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Care Homes for Older People

VOLUME 2 ADMISSIONS, NEEDS AND OUTCOMES

Andrew Bebbington
Robin Darton
Ann Netten



PSSRU
at the University of Kent at Canterbury,
the London School of Economics
and the University of Manchester

Care Homes for Older People

Volume 2

Admissions, Needs and Outcomes

The 1995/96 National Longitudinal Survey of Publicly-Funded Admissions

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and Ann Netten

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the London School of Economics
and the University of Manchester

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Preface

Care homes have always had a key role in the provision of care for older people. The most appropriate use and funding of care in care homes has been the subject of many important policy initiatives over the years. This is demonstrated most recently by the NHS Plan (Cm 4818-I, 2000) and the Government's response to the Royal Commission on Long Term Care. In part this is because of the vulnerability of the residents, the effects of demographic change on the numbers of older people who may need residential care and the visibility of the high costs associated with this form of care. It is essential that we have a good understanding of this key aspect of care provision.

It has been argued that the lack of relevant research and data means that many policy proposals are based on what may not be well-founded assumptions across a range of issues (King's Fund, 1999). It is difficult to construct an overall picture when there are differences between the information available on residential and nursing homes, when the type of information collected varies over time, and where there are variations in practice between the different parts of the United Kingdom. In this context, the establishment in 2002 of a National Care Standards Commission (under the Care Standards Act 2000), whose regulatory responsibilities will include collecting data about services, should provide the opportunity to provide more coherent statistics nationwide in the future. But in order to avoid overburdening through data collection requirements those in the business of providing care, a balance needs to be struck between routine data collection and other sources of statistics, such as specially commissioned surveys. The latter fulfil a vital role in providing us with a detailed picture of care homes and their residents needed for policy development and planning.

This report presents the findings of one part of a two-part study funded by the Department of Health: a national, cross-sectional survey of care homes for older people and a longitudinal follow-up of publicly-funded admissions. At the time the work was commissioned there were four key objectives:

a) to provide a baseline description of the use of residential and nursing home care by both publicly and privately-funded residents;

b) to provide data to feed in to the development of the relevant Standard Spending Assessment formulae;

c) to increase understanding of outcomes of residential care, including mortality, changes in location and changes in dependency;

d) to increase understanding of the relationship between dependency and costs of care under the new arrangements for community care introduced in 1993.

The report of the study is in two parts. This volume reports on the longitudinal study that was started in autumn 1995, and continued until 1999, some time after implementation of the reforms introduced in 1993 by the NHS and Community Care Act 1990, which had extended local authorities' responsibilities for assessing and funding residents. This part of the study focused on the characteristics of newly admitted long-stay publicly-funded residents, and their outcomes and costs over the following 3½ years. The survey covered approximately 2500 residents in 18 local authorities. Information was collected on:

- their personal characteristics, health, dependency and charges at the time of admission
- their circumstances prior to admission
- their subsequent moves and survival, health and dependency at 6, 18, 30 and 42 months after admission.

Together with its companion report, which describes the cross-sectional survey of homes and residents (Netten et al., 2001a, *Care Homes for Older People: Volume 1. Facilities, Residents and Costs*), this is a valuable source of information for the future and will provide much information for the policy debate. The data on which this report is based will be made publicly available in due course.

Greg Phillpotts
Deputy Director of Statistics
Department of Health

Acknowledgements

This report is based on a survey funded by the Department of Health as part of a wider study of residential and nursing home care for older people commissioned from the Personal Social Services Research Unit (PSSRU). We would like to thank the local authorities which agreed to participate in this study, and in particular our liaison officers; the staff both in the authorities and in the residential and nursing homes for providing the information; Research Services Limited (now IPSOS-RSL), who managed the main data collections; colleagues Pamela Brown, Kathryn Mummery and Royston Bartholomew, who worked on the project and contributed to various chapters; Judy Hartley, for editorial services in drafting the report; Lesley Cox, the project secretary; the Advisory Group which oversaw the research; and finally to Greg Philpotts and Antonia Roberts of the Department of Health, who coordinated the Advisory Group. The views expressed in this report are those of the authors and are not necessarily those of the Department of Health.

Notes on the tables

- Percentages shown in the tables have been rounded to whole numbers and may not sum to 100 due to rounding.
- The symbol '<1' denotes non-zero percentages of under 1 per cent.

Summary

This report presents the main findings of the 1995 PSSRU Survey of Admissions to Residential and Nursing Homes. The survey provides a unique perspective on what happens to publicly-funded residents after admission, making it possible to relate circumstances at admission to subsequent events. A toolkit is provided to help planners make provision for residential and nursing home care for older people in their locality.

Chapter 1: Introduction

- The introductory chapter discusses the policy background informing this survey. It gives an outline of the methodology employed in the survey and provides a glossary of the terms used throughout.

Chapter 2: The Risk of Admission

- This chapter provides background information on the national demand for care homes for long-term residents, whether publicly or privately funded, and on the rates of admission. These admission rates provide an indication of the probability of being admitted to a care home. The chapter determines what the average lifetime risk of admission would be if the national rates in 1995/96 were to continue indefinitely, a risk that turns out to be higher than is generally supposed.
- There is now one care home place for approximately every 10 people aged 75 and over in England. The total number has reduced slightly in the last two years. Most of these places are in independent sector homes, but three-quarters of residents are state-supported, mainly by local authorities.
- Based on 1995/96 admissions rates, one man in six, and one woman in three can expect to enter a care home for older people on a long-term basis, at some time in their life. These probabilities become even higher for survivors to very old age.
- The lifetime risk of admission has been rising over a long period, but may have declined slightly recently.

Chapter 3: The Circumstances of Admission

- Chapter 3 looks at who is most at risk of admission to a care home. It compares the circumstances of older people who are admitted as long-stay, publicly-funded residents with the circumstances of older people who are not care home residents.

- By quantifying the scale of the differences between the two groups of people, a need indicator was developed. This provides a method of assessing the needs of localities, based on the circumstances of people living there, independent of expressed demand or supply.
- The main reasons for admission as a long-stay, local authority-supported resident were due to physical or mental health but carer-related reasons were common.
- Most people were admitted direct from hospital.
- Only about 3 per cent of admissions were of people no longer able to support themselves financially in a private care home.
- People admitted to a care home as a supported long-stay resident were typically:
  - aged in their 80s
  - female
  - unmarried
  - living alone or, where living with others, living in *their* home
  - living in a house rented from the local authority or housing association
  - receiving Income Support and Housing Benefit
  - receiving Attendance Allowance
  - living in poorer neighbourhoods
  - multiply disabled
  - experiencing a limiting longstanding illness.
- Better off older people were less likely to enter a care home (whether or not self-funding) than the less well off.

Chapter 4: The Initial Placement Decision

- It is seen as important that individuals should receive services appropriate to their needs and not just those that happen to be available locally. But there is considerable variation between local authorities in the proportions of people placed in nursing homes as opposed to residential homes. This chapter examines the pattern of admissions, the characteristics of people admitted, the effects of supply factors, and investigates the degree to which consistent policies are being applied across English authorities in terms of admission to care homes.
- Logistic regression analysis was used to examine the predictive power of individual circumstances in determining which type of care home a person would be admitted to. The results of this analysis were that:
  - Dependency characteristics of the individual explained the placement of nearly 75 per cent of admissions, and other individual characteristics increased the figure to over 80 per cent.
  - Five factors were associated with placement in residential rather than nursing care: arthritis, deafness, family breakdown, living alone and lack of motivation.
  - There was little evidence that local authorities were being constrained in placement decisions by supply factors.
  - There was a relatively high level of consistency between authorities in placement decisions.
- The variation across authorities in the proportion of admissions to nursing homes is likely to have been due, at least in part, to differing community care policies.

Chapter 5: Length of Stay and Mortality

- Chapter 5 examines life expectancy in relation to circumstances at the time of admission. Drawing on a proportional hazard model, predicted average survival rates are presented.

- The median survival for the whole sample was 19.6 months (±0.9 months). For those originally admitted to nursing beds it was 11.9 months (±0.9 months), and for residential beds it was 26.8 months (±1.0 months).
- Mortality rates were high initially, especially in nursing beds, but after about twelve months settled to around 3 per cent per month for the combined sample.
- The factors at admission that significantly raised subsequent mortality were, in order of significance:
  - having a malignancy (cancer)
  - having a low Barthel score (high dependency)
  - old age
  - being a man
  - being admitted to a nursing home
  - being admitted from a hospital, having a respiratory illness
  - being cognitively impaired.
- Death rates in care homes were found to be higher in winter.
- There were no significant differences between local authorities in survival outcomes, after taking into account factors such as dependency at admission.
- As a few residents will live for a long while, the average length of survival will be much greater than the median. Although this average cannot be calculated precisely until all have died, the best estimate is 29.7 months and almost certainly in the range 28.9–30.7 months.

Chapter 6: Health Outcomes

- This chapter provides descriptive information that may help both individuals and organisations plan the future for people admitted to a care home.
- With regard to dependency:
  - many people improve as well as get worse during the first six months but thereafter there are few improvements
  - rates of change are greatest in the first six months.
- With regard to both dependency and cognitive function, the evidence suggests that survivors at six months may on average be slightly better off than at the time of admission, but thereafter there will be a slow but steady decline.
- The improvement by six months was most marked in those activities of daily living that might relate to being in a better controlled environment, rather than any real indication that people had recovered in a way that might make them more fit to return to private households.
- Though some people seemed quite independent and mentally alert at each stage of the survey, only 1 per cent of all those admitted were in this condition at every wave of the survey.
- The recent National Audit by Millard may have been over-optimistic about the potential for avoiding nursing home placement, if health changes through time are taken into account.

Chapter 7: Moves Between Types of Home and Bed

- Chapter 7 examines moves within care homes. These moves are of interest for both welfare and financial reasons.
- Approximately 10 per cent of people in the admissions survey moved to a different home and 8 per cent moved to a different type of bed in the first 42 months following admission.
- People admitted to a residential bed were more likely than those admitted to a nursing bed to move to a different home or to a different type of bed.

- People admitted to dual registered homes were less likely to move to another home but more likely to move to a different type of bed than people in the survey as a whole, and the majority moved from a residential to a nursing bed.
- Including people who were admitted to a nursing bed from a residential home suggests that approximately 19 per cent of people admitted to a residential bed subsequently move to a different type of bed.
- Moves from a nursing bed to a residential bed were not associated with changes in levels of dependency and might have been the result of initial misplacement.
- Moves from a residential bed to a nursing bed were associated with a decline in health status after admission.

Chapter 8: People Who Leave Residential and Nursing Home Care

- Few people ever leave a care home environment once admitted. The great majority of those that do, leave fairly soon after admission. Thereafter there would seem to be an effort made to retain the resident in the care home wherever possible.
- Though failure to settle was given as the commonest reason for discharge back to private households, it is evident that the majority of such people had been admitted with low levels of dependency and the health of others had improved.
- Though the availability of informal care was often a factor enabling discharge, a significant number returned to live alone (possibly in sheltered housing). This group had better survival prospects than those remaining in a care home.
- Rehabilitation was considered for 6 per cent of people at the time of admission, but rarely took place. Only a few of the people who were actually discharged to a private household had been admitted with rehabilitation in mind. Nevertheless, those local authorities that were most minded to consider rehabilitation, did indeed discharge the most cases, even if they were not the ones originally planned.
- Discharge to hospital was usually for terminal care, and many died quite soon. But a few people seem to have lived in hospital for a long time afterwards, or were subsequently readmitted to a care home.
- While discharge to a hospital was normally the result of illness, in a few cases it was because of problems associated with disability or dementia.

Chapter 9: People from Ethnic Minorities

- Only 1 per cent of the population aged 75+ is from ethnic minorities and thus the number admitted to care homes is very small.
- Contrary to what is often stated, ethnic minorities do not have a low rate of admission to local authority-funded care homes, and may even have a higher than average rate, if age differences are taken into account.
- The health of those admitted was in general somewhat poorer, and possibly they did not live as long, which seems to indicate that they left it late to be admitted. This would imply that the low health expectancy of people in ethnic minorities means that care services are needed earlier, and that to achieve equity with the white group rather higher admission rates might be expected than at present.
- Although the evidence is limited, as far as it goes it does appear to support the contention that there are problems of access for people in black and ethnic minority groups, assuming, of course, that no equally good substitute services are available. This evidence would also imply that the expected rise of numbers of older people in ethnic minorities will, if the health differentials remain, give rise to a disproportionate rise in the need for care, and hence to increased demand should the access problems be resolved.

Chapter 10: Lifetime Cost of an Admission

- Methods for estimating lifetime costs to social services for the care of an older person admitted for the first time to a care home as a publicly-funded resident are presented. The assumptions made in these calculations are outlined and the results are given, along with an examination of their accuracy.
- The average gross lifetime cost to social services of a placement was £32,000 for a nursing bed and £38,000 for a residential bed, at 1996 prices. There is tremendous variation in lifetime costs and about 10 per cent will cost more than £100,000. These estimates depend on long-term survival, but are likely to be within 5 per cent of these figures.
- Net lifetime costs are harder to judge because of problems establishing the resident contribution. The cost is much higher in local authority residential homes compared with other types of accommodation. Given the central forecast of survival it is likely to be £30,000–£34,000 for a placement in a local authority home, £18,000–£23,000 in other residential homes, and £19,000–£22,000 in a nursing home.
- The most appropriate way to estimate the gross lifetime cost of a new resident is from the initial weekly cost multiplied by expected survival, given by the prediction model in the Toolkit.
- Those factors which raise weekly costs, for example by leading to nursing rather than residential care, are precisely those that lower expected survival. The consequence is that while lifetime cost may be predicted prior to a placement decision, the great variation means such estimates cannot be expected to be very accurate in individual cases.

Chapter 11: Toolkit

- The Toolkit presents a number of tools to help the local planner make provision for residential and nursing home care for older people in the area, based on the circumstances of people admitted in 1995/96. These tools include:
  - a model for estimating the probability of being admitted to a care home
  - a need indicator for predicting potential need for care homes in a locality
  - logistic regression equations for predicting the type of home admitted to by personal circumstances at admission
  - a proportional hazard model relating circumstances at admission to survival rates and a model for forecasting survival beyond 42 months
  - transition rates showing changes in dependency and cognitive functioning over time following admission
  - methods for predicting lifetime costs of admissions.

1 Introduction

Objectives of the study

1. The 1995 PSSRU Survey of Admissions to Residential and Nursing Homes was designed to identify factors associated with the risk of admission to a care home where that admission is supported by the local authority, to provide data to feed into the development of the relevant Standard Spending Assessment formulae (which are used to calculate the Revenue Support Grant to English local authorities). It was extended longitudinally in order to determine the health outcomes for people who enter homes, what becomes of them, and what are the total cost consequences to local authorities. This is the first truly national survey in England to follow people from the point of admission, and provides a unique perspective on what happens to publicly-funded residents, relating characteristics at admission to subsequent events.

2. The intention of this report is to provide a statistical account of key findings from all stages of the survey, up until 3½ years after first admission, at which point three-quarters have died and trends have become stable. The report describes in quantitative terms the collective experience through the stages of entering, passing through, and leaving care homes. Its purpose is to inform those who are responsible for planning services, and it includes a toolkit for prediction based directly on the findings (see Chapter 11).

3. This is a study of the demand for a special form of social care. Although it is written at a time of very pressing policy concerns with social care for older people, the report deliberately does not tackle such issues directly. The intention of this report is, above all, to present evidence. But the survey is indeed being used to inform a number of such issues (see box 1.1), and the discerning reader will detect undercurrents relating to current concerns within the manner in which we present evidence.

4. It is the inevitable fate of longitudinal surveys that they describe policy phenomena that happened some time in the past. This report is a study of the consequences of admissions policies in 1995/96. It came after the upheavals of the 1990 NHS and Community Care Act reforms, which had been accompanied by a difficult period of adjustment during 1993–94 as local authorities came to terms with their new responsibility for managing nearly all state funded care. It also came after a long period of contraction in long-term care within hospitals, during which time care homes became by far the most significant institutional service – according to the 1991 Census, care homes accounted for 86 per cent of all over 65s living in some form of communal establishment. But it came before the initiative on 'Promoting Independence' in *Modernising Social Services* (1998), and the *National Service Framework for Older People* (2001) with its emphasis on intermediate care as a means of preventing early admission to care homes.

5. Even with these changes, it is unlikely that the findings will be irrelevant to

future planning. However volatile the changes at the margin, care home services represent a huge national investment and the evidence of past trends is that the real changes which take place, though major, can be measured in decades rather than years. There is little sign yet that the long slow rise in admissions has stopped.

BOX 1.1: CURRENT ISSUES IN THE DEMAND FOR CARE HOMES

The impact of socio-demographic trends on the future demand for care homes, and the cost implications of this

In 1999 the Royal Commission on Long Term Care reported on the impact of an ageing population, and how the additional care (which was predicted to more than double in cost in real terms over the next 30 years) would be paid for. Some of the key conclusions have created considerable political embarrassment, neither being rejected nor implemented.

The appropriate use of care homes; whether people are entering at the right time and the ones who have most benefit

There has been continued disquiet that people are entering care homes whose needs are not that severe. A recent national audit of nursing homes (Millard, 1999) concluded that many people improved shortly after entry and one-sixth of residents 'no longer needed nursing care'. There has been a recent major policy drive to improve rehabilitation and create alternatives to long term care in care homes.

The level of state payments for care home places

There has been a mounting protest by home owners over the level of payment the state permits for supported residents, and the financial implications of the new Care Standards Act (Department of Health, 1999). *Community Care* (June 2000) reported that homes were closing at an unprecedented rate, and that there were revolts by homes refusing to take new clients or even evict existing ones.

Equity in the distribution of resources

Consistency was one of the key themes of *Modernising Social Services* (1998), with concerns being expressed about the lack of clear eligibility criteria, the differences of quality in the distribution of state funded services, and differences in charging policies as contributing to a sense of unfairness. There were also concerns about equity in relation to ethnic minorities.

Methodology

6. The key objective for the design was to include at least 2,000 people newly admitted to a care home as a publicly supported resident, who would be nationally representative of all such entrants in 1995. The sample was clustered in 18 selected local authorities. The primary stratification was between London boroughs, metropolitan districts and shire counties (there were no unitary authorities at the time of this survey). Within groups, the metropolitan districts were distributed among the metropolitan counties, and socio-economic status, population sparsity, and the rate of inward and outward population movement of older people (the retirement-migration rate) were taken into account in selecting authorities. Three of the first selected authorities were unable to participate and were substituted: the result was however a slight shift in the representation of the main types of authority, with five London boroughs, eight metropolitan districts and five counties. These authorities were found to be broadly nationally representative in terms of a range of socio-demographic indicators and statistics of care home provision. Some earlier analyses used reweighting to adjust for the slight over-representation of metropolitan districts, but this had very little impact on the results, and is not generally done for the results in this report.

7. The survey considered a number of 'locations' for care: local authority (LA) residential homes; voluntary residential homes; private residential homes; nursing homes; dual registered homes (residential bed); dual registered homes (nursing bed). 'Nursing beds' includes people admitted to nursing homes and those

admitted to nursing beds in dual registered homes: likewise residential beds. In most analyses in this report, it is the location or bed to which the person was *first* admitted that is used as the explanatory factor, even though a significant proportion of people were subsequently transferred to another location.

8. Information at the point of admission was collected on:

- socio-demographic data designed to be compatible with the 1991 Census and the 1994 General Household Survey
- circumstances surrounding admission
- health status
- dependency
- cognitive functioning
- location prior to admission
- financial assessment and the cost of the care provided.

9. Each person in the survey was followed up after one, six, 18, 30 and 42 months, unless they had died or withdrawn. The information collected at each stage was:

- survival
- current location
- reasons for moving, where appropriate
- health status
- dependency
- cognitive functioning.

At the one-month stage only survival and current location were investigated. At the end of the survey, application was made to the Office for National Statistics (ONS) National Health Service Central Register to establish the survival of all people who we had failed to successfully trace to 42 months, or where we were uncertain of date of death. This provided information on survival in nearly all cases.

10. The admissions and follow-up survey questionnaires in Appendixes 1 and 2 give further information on the data collected.

11. The information collected in the admissions survey and one month follow-up was provided by social services staff in the 18 participating local authorities. In the other follow-ups, home managers were asked to complete a questionnaire to record the location of the individual and, if they were still living in the home, to provide information on their level of dependency.

12. As far as possible, people were followed up even if they subsequently moved. If a resident had moved to another residential or nursing home, the new home was contacted and asked to complete the same questionnaire. A separate exercise was conducted to follow up those people who left the home to return to a private household, which collected additional information, for example about services now being received. More limited information was obtained for people discharged to hospital without their bed in the home being kept open (often these were terminal cases). Information about these people was obtained from social services staff in the local authority which made the original assessment for admission. Those readmitted to a care home were included in the main series of follow-up studies.

13. Staff were asked to approach individuals or their families at each stage to ensure there was consent for personal information being used for research. Where consent was withdrawn, no further attempt was made to get any information for that person, including survival data from ONS, though data up to that point were normally retained. We were not able to establish the initial refusal rate precisely, but it was almost certainly very small, with teams in most areas reporting little or

no objection to forwarding information collected as a routine part of the assessment. Withdrawals at subsequent waves of the survey are reported in table 1.1.

