^2_{df} = 176.66$; $p < .001$). Part of the difference was accounted for by the differences in the proportion of deaths within the age groups: with increasing age amongst the over 65's, the deaths as a proportion of all outcomes increased (Figure 25). A further marked difference was the relatively high proportion of discharges
in the youngest age group.

Figure 25 Outcome (percentage) of 1976 institutional elderly population three years after original enumeration, by age group.

"Excludes 28 people in whom age was not recorded."
Six month follow-up of the elderly who were enumerated in NHS facilities or social services homes for the elderly in December 1979 showed that the majority (64%) were still resident with the remainder being divided roughly equally between death, discharge home or transfer to another type of care (Table 47).

Table 47 Outcome at six months (percentage) for elderly people who were in NHS facilities and social services homes in December 1979, by age group.

<table>
<thead>
<tr>
<th>Age group</th>
<th>Outcome at 6 months</th>
<th>N(100%)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Still resident</td>
<td>Died</td>
</tr>
<tr>
<td>65 - 74</td>
<td>55 10 20 8 7</td>
<td>100 (945)</td>
</tr>
<tr>
<td>75 - 84</td>
<td>64 13 11 10 2</td>
<td>100 (1685)</td>
</tr>
<tr>
<td>85 - 94</td>
<td>71 15 6 8 41</td>
<td>100 (1124)</td>
</tr>
<tr>
<td>95 and over</td>
<td>68 18 3 10 1</td>
<td>100 (152)</td>
</tr>
</tbody>
</table>

10 people in whom age was not recorded have been excluded.

The proportion still resident, six months after enumeration, increased with greater age, as did the proportion who had died whilst the proportion discharged home fell.
The effect of age on the likelihood of various outcomes in the follow-up of the 1979 population is reflected in the relative risk of three alternative outcomes (death versus survival, still resident versus moved elsewhere, home on discharge versus transfer). There was an increase in the relative risk of death with increasing age (Table 48) and all older age groups showed significantly greater (p<.05) risk relative to 65 - 74 year olds. The corresponding data for survivors, examining continuing residence in the same type of care as opposed to discharge or transfer, showed a less clear-cut age-related effect.

Table 48 Relative risk (percentages, 95% confidence limits shown in brackets) of various alternative outcomes at six months, for elderly people in care in December 1979, by age group.

<table>
<thead>
<tr>
<th>Age group (years)</th>
<th>Relative risk* of death(%) all patients</th>
<th>Relative risk* of continued residence(%) survivors</th>
<th>Relative risk* of discharge home for those discharged or transferred</th>
</tr>
</thead>
<tbody>
<tr>
<td>65 - 74</td>
<td>100 (by definition)</td>
<td>100 (by definition)</td>
<td>100 (by definition)</td>
</tr>
<tr>
<td>75 - 84</td>
<td>161 (114-228)</td>
<td>79 (58-92)</td>
<td>44 (24-79)</td>
</tr>
<tr>
<td>85 - 94</td>
<td>199 (140-284)</td>
<td>108 (77-152)</td>
<td>29 (15-59)</td>
</tr>
<tr>
<td>95 and over</td>
<td>248 (144-427)</td>
<td>93 (50-172)</td>
<td>16 (3-78)</td>
</tr>
</tbody>
</table>

* Relative risks are expressed as the odds in favour of given alternative outcomes (death versus survival; continued residence versus discharge or transfer; discharge home versus transfer to another institution) for each age group compared to patients aged 65 - 74 years.

The relative risk of continued residence for the 75 - 84 year old survivors was significantly lower (p<.05) when compared to patients and residents aged 65 - 74 years old. For the two older age groups, however, there was no significantly greater or lesser relative risk of continued resi-
dence as evidenced by the 95% confidence limits for the estimates of relative risk. However, for those survivors who were no longer resident in care six months after enumeration, there was an apparent age-related influence on the likelihood of their destination being home rather than another type of care. All three older age groups showed a significantly lower (p<.05) relative risk of discharge home when compared to the youngest age group (65 - 74 years) and the relative risk fell with increasing age.

5.2.2 Outcome and levels of incapacity

There were significant differences between elderly people enumerated in December 1976 with different levels of incapacity within the five activities:

- mobility ($\chi^2_{9df}=250.74; P<.001$);
- urinary incontinence ($\chi^2_{9df}=242.10; P<.001$);
- faecal incontinence ($\chi^2_{3df}=169.72; P<.001$);
- washing and dressing ($\chi^2_{6df}=231.39; P<.001$); and
- feeding ($\chi^2_{6df}=172.26; P<.001$) – Figure 26.
Figure 26: **Outcome (percentages)** of 1976 institutional elderly population three years after original enumeration, by incapacity in individual activities of daily living (1)

(1) All people resident less than 28 days have been excluded as have people with incomplete data, numbers and percentages of total shown in relevant footnotes.

(2) 74 (2%) (3) 92 (2%) (4) 94 (2%) (5) 109 (3%) (6) 99 (3%)
For each of the individual activities, the proportion of deaths increased within each higher incapacity category. There was a correspondingly high proportion of continuously resident elderly people in the lowest incapacity groups and a low proportion of continuously resident people in highest incapacity groupings in the individual activities.

Figure 27: Outcome (percentages) of 1976 institutional elderly population three years after original enumeration, by total activities of daily living (total ADL) score.

All people resident for less than 28 days were excluded as were 289 (8% of total) in whom part of activity assessment was not recorded.
The differences in the proportions of different outcomes between the various total ADL score bands also proved to be highly statistically significant ($\chi^2 = 313.44; P < .001$). The proportion of outcomes which were deaths increased with increasing total ADL score. In the highest incapacity group it was more than double that in the least incapacitated group: 77% compared to 37%. Other important differences in outcome for the different total ADL score groupings were the relatively high proportion (over half) of continuously resident elderly people in the score range 0 - 1 and the relatively low proportion continuously resident in the highest score range, 8 - 11. There was hardly any difference in the proportion of patients and residents who were discharged: it ranged between 3% and 5% for all four total ADL score bands.

Figure 28 shows the pattern of outcomes within four types of institutions (NHS geriatric wards and hospitals, NHS psychiatric wards and hospitals: homes for the elderly: and private nursing homes). For the least incapacitated group, the differences between the four types of care with respect to outcome were highly significant ($\chi^2 = 96.53; P < .001$).
Figure 28: Outcome (%) of 1976 institutional elderly population three years after original enumeration by total activities of daily living (total ADL score) within each type of care.

Homes for handicapped and NHS acute beds have been excluded because of relatively small numbers, other exclusions as in Figure 27.

A large part of this difference was accounted for by the relatively high proportion of deaths amongst the geriatric hospital population together with the relatively low proportion of continuously resident patients in the same setting. There was also a relatively high proportion (about
one fifth) of discharges in the private nursing home population and a relatively low figure for deaths in the psychiatric hospital population. For elderly people who scored 2 - 4 on total ADL in 1976 as Figure 28 shows, the pattern was similar.

For the groups scoring between 5 - 7 and 8 - 11 for total ADL, the differences in outcome between institutions remained highly significant but became more similar with higher levels of incapacity as the proportion of deaths increased in all types care.

Six month follow-up of the 1979 population in NHS facilities and social services homes for the elderly also revealed differences in outcome between patients who were in the three incapacity groups with respect to total ADL score (Table 49).

<table>
<thead>
<tr>
<th>Total ADL</th>
<th>Still resident</th>
<th>Died</th>
<th>Discharged home</th>
<th>Transferred to another institution</th>
<th>Other end not known</th>
<th>Total N (100%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>0 - 2</td>
<td>80</td>
<td>4</td>
<td>4</td>
<td>8</td>
<td>4</td>
<td>100 (1239)</td>
</tr>
<tr>
<td>3 - 6</td>
<td>75</td>
<td>10</td>
<td>4</td>
<td>10</td>
<td>1</td>
<td>100 (1039)</td>
</tr>
<tr>
<td>7 - 11</td>
<td>63</td>
<td>25</td>
<td>3</td>
<td>8</td>
<td>1</td>
<td>100 (922)</td>
</tr>
<tr>
<td>All scores</td>
<td>73</td>
<td>12</td>
<td>4</td>
<td>8</td>
<td>3</td>
<td>100 (3200)</td>
</tr>
</tbody>
</table>

People with lengths of stay under 28 days have been excluded.
As with the 1976 population there was a fall in the proportion still resident and an increase in the proportion who died with increasing incapacity, but little difference between incapacity groups in the proportions in other outcomes.

The relative risks for the different outcomes (Table 50), as would be expected from the previous data, showed significantly greater increase in the relative risk of death for the higher incapacity groups.

<table>
<thead>
<tr>
<th>Total ADL score</th>
<th>Relative risk* of death (%) all patients</th>
<th>Relative risk* of continued residence (%) survivors</th>
<th>Relative risk* of discharge home (%) for those discharged or transferred</th>
</tr>
</thead>
<tbody>
<tr>
<td>0 - 2</td>
<td>100 (by definition)</td>
<td>100 (by definition)</td>
<td>100 (by definition)</td>
</tr>
<tr>
<td>3 - 6</td>
<td>258 (180 - 369)</td>
<td>81 (63 - 106)</td>
<td>95 (57 - 161)</td>
</tr>
<tr>
<td>7 - 11</td>
<td>768 (553 - 1060)</td>
<td>80 (69 - 106)</td>
<td>69 (38 - 125)</td>
</tr>
</tbody>
</table>

* Relative risks are expressed as the odds in favour of given alternative outcomes (death versus survival; continued residence versus discharge or transfer; discharge home versus transfer to another institution) for each total ADL score group compared to the 0 - 2 group.

However, although the relative risk of continued residence in survivors was lower for the higher incapacity groups as was the risk of being discharged home, these differences did not prove significant at the 5% level.
5.3 OUTCOME AND TYPE OF CARE

The differences between the six types of institution in the distribution of outcomes of the 1976 population was highly significant (\( \chi^2 = 1195.86; p < .001 \)). A higher proportion of deaths occurred in the NHS geriatric hospital population than in other types of care but apart from a slightly lower proportion of deaths in the psychiatric hospital population, the proportion of all outcomes which were deaths was broadly similar (Figure 29). The other main differences were the very low proportion of continuously resident patients and the relative high proportion of discharges in the elderly people who were in NHS acute beds. Elderly patients in the NHS acute sector and in private nursing homes ended their stay by being discharged more often than patients and residents in other types of care. Very low proportions (3%) of old people in homes for the elderly or psychiatric hospitals were alive and in the community at the end of the three year period.
Figure 29: Outcome (percentage) of 1976 institutional elderly population three years after original enumeration, by type of care.

The shorter (six month) follow-up of the 1979 elderly in NHS facilities and social services homes used a more detailed classification of the NHS geriatric beds as was used in the first chapter of results (Chapter 3 page 3-9).
In the geriatric beds within general hospitals, less than 10% of patients remained six months after enumeration, whilst roughly equal proportions of the rest had either died, been discharged home or were in another type of care. This was a different pattern of outcome to that seen in either the geriatric community or the geriatric peripheral beds. The populations in the latter two types of geriatric care, though broadly similar to each other, showed differences in outcome at six months. In the peripheral geriatric units, a higher proportion of patients were still resident or had died; in the geriatric community hospital a quarter had been transferred to another type of care compared to a tenth of the population in the peripheral beds (Table 51).
These differences are reflected in the risk of the three respective outcomes relative to the geriatric community hospital population (Table 52). The relative risk of death for patients who had been in geriatric units in general hospitals was much greater and significant at the 5% level. The corresponding relative risk for patients in the peripheral geriatric hospitals was also higher than unity but did not quite achieve significance at the 5% level.

Table 52 Relative risk (percentages, 95% confidence limits shown in brackets) of various alternative outcomes at six months for elderly people in care in December 1979, by type of care.

<table>
<thead>
<tr>
<th>Type of care</th>
<th>Relative risk* of death (%) all patients</th>
<th>Relative risk* of continued residence(%) survivors</th>
<th>Relative risk* of discharge home(%) for those discharged or transferred</th>
</tr>
</thead>
<tbody>
<tr>
<td>Geriatric community (by definition)</td>
<td>100 (by definition)</td>
<td>100 (by definition)</td>
<td>100 (by definition)</td>
</tr>
<tr>
<td>Geriatric general (125-532)</td>
<td>258 (17-42)</td>
<td>140 (57-248)</td>
<td>140 (57-248)</td>
</tr>
<tr>
<td>Geriatric peripheral (100-289)</td>
<td>170 (187-482)</td>
<td>107 (49-233)</td>
<td>107 (49-233)</td>
</tr>
<tr>
<td>Psychiatric (41-122)</td>
<td>71 (106-339)</td>
<td>356 (120-666)</td>
<td>356 (120-666)</td>
</tr>
<tr>
<td>Acute (43-197)</td>
<td>92 (32-106)</td>
<td>257 (110-601)</td>
<td>257 (110-601)</td>
</tr>
<tr>
<td>Homes for the elderly (19-140)</td>
<td>91 (539-1240)</td>
<td>20 (9-43)</td>
<td>20 (9-43)</td>
</tr>
</tbody>
</table>

* Relative risks are expressed as the odds in favour of given alternative outcomes (death versus survival; continued residence versus discharge or transfer; discharge home versus transfer to another institution) for each type of care compared to geriatric community hospital.

Amongst survivors, the relative risk of continued residence of patients in geriatric general hospital units was low, and that for patients in peripheral geriatric units high, in relation to the population in the geriatric community hospital. As will be seen from the 95% confidence lim-
its of the relative risk values depicted in Table 52, both achieved statistical significance at the 5% level. Once no longer resident, there was little difference in the relative risk of discharge home compared with transfer to another type of care for patients who had been enumerated in the three types of geriatric care.

Elderly people who had been resident in the other types of care—acute, psychiatric, and social services homes also showed differences in outcome (Table 51). The highest proportion of continuously resident elderly people at six months was in homes for the elderly and a relatively low figure occurred in NHS acute beds. Although even here the proportion still resident at six months was 17%. The relatively high proportion (51%) discharged home from acute care was higher than in any other type of care.

The relative risk of death by six months was least for residents in homes for the elderly, although as the 95% confidence limits show, the estimate was not significantly so level (Table 52). Amongst survivors, however, a significantly higher relative risk of continued residence at six months was seen for such residents compared to patients in other types of care. This figure (818%) was much greater even than that for either the psychiatric hospital population (189%) or the population in peripheral geriatric units (300%). Moreover, when survivors who had left the institution were considered, for residents of homes for the elderly, the relative risk of their destination being home as
compared to another institution was much lower than for the other types of care.

Table 53: Relative risk (percentages, 95% confidence limits shown in brackets) of various alternative outcomes at six months for elderly people in care in December 1979, by length of stay.

<table>
<thead>
<tr>
<th>Length of stay</th>
<th>Relative risk* of death(%) all patients</th>
<th>Relative risk* of continued residence(%) survivors</th>
<th>Relative risk* of discharge home (%) for those discharged or transferred.</th>
</tr>
</thead>
<tbody>
<tr>
<td>0 - 6 months</td>
<td>100 (by definition)</td>
<td>100 (by definition)</td>
<td>100 (by definition)</td>
</tr>
<tr>
<td>6 - 12 months</td>
<td>74 (50 - 108)</td>
<td>266 (182 - 383)</td>
<td>42 (20 - 88)</td>
</tr>
<tr>
<td>1 - 2 years</td>
<td>63 (45 - 88)</td>
<td>408 (288 - 577)</td>
<td>13 (5 - 36)</td>
</tr>
<tr>
<td>2 - 5 years</td>
<td>59 (44 - 79)</td>
<td>676 (489 - 935)</td>
<td>17 (7 - 39)</td>
</tr>
<tr>
<td>5 years or more</td>
<td>44 (31 - 63)</td>
<td>1190 (743 - 1870)</td>
<td>34 (12 - 98)</td>
</tr>
</tbody>
</table>

* Relative risks are expressed as the odds in favour of given alternative outcomes (death versus survival; continued residence versus discharge or transfer; discharge home versus transfer to another institution) for each length of stay group compared to patients who had been resident for under six months.

Analysis of outcome at six months in relation to length of stay prior to the survey in 1979 (Table 53) showed a fall in the risk of death (compared to those with a stay under six months) with increasing length of stay. Amongst survivors, the relative risk of continued residence increased with increasing previous length of stay and all longer stay groups were significantly greater (at the 5% level) than the shortest stay group, whilst in those no longer still resident, the relative risk of discharge home was significantly lower in the longer stay groups.
When, using regression analysis, differences in outcome at six months between institutions were analysed having taken into account variations in the other significant factors which affected outcome (length of stay, age, sex and total incapacity), some of the relative risk differences disappeared whilst other persisted.

The relative risk of death for patients in geriatric beds within general hospitals remained significantly higher than all other types of care. For survivors, all the previous differences between types of care in the relative risk of continued residence persisted. Thus, there were comparatively high relative risks of continued residence for elderly people in peripheral geriatric and psychiatric units and homes for the elderly whilst the relative risk of continued residence for survivors in geriatric units within general hospitals remained significantly ($P<.05$) lower (22%).

After adjustment, the relative risks of discharge home for patients in acute and psychiatric beds remained higher than those for other institutions but these differences (in relation to the geriatric community hospital) were no longer significant. However, the relative risk of discharge home for residents of homes for the elderly remained significantly low compared to all other types of care.

5.3.1 Outcome and source of admission

Source of admission in relation to outcome was examined
for the 1979 follow-up. It was not possible to examine this variable for the 1976 population because the information was not collected in a standard way.

Table 54: Relative risk (percentages, 95% confidence limits shown in brackets) of various alternative outcomes at six months for elderly people in care in December 1979, by source of admission.

<table>
<thead>
<tr>
<th>Source of admission</th>
<th>Relative risk* of death(%) all patients</th>
<th>Relative risk* of continued residence (%), survivors</th>
<th>Relative risk* of discharge home (%) for those discharged or transferred</th>
</tr>
</thead>
<tbody>
<tr>
<td>From community</td>
<td>100 (by definition)</td>
<td>100 (by definition)</td>
<td>100 (by definition)</td>
</tr>
<tr>
<td>From another institution</td>
<td>109 (90 - 132)</td>
<td>145 (122 - 171)</td>
<td>43 (33 - 59)</td>
</tr>
</tbody>
</table>

* Relative risks are expressed as the odds in favour of given alternative outcomes (death versus survival; continued residence versus discharge or transfer; discharge home versus transfer to another institution) for patients admitted from another institution compared to those whose source of admission was the community.

The risk of various outcomes for patients admitted to care from another type of institution relative to those who had been admitted from the community (their own or a relatives home, or sheltered housing) is shown in Table 54. The only significant differences were a greater likelihood of continued residence at six months for survivors who had come from another institution and a lower likelihood of discharge home for survivors who had been admitted from other institutions and were no longer still resident.
5.4 OUTCOME AND MISPLACEMENT

Figure 30 shows the differences in outcome in the 1976 population for misplaced compared to suitably placed patients and residents in the three types of NHS facilities (geriatric, psychiatric, acute) compared to the population in homes for the elderly.
RESULTS: OUTCOMES.

Figure 30: Outcome (percentage) of 1976 institutional elderly population three years after original enumeration, suitably placed and misplaced people within each type of care.

For all types of care combined there were highly significant differences in outcome ($\chi^2 = 99.29; P < .001$) between misplaced and suitably placed elderly people. The main source of this difference was in the relatively high proportion of patients and residents in the misplaced group compared to the suitably placed group who were transferred and the rela-
tively low proportion of continuously resident individuals.

Within the geriatric and psychiatric hospital populations, the proportion of deaths in the misplaced group was lower than in the suitably placed group as might be expected from the earlier results (Chapter 3, page 3-33) which showed that this group (in these types of care) was less incapacitated.

Amongst the elderly people who were in NHS acute beds in December 1976 there was a relatively low proportion of discharges (11%) in the misplaced group compared to the suitably placed group (45%).

In homes for the elderly, the differences in outcomes between the suitably placed and misplaced residents, although significant ($\chi^2 = 9.38; P<.05$), were not so marked. The proportion of deaths was higher in the misplaced group, and this again would be expected given the knowledge that they have higher levels of incapacity (Chapter 3, page 3-38). The proportion of misplaced residents transferred was smaller overall (7%) than elsewhere.

The follow-up of elderly people who had been resident in NHS facilities and social services homes in December 1979, showed that overall the relative risk of continued residence at six months among survivors was significantly lower ($P<.05$) in the misplaced group, although there was no significant difference in the relative risk of death or of
### Table 55: Relative risk (percentages, 95% confidence limits shown in brackets) of various alternative outcomes at six months for elderly people in care in December 1979, by whether they were misplaced.

<table>
<thead>
<tr>
<th>Status on assessment</th>
<th>Relative risk* of death(%) all patients</th>
<th>Relative risk* of continued residence (%) survivors</th>
<th>Relative risk* of discharge home(%) for those discharged or transferred</th>
</tr>
</thead>
<tbody>
<tr>
<td>Suitably placed</td>
<td>100 (by definition)</td>
<td>100 (by definition)</td>
<td>100 (by definition)</td>
</tr>
<tr>
<td>Misplaced</td>
<td>139 (77 - 180)</td>
<td>34 (28 - 42)</td>
<td>87 (62 - 121)</td>
</tr>
</tbody>
</table>

* Relative risks are expressed as the odds in favour of given alternative outcomes (death versus survival; continued residence versus discharge or transfer; discharge home versus transfer to another institution) for patients who were judged to be misplaced at the time of the survey compared to those who were considered suitably placed.

The outcomes of the two groups within each type of care (Table 56), as would be expected from the 1976 data, showed overall similarities: a lower proportion still resident and a greater proportion discharged or transferred in the misplaced group compared to the suitably placed group.
Table 56: Outcome at six months (percentage) for elderly people who were suitably placed (A) or misplaced (B) in NHS facilities and social services homes in December 1979 by type of care

<table>
<thead>
<tr>
<th>Type of care</th>
<th>Outcome at six months</th>
<th>Total N(100%)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Still resident</td>
<td>Died</td>
</tr>
<tr>
<td>Geriatric community A</td>
<td>49</td>
<td>21</td>
</tr>
<tr>
<td>B</td>
<td>29</td>
<td>7</td>
</tr>
<tr>
<td>Geriatric general</td>
<td>A</td>
<td>8</td>
</tr>
<tr>
<td>B</td>
<td>15</td>
<td>30</td>
</tr>
<tr>
<td>Geriatric peripheral</td>
<td>A</td>
<td>55</td>
</tr>
<tr>
<td>B</td>
<td>48</td>
<td>20</td>
</tr>
<tr>
<td>Psychiatric A</td>
<td>82</td>
<td>10</td>
</tr>
<tr>
<td>B</td>
<td>58</td>
<td>20</td>
</tr>
<tr>
<td>Acute</td>
<td>A</td>
<td>15</td>
</tr>
<tr>
<td>B</td>
<td>24</td>
<td>16</td>
</tr>
<tr>
<td>Homes for the elderly</td>
<td>A</td>
<td>83</td>
</tr>
<tr>
<td>B</td>
<td>69</td>
<td>15</td>
</tr>
<tr>
<td>All types of care</td>
<td>A</td>
<td>66</td>
</tr>
<tr>
<td>B</td>
<td>47</td>
<td>15</td>
</tr>
</tbody>
</table>

But there were exceptions to this pattern: patients in geriatric units within general hospitals showed a greater proportion still resident in the misplaced group, little difference in the proportion discharged home, but a lower proportion of transfers in the misplaced group. In the NHS acute beds, similarly there was a greater proportion of still resident patients in the misplaced group but a lower proportion of discharges home and a higher proportion of transfers in the misplaced group.
5.5 MORTALITY IN THE INSTITUTIONAL POPULATION

5.5.1 MORTALITY EXPERIENCE COMPARED TO LEICESTERSHIRE POPULATION

5.5.1.1 Comparison between types of care -

The mortality experience of patients and residents who were enumerated in the six types of care in December 1976 during the first year of follow-up compared to a standard population, the elderly population of Leicestershire for 1977 are presented in Table 57 as standardised mortality ratios (SMRs). The method of calculation of SMRs and their standard errors is explained in Chapter 2, page 2-56.

Table 57: Observed (O) and Expected (E) Deaths, Standardised Mortality Ratios (O/E x 100) (with 95% Confidence Limits [CL]) for Elderly in Different Types of Care in December 1976 in the Year after the Survey, Leicestershire Population 1977 used as Standard

<table>
<thead>
<tr>
<th></th>
<th>Geriatric</th>
<th>Psychiatric</th>
<th>Acute</th>
<th>Homes for Elderly</th>
<th>Private Nursing Homes</th>
<th>All*</th>
</tr>
</thead>
<tbody>
<tr>
<td>O</td>
<td>316</td>
<td>157</td>
<td>129</td>
<td>563</td>
<td>87</td>
<td>1275</td>
</tr>
<tr>
<td>E</td>
<td>85.7</td>
<td>54.5</td>
<td>29.8</td>
<td>265.1</td>
<td>35.3</td>
<td>481</td>
</tr>
<tr>
<td>SMR</td>
<td>369</td>
<td>288</td>
<td>433</td>
<td>212</td>
<td>246</td>
<td>265</td>
</tr>
<tr>
<td>CL</td>
<td>330-412</td>
<td>246-337</td>
<td>364-515</td>
<td>195-230</td>
<td>199-304</td>
<td>251-280</td>
</tr>
</tbody>
</table>

*Homes for handicapped excluded because of small numbers.

For the elderly population who had been in institutional care, their mortality experience was greater than would have been expected given the pattern in the general elderly population of Leicestershire; moreover, in all individual
types of care it was significantly raised (p<0.5). The SMRs were higher for the NHS compared to the non-NHS institutional populations and the highest values were in the acute and geriatric hospitals where mortality was about four times what would have been expected. When the mortality experience of the various populations originally in institutions were examined over the whole three year follow-up period, for all types of care, there was still one and half times the number of deaths that would have been expected given the prevailing mortality for the elderly population of Leicestershire as a whole (Figure 31).

Figure 31: Standardised mortality ratios (SMRs) (with 95% confidence limits) for three year period (1977 - 1979) after initial enumeration by type of care
The SMR for each type of care was lower than that for the first year of follow-up but SMRs for people who had been in NHS hospitals and wards remained higher than those for non-NHS homes and hospitals. However, there was no longer a difference between the mortality experience of the three types of NHS care: over three years the mortality for patients who had been in geriatric, psychiatric and acute hospitals was similar, around twice the expected number of deaths in each case.

5.5.1.2 Level of incapacity -

Standardised mortality ratios (SMRs) over three years for patients and residents in each category of mobility are shown in Figure 32.
It can be seen that even in the group who were fully ambulant, the mortality experience was significantly (p<.05) worse over the three year period than would have been expected SMRs increased in each successive category of incapacity until for the group who were bedfast, the observed figure was double the expected. The mortality experience of the same group of patients and residents in the first year after they had been enumerated (Table 58) was higher than over the three year follow-up period as a whole.
STARTING FROM A HIGHER SMR FOR ELDERLY PEOPLE WHO WERE FULLY AMBULANT IN THE FIRST YEAR OF FOLLOW-UP, A SIMILAR GRADIENT IN MORTALITY WAS OBSERVED WITH INCREASING INCAPACITY. FOR PATIENTS AND RESIDENTS WHO WERE BEDFAST AT THE TIME OF ASSESSMENT IN 1976, THERE WERE FOUR TIMES AS MANY OBSERVED AS EXPECTED DEATHS IN THE YEAR FOLLOWING ENUMERATION. A SIMILAR PATTERN IN ONE YEAR MORTALITY WAS OBSERVED FOR EACH INDIVIDUAL ACTIVITY.

FOR OTHER ACTIVITIES APART FROM MOBILITY, THE THREE YEAR MORTALITY EXPERIENCE OF THE INSTITUTIONAL POPULATION COMPARED TO THE GENERAL POPULATION SHOWED AN INCREASE WITH GREATER INCAPACITY. FOR URINARY INCONTINENCE (FIGURE 33)
patients and residents who were frequently incontinent in the week preceding assessment experienced about double the expected mortality.

Figure 33: Standardised mortality ratios (SMRs) (with 95% confidence limits) for three year period (1977 - 1979) after initial assessment of degree of urinary incontinence.

A similar SMR was recorded for faecally incontinent patients and residents (Figure 34)
Figure 34: Standardised mortality ratios (SMRs) (with 95% confidence limits) for three year period (1977 - 1979) after initial assessment for presence of faecal incontinence.

The pattern of increasing SMRs with greater incapacity was also seen in people who, in 1976, had had different amounts of help or supervision with washing and dressing (Figure 35).
Figure 35: Standardised mortality ratios (SMRs) (with 95% confidence limits) for three year period (1977 - 1979) after initial assessment of level of independence in washing and dressing.

In this case however, the SMR for the highest incapacity group (those who had been washed, dressed or shaved) was slightly lower (at 187) than was the SMR for the highest incapacity group in the other activities. In relation to the activity of feeding, the opposite was the case (Figure 36).
Figure 36: Standardised mortality ratios (SMRs) (with 95% confidence limits) for three year period (1977 - 1979) after initial assessment of level of independence in feeding.

The SMR of 243 recorded for elderly people who had been assessed as having been spoonfed was higher than the severest level incapacity for the other four activities (Figure 36). The same gradient in three year mortality with increasing incapacity was observed for total activities of daily
Results: Outcomes.

Living (ADL) score (Figure 37).

Figure 37: Standardised mortality ratios (SMRs) (with 95% confidence limits) for three year period (1977-1979) after initial assessment of total activities of daily living (ADL) score.

5.5.2 Mortality by Cause

Cause of death information had been collected on all deaths occurring in the first two years following the initial survey in 1976 and was coded to underlying cause of death by the Office of Population, Censuses and Surveys.
SMRs were then calculated for five broad cause of death categories, using the International Classification of Diseases (ICD) 8th revision (World Health Organisation, 1967) codes used by the OPCS. The five categories, with ICD numbers were as follows: cancer (140-239); Heart disease (390-429); Other Cardiovascular disease (430-448); Respiratory disease (460-519); all other causes. Cause-specific, age- and sex-specific two year mortality rates for the elderly population of Leicestershire for the two year period 1977-1978 were used as the standard population (see Chapter 2, page 2-57). The results are shown in Table 59.

<table>
<thead>
<tr>
<th>Cause of Death Group</th>
<th>NHS Geriatric Beds</th>
<th>NHS Psychiatric Beds</th>
<th>NHS Acute Beds</th>
<th>Homes for Elderly</th>
<th>All Types of Care</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cancers</td>
<td>168</td>
<td>58</td>
<td>545</td>
<td>90</td>
<td>137</td>
</tr>
<tr>
<td>Heart disease</td>
<td>166</td>
<td>152</td>
<td>158</td>
<td>167</td>
<td>163</td>
</tr>
<tr>
<td></td>
<td>(138 - 201)</td>
<td>(119 - 195)</td>
<td>(114 - 219)</td>
<td>(150 - 186)</td>
<td>(151 - 177)</td>
</tr>
<tr>
<td>Other Cardiovascular</td>
<td>324</td>
<td>127</td>
<td>123</td>
<td>195</td>
<td>215</td>
</tr>
<tr>
<td>Respiratory disease</td>
<td>(273 - 394)</td>
<td>(89 - 128)</td>
<td>(74 - 204)</td>
<td>(172 - 221)</td>
<td>(197 - 235)</td>
</tr>
<tr>
<td>Other causes</td>
<td>338</td>
<td>600</td>
<td>300</td>
<td>214</td>
<td>268</td>
</tr>
<tr>
<td></td>
<td>(270 - 397)</td>
<td>(498 - 724)</td>
<td>(210 - 430)</td>
<td>(187 - 244)</td>
<td>(245 - 294)</td>
</tr>
<tr>
<td>All other causes</td>
<td>298</td>
<td>359</td>
<td>368</td>
<td>183</td>
<td>242</td>
</tr>
<tr>
<td></td>
<td>(225 - 396)</td>
<td>(260 - 496)</td>
<td>(238 - 571)</td>
<td>(149 - 224)</td>
<td>(212 - 277)</td>
</tr>
<tr>
<td>All causes</td>
<td>249</td>
<td>228</td>
<td>257</td>
<td>177</td>
<td>201</td>
</tr>
<tr>
<td></td>
<td>(226 - 273)</td>
<td>(201 - 258)</td>
<td>(220 - 302)</td>
<td>(166 - 189)</td>
<td>(192 - 210)</td>
</tr>
</tbody>
</table>

* Homes for handicapped and private nursing homes excluded because of small numbers.

* Leicestershire 1977-78 as standard population

Mortality from cancer observed in the NHS acute hosp
tal population was more than five times the expected figure, whilst only in the geriatric hospital population was there any significant increase (within the other types of care) in deaths from this cause.

Other important features were the relatively high mortality from other cardiovascular disease (mainly stroke) for people who had been in geriatric care; the relatively high mortality from all other causes of death in the NHS settings and the particularly high mortality from respiratory disease for those in psychiatric wards and hospitals.

In the psychiatric hospital population, a higher proportion of deaths were attributed to respiratory disease than in the other types of care. Moreover, this was accounted for by one diagnostic category; forty per cent of all deaths in the psychiatric hospital population were attributed to the underlying cause; bronchopneumonia (ICD 8th revision No485) (Table 60).

<table>
<thead>
<tr>
<th>Cause of Death</th>
<th>NHS Geriatric Beds</th>
<th>NHS Psychiatric Beds</th>
<th>NHS Acute Beds</th>
<th>Homes for the Elderly</th>
<th>Homes for the Handi- Nursing Homes</th>
<th>Private Nursing Homes</th>
<th>All Types</th>
</tr>
</thead>
<tbody>
<tr>
<td>Bronchopneumonia</td>
<td>19</td>
<td>40</td>
<td>12</td>
<td>17</td>
<td>10</td>
<td>4</td>
<td>19</td>
</tr>
<tr>
<td>All causes</td>
<td>100</td>
<td>100</td>
<td>100</td>
<td>100</td>
<td>100</td>
<td>100</td>
<td>100</td>
</tr>
</tbody>
</table>

The next highest proportion was in the geriatric hospital
population where 19% of all deaths were attributed to bronchopneumonia.
5.5.3 PLACE OF DEATH

Table 61 shows the place of death as stated on the draft death returns of the 2416 elderly people who had been in institutional care in Leicestershire in December of 1976, but were dead three years later in December of 1979.

The majority (78%) died within the same (or same type) of care as they were enumerated in in 1976. A small proportion (4%) had listed as their place of death, a private address within the community. Nearly all the remainder died in institutions of a different type and all but 1% were institutions inside Leicestershire.

<table>
<thead>
<tr>
<th>Type of Care 1976</th>
<th>Same or Same type</th>
<th>Domiciliary</th>
<th>Geriatric</th>
<th>Psychiatric</th>
<th>Acute</th>
<th>Homes for Elderly</th>
<th>Institutions Outside Leics</th>
<th>Other</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>NHS Geriatric Beds</td>
<td>80</td>
<td>5</td>
<td>2</td>
<td>6</td>
<td>6</td>
<td>0</td>
<td>1</td>
<td>100</td>
<td>(522)</td>
</tr>
<tr>
<td>NHS Psychiatric Beds</td>
<td>87</td>
<td>1</td>
<td>4</td>
<td>4</td>
<td>2</td>
<td>1</td>
<td>1</td>
<td>100</td>
<td>(322)</td>
</tr>
<tr>
<td>NHS Acute Beds</td>
<td>48</td>
<td>26</td>
<td>17</td>
<td>2</td>
<td>7</td>
<td>0</td>
<td>0</td>
<td>100</td>
<td>(177)</td>
</tr>
<tr>
<td>Homes for Elderly</td>
<td>77</td>
<td>2</td>
<td>7</td>
<td>10</td>
<td>*</td>
<td>1</td>
<td>1</td>
<td>100</td>
<td>(1193)</td>
</tr>
<tr>
<td>Homes for Handicapped</td>
<td>89</td>
<td>0</td>
<td>0</td>
<td>11</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>100</td>
<td>(45)</td>
</tr>
<tr>
<td>Private Nursing Homes</td>
<td>92</td>
<td>0</td>
<td>1</td>
<td>1</td>
<td>3</td>
<td>1</td>
<td>0</td>
<td>1</td>
<td>(157)</td>
</tr>
<tr>
<td>All types</td>
<td>78</td>
<td>4</td>
<td>5</td>
<td>1</td>
<td>8</td>
<td>2</td>
<td>1</td>
<td>1</td>
<td>(2416)</td>
</tr>
</tbody>
</table>

* Not applicable.
There were differences between populations of different types of original care. For patients who had been in acute care, under half died within this type of setting, but almost a fifth were in geriatric wards or hospitals at the time of their death, and a quarter were in a domiciliary setting. Four fifths of the deaths which occurred amongst residents of homes for the elderly occurred within such homes, and 10% in NHS acute hospitals.

5.5.4 SURVIVAL FROM TIME OF ADMISSION AND TIME OF ASSESSMENT.

A life table analysis of the mortality data has produced survival times from the time of the initial survey and estimates of survival from the time of admission. The comparisons between survival times in different types of care are presented as estimates relating to the time of admission to care, survival for different incapacity groups relates to the time of assessment. Details of this analysis are given in Chapter 2 (see P.2-55).
For elderly people in all types of care, estimated survival to six months after admission was 72% (Table 62). Mortality increased rapidly however, so that by two years following admission to all types of care under a half were still alive and by the five year point the proportion was just over a fifth.

Within the three types of NHS facilities survival was poorest for the population in geriatric wards and hospitals, half survived one year from admission to this type of care, the corresponding figures for those who had been in psychiatric or acute beds were 64% and 67% respectively.