14. The survey included 2,629 individuals assessed for admission as a to residential and nursing home care during a three-month period in the last three months of 1995. The criterion for inclusion was that the person should be over 65, be admitted as a first-time publicly supported, long-term resident of a residential or nursing home, and be actually admitted by 15 January 1996. In practice, 56 people did not meet these criteria for one reason or another, and were considered ineligible. The effective sample size was therefore 2,573 cases.

15. There were two further reasons why certain people could be considered ineligible, and who were excluded from some analyses. First, 33 people were placed on a waiting list by one authority and not admitted until after the January deadline, in February or early March 1996. These have been generally included but omitted from some analyses concerning admission. Second, it may not have been the first admission for some people. In particular, a number of people were admitted direct from another care home. In many cases these were either people being transferred from a short-stay place, or were previously self-supporting. But 191 people appear to have been in the process of transfer between homes. In the interests of simplicity we did not omit them from the data collection but to maintain the focus on *first* time admissions this group have been excluded from the analyses of long-term survival and health. It is of course possible that some of the admissions from private households and hospitals are of people who have been in a care home before, but given the small rate of discharge, the number of such cases would be very small.

16. Each follow-up attempted to re-contact everyone who had not been reported as dead, or who had not asked to be dropped from the study (see §13). At each stage some people could not be located, or no information was obtained. Usually this was because the head of home did not respond to our questionnaire. Such cases were always re-attempted at the next wave, and often information was obtained. The final sweep of information from ONS established whether or not the person had in fact died, and thus enabled us to complete the record on a number of 'lost' cases. However, ONS themselves were unable to trace the record for 24 people.

17. Survey practitioners will appreciate the difficulties and uncertainties of a longitudinal survey of this nature. People are lost or reported dead, and then later re-found. Dates of death may be missing, or misreported. People's whereabouts may be traced, but the return of information may be partial, particularly if they have moved. The final information from ONS greatly improved our understanding of survival, and enabled us to discount some people who had not been traced. Thus information at each stage may modify what is known at earlier stages. Some of the analyses in this report were conducted at intermediate stages, and for that reason sample sizes may seem to vary rather arbitrarily in places, in addition to the reasons mentioned above.

18. With these caveats in mind, table 1.1 reports the final position regarding the response rate and level of information at each stage. In general, survey information should have been provided at each stage for all those who were alive and traced, and who had not withdrawn. This is shown in the table, where the Barthel Index is a fairly clear indication the questionnaire will have been fully completed. But in some cases the person was traced but little additional information was obtainable. This was particularly true where the person had moved out of a care home into hospital or back to the community. In such cases we were reliant on a social worker maintaining knowledge of the person's circumstances, and this was not always the case.

Table 1.1 Response levels at each stage

	Initially	6 months	18 months	30 months	42 months
Alive, full information	2569	1360	897	645	464
Alive, some information	6	204	162	110	51
Alive, no information	0	232	197	131	92
Dead	0	728	1231	1699	1861
Untraced	0	5	9	11	13
Withdrawn from study	0	44	76	87	92
Ineligible	56	56	56	56	56
Total	2629	2629	2629	2629	2629

'Full information' means a Barthel Index score could be calculated for this person. 'Some information' means that at least whereabouts and type of care home was reported.

Glossary and definitions

GLOSSARY

Barthel Index of Activities of Daily Living	See box 1.2.
Care home	A residential, nursing or dual registered home primarily for the needs of people aged 65 and over.
Dual registered home	A care home registered with both local and health authority, and usually having both personal care and nursing care beds.
Hazard rate	See mortality rate.
Long-stay admission	Where no date of discharge was set prior to admission. (However, the resident may still be admitted with the intention of eventual discharge - rehabilitation).
MDS Cognitive Performance Scale	See box 1.3.
Mortality rate	The proportion of people who die within a short time period, given survival up to that point. Very similar is the hazard rate, the number of deaths in a short period, in relation to the average number of people alive during that period. (See Parmar and Machin, 1995, for a full discussion.)
Nursing home	A care home registered with the health authority under Part 2 of the Registered Homes Act 1984 (now superseded by the Care Standards Act 2000) providing constant or daily nursing care.
Publicly-funded resident	One for whom any part of the costs of the placement in a care home are directly funded by any government welfare agency, other than via pension or income support, and excluding therapies and treatments supplied by the NHS. This agency now is normally the local authority social services department but may be the NHS or, for people who have been in a care home some time, social security. Publicly-funded residents include those who make a contribution to the cost of their placement.
Resident	Long-stay resident or patient of a care home.
Residential home	A care home providing board and personal care only. Includes local authority homes registered under the provisions of Part III of the National Assistance Act 1948, and other homes registered with the Local Authority under Part 1 of the Registered Homes Act 1984.
Risk ratio	A comparison of the hazard rates for two people in different circumstances, for example when comparing men and women.
Spend-down	Individuals already living in a care home, who are now applying for local authority support because their private resources are exhausted.
Self-funded resident	One for whom the entire costs of the placement are made from their own income or capital, or from those of any other private individual or individuals. It includes those who are funded through a private or employees' insurance scheme, or by a former employer. It also includes those receiving a contribution to their support from a voluntary organisation.
Voluntary home	A care home that is neither owned by a local or health authority nor run for profit.

BOX 1.2: BARTHEL INDEX OF ACTIVITIES OF DAILY LIVING

The Barthel Index is computed as the sum of the scores for the ten items shown, and ranges from 0 (highest level of dependency) to 20 (lowest level of dependency). A categorised form is widely used. See Collin et al. (1988) for full details.

Barthel Index of Activities of Daily Living

Function	Score	Description
Bowels	0	Incontinent (or needs to be given enemata)
	1	Occasional accident (once/week)
	2	Continent
Bladder	0	Incontinent, or catheterised and unable to manage
	1	Occasional accident (maximum once per 24 hours)
	2	Continent (for over seven days)
Grooming	0	Needs help with personal care
	1	Independent face/hair/teeth/shaving (implements provided)
Toilet use	0	Dependent
	1	Needs some help, but can do something alone
	2	Independent (on and off, dressing, wiping)
Feeding	0	Unable
	1	Needs help cutting, spreading butter etc
	2	Independent (food provided in reach)
Transfer	0	Unable — no sitting balance
	1	Major help (one or two people, physical), can sit
	2	Minor help (verbal or physical)
	3	Independent
Mobility	0	Immobile
	1	Wheel chair independent including corners etc
	2	Walks with help of one person (verbal or physical)
	3	Independent (but may use any aid, eg stick)
Dressing	0	Dependent
	1	Needs help, but can do about half unaided
	2	Independent (including buttons, zips, laces, etc)
Stairs	0	Unable
	1	Needs help (verbal, physical, carrying aid)
	2	Independent up and down
Bathing	0	Dependent
	1	Independent (or in shower)

Simplified Barthel Scale

Barthel score	Level of dependency
0–4	Total
5–8	Severe
9–12	Moderate
13–16	Low
17–20	Very low

BOX 1.3: MDS COGNITIVE PERFORMANCE SCALE

The MDS Cognitive Performance Scale is a seven point scale ranging from 0 (intact) to 6 (very severe impairment) based on levels of five areas of performance. See Morris et al. (1994) for details. The survey omitted the item 'Comatose' but this does not in practice affect scale construction. A simplified three-point scale is used throughout the analysis.

MDS Cognitive Performance Scale items

MDS CPS item	Score	Description
Comatose	0	No
	1	Yes
Short-term memory	0	Memory OK
	1	Memory problem
Decision making	0	Independent
	1	Modified independent
	2	Moderately independent
	3	Severely impaired
Understood	0	Understood
	1	Usually understood
	2	Sometimes understood
	3	Rarely/never understood
Eating	0	Independent
	1	Supervision
	2	Limited assistance
	3	Extensive assistance
	4	Total dependence

Computation of impairment and severe impairment counts for constructing scale

Impairment/severe impairment counts	Components	Scores
Impairment count (IC)	Decision making	1, 2
	Understood	1, 2, 3
	Short-term memory	1
Severe impairment count (SIC)	Decision making	2
	Understood	2, 3

MDS Cognitive Performance Scale categories

Score	MDS CPS category	Decision rule
6	Very severe impairment	Comatose = 1
		Comatose = 0 & Decision making = 3 & Eating = 4
5	Severe impairment	Comatose = 0 & Decision making = 3 & Eating ≠ 4
4	Moderately severe impairment	Comatose = 0 & Decision making ≠ 3 & IC ≥ 2 & SIC = 2
3	Moderate impairment	Comatose = 0 & Decision making ≠ 3 & IC ≥ 2 & SIC = 1
2	Mild impairment	Comatose = 0 & Decision making ≠ 3 & IC ≥ 2 & SIC = 0
1	Borderline intact	Comatose = 0 & Decision making ≠ 3 & IC = 1
0	Intact	Comatose = 0 & Decision making ≠ 3 & IC = 0

Simplified MDS Cognitive Performance Scale

MDS CPS score	Level of impairment
4, 5, 6	Severe impairment
1, 2, 3	Mild impairment
0	Intact

2 The Risk of Admission

Introduction

1. This chapter provides background information on the national demand for care homes for long-term residents, and on the rates of admission, whether funded privately or state-supported. These admission rates provide an indication of the probability of being admitted. This chapter determines what the average lifetime risk of admission would be if the national admission rates in 1995/96 were to continue indefinitely, a risk that turns out to be higher than is generally supposed. National statistical evidence on admissions has been limited to publicly-funded residents since 1995/96 but the indication is that, if anything, this risk is rising.

Numbers of residents

2. According to the most recent estimates (Department of Health, 2000b) there are just under 400,000 places in care homes predominantly for older people in England, excluding beds in NHS hospitals (table 2.1). This represents approximately one place for every 10 people aged 75 and over, the main users of care homes. The number of places rose to a peak in 1998, but since then has fallen back by 5 per cent so that in 2000 there were a similar number of places to the number that had been available in 1996, at the time of this survey.

Table 2.1: Places in homes, by type of accommodation, England 2000

	Places/beds
Residential care	
Local authority home	42,617
Independent homes	165,797
In dual registered homes	31,882
Nursing care	
Registered beds for older people	149,964
Total	390,260

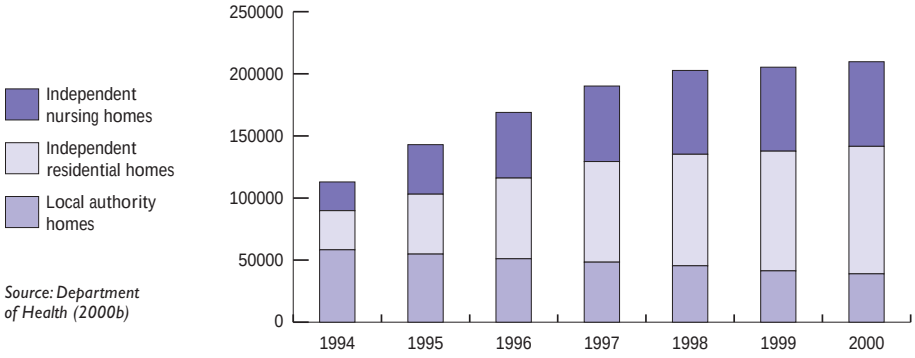
Source: Department of Health, 2000b
Note: excludes homes for elderly mentally infirm people

3. What is not so clear is exactly how many people are now living in care homes, including those who are self-supporting. In March 1996, at the time of our survey, there were an estimated 325,500 long-stay residents over 65. This figure excludes short-stay residents and adjusts for possible double counting of people in dual registered homes. It excludes all types of hospitals and clinics (the figures in table 2.1 include a few non-NHS hospitals). During the year preceding we have estimated that the number of first-time long-stay admissions to care homes in England by people over 65 was around 123,300. These estimates allow for a number of repeat admissions, and make use of some data from the companion survey (Netten et al., 2001a) to fill gaps in the national statistics relating to self-funded residents.

4. There are, however, complete national statistics on local authority-supported residents, who are the main subjects of this report. Based on the companion survey, it is estimated that in 1996, 73 per cent of all recent admissions were state supported, of whom nearly all were supported by local authorities. Only 27 per cent were privately funded, or supported by a charity, pension, or other source. So supported residents do represent the great majority of entrants to care homes.

5. Figure 2.1 shows recent trends in the numbers of local authority supported residents. By 2000, there were just over 200,000. The recent rapid increase in numbers of local authority supported residents is not due so much to a change in demand as to changed administrative arrangements. Since 1993, the responsibility for purchasing state-supported care has been entirely with local authorities. Since then, virtually all new admissions seeking state support have had to seek it from local authorities, and as a result the number of people supported by local authorities has increased. There are now only a few 'preserved rights' residents funded under the old rules.

Figure 2.1: Trends in numbers of local authority supported residents



Source: Department of Health (2000b)

6. Figure 2.1 also shows how the balance between different types of care home has changed. Homes owned and run by local authorities are giving way to homes in the independent sector. This is also a result of administrative changes introduced in 1993. Nursing home care expanded rapidly up until 1998, but has remained static since. For further information about types of home, see Netten et al. (2001a).

The risk of admission

7. At a time when the options for funding long-term care are much under discussion, surprisingly little is known about the risks involved, and no figure is quoted by the recent Royal Commission (1999) other than a rough calculation for all forms of care by Glennerster (1986). The rate of admission into institutions has been rising over a long period, particularly in the oldest age groups (Grundy and Glaser, 1997).

8. Estimates of risk can be based on the probability of admission. The estimates presented here are calculated for all long-stay admissions to a care home for older people, whether as a publicly or privately funded resident. The method uses the age-specific admission rates to care homes during the 12 months to March 1996. Technically it is a double-decremented life table based on period rates (see box 2.1).

9. Tables 2.2 and 2.3 show for men and women respectively, the numbers of people involved, and the resulting estimates of lifetime risk.

- For men, it is 16 per cent at birth rising to 20 per cent at 65.
- For women, it is 32 per cent at birth rising to 36 per cent at 65.

BOX 2.1: ESTIMATING RISK FROM DOUBLE-DECREMENTED LIFE TABLES

With a double-decremented period life table, a hypothetical population is subjected to two alternative causes of loss, either death or first-time admission to a care home as a long-stay resident. The basic form of the model is:

$$l_{x+1}(N) = l_x(N).\{1-p_x-q_x(N)\}$$

where:

$l_0(N)$ is the birth population (taken conventionally as 10,000);
$l_x(N)$ is the number of people who have never entered a care home when they reach the age of x;
p_x is the probability of first admission while aged x, given survival to that age;
$q_x(N)$ is the probability of death while aged x among those who have never entered a care home, given survival to that age.

The p's and q's are estimated from actual age-specific rates in England. This is based on: the numbers of people alive in 1996; the numbers in care homes; the numbers of admissions in the previous year; deaths in the previous year; deaths among those who have been in care homes. From this, the l's can be estimated up to the highest age.

The future risk of admission for someone aged x, based on current rates, is:

$$Rx = \frac{\sum_{i=x}^{\infty} li(N).pi}{lx(N)}$$

In practice the method uses 5-year age groups rather than individual years of age, and separates men and women.

Table 2.2: Care homes' residents 1995/96 and lifetime risk of admission, males, by age

Age	Total population '000	Total deaths '000	People in care homes '000	First admissions '000	Deaths among those admitted '000	Lifetime risk %
0 to 64	20,961.8	55.0	0.0	0.0	0.0	16
65 to 69	1,037.1	27.6	4.3	2.0	0.9	20
70 to 74	89.9	39.1	9.7	5.9	4.6	21
75 to 79	616.8	42.6	13.9	6.6	5.5	23
80 to 84	385.0	42.7	17.4	9.8	9.0	27
85 and over	234.7	45.3	29.8	12.4	16.7	30

Note: Lifetime risk is at the start of each age group

Table 2.3: Care homes' residents 1995/96 and lifetime risk of admission, females, by age

Age	Total population '000	Total deaths '000	People in care homes '000	First admissions '000	Deaths among those admitted '000	Lifetime risk %
0 to 64	20,375.2	33.6	0.0	0.0	0.0	32
65 to 69	1,162.1	17.9	5.0	2.3	1.1	36
70 to 74	1,117.1	29.0	13.8	5.4	3.2	39
75 to 79	911.9	38.5	26.8	13.8	10.6	42
80 to 84	715.3	52.5	54.2	22.6	15.8	44
85 and over	678.3	102.9	150.7	42.3	55.9	47

Note: Lifetime risk is at the start of each age group

These risks are undoubtedly greater than many people realise, particularly for women. Lifetime risk becomes significantly higher for older survivors so that, by age 85, a woman who is still living in her own home has an almost evens chance of entering a care home before she dies.

16% of men and 32% of women are predicted to enter care homes. The risk of admission has fallen slightly recently.

10. The above figures are based on 1995/96 rates. Due to changes in administrative statistics, it is not straightforward to establish the general trend since. In 1995/96 we estimate that there were about 148,000 long stay admissions (including re-admissions) of people aged 65+ to care homes. In 1999/00 there were 96,804 *supported* admissions (Department of Health, 2000b, table S2). If we assume the same ratio between supported and self-financing admissions as reported in §4, it implies around 133,000 long-stay admissions in total. That is about 10 per cent less and if so, the risk of admission will have fallen slightly since the above estimates were calculated.

11. The results accord with recent findings in Australia. Liu et al. (2001) independently used the same method as here to derive lifetime risk of care home entry. In 1999/00 the risk at age 65 was 42 per cent for women and 24 per cent for men. Liu et al. (1999) warn that the risk is much greater than generally recognised, probably because at any point in time only a small proportion of older people live in a care home.

Conclusions

- There is now one care home place for approximately every ten people aged 75 and over in England. The total number has reduced slightly in the last two years. Most of these places are in independent sector homes, but three-quarters of residents are state-supported, mainly by local authorities.
- Based on 1995/96 admission rates, one man in six, and one woman in three can expect to enter a care home for older people on a long-term basis, at some time in their life. These probabilities become even higher for survivors to very old age.
- The lifetime risk of admission has been steadily rising, but since 1995/96 has probably fallen slightly.

3 The Circumstances of Admission

Introduction

1. Chapter 2 showed that the probability of admission to a care home is higher than generally supposed, particularly for women. But not all people are equally at risk. This chapter and the next look at the characteristics of people who are admitted as a local authority-supported long-stay residents. In comparison with older people generally, it will be shown that those who are admitted tend to be particularly old, either living alone or in a situation where other household members can no longer cope, less wealthy, and in poor health. None of this is surprising, although the extent of the difference from the general population may be.

2. By quantifying the scale of the difference, it is possible to develop a *need indicator*, a method of assessing the needs of localities, based on the circumstances of people living there, and independent of expressed demand or supply. This need indicator is given in the Toolkit (Chapter 11) and is in fact the one developed from this survey for use with Standard Spending Assessments.

3. This chapter examines the reasons for entry, the family and socio-demographic backgrounds of people who are admitted, their functional capacity, previous service receipt, and the localities from which they come. These are compared with older people generally, using the General Household Survey (see box 3.1). The survey of admissions included questions that were identical in format and wording to those used by the 1994 GHS, though for the GHS the answers are normally provided by the respondent themselves or a member of their household, whereas the admissions survey was completed by a social worker.

BOX 3.1: THE GENERAL HOUSEHOLD SURVEY

The General Household Survey (GHS) is a continuous national survey of Great Britain that has been run by the Office for National Statistics (formerly OPCS) since 1971. It includes questions on population and fertility, family and household information, housing, health, employment and education. It surveys approximately 10,000 private households and their residents per annum, on a nationally representative basis.

Periodically the GHS includes subjects of special concern. One on people over 65 — their functional ability, use of health and social care facilities — has been included from time to time since 1980. The 1994 edition is used here (OPCS, 1996). The analysis in this chapter is based on 3058 people over 65 living in England only.

In the tables of this chapter, 'receiving community care' refers to people who received one or more of the following home services in the month preceding the survey:

- home help or home care worker (from local authority)
- district or community nurse (home visit)
- meals on wheels
- attendance at a day centre (not drop-in).

4. The next chapter contains more information on the physical and mental health of new residents, in the context of the decision about appropriate placement.

Reasons for admission

5. Table 3.1 shows the main reasons that were given by social workers for admitting new residents. Physical and mental health problems predominated, but carer related problems were also important. Rehabilitation was a comparatively minor reason for long-stay admission at this time.

Table 3.1: Major reasons for admission

Reasons for admission	Proportion %
Physical health problems	69
Mental health problems	43
Functional disablement	42
Stress on carers	38
Lack of motivation	22
Present home physically unsuitable	15
Family breakdown (including loss of carer)	8
Need for rehabilitation	6
Fear of being the victim of crime	4
Abuse	2
Loneliness or isolation	2
Homelessness	1
Number of individuals	2573

Note: Reasons as given by social worker. More than one reason may be given.

6. Table 3.2 shows that just over one half of all people were admitted direct from a hospital. Four-fifths of these are known to have been there for less than eight weeks, so the commonest time of entry was following a health event requiring hospitalisation, such that a return to the former private household was not practicable.

Table 3.2: Source of admission

Source of admission	Proportion %
Private household	29
Sheltered housing	6
Residential or nursing home	13
Hospital	51
Number of individuals	2573

7. Of those admitted from a residential or nursing home, one quarter (about 3 per cent of all admissions) were people no longer able to pay for themselves within a private home, and one quarter were transfers from a short-stay placement. The remainder were mostly transfers between homes, following a reassessment. As this study is of *first* time admission to a care home as a supported resident, this last group is excluded from much of the analysis in this report (see Chapter 1, §15).

Personal circumstances

Demographic characteristics

8. Table 3.3 compares the demographic characteristics of older people admitted to care homes with those living in private households, separating those who were recipients of community care (see the box on page 19) from others. Recipients of both community care and those admitted to a care home were:

Table 3.3: Demographic characteristics of older people in private households (by whether receiving services) and new admissions to a care home

Demographic characteristics	General Household Survey 1994		Admissions survey
	No community care %	Receiving community care %	%
Age group			
65 to 69	33	11	3
70 to 74	32	17	9
75 to 79	17	20	17
80 to 84	12	26	26
85 to 89	5	18	27
90 and over	1	9	18
Sex			
Male	44	30	29
Female	56	70	71
Marital status			
Married/cohabiting	58	23	21
Not married	42	77	79
Ethnic group			
White	99	99	99
Other	1	1	1
Number of individuals	2649	409	2573

- older than average, and people admitted to a care home were on average older yet again, with an average age of 83;
- more likely to be women than men, and unmarried rather than married (the gender difference is mainly because of the high age of recipients);
- represented in similar proportions across ethnic minorities. The ethnic mix of admissions is discussed in Chapter 9.

Household composition and tenure

9. Where the person admitted had been living in a private household, at least within eight weeks of admission, it was possible to establish something about their domestic background, for comparison with other older people living in private households. This is shown in table 3.4.

- Both recipients of community care and people admitted to a care home were likely to have been living on their own, though this is particularly true for recipients of community care.
- Both were more likely to have been living in local authority (LA) or housing association (HA) rented accommodation than the majority of older people.
- People admitted to a care home quite often were living in someone else's home. This may be indicative of a situation where a carer relationship has broken down. A common point of admission is where a relative formerly providing care refuses to allow the person to return to their home after hospitalisation. Possibly the older person had moved to be with the relative fairly recently, as a significant proportion were recent movers.

Disability

10. Older people receiving community care were more disabled than those who were not, and those who were admitted to a care home were far more likely to be disabled in every respect. Because disability is so closely linked to age, table 3.5 is age-standardised to show that, even age-for-age, people admitted to care homes were very disabled. It must be remembered that the admissions survey was completed by social workers often at a particularly traumatic time in the person's

Table 3.4: Tenure of older people in private households (by whether receiving services) and new admissions to a care home

Household composition and tenure	General Household Survey 1994		Admissions survey
	No community care %	Receiving community care %	%
Household composition			
Lived alone	35	73	64
One other person	56	25	27
Several others	9	2	9
Household tenure			
Owned/mortgaged	69	43	30
Rented from LA/HA	25	48	58
Privately rented	6	8	9
Other	0	1	3
Relationship to head of household			
Head or spouse of head	96	97	64
Not head	4	3	21
Length of residence			
Less than one year	2	1	5
Other	98	99	95
Number of individuals	2621	388	2111

Note: Unknowns omitted from this table. Sample size may be smaller for some proportions.

Table 3.5: Age-standardised disability and limiting longstanding illness of older people in private households (by whether receiving services) and new admissions to a care home

Disability	General Household Survey 1994		Admissions survey
	No community care %	Receiving community care %	%
Unable to do without help:			
Get up/down stairs	11	30	77
Get around indoors	2	4	51
Get to the toilet	3	3	56
Get in/out of bed	2	5	52
Dress/undress	3	7	71
Feed self	1	1	23
Bath/shower/wash all over	10	30	91
Wash face and hands	0	2	49
Walk down the road	17	44	83
Limiting longstanding illness			
Yes	44	67	95
No	56	33	5
Number of individuals	2632	408	2573

Note: GHS figures standardised to match the age distribution of the admissions survey.

life. Even allowing for this, the high levels of disability among those admitted are striking.

Both the decision to seek local authority-supported care and the ability to contribute to the cost of that care are affected by the financial resources of the older person.

Wealth

11. Both the decision to seek local authority-supported care and the ability to contribute to the cost of that care are affected by the financial resources of the older person. It is impossible to compare the actual financial resources of people living at home with those living in care homes but, once again, the best way to demonstrate the wealth differences is to look at certain individual circumstances prior to the point of admission. Table 3.4 shows that the majority of admissions were from people who had been living in rented accommodation. Table 3.6 examines receipt of social security benefits. This table refers to the period before

Table 3.6: Receipt of benefits by older people in private households (by whether receiving services) and new admissions to a care home

Benefits	General Household Survey 1994		Admissions survey
	No community care %	Receiving community care %	%
Received income support	11	32	53
Received attendance allowance	5	25	61
Claimed housing benefit	19	49	53
Number of individuals	2621	388	1710

Note: Unknowns omitted from this table.

assessment, as new benefits were often obtained at the time when the individual entered a care home. A high proportion of both those in receipt of community care services and those who were admitted to a care home received either Income Support or Housing Benefit, both of which imply low financial resources. Not surprisingly, a high proportion also received Attendance Allowance, a benefit for disabled people.

12. Another factor relevant to wealth is the type of locality from which the older person came. An indicator was proposed for the research by a Local Authorities Association representative, described as 'a simple ward-based index of wealth, reflecting plausible factors likely to be associated with occupational pensions and more expensive private housing'. This indicator is based on two items constructed from the 1991 Census Small Area Statistics:

- Persons in owner occupied households with six or more rooms.
- Households where the head is in a professional or managerial SEG, as a proportion of all households where the SEG of the head is known.

13. The indicator is constructed as follows. The proportions of people/households in every English ward (with more than 100 households) is determined. These are converted to z-scores by subtracting the mean and dividing by the standard deviation. The two z-scores are added together. The resulting score is then ordered across all wards, and wards are then rated from 1 to 5, according to which quintile their score falls into.

14. Applying this indicator revealed that a disproportionate number of older people came from the least affluent wards, but that this was particularly true for those people admitted to a care home (table 3.7).

15. The conclusion from this is that care homes are predominantly a service for the less well off. It is to be expected that someone admitted as a supported resident will not be well off, because there are strict limits on the financial resources of a person applying for support. From April 1996, soon after the start of this study, they had to own less than £16,000 capital, including their own home (Department of Health, 1996a). However, because three-quarters of all people in

Table 3.7: Ward of origin for people in the admissions survey and all over 65 in the 1991 Census, categorised by ward affluence

Affluence quintile	People 65 and over in the areas participating in the study (Census) %	People in the Admissions Survey %
First quintile (poorest)	28	39
Second quintile	20	20
Third quintile	17	16
Fourth quintile	17	12
Fifth quintile (richest)	18	13
Number of individuals		2110

care homes are supported, Almond et al. (1999) showed that older people with resources over this limit must at present be far less likely to enter a care home than those with resources below the limit.

16. This has disturbing implications as to whether the charging policy is creating incentives which result in different types of care being used by older people on the basis of their financial resources, irrespective of need. Does it mean that there is a group of moderately well off older people, who are doing everything to avoid entering a care home because of the cost implications, even though it might best suit their needs to be there? Or is it too easy to encourage the least well off to enter a home, perhaps ultimately because it is cheaper for the local authority than providing social housing and the level of domiciliary care necessary? Such questions deserve further investigation.

A need indicator for care

17. It has been shown that a number of factors are characteristic of people who enter care homes as supported, long-term residents, such as age, tenure, limiting longstanding illness, receipt of benefits. It is possible to combine these factors in such a way as to provide a predictor of the probability that a given person will be admitted in the near future. Tool 1 in the Toolkit (Chapter 11) provides such a measure.

18. These measures have their counterparts in national statistical counts such as the census and other administrative returns. As a result, the distribution of these factors is known at a local level. It is therefore possible to use these factors to devise indicators of the potential need for care homes among local communities. An equation for estimating need, based on these results, was developed for use with Standard Spending Assessments and will also be useful for planning at a local level within local authorities. This indicator is described in Tool 2 of the Toolkit (Chapter 11).

Conclusions

- The main reasons for admission as a long-stay, local authority-supported resident were due to physical or mental health but carer-related reasons were common.
- 51 per cent of people were admitted direct from hospital.
- Only about 3 per cent of admissions were of people no longer able to support themselves financially in a private care home.
- People admitted to a care home as a supported long-stay resident were typically: aged in their 80s; female; unmarried; living alone; where living with others, living in their home; living in a house rented from the local authority or housing association; receiving Income Support and Housing Benefit; receiving Attendance Allowance; living in poorer neighbourhoods; multiply disabled; and had a limiting longstanding illness.
- Better off older people were less likely to enter a care home (whether or not self-funding) than the less well off.

4 The Initial Placement Decision

Introduction

1. Increasingly, it is seen as important that what happens to you in terms of social care should not be a lottery, based on where you live. Individuals should receive services appropriate to their needs, not just those which happen to be available locally (Cm 4169, 1998). However, routinely collected statistics show considerable variation between authorities in the proportions of people placed in nursing homes as opposed to residential care homes (Department of Health, 2000a). Is this due to variations in demand (the type of resident approaching authorities), supply (the level and type of provision available for local authorities to purchase), or policy (in terms of eligibility criteria or interpretations of need at field level)?

2. These questions have long-term implications for both the welfare of individuals and costs to the public purse. Once admitted, it is unusual to move (see Chapter 7), and doing so can be very disruptive for the individual, so it is important that the initial placement is appropriate.

3. However, nursing home care costs substantially more than residential care. Laing & Buisson (1993) calculated that, in April 1993, the typical net weekly cost to a local authority was £88 for a residential placement and £183 for a nursing home placement. This difference is equivalent to the difference in cost between packages of community care and residential care and may provide a strong incentive to use residential placements where possible. Indeed, Burgner noted that local authorities appeared to be 'using residential homes for people with dependency levels who might earlier have been placed in nursing homes' (Burgner, 1996, para. 4.9.9).

4. This chapter examines the pattern of admissions, the characteristics of people admitted, the effects of supply factors, and investigates the degree to which consistent policies are being applied across English authorities in terms of admissions to residential and nursing home care. A fuller discussion appears in Netten et al. (2001b).

Patterns of admission

5. Less than 9 per cent of admissions were placed in local authority-run homes (table 4.1). Indeed, in two of the authorities there were no local authority-managed homes at all. Just under half of all admissions were assessed as requiring nursing home rather than residential home care. Although dual registration is an increasing form of provision, such homes represented a very small proportion of placements in the survey. The proportion of people placed in

Table 4.1: Demographic characteristics of admissions, by type of place to which admitted

Demographic characteristics	Residential place			Nursing place %	All places %
	Local authority %	Voluntary %	Private %		
Age group					
65 to 69	2	3	3	4	3
70 to 74	8	9	8	10	9
75 to 79	15	12	15	19	17
80 to 84	31	24	26	26	26
85 and over	45	52	48	41	45
Sex					
Male	31	28	25	32	29
Female	69	72	75	68	71
Source of admission					
Domestic household	44	40	35	18	28
Sheltered housing	8	10	8	2	5
Residential care	7	8	10	12	10
Nursing home	<1	2	2	4	3
Hospital	39	39	44	63	52
Other	0	2	2	2	1
Household composition (8 weeks before admission)					
Lived alone	67	62	62	38	51
Lived with others	29	31	24	35	30
In hospital	3	4	7	16	10
In residential/nursing home	1	2	6	11	7
Elsewhere	0	1	<1	<1	<1
Household tenure (8 weeks before admission)					
Owner occupied/mortgaged	24	26	23	22	23
Rented from LA/NT/HA	60	56	50	44	49
Privately rented	8	7	10	5	7
Other	3	3	3	2	3
Not living in household	4	8	14	27	19
Number of individuals	206	243	865	1124	2438

Note: LA/NT/HA — local authority / new town / housing association

residential care homes varied between 33 per cent and 71 per cent in the participating local authorities.

Individual characteristics associated with admission

Age and gender

6. Overall, 71 per cent of admissions were women. A slightly higher proportion of men were admitted to nursing homes than to independent residential homes (table 4.1). Men were also more likely to be admitted from hospital than women.

7. Table 4.1 shows the distribution of age groups at admission by type of placement. People admitted from hospital and to nursing homes also tended to be younger than those admitted from elsewhere and to residential homes. Those admitted to nursing homes had an average age of 82.5, compared with 83.5 among those admitted to residential care homes. Age was also associated with source of admission: the average age of those admitted from hospital was 82 compared with 84 from elsewhere. Although the differences in average age of admission from hospital and to nursing homes were small they were statistically significant.

Just over half of all admissions were in hospital at the time of assessment.

Source of admission

8. Information was collected about where people were at the point of admission and where they were normally resident eight weeks before admission. Just over half of all admissions were in hospital at the time of assessment. The majority of these were acute episodes in geriatric or general medical wards. Ten per cent of the sample had been in hospital for more than eight weeks. People in hospital at the time of assessment were more likely to be admitted to nursing homes than those assessed at home. Fifty-six per cent of people discharged from hospital entered nursing homes compared with 35 per cent of those admitted from the community.

9. Of people admitted from private households, 15 per cent were in some form of sheltered housing. The majority of these households were rented from housing associations or local authorities. Very few people were admitted straight from sheltered housing to nursing homes, suggesting that this type of accommodation does not act as a substitute for residential care in any moves along the continuum of care. In addition, it was interesting to note that people admitted from sheltered housing were no more dependent than people living in unsupported accommodation (average Barthel score of 12.0, compared with 11.3 in other types of private households). Of course, sheltered housing is a very inclusive term concealing a wide range of support.

10. Eight weeks before assessment over half of the people in the survey had been living alone. In a study carried out in conjunction with the 1998 General Household Survey, the proportion of people aged 80 and over living alone in the community was 56 per cent (Bridgwood, 2000). Among those living in the community eight weeks before admission, those admitted to residential homes were more likely to have been living alone (70 per cent) and those admitted to nursing homes were less likely to have been living alone (52 per cent).

Reasons for admission

11. Social workers were asked to identify all relevant reasons for admission. Mental health needs were more frequently identified with residential than with nursing home admissions but the reverse was true for physical or functional needs (table 4.2). Carer-related factors, which were slightly more likely to be associated with residential admissions, were identified in 40 per cent of cases overall. Lack of motivation was associated more with residential than with nursing home care.

Table 4.2: Reasons for admission, by type of place to which admitted

Reasons for admission	Residential place			Nursing place	All places
	Local authority	Voluntary	Private	%	%
	%	%	%		
Physical or functional needs	74	78	75	83	79
Mental health needs	51	49	47	39	44
Carer related factors	44	49	40	38	40
Lack of motivation	22	29	25	16	21
Housing problem	14	13	16	15	15
Social contact	4	2	3	1	2
Other	7	8	7	3	5
Number of individuals	206	243	865	1124	2438

Disorders and diseases

12. The disorders and diseases specified were those that care managers were aware of when assessing the individual. Dementia was the most frequently cited disorder (table 4.3). Arthritis was reported in a third of cases and stroke and

cardiovascular disease in a fifth. Stroke and malignancy were more frequently reported among admissions to nursing home places than residential places.

Table 4.3: Disorders and diseases of admissions, by type of place to which admitted

Disorders and diseases	Residential place			Nursing place	All places
	Local authority	Voluntary	Private		
	%	%	%	%	%
Dementia (diagnosed)	40	40	37	39	38
Arthritis	39	36	33	28	32
Stroke	18	17	17	26	21
Cardiovascular disease	21	15	19	20	19
Respiratory/chest disease	15	15	14	15	14
Deafness	19	15	15	11	14
Depression (diagnosed)	12	11	16	12	13
Fracture	9	9	10	11	10
Blindness	9	9	10	10	10
Malignancy	4	3	5	13	8
Other psychiatric disorder	5	7	6	5	6
Gastrointestinal disease	4	4	4	6	5
Number of individuals	206	243	865	1124	2438

Dependency and cognitive functioning

13. As would be expected, people admitted to nursing homes had higher levels of dependency than those admitted to residential homes. People admitted from hospital were also, at the point of admission, more dependent.

14. All types of nursing care requirements were associated with admission to nursing homes. The most frequently identified type of nursing care was daily dressings. These were needed for approximately 40 per cent of people admitted to nursing homes, but were also identified for approaching 20 per cent of people admitted to residential homes (table 4.4). Nearly a quarter of people admitted to nursing homes required assistance with bedfast procedures.

people admitted to nursing homes had higher levels of dependency than those admitted to residential homes

15. There was evidence of widespread cognitive impairment among admissions (table 4.5). Only one-third of admissions were classified as intact or borderline intact and over a third were severely impaired. Levels of cognitive impairment were higher among those admitted to nursing homes but the relationship was less marked than with physical dependency characteristics: a substantial proportion of severely impaired people were admitted to residential care. Evidence of behavioural problems was not disproportionately associated with nursing home admissions.

16. Although people admitted to nursing homes were on average more dependent, taking physical and cognitive impairment separately would suggest a considerable level of overlap in terms of levels of dependency. Nearly a third of admissions to nursing homes had moderate levels of dependency, more typical of admissions to residential care homes. But of those people who had a Barthel score above 12, a significantly higher proportion admitted to nursing homes had severe cognitive impairment (37 per cent, compared with 20 per cent entering residential homes). Nevertheless, about a fifth of people in the relatively low functional dependency group who were admitted to nursing homes had no evidence of cognitive impairment.

Table 4.4: Dependency of admissions, by type of place to which admitted

Dependency characteristics	Residential place			Nursing place	All places
	Local authority %	Voluntary %	Private %	%	%
Mobility					
Walk outdoors	19	15	16	4	11
Walk indoors and stairs	20	14	15	5	11
Indoors on level/with aids	35	32	31	11	23
Walk indoors with help	11	15	21	23	20
Mobile in wheelchair	11	19	13	28	20
Chair or bedfast	4	5	4	29	15
Self-care (need assistance)					
Wash face and hands	25	36	35	67	49
Bath or wash all over	89	88	85	95	90
Dress	51	60	58	88	72
Feed self	7	12	12	38	23
Use WC	20	30	29	73	49
Transfer (bed/chair)	22	34	34	76	52
Continence					
Continent	55	44	55	24	40
Occasional accidents	33	35	31	30	31
Incontinent	12	21	14	46	29
Barthel Index of ADL (grouped)					
Very low & low dependence (score 13–20)	59	46	52	12	34
Moderate dependence (score 9–12)	29	30	28	19	24
Severe dependence (score 5–8)	10	18	16	32	23
Total dependence (Score 0–4)	2	7	4	37	19
Require nursing care					
Daily dressings	16	21	17	39	28
Bedfast procedures			2	24	12
Other tasks	9	7	9	37	22
Any tasks	21	27	23	66	43
Number of individuals	206	243	865	1124	2438

Table 4.5: Cognitive impairment and behavioural problems of admissions, by type of place to which admitted

Dependency characteristics	Residential place			Nursing place	All places
	Local authority %	Voluntary %	Private %	%	%
MDS CPS categories					
Intact (0)	24	19	22	18	20
Borderline intact (1)	14	16	15	10	13
Mild impairment (2)	11	12	13	9	11
Moderate impairment (3)	24	20	26	17	21
Moderately severe impairment (4)	6	9	7	10	8
Severe impairment (5)	21	23	16	32	24
Very severe impairment (6)	0	<1	<1	4	2
Frequency of problem behaviour					
Never/very unusual	67	60	69	65	66
Sometimes (weekly)	23	23	19	20	20
Frequently (daily)	10	17	12	16	14
Number of individuals	206	243	865	1124	2438

Appropriateness of placements

17. A series of logistic regression analyses was applied to examine the predictive power of the variables shown in tables 4.1 to 4.5 (see table 11.6 in the Toolkit). The analyses compared the characteristics of people who were admitted to a nursing home place with the characteristics of those who were admitted to a residential place.

18. When considering personal characteristics (age group, sex, Barthel score, cognitive functioning, problem behaviour, need for nursing care, disorders and diseases, and reasons for admission), using the Barthel score alone achieved nearly 75 per cent correct predictions. Including age group, sex, cognitive functioning and problem behaviour with the Barthel score did not improve the overall proportion of correct predictions, although sex (being female) and mild cognitive impairment were significantly associated with admission to a residential place. Inclusion of need for nursing care, disorders and diseases, and reasons for admission improved the overall proportion of correct predictions to nearly 80 per cent.

using the Barthel score alone achieved nearly 75 per cent correct predictions

19. Following the consideration of individual characteristics, the additional effects of household composition and source of admission were investigated. This revealed that those who had been living alone were almost twice as likely to be admitted to a residential place, while those who had been living in another home or hospital were over twice as likely to be admitted to a nursing home place. The inclusion of these variables slightly altered the importance of the other variables (for example arthritis and deafness), but all of the variables were still statistically significant at the 5 per cent level, and the overall proportion of correct predictions was increased to over 81 per cent.

20. A further development, not shown in table 11.6, examined the effect of the overall supply of residential and nursing home places, obtained from Department of Health statistics, and the relative supply of residential and nursing home places. These variables were statistically significant but, again, the inclusion of these variables slightly altered the importance of the other variables in the equation, reducing the importance of the arthritis variable to just below the 5 per cent level of statistical significance. As a result, the proportion of correct predictions was reduced slightly, to just under 81 per cent.

21. Overall, the model was slightly better at predicting admission to a residential place than to a nursing home place. The cut-off probability for the percentage of correct predictions in the model was 0.5. Eleven per cent of people admitted were predicted to have been admitted to a residential home but were in fact admitted to a nursing home place. This compares with 7 per cent who were predicted to have been admitted to a nursing home place but were actually admitted to a residential place.

Authorities varied in the degree to which they placed people in the opposite type of place to that predicted by the model.