Survival after admission to the non-NHS facilities (homes for the elderly and private nursing homes) were similar to each other. Both had higher survival figures than the populations in NHS geriatric beds but not so good as the
population which had originally been in acute beds. It enjoyed the most favourable figures of all types of care.

When a regression analysis model of the life-table was applied, to take account of differences between institutions in variables which affected survival, differences in survival remained significant \( \chi^2 = 11.80; p < .05 \) when differences in age and of level of incapacity in total activities of daily living, were taken into account. However, the difference now comprised a better survival for patients who had been in private nursing homes. There was no significant difference in survival after adjustment for age and level of incapacity between people in geriatric, psychiatric and acute hospitals or homes for the elderly.

<table>
<thead>
<tr>
<th>Time from Admission</th>
<th>SEX</th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>MALES</td>
<td></td>
<td>FEMALES</td>
</tr>
<tr>
<td>6 Months</td>
<td>66.0</td>
<td>(60.8 - 70.9)</td>
<td>75.7</td>
</tr>
<tr>
<td>1 Year</td>
<td>53.7</td>
<td>(48.8 - 58.4)</td>
<td>64.8</td>
</tr>
<tr>
<td>2 Years</td>
<td>39.6</td>
<td>(35.5 - 43.8)</td>
<td>52.9</td>
</tr>
<tr>
<td>3 Years</td>
<td>31.2</td>
<td>(27.7 - 34.8)</td>
<td>42.1</td>
</tr>
<tr>
<td>5 Years</td>
<td>17.0</td>
<td>(14.4 - 19.9)</td>
<td>25.1</td>
</tr>
</tbody>
</table>
Considering all types of care, estimated survival figures for females were significantly higher \( p < .05 \) than those for males at all five time periods after admission (Table 63) and the significant differences between the sexes persisted when age was taken into account.

5.5.4.1 Activities of daily living

Survival in relation to individual activities of daily living was calculated from the time of first assessment of level of incapacity in December 1979 and is therefore, expressed at various time intervals up to the end of the three year observation period. Survival to all time periods fell with increasing incapacity and differences between the different incapacity groups remained highly significant \( p < .001 \) after adjustment for differences in age and length of stay using regression analysis.
### TABLE 64

Percentage survival (95% confidence limits in brackets) from time of assessment by level of mobility

<table>
<thead>
<tr>
<th>Time from Assessment</th>
<th>Fully Ambulant (90.4 - 93.4)</th>
<th>Ambulant except stairs (84.0 - 89.9)</th>
<th>Ambulant with Attendant /Aid (80.9 - 84.87)</th>
<th>Bedfast (60.8 - 70.9)</th>
<th>All levels (84.1 - 86.4)</th>
</tr>
</thead>
<tbody>
<tr>
<td>6 Months</td>
<td>92.0</td>
<td>87.2</td>
<td>82.9</td>
<td>66.0</td>
<td>85.3</td>
</tr>
<tr>
<td></td>
<td>(90.4 - 93.4)</td>
<td>(90.4 - 93.4)</td>
<td>(80.9 - 84.87)</td>
<td>(60.8 - 70.9)</td>
<td>(84.1 - 86.4)</td>
</tr>
<tr>
<td>1 Year</td>
<td>86.8</td>
<td>76.6</td>
<td>71.9</td>
<td>54.0</td>
<td>76.3</td>
</tr>
<tr>
<td></td>
<td>(84.9 - 88.6)</td>
<td>(72.7 - 80.2)</td>
<td>(69.5 - 74.2)</td>
<td>(48.6 - 59.3)</td>
<td>(74.9 - 77.7)</td>
</tr>
<tr>
<td>2 Years</td>
<td>72.8</td>
<td>59.1</td>
<td>52.9</td>
<td>36.2</td>
<td>59.4</td>
</tr>
<tr>
<td></td>
<td>(70.3 - 75.2)</td>
<td>(54.6 - 63.4)</td>
<td>(50.3 - 55.5)</td>
<td>(31.2 - 41.4)</td>
<td>(57.8 - 61.1)</td>
</tr>
<tr>
<td>3 Years</td>
<td>62.4</td>
<td>44.9</td>
<td>39.1</td>
<td>26.0</td>
<td>47.1</td>
</tr>
<tr>
<td></td>
<td>(59.7 - 65.0)</td>
<td>(40.5 - 49.4)</td>
<td>(36.6 - 41.7)</td>
<td>(21.6 - 30.8)</td>
<td>(45.5 - 48.8)</td>
</tr>
</tbody>
</table>

For example, two years after having been assessed as bedfast 36% were still alive compared with 73% for the group who were fully ambulant (Table 64).

A similar pattern was observed of survival from assessment for the various categories with respect to urinary and faecal incontinence (Tables 65 and 66).
TABLE 65 Percentage survival from time of assessment (95% confidence limits in brackets) by degree of urinary incontinence.

<table>
<thead>
<tr>
<th>Time from Assessment</th>
<th>Not Incontinent</th>
<th>Needed Raising or Sending</th>
<th>Incontinent Once</th>
<th>Frequently Incontinent</th>
<th>All degrees</th>
</tr>
</thead>
<tbody>
<tr>
<td>6 Months</td>
<td>90.7 (89.4 - 91.9)</td>
<td>85.1 (80.8 - 88.6)</td>
<td>82.3 (78.0 - 86.0)</td>
<td>73.5 (70.4 - 76.4)</td>
<td>85.4 (84.2 - 86.5)</td>
</tr>
<tr>
<td>1 Year</td>
<td>84.1 (82.5 - 85.7)</td>
<td>74.1 (69.1 - 78.7)</td>
<td>70.1 (65.2 - 75.0)</td>
<td>61.1 (57.7 - 64.4)</td>
<td>76.5 (75.1 - 77.9)</td>
</tr>
<tr>
<td>2 Years</td>
<td>69.6 (67.6 - 71.6)</td>
<td>56.5 (51.0 - 61.9)</td>
<td>48.2 (43.0 - 53.3)</td>
<td>41.1 (37.8 - 44.5)</td>
<td>59.6 (58.0 - 61.2)</td>
</tr>
<tr>
<td>3 Years</td>
<td>57.3 (55.1 - 59.5)</td>
<td>43.3 (38.0 - 48.8)</td>
<td>35.9 (31.1 - 41.0)</td>
<td>28.9 (25.9 - 32.1)</td>
<td>47.3 (45.6 - 48.9)</td>
</tr>
</tbody>
</table>

TABLE 66 Percentage survival (95% confidence limits in brackets) from time of assessment by presence of faecal incontinence.

<table>
<thead>
<tr>
<th>Time from Assessment</th>
<th>Absent</th>
<th>Present</th>
<th>All People</th>
</tr>
</thead>
<tbody>
<tr>
<td>6 Months</td>
<td>88.2 (86.9 - 89.3)</td>
<td>72.9 (69.5 - 76.2)</td>
<td>85.2 (84.0 - 86.3)</td>
</tr>
<tr>
<td>1 Year</td>
<td>79.9 (78.4 - 81.4)</td>
<td>60.6 (56.9 - 64.2)</td>
<td>76.1 (74.7 - 77.5)</td>
</tr>
<tr>
<td>2 Years</td>
<td>64.5 (62.7 - 66.2)</td>
<td>37.6 (34.1 - 41.2)</td>
<td>59.2 (57.5 - 60.8)</td>
</tr>
<tr>
<td>3 Years</td>
<td>51.9 (50.1 - 53.8)</td>
<td>25.6 (22.5 - 28.9)</td>
<td>46.7 (45.1 - 48.4)</td>
</tr>
</tbody>
</table>
Similar and significant falls in the survival with increasing levels of incapacity in the remaining two activities were also independent of the effect of differences in age or length of stay (Tables 67 and 68).

**TABLE 67** Percentage survival (95% confidence limits in brackets) from time of assessment by level of independence in washing and dressing.

<table>
<thead>
<tr>
<th>Time from Assessment</th>
<th>Not Supervised</th>
<th>Needed Supervision</th>
<th>Washed Dressed or Shaved</th>
<th>All degrees</th>
</tr>
</thead>
<tbody>
<tr>
<td>6 Months</td>
<td>92.3 (90.7 - 93.6)</td>
<td>87.8 (85.5 - 89.8)</td>
<td>76.3 (73.9 - 78.5)</td>
<td>85.1 (83.9 - 86.3)</td>
</tr>
<tr>
<td>1 Year</td>
<td>86.0 (84.0 - 87.8)</td>
<td>78.7 (75.9 - 81.4)</td>
<td>64.4 (61.8 - 67.0)</td>
<td>76.1 (74.7 - 77.5)</td>
</tr>
<tr>
<td>2 Years</td>
<td>72.2 (69.7 - 74.6)</td>
<td>60.8 (57.6 - 64.0)</td>
<td>45.5 (42.8 - 48.2)</td>
<td>59.3 (57.7 - 60.9)</td>
</tr>
<tr>
<td>3 Years</td>
<td>61.1 (58.4 - 63.7)</td>
<td>47.5 (44.2 - 50.8)</td>
<td>32.7 (30.2 - 35.2)</td>
<td>47.0 (45.3 - 48.6)</td>
</tr>
</tbody>
</table>

Elderly people who had been spoonfed at the time of the initial assessment had the worst survival over the three years than any other group (Table 68). Seventy per cent of spoonfed individuals were dead by two years after assessment, a figure higher than 64% two-year mortality for bedfast people.
TABLE 68 Percentage survival (95% confidence limits in brackets) from time of assessment by level of independence in feeding.

<table>
<thead>
<tr>
<th>Time from Assessment</th>
<th>Not Supplied</th>
<th>Needed Supervision</th>
<th>Spoonfed</th>
<th>All Degrees</th>
</tr>
</thead>
<tbody>
<tr>
<td>6 months</td>
<td>89.8</td>
<td>80.7 (88.5 - 90.9)</td>
<td>59.3 (53.7 - 64.7)</td>
<td>85.3 (84.1 - 86.4)</td>
</tr>
<tr>
<td>1 Year</td>
<td>81.4</td>
<td>71.3 (79.9 - 82.9)</td>
<td>46.4 (40.9 - 52.0)</td>
<td>76.3 (74.8 - 77.7)</td>
</tr>
<tr>
<td>2 Years</td>
<td>65.8</td>
<td>50.4 (63.9 - 67.7)</td>
<td>29.7 (46.7 - 54.1)</td>
<td>59.5 (57.8 - 61.1)</td>
</tr>
<tr>
<td>3 Years</td>
<td>53.0 (51.0 - 55.0)</td>
<td>38.9 (35.4 - 42.5)</td>
<td>19.0 (15.0 - 23.5)</td>
<td>47.1 (45.4 - 48.7)</td>
</tr>
</tbody>
</table>

When total incapacity, expressed in terms of the total activities of daily living (ADL) score was examined a similar gradient of increased mortality (at all time periods) with greater incapacity was also observed (Table 69).

TABLE 69 Percentage survival (95% confidence limits in brackets) from time of assessment by total activities of daily living (ADL) score.

<table>
<thead>
<tr>
<th>Time from Assessment</th>
<th>ADL SCORE 0 - 2</th>
<th>3 - 6</th>
<th>7 - 11</th>
<th>All Scores</th>
</tr>
</thead>
<tbody>
<tr>
<td>6 months</td>
<td>92.5 (91.1 - 93.7)</td>
<td>84.8 (82.4 - 86.9)</td>
<td>71.7 (68.5 - 74.8)</td>
<td>85.3 (84.1 - 86.5)</td>
</tr>
<tr>
<td>1 Year</td>
<td>86.1 (84.3 - 87.7)</td>
<td>76.2 (73.4 - 78.8)</td>
<td>58.3 (54.8 - 61.7)</td>
<td>76.6 (75.1 - 78.0)</td>
</tr>
<tr>
<td>2 Years</td>
<td>72.7 (70.1 - 74.5)</td>
<td>57.2 (54.0 - 60.2)</td>
<td>36.1 (34.8 - 41.5)</td>
<td>59.7 (58.0 - 61.4)</td>
</tr>
<tr>
<td>3 Years</td>
<td>60.1 (58.8 - 63.4)</td>
<td>42.6 (39.5 - 45.7)</td>
<td>26.4 (23.5 - 29.5)</td>
<td>47.3 (45.6 - 49.0)</td>
</tr>
</tbody>
</table>
CHAPTER 6

DISCUSSION.

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The modern view of care of the elderly, recognising the need to ensure the greatest possible independence and self-determination has, as its cornerstone, the objective of helping them to remain in the community for as long as possible (see, for example, Department of Health and Social Security, 1976).

A range of care is thus implied through which the appropriate level of support is related to need, as early as possible after complete independence is lost. Its components as they exist at present, could be identified broadly as: a) care based on the hospital service - acute assessment, rehabilitation and longer-term care together with day hospital facilities; b) residential care in a non-hospital setting, principally provided in the homes for the elderly run by social services departments but also by voluntary and private agencies; c) sheltered housing which allows elderly people to remain in the community but under the supervision of a warden; d) primary care services, organised around general practice; e) services taken to the home - such as meals-on-wheels and luncheon clubs, health visitors, home helps, social workers, district nursing, aids and adaptations to houses, and a wide variety of others (e.g. street wardens or fostering schemes) depending on local initiative - provided by statutory, voluntary and private agencies.

6.1 CAN THE COMMUNITY CARE?

The present study which represents the experience of
one area over a relatively short period of time - three years - has shown no reduction in the proportion of the elderly population as a whole who found themselves in some form of institutional care. Moreover, amongst the very elderly population of Leicestershire (those aged 85 years and over) there was an increase in those who were in the largest form of provision - the homes for the elderly. Yet, these changes occurred at a time of considerable health service expenditure locally to reduce previous inequalities in the distribution of resources. It might be expected that a proper commitment to a policy of 'community' care would have seen investment in it and perhaps its greatest impact at the level of residential homes, particularly. Their traditional role has been in providing for frail elderly people whose capacity for self-care has dwindled to the extent that they can no longer maintain their independence, rather than those with acute medical problems. The lack of such a commitment suggests perhaps that the term 'community care' is in danger of becoming, like 'prevention', a hollow catch-phrase whose importance is re-emphasised in debate about policy but, yet, does not enjoy the financial patronage commensurate with the apparent esteem in which it is held.

The most important community resource in Britain has been, and undoubtedly still is, the family. Nevertheless, the demographic influences discussed earlier have increased the number of elderly people who do not have such support. The problem is not that elderly people are rejected by their families, simply it is one of scale, there are too many of
them. Policies based on the belief that the family alone will cope or that incremental increases in existing community services are the solution are ill-founded: the numerical problem brought about by the increase in the numbers of the very elderly population currently under-way is too great.

Indeed, its demands are forcing the re-examination of the components of a service whose hallmark is the rigid sub-divisions which exist between them, a spectrum rather than a continuum operating as an integrated whole.

The present study has confirmed that the majority - some 96% - of people aged 65 years and over at any time are living in private dwelling places within the community and not in institutions. This important fact should never be lost sight of when discussing patterns of incapacity or the balance of care between community and hospitals or homes. Thus, the results of a survey of the elderly in institutional care, albeit one encompassing all types within a defined geographical area, must be seen in the context of services for the elderly population as a whole. Nevertheless, the fact that with increasing age, a greater proportion of the elderly population will be unable to remain independent without institutionally-based care means that it is an essential back-up for community services.

The discussion of the results of the present study in the section which follow this, examine the relationship between these different components of the service.
6.2 CARE OF THE ELDERLY IN HOSPITALS

The most important aspect of the provision of care for the elderly in hospitals is the manner of organisation and working relationship of the different parts of the geriatric service and the other hospital specialties which treat the elderly.

6.2.1 The orientation of geriatric in-patient care

The classification of geriatric facilities in the present study into different types was not easy. There was no obvious consensus within the health service locally as to which types of care should be grouped together. For example, although the majority of geriatric beds within general hospitals were used for 'acute' treatment and rehabilitation, some patients in these beds had been there for much longer periods of time. For this reason, and the fact that a classification based on use, when used to examine activity, leads to a certain circularity of argument, traditional administrative classifications of geriatric beds (based on terms such as: 'acute', 'rehabilitation' and 'long-stay') have been avoided. Geriatric beds within general hospitals have been described as such. Two other types of geriatric facility have been distinguished: beds in 'peripheral' units and those in the single large 'community' hospital. Peripheral units were those geriatric units, under the management of consultant geriatricians, in the smaller towns around the edges of the Leicestershire area. In Leicestershire, the community hospital is large (around 200 beds)
and, although general practitioners participate in in-patient care, overall control of admission and discharge rests with geriatricians and it is perceived as one part of the geriatric service.

The way in which these three types of care function is indicated by the pattern of outcomes (by six months after enumeration) of the populations within them in December of 1979. Outcomes of the 1976 population could not easily be described in relation to these three types of care, because the community hospital was not open and there were slight changes in the use of the beds within general hospitals.

The fact that the risk of death was relatively high for patients entering geriatric beds within general hospitals (even after adjustment for differences in age, length of stay and level of incapacity) suggests that it had a major role as might be expected in the management of the acutely-ill elderly. This type of geriatric care was also characterised by a relatively high turnover amongst survivors: patients being returned to the community or transferred (usually to a peripheral geriatric unit). Indeed, the likelihood of being still resident at six months was even lower than for elderly patients in other specialties (i.e. acute general wards).

The geriatric 'community' hospital population showed greater turnover than the peripheral geriatric units but did not really approach the general hospital geriatric beds in
the extent of discharge or transfer of survivors. Moreover, the fact that when such a movement occurred it was no more likely to be to the community rather than on to another institution (usually a peripheral geriatric bed) indicates that it was functioning as part of a continuation of inpatient geriatric facilities.

This pattern of activity does not accord with the notion of a community hospital originally formulated by studies in Oxford (Oddie et al., 1971) in which stays were limited to about three weeks, and medical treatment and admission policy was the responsibility of general practitioners; nor is it of the size originally envisaged. There is probably no uniformity in the use of the term 'community hospital' throughout the country.

Other published surveys following-up admissions to geriatric hospitals also reflect the type of unit which is the subject of investigation.

Isaacs (1965) followed up a resident population of geriatric hospital patients for one year and thus, in following a cross-sectional population, rather than recent admissions only, his design was similar to that used in the present study. He describes his series as relating in the main to the prognosis of long-stay hospital patients; it seems most appropriate to compare them with the peripheral geriatric population in Leicestershire. The outcomes at six months of Isaacs' (1965) population in his three broad categories were:
still resident (66%); died (20%); discharged (14%). The corresponding figures for geriatric peripheral units in the present study were: 54% (still resident); 25% (died); 10% (discharged home); 11% (transferred). Thus, the two studies show similarities in that the greatest proportion at six months were still resident whilst the next largest outcome category was death. The variations in the magnitude of the differences could be explained by the different ways in which outcome categories were constructed. The follow-up of the 1979 elderly institutional population of Leicestershire took the immediate outcome of a particular admission within the six month follow-up period, whilst Isaacs (1965) took account of outcomes of people who had been transferred from the geriatric hospital but included the outcome of that second admission with his three broad outcome categories. This approach is probably not so valuable since transfer of patients within components of the institutional services is an important consideration. One of the principal discrepancies, for example, was the higher proportion of surviving continuously resident patients in his, compared to the present study. However, since Isaacs' data contained patients that in the present approach would have been classified as transfers to the other hospitals, the relative proportions (in the two studies) in this particular outcome category would probably be much nearer to one another. Moreover, Isaacs (1965) included in his 'discharged' category transfers to old people's homes (these would have been classified as 'transferred' in the present study), which could partly explain his higher proportion discharged. The 5%
discrepancy in the proportion of all outcomes which were deaths is probably real and indeed would probably be widened by applying Isaacs' classification to the 1979 Leicestershire data since he included 'post-transfer' deaths with all 'deaths'.