22. Authorities varied in the degree to which they placed people in the opposite type of place to that predicted by the model. Using a probability of under 0.33 to denote a low predicted probability of placement, eight local authorities made more than 10 per cent of placements in the opposite type of place to that predicted. The maximum proportion of such placements in any local authority was 20 per cent. Among these eight authorities, five made the majority of such placements in nursing places, one made the majority of such placements in residential places, and two made similar proportions of such placements in residential and nursing home places.

Outcomes at 30 months

23. Table 4.6 shows the proportion of individuals who died by 30 months, and their mean length of survival following admission, according to the type of place that they were admitted to and the type of place predicted by logistic regression (table 11.6).

Table 4.6: Survival of individuals 30 months after admission, by type of place to which admitted and type of place predicted

Place to which admitted	Place predicted	Number of individuals	Died within 30 months (%)	Mean survival of those who died (months)
Residential	Residential	1095	57	12.3
Residential	Nursing	168	69	11.3
Nursing	Residential	260	68	8.6
Nursing	Nursing	760	82	7.7
All places	All places	2283	67	9.9

24. Individuals who were predicted to have been admitted to a residential place were less likely to have died by 30 months than those predicted to have been admitted to a nursing place, whether they had been admitted to a residential place or to a nursing place. The mean length of survival of those who had died was also slightly longer for those who were predicted to have been admitted to a residential place than for those who were predicted to have been admitted to a nursing place, whichever type of place they had actually been admitted to, but the differences were not statistically significant. However, among those who were predicted to enter the opposite type of place to the one that they had been admitted to, the difference between the mean lengths of survival of those who had died (11.3 months and 8.6 months) was statistically significant ($p < 0.05$).

Discussion

25. Considerable variation between local authorities was observed in the proportions of older people supported in care homes who are living in nursing homes as opposed to residential homes. What can explain this variation?

26. The logistic regression analysis correctly predicted the placement of over 80 per cent of people at the point of admission, based on their individual characteristics. As discussed further in Chapter 5, mortality rates were much higher among people admitted to nursing homes than among those admitted to residential homes, as would be expected if appropriate decisions were being made. In addition, mortality rates within the group of those apparently placed inappropriately (table 4.6) suggest that some of the remaining unexplained variation between authorities in placements can probably be accounted for by some aspect of individual health that was not captured by the survey. For example, it may have been apparent at assessment that an individual's health was declining rapidly or, conversely, that they were on the road to recovery. It would therefore appear that local authorities were placing people in nursing home care on a consistent basis appropriate to the individuals' needs. However, this means that the observed variation between local authorities in their level of admissions to residential and nursing homes was due primarily to some other factor.

27. Turrell et al. (1998) suggest that variations in the relative supply of residential and nursing homes are likely to result in some misplacement. Construction of supply indicators is hampered by the lack of geographical correspondence between local and health authorities and the use of homes beyond the local authority boundaries, particularly in London (Bebbington and Darton, 1995). The supply indicators that were used were found to be statistically significant but did not improve the predicted proportion of correct placements. With the caveats

about measurement of supply, this suggests that there is little evidence that authorities were being constrained in placement by factors beyond their control.

28. Could the variation in the proportion of publicly-funded residents in residential and nursing homes be due to the types of people who approached local authorities, as a result of differing policies on continuing care? The low levels of people discharged from care homes to hospital suggest that this is unlikely, indicating that there was little variation in levels of dependency between people being admitted to care homes in different areas.

29. Some of the variation could be accounted for by differing community care policies. The fact that the dependency characteristics of individuals accounted for most of the variation in placements suggests that those authorities with a high proportion of nursing home placements relative to residential home placements were admitting a higher proportion of more heavily dependent people. This would suggest, in turn, that they were more successful than other authorities in maintaining people at home.

30. The survey revealed five factors that were associated with increased probabilities of placement in residential rather than nursing care: arthritis, deafness, family breakdown, living alone and lack of motivation. It is possible that innovative interventions with respect to these factors could offer scope for diversion away from admission to a care home. These issues are discussed in more detail in Netten et al. (2001a).

Conclusions

- Dependency characteristics of the individual explained the placement of nearly 75 per cent of admissions, and other individual characteristics increased the figure to over 80 per cent.
- Five factors were associated with placement in residential rather than nursing care: arthritis, deafness, family breakdown, living alone and lack of motivation.
- There was little evidence that local authorities were being constrained in placement decisions by supply factors.
- There was a relatively high level of consistency between authorities in placement decisions.
- The variation across authorities in the proportion of admissions to nursing homes is likely to have been due, at least in part, to differing community care policies.

5 Length of Stay and Mortality

Introduction

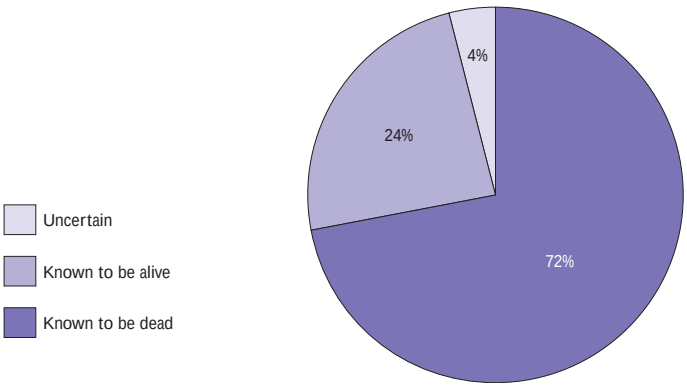
1. Information about the expected length of stay for people admitted to a care home is important for predicting lifetime costs as well as for planning purposes. Primarily, length of stay will be determined by mortality because very few people admitted to a care home subsequently return to a private household (see Chapter 8).

2. In this chapter, variations in survival following first admission as a publicly supported resident are related to circumstances at the time of admission. Survival has been examined for all individuals, even if they subsequently left care homes. The result is a method of predicting life expectancy, which is presented in Chapter 11 (tool 4).

Survival rates

3. Figure 5.1 shows the survival status at 42 months after admission. The 'uncertain' group includes cases without a confirmed status at 42 months but mainly consists of people who had declined to continue participation in the study (see Chapter 1).

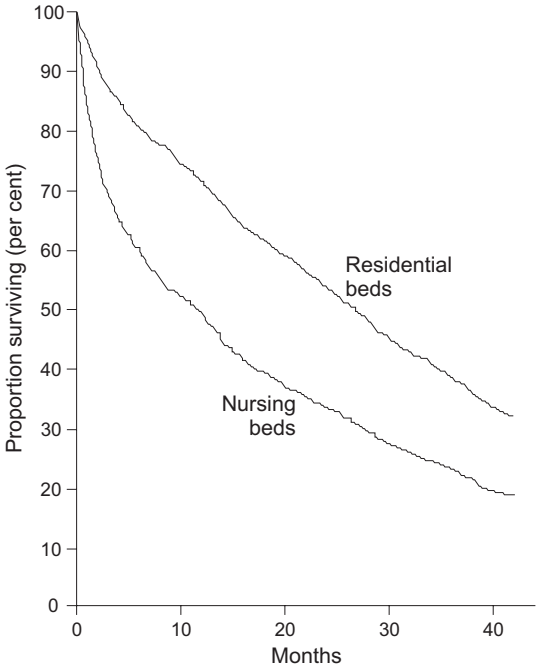
Figure 5.1: Survival rates at 42 months after admission



a median survival period of 19.6 months for all admissions

4. Standard life table methods have been used to arrive at median survival rates following admission. These methods centre on the calculation of mortality rates which predict the probability of dying in a given time interval following admission, given survival up to that point. Analysis of the data using these methods shows a median survival period of 19.6 months for all admissions.

Figure 5.2: Kaplan-Meier survival probability for people following first admission to a care home



Survival according to type of bed

5. Survival rates vary according to the type of bed to which the person is admitted. The median survival for people admitted to nursing beds is 11.9 months and for residential beds is 26.8 months. Figure 5.2 shows that people admitted to nursing beds suffered particularly high mortality in the first three months following entry. The probability of dying in the first three months is 30 per cent, compared with 12 per cent for people admitted to residential beds. In the longer term the hazard rates converge to 3 per cent per month for the combined sample.

6. It is of interest to ask whether the 'uncertain' cases lost to follow-up could have greatly affected the above estimates. Two extreme possibilities might be considered. The first is pessimistic: that everyone with whom contact was lost died immediately after the last date on which contact was made. The second is optimistic: that all those lost to follow-up are still alive at 42 months (see table 5.1). It is evident from this that median survival estimates might be a little different if the people for whom there is incomplete information were very atypical in their outcomes.

Table 5.1: Survival estimates using different assumptions

	Median survival for residential bed admissions (months)	Median survival for nursing bed admissions (months)
Pessimistic assumption	24.7	10.9
Central estimate	26.8	11.9
Optimistic assumption	27.8	12.2

Factors affecting survival rates

7. Several things seem to be associated with survival following the point of first admission. Figure 5.2 has illustrated differences according to placement, but other factors can more properly be described as likely causes of survival. We can therefore talk about their *effect* on survival. Table 5.2 lists those factors that at the outset we hypothesised would be most likely to affect survival. In Chapter 11 (tool 4) we introduce a statistical model which examines the effect of each of these, taken collectively, on the hazard rate — the rate at which people are dying at any particular point in time (see Glossary in Chapter 1). This approach uses a regression-like statistical model, Cox's Proportional Hazards Model (Parmar and Machin, 1995) which does not assume that the hazard rate is a constant — figure 5.2 shows clearly that it is not. Instead it relies on an assumption that the hazard rates for different types of person remain in constant ratio to one another. This assumption has been checked and seems reasonable for all the factors listed in table 5.1, except possibly the placement sector. People admitted to nursing homes have particularly high mortality rates in the first few months.

8. As the hazard rates are assumed to remain in constant ratio to one another at all points in time, we can compare people of different types according to that ratio. This tells us whether one type of person has a higher or lower mortality rate than another. These hazard rates, from the Proportional Hazards Model, are shown in table 5.2. A similar approach was used by Breuer et al. (1998) to assess factors affecting life expectancies in a US nursing home survey, and full details of the analysis are given in Chapter 11. It is based on 2191 people who were first-time supported admissions and for whom all the requisite information is complete.

Table 5.2: Proportional hazard model for factors affecting death rates in residential and nursing homes (including assessment of appropriate bed)

	p	Risk ratio
Area of origin	0.08	
Shire county		1.00
Metropolitan district		0.89
London		0.89
Age at admission*	<0.01	
65 to 74		1.00
75 to 84		1.42
85 and over		1.99
Sex*	<0.01	
Male		1.00
Female		0.75
Diagnosed illness at admission		
Dementia	0.49	0.96
Depression	0.61	1.04
Cardiovascular	0.15	1.10
Respiratory*	<0.01	1.40
Malignancy*	<0.01	2.34
Stroke	0.77	1.02
Incontinent (urine or faeces)	0.28	0.93
Barthel score at admission*	<0.01	
0–4		1.89
5–8		1.30
9–12		1.27
13–20		1.00
Cognitive functioning (MDS CPS, grouped)*	0.04	
Intact		1.00
Mild impairment		1.15
Severe impairment		1.25
Source of admission	0.12	
Private household		1.00
Care home		1.01
Hospital		1.13
Other		1.29
Bed type*	<0.01	
Local authority home		1.00
Private or voluntary residential bed		1.16
Nursing home bed		1.51

*Note: Factors marked * are significant at the 5 per cent level.*

9. Table 5.2 shows the effect of each factor independent of all other factors. For example, in any short period of time after admission, a woman is only 75% as likely to die as a man, everything else being equal. Thus women are better survivors than men. Not all the factors are statistically significant (low 'p' value), even with the large sample size of this study, and their effect if any could at most be slight. The factors at admission which do significantly raise subsequent mortality are, in order of their statistical significance:

- having a malignancy (cancer)
- having a low Barthel score (high dependency)
- old age
- admission to a nursing bed
- being a man
- being admitted from a hospital
- having a respiratory illness
- cognitive impairment.

10. The factors at admission that significantly reduce subsequent mortality are:

- being younger
- being a woman
- being admitted to a local authority residential home
- having a high Barthel score
- being admitted from another care home (many of whom are spend-down cases).

11. Factors that make no difference (after other factors are allowed for) include region of residence, depression, cardiovascular disease, incontinence, being diagnosed with dementia, being admitted following a stroke. Local authority of origin was included in the analysis but proved not to be a significant factor.

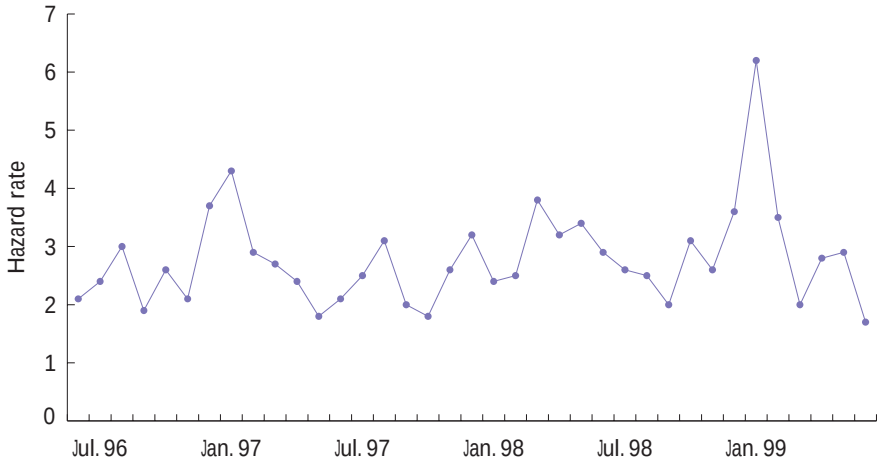
Seasonality

the average mortality rate is as much as 36 per cent higher in the winter months of December to March as it is in the other eight months of the year

12. The hazard rates for death do vary a certain amount from month to month, and one possible reason for that might be to do with the season. It is well established that there is an excess mortality in winter among older people. In order to examine whether the same is true in care homes, the evidence shown in table 4.1 has been reorganised according to the calendar month, rather than according to the number of months since admission. Because there is an initial high mortality, this series is not started until June 1996, when all surviving residents had been in a care home for at least six months. The trend in monthly hazard rates tends to level off after this point.

13. Figure 5.3 shows that there are pronounced peaks in the monthly record, particularly for January 1997 and January 1999. The former winter was particularly cold. The winter of 1997/98 was exceptionally mild, but there was a cold snap in late November and early December. Figure 5.3 does seem to indicate that mortality is higher in winter. Indeed, the average mortality rate is as much as 36 per cent higher in the winter months of December to March as it is in the other eight months of the year.

Figure 5.3: Monthly hazard rate, June 1996–June 1999



14. The Department of Health 'Keep Warm' campaign is based on the assumption that many of the excess deaths in winter are avoidable if older people were able to keep themselves warmer. Warmth should not be a problem for people who spend nearly all their time within a care home. So our results suggest that high winter mortality among older people is not simply the result of the cold. The higher incidence of infectious diseases, and possibly such factors as Seasonal Affective Disorder, would have to be responsible to explain the seasonal variations in care homes.

Average length of survival

15. The above analysis gives an indication of the factors at admission that will affect typical length of life, and so length of stay in care homes. However, when planning in aggregate for the cost consequences of admissions, it is important to determine not the median, but rather the expected, or average survival, given

average and median length of stay can be considerably different

these factors. The average and median length of stay can be considerably different, due to a small proportion of people who may remain many years in a care home, and so who add to overall average life expectancy. In principle, the actual average will not be known until the last person from this cohort has died, and this might not be for 25 years or more. However, as the number of people surviving beyond 42 months is only one quarter of the original, it is possible to make assumptions about what will happen in future to the remainder, enabling an average to be calculated.

16. This can be done using a forecasting model. Such a model must make assumptions about the processes affecting future mortality. Assuming that, after 42 months, the hazard rate will remain at a constant rate for each survivor, corresponding to the average level between 30 and 42 months, but making allowance for the factors at admission which have already been shown to influence survival, this model predicts an average length of survival of 29.7 months following admission. The form of this model is shown in the toolkit (Chapter 11).

an average length of survival of 29.7 months following admission

17. If the death rate were to be either 10 per cent higher or 10 per cent lower than that predicted by the model for survivors beyond 42 months, average life expectancy following admission would be between 28.9 and 30.7 months.

Trends

18. The question is often raised as to whether average survival is increasing or reducing. Improving quality of care, and the increasing targeting of services on people with cognitive health conditions, might be expected to improve survival and thus increase costs. The changing nature of services, with the decline in use of long-stay hospitals and the rise in nursing homes, generally makes comparisons difficult, but there is an early comparable study of survival in Leicestershire in 1976: a census with a longitudinal follow-up of 4,514 older people in institutional care (Donaldson et al., 1980).

19. Using standard life-table techniques (rather than a cohort approach as in our case) the authors estimated a median survival of 24 months across people in all types of institution, a figure somewhat higher than our estimate of 19.6 months in 1996. Although we cannot reproduce the ADL index used in the Leicestershire study precisely, an approximation is possible that suggests dependency is now slightly greater on average. This is in line with established trends (Netten et al., 2001a, Chapter 2). The implication is that survival has probably fallen slightly through time as dependency has risen. It is not possible to speculate as to whether there has been an improvement for people in a similar state of health.

Predicting survival

20. The models used above can in principle be used to predict survival in individual cases. The Toolkit (Chapter 11, tool 4) illustrates how this can be done. However, these estimates are highly variable and of very limited use in a single case. The Toolkit also provides more detailed estimates for different types of people, which may be helpful for planning purposes.

Conclusions

- The median survival for the whole sample is 19.6 months (±0.9 months). For those originally admitted to nursing beds it is 11.9 months (±0.9 months), and for residential beds it is 26.8 months (±1.0 months).

- Mortality rates are high initially, especially in nursing beds, but after about twelve months settle to around 3 per cent per month for the combined sample.
- The factors at admission that significantly raise subsequent mortality are, in order of significance: having a malignancy (cancer), having a low Barthel score (high dependency), old age, being a man, being admitted to a nursing home, being admitted from a hospital, having a respiratory illness, being cognitively impaired.
- Death rates are higher in winter in care homes.
- There are no significant differences between local authorities in survival outcomes, after taking into account factors such as dependency at admission.
- As a few residents will live for a long while, the average length of survival is much greater than the median. Although this average cannot be calculated precisely until all have died, the best estimate is 29.7 months and almost certainly in the range 28.9–30.7 months.
- There is limited evidence on trends, but some indication that survival among older people in institutional care is slightly shorter now than 20 years previously.

6 Health Outcomes

Introduction

1. A major aim of this study has been to establish the outcome of an admission to a care home, in terms of the health and survival of the person admitted. There are two applications for this investigation.

- *As a guide to quality.* A concern of care homes is to provide an enabling environment and to support and maintain the health of residents as far as is practicable, and these are criteria by which homes may be judged. Arguably, one home is better than another if residents in similar circumstances at admission live longer, enjoy better health, and are more able to manage basic activities.
- *For planning.* A goal of the work is to investigate the practicality of predicting subsequent health following admission, as a guide to care planning.

2. This chapter looks at how levels of dependency and cognitive functioning change over time following admission, using the Barthel and MDS CPS scales respectively (see Chapter 1). Healthy life expectancy following admission is examined and this is related to the recent debate over whether some people are unnecessarily admitted to a care home.

3. There are certain reliability issues with measures of health change over time, including missing data and fluctuations in health. This study has enjoyed particularly low levels of missing data and the Barthel and MDS CPS are both well-established scales that have been thoroughly tested for their reliability. However, the scope for predicting or explaining why changes in health occur is limited.

Changes in dependency following admission

4. Figure 6.1 shows the distribution of levels of dependency at admission. Figure 6.2 shows the proportion of people who experienced significant changes in dependency between survey waves. This shows that a surprising number improved (by four or more points on the Barthel scale, which Collin et al. (1988) suggested is highly likely to represent genuine change) in the first six months. This initial improvement might have been due to particular difficulties around the time of admission, which resolved later.

5. After the first six months, however, comparatively few people improved and the general trend was towards greater dependency.

6. It is of interest to ask in what respects improvements were achieved, and conversely, what aspects of dependency are least likely to improve.

Figure 6.1: Dependency at admission, among people admitted to residential and nursing home care (Barthel Index of ADL)

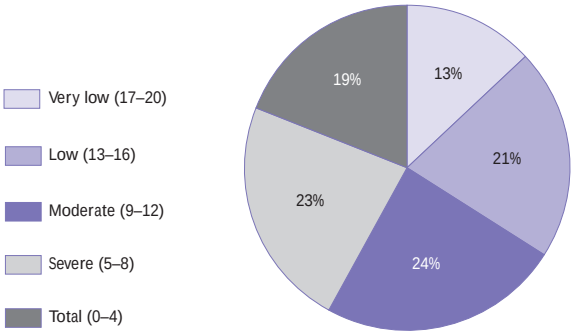
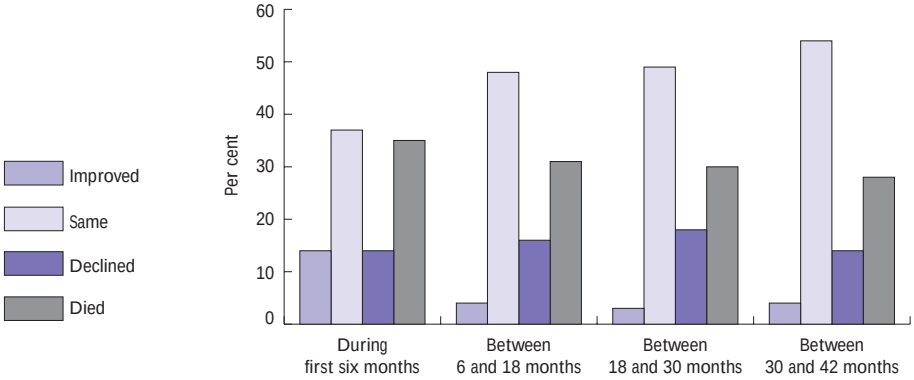


Figure 6.2: Changes in dependency following admission (Barthel Index of ADL)



- *Feeding* stood out as the area where most improvements were made following admission. Improvements continued to occur later on as well, to a greater extent than any other ability.
- *Continence* likewise showed good gains immediately following admission, and showed low rates of decline throughout. However, if the gains were not made immediately after admission, they were much less likely to occur later. This finding probably reflects improved management of incontinence following admission, rather than any great improvement in the underlying condition.
- *Mobility* also stood out as an ability that was well maintained, and declines were low. Again, this is probably due to the regime in homes providing support to prevent residents becoming wholly bedfast or chairbound.

people with specific health diagnoses at admission were most likely to improve

7. People who improve shortly after admission might seem good candidates for measures to postpone an early long-term admission, particularly those who achieve a moderate or low level of dependency as a result of their improvement. The study compared these with the remainder to see if they could have been identified at the time of admission. The criterion for an improvement is a gain of four or more points on the Barthel scale, with a final score exceeding eight. Because individuals with initially high scores may be unable to improve that much (because of the nature of the scale), only people who scored 14 or less at admission were considered.

8. Analysis of the factors that vary significantly between 'improvers' and others shows that it is those who were comparatively independent at admission who improved most. What is particularly noticeable is that it was people with specific health diagnoses at admission who were most likely to improve. However, perhaps surprisingly, it was not people discharged from hospital (presumably following some acute condition) who were most likely to show subsequent improvement. So it is not premature discharge from hospital that provides the greatest missed opportunities for possible rehabilitation. Rather, these are to be found among

people admitted from private households with chronic diseases. Possibly these are diseases that may undergo remission, and thus enable the person to be more independent, at least for a while.

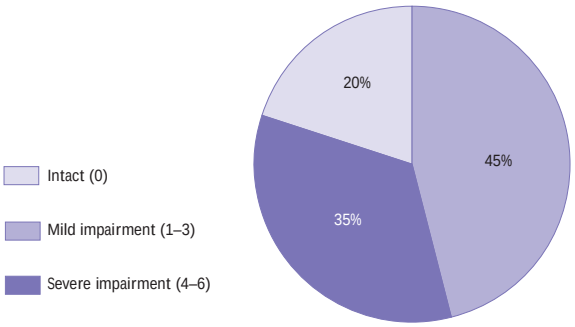
9. Theoretically, it would be possible to generate an equation that predicts, from the circumstances at admission, who is likely to make significant improvements in their dependency by six months. However, when this is attempted, the level of prediction turns out to be too small for this to have much practical use in individual cases.

Changes in cognitive function following admission

10. Cognitive functioning was measured in this study using the MDS Cognitive Performance Scale. This scale is based on five items, but combined in a complex manner to produce seven levels of functioning. For this analysis the seven levels were reduced to three (see Chapter 1).

11. Figure 6.3 shows the situation at the time of admission. The majority of new admissions were described as showing some degree of problem. Transition rates show that there were as many recoveries as declines in the first six months, when indeed the majority of survivors were in the 'mildly impaired' category. However, over the next two waves of the study more people declined than improved.

Figure 6.3: Cognitive functioning at the time of admission, among people admitted to residential and nursing home care (MDS CPS)



No factors at admission appear to be predictive of subsequent changes in cognitive functioning.

12. Of those who survived to the end of the study, 42 per cent were severely impaired compared with 35 per cent at the outset. It is notable that though there was only a slight relationship between cognitive functioning and mortality in the first six months, in subsequent waves death rates were much higher among those who had been severely dysfunctional. No factors at admission appear to be predictive of subsequent changes in cognitive functioning.

Healthy life expectancy following admission

13. A forward Markov chain model has been used to estimate healthy life expectancy following admission, based on the transition rates between levels of dependency and cognitive functioning. This model, which is regarded as the best method of estimating healthy life expectancy but has rarely been applied in practice, has been used to estimate the proportion of remaining life that will be lived at various health states, given state of health at admission. Like the survival model in Chapter 5, it assumes proportionality: that is, although the expected length of remaining life may vary depending on age, gender, etc., the proportion at different states of health will be similar. Estimates of the transition rates are given in Chapter 11 (tool 5).

Table 6.1: Healthy life expectancy by dependency (grouped Barthel Index of ADL) at admission

	Dependency at admission			
	Total	Severe	Moderate	Low
Median life expectancy (months)	6.6	15.9	18.8	27.5
Percentage of remaining life with				
Total dependence (0–4)	64	30	22	16
Severe dependence (5–8)	20	39	21	14
Moderate dependence (9–12)	9	14	28	18
Low dependence (13–20)	7	17	29	51

Interpretation: A person who is totally dependent at admission can expect to live for six months. Their expectation is that 64% of this will be in total dependence, 20% in severe dependence, etc.

14. Table 6.1 shows the outcomes. It can be seen that a person who has low dependency at admission can expect to live about half their remaining life at this low level. A person with total dependency at admission can expect to live about two-thirds of their remaining life at this level. Median survival and subsequent expectation of healthy life are very different depending on life expectancy at the outset. For a typical person, the expectation of life in total dependency is about four months regardless of their state of health at admission.

For a typical person, the expectation of life in total dependency is about four months regardless of their state of health at admission.

15. Cognitive functioning is shown in table 6.2. It also appears that those who are admitted with severe dysfunction are likely to spend the greater part of their remaining life in that state. Those who are intact at admission can however expect to decline, and can expect to spend nearly three-quarters of their remaining life with some degree of problem.

Table 6.2: Healthy life expectancy by cognitive functioning (grouped MDS CPS) at admission

	Cognitive functioning at admission		
	Severe	Mild	Intact
Median life expectancy (months)	14.9	20.2	23.0
Percentage of remaining life with			
Severe impairment	62	35	26
Mild impairment	30	49	34
No impairment (intact)	8	16	40

People with low needs in care homes

16. These conclusions can be compared with those of the contemporaneous National Audit of Nursing Home Placements (Millard, 1999). This found that significant numbers of people in nursing homes have needs which do not seem to warrant such intensive care. The audit was of 1,179 people fairly recently admitted to a nursing home, nearly all with state support. There was no longitudinal element to the audit, though documentation from the time of admission was examined where possible to determine the person's condition at that time. Dependency at the audit was measured with the Barthel scale, and a need assessment was undertaken by specially trained nursing, social work and medical staff.

17. The audit found that a quarter of residents in nursing homes had a Barthel score of 11 or higher, a result that exactly matches that in our companion survey (Netten et al., 2001a). This level was considered to be above that for which nursing care is needed. Two-fifths of residents were judged to have improved since admission with respect of diagnosed medical conditions. The auditors considered that 17 per cent no longer needed nursing care; and it was concluded that the decision to admit to nursing care may have been taken too soon.

18. The longitudinal element of the present study gives a rather different slant to this picture. Like the National Audit, the present study found significant numbers of improvers among the survivors of the first few months. We examined people

Those who are intact at admission can however expect to decline and will spend more than half their life with some degree of problem.

who had a Barthel score of 13 or above and no cognitive impairment at the time of admission. Fourteen per cent of admissions were in this group. This proportion stayed fairly constant at each wave of the survey. However, of the people who survived through the 42 months, only 14 — less than 1 per cent of the original admissions — had always had low dependency and intact cognitive functioning.

19. Our study would seem to imply that the National Audit may have over-stated the extent of misplacement, if we take into account what is happening through time. First, because the National Audit did not consider placement decisions for people who died between admission and audit, a group who probably had higher than average need, it may well appear to be over-estimating the extent of poor decision making at the time of admission. Second, although at any given moment there are people who might not need to be in a care home, they might well prove to be 'revolving door' cases. We have shown that it is not easy to predict who will improve. Whether it is worth moving people repeatedly between different forms of accommodation as their needs change must in part depend on a judgement about their welfare. Various commentators have stressed the importance of stability for people at this stage in their live (e.g. Reed et al., 1998).

Conclusions

- This chapter has been concerned to provide descriptive information that may help both individuals and organisations plan the future for people admitted to a care home.
- With regard to dependency:
  - many people improve as well as get worse during the first six months but thereafter there are few improvements;
  - rates of change are greatest in the first six months.
- With regard to both dependency and cognitive function, the evidence suggests that survivors at six months may on average be slightly better off than at the time of admission, but thereafter there will be a slow but steady decline.
- The improvement by six months was most marked in those activities of daily living that might relate to being in a better controlled environment, rather than any real indication that people had recovered in a way that might make them more fit to return to private households.
- Though some people seemed quite independent and mentally alert at each stage of the survey, only 1 per cent of all those admitted were in this condition at every wave of the survey.
- The National Audit (Millard, 1999) may have been over-optimistic about the potential for avoiding nursing home placement, if health changes through time are taken into account.

7 Moves Between Types of Home and Bed

Introduction

1. Examination of moves within residential and nursing home care is of interest both for welfare and for financial reasons. Boaz et al. (1999) note that older people who have moved into a care home often identify advantages of their new homes, including the safe environment, the care they receive and the company of others, but they also do not want to have to move again. Financially, the move from a residential to a nursing home entails considerable extra costs, with the average weekly fee level for private nursing home care being approximately £100 greater than that for private residential home care (Laing & Buisson, 1999).

2. In this chapter information is presented on the number of moves within and between residential and nursing homes: how this relates to the characteristics of people on admission and also to changes in health status.

3. Acute hospital episodes, including short terminal stays, where the care home bed was being kept open, are not included. Returns to the community are covered in Chapter 8.

Moves

4. Table 7.1 shows that only 8 per cent of those admitted to a care home moved to a different type of bed. Ten per cent moved to a different home.

5. People admitted to a residential bed were more likely than those admitted to a nursing bed to move to a different type of bed (10 per cent compared with 5 per cent). They were also more likely to move to a different home (12 per cent compared with 8 per cent). However, these figures do not take account of people admitted from another care home. Including those admitted to a nursing bed from a residential home with those admitted to a residential bed from sources other than nursing homes indicates that 19 per cent of admissions to a residential bed moved to a different type of bed.

6. People admitted to dual registered homes were less likely to move to another home than individuals in the survey as a whole (5 per cent compared with 10 per cent). On the other hand, they were more likely to move to a different type of bed (18 per cent compared with 8 per cent). Among those who moved to a different type of bed, 86 per cent moved from a residential to a nursing bed.

Table 7.1: Destination (type of bed) of individuals in period to 42 month follow-up, by type of bed admitted to and source of admission (percentages)

Type of bed admitted to and source of admission	Same type of bed as that admitted to	Different type of bed	Elsewhere (not in a care home)
All individuals	84	8	8
Admitted to residential bed	79	10	11
From private household	77	12	11
From residential home	82	12	6
From nursing home	82	12	6
From hospital	80	9	12
Admitted to nursing bed	90	5	5
From private household	89	7	5
From residential home	94	3	2
From nursing home	96	2	2
From hospital	90	5	5
Number of individuals	2002	188	189

Characteristics of people who move

7. The study examined the dependency characteristics and cognitive functioning of individuals at admission, according to the type of bed they were admitted to and their destination, defined by the type of bed they occupied.

8. People who moved from a residential bed to a nursing bed were similar to those who remained in a residential bed in terms of their levels of dependency at admission. But 30 per cent of those who moved from a nursing bed to a residential bed had low or very low dependency at admission, compared with 11 per cent of those who stayed in a nursing bed throughout. However, it should be noted that only 10 per cent of people admitted to a nursing bed moved to a different type of bed or left nursing home care.

Changes in dependency among people who move

9. Table 7.2 shows changes in the level of dependency following admission for people remaining in a care home, according to the type of bed that they were admitted to and whether they remained in the same type of bed or moved to a different type of bed. As discussed in Chapter 6, measurement of changes in health status is notoriously difficult. With this in mind, the results suggest that people who moved from a residential bed to a nursing bed were more likely than those who remained in a residential bed to experience increasingly high levels of dependency. Among those who remained in a residential bed, the proportion having a higher level of dependency increased from 20 per cent at the six month

Table 7.2: Change in dependency (Barthel Index of ADL) of individuals who stayed in original type of bed or who moved to a different type of bed in period to 42 month follow-up, by type of bed admitted to (percentages)

Type of bed admitted to and change in dependency from admission[1]	6 months		18 months		30 months		42 months	
	Same type of bed	Different type of bed	Same type of bed	Different type of bed	Same type of bed	Different type of bed	Same type of bed	Different type of bed
Admitted to residential bed[2]								
Lower dependency (≥4 points)	24	6	19	3	19	0	15	7
No change (<4 points)	56	19	54	34	45	23	45	7
Higher dependency (≥4 points)	20	75	28	63	36	77	40	87
Admitted to nursing bed[2]								
Lower dependency (≥4 points)	17	43	17	23	14	11	8	50
No change (<4 points)	61	29	55	50	51	56	53	25
Higher dependency (≥4 points)	22	29	27	27	34	33	40	25
Number of individuals[2]	1098	23	682	54	465	31	378	19

Notes: 1. A change of 4 or more points on the Barthel Index of ADL is classified as a change in dependency (Collin et al., 1988).
2. Excluding individuals with incomplete information.

follow-up to 40 per cent at the 42 month follow-up. However, 73 per cent of those who moved from a residential to a nursing bed had a higher level of dependency following the move, the lowest proportion being 63 per cent at the 18 month follow-up.

10. Among those who remained in a nursing bed, the proportion having a higher level of dependency increased from 22 per cent at the six month follow-up to 40 per cent at the 42 month follow-up. Among all those who moved from a nursing bed to a residential bed, a similar proportion had a higher level of dependency following the move (29 per cent) as had a lower level of dependency (26 per cent).

11. So, as might be expected, people who moved from a residential bed to a nursing bed were more likely to have a higher level of dependency following the move, compared with those who remained in a residential bed. Conversely, those who moved from a nursing bed to a residential bed were more likely to have a lower level of dependency, compared with those who remained in a nursing bed.

Changes in cognitive functioning among people who move

12. People who moved from a residential bed to a nursing bed were also more likely than those who remained in a residential bed to suffer from cognitive impairment at the follow-up. Among those who remained in a residential bed, the proportion suffering from cognitive impairment, defined as MDS CPS scores 2–6, increased from 58 per cent at the six month follow-up to 68 per cent at the 42 month follow-up. Among those who moved from a residential bed to a nursing bed, 84 per cent were suffering from cognitive impairment following the move. However, among individuals admitted to a nursing bed, levels of cognitive impairment among those who moved to a residential bed were similar to those for people who remained in a nursing bed.

Survival according to moves between types of home and bed

13. People who moved to a different type of home or bed were more likely to have survived to 42 months than those who remained in the same type of home or bed. These figures held true irrespective of source of admission.

14. Among those admitted to a residential bed, about 50 per cent of those who subsequently moved to a different home or type of bed survived to 42 months, compared with 27 per cent of those who remained in the same home or type of bed. Of individuals admitted to a nursing bed, 49 per cent of those who later moved to a different home and 52 per cent of those who moved to a different type of bed survived, compared with 12 per cent of those who remained in the same home or type of bed. It is not surprising that people admitted to a nursing bed and subsequently moving to residential care would be less frail than those remaining in nursing home care and, thus, survive longer. However, the greater survival rate among those who moved from a residential bed to nursing home care is unexpected.

Conclusions

- Approximately 10 per cent of people in the admissions survey moved to a different home and 8 per cent moved to a different type of bed in the first 42 months following admission.
- People admitted to a residential bed were more likely than those admitted to a nursing bed to move to a different home or to a different type of bed.
- People admitted to dual registered homes were less likely to move to another

home but more likely to move to a different type of bed than people in the survey as a whole, and the majority moved from a residential to a nursing bed.

- Including people who were admitted to a nursing bed from a residential home suggests that approximately 19 per cent of people admitted to a residential bed subsequently move to a different type of bed.
- Moves from a nursing bed to a residential bed were not associated with changes in levels of dependency and might have been the result of initial misplacement.
- Moves from a residential bed to a nursing bed were associated with a decline in health status after admission.

8 People who Leave Residential and Nursing Home Care

Introduction

1. Table 7.1 described the number of people who move after initially being admitted to a care home, according to where they move. Most, as described in Chapter 7, move to another home. This chapter examines the circumstances surrounding people who actually left residential and nursing home care and returned to the community. A wide range of issues is raised by such moves. These include:

- the rates of discharge from care homes
- the reasons given for leaving a care home
- what levels of support were received in the community following discharge
- whether people soon returned to a care home
- outcomes in terms of health and survival.

The results presented here are based on the first 30 months following admission, after which time very few people were discharged to the community. This chapter also describes briefly the people who were discharged to hospital.

Discharge rates

discharge rates are very low

2. Establishing exact discharge rates is partly a matter of definition. We have accepted all reports of discharge to a permanent place elsewhere, but several of those discharged to hospital died within a few days and perhaps should not have been reported as having been discharged, in our sense. Also, it became apparent that some of those discharged in the early months had been regarded by their care managers as short-term cases even though a definite date of discharge had not been set on entry (see Chapter 1). Even so, however defined, discharge rates are very small. At 30 months after admission, 182 cases had been identified in the survey (7 per cent of the overall sample). 88 (3 per cent) went to live in a private household while 94 (4 per cent) were discharged to hospital.

3. Few of those admitted to a dual registered home moved to a private household or hospital, compared with individuals in the survey as a whole (4 per cent compared with 7 per cent).

4. It is of interest to ask how long it was before residents were discharged. The dates of most discharges are known reasonably accurately, and it is possible to use survival analysis to establish discharge rates through time. Table 8.1 uses a life-table approach that allows for people lost to competing risks (i.e. death, being lost to the study, discharged). This permits computation of the hazard rate, the probability of being discharged in a given month, assuming survival up to that month.

Table 8.1: Discharge rates from care homes

Interval (months from admission)	Number at start	Monthly hazard rate (with standard error) %			
		Discharged to private households		Discharged to hospital	
0–3	2543	0.75	(0.10)	0.67	(0.10)
3–6	1929	0.25	(0.07)	0.33	(0.08)
6–12	1708	0.18	(0.05)	0.11	(0.03)
12–18	1371	0.04	(0.02)	0.16	(0.05)
18–24	1140	0.03	(0.02)	0.03	(0.02)
24–30	858	0.04	(0.03)	0.15	(0.06)

Most moves take place fairly soon after admission

5. Allowing for missing data, the probability of leaving a care home in the first 30 months after admission is 10 per cent. On this basis the 'lifetime' probability of discharge is approximately 11 per cent.

6. Most moves take place fairly soon after admission. The pattern differs a little between moves to a private household and moves to a hospital. For moves to a private household the rate of removal drops off quickly after the first few months, and after 12 months only a trickle return to the community. On the other hand, there are still a few moves to hospital up to the 30 month stage.

Why do people return to private households?

7. Wherever possible the survey followed up people who were discharged to private households. Of the 88 cases, contact was lost with 12, who mostly moved away from the area. For further detailed information we were reliant on a case worker maintaining close contact, which happened in 41 cases.

8. Reasons for the move have been given in 37 cases where a track was successful (table 8.2). The nature of institutional care was found to be unacceptable by a large proportion of the people who returned to the community. The most common reason given for the move was that the resident 'did not settle' – some aspects of care such the loss of autonomy and the lack of privacy being cited as factors. The second most common reason given by their social workers for the resident's return to the community was that their health status or functioning had improved (24 per cent). An additional 11 per cent of all cases stated that rehabilitation had been successfully completed, indicating that in at least these cases there had been a planned programme to facilitate a return home. These reasons can be supported by detailed examination of the evidence in the following sections:

- appropriateness of placement
- recovery
- rehabilitation
- availability of alternatives.

Table 8.2: Principal reasons for discharge — people discharged to private households

Reasons for discharge	%
Resident did not settle	43
– wanted to be in own home	27
– wanted to be with partner	5
– did not like sharing/lack of privacy	8
– found other residents too confused	3
Physical condition improved	24
Rehabilitation successfully completed	11
Carer able to resume caring	3
Other	19

Based on 37 people providing reasons

Appropriateness of placement

9. The majority of people discharged to private households had originally been admitted to residential beds, which probably reflects the lower dependency of people in those establishments. Nevertheless, 30 per cent had been admitted to nursing beds.