No British studies could be found which studied outcome for an elderly population in all types of institutional care in the way that the present study has done and most, like Isaacs (1965), have examined a single type of care such as geriatric hospitals (Silver and Zuberi, 1965; Hodkinson and Jefferys, 1972; Farrow, Rablen and Silver, 1976; Piper and Hodkinson, 1979; Hodkinson and Hodkinson, 1980) homes for the elderly (Lowther and McLeod, 1974; Smith and Lowther, 1976) or psychiatric hospitals (Bewley et al., 1975).

Much of the difficulty in comparing different studies, and in particular those which have dealt with geriatric hospital populations, is the variation in organisation of services in different localities and at different time periods. Whilst the older studies most nearly reflect the way in which the peripheral or longer-stay components of a modern geriatric service operate, the more recent literature has involved departments of geriatric medicine in which the emphasis is on acute care and rehabilitation. Indeed, some of the published studies have had the purpose of highlighting their service as one in which waiting times are reduced by rapid turnover and which is generally more efficient or effective.
For example, the experience of the first year's work of a new geriatric department at Northwick Park Hospital serving a population of about 140,000 (17,000 over 65 years), and employing (for all patients) an initial 25-bedded admission ward with a further 89 beds (in two smaller hospitals) for continuing treatment, rehabilitation or longer-term care (Hodkinson and Jefferys, 1972), showed a similar pattern of outcomes to the patients within geriatric beds in general hospitals in Leicestershire. A low proportion of patients were still resident with about 90% of the total in each case split roughly equally between death, discharge or transfer. Hodkinson and Jefferys (1972) appeared to group together discharges to the community and transfers to the other geriatric hospitals and the proportion was higher than in the present study.

Important determinants of outcome for patients once they are admitted are the types of problem selected in the first place and the availability or organisation of resources in other parts of the service which in turn governs acceptance of discharges or transfers. They throw no light on the more important question of what represents an appropriate or effective function for geriatric in-patient facilities.

Hodkinson and Jefferys (1972) saw the elimination of a geriatric waiting list as a matter of choice, not necessarily dependent on generous bed provision. By removing barriers to referral by general practitioners and above all ma-
intaining high turnover, they considered that an admission unit within a District General Hospital (DGH) was the key to a successful geriatric service. Through its operation, common difficulties of geriatric services such as:– the referral of inappropriate problems by general practitioners, resistance to discharge on the part of patients and relatives, deterioration whilst awaiting admission, poor morale of staff, institutionalisation of patients, would be minimised.

The issues are not so straightforward however. In Leicestershire in 1979, the ratio (per thousand) of geriatric beds within general hospitals to the elderly population was slightly higher (1.8) than that (1.47) which can be deduced from the data presented by Hodkinson and Jefferys (1972). Yet, whilst the throughput (annual number of deaths and discharges per available bed) for all types of geriatric beds in Leicestershire (Trent Regional Health Authority, 1981) was lower (4.2) than that quoted by the above authors (6.16), it still fell within the range of 'high' turnover which they invoked in their arguments. The waiting list for in-patient geriatric care in Leicestershire was higher in 1979 than both the Regional and National averages (Trent Regional Health Authority, 1981).

6.2.2 The importance of the general hospital facility

Other studies have reported successful models for providing geriatric services with no waiting list and in which the need for continuing care and 'long stay' are reduced.
Evans (1980) has reviewed three such studies (O'Brien, Joshi and Warren, 1973; Gedling and Newell, 1972; Bagnall et al., 1977) and pointed out that despite different methods of organisation, all have a relatively generous endowment of geriatric beds within district general hospitals. His comparative data for these three 'successful' services are shown in Table 70, together with the corresponding data for Leicestershire during 1979.

It can be seen (Table 70) that whilst the level of all types of geriatric beds in Leicestershire was lower, but not greatly so, than that provided in the other areas, the great discrepancy was in the provision of geriatric beds within general hospitals.
TABLE 7: Comparison of levels of provision in populations where three 'successful' geriatric services operate and data for Leicestershire. Table adapted from Evans (1981).

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>All geriatric beds*</td>
<td>8.1</td>
<td>9.1</td>
<td>9.0</td>
<td>7.7</td>
</tr>
<tr>
<td></td>
<td>Geriatric beds with general hospital facilities</td>
<td>5.7</td>
<td>8.5</td>
<td>8.5</td>
<td>1.8</td>
</tr>
<tr>
<td></td>
<td>Percentage of geriatric beds with general hospital facilities</td>
<td>70</td>
<td>93</td>
<td>92</td>
<td>23</td>
</tr>
<tr>
<td></td>
<td>Medical beds available to elderly*</td>
<td>3.0</td>
<td>0.5</td>
<td>1.0</td>
<td>3.7</td>
</tr>
<tr>
<td></td>
<td>Medical and geriatric beds with general hospital facilities</td>
<td>8.7</td>
<td>9.0</td>
<td>9.5</td>
<td>5.5</td>
</tr>
<tr>
<td></td>
<td>TOTAL medical specialties admission rate*</td>
<td>123</td>
<td>60</td>
<td>82</td>
<td>56</td>
</tr>
</tbody>
</table>

* per thousand population aged 65 years and over
* data taken from Evans 1980
**Trent Regional Health Authority 1981

Moreover, when the other key resource non-geriatric medical beds within general hospitals was added, Leicestershire still lags behind the other services.

The relationship between the general and geriatric sectors of hospital in-patient provision has always been problematic but most recently it has been one of the main foci of more intense discussion prompted by the demands of the ageing population (see, for example, Department of Health and Social Security, 1981a).

In Leicestershire, it is perhaps surprising to examine
the way in which general medical beds were operating prior to the first survey in 1976.

Even allowing for the known discrepancies (Evans, 1977) between SH3 data and the hospital discharge-based systems (HIPE and HAA), it seems (Table 71) that in general medicine more than any other specialty in Leicestershire, limited resources were being concentrated in younger age groups at the expense of the elderly. Nor, as has been discussed did the geriatric service have the right balance of provision to allow it to respond.

Table 71: Occupation of Beds in Different Specialties by the Elderly* in Leicestershire Hospitals in 1976 Compared with Regional and National Figures

<table>
<thead>
<tr>
<th>Specialties</th>
<th>Leicestershire Area 1, 5</th>
<th>Trent Region 1, 5</th>
<th>England &amp; Wales 2, 3, 4</th>
</tr>
</thead>
<tbody>
<tr>
<td>General Medicine</td>
<td>32</td>
<td>41</td>
<td>47</td>
</tr>
<tr>
<td>Chest Diseases</td>
<td>16</td>
<td>28</td>
<td>35</td>
</tr>
<tr>
<td>G.P. Medicine</td>
<td>75</td>
<td>64</td>
<td>65</td>
</tr>
<tr>
<td>Geriatrics</td>
<td>96</td>
<td>88</td>
<td>86</td>
</tr>
<tr>
<td>General Surgery</td>
<td>34</td>
<td>33</td>
<td>33</td>
</tr>
<tr>
<td>Orthopaedics</td>
<td>45</td>
<td>38</td>
<td>37</td>
</tr>
<tr>
<td>All Specialties</td>
<td>49</td>
<td>46</td>
<td>50</td>
</tr>
</tbody>
</table>

*Average daily number of beds occupied by people aged 65 years and over in each specialty (obtained from Hospital Activity Analysis[1] or Hospital In-patient Enquiry[2]) expressed as a percentage of the overall average beds available in that specialty (obtained from SH3 data).


In the years between the two surveys of the elderly in Leicestershire, there was a major expansion of acute general beds (particularly in the largest District General Hospital - DGH) and a small increase in the number of geriatric beds.
available. In turn, the absolute numbers of elderly people in acute general beds by December 1979 (the time of the second survey) had increased in proportion. Looked at in terms of proportions of the population hospitalised, more of the elderly population were in acute general beds as a result of their increased availability in 1979. There was no similar increase in the proportion of the elderly population who were in geriatric beds.

This state of affairs could be regarded as an equitable solution in the scenario which has been described: the elderly population benefitted from extra resources along with younger age-groups. However, it would be over-simplistic to assume that the elderly population of a particular acute hospital specialty has a range of conditions which are particular, or indeed best suited, to care within it.

The situation is complex to interpret in that point prevalence measures describe only part of the picture. A higher residency ratio at one time period compared to another may represent a higher admission rate, prolongation of stay, or a mixture of the two. Moreover, if stay is prolonged is it because an increase in the admission of elderly people to available acute beds has exceeded the capacity of the geriatric service to take (or transfer) people in need of rehabilitative care or long-term care?

Nevertheless, from the findings of the present study, it is difficult to escape the conclusion that this was not a
planned change of emphasis on the part of the service but an inevitable sequel to resources suddenly becoming available in the face of suppressed demand.

6.2.3 Relationship between general and geriatric medicine

Many of the attitudes within the service to the elderly hospital patient are encapsulated in the widely-used term 'blocked-bed'. No conventional definition exists for it, but through it health service professionals could be interpreted as having reacted to the demands of an ageing population by defending the essence of the role of the acute hospital in treating acute illness in the 'productive' age-groups against the pressure to 'care' for the older patient.

Indeed, it is a term derived from the values of those who work in the acute sector and who have the executive authority to direct their use in a manner which they perceive as correct. It implies that 'cure' and 'care' should be kept separate by administrative means.

A consensus definition emerged in a recent survey of health authorities in the United Kingdom. It runs as follows: "a bed occupied by a patient who in the consultant's opinion, no longer requires the services provided for that bed, but who cannot be discharged or transferred to more suitable accommodation" (Bytheway and Hall, 1977). This definition rules out the possibilities of 'blocked-beds' oc-
curring because of poor communication or poor patient management when the resources are actually available for transfer. Moreover, despite the fact that the consultant is the person mainly responsible for deciding treatment and discharge policy, the enormous variation in practice means that such a definition embodies a highly subjective component. At its most extreme, an acute bed might be regarded as 'blocked' if it contained any elderly person other than one admitted quite recently. Another extreme definition of a 'blocked-bed' is the one raised by Rubin and Davies (1977) in which it was seen as a situation in which 'throughput' had effectively stopped - as if 'throughput' was an aim in itself. This definition has no reference to the appropriateness or otherwise of patients' placements as the authors concede.

Indeed the concept raises many complex and intractable questions: what is a hospital and what activities should take place within it?, what balance should be struck between 'caring' and 'curing'?, what criteria inform staff judgements of inappropriateness of a patient's placement and how did they come to the fore? - for example, is the concept a product of modern managerialism as applied to the health service in the 1970's?, what part does the 'blocked-bed' play in a specialist's attempts to secure more resources in a climate of competition with other disciplines?, how does the concept of the 'blocked-bed' relate to attempts to evaluate medical care?.
Here, misplacement was based on the opinion of nursing staff caring for the elderly person. It could be argued that this is just as valid an opinion as the one based on a clinician's judgement: in many cases it is the type of nursing care required by the elderly person which determines the mode of care which is most appropriate. The proportion of misplaced elderly people in acute general wards in Leicestershire in 1979 was 23%. Smith and Lowther (1975) found a figure of 18% of bed occupancy by 'geriatric' patients in acute wards in Edinburgh during 1973 but their figure was based only on those who already had their names on geriatric waiting lists and thus could not take account of patients misplaced but suitable for other types of care or discharge home. Although, in Leicestershire the largest proportion (41%) of misplaced patients in acute wards were considered to need geriatric care, 5% were felt to need psychiatric care and 25% to be suitable for care in the community (with adequate support if necessary). McArdle, Wylie and Alexander (1975) found a higher figure of 33% for elderly patients no longer in need of acute medical care occupying acute beds. Misplacement in their study was on the basis of medical opinion on whether medical care had been 'completed' but only of one consultant team who were responsible for the female medical ward of a large teaching hospital. Nevertheless, the fact that a higher figure was obtained when medical opinion alone was sought poses the question of whether multidisciplinary assessment has an advantage. Acute specialists may perceive themselves as needing to be 'productive' with high turnover of patients and be more
likely to attach the label of misplacement with less consideration of the patient's particular needs.

MacPhail and Bradshaw (1967) surveyed all general and geriatric beds in the Leeds area, taking the consultant's opinion on whether patients were no longer in need of acute hospital care. Overall 5.8% of patients in acute beds had spent seven or more days there unnecessarily, whilst the figure was 11% when restricted to those aged 60 years and over. Rubin and Davies' (1975) study of 1010 general hospital beds in Liverpool resembled the present study in a number of respects. Both were point prevalence surveys which involved representatives of health authority and social services departments, and both utilised questionnaires which incorporated an assessment of functional capacity. Rubin and Davies (1975) employed a judgement of misplacement which took the opinion of both nursing and medical staff but unfortunately since they administered their questionnaire only to patients initially judged as misplaced, no comparisons between levels of functional capacity in the two groups could be made.

In Leicestershire, there was a lack of any marked difference in incapacity (in most activities of daily living) between misplaced and suitably-placed patients in the acute hospital population. This seems to indicate that there was no clear consensus amongst nursing staff as to which groups of patients, at least in terms of functional capacity, are appropriate for their care setting. This is
in contrast to the other NHS settings where there was greater polarity, lower incapacity being associated with misplacement in geriatric and psychiatric hospitals.

The interventions available in the acute sector may not be perceived by staff working within it as having any relevance or effect on functional limitations, thus a measure of activities of daily living may not be a relevant objective criterion for them. Impressions about misplacement in the acute sector could be based on cruder notions of elderly people being there for 'too long'. This study suggests that chronological age is a much more important influence on such judgements in the acute sector than in other settings.

Although conclusions can only be tentative from such limited data, could it be that staff in the acute sector perceive a person as misplaced in their care setting merely because they are very old, their level of functional capacity being a lesser consideration? This would seem to be in line with some anecdotal impressions yet it perhaps reflects the fact that staff view geriatrics as specialty with responsibility for a defined age-group. At its worst it raises the issue of whether the negative stereotype of old age if widespread amongst professionals even may have some implications for the quality of care.

6.2.4 Alternative models for organising geriatrics

A number of solutions have been put forward to ration-
alise the hospital care of the elderly and they can be broadly summarised as three options:

a) the integration of geriatric medicine with general medicine;

b) the creation of geriatrics as an age-defined specialty;

c) the more extreme view, the abolition of geriatrics as a specialty.

Although the last of these has been raised (Leonard, 1976) few serious commentators would support it. The evidence in the literature indicates that some local services operate using either model a) or b) to organise geriatric medicine. Wards run jointly by consultants in general and geriatric medicine have been reported (Evans, 1974) and arrangements where geriatric physicians are 'attached' to general medical units (Burley et al., 1979; Smith, 1981) are in operation elsewhere. In other parts of the country, the geriatric service takes responsibility for all elderly patients, the definition of 'elderly' varying, e.g. 65 years and over (O'Brien, Joshi and Warren, 1973) or 75 years and over (Bagnall et al., 1977).

The recent report of the working party of the Royal College of Physicians of London on the medical care of the elderly (Royal College of Physicians, 1977) made recommenda-
tions for a model of geriatric medicine involving its integ-
ration with general medicine. The recommendations see the
fusion of all acute medical and geriatric facilities in the
District General Hospital together with the appointment of
Consultant Physicians "with a special interest in geriatric
medicine" who should usually (according to local circum-
stances) have access to the same acute beds as his colleag-
ues. Such physicians are also envisaged as holding con-
tracts with a stated number of sessions devoted to care of
elderly patients in rehabilitation or long-stay beds.

This proposal is a response to the inevitability and
permanency of the ageing population so that, in theory, the
burden of care would be shared, as the Working Party puts
it: "there should be a progressive integration of all acute
hospital medical work so that an arbitrary age-barrier would
no longer be necessary".

The model whilst superficially attractive, will not be
easy to implement. Much depends on the calibre and level of
recruits to take an interest in the care of the elderly. The
experience of geriatric medicine in its present form is not
good in this context, although the very existence of such an
integrated service is seen as improving training and inter-
est in the problems of the elderly. However, this process
will probably be a slow one and, in the interim, it is easy
to imagine conflicts arising from the attitudes of consul-
tants in general specialties towards the erstwhile geriatric
physician sharing the medical care of all age groups.
Moreover, whilst the situation might prevent cries of "misplacement" or "bed-blocking" on acute medical wards, the situation may persist or even worsen in surgical and orthopaedic wards where it is difficult to imagine how a comparable model of generalist with special interest could develop. The creation of specialised geriatric-orthopaedic units which have been implemented in some areas and advocated more generally (Devas, 1974) would introduce yet another dimension to the acute care of the elderly. The Working Party on Care of the Elderly (Royal College of Physicians, 1977) states as part of one of its recommendations: "physicians other than those with special interest in geriatrics and some surgeons should also have some access to long-stay beds, precise arrangements being decided locally". It is all too easy to see how this may be a tempting option for a surgeon pressed to admit from his waiting list to a bed containing an elderly person. If the elderly require a group with special expertise and training to deal with their problems, it is difficult to reconcile the physicians and surgeons who do not yet possess these special skills making the decision as to which elderly people do or do not require long-term care.

Indeed, much of the success of this model of hospital care of the elderly will depend on a change of attitude on the part of medical and nursing staff. If the notion of blocked-beds is, as has been argued here, symptomatic of a deeply entrenched value system which recognises a very limited place for care of the elderly in an acute hospital set-
ting, then it is unlikely to succeed.

It is all too easy to imagine that, instead of true integration, an age-defined policy might operate at a ward level with all elderly patients effectively being 'handed over' to the physician with an interest in geriatrics. Hardly a course of action likely to foster interest or experience in the problems of the elderly in all medical and nursing staff. If, as has been argued here, a strong emphasis should continue to be placed on assessing, monitoring and maximising functional capacity as well as treating underlying disease processes, (an orientation of less relevance to younger age-groups) a mixed ward with different therapeutic goals may not be the optimum arrangement. Furthermore if the physician with a special interest in the elderly is to involve himself in the acute medicine of younger age-groups this would seem to work against him maintaining a total community perspective to assessing and meeting the needs of the elderly.

The alternative approach to geriatric care is to take an age-limit as deciding the responsibility for care rather in the same way that paediatrics is organised as a specialty. It would seem sensible given that the major population changes will be in the oldest age-groups and also the relationship of incapacity to age, to take this age-limit as 75 years rather than 65 years.