10. Is there anything about the people who left a care home that might suggest that the placement was not really appropriate in the first place? We can draw some conclusions by examining the circumstances at admission of people of those who returned to living in the community. Table 8.3 shows that they were slightly

Table 8.3: Characteristics at admission of people who moved out of residential or nursing home care within 30 months of admission

Individual characteristics	Moved to private household %	Moved to hospital %	All admissions %
Age group			
65 to 69	6	5	3
70 to 74	15	17	9
75 to 79	23	10	17
80 to 84	19	35	26
85 and over	38	33	45
Sex			
Male	26	36	29
Female	74	64	71
Source of admission			
Hospital	43	51	52
Community	50	39	34
Other	7	10	14
Household composition			
Lived alone	60	71	64
Lived with others	40	29	36
Barthel Index of ADL (grouped)			
Very low dependence (score 17–20)	27	22	13
Low dependence (score 13–16)	24	28	21
Moderate dependence (score 9–12)	21	27	24
Severe dependence (score 5–8)	12	15	23
Total dependence (score 0–4)	16	9	19
Cognitive functioning (MDS CPS, grouped)			
Intact (0)	32	19	20
Mild impairment (1–3)	54	50	45
Severe impairment (4–6)	14	31	35
Diagnosed at admission with			
Dementia	22	47	38
Arthritis	41	30	32
Stroke	18	19	21
Cardiovascular disease	23	18	19
Respiratory disease	13	15	14
Malignancy	3	5	8
Major reasons for admission			
Physical needs	82	75	79
Mental health needs	32	47	44
Carer needs	38	43	40
Housing problem	27	6	15
Lack of motivation	26	28	21
Social contact	7	2	2
Other	6	13	5
Number of individuals	88	94	2543

younger than average and were more likely to have been admitted from a private household than from a hospital. However, they were not self-evidently people with a surviving a partner in the community who might resume their support. Sixty per cent had been living alone prior to admission, a similar proportion to that for all admissions.

11. The most striking characteristic of those returning to live in a private household was their relatively low level of dependency at the time of the original admission. More than a quarter were rated as highly independent on the Barthel scale. The levels of cognitive impairment of people returning to the community were also lower overall. Thirty-two per cent were cognitively intact at admission and only 14 per cent were severely impaired compared with 34 per cent of all admissions. Table 8.3 also indicates that housing problems and social isolation were mentioned more frequently as reasons for admission by those who subsequently left residential or nursing home care. Put together, this might well suggest that some of those who subsequently returned to the community from residential or nursing home care did not really need this form of care in the long term.

Recovery

12. Improvement in health was given as a reason for leaving care in one quarter of cases (table 8.2). This is supported by the evidence of changes in dependency between admission and follow-up after discharge to the community (see table 8.4). One third of cases with dependency information at follow-up showed an improvement of four or more points on the Barthel scale, which is considered a significant measure of improvement (Collin et al., 1988). Typically these were people with a low initial score, whereas those who did not improve were mostly fairly high on the Barthel scale to start with. Thus, at discharge, the great majority were fairly able on the Barthel scale.

Table 8.4: Changes in dependency for people who were discharged to a private household, by dependency at admission (Barthel Index of ADL)

Barthel score at admission	Improved	Same	Deteriorated	No follow-up score
Very low dependence (17–20)	–	9	2	9
Low dependence (13–16)	2	8	1	8
Moderate dependence (9–12)	4	5	2	3
Severe dependence (5–8)	5	1	1	3
Total dependence (0–4)	5	2	–	4
Number of individuals	16	26	7	28

Note: Improved: by 4 or more points; Same: stayed within four points; Deteriorated: by 4 or more points.

13. A similar story emerges from looking at survivors at 30 months. Of the 21 leavers for whom health status was obtained at 30 months, 15 (71 per cent) scored the same or better on the Barthel score than they had at admission. By comparison, only one-third of those still alive in care homes were no worse in terms of their Barthel score. Further evidence that recovery was a factor in discharge is that subsequent survival rates of people discharged were better, even allowing for health differences at the time of admission (see *Survival*, below).

Of the 134 for whom rehabilitation was given as a reason for admission, only 14 (10 per cent) actually did return to the community.

Rehabilitation

14. Although rehabilitation became a major theme following *Modernising Social Services* (Cm 4169, 1998), even at the time of the admissions survey it was seen as a significant role for care homes. In 6 per cent of all cases one of the main reasons for admission was stated to be the need for rehabilitation. Compare this with the 3 per cent who actually did return to a private household. Of the 134 for whom

rehabilitation was given as a reason for admission, only 14 (10 per cent) actually did return to the community.

15. Rehabilitation as a reason for admission varied greatly between local authorities. In one authority, 16 per cent of all admissions were said to be for rehabilitation, while in others there were no cases. The former authority, a metropolitan borough, was also to become the one with the highest rate of discharges to the community (11 per cent of its admissions). This borough had a positive policy of admitting older people to homes specifically for the purposes of rehabilitation and convalescence and had a history of good partnership with the health authority.

16. Discharges to the community were particularly rare in London. Only two out of 262 London admissions returned to private households. There may be particular barriers at work here, perhaps related to out-of-borough placements, admission policies or practice issues.

Availability of alternatives

17. Table 8.2 shows that in only one case was the resident able to return to a private household because a carer was again available, though there were probably more instances. There were a couple of cases where residents were able to return to the community because their housing difficulties had been resolved (by providing them with sheltered accommodation).

What happens following return to a private household?

Living circumstances

18. The 41 people for whom we have most information fall into two distinct groups. Eighteen returned to the community to live in a household with another person or persons. These people had mostly been highly dependent at the time of admission, two-thirds being rated as severely or totally dependent on the Barthel Index (scores 0–8), and one-third were severely cognitively impaired. Typically, they had made some improvement while in the home, so that after discharge the Barthel scores for half of them had improved by more than four points. For the most part they were able to return to the community because informal support was available there for them.

19. The larger group of 23 returned to live alone. Nearly three-quarters of this group had been of low or very low dependency at admission (Barthel scores 13–20), and half of them were cognitively intact (compared with 20 per cent of all admissions).

Continued social services support

20. Of the 41 in touch with a case worker, 34 were in receipt of services. We must assume that the level of involvement was lower in the cases where there was no contact. So it is likely that at least one quarter — and perhaps many more — did not receive support from social services in the long term after discharge.

21. However, those who did receive services often got a lot. The extreme was one case reported to be allocated five hours of home help and four community nurse visits per day, but this was probably for just a short period. Table 8.5 shows the average amount of support received. It did not seem to matter whether or not the person was returning to live alone. Possibly this was because those returning to live with others were more dependent and had a need for respite care.

Table 8.5: Average service receipt, by household composition, for people discharged to private households who continued to receive community services (percentages)

Service details	Living alone	Living with others
Home care hours per week	10	11
Community nurse visits per week	2	1
Meals delivered per week	1	1
Day care days per week	1	1
Respite days per year	14	29

Return to a care home

22. Of the 88 who were discharged to a private household, 15 are known to have returned to a care home by 30 months, or before they died. Often the return was quite quick. Only six of these 15 had remained in the private household for three months or more.

Survival

leavers survive longer

23. It is not surprising in view of their better health, that people who return to private households survive longer than average. Of the 88 who were discharged, at 30 months 41 had died, 33 were alive and the status of 14 was unknown. This includes people who subsequently returned to a care home. Their median survival is estimated as 26 months, compared with 18 months for the remainder of the admissions group. Even if we allow for the circumstances at admission, using the statistical model given in the Toolkit, it is still the case that leavers survive longer. The odds that they will die in any given month is only half that of people who never leave. This is further evidence of the link between health improvement and subsequent discharge.

People discharged to hospital

24. Ninety-four people were identified as having been permanently discharged to hospital. The study was concerned to distinguish those who were admitted to hospital for a short period prior to death from those for whom the move was 'permanent', but it is obvious that the distinction is a fine one. Only 53 of those discharged to hospital are known to have survived for more than two weeks subsequently (with another nine 'not certain'), and the assumption must be that many of the remainder were discharged with immediate terminal care needs.

25. Table 8.1 shows that the majority of discharges to hospital took place quite shortly after admission. This might imply one of two things. It could be:

- That the admission to a care home was inappropriate — 'it should have been realised' that the person would shortly need full-time hospital care, and the stress and expense of a double relocation could have been avoided.
- That after someone has been in a care home for a while, an effort is made to help them avoid going into permanent hospital care. This could be achieved by providing terminal care in the home, or by keeping their bed open for them even if they do go into hospital care.

26. The study did not reveal a great deal about why people were discharged to hospital care, because these cases were not routinely followed up. Not surprisingly, however, illness is given as the main reason for the 28 cases that were followed up. Perhaps less expected are the cases referred to hospital because of increased dependency or behaviour problems (table 8.6).

27. Based on their circumstances at admission, it would not have been easy to predict who would be discharged to hospital care (table 8.3). Surprisingly, these

Table 8.6: Discharge rates from care homes — people discharged to hospitals

Discharges to hospital	%
Illness/needed hospital care	36
Increase in dependency	21
– loss of mobility	14
– became incontinent	7
– confusion increased	4
Home could not cope with aggressive behaviour	11
Other	4
Not known	27

Based on 28 people providing reasons

people were actually less dependent than average at admission. Their health was no worse, except they were slightly more likely to have been diagnosed with dementia prior to admission. Men were more likely to be discharged to hospital than women.

the results do not suggest that there was obvious evidence of misplacement of those who were subsequently moved into hospital care

28. Therefore, the results do not suggest that there was obvious evidence of misplacement of those who were subsequently moved into hospital care. However, it is worth noting that there were considerable differences in the incidence of such discharges in different local authorities, which may have been the consequence of a range of different local pressures. Whereas the overall rate of discharge to hospital was 4 per cent of all admissions, across the participating local authorities this ranged from 2 per cent to 9 per cent of their admissions.

29. Survival following discharge to hospital was rarely long. Even for those people surviving the first two weeks, the median is under three months. However, 10 people eventually returned to a care home, and 13 survived for a year or more in a long-stay hospital bed.

Conclusions

- The most striking observation is just how few people actually ever leave a care home environment once admitted. The great majority of those that do, leave fairly soon after admission. Thereafter there would seem to be an effort made to retain the resident in the care home wherever possible.
- Though failure to settle was given as the commonest reason for discharge back to private households, it is evident that the majority of such people had been admitted with low levels of dependency and the health of others had improved.
- Though the availability of informal care was often a factor enabling discharge, a significant number returned to live alone (possibly in sheltered housing). This group had better survival prospects than those remaining in a care home.
- Rehabilitation was considered for 6 per cent of people at the time of admission, but rarely took place. Only a few of the people who were actually discharged to a private household had been admitted with rehabilitation in mind. Nevertheless, those local authorities that were most minded to consider rehabilitation, did indeed discharge the most cases, even if they were not the ones originally planned.
- Discharge to hospital usually means for terminal care, and many die quite soon. But a few people seem to have lived in hospital for a long time afterwards, or were subsequently readmitted to a care home.
- While discharge to a hospital was normally the result of illness, in a few cases it was because of problems associated with disability or dementia.

9 People from Ethnic Minorities

Introduction

1. Concern is often expressed about the special needs of older people from ethnic minorities for publicly-funded residential and nursing home care, as indeed for social services designed for older people generally. This chapter examines admission rates from ethnic minorities, comparative access to care home services, the characteristics of people from ethnic minorities who were admitted, and the consequences of admission for these people.

2. These concerns have largely hinged on matters of cultural appropriateness. For example, one of the recommendations of the Royal Commission on Long Term Care (1999) was that 'it should be a priority for Government to improve cultural awareness in services offered to black and ethnic minority elders.' The suitability of current modes of care has been questioned (Askham et al., 1995; Patel, 1999). 'Appropriateness' broadly concerns the quality of the care being offered, which is beyond the main scope of the present survey. Awareness of this subject is now widespread throughout social services and has been formally expressed in relevant governmental papers through the 1990s. Murray and Brown (1998) list local examples of good practice.

the assumption seems to be that existing services are underused by these groups

3. What is less well known is to what extent existing services are used by people from black and ethnic minorities. The pattern of use is also unknown. The assumption seems to be that existing services are underused by these groups, and therefore that *ease of access* should also be of concern. Patel (1999, para 3.2) describes existing levels of provision as 'inadequate', not just because of shortage of supply — as measured by range and choice of services — but also because services are culturally inappropriate. In other words, there is a link between access and quality in that people will be reluctant to access an unsuitable service. Special problems of access exist for ethnic minorities in areas where there are very small numbers of such people. These problems may extend to informal carers who may have to take on a particularly heavy burden of responsibilities.

4. The numbers of older people from the ethnic groups of most concern — those from the 'New Commonwealth' who have emigrated to Britain since the 1950s — remain small. Latest estimates (Schuman, 1999) indicate that by 1996 they comprised less than 2 per cent of all people over 60, and well under 1 per cent of all those over 75, the main age group for care home services. Nevertheless, numbers may be expected to increase as the younger immigrants age, though arguably the cultural distinctions and obstacles may diminish as they do so.

5. The three main ethnic groups comprise people of African or Caribbean origin, those from the Asian sub-continent (Bangladeshi, Indian, Pakistani), and Chinese people. In the admissions survey there were only 29 people from these groups. Clearly only limited inference can be drawn from such low numbers and while one can reiterate the importance of cultural diversity and the quite different

problems and experiences of people in these groups, there is little that can be done to investigate them statistically in a systematic way.

Representativeness

6. The admissions survey was designed to be nationally representative (of England). The proportion of people from ethnic minorities in the 18 participating authorities is identical to the national average reported in the 1991 Census. Although, for various reasons, ethnic identification was not reported in 5 per cent of cases in this study, there is no reason to believe that this will significantly bias the results.

Admission rates from ethnic minorities

7. For this analysis the study concentrated on the three ethnic minorities described above. Individuals in 'European' ethnic minority groups (mostly Irish and Cypriot) were treated as 'white'. People described as 'other' or 'mixed' were excluded.

1.2 per cent of the survey sample were from ethnic minorities — closely matching representation in the general population of people over 65.

8. 1.2 per cent of the survey sample were from ethnic minorities — closely matching representation in the general population of people over 65. But it may be important to take into account the very different age distributions of the white and ethnic minority groups. Even among the older population, people from ethnic minorities they tend to be younger than average and, as we noted above, there are very few over 75. This is reflected in the age distribution of those admitted, where many were under 75, a comparatively low risk group generally. Standardising for the population age differences suggests that the admission rate among ethnic minorities was nearly twice that for the white group.

Characteristics of people admitted

9. The pattern of admissions of people from ethnic minorities differs from that of the white group in other ways apart from age composition. Table 9.1 summarises results based on a range of factors at the time of admission. There are some striking differences between ethnic minority and white admissions.

Those from ethnic minorities, in general:

- are younger
- are more likely to be men
- are more likely to have been living with their family prior to admission
- have a higher incidence of cognitive impairment/dementia and incontinence
- are more dependent, scored on the Barthel scale.

physical health problems are less likely to feature among the reasons for admission than for the white group

10. Despite the higher dependence, physical health problems are less likely to feature among the reasons for admission than for the white group. On the other hand, mental health problems, housing and carer difficulties are more likely to feature.

11. While great caution must be exercised in making observations about ethnic subgroups in view of the very low numbers involved, it is worth noting that most of the above observations apply particularly to the African and Afro-Caribbean group. Those from the Indian Sub-Continent are more like the white group, though this group recorded a number of problems with carers.

Table 9.1: Individual characteristics at admission by ethnic group

Individual characteristics	White		Black & ethnic minorities	
	No.	%	No.	%
Age group				
65 to 74	290	12	10	36
75 to 84	1019	42	12	43
85 and over	1089	46	6	21
Sex				
Male	710	30	14	48
Female	1696	70	15	52
Source of admission				
Hospital	1248	52	17	59
Community	803	34	10	34
Care home/other	345	14	1	7
Household composition				
Lived alone	1259	64	9	39
Lived with others	718	36	14	61
Barthel Index of ADL (grouped)				
Very low & low dependence (score 13–20)	821	34	6	21
Moderate dependence (score 9–12)	570	24	5	17
Severe dependence (score 5–8)	554	23	11	38
Total dependence (score 0–4)	456	19	7	24
Cognitive functioning (MDS CPS)				
Intact (0)	460	20	2	7
Mild impairment (1–3)	1031	45	13	48
Severe impairment (4–6)	787	35	12	44
Incontinent				
No	1712	71	12	41
Yes	695	29	17	59
Diagnosed at admission with				
Dementia	922	38	17	59
Arthritis	771	32	10	35
Stroke	501	21	9	31
Cardiovascular disease	466	19	6	21
Respiratory disease	357	15	0	0
Malignancy	199	8	2	7
Major reasons for admission				
Mental health needs	1053	44	17	59
Physical needs	1693	70	16	55
Carer needs	878	37	14	48
Housing problem	347	14	8	28
Lack of motivation	522	21	6	21
Area of origin				
Shire counties	1162	48	8	28
Metropolitan districts	996	41	11	38
London	249	11	10	44

Consequences of admission

12. Table 9.2 shows placement after admission. There was little difference between the white group and those from ethnic minorities in placement decisions. Like those in the white group, very few returned to private households after admission.

13. The median survival following admission for people from ethnic minorities was 14 months, compared with 20 months for the white group. The difference is not statistically significant, but is consistent with the lower dependency at admission. Again there seem to be differences between ethnic subgroups, with people from the African and Afro-Caribbean group dying more quickly than others and Asian people more likely to survive longer.

Table 9.2: Placement and subsequent return to private household by ethnic group

	White		Black & ethnic minorities	
	No.	%	No.	%
Placement				
Nursing home	1019	42	15	52
Local authority residential home	212	9	0	0
Private/voluntary residential home	1006	42	13	45
Dual registered home	170	7	1	3
Returned to private household?				
No	2300	97	26	93
Yes	81	3	2	7

Conclusions

- Contrary to what is often stated, ethnic minorities do not have a low level of admission to local authority-funded care homes, and may even have a higher than average rate, if age differences are taken into account.
- Nevertheless, the health of those admitted is in general somewhat poorer, and possibly they live less long, which seems to indicate that they have left it late to be admitted. This would imply that the low health expectancy of people in ethnic minorities means that care services are needed earlier, and that to achieve equity with the white group rather higher admission rates might be expected than at present.
- Although the evidence is limited, as far as it goes it does appear to support the contention that there are problems of access for people in black and ethnic minority groups, assuming, of course, that no equally good substitute services are available. This evidence would also imply that the expected rise of numbers of older people in ethnic minorities will, if the health differentials remain, give rise to a disproportionate rise in the need for care, and hence to increased demand should the access problems be resolved.

10 Lifetime Cost of an Admission

Introduction

1. This chapter determines the lifetime costs to social services for the care of someone aged 65 and over admitted for the first time to a care home as a publicly-funded resident. Much of the chapter describes the methodology, particularly in relation to how costs were derived and how they were imputed where information was incomplete. It also discusses how charges in private and voluntary homes were combined with costs in local authority homes and how net cost estimates were derived. The results are presented in the section on total costs, along with an examination of the possible impact on the accuracy of those results of assumptions made in the analysis.

2. Costs in this study refer to the cost to social services of the care they have agreed to provide, from the time of first admission up until the resident's death. This may include community-based care where a person subsequently leaves a care home, but it excludes primary health care, hospital, housing and social security costs. One implication is that where nursing is inclusive, as is usual for nursing homes, the cost of it will be included, since it is a cost to social services. Where nursing is provided externally, as is the case for some but not all nursing in residential homes, it will be excluded, since it is a cost to health authorities. This, of course, is expected to change with the implementation of the Government's plans. Both gross and net costs are of interest, the latter being the cost after the resident's contribution.

3. Costs are calculated on the basis of the length of time that a person spent in each type of setting, and the weekly unit cost of the care they received. The reason for this approach was that this study did not determine the actual total costs borne by local authorities during each resident's lifetime. The main source of information about costs is based on the charges that were set shortly after admission and reported by the assessment officer. Thereafter the survey was conducted as far as possible in care homes without further reference to social services departments. This approach has certain obvious methodological implications relating to the nature and quality of the information supplied about unit costs, and to the consequences of not knowing about any change in costs.

4. However, with one quarter of the original entrants still alive after three and a half years, and some of them likely to live for many years, the greatest uncertainty in predicting average lifetime costs derives from assumptions about long-term survival.

Gross unit cost estimates

5. This section and the next examine the implications of:
- changes in charges or costs resulting from moves to different establishments
- changes in charges arising from reassessment
- the need to impute charges when people move
- comparability of local authority (LA) homes' costs with other institutions' charges
- net costs.

6. In general, where a person remained in the same type of care throughout, the gross average unit cost has been estimated from the fee set at the outset. This is plausible because:
- The great majority of people who entered a care home never left again, at least for a different type of care.
- It is comparatively unusual for a fee to be renegotiated for an individual once that person is in a home.
- Few people used local authority homes, for which the true cost (to social services) is harder to determine.

Changes in charges

prices for most residents remain unchanged throughout the period they are supported in a care home

7. A problem with using initial charge is that it ignores changes in charges. For this reason we re-examined the companion survey (Netten et al., 2001a) to see whether this would be serious. That survey found that charging reviews for publicly-funded residents are usually carried out annually but, as table 10.1 shows, in only one home in six did the head of home say that these reviews are conducted on an individual resident basis. In the great majority of cases the reviews are undertaken collectively for all residents, though in a few cases some residents may in addition be reviewed individually. In fact, in most cases not only are the individual circumstances of residents not normally examined during review, but the homes themselves are not directly consulted. For only 20 per cent of homes was the home or its managers involved in the review.

8. So the processes of review would appear to militate against price changes on an individual basis, say in response to a gradual change in health. Moreover, it appears unlikely that reviews of the contracted price take place on a per home basis, unless the home has changed function. Indeed, the initial contracted price appears to vary comparatively little with staffing levels, physical fabric, organisational arrangements, and size (Netten et al., 2001a).

9. The main factor that affects changes in the contracted weekly price for local authority-funded residents through time is very probably inflationary, reflecting perhaps the local authority's desire to manage its demand–supply position for this

Table 10.1: Reviews of charges for local authority-funded residents in independent homes, showing (a) who it is reviewed for and (b) who reviews

	Private homes %	Voluntary homes %
Regularly reviewed for		
Individual residents	17	15
All residents	68	72
Both of these	9	10
Not regularly reviewed	6	3
Reviewed by		
The LA without the home	73	15
The LA together with the home	16	17
The LA with the home's managing organisation	9	25
Other	2	8

form of care. On this basis it is reasonable to assume that prices for most residents remain unchanged throughout the period they are supported in a care home, apart from inflationary changes, unless it is necessary for the resident to change homes.

10. What matters for costing purposes is how long a person was resident in a location, and what type of services they were getting. Most people remained in their first placement until they died (see Chapter 7). Where people moved the unit cost is likely to change and box 10.1 describes how the new unit costs were imputed in these cases. Because of the relatively small number of people involved, the method is kept simple. The cost will also depend on the timing of the move. Dates were recorded but, as usual, there is some missing information. In 77 cases (25 per cent) the exact date of move was unknown and has been imputed between the relevant waves of the survey.

BOX 10.1: IMPUTING COSTS FOR PEOPLE WHO MOVE

To a similar type of home

Where people move between similar settings (e.g. from one private residential home to another), the assumption is that this is unlikely to affect the weekly unit costs much.

To a different type of home

The weekly cost of the second or subsequent home was unknown so it has been imputed. A prediction formula was devised on the basis of the factors found to be most significant in the report by Forder and Netten (2000). The factors included were authority group, the type of placement, and Barthel score. Other factors found by Forder and Netten to be significant, including behaviour problems, nursing input, source of admission and reason for admission, all have a comparatively small impact compared with the above. The toolkit, Chapter 11 tool 6, shows the formula, which was derived using regression based on the average weekly costs for all first admissions.

To private households

The study was able to track subsequent use of support services in 50 per cent of cases, up to 30 months, based on care manager records. Costs of domiciliary services are estimated from the volume of care and the unit cost estimates given by Netten and Dennett (1996), and are for social services only, excluding community nursing, hospital care, etc. The fairly small number of people concerned justifies this approximate approach. The average cost is almost exactly £100 per week (outside London) and this figure has been used (with London inflation where appropriate) for all the remaining cases where volume of support services was unknown. However the actual amount was probably extremely varied. Of the 41 known cases, nine had no subsequent input from social services at all. At the other extreme were eight cases receiving care worth between £200 and £300 per week. In several cases this included very substantial amounts of phased residential care, together with domiciliary support at other times. About one quarter had returned to a care home by 42 months.

To hospital

Long-stay hospital care has not been including in the costing. For the most part, the period in long-term hospital care was usually under two months. A few returned to a care home; almost all the remainder died.

Costs in local authority homes

11. The great majority of people go to homes in the private and voluntary sector, and for these a charge is set which represents the total cost to social services for the care provided. Inputs from personnel outside the home such as social work care managers are presumed to be quite small.

12. For those admitted to local authority homes, the cost basis is rather different. Here the social services face direct costs for providing the labour and capital needed for residential care, rather than meeting a pre-set charge. This makes establishing the cost of care rather more difficult, since it becomes a combination of recurrent costs of running the home, amortised capital, and overheads in terms of administration of the home (as distinct from undertaking the care management). Moreover, the question of marginal costs may arise. When paying for an extra place in a privately owned institution, the local authority will have a pretty clear idea what that will be. Variations in marginal costs will be a good deal less clear when providing care in their own homes, and potentially could be very variable, dependent on such factors as occupancy level. This analysis has avoided this complication by focusing on average costs throughout. Such matters as the likely impact of change in demand on costs are not considered.

13. What is not clear is whether the reported costs in each case for local authority residential care are truly inclusive of all the costs faced by the local authority in providing that care. However, it is fairly certain that, in general, they are not. The average unit cost reported here is £280 per week, quite close to (but a little below) the figure Netten et al. (1998) report for the recurrent costs alone. Effectively, capital costs are discounted, though Netten and Dennett (1996) imply that these could add a further 10 per cent to the real cost of care.

14. The data have been analysed as provided for local authority provision, i.e. capital costs have effectively been ignored. This should be borne in mind through the analysis, particularly where it relates to comparisons between type of home. In general, however, the comparatively small number of people in local authority homes means that this assumption is unlikely to affect other conclusions greatly.

Net unit cost estimates

Resident cost contribution

15. Remarkably few people being admitted were assessed at the point of admission as possessing significant income of their own. The great majority were reported as having income levels that would imply they were relying on state benefits.

16. A similar picture is given for assets. Although nearly one half had some capital assets, in a mere 1 per cent of cases was this reported as being above the threshold for claiming income support at the time of the study.

17. As a result, the resident contribution was rarely likely to be greater than their personal income support and residential allowance entitlements, which vary with age and disability, and whether or not they are in Greater London, respectively.

Net weekly cost

18. The average net weekly assessed cost to social services of the placement was £178, which is £100 less than the gross cost. It differs slightly according to type of home. This leads to the recommendation for imputing net weekly cost shown in table 10.2.

Total costs

Gross lifetime costs to social services of a placement in a care home average approximately £32,000 for a placement in a nursing bed and £38,000 for a placement in a residential bed (at 1996 prices)

Lifetime gross totals

19. Total costs to social services are estimated by multiplying the unit cost of the service (package) as described above, by the length of time for which that service is used. This assumes that the unit cost of services remains constant (at 1996 prices).

20. To estimate the additional costs for survivors beyond 42 months, this study has used the estimated survival time approach described in Chapter 5, and assumed that the same service will continue to be used until death. This would appear to be a reasonable assumption for, as time goes by, fewer and fewer people move from the care home in which they are currently placed.

21. Gross lifetime costs to social services of a placement in a care home average approximately £32,000 for a placement in a nursing bed and £38,000 for a placement in a residential bed (at 1996 prices). Although the weekly cost of care in a nursing bed is higher, the likely length of stay is much lower.

22. However, these averages are very variable indeed. Many people, about one quarter of all those admitted, leave very quickly and cost less than £5,000. At the other extreme, around 10 per cent of cases are projected to cost over £100,000; one or two may eventually cost as much as £250,000.

Lifetime net costs

23. Because of difficulties assessing resident contribution the study examined two slightly different sets of assumptions regarding capital.

- For people without capital, resident contribution remains throughout their lifetime as it was assessed initially. This assumes income (if any) remains constant. For people with capital, it is assumed they will pay the total cost up to the limit of their capital (less £16,000, the 1996 assets threshold) and thereafter resident contribution will be as originally assessed. For people with unknown capital, an average value of £40,000 is assumed.
- Resident contribution remains throughout the lifetime as it was originally assessed.

24. These should represent the likely extremes with regard to resident contribution from capital. With the first assumption, 11 per cent of the sample would be able to pay for their entire care, and the net cost to the local authority would be nil. With the second assumption, the local authority would contribute to everyone's care, though that contribution would be under £100 per week in 7 per cent of cases.

25. Taking account of capital, the mean lifetime net cost (over all types of home) would be £20,000 whereas if capital is not realised, it would be £23,000. This represents the likely range for the true net cost to social services, though once again note the high variability.

Accuracy of estimates

26. These estimates have of course required a number of assumptions and approximations, described through the preceding sections, which can be summarised as follows:

- prediction of life expectancy for individuals not known to have died within 42 months (727 cases)
- imputation of date of move where not known precisely (57 cases)
- imputation of gross unit cost for movers (83 cases).

- imputation (or partial imputation) of service use for some people who returned to private households (73 cases)
- assumption that costs will remain constant (at 1996 prices) while the person remains in the same care home
- ignoring capital costs in local authority homes (176 cases).

27. Of these, the first is likely to be by far the most crucial to the accuracy of the final estimate because, although only a very small proportion of people live a long time after admission, their cost implications can be enormous. Following Chapter 5 paragraph 17, table 10.2C shows the consequences for the average costs if the monthly death rate for these survivors were to be 10 per cent higher or lower than forecast. This table shows how sensitive the estimate of the lifetime average cost is to assumptions about future death rates.

Table 10.2: Gross lifetime cost of a local authority placement, by type of home to which originally admitted

(a) Mean, median, standard deviation

	Median cost £	Mean cost £
Local authority residential home	29,200	43,500
Voluntary residential home	22,700	32,200
Private residential home	24,700	39,300
Dual registered home (residential bed)	22,400	36,500
Dual registered home (nursing bed)	17,700	37,400
Nursing home	15,200	32,400
Overall	20,600	35,900

(b) Distribution, by initial placement

	Residential beds %	Nursing beds %
Under £5,000	18	34
£5,000–£10,000	10	10
£10,000–£20,000	16	13
£20,000–£50,000	27	22
£50,000–£100,000	22	9
Over £100,000	8	12

(c) Overall means, with different assumptions about death rates beyond 42 months

	Residential beds	Nursing beds
High variant	£37,000	£31,600
Central forecast	£38,400	£32,700
Low variant	£40,100	£34,100

Discussion

28. It follows from the arguments above that the factors at the outset which affect the total cost will be those that influence life expectancy and the unit cost of care. Because so few people leave the type of care to which they are first admitted, once a person is placed, the total costs can be estimated from the weekly placement charge and the forecast average life expectancy. The model for forecasting life expectancy, discussed in Chapter 5, can be used for this purpose.

predicatability of lifetime costs is quite poor

29. A surprise here is that the predictability of lifetime costs is quite poor. This is partly because of the immense variability in costs. It is also partly because several of the factors that contribute to the need for a relatively high-cost intervention (in particular nursing care) are the very ones that are associated with low life expectancy. Overall, the prediction equation is counter-intuitive in that the factors that might seem to be least associated with need, are the ones which result in highest lifetime costs. Thus low levels of dependency at admission will result in high costs. For example: all else being equal, a man will cost only three-quarters (76 per cent) as much as a woman; someone with high dependency (a Barthel score below five) at entry will cost little more than a third of someone with low dependency (a Barthel score above 12). Local authority of origin is not statistically significant, due to the quite small numbers from London. Had it been so, then the model tends to indicate higher costs for inner London residents.

Conclusions

- The average gross lifetime cost to social services of a placement is £32,000 for a nursing bed and £38,000 for a residential bed (1996 prices). There is tremendous variation in lifetime costs and about 10 per cent will cost more than £100,000. These estimates depend on survival beyond 42 months, but are likely to be within 5 per cent of these figures.
- Net lifetime costs are harder to judge because of problems establishing the resident contribution. The cost is much higher in local authority residential homes compared with other types of accommodation. Given the central forecast of survival it is likely to be £30,000–£34,000 for a placement in a local authority home, £18,000–£23,000 in other residential homes, and £19,000–£22,000 in a nursing home.
- The most appropriate way to estimate the gross lifetime cost of a new resident is from the initial weekly cost multiplied by expected survival, given by the prediction model in the Toolkit. Those factors which raise weekly costs, for example by leading to nursing rather than residential care, are precisely those that lower expected survival. The consequence is that while lifetime cost may be predicted prior to a placement decision, the great variation means such estimates cannot be expected to be very accurate in individual cases.

11 Planning Toolkit

Introduction

1. This toolkit contains a number of methods which were generated by the analysis described in various chapters of the report, which we believe may be helpful to English local authorities for planning the care requirements of localities and groups of individuals who may need long-stay supported care. These include:

- Tool 1: The probability of being admitted (for an older person).
- Tool 2: A need indicator for local areas.
- Tool 3: Whether an admission is likely to be to a nursing or residential care bed.
- Tool 4: The median and average duration of life following first admission.
- Tool 5: Predicting dependency changes in care.
- Tool 6: The predicted lifetime cost of an admission.

2. In each case the toolkit presents a formula (or formulae) which is based on a number of socio-demographic indicators and health measures which are readily determinable at the time of admission. These indicators were introduced in Chapter 3.

3. Some of the tools can also be used to predict risk or outcome in individual cases. We stress however that the simplicity of the predictors and the degree of uncertainty involved results in considerable variability and caution should be observed for predictions for individual cases. Obviously these tools are no substitute for professional judgement.

4. All tools are based on the survey evidence, and therefore they apply to people admitted towards the end of 1995. The effect of general changes since then, particularly in admissions/discharge policies, is likely to affect their applicability in future.

5. The methods by which formulae are derived are outlined, and further detail is available from the authors.

Tool 1: The probability of admission

6. Chapter 2 outlined the life-time risk of admission to a care home. The formula below provides an approximate means of estimating the annual probability that a given person will be admitted for the first time as a supported resident. It is based on evidence from Chapter 3 and those circumstances of an older person that might be expected to remain fairly stable through the period of a year. It excludes specific health problems and independence in activities of daily living, a decline in which is a frequent precursor for the need for a care home place, but it does include limiting long-standing illness and receipt of attendance allowance, both of which are indicative of chronic problems

7. The method used to generate this formula is a logistic regression using the combined sample of the admissions survey and the 1994 General Household Survey (people over 65). The former is re-weighted to the estimated total number of first admissions nationally in 1995/96 and the latter to the mid-year England population in private households, but with a small further adjustment to allow for under-reporting of benefits receipt in the GHS.

Table 11.1: Logistic regression for need

Variable	B	s.e. (B)	Significance (p)	Odds ratio
Age group			0.00	
65 to 69	0.00	–		1.00
70 to 74	0.47	0.65		1.60
75 to 79	1.48	0.61		4.40
80 to 84	1.97	0.59		7.19
85 to 89	2.51	0.60		12.30
90 and over	2.75	0.63		15.71
Sex			0.36	
Male	0.00	–		1.00
Female	–0.25	0.27		0.78
Household composition			0.03	
Living alone	0.00	–		1.00
2 or more pensioners	–0.91	0.31		0.40
1+ pensioner, 1 other	–0.34	0.52		0.71
1+ pensioner, 2+ other	–0.77	0.61		0.46
Tenure			0.00	
Owner occupier / mortgage	0.00	–		1.00
Renting	1.02	0.27		2.78
Relationship to household head			0.00	
Head or spouse	0.00	–		1.00
Other	2.15	0.46		8.61
Limiting Longstanding Illness			0.00	
No LLI	0.00	–		1.00
LLI	2.49	0.46		12.03
Receipt of Income Support			0.01	
Not receiving IS	0.00	–		1.00
Receiving IS	0.73	0.25		1.82
Receipt of Attendance Allowance			0.00	
Not receiving AA	0.00	–		1.00
Receiving AA	1.52	0.25		4.59
Constant	–8.19	0.76	0.00	–

8. The first numeric column ‘B’ is used for computing the probability of admission. The method is to add together all the coefficients that apply to a particular person, including the constant. Call the answer ‘Z’. Then the probability may be obtained from the formula:

$$P = \exp(Z)/\{1 + \exp(Z)\}$$

The example in table 11.2 illustrates the calculation. In 1995/96 the average probability was 1.3 per cent per annum for people over 65, so a larger probability is indicative of high risk.

Table 11.2: Illustrative calculation of the probability of admission

Illustrative calculation of the probability of admission as a supported resident to a care home. Man, aged 86, living alone, rented accommodation, head of household, with a limiting longstanding illness, receiving income support.

Man	0.00
Aged 86	2.51
Living alone	0.00
Living in rented accommodation	1.02
Head of household	0.00
Limiting longstanding illness	2.49
Receives income support	0.73
No attendance allowance	0.00
Constant	–8.19
Total (Z)	–1.44

Then exp(–1.44) = 0.2369; P = 0.2369/(1+0.2369) = 19.2%. This is a person at very high risk of admission.

9. Table 11.1 also shows the standard errors of coefficients, the 'p' value associated with a test of statistical significance of the difference between levels of each factor, and the odds ratios associated with factors. This last is not directly relevant to this tool, but is included for interest. These odds ratios show how much more likely a person is to be admitted, than someone in the reference group (the group with a coefficient of 1), all else being equal. For example:

- A person aged 75–79 is 4.4 times as likely to be admitted in a year, than one aged 65–69, all else being equal.
- An older person living with another pensioner is only 0.40 times as likely (less than half) to be admitted in a year, than one who lives alone, all else being equal.

Tool 2: A population need indicator

10. In Chapter 3 a number of socio-demographic characteristics of older people were identified as being associated with increased risk of long-stay admission to a care home as a supported resident. It is therefore reasonable to suppose that the potential need for care home provision (or suitable substitutes) will be higher in those areas where many people share such characteristics.

11. Many of these characteristics are closely linked to counts that are available for local areas, from the census and other administrative data, and from these it is practicable to develop a need indicator. In fact a major purpose of the survey was to make recommendations about a need indicator for use with Standard Spending Assessments.

12. Need in a population is the sum of the probabilities of the need of each individual, and this can be estimated using these formulae with census statistics and counts from benefits agencies. This method is known as 'synthetic estimation'. Tool 1 provided a logistic equation for predicting these probabilities. Unfortunately this equation cannot be used direct with census data which is generally only available in the form of a specific set of counts. So a linear approximation to the logistic form is devised. At the same time all factors and levels not statistically significant were dropped. Statisticians will be wary of this, but in practice the predicted probabilities for all individuals in the combined sample were very similar between the two methods, with a correlation of 0.87. Full details of the method are available from the DETR Local Government Finance Group.

13. There are a number of further details requiring attention, for example the use of the admissions survey as representing the population of people in care homes; and the omission of people currently in care homes from the census counts on which the indicator is based; the implications of these are examined in the supporting papers.

14. The method of application is to multiply the number of people in each category by the associated coefficient in table 11.3, and add the results together. The total number of people aged 65+ living in private households in the area is then multiplied by the constant, which is negative, and the result subtracted from the previous result. This gives an estimate of the number of people over 65 in an area who are in need. However, it should not be regarded as an absolute figure, but is normally used as a relative measure of the needs of areas. (It may be noted in passing that versions 1 and 2 shown in table 11.3 are scaled such that if 1991 national census counts are used, the result is the same as the national total of supported older residents in 2000).

15. Three variants of the indicator are shown in table 11.3. Version 1 is that originally produced by the analysis, and is the one used in Chapter 3. Version 3 is

Table 11.3: Three versions of the population need indicator

Indicators	Version 1	Version 2	Version 3
Older people receiving income support	0.0367	–	0.0388
Older people receiving AA or DLA	0.0889	–	0.0869
Household residents aged 75 to 84	–	0.0106	0.0189
Household residents aged 85 and over	0.0704	0.0858	0.0853
Older people in rented accommodation	0.0195	0.0331	0.0210
Older people (in households) with limiting longstanding illness	0.0340	0.0479	0.0365
Older people who are not head of household (or partner of head of household)	0.0651	0.0588	0.0676
Older people living alone	0.0153	0.0122	0.0132
Constant	–0.0246	–0.0208	–0.0314

Version 1: Original version based on a regression analysis of the survey.
Version 2: A variant of the original version without Income Support and Attendance Allowance.
Version 3: The version used for SSAs for FY 2001/2.
Note that the definitions of variables differs between the first two versions and the third.

the form that was used for SSA formulae in 2000/01. The difference mainly reflects changes to the indicators since the survey was undertaken, for example the rising importance of Disability Living Allowance as a benefit, and the use of people of pensionable age, rather than those over 65. It is important to note that definitions of indicators differ between versions 1 and 2, and 3. For definitions of the indicators currently used with the SSAs, see DETR (2000) annex D, pages 54-56. Although version 3 was devised specifically for assessing local authority needs, it would now be the preferred method for a local need indicator.

16. Version 2 may be a useful alternative if benefits agency data is not available at local level. It uses Census counts only. Details of appropriate 1991 Census counts (Small Area Statistics) for use with this formula are shown in table 11.4.

Table 11.4: Local area counts for calculating the need indicator

This table shows the preferred 1991 Census and Social Security counts used to define the components of the need indicators shown in table 11.3 (versions 1 and 2 only). It may be desirable to adjust these to allow for under-reporting. Similar counts will be available from the 2001 Census.

Figures are denoted by their SAS Cell Identifier, e.g. S350113 is table 35, cell 113. (See OPCS 1991 Census User Guide no. 25, *Cell Numbering Layouts: Small Area Statistics*).

A. Census counts

The following two ratios are used to adjust numbers based on pensionable age to age 65+:

P = (S350117 + S350124)/(S350110 + S350117 + S350124)

Q = (S350113 + S350120)/(S350110 + S350113 + S350120)

Aged 75 to 84.	S350127 + S350134
Aged 85 and over.	S350141 + S350148
In rented (and other) accommodation	Constant – S470189 x Q – S470203 – S470217
With limiting longstanding illness	S120019 + S120022
Not head of household (or spouse)	(S530050 – S530052) x Q + (S530054 – S530056)
Living alone	S470015 + S470029 + S470043 + S470057 x P + S470071 + S470085
Constant	S350113 + S350120 + S350127 + S350134 + S350141 + S350148

B. Social security counts

Annual counts of *People aged 60+ receiving income support and People aged 65+ receiving attendance allowance or DLA* are available for local authorities from the Information Centre, Analytical Service Division, Department of Social Security, Longbenton, Newcastle NE98 1YX.

17. Table 11.5 shows the consequences of using the need indicator (version 1 of table 11.3) to measure the expected demand for supported care in care homes, across the local authorities of England, as they were constituted in 1995. The indicators were based on 1991 Census counts and social security numbers in 1994, from the sources listed in table 11.2. The results were compared with the number of supported residents on 31 March 1995, from Department of Health statistics on residential accommodation RA/95 (Department of Health, 1996b). It should be noted that in a few cases the numbers of supported residents are probably not correctly reported, which may account for some of the extreme cases reported in table 11.5.