The age-defined service might be more effective in pro-
viding continuity of care between different types of geriatric hospital provision, day care and the community, all within the remit of a geriatrician. Provided that a continuing commitment was made to the siting of geriatric beds within District General Hospitals, it need not suffer the disadvantage of poor recruitment of staff.

Central Government attitudes on the matter seem to be unclear. A recent 'study' by DHSS officials on the respective roles of the acute and geriatric in-patient services (Department of Health and Social Security, 1981a) could see no set pattern for all districts. Their suggestion was that the integrative approach would be the best one where there were local difficulties in the recruitment of suitable individuals for consultant geriatric posts.

This would seem the wrong emphasis on which to decide on a particular option. There seems to be a genuine dichotomy over which course of action to adopt. As has been discussed, whilst there is limited evidence that the age-defined approach can operate successfully, it is too early to say whether the alternative, integration, can be effective.

6.2.5 The need for a local initiative

There is no doubt however, that the Royal College of Physicians report (1977) has been influential. In Leicestershire, a local working party (Leicestershire Area Medical
Committee, 1978) suggested the adoption of a similar model, although no geriatric physicians with a special interest have yet been appointed.

From the foregoing discussion, it is apparent that there is an urgent need locally for an increase in the number of beds within general hospitals to which the elderly may be admitted. What the ideal level of such provision should be is not easily determined. The services reviewed by Evans (1980) shown in Table 70 are all in excess of the ratio 5.0 (half 'acute', half 'rehabilitation') beds (per thousand 65 years and over) recommended by the Department of Health and Social Security (1981a) although the service in Hull (Bagnall et al., 1977) appears to function effectively with just less than 6 per thousand. The figure was about 9 if general medical beds were also included.

In Leicestershire, amongst planned developments already under way, (in addition to the expansion of the main DGH already discussed) is the opening of the first phase of a further DGH which, by 1984, will have opened, adding about two hundred beds to the Area's quota. These beds have been earmarked for general surgery (approx. 140) and general medicine (approx. 60). The effect of this on the availability of medical beds for the elderly in Leicestershire is shown in Table 72. It will lead to a slight overall increase in the potential availability of general hospital beds for the elderly (5.5 to 6.0 per thousand) but only through the expansion of general medical quota.
This would seem to favour the approach of integration of acute care of the elderly. However, despite some move of local policy in this direction, at present, neither of the two models of geriatric care discussed above are in operation in Leicestershire. Indeed, as has been shown, the service is operating as it does in many parts of the country, with the geriatric department taking secondary referrals from the general sector and accepting such primary referrals as it is able to within the limitations of the small number of general hospital beds available to it.

If there is no immediate implementation one of the two alternatives to re-organise geriatric care then there may be little benefit to the elderly from this further expansion of services.

From the results discussed earlier relating to misplacement in the acute general sector, the apparent mode of operation of the general medical service and from the evidence in the literature, it is suggested here that despite a local policy document to the contrary, it would be better to develop geriatrics in Leicestershire as an age-defined specialty. The extra DGH, which is seen by many locally as the untimely result of a lengthy and apparently irreversible process begun in the height of the capital planning ethos of the 1960's, could be incorporated into such a model of geriatric care. It's development as a hospital concerned with the care of the elderly would see a small but immediate benefit (see Table 72) in the re-allocation of the beds in
it's first phase of (say) 150 to geriatric medicine and 50 to surgery; later planned phases could then develop this trend with further concentration of multidisciplinary expertise on the acute assessment, treatment and rehabilitation of the elderly. Peripheral geriatric units and community hospitals would continue to provide longer-term support and community services could be developed around this focus.

TABLE 7: Comparison of present and future levels of bed provision (per 1000 population aged 65 years and over) in Leicestershire: planned use versus possible alternative deployment (see text)

<table>
<thead>
<tr>
<th></th>
<th>1979</th>
<th>1984 (planned)</th>
<th>1984 (alternative)</th>
</tr>
</thead>
<tbody>
<tr>
<td>All geriatric beds</td>
<td>7.7</td>
<td>7.6</td>
<td>8.9</td>
</tr>
<tr>
<td>Geriatric beds within general hospitals</td>
<td>1.8</td>
<td>1.8</td>
<td>3.1</td>
</tr>
<tr>
<td>Medical beds within general hospitals</td>
<td>3.7</td>
<td>4.2</td>
<td>3.6</td>
</tr>
<tr>
<td>Medical and geriatric beds within general hospitals</td>
<td>5.5</td>
<td>6.0</td>
<td>6.7</td>
</tr>
<tr>
<td>Medical beds in peripheral hospitals</td>
<td>2.1</td>
<td>1.2</td>
<td>1.2</td>
</tr>
<tr>
<td>Beds in community hospitals</td>
<td>1.5</td>
<td>2.4</td>
<td>2.4</td>
</tr>
</tbody>
</table>

1. assumes planned closure of peripheral hospital will take place
2. assumes planned community hospital will open

6.3 HOMES FOR THE ELDERLY

About half the entire institutional elderly population of Leicestershire in December 1979 was in homes for the elderly. Using national data it is not possible to construct, for purposes of comparison, concurrent age-specific residency ratios for all types of care from routinely available data.
sources. Here, data have been obtained from the general census which enables similar age-specific residency ratios to be calculated for England and Wales as a whole (see Table 73). The disadvantage, of course, is that the most recent census, was in 1971, some eight years distant from the Leicestershire Survey (data for this aspect of the 1981 census will not be available until autumn 1982, Office of Population Censuses and Surveys, personal communication). Nevertheless, provided that the magnitude of the differences are interpreted with caution, they provide a basis for comparison.

<table>
<thead>
<tr>
<th>AGE/SEX GROUP</th>
<th>TYPE OF CARE (RATIO PER THOUSAND POPULATION)</th>
<th>Homes for Elderly and disabled</th>
</tr>
</thead>
<tbody>
<tr>
<td>65 - 74</td>
<td>6.4</td>
<td>3.7</td>
</tr>
<tr>
<td>75 - 84</td>
<td>7.5</td>
<td>6.9</td>
</tr>
<tr>
<td>85 and over</td>
<td>10.4</td>
<td>8.3</td>
</tr>
<tr>
<td>65 - 74</td>
<td>7.4</td>
<td>4.1</td>
</tr>
<tr>
<td>75 - 84</td>
<td>11.9</td>
<td>10.3</td>
</tr>
<tr>
<td>85 and over</td>
<td>18.2</td>
<td>15.0</td>
</tr>
</tbody>
</table>

In both sets of data, greater proportions of the two oldest age groups of both sexes were in homes for the elderly and handicapped than in any other type of care. There
was a large increase in the institutionalisation ratio with respect to such homes for the elderly population aged between 75-84 years and that aged 85 years and over. Although there was a corresponding increase over the two age groups for the proportion who were in geriatric care, in Leicestershire, in these two oldest age groups, the ratio for people in homes for the elderly and disabled was three times that for geriatric beds. It must be remembered however, that the proportion of the population resident at a point in time reflects a variety of factors and does not give any impression of flow of patients within different settings or to and from the community.

The dependence of these indices on availability of resources is of major importance. Moreover, comparisons of the national data in Table 73 with the Leicestershire data are made difficult because of this, and also by the fact that the time periods are so different. In the data for the homes for the elderly and disabled, Leicestershire shows a higher age-specific residency ratio in the oldest age group (and lower in the younger age groups) than the England and Wales figures. This could represent a trend towards selective admission of older residents in the more recent time-period, although it could also reflect differing levels of resources. There is also the possible influence of the open-ended age-group (aged 85 years and over) discussed earlier (see Chapter 4, P.4-7) which cannot be resolved until data from the 1981 census become available.
The present study has shown clearly that within the different institutional settings in Leicestershire in 1979, it was the geriatric hospital population which contained the highest levels of incapacity. Level of incapacity was age-related but the population in the geriatric beds was younger and more incapacitated than that in homes for the elderly. There is little doubt, however, about the major providers of institutionally-based care within the types available to the elderly: it is largely a function of the social services department. The result is that the relatively small proportions of highly incapacitated elderly people in such homes when translated into numbers, represent a considerable workload for staff working within them.

6.3.1 The interpretation of data on functional incapacity

The assessment of the elderly institutional populations in Leicestershire has focussed, to a large extent, on their levels of incapacity in relation to five basic activities of daily living which incorporate the most fundamental skills necessary for self care.

As was discussed in the introduction, this approach, dealing with level of physical function, is more closely allied with the American studies of chronic disease and rehabilitation than the British work which has had a more clinical or diagnostic orientation.

There are difficulties with the use of an assessment of
incapacity in activities of daily living in an institutional setting, which should be borne in mind when data are being interpreted. To the extent that an accurate assessment requires a full appreciation of the elderly person's abilities, both potential and realised, omission here from the assessment of people with durations of stay under 28 days (so that staff had an opportunity to become fully acquainted with them) and use of a consensus view of caring staff, meant that such problems would have been reduced. This still leaves the issue of whether various institutional regimes, training and attitudes of staff allow their elderly charge to attempt to perform an activity unaided. It may be less disruptive to the regime of an old people's home to wash and dress the frailer residents in the morning rather than allow them to do this more slowly for themselves. In this way, all residents will arrive at the breakfast table at the same time. Similar arguments might apply on a hospital ward, particularly with respect to bathing. There may even be special rules on a ward so that elderly patients are not left alone in the bathroom on the grounds of safety. This may result in a nurse bathing patients when they might otherwise have been capable of doing so themselves.

Similarly, high estimates of dependency (ie. needing help to go to the toilet) in urinary incontinence might occur where regimented toileting of groups of patients or residents may have evolved as part of the routine. In the same example, higher incapacity may reflect availability and proximity of toilet facilities and of staff. The combina-
tion of limitation of mobility and a long corridor at the end of which is a lavatory may result in frequent urinary incontinence which, given different circumstances, would not occur.

Another facet of the problem which may be impossible to disentangle is the degree to which assistance with activities represents an administrative convenience or a component of rehabilitation. To what extent, for example, does regular toileting fulfill a retraining function for bowels and bladder?

These problems are not highlighted to invalidate the method of assessment: alternative approaches such as self-reporting by patients and formal testing of level of function also have serious limitations in terms of validity and general applicability. Moreover, the concept of capacity to perform basic activities of daily living is widely applicable in the range of settings in which it has been used, easily understood by staff and has utility in terms of matching needs and assessing rehabilitation. Rather, it is intended to draw attention to the fact that levels of incapacity in particular functions reported in this study and the many other published studies of which such assessments have been a feature, should not be used uncritically.

6.3.2 Patterns of incapacity

Most studies of incapacity of the elderly in residen-
tial care have assessed level of mobility, the presence or absence of urinary incontinence and the degree of mental confusion. Despite differences in criteria for defining mobility, (an important element of many assessments), most schedules have similarities at the two extremes, usually expressed as 'fully ambulant' and 'bedfast' or 'chairfast'.

In Leicestershire, in 1979, a similar proportion (2.5%) of 'bedfast' old people was found as in earlier national studies of residential homes: Townsend (1962): 2.5%; Carstairs and Morrison (1971): 1.8%. There was considerable variation however, in the proportion who were minimally incapacitated between these studies. The present study found that 36% of residents were fully ambulant whilst those of the Department of Health and Social Security, (1970) and Carstairs and Morrison (1971) found less incapacity, 50% and 59% respectively. This is in keeping with the admission of older residents in later time periods although is not consistent in its similarity to Townsend's (1962) figure of 36% fully ambulant residents in a study of residential homes in England and Wales in 1958-59. However, the latter survey was carried out at the time of admission rather than cross-sectionally and took the opinion of the elderly person rather than staff caring for them on level of functional capacity.

Incontinence of urine is one of the most distressing and embarrassing sources of incapacity in old age and it is usually viewed by staff as one of the most labour-intensive
DISCUSSION.

...disabilities in an institutional setting. As with assessments of other activities, comparison between studies is hampered by different criteria of definition. The definition of incontinence has included both urinary and faecal incontinence (Townsend, 1962; Masterton, Holloway and Timbury, 1980) whilst others have reported urinary incontinence separately (Department of Health and Social Security, 1970; Carstairs and Morrison, 1971). Carstairs and Morrison (1971) included faecal incontinence occurring together with urinary incontinence as a separate category (double incontinence). Embracing all the definitions of incontinence used in studies of residential homes under the broad rubric of 'severe incontinence' its prevalence ranges from 4-17% (Table 74). As would be expected, these figures are considerably below those found in the present and other studies for patients in hospitals.
In the more recent studies, depicted in Table 74 despite the difference in localities and the variation in definitional criteria, the prevalence of incontinence is remarkably similar. Only the present study and two others have presented results for 'double incontinence' (frequent...
urinary together with faecal incontinence) as a separate category. The figure of 10% prevalence of double incontinence found here was slightly below that of 14.1% found by Wilkin and Jolley (1978) and higher than the figure of 3% found by Carstairs and Morrison (1971).

Despite the relatively high proportion of incontinence in residential homes and hospitals, it must be remembered that the majority of all cases in a population occur in the community (Yarnell and St.Leger, 1979).

In the study by Carstairs and Morrison (1971) of residential homes in Scotland, 86% were able to wash and 82% to dress unaided whilst in the census of residential accommodation in England and Wales (Department of Health and Social Security, 1970) 83% were able to wash, 71% to dress and 96% were able to feed themselves. In the present study, levels of incapacity were higher only 46% of residents of homes for the elderly washed, dressed or shaved unaided, whilst 79% fed themselves without assistance.

Staff in homes for the elderly surveyed in this study were dealing regularly with elderly people who could not walk, were frequently incontinent of urine or faeces, who may have needed to be washed, dressed, shaved or spoonfed. The size of the problem though much smaller in terms of proportions, than in long-stay hospital settings is numerically larger. For example, the number of old people who were frequently incontinent of urine in residential
homes in Leicestershire in December 1979 was enough to fill
seven fifty-bedded residential homes and just under half the
total number of places in geriatric hospitals in Leices-
shire.

6.3.3 What types of resident are appropriate?

This descriptive account of the patterns of incapacity in residential homes raises the question of what kinds of problems it is appropriate for them to deal with and what should be their place within the range of services provided for the elderly population.

Townsend (1962), in his study published as "The Last Refuge" observed that between one half and two thirds of residents of homes for the elderly at that time were "comparatively active and physically and mentally capable of managing most or all personal and household tasks." His figure was based on resident-reported capacity to perform certain tasks and was high in relation to the findings of the present study. Here only 19% of the 10% who were misplaced were judged capable of managing at home or in a sheltered housing scheme.

Indeed, recently concern has turned, more particularly, to residents whose degree of moderate or severe incapacity is such that they are deemed to be more suitable for care in a hospital setting. Carstairs and Morrison (1971), in their survey of all forms of residential care in Scotland, in-
ferred the most appropriate type of care from their assessment of functional capacity, mental status and other physical conditions, and undertook to validate this by taking the opinion of matrons of residential homes on a small sample. The present study took the judgement of matrons and officers in charge, in the light of having completed an assessment of level of incapacity of the elderly person concerned.

Carstairs and Morrison (1971) themselves drew attention to the difficulties in the two approaches for gauging misplacement. They state: "we had rejected the idea of asking matrons to make allocations to care in the census itself because of the difficulty of accepting what might be a rather unconsidered judgement lacking in comparability". However, the difficulty of inferring the most appropriate type of care from a given level of incapacity is apparent from the results of the validation part of their study. When matrons of homes were asked to state whether they agreed with the allocation to care which had been chosen for a particular resident, in less than two thirds of cases was there overall agreement and for allocations to sheltered housing agreement was less than 50%. Thus, whilst it is possible to construct dependency groups which appear attractive to those wishing to plan services, they may not have a high relevance for workers. Carstairs and Morrison (1971) concede:

"it appears that these two approaches differ and are difficult to reconcile. Our approach, which hopes to arrive at an indication of current accommodation needs, was based on assessment of the appropriate care for an individual if certain facilitating factors had been present at the right time. The matron's approach was probably closer to consideration of whether the resident could actually cope in the present, in the care category we sug-
gested as appropriate".

In Leicestershire, taking the matron's opinion, and relating it to the characteristics of residents who were labelled as misplaced, I was able to explore possible attitudes of staff to different types of disability.

In the population of homes for the elderly in Leicestershire, 10% of residents were judged as misplaced. Higher mean scores for activities of daily living occurred in the misplaced group than in the suitably placed group, the reverse of the situation in NHS geriatric and psychiatric facilities. The magnitude of the difference for most activities was also much greater, in homes for the elderly, most for incontinence of urine and faeces and difficulty in feeding and least for incapacity in mobility. This could mean that staff in homes for the elderly, who see their role as dealing with less incapacitated elderly people, react adversely to the labour-intensive disabilities such as incontinence which are so disruptive and time-consuming to the organisation of the home and are construed as nursing care. The fact that lack of mobility is less pronounced a factor may reflect a greater acceptance of incapacity in this sphere as a more natural feature of the increasing frailty of old age.

The types of alternative care proposed by officers-in-charge of homes for the elderly for their misplaced residents in the present study, were mainly geriatric
These figures may be compared with a study of misplaced elderly people in institutional care in Leicestershire in 1976 (Dodd, Clarke and Palmer, 1980) in which the survey schedule of each individual misplaced resident was examined and allocated to the most appropriate type of care by a psychiatrist and epidemiologist. The proportion of misplaced residents thought to be suitable for care in the community was similar in the two studies (19%, present study; 22%, Dodd, Clarke and Palmer, 1980). The proportion thought to be in need of hospital care was not greatly dissimilar, (71%, present study; 66%, Dodd, Clarke and Palmer, 1980). However, there were differences between the two studies in which type of hospital care was thought appropriate. The proportion considered to be in need of psychiatric hospital care was higher (33%) in the study by Dodd, Clarke and Palmer (1980) than the present study (22%), perhaps not surprising in view of the fact that in the former study, one of the assessors was a psychiatrist. It is more difficult to make a comparison on the non-psychiatric hospital category. The study by Dodd, Clarke and Palmer (1980) distinguished only 'general' nursing care whilst the present study asked officers-in-charge to choose 'geriatric' or 'other NHS' facilities. The present study found 43% judged suitable for 'geriatric' and 6% for 'other NHS' care, whilst Dodd, Clarke and Palmer (1980) felt that 30% needed 'general' nursing care. However, broad comparability between medically-qualified assessors and officers-in-charge on the proportions of residents who require either a lower dependency form of care (community) or
a higher dependency form of care (hospital) on a similar popu-
lation suggests that officers-in-charge are capable of
making such distinctions. The precise type of hospital care
required would probably in any case be dependent on a medi-
cal assessment and reflect local organisation of services.

6.3.4 Are levels of incapacity increasing?

During the fieldwork stage of the study in Leicestershire in 1979, it was volubly expressed by many
officers-in-charge of social services homes that the nature
of the problems they were dealing with had dramatically al-
tered over recent years. Indeed, it seems to be a
widely-held belief within the service that the number of
highly incapacitated old people within residential homes has
burgeoned.

The results of the present study have shown an increase
in level of incapacity in individual activities of daily
living within this and other types of care between the two
observation periods separated by a three year interval. The
evidence that such changes have taken place generally is
difficult to discern as the literature is contradictory.
Darton and McCoy (1981) report on two cross-sectional stu-
dies of local authority and voluntary homes for the elderly
in Suffolk. The first was carried out as part of the De-
partment of Health and Social Security (1970) national sur-
vey of homes for the elderly and the second in 1980 was a
similar study, in the same geographical area. Although the
time period was much longer than the present study, and restricted to homes for the elderly, nevertheless, there was an increase in incapacity between time periods (see Table 75) in both their's and this study.

Table 75 Change in state of residents in local authority homes for the elderly in Suffolk.

<table>
<thead>
<tr>
<th>INDEX</th>
<th>1970</th>
<th>1980</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Age (years)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>65-74</td>
<td>17</td>
<td>13</td>
</tr>
<tr>
<td>75-84</td>
<td>39</td>
<td>39</td>
</tr>
<tr>
<td>85+</td>
<td>39</td>
<td>45</td>
</tr>
<tr>
<td>2. Mobility</td>
<td></td>
<td></td>
</tr>
<tr>
<td>no help needed</td>
<td>45.0</td>
<td>34.5</td>
</tr>
<tr>
<td>help needed</td>
<td>47.2</td>
<td>54.2</td>
</tr>
<tr>
<td>wheelchair or bedfast</td>
<td>7.8</td>
<td>10.5</td>
</tr>
<tr>
<td>3. Continence</td>
<td></td>
<td></td>
</tr>
<tr>
<td>continent</td>
<td>69.4</td>
<td>60.3</td>
</tr>
<tr>
<td>isolated incidents</td>
<td>17.3</td>
<td>21.3</td>
</tr>
<tr>
<td>urinary incontinence</td>
<td>8.5</td>
<td>11.0</td>
</tr>
<tr>
<td>faecal or double incontinence</td>
<td>4.9</td>
<td>6.9</td>
</tr>
<tr>
<td>4. Mental State</td>
<td></td>
<td></td>
</tr>
<tr>
<td>mentally alert</td>
<td>66.2</td>
<td>50.2</td>
</tr>
<tr>
<td>mildly confused</td>
<td>27.5</td>
<td>32.4</td>
</tr>
<tr>
<td>severely confused</td>
<td>6.3</td>
<td>16.5</td>
</tr>
</tbody>
</table>

Darton and McCoy (1981)

Two reports (Wilkin, Mashiah and Jolley, 1978; Masterton, Holloway and Timbury, 1981) based on cross-sectional surveys of institutions separated by a fixed period of time (one or two years respectively) have presented conflicting findings and attempted to draw inferences about admission policy and practice and their effects on the workload in homes for the elderly.
Wilkin, Mashiah and Jolley, (1978) using the Crighton Behavioural rating scale (which includes an assessment of physical as well as mental status) interpreted a fall in levels of incapacity in long-stay geriatric and psychogeriatric wards together with a corresponding increase in social service homes as a response by the geriatric service to the demands imposed by the ageing population. They considered that geriatric hospitals were concentrating their facilities on people judged to have reversible disabilities, leaving the residue of severe irreversible disorders to be thrust on to residential homes.

This is not in accordance with the findings of the present study (over a three year period), particularly that of most marked worsening incapacity (for most activities of daily living) in the population in geriatric beds. The study by Wilkin, Mashiah and Jolley (1978) was based on relatively small numbers of old people and institutions and covered only a one year interval, factors which suggest a cautious approach to seeking policy implications from the data.

Masterton, Holloway and Timbury (1981) found slight falls in a two year interval in the mean levels of behavioural disabilities in the populations of 11 local authority homes in Glasgow; included in their assessment was the shortened Stockton Geriatric Rating Scale (Gillearid and Pat-tie, 1977) which includes a component on physical disability. This they believed, was a deliberate policy of selection,
based on perceptions of social services staff about the level of disability most appropriate to the aims of the home. Despite the overall falls in incapacity, these authors reported (but did not discuss) a two percent increase in the physical disability in the two year interval. It is a fallacy to assume that small differences in means are trivial. Depending on the variability of the data, when transmitted into absolute numbers, they could represent relatively large numbers of old people.

Commenting specifically on the problem of urinary incontinence, Gilleard (1980), using published data from various studies, saw evidence of a temporal increase of the prevalence of urinary incontinence in local authority homes for the elderly. In terms of its prevalence, the present study showed a 2% increase of frequent urinary incontinence in the population of homes for the elderly in Leicestershire between 1976 and 1979. The use of published data from different centres to draw inferences about temporal trends is not justified however, because of the possible effect of selection bias.

Used alone, data from cross-sectional studies separated by a fixed period of time, even in the same localities, can only indicate changes in the extent of incapacity faced by staff in different settings. They cannot show whether a greater or lesser level has resulted from changes in the overall status of people admitted to care or changes amongst continuously resident old people. Here, it has been shown
that overall change did arise both from recent admissions and changes in the status of the continuously resident. The cross-sectional comparisons thus reflect an interaction of these two components of change, but still do not fully describe the workload generated because of the contribution of people who have died or returned home in the interval between surveys and were not taken account of.

People with lengths of stay under one year in all hospitals and homes in Leicestershire in 1976 and 1979 differed slightly in the direction of higher incapacity at the later time period, but only within the geriatric hospital population (for most individual activities of daily living and for the overall incapacity score) were the changes unequivocal. There was little change in the homes for the elderly. Observing people with lengths of stay under a year is not of course, equivalent to examining serial admissions, but despite this limitation, a cautious interpretation of the data here would be that, in Leicestershire, geriatric hospitals were admitting patients who were no older, but more highly incapacitated, than in the past. In contrast homes for the elderly appeared to be admitting older residents whose level of incapacity was little different to three years ago.

What cannot be determined from the present study, or the limited amount of data from other studies which have concerned themselves with changes in incapacity amongst institutional elderly populations, is the extent to which dif-
different proportions of the base population of various levels of incapacity are in institutional care or in the community at different times or in different places. This highlights one of the fundamental limitations of a study solely of elderly people in institutional care: no matter how comprehensive it is, it cannot be used alone to plan services for the elderly. Nevertheless, such studies provided their limitations are fully borne in mind can make valuable contributions to this process.

It is difficult to dismiss the fact that more of the very elderly population were in residential homes in Leicestershire in 1979, compared to 1976, as parochial or based on too short an observation period, when national data over two decades are also indicative of increasing proportions entering residential homes for the elderly (Evans, 1977).

6.3.5 The response to changes in incapacity

Whilst there is disagreement in the literature about whether overall levels of incapacity are increasing, decreasing or remaining the same, it must be remembered that there are two distinct aspects to consideration of the problem of elderly people in residential homes who may be too incapacitated or too ill for them. Firstly, is the question of the levels of incapacity which are accepted in elderly people admitted to care and secondly, the separate but related question of the group who worsen or become acutely ill after being resident for varying lengths of time.
In the present study, the population of homes for the elderly restricted only to those who had been resident for less than one year, in 1979, contained 7% of people who had a total activities of daily living (total ADL) score of 7 and above; however, in the entire cross-sectional population the corresponding proportion of highly incapacitated individuals was 16%. Some light is also thrown on admissions to homes for the elderly by the data on source of admission and in Table 76 they are compared to findings from other studies.

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<tr>
<td>Living alone</td>
<td>37</td>
<td>34</td>
<td>29</td>
<td>25</td>
</tr>
<tr>
<td>Living with others</td>
<td>21</td>
<td>28</td>
<td>25</td>
<td>28</td>
</tr>
<tr>
<td>Home for the Elderly</td>
<td>11</td>
<td>9</td>
<td>15</td>
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<td>Mental or psychiatric hospital</td>
<td>7</td>
<td>3</td>
<td>22</td>
<td>29</td>
</tr>
<tr>
<td>Other hospital</td>
<td>10</td>
<td>16</td>
<td>not available</td>
<td>not available</td>
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<tr>
<td>Sheltered housing and unspecified</td>
<td>3</td>
<td>not available</td>
<td>2</td>
<td>not available</td>
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<tr>
<td>Other sources</td>
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The four studies show broadly comparable results, although the present study showed the highest proportion (37%)
of residents who had been living alone prior to admission, and the lowest proportion (21%) who had been living with others prior to admission. The percentage who were reported as living alone increased (if the studies are arranged chronologically) between 1962 and 1979. Given that this change occurred over a time period when the population of Great Britain was ageing it is tempting to explain the difference in terms of a greater number of isolated elderly people in need of care in recent years. The interpretation of such trends over time however, is hazardous especially with data taken from entirely different studies: a number of possible explanations should be given close scrutiny. The greatest area for possible variation is in relation to differing policy to institutional care and differing availability of resources. This is particularly likely to be the case where a local service is involved such as the present study. The relatively high number of people admitted to care who had been living alone in Leicester, for example, may represent the service responding to lack of resources by rationing on the basis of greatest need.

It may seem surprising to see such a high proportion (9-15%) of people already resident in a home for the elderly were admitted from another, similar home. There are a number of possible reasons for this phenomenon. In Leicestershire, a high proportion of such transfers take place for the convenience of the elderly person and her relatives and friends: to be in a home in closer proximity for visits. It is also the case that the gradual phasing out of the
older buildings, many of them the former poor law institutions was and still is taking place. Transfer of patients for these administrative reasons is particularly likely to have taken place around the time of Townsend's (1962) study and the Department of Health and Social Security study in 1970. In Leicestershire, and in many other parts of the country, the decision as to which elderly people are admitted to social services residential homes is made by officers-in-charge after a social worker's report.

Pre-admission assessment which involves a multidisciplinary perspective, and this also includes medical assessment, is in operation in some places and has been advocated more widely. It's major advantages would seem to be in preventing initial misplacement, assuring a more accurate selection of the correct level of care at the outset and improving the links and dissemination of information between health and social services.

Aside from the data on levels of incapacity, the observation of the mortality component of the study is also relevant. In the first three months after admission to homes for the elderly the mortality was 11%. This taken together with the first year standardised mortality ratios suggests that there may be an element of acute illness amongst such admissions.

Whilst pre-admission medical assessment might minimise the extent to which elderly people with underlying, possibly
acute illness enter residential care, when an initial admission to a hospital assessment unit or medical supervision in the community is more appropriate, it must be made clear that it would not solve other issues pertaining to the homes for the elderly.

Firstly, it does not resolve the problem of what levels of incapacity it is appropriate for them to deal with, given the new demand placed on them by the ageing of the population. Nor is there any simple solution through which the homes themselves can cast themselves back to the resident mix of the 1960's. In particular, a move towards a more restrictive admission policy is not an appropriate option. Although a high proportion of the continuously resident in institutional settings remained unchanged over the three year period (as shown in the longitudinal element of the present study) when change occurred, it was much more likely to be deterioration in function. Thus, even if officers-in-charge of social services departments were to operate a strict policy of controlling the level of incapacity of new residents, as Masterton, Holloway and Timbury (1981) suggest they are doing, they would still have to deal with higher levels of incapacity arising from their existing residents. Moreover, since as I have shown, deterioration increases with greater age, then the older that new residents to such homes are, the more that higher levels of incapacity resulting from deterioration might be expected. The issues distill still further when the options are considered for managing an elderly resident whose status deteriorates.
concept of a continuum of care might see them being transferred to a hospital setting when their condition deteriorates but as was discussed in the introduction (see Chapter 1, P. 1-76) there is a body of opinion that suggests that removal of an elderly person from an environment to which they have been accustomed, in itself may be deleterious.

Comparison of the proportion of admissions from hospitals to homes for the elderly in different studies (see Table 76) shows broad comparability (19-29%) with the Scottish study, Carstairs and Morrison (1962) showing the lowest proportion (19%). Only the present study and the study by Carstairs and Morrison (1962) break the figure down into type of NHS hospital and although the present study shows a higher proportion of admissions from psychiatric hospitals, the difference between the studies is small and not worthy of speculation.

The figure of 10% of psychiatric hospital patients in Leicestershire who had originated in homes for the elderly, greater than the corresponding movement into geriatric hospitals could reflect the difficulty which confused or demented patients cause staff in homes for the elderly, thus making transfer more urgent. It might also reflect differences in the willingness or capacity of geriatric and psychiatric services to admit patients who are already in a form of institutional care.
The home for the elderly in Leicestershire was characterised by relatively low turnover in terms of attrition through discharge or transfer as opposed to death. This despite the fact that staff in this setting labelled many residents with higher levels of incapacity as not suitably placed in their care.

In the present study, there was little movement of residents out of homes for the elderly. In the six month follow-up of the 1979 population the likelihood of continuing residence (versus discharge or transfer) was very much higher (relative risk 818%), than in any other care setting, although the small proportion of survivors that did leave were more likely (than those in hospitals) to go to another institution rather than home. Moreover, although the proportion of transfers in the misplaced group was higher than their suitably-placed counterparts, the level of transfer was low in comparison with other types of care.

6.3.6 The future of the residential home

Undoubtedly there is acceptance on the part of staff of high levels of incapacity in other residents, thus they may be willing to cope to some extent with this rather than see their elderly resident transferred. Nevertheless, there is conflict in the role of such homes arising from the type of resident dealt with in the past, and the apparently higher levels of incapacity of present day elderly people. If this cannot (or it is not necessarily desirable that it should be
controlled by pre-admission assessment or restrictive admission policy the question is raised as to what the future of residential homes should be.

A number of alternative models have been suggested: one is the provision of a new type of care either within the NHS or run jointly by the health and social services which is often referred to as the NHS nursing home. As it is usually envisaged its aim would be to combine some of the functions of the social services homes for the elderly with the present long-stay geriatric units, thus providing nursing care for all highly incapacitated old people. The recent White Paper on the elderly ("Growing Older") appears to shy away from this concept instead advocating wider financing of nursing homes in the private and voluntary organisations:

"...Health Authorities in England and Wales and Health Boards in Scotland are empowered to make contractual arrangements with private and voluntary hospitals and nursing homes ... the government hopes to see such co-operation developed and expanded"

This, together with the development of 'small local units' (the imprecise community hospital concept), is seen as the solution to long-term institutional care of the elderly. Relatively little information is in the literature about patterns of incapacity in private nursing homes in Britain. Data here show that the elderly population was older than in any other type of care with the exception of homes for the handicapped. Levels of incapacity in most activities of daily living were just behind the geriatric hospitals in severity. It was not possible because of diffi-
culties in gaining co-operation, to trace individuals in the six month follow-up of the 1979 enumerated population. Thus, the likelihood of various alternative outcomes could not be calculated in this sector in the way that it was for social services homes and NHS facilities.

Aside from the reservations held by some that the model of nursing homes in the private sector is far from attractive, the idea of developing another care setting whilst it may help to provide another (perhaps more appropriate) option for admission of incapacitated elderly people still raises the problem of transferring or re-locating elderly people who deteriorate. That is of course, if residential homes in some form are to co-exist with nursing homes.

Arie (1981) has taken a more fundamental view suggesting that the largest group of people caring for the elderly, outside members of their family, is what he terms "untrained women", a group of people with similar level of expertise and training in all the long-term care settings whether the assistant nurse on the geriatric ward or the care assistant in the residential home. Thus, Arie (1981) suggests that it is staff ratios and training which characterise the care provided, the setting and the administrative sub-divisions of care being relatively unimportant. In Leicestershire in 1979 over half the officers-in-charge of social services homes for the elderly had nursing qualifications (Baxandall, 1980) perhaps suggesting the way in which the service was attempting to come to terms with the problem. The approach
DISCUSSION.

of making staff, either in quantitative or qualitative terms, more capable of dealing with the problem of the ill or highly incapacitated resident still leaves unresolved the place of the residential home as a provider of care on a more individual basis for the less incapacitated which was its role as originally envisaged. Indeed, this role for them appeared to be part of government thinking even comparatively recently:

"[it should not provide] the professional type of health care which is properly the function of the primary health care services. Nor should residential homes be used as nursing homes or extensions of hospitals"

(Department of Health and Social Security, 1977c).

One option which has been insufficiently aired in the debate and which was lost sight of in Townsend's (1962) report, perhaps because it was presented as part of the process of winding down residential homes (a strategy which proved unacceptable to policy-makers) was the idea of bringing residential homes within the health service administration. As Townsend (1962) put it:

"it is proposed that all communal or institutional accommodation for the elderly should be administered by hospital management committees, under the general direction of regional hospital boards. The transfer of responsibility for communal homes to hospital management committees would help unify the administration of institutional services, encourage more equal distribution of both services and staffing and, most important, make it easier to supply medical and nursing services where they are required rather than transfer old people needlessly from one type of institution to another".

This, of course, would have to be matched by an adequate thrust in housing policy to cater for the needs of
the frail, but not highly incapacitated, elderly.

The above extract from Townsend's (1962) study of the elderly in residential care, quoted at length because of its salience to the current problems and debate, has a number of attractions as a model for the present. It goes some way to fusing artificial divisions between health and social services in the provision of care for the elderly, it avoids the possibility that relocation or transfer of elderly people may in itself be harmful, it provides good opportunities in training terms for broadening staff's conception of the breadth of problems of old age, and it facilitates a single assessment procedure prior to admission.

This could be part of a wider move towards concentrating responsibility for the elderly to a single agency, in this case the health service. This single agency model (although no proposals are made about residential homes) is the most radical of the proposals in the recent consultative document "Care in the Community" (Department of Health and Social Security, 1981b) to overcome obstacles arising from the division of responsibilities between health and social services; although this document in considering them alongside the other two client groups (the mentally ill and the mentally handicapped) seems to over-estimate the extent to which elderly people currently cared for in hospital settings might be transferred to care in the community.

Despite the current conflict in the role of the resi-
disability, it unlikely that Townsend's proposal would ever gain acceptance. The repercussions both financial and legislative would be too great. It does not of course satisfy the argument either that care in such homes by staff with a social work rather than a nursing orientation is likely to be more beneficial to the elderly resident (Evans et al., 1981). If a major investment in the provision of sheltered and very sheltered housing were to take place then it is possible that the role of the residential home or at least its premises could be utilised in some other way. The provision of housing for the elderly is another area where integration with other components of the service has traditionally been poor. Moreover, it is particularly vulnerable to public expenditure cuts.

It would seem that the most realistic approach would be to openly recognise and accept that highly incapacitated residents are a permanent feature of modern residential homes for the elderly, and that adequate support in the form of nursing or medical care should be provided. Evans (1977) reports the exploration of the possibility of special residential homes with high staffing ratios and visiting medical staff along the lines of specialist homes for the mentally ill. Others have gone further and mooted the idea of an annex or sick-bay in which more highly incapacitated residents could be nursed.
6.4 THE ELDERLY MENTALLY ILL

Another important issue in the provision of institutional care for the elderly is the problem of mental illness, a major part, but not all, of which is dementia. Early studies (Kay, Beamish and Roth, 1964) showed what a relatively common problem it is in old age and that the majority of demented elderly people are in the community, not in hospitals or homes, although they are heavy users of institutionally-based services (Kay et al., 1970).

As has been discussed elsewhere (see Chapter 2, P.2-29) a full scale assessment for dementia could not be administered in the present study, and only limited validity could be claimed for the descriptive categories which were used to detect confusion during the day-time or restlessness at night. The proportion of residents of homes for the elderly in Leicestershire judged by the staff to be "almost always confused" during the day-time (17%) was slightly higher than the "severely confused" category in the national study of homes in England and Wales (Department of Health and Social Security, 1970) and considerably higher than the "severely confused" group in the Scottish national study (Carstairs and Morrison, 1971). Although if the latter's category of "often somewhat confused" was also included the figure was closer (16%).

In the present study within homes for the elderly misplaced residents had very much higher mean levels of dis-
turbed behaviour during the day and at night than their suitably-placed counterparts, indicating that staff were unhappy about managing such people. The psychiatric hospitals had the highest proportion (10%) of admissions directly from homes for the elderly perhaps also indicating the particular difficulty that confused residents pose to staff in such homes.

In some parts of Britain specialised homes for the elderly mentally ill have been developed and in Leicestershire shortly after the second survey was conducted, such a home was being established on a trial basis.

The issue of whether confused old people should be maintained in segregated homes is difficult to resolve in the absence of evidence about the effect of different institutional regimes and environments on confused and non-confused residents. Some authors (Meacher, 1972; Jones, 1975; Lipman and Slater, 1977) are firmly of the view that integration should take place, in that the confused elderly residents benefit from mixing with their non-confused counterparts. This approach may undervalue the extent to which the behaviour of severely confused residents causes disruption and distress in the lives of non-confused residents. Moreover, it may overestimate the extent to which a particular environment can influence the natural history of dementia in the elderly.

In Leicestershire, the development of services for the
psychogeriatric patient is in a state of transition. At the
time of the survey, one ward, earmarked for the assessment
of psychogeriatric patients was within the complement of
geriatric beds in one of the two general hospitals in which
such beds are situated. Other elderly people with dementia
and functional psychiatric disorder are admitted to one of
the two large psychiatric hospitals in the area. Just after
the completion of the survey, psychogeriatric teams were es­
tablished at one of the psychiatric hospitals and proposals
have been made for a comprehensive service based on existing
hospital provision in line with accepted norms, establishing
community teams and new type of care home intermediate
between the level of care provided in residential homes and
that in hospitals.

The provision of a separate norm of in-patient provi­

sion for the elderly mentally ill has been a part of recent
government policy (Department of Health and Social Security,
1977), but it appears to be held at the level at which de­
mented patients occupied beds in mental hospitals in 1971
(Jolley, 1977). Moreover, as with the norms for geriatric
beds (see also Chapter P.1-65; it is related to the base
population aged 65 years and over and does not take account
of the heterogeneity of the elderly population. In the pre­
sent study, the levels of incapacity (in nearly all activi­
ties of daily living) of elderly patients admitted more re­
cently to psychiatric hospitals were very similar to those
in geriatric hospitals, a fact which would appear to support
the view (Godber, 1978) that a joint service run between
geriatric medicine and geriatric psychiatry is the best organisational model. This might also fit most appropriately in an age-defined model of geriatric care.

In the absence of a detailed assessment of mental status and data for the elderly in the community, the present study cannot throw further light on these issues.

Also of relevance, however, are the data on functional capacity found here amongst old people in psychiatric hospitals who were admitted in earlier life (the 'graduate' elderly). An arbitrary length of stay of five years has been chosen for purposes of analysis and shows a markedly different pattern of incapacity, with much lower levels (in proportional terms) in the graduates. This group falls within the government's definition of 'old' as distinct to 'new' long-stay (Department of Health and Social Security, 1975) and clearly their existence frustrates the policy of successive governments since the time of the Hospital Plan (Ministry of Health, 1962) to close down the large mental hospitals. It is often argued that it would be inhumane to discharge them to the community in order to advance this objective because they have become so heavily institutionalised. Here it was found that levels of incapacity in this group, though lower, are not inconsiderable. For example, 15% were frequently incontinent of urine and these sort of incapacities would certainly hamper any attempts to move such patients into an alternative mode of care perhaps closer to the community. It seems feasible that at least some of this in-
capacity was a by-product of chronic psychiatric disorder and not necessarily of similar origin to that in the other groups of old people. In which case there is perhaps scope for retraining and this is clearly an area that should be investigated.

6.5 OUTCOME

Two questions are raised by the data in the present study related to outcome. Firstly, which characteristics of elderly people in institutional care are associated with particular outcomes? and secondly, what relationship exists between the type of care provided and the nature of these outcomes?

6.5.1 Utility of data on outcomes

The follow-up of the institutional elderly population of Leicestershire first enumerated and assessed for level of incapacity in December of 1976 has shown that much of the difference between particular variables and the pattern of outcomes was accounted for in the way in which the factor affected the proportion of deaths. For example, with increasing age and higher initial level of incapacity by three years there were more deaths and a correspondingly smaller proportion of other outcomes.

Expressing outcome at three years gave a broad impression of the fate of the original study population but was
difficult to relate to an individual episode of care. The shorter follow-up of the elderly population in NHS accommodation and social services homes in 1979 thus supplemented the above data and allowed a more detailed inspection of outcome in different groups of survivors. This part of the study showed that amongst people who had survived to six months after enumeration, the only significant difference between the age groups was that 75-84 year olds were less likely to be still resident than other age groups and once they had left, that all older age groups were more likely to have been transferred to another institution than to have gone home. As might be expected, amongst survivors the likelihood of continuing residence was greater with increasing length of stay, although it may seem surprising that this difference was manifest as early as it was. The risk of continuing residence for an old person who had survived the admission and stayed for more than six months (but less than a year) was two and a half times greater relative to one who had been resident for less than six months (see Table 53). The powerful relationship between increasing incapacity and mortality was confirmed, but amongst survivors the likelihood of continuing residence at six months or destination once discharged appeared to be unrelated to level of incapacity.

Few other workers have examined in detail the influence of level of functional capacity on outcome in the British context. At the other technological extreme (to the activities of daily living approach) of potential predictors of
outcome, Hodkinson and his co-workers have examined the effect of various laboratory indices and clinical impressions of senior medical staff (Piper and Hodkinson, 1979; Hodkinson and Hodkinson, 1980; Hodkinson and Piper, 1981). Although certain biochemical indices influenced outcome, the clinical assessment appeared to be the more powerful predictor of outcome (Hodkinson and Piper, 1981). Whilst this may be acceptable in terms of death or survival, the measure used by Hodkinson and Piper (1981), it is surely unacceptable to use clinical assessment of outcomes such as discharge home or continuing residence (Piper and Hodkinson, 1979) when the clinician himself/herself has the ability to influence that outcome. The use of the more objective measures reported as 'physical factors' by Hodkinson and his group (Hodkinson and Hodkinson, 1980) have shown that constitutional upset and dehydration are influences on death but again their assessment has a strong subjective component.

Indeed, the study of variables such as discharge to the community or movement between different care settings is probably best viewed as the examination of processes rather than outcomes of care. That is to say, it should be used to throw light on the way in which a particular care setting functions, as in other parts of this discussion rather than as a basis for prognosis.

This is illustrated by considering the outcomes for those patients and residents who had been judged as inappropriately placed (1976) or misplaced (1979) in the two
cross-sectional surveys in Leicestershire. In general, differences were in the direction that might have been expected: overall, in the three year follow-up of the 1976 population, more were transferred and fewer were continuously resident in the misplaced group.

Whilst the numbers in the 1979 follow-up were too small to calculate relative risk measures within types of care, the proportion in each outcome category for the two groups (misplaced and suitably placed) in different settings gave an indication of the pattern (see Table 56) if not the size of the risk. In departing from the overall pattern, the outcomes for patients in the geriatric units within general hospitals and acute general hospitals appear to reflect different kinds of problems. Both showed a higher proportion of patients still resident at six months in the misplaced group, the reverse of the situation in the other five types of care. These two types of care however, are those in which continuing residence is a relatively uncommon event even disregarding the suitability or otherwise of placement. Thus, it may be that when a misplacement occurs, it prolongs stay whilst arrangements for transfer or discharge are secured. In the acute hospital population where transfers were more common, and discharges home less common, in misplaced patients than in the suitably placed, prolongation of stay (more continuously resident misplaced patients) to six months, therefore, may be because they are awaiting transfer to geriatric hospitals. In geriatric units within general hospitals the opposite appeared to be the case; discharge
was commoner than transfer, and it would appear that delay could have resulted from arrangement of a discharge to the community.

The fact that a higher proportion of misplaced patients are transferred or discharged from acute hospitals than homes for the elderly, means a different thing taken as a fact in isolation, than when it is also observed that it is usual in the acute hospital setting to see relatively rapid turnover. The fact that there are differences in outcome for misplaced and suitably placed patients and residents means that some of the misplaced patients are being dealt with in a different way to their suitably placed counterparts. It would be quite wrong however, to conclude uncritically that because acute hospitals had a higher turnover of misplaced patients than (say) homes for the elderly, the former were dealing more efficiently with the problem of misplacement. Whilst examining destination after a spell of care throws light mainly on the way in which the service is operating, it is a different prospect to focus attention on the 'harder' outcome variables such as death and level of incapacity.

6.5.2 Functional incapacity as a predictor of mortality

The higher mortality in the three types of NHS accommodation compared to the non-NHS facilities was reflected in the higher SMR's for the former and in the lower estimated survival to various time periods after admission. The rela-
tively favourable mortality experience of elderly people in acute care in terms of proportion surviving - half at five years after admission - reflects the fact that many who survive the acute admission will be fit enough to return to the community. It is worthy of emphasis however, that even in this group the mortality experience was almost double that of the elderly population as a whole.

Despite differences between time periods and geographical localities which might be expected to bring about different patterns of mortality, the present study shows similarities with other British and American studies.

Smith and Lowther's (1976) study of two hundred admissions to a local authority residential home in Edinburgh found that 64% were dead, four years after admission. The corresponding figure for the population of homes for the elderly the same time period after admission in the present study was 66%, this despite the fact that the present study used an estimate of survival from admission (the data were cross-sectional) whilst the former study was based on true recent admissions.

Comparison between studies of geriatric hospital populations are less straightforward because of differences in the type of unit involved.

Hodkinson and Hodkinson (1980), using life table analysis of over 2500 serial admissions to a department of ger-
iatric medicine, reported a mortality at six months of 30-40% (exact values were not quoted, and the two sexes are described separately, percentages estimated from graphs), a figure broadly comparable to the life-table estimate of 38% mortality six months after admission to geriatric facilities in Leicestershire. This was despite the fact that the present study (for the 1976 population) has grouped different types of geriatric facilities to examine mortality to three years.

Silver and Zuberi’s (1965) earlier study of the prognosis of patients admitted to a geriatric unit in the East End of London followed 455 elderly people for two years after the date of admission. As in the present study they viewed mortality in the entire study population (even those who had been discharged from hospital) not merely hospital mortality - a feature of most other studies. Their two-year mortality figure of 65% is close to the 63% estimated for all types of geriatric facilities to the same time period in Leicestershire. Kay, Norris and Post (1956) found that 38% of elderly patients were dead one-year after admission to a psychiatric observation ward. The corresponding life-table estimate of survival for elderly people admitted to a psychiatric ward in Leicestershire was 36%.

It may seem surprising that data on mortality in institutionalised elderly people are so similar between studies carried out in different places, at different times, and with potentially different types of services. From these compar-
isons, it would appear that there may be a degree of homogeneity between geriatric in-patient populations and also those in homes for the elderly from one part of the country to another.

Elderly people in geriatric facilities have the highest mortality: only one quarter were estimated as still alive three years after admission to geriatric facilities in Leicestershire. Indeed, this paints a bleak picture for patients and staff alike in this type of care. In homes for the elderly, though the prognosis is more optimistic, still less than half are estimated to survive to two years after admission.

The poorer survival for males shown here has been reported by other British workers (Silver and Zuberi, 1965; Isaacs, 1965; Hodkinson and Hodkinson, 1980).

Studies of the elderly in institutional care, in this and other countries, have shown that highest mortality is associated with high physical dependence, loss of mobility, incontinence of urine or faeces and poor mental status (Kay, Norris and Post, 1956; Isaacs, 1965; Goldfarb Fisch and Gerber, 1966; Goldfarb, 1969; Brauer, Mackeprang and Bentzon, 1978).

Brauer Mackeprang and Bentzon (1978) in a study of a large geriatric institution in Copenhagen, calculated a probability of death in one year of 13% for those patients
classified as 'independent' with respect to their need for nursing care and 34.1% (female) together with 46.7% (male) for those patients judged to be 'heavily dependent'. These figures are similar to the 14% (total ADL 0-2) and 42% (total ADL 7-11) one year mortality for elderly people for low and high incapacity groups living in institutions in Leicestershire.

Goldfarb, Fisch and Gerber (1966) studied a representative institutional sample of elderly people from homes for the aged, nursing homes and State hospitals in New York City, and found that incontinence of urine or faeces was a strong predictor of mortality. Their one year mortality for incontinent individuals (38%) was similar to the figure (39%) for people frequently incontinent of urine in all types of care in the present study. In both studies there was a clear gradient in mortality between continent and incontinent elderly people. In the present study, faecal incontinence led to high mortality (39% at one year) but this was not the highest mortality at one year: that occurred in the group who were spoonfed (54%).

Goldfarb's (1969) longer follow-up study, supplementing the earlier study again showed the poor prognosis for incontinent individuals and also for people with poor mobility. By three years in his follow-up study, the survival figures were still similar to the values at the same time period in the Leicestershire institutional elderly population. Goldfarb (1969) found that survival for elderly patients
with incontinence was 25% and for those with poor mobility was 39%. The corresponding figures after three years in the present study were 29% (frequent incontinence) and 39% (ambulant with an attendant or aid).

Donaldson, Clayton and Clarke (1980) compared survival in relation to total activities of daily living score in the Leicestershire population (using the first year’s follow-up data from the present study) with data from an American study which provided the best available comparison in terms of an index of functional capacity. The American study (Jones, Densen and McNitt, 1978) administered the Katz index of ADL (Katz et al., 1963) shortly after admission to nursing home care. Donaldson, Clayton and Clarke (1980) used a life-table analysis to estimate survival from time of admission using their cross-sectional data. Nevertheless, a close similarity in survival was seen for similar incapacity groups.

When data from the present study were being analysed, it was not considered justifiable to estimate survival from time of admission and relate it to an assessment of functional incapacity that did not necessarily fall close to the time of admission. This was in part because of the present study’s findings of longitudinal changes over time but also because data from a longer follow-up period were now available.

Here, therefore, survival (in relation to level of func-
tional capacity) described from the time of assessment and not from the time of admission is compared with that of Jones, Densen and McNitt (1978) in Table 77.

Table 77 - Probability of survival to specified time periods after assessment for institutionalised elderly people, present study, with American data* shown in brackets

<table>
<thead>
<tr>
<th>Survival to</th>
<th>Low</th>
<th>Moderate</th>
<th>Severe</th>
<th>All Categories</th>
</tr>
</thead>
<tbody>
<tr>
<td>3 months</td>
<td>.962</td>
<td>.937</td>
<td>.829</td>
<td>.923</td>
</tr>
<tr>
<td></td>
<td>(.918)</td>
<td>(.855)</td>
<td>(.737)</td>
<td>(.754)</td>
</tr>
<tr>
<td>6 months</td>
<td>.925</td>
<td>.848</td>
<td>.717</td>
<td>.853</td>
</tr>
<tr>
<td></td>
<td>(.847)</td>
<td>(.825)</td>
<td>(.651)</td>
<td>(.681)</td>
</tr>
<tr>
<td>1 year</td>
<td>.861</td>
<td>.762</td>
<td>.583</td>
<td>.766</td>
</tr>
<tr>
<td></td>
<td>(.741)</td>
<td>(.762)</td>
<td>(.558)</td>
<td>(.602)</td>
</tr>
<tr>
<td>2 years</td>
<td>.723</td>
<td>.572</td>
<td>.381</td>
<td>.597</td>
</tr>
<tr>
<td></td>
<td>(.599)</td>
<td>(.556)</td>
<td>(.503)</td>
<td>(.501)</td>
</tr>
</tbody>
</table>

*Jones, Densen and McNitt (1978)

Overall but particularly in the early time periods (three and six month survival), the American data show poorer survival than do the Leicestershire figures. This may be partly explained by the fact that the present study excluded from assessment elderly people resident for less than one month on the grounds (as has been discussed earlier) that staff would not have had the opportunity to make a satisfactory appraisal of the elderly person's level of function. Early mortality is relatively high (Jones, Densen and McNitt, 1978) and this selection influence may account for the difference between the two studies. The broad compara-
bility however, of many of the survival figures for two popu-
ulations in different types of institutions and in different countries appears further to suggest that increasing impairment of function in mobility and other aspects of self-care strongly predicts mortality.

6.5.3 Interpreting changes over time in functional status

There is less scope for such comparisons in the other outcome variable, change in level of incapacity. Whilst longitudinal studies of the elderly focussing on the effect of the ageing process on such factors as intellectual function (see for example, Hall et al., 1972) or behaviour and social adaptation (see for example, Youmans and Yarrow, 1971) have been carried out, the body of data about changes in functional status in the elderly is relatively scant.

A study by Mackeprang and Brauer (1977) had similarities in design to the present study, in that it linked surviving residents in two cross-sectional studies (two years apart) of a large geriatric institution in Copenhagen. Their findings indicated that the direction of change was in favour of increased dependency. Further comparisons (for example, with respect to the magnitude of the differences) are hindered by the differing methods of assessment used. The Scandinavian authors used an evaluation of the need for nursing care in terms of 'care points' and did not report either longitudinal changes in individual surviving patients or overall changes in the survivor population compared to
its initial level of dependency.

Many of the studies which have examined changes over time in functional capacity using such standardised indices in the institutional setting are attributable to the American worker Katz and his colleagues and the influence his approach has had on other workers in the United States studying disability in chronic disease.

A study by this group of workers (Katz, et al., 1966) followed 159 patients with strokes over a period of six years with six-monthly reassessment. They were principally concerned with return to pre-stroke levels of independence. However, the assessments contained a measure of the level of activities of daily living as well as level of mobility (as a separate study). The finding that young patients recovered walking and ADL levels more frequently than older patients would be expected and is in keeping with the relationship between age and increased deterioration in functional capacity found in the present study. Further comparisons are made difficult by the fact that the former study deliberately selected patients who in the main had been free of any incapacity in mobility or activities of daily living before admission.

This is of course, a perfectly valid approach when looked at in the context of a single diagnostic category (e.g. people with first strokes) when the aim of the study is to examine improvement or lack of improvement in connec-
tion with certain variables or rehabilitative procedures. Unfortunately, many of the relatively few available data have been limited in just this way to particular diagnoses such as stroke (Moskowitz, Lightbody and Freitog, 1971; Lehman et al., 1975; Granger, Sherwood and Greer, 1977; Anderson, Anderson and Kottke, 1977) or fractured hip (Staff of the Benjamin Rose Hospital, 1959; Katz, et al., 1964; Katz et al., 1967).

Spasoff et al. (1978) as part of a longitudinal study of elderly residents in long-stay institutions in Canada, collected data on capacity in activities of daily living using the Katz scale (Katz et al., 1963). There was only a slight increase in mean number of dependent activities of daily living between one month of admission and one-year, a result which appears to conflict with the findings of the present study.

There are a number of important features in the Canadian Study which could account for the difference. Firstly, the number of patients they were able to follow-up was considerably smaller than the 104 who had been living in institutions for the whole year: data were finally obtained on 69 patients. Secondly, the index of change was the difference between means for the populations at the two time periods rather than the individuals who changed and finally the follow-up period was shorter than in the present study.
Another American study (Hicks et al., 1979) has shown that change in the same index, as might be expected, increases with the interval between assessments (Table 78). Their figure for change at the relevant time interval was closer although less deterioration occurred than in the present study. This discrepancy would be expected because they studied a population based sample of the elderly, rather than one restricted to institutional care.

The longitudinal element of this study in Leicestershire has limitations, the most serious of which is selection bias. Excluded from this part of the analysis were elderly people who died at some point in the three year fol-
low-up (53% of the total) and those who had been discharged (9%). Elderly people who were continuously resident but were transferred from their original place of enumeration to another type of care at some point over the three years (5%) have been excluded so as not to confuse the effect of institution, as were people discharged and readmitted (1%).

Such exclusions are common to many of the other studies that have been discussed and would necessarily be a feature of longitudinal studies of the elderly unless re-assessments were carried out frequently, because of the high proportion of (interim unassessed) deaths. Having said this, the interval of three years between assessments in the present study is undoubtedly too long to develop meaningful bases, for example, to assess rehabilitation policies. Yet, the constraints on methodology are often practical ones. The dividing line between gaining co-operation of managerial and caring staff or not is thin and can depend not only on the volume of work required, but the perceived distance of similar undertakings in the past. Moreover, to resurvey the same institutions three years on had a second purpose, to examine overall changes in the burden of care in the different types of services provided. The effect of selection here will be to have removed people at the two ends of the spectrum of severity. People who died are likely to have deteriorated to a greater extent than survivors, and people who have improved either spontaneously, or as a result of a treatment or rehabilitation programme, will have been discharged and also be excluded from consideration, although
this latter group was small. Continuously resident survivors (about a third of the original population), although not typical of all elderly people in institutions, represent a substantial group who are of importance to long-stay institutions, where transfer or discharge is not a common or easy event. Given these limitations, the finding was that staff in geriatric hospitals, psychiatric hospitals and homes for the elderly in Leicestershire faced an increasing burden of incapacity from patients and residents who remained with them over a period of several years.

The extent of change was greater when it was examined in relation to all activities of daily living (29% remained unchanged) than for individual activities of daily living (60-70% unchanged). Clearly this would be expected in the former where there are more dimensions for change.

In either case, when change occurred it was more often in the direction of deterioration in a ratio of three or more to one. This deterioration was greater for urinary incontinence than for mobility, washing/dressing and feeding, and highest for faecal incontinence (6.7 to one). The factors contributing to this very high ratio of deterioration amongst those whose status in faecal incontinence changed cannot be explained. It must be remembered however, that an element of change will be due to observer variation. The schedule was unchanged, but whilst it was impossible because of staff changes to maintain the same observers for the two time periods, the utilisation of a consensus approach to the
assessment should have served to reduce although not of course, eliminate this source of bias. There is no evidence that any such variation would affect one particular component of the assessment more than another.

Greater change and hence greater deterioration, as would be expected, occurred with increasing age; the effect was greater for urinary and faecal incontinence and in some other activities and all activities combined the age effect was pronounced for females but not males. The overall sex difference in deterioration varied between individual activities and it is difficult to draw general conclusions about it.

It is not possible to say of course, at what point over the three year period change took place and whether it was gradual or sudden. A person highly incapacitated in 1976 as a result of acute illness for example, but who responded to therapy relatively quickly but was placed in long-term care for reasons such as advancing age or poor social circumstances, would show up as improvement in 1979. This would clearly be a different situation from someone who had gradually changed their status over the three year period. Much of the acute illness effect would be reduced by the exclusion of stays less than 28 days, and the fact that there are few long-stay patients in acute hospitals (transfers were also excluded).
6.5.4 The influence of environment

Further light is thrown on the stability of the index by the data on change in relation to length of stay. Less change and less deterioration occurred in people with longer lengths of stay prior to initial assessment. There was no gradation, however, and they appeared to break into two groups. Those who had been resident for a relatively long time prior to assessment (five years or more) changed least and deteriorated least. This longer-stay group mainly comprised psychiatric patients who were admitted at younger ages and had grown old within the institution. The fact that the level of deterioration in people with lengths of stay under a year was similar to or less than the other groups with lengths of stay under five years, suggests that whilst change cannot be assumed to be uniform over time, the results of the present study are unlikely to be heavily influenced by changes in the early period which have then remained stable for the rest of it.

Better decisions could be made regarding the components of the care system for the elderly if data were available describing their impact on health or level of function. At the present, time decisions are often made on intuitive grounds. One aspect of this problem relates to long-term care: in which sort of setting it should be provided and what type and level of staff should conduct it?

The adverse effect of long-term care in an institution—
al setting on the individual's self esteem and degree of self-determination has been widely aired in the sociological literature, emanating largely from the writing of Goffman (1961). What has not been established is the extent to which various institutional regimes or environments affect outcome variables such as death or level of incapacity. Studies which have been conducted have never unequivocally eliminated selection bias as a possible explanation for differences in outcome between study populations.

The present study cannot draw inferences on the adverse effects of institutional settings per se because it lacks a comparable group of elderly people outside the institutional system. Such a group would be necessary to separate changes from the ageing process over time.

Nevertheless, the three types of care which had sufficient numbers of long-stay patients and residents were different. A greater degree of change in all activities took place in geriatric hospital patients in whom deterioration was also greatest (almost four and a half times the number who improved). In the other two settings fewer old people changed their status but a greater degree of deterioration took place in residents of homes for the elderly (3.2 to one) than in psychiatric hospital patients (2.5 to one).

The use of regression analysis to adjust for differences in some variables which significantly affected change has shown that the degree of deterioration was similar for
'comparable' individuals in geriatric and psychiatric hospitals, but significantly greater in both cases than for 'similar' old people in homes for the elderly. Thus, once the effect of the 'graduate' psychiatric patients has been excluded, it seems that people who are already elderly at the time of admission either to geriatric or psychiatric care, and then continuously resident for a period of years, undergo similar change.

It could be argued that the persistence (after adjustment) of a less favourable outcome amongst patients whose status changed in long-stay NHS settings, compared with old people in residential homes, is evidence for an adverse effect of the hospital environment or the quality of care provided. Alternatively, it may seem more plausible that the matching of the two groups of elderly people has failed to take account of another important characteristic which both influences change in functional capacity and is more common in hospital patients than residents of homes for the elderly. The most logical candidate would be a specific disease process such as 'stroke', which (it might be postulated) induced greater and more rapid deterioration than the same level of incapacity arising from increasing, non-specific frailty of old age.

If another factor was influencing the deterioration in function it might be expected to be manifest in terms of mortality. This hypothesis does not appear to be substantiated by the mortality component of the study. It was found
most of the significant differences in survival between elderly people in different types of care disappeared when differences in functional capacity and age had been taken into consideration. There remained a slightly improved survival for patients in private nursing homes but elderly people who had been in acute hospitals, geriatric hospitals, psychiatric hospitals, or homes for the elderly (and were similar in terms of these variables) experienced similar levels of mortality. From these data it seems unlikely that many disease processes 'over-ride' the prognostic effect of level of functional capacity, although it should be remembered that incapacity was only assessed on people resident for 28 days or more. Thus, the shorter stay patients would not be brought into this comparison and they are a group with a high level of acute illness. Thus, it appears that after the acute episode is over, loss of mobility or urinary incontinence (say) arising from, or co-existing with, a specific disease process is not any more powerful predictor of mortality than any other source.

Mortality data included death wherever it occurred. It is possible that the apparent discrepancy between the longitudinal study and the mortality study has resulted from the transfer of residents of homes for the elderly immediately prior to death. This is not borne out by the place of death data which show that the majority occur within the institution.

The present study cannot conclude that the apparently
greater extent of deterioration amongst elderly people in the long-stay NHS settings compared to their counterparts in residential homes who survived, were continuously resident, and changed in status was due to the adverse effects of NHS institutional regimes. It is impossible to fully exclude a confounding effect. It would seem, however, that this is an important area for further study and one which could contribute to decisions about the type of long-term care which is provided for elderly people no longer capable of living in the community even with adequate supporting services.

6.5.5 Potential for influencing outcome
Central also to these deliberations is the related but separate issue of whether, and how much, adverse outcomes such as deterioration or death should be regarded as an inevitable feature of the final throes of the ageing process in the longer-term care settings. That is to say whether, when and how should the decision be made that an elderly person no longer has the potential for rehabilitation? Within the NHS, this judgement is usually made during the early period after admission to hospital (whether to an acute general or geriatric bed). Whilst there is usually a notional period of planned rehabilitation during the early phase of longer-term care, in an overstretched service, this may not in practice persist. In the residential homes for the elderly given the conflict between their traditional role and the demand imposed by the ageing population depicted here, it is doubtful if any such attempts take place at all.
As one aspect of his essay on evaluating the quality of medical care, Donabedian (1966) listed three kinds of outcome on which such assessments might be based: recovery, restoration of function and survival. The term 'recovery' is relevant only in a limited sense in the context of care of the elderly in relation to acute episodes of illness.

If the second outcome measure is expressed, less ambitiously, as "maintenance of, or improvement in function", then it becomes (along with the third measure) more relevant to the consideration of chronic illness and loss of function in old age.

Indeed, the other side of the coin of considering the impact of various factors on deterioration, in those elderly people whose status had changed between 1976 and 1979, is to note the extent to which change did not take place and the smaller proportions in whom apparent improvement occurred. Here, also, was the finding of a greater likelihood of change in people with higher initial levels of incapacity (and when change occurred) that improvement was more frequent than was true for low initial incapacity.

In this observation, there must be an element of artefact resulting from the length of time between assessments and the fact that a survivor population is being considered but it opens up the opportunity for discussion of the potential for an active approach in the longer stay population.
It may seem speculative, but given the strong relationship between level of function and mortality, is it even possible that survival could be improved if, by active intervention, people were moved from higher into lower incapacity groups?

Further study would be necessary to discover whether level of incapacity or prognosis could be affected by active measures in these settings. If so, it might be envisaged that a permanent system could be established where, at regular intervals or upon deviation from base lines of change, multi-disciplinary review would be triggered on an individual basis within longer-term care settings.

6.6 DEATH CERTIFICATION PRACTICES.

Certification of death particularly among the elderly is known to lack both reliability and validity (Lake, 1969). The fact that the standardised mortality ratio for respiratory disease was so high in the psychiatric hospital population, and that this was coupled with a very high proportion of deaths being attributed to bronchopneumonia, compared to deaths in other institutional populations, appears to reflect differences in certification practice. Bronchopneumonia is commonly used as cause of death, at certification in the elderly and is generally held to be a diagnosis which is used when no clear-cut cause is recognised or sought. The fact that this phenomenon occurs to a disproportionate extent in the elderly in psychiatric hospi
tals may mean that patients in there do not have a recognised physical, organic pathology, and that the psychiatrists do not hold the view that a psychiatric condition can act as an underlying cause of death.

However, apart from this and the high SMR for cancer in the acute hospital population, together with the relatively high SMR for other cardiovascular disease in the geriatric hospital population, SMR for other cause groups were broadly similar for the other types of care.

On the basis of these certified causes it cannot be stated that different disease processes are at work in different individual institutional elderly populations, with perhaps the exceptions of the acute hospital and cancer and other cardiovascular disease and geriatric hospitals. The fact that there are some differences in the cause of death from these chronic diseases between types of care may reflect the difficulty of singling out in any valid way an individual pathology amidst multiple pathologies.

6.7 CONCLUSIONS : FURTHER RESEARCH, POLICY IMPLICATIONS, RECOMMENDATIONS

6.7.1 Provision of services within the general hospital : organisation of geriatric care
Two alternative models of geriatric care currently being debated have been discussed here: the integration of geriatric medicine with general medicine or the operation of the former as an age-defined specialty. The success of either appears to depend on an adequate availability of beds within the facilities of a general hospital for the size of the elderly population in a particular locality.

In Leicestershire, the ratio of geriatric beds within general hospitals per thousand population (age 65 years and over) is lower than the national figure and considerably lower than those for areas described in the literature in which services are apparently operating successfully; this holds true even if the general medical quota is included.

Data from the present study cannot indicate unequivocally which way the service in Leicestershire should be developed. However, the influx of elderly patients to acute general beds following the expansion of this sector between 1976 and 1979 emphasises the need for a firm commitment locally to one or other model of geriatric care. The observation that, in the face of limited resources, the general medical service locally appeared to be dealing with a lower than expected population of elderly patients and that the data on misplacement suggested a perceived division of responsibility by nursing staff which was age-related, lend weight to an age-defined delineation of care.

Thus, after consideration of these data and the advan-
tages and disadvantages discussed in the literature, it is recommended that this model be adopted in Leicestershire, further discussion would need to take place to decide on whether the definition should be 65 years or 75 years. The latter would seem more logical in view of the relation of illness and incapacity to age.

This recommendation is contrary to a local policy document which proposes the integration of geriatrics with general medicine as is a second, parallel, proposal here that beds within the first phase of a new District General Hospital be allocated to care of the elderly and also in subsequent phases, developing it as a centre of such a service.

6.7.2 The home for the elderly: the response to a changing pattern of incapacity

Homes for the elderly, mainly provided by the social services department, are the places where the majority of elderly people, who are in institutional care, are resident. As a consequence although the proportion of this population in the higher incapacity groups is much lower than the hospital populations, the absolute numbers of such people are relatively large.

It is recommended that a machinery be established for pre-admission assessment of applicants to such homes, incorporating both an assessment of functional capacity and a medical assessment, in this way, initial misplacement might
be minimised.

Implementation of this procedure alone will not solve the problem of homes having to deal with greater numbers (than the staff feel able to cope with or perceive as being in keeping with their traditional role) of old people with incontinence, loss of mobility and inability to wash, dress and feed themselves.

One solution would be to operate a restrictive admission policy and in combination with this to rapidly transfer to hospital anyone who becomes ill or whose level of functional capacity deteriorates.

Since one component of change arises from existing residents, restrictive admission policies are not the solution. Such policies, in any case, are likely to be counter-productive if (as is likely) they lead to the acceptance of more very elderly (albeit less incapacitated) residents. It has been shown here, the tendency to change status and deteriorate increases with age.

The movement of residents who could theoretically be transferred is likely to prove administratively impractical and there is some evidence in the literature that frequent re-location is itself deleterious. Rather, there is a need to accept that higher levels of incapacity in residential homes are a permanent and inevitable feature of the ageing of the population and to make qualitative and quantitative
adjustments to staff in accordance with it.

To this end, it is recommended that firm arrangements are made to second staff within the health service to work within and provide support to such homes.

6.7.3 Longer-term care: the effect of environment, the scope for rehabilitation and continuing review

Little is known about the effects of different institutional environments on the natural history of functional incapacity in the elderly. The present study showed that, amongst surviving elderly people who were continuously resident over the whole three-year period, after adjustment for differences in variables which significantly affected change, deterioration in patients whose status altered in geriatric and psychiatric hospitals was similar, and greater in both cases, than residents of homes for the elderly. The design of the study meant that other characteristics of the old person in hospital not allowed for, could not be ruled out as an explanation for this greater change. It is recommended, therefore, that further research be undertaken to compare the natural history of people with different levels of functional capacity in different types of long-term care and with a group outside the institutional setting.

Given the high proportion of survivors whose status remained stable over the three year period, further research is also recommended to determine whether it is possible that
more active rehabilitation can reverse or delay progression of existing levels of incapacity, in groups of old people within extended care settings. The results of the longitudinal study and the consistent relationship between increasing incapacity and mortality suggests scope for comparing observed outcomes in response to such regimes with those expected.

Such research might provide the basis for establishing a system of regular review of the level of functional capacity of all patients and residents of the longer-stay types of care. A change in the patient or resident's status might trigger more intensive multidisciplinary review and action.

6.7.4 The elderly mentally ill: review of the 'graduate' elderly

Levels of incapacity were much lower amongst old people in psychiatric care with greater lengths of stay than in those who had been admitted more recently. Nevertheless, the fact that these higher levels of incapacity existed in the 'graduate' elderly raises the question of whether they were disabilities associated with chronic psychiatric disease, and whether they were hampering discharge from hospital even if such a course of action were judged humane.

It is recommended that a review be undertaken of all elderly people who have been in psychiatric hospitals longer than five years to determine the nature and level of any functional incapacity they may have and to determine whether
there is scope for rehabilitation and retraining.

6.7.5 Death certification

An incidental finding in the analysis of cause of death information in the present study was the apparently high occurrence of respiratory disease as a cause of death in psychiatric hospital patients. The fact that there, death in an elderly patient was much more likely to be ascribed to bronchopneumonia than in other institutions raises questions about the quality of death certification, known to be poor in the elderly. It is recommended that a small study be undertaken to further investigate the quality of cause of death information in the elderly dying in hospitals and homes.
CHAPTER 7

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ABSTRACT

A cross-sectional study of all elderly (65 years and over) people in institutional care in Leicestershire in December of 1979 undertook an assessment of level of incapacity and suitability of placement. Comparisons were made with a similar study exactly three years previously. Follow-up of the earlier population yielded data on outcome at three years and was supplemented by a shorter follow-up of the 1979 population which gave information for that spell of care.

Incapacity was greatest in geriatric hospitals and more recently admitted psychiatric hospital patients and least in homes for the elderly, although there the absolute numbers of highly incapacitated people were large.

Misplacement was associated with high incapacity in homes for the elderly and low in geriatric and psychiatric hospitals. In acute wards greater age appeared to be more important in determining whether patients were judged as misplaced.

More of the very elderly population were in residential homes and less in geriatric beds in 1979 compared to 1976. Higher proportions of all elderly age-groups were in acute beds and between the two study periods, additional acute beds were opened. Overall, levels of incapacity increased but in more recent admissions significant increases were only seen in geriatric hospital patients.

Between 60 and 80% of continuously resident survivors remained unchanged whilst three to four times as many deteriorated as improved. Change and deterioration occurred with increasing age. After adjustment for differences in important variables, patients in geriatric and psychiatric hospitals deteriorated to a similar and significantly greater extent than their counterparts in residential homes.

Increasing incapacity strongly and consistently affected survival adversely. With the exception of private nursing homes, after adjustment for differences in age and level of incapacity, survival for the populations in different types of care was similar.

Policy implications, particularly the roles and relationships between different forms of institutional care are discussed.