Table 11.5: Numbers of supported residents in 1995 compared with the need indicator

Provision much below need indicator (25%+):				
Bromley	Brent	Cheshire	Haringey	Harrow
Hounslow	Wakefield	St Helens	Waltham Forest	Gloucestershire
Merton	Havering	Doncaster		
Provision below need indicator (10%–25%)				
Westminster	Sandwell	Bexley	Ealing	Solihull
Redbridge	Birmingham	Barnet	Liverpool	Cambridgeshire
Enfield	Wigan	Oldham	Warwickshire	Kingston
Sheffield	Barking & Dagenham	Newham	Hertfordshire	Southwark
Wolverhampton	Islington	Tameside	Camden	Sefton
Manchester	Dudley	Kensington		
Provision within 10% of need indicator				
Hammersmith	Buckinghamshire	Rotherham	Isle of Wight	Greenwich
Walsall	Bolton	Sunderland	Lincolnshire	Hackney
Essex	Dorset	Trafford	Bradford	Wandsworth
Shropshire	Cornwall	Lambeth	Coventry	Newcastle
Tower Hamlets	Salford	Barnsley	Kirklees	Derbyshire
Hereford & Worcester	Berkshire	Richmond	Staffordshire	Hampshire
Lewisham	Avon	Surrey	South Tyneside	Leicestershire
Norfolk	Hillingdon			
Provision above need indicator (10%–25%)				
Durham	Leeds	Cumbria	Northumberland	West Sussex
Rochdale	Kent	Lancashire	Somerset	Gateshead
Croydon	Stockport	Oxfordshire	Bury	East Sussex
Bedfordshire	Sutton	Nottinghamshire	Suffolk	City Of London
Cleveland	Wirral	Humberside		
Provision much above need indicator (25%+)				
Devon	Wiltshire	North Yorkshire	Northamptonshire	Calderdale
Knowsley	North Tyneside			

Tool 3: Predicting placement for a new admission

18. Table 11.6 shows the results of a series of logistic regression analyses in which the characteristics of individuals who were admitted to a nursing home place were compared with those of people who were admitted to a residential place. The goodness of fit of the equations is indicated by the proportion of correct predictions and by McFadden's R^2, which is analogous to the R^2 statistic used in linear regression analysis (McFadden, 1974). Since 54 per cent of the sample had been admitted to a residential place and 46 per cent had been admitted to a nursing home place, the minimum proportion of correct predictions, 54 per cent, could be achieved by allocating all cases to residential places.

19. The characteristics of individuals examined in the equations are shown in tables 4.1 to 4.5 (see Chapter 4). Equation 1 shows the results of the best-fitting model in which variables relating to personal characteristics were included. It only includes variables which achieved statistical significance at the 5 per cent level. Equation 2 shows the additional effects of household composition and source of

Table 11.6: Logistic regression equations comparing individuals admitted to a nursing place with those admitted to a residential place

Independent variables *(Reference category in italics)*	Equation 1		Equation 2	
	Estimated coefficient	Odds ratio	Estimated coefficient	Odds ratio
Barthel Index of Activities of Daily Living				
(Low dependence: score 13–20)				
Moderate dependence (score 9–12)	0.8750**	2.40	0.7757**	2.17
Severe dependence (score 5–8)	1.7418**	5.71	1.5483**	4.70
Total dependence (score 0–4)	2.8190**	16.76	2.5745**	13.12
Frequency of problem behaviour				
(Never/very unusual/sometimes)				
Frequently (daily)	0.5815**	1.79	0.5908**	1.81
Other disorders and diseases				
(Not reported)				
Malignancy	1.0358**	2.82	1.0695**	2.91
Arthritis	–0.3829**	0.68	–0.2487*	0.78
Deafness	–0.4237**	0.65	–0.3983*	0.67
Nursing care needs				
(Not reported)				
Daily dressings	0.5483**	1.73	0.6166**	1.85
Bedfast procedures	1.8098**	6.11	1.8056**	6.08
Other nursing care	1.4116**	4.10	1.3805**	3.98
Reasons for admission				
(Not reported)				
Physical health problems	0.5419**	1.72	0.5808**	1.79
Family breakdown	–0.6645**	0.51	–0.7530**	0.47
Lack of motivation	–0.5643**	0.57	–0.5138**	0.60
Household composition				
(Lived with others/not in household)				
Lived alone	–	–	–0.6866**	0.50
Source of admission				
(Domestic household/sheltered housing/other)				
Residential or nursing home	–	–	0.8872**	2.43
Hospital	–	–	0.8473**	2.33
Constant	–2.1892**		–2.3851**	
Number of individuals				
Total number	2438		2438	
Number in analysis	2283		2283	
McFadden's R^2	0.34		0.37	
Percentage of correct predictions				
Residential beds	85.7		86.7	
Nursing beds	71.7		74.5	
Overall	79.5		81.3	

*$0.05 > p \geq 0.01$; ** $0.01 > p$.

admission. The results of these analyses are described in Chapter 4, and in greater detail in Netten et al. (2001b).

20. Each of the characteristics of the individuals was either present (value = 1) or absent (value = 0). In this case, the logistic regression equation expresses the logarithm of the odds of admission to a nursing home place compared with admission to a residential home place as a linear equation of the relevant estimated coefficients, including the constant term:

$$\text{odds} = \frac{\text{probability of admission to nursing home place}}{\text{probability of admission to residential home place}},$$

and

$$\log(\text{odds}) = \text{constant} + \text{sum of relevant coefficients} = Z, \text{ say.}$$

Hence

$$\text{odds} = \exp(Z), \text{ where 'exp' is the exponential function.}$$

Transforming this equation gives the estimated probability of admission to a nursing home place:

$$\text{probability of admission to nursing home place} = 1/\{1 + \exp(-Z)\}.$$

For example, from equation 2, for a person with severe dependence, deafness and physical health problems:

$$Z = 1.5483 - 0.3983 + 0.5808 - 2.3851 = -0.6543,$$

$$\text{probability of admission to nursing home place} = 0.34,$$

and

$$\text{odds of admission to nursing home place} = 0.52.$$

Such an individual is half as likely to be admitted to a nursing home place as to a residential home place under this model. For a person with total dependence, deafness and physical health problems, the estimated probability of admission to a nursing place, using equation 2, is 0.59, and the odds of admission to a nursing home place are 1.45. That is, such an individual is nearly one-and-a-half times as likely to be admitted to a nursing home place as to a residential home place under this model.

21. The odds ratios shown in table 11.6 represent the relative probabilities of admission to a nursing home place rather than to a residential place for individuals with the given level of each of the independent variables, compared with individuals with the reference category level (i.e. the odds ratio is 1.0 for the reference category). For example, from equation 2, individuals with a Barthel score of four or less (total dependence) were estimated to be 13 times as likely to have been admitted to a nursing place than to a residential place, compared with those with a Barthel score of 13 or more (low dependence). (The constant term cancels out in these calculations.)

Tool 4: Predicting survival

22. Chapter 5 described the mortality of people in the 42 months following first admission, the median survival, and the mean survival which requires some extrapolation of mortality rates for those people who survived the first 42 months. The chapter also identified a number of factors that are associated with diminished or increased life-span following admission.

23. This tool describes a model for predicting survival given the circumstances at the time of admission, based on this evidence. However, because of the wide variation in survival, we emphasise that this model is of limited usefulness in individual cases, and is really intended for predictions for a group of people. The model based method is an alternative to using the sample itself for generating estimates.

24. Table 11.7 shows the estimated monthly hazard rates for the whole sample, excluding those for whom this may not have been a first admission). These may be regarded as representative for all publicly-funded long-stay admissions in late 1995 to early 1996. The hazard rates are estimators of the probability of dying within a month of a given point, given survival up to that point. This varies month by month, and is calculated as the average within that month.

Table 11.7: Life table for first time admissions to publicly-funded residential and nursing homes during the 42-month study

Month	Number exposed to risk	Hazard rate	Month	Number exposed to risk	Hazard rate
1	2385	0.0930	22	1092	0.0269
2	2171	0.0741	23	1063	0.0209
3	2014	0.0567	24	1041	0.0273
4	1902	0.0386	25	1013	0.0240
5	1830	0.0379	26	989	0.0298
6	1762	0.0294	27	960	0.0307
7	1690	0.0331	28	931	0.0339
8	1613	0.0213	29	900	0.0385
9	1578	0.0211	30	866	0.0222
10	1545	0.0256	31	840	0.0302
11	1506	0.0194	32	808	0.0276
12	1477	0.0254	33	786	0.0206
13	1440	0.0361	34	770	0.0223
14	1388	0.0344	35	753	0.0310
15	1341	0.0341	36	730	0.0292
16	1296	0.0282	37	709	0.0388
17	1260	0.0257	38	682	0.0343
18	1228	0.0148	39	659	0.0466
19	1192	0.0263	40	629	0.0307
20	1144	0.0275	41	610	0.0266
21	1113	0.0190	42	594	0.0239

25. These hazard rates are the building blocks of the tool. However, table 11.7 applies only to an 'average' person, representative of the population as a whole. As was shown in Chapter 5, rates vary according to circumstances at admission. The assumption behind the 'proportional hazards model introduced in that chapter is that for any particular person, the hazard rates for an individual will, through time, be in constant proportion with the average rates shown in table 11.7. In order to work out the rates for an individual the multiplier 'r' needs to be determined. This multipier can be calculated from the characteristics of the individual, using table 11.8. The method is to add together the appropriate model coefficients. Then take the exponent of the result, and divide by 2.40 to give the multiplier.

26. Beyond 42 months we must extrapolate because the survey ran only for 42 months, at which point one quarter of the original entrants were still alive. As monthly hazard rates seem to have settled down by this point, with some seasonal

Table 11.8: Proportional hazard model for factors affecting death rates in residential and nursing homes

	Model coefficient	Standard error	p
Area of origin			0.08
Shire county	0.0000	–	
Metropolitan district	–0.1152	0.0549	
London	–0.1174	0.0910	
Age at admission			<0.01
65 to 74	0.0000	–	
75 to 84	0.3498	0.0910	
85 and over	0.6891	0.0911	
Sex			<0.01
Male	0.0000	–	
Female	–0.2944	0.0576	
Diagnosed illness at admission			
Dementia	–0.0443	0.0640	0.49
Depression	0.0386	0.0763	0.61
Cardiovascular	0.0918	0.0641	0.15
Respiratory	0.3379	0.0703	0.00
Malignancy	0.8507	0.0861	0.00
Stroke	0.0189	0.0640	0.77
Incontinent (urine or faeces)	–0.0769	0.0705	0.28
Barthel score at admission			<0.01
0–4	0.6377	0.1026	
5–8	0.2607	0.0802	
9–12	0.2361	0.0704	
13–20	0.0000	–	
Cognitive functioning (MDS CPS, grouped)			0.04
Intact (0)	0.0000	–	
Mild impairment (1–3)	0.1376	0.0725	
Severe impairment (4–6)	0.2198	0.0885	
Source of admission			0.12
Private household	0.0000	–	
Care home	0.0079	0.1158	
Hospital	0.1234	0.0572	
Other	0.2561	0.2065	
Bed type			<0.01
Local authority home	0.0000	–	
Private or voluntary residential bed	0.1509	0.0995	
Private or voluntary nursing home bed	0.4127	0.1069	

Table 11.9: A model for forecasting survival beyond 42 months

Life expectancy in months (given survival to 42 months) = 1/exp(–z), where z is given by the sum of the following coefficients that apply:

Factor (at time of admission)	Coefficient
Constant	6.910
Age at admission	–0.037 x age
Sex	
Male	0.000
Female	0.236
Admitted with	
Respiratory/chest disease	–0.347
Malignancy	–0.566
Barthel score at admission	
0–4	–0.317
5–8	–0.185
9–12	–0.067
13–20	0.000
Bed type	
Local authority home	0.000
Private or voluntary residential bed	–0.302
Nursing home bed	–0.413

variation, the extrapolation is based on the period 12–42 months. Table 11.9 provides the necessary coefficients from a Poisson survival model.

Worked example

27. A woman aged 85 admitted from a private household in a shire county. Diagnosed respiratory illness at time of admission. Not incontinent. Barthel score 7. Mild impairment on MDS Cognitive Scale. Admitted to a nursing home place.

- what is the probability that she will die within 12 months?
- what is her median life expectancy?
- what is her mean life expectancy?

28. **Step 1: The proportional hazard**

Using the model in table 11.8:

	Coefficient from table 11.8
Shire county	0.0000
Woman	–0.2944
Aged 85+	0.6891
Respiratory illness	0.3379
Barthel score 5–8	0.2607
Mild cognitive impairment	0.1376
Admitted from private household	0.0000
Admitted to a nursing home bed	0.4127
Sum of coefficients	1.5436

The hazard ratio 'r' (compared with general average) is given by

$$\exp(\text{sum of coefficients})/2.40 = \exp(1.5436)/2.40 = 1.7115$$

29. **Step 2: The life table**

The life table for the first 42 months is calculated from the specific hazard rate for this person, which is determined from table 11.7 and the hazard ratio above. The following table shows the calculations.

Month i	Hazard rate (table 11.8) h_i	Specific hazard rate rh_i	Prob. of surviving month $(2- rh_i)/(2+ rh_i)$	Cumulative prob. of surviving s_i	Average survival $s_i/(1–½ rh_i)$	$(i–½)$ x av. survival
1	0.0930	0.1815	0.8336	0.8336	0.9168	0.4584
2	0.0741	0.1445	0.8653	0.7213	0.7775	1.1662
3	0.0567	0.1106	0.8952	0.6458	0.6835	1.7089
4	0.0386	0.0752	0.9275	0.5989	0.6224	2.1782
5	0.0379	0.0739	0.9288	0.5563	0.5776	2.5992
6	0.0294	0.0573	0.9443	0.5253	0.5408	2.9743
7	0.0331	0.0646	0.9375	0.4925	0.5089	3.3077
8	0.0213	0.0416	0.9593	0.4724	0.4824	3.6182
9	0.0211	0.0412	0.9596	0.4533	0.4629	3.9344
10	0.0256	0.0499	0.9513	0.4313	0.4423	4.2019
11	0.0194	0.0379	0.9628	0.4152	0.4232	4.4441
12	0.0254	0.0495	0.9517	0.3952	0.4052	4.6597
…	…	…	…	…	…	…
40	0.0307	0.0598	0.9419	0.0811	0.0836	3.3031
41	0.0266	0.0518	0.9495	0.0770	0.0791	3.2024
42	0.0239	0.0465	0.9545	0.0735	0.0753	3.1237
Total					12.6508	169.6526

In the above table, the specific hazard rate shows the presumed monthly hazard rates for this individual. The cumulative probability of surviving, s_i, is calculated from the preceding column, for example:

CP of surviving month 3 = CP of surviving month 2 x prob. surviving month 3
= 0.7213 x 0.8952
= 0.6458.

From the 'cumulative probability of surviving' column we can see that:

- The probability of surviving 12 months is 0.3952, that is, the probability of dying is 60 per cent.
- The median (50%) expected survival is between 6 and 7 months, 6.8 months.

30. **Step 3: Expectations beyond 42 months, and mean survival**

The model of table 11.9 gives:

	Coefficient from table 11.9
Constant	6.910
Woman	0.236
Aged 85	–0.037x85 = –3.145
Respiratory illness	–0.347
Barthel score 5–8	–0.185
Admitted to a nursing home bed	–0.413
Sum of coefficients	3.056

Then 1/(-exp(3.056)) gives 0.0471, i.e. a monthly hazard rate of 4.71 per cent.

The mean survival is estimated from the two halves of the distribution:

Mean = Probability of surviving under 42 months x Cond. Mean of first 42 months
+ Probability of surviving over 42 months x Cond. Mean beyond 42 months
= (1 – 0.0735) x 169.65/12.65 + 0.0735 x (42 + 1/0.0471) = 17.07 months

The figure of 0.0735 comes from the Cumulative Probability of Survival column, at 42 months. The figures of 12.65 and 169.65 come from summing the final two columns at step 2.

- Mean expected survival is just over 17 months.

Warning: model goodness-of-fit and the accuracy of predictions

31. Users are warned that the accuracy of the above predictions will be poor in individual cases, because there is so much variability in survival. The interquartile range for all cases (that is the from when quarter have died to when three-quarters have died) is from 4½ to 44 months. This variation will be little reduced in predictions obtained from the model. The Cox Proportional Hazards Model at the centre of model reduces the standard goodness-of-fit statistic –2 x Log(Likelihood), from 22,341 to 21,971 as the factors are introduced. This corresponds to a McFadden R^2 of under 0.02: only a small proportion of the overall variation in life expectancy is explained by these factors.

Typical cases

32. The following table shows the median and mean survival predicted by the model, in months, for some common circumstances on admission. These are men and women admitted at ages 80 and 90 respectively, to (a) a residential care bed (in an independent sector home, with mild cognitive impairment and either low or severe ADL disability; and (b) a nursing care bed, with severe cognitive disability,

and either severe or total ADL disability. In other regards, the person is assumed to live in a shire, to have no diagnosed major illness, not incontinent, and admitted direct from a private household.

	Men		Women	
	Aged 80	Aged 90	Aged 80	Aged 90
Residential bed, mild cognitive impairment				
Low disability				
Median	27	16	37	25
Mean	40	28	51	36
Severe disability				
Median	19	12	27	18
Mean	31	22	41	29
Nursing bed, severe cognitive impairment				
Severe disability				
Median	12	7	20	11
Mean	23	18	33	21
Total disability				
Median	6	3	10	5
Mean	16	11	22	15

For a man aged 80 on admission to a residential care bed, with mild cognitive disability, low disability and no major illness, his mean life expectancy is 40 months (taking into account a small chance of living many years), but 50 per cent of people like him will have died by 27 months.

Tool 5: Predicting dependency changes

33. The following two tables are designed to provide a quick method of forecasting the likely changes in the dependency state at some future state in time, given their level of dependency now. This is given for two of the main health-related measures used in the survey; Barthel score and MDS cognitive function index. These tables provide transition probabilities between states which are used in Chapter 6 to forecast life expectancies at different states of dependency.

Illustration

34. What is the probability that someone who is totally dependent (Barthel) on admission will have improved by six months? If they have not improved, what is the probability they will improve by the end of the next year?

35. From table 11.10, the probability that a person will improve from total dependency at admission by the end of six months is 11%+5%+2% = 19%. The probability that a person will improve from total dependency at six months by the end of 18 months is 9%+2% = 11%.

Table 11.10: Transition rates for levels of dependency (Barthel Index of ADL)

	At admission			
	Total %	Severe %	Moderate %	Low %
At 6 months				
Dead	55	35	33	23
Total	27	15	8	3
Severe	11	25	17	5
Moderate	5	13	16	17
Low	2	11	26	52
(Base)	(361)	(460)	(479)	(631)
Missing %	15	17	17	23
(Base)	(427)	(556)	(576)	(821)

	At 6 months			
	Total %	Severe %	Moderate %	Low %
At 18 months				
Dead	53	37	28	20
Total	36	22	9	2
Severe	9	32	25	7
Moderate	2	7	24	15
Low	0	4	14	56
(Base)	(186)	(222)	(215)	(408)
(Missing %)	17	19	18	19
(Base)	(223)	(273)	(262)	(508)

	At 18 months			
	Total %	Severe %	Moderate %	Low %
At 30 months				
Dead	43	36	32	20
Total	49	25	14	4
Severe	8	29	21	6
Moderate	1	7	26	16
Low	0	3	8	55
(Base)	(142)	(162)	(143)	(267)
Missing %	17	15	11	16
(Base)	(170)	(190)	(161)	(319)

	At 30 months			
	Total %	Severe %	Moderate %	Low %
At 42 months				
Dead	48	33	30	15
Total	43	26	12	5
Severe	8	29	23	5
Moderate	1	8	27	15
Low	0	3	8	60
(Base)	(125)	(92)	(86)	(144)
Missing %	11	11	8	10
(Base)	(140)	(103)	(93)	(161)

Interpretation: At six months, 55 per cent of those whose dependency was 'total' at admission were dead (based on 363 people). Of those who scored 'total' at admission, 14 per cent were missing at six months (based on 421 people). Some of the above tables have been subject to minor alteration since the 30

month analysis. 'Missing' includes those who are known to be alive but with no returned information on the Barthel scale, plus a small number lost to the study (mainly refusers).

Table 11.11: Transition rates for levels of cognitive functioning

	At admission		
	Severe %	Mild %	Intact %
At 6 months			
Dead	39	34	35
Severe	35	16	5
Mild	24	37	27
Intact	3	14	34
(Base)	(646)	(843)	(372)
Missing %	15	17	14
(Base)	(751)	(1017)	(447)

	At 6 months		
	Severe %	Mild %	Intact %
At 18 months			
Dead	44	26	27
Severe	41	23	5
Mild	14	44	28
Intact	1	7	39
(Base)	(358)	(500)	(234)
Missing %	15	16	14
(Base)	(422)	(599)	(272)

	At 18 months		
	Severe %	Mild %	Intact %
At 30 months			
Dead	38	30	19
Severe	53	25	7
Mild	9	37	29
Intact	0	8	46
(Base)	(297)	(320)	(140)
Missing %	8	16	10
(Base)	(322)	(379)	(156)

	At 30 months		
	Severe %	Mild %	Intact %
At 42 months			
Dead	41	29	19
Severe	46	17	5
Mild	11	46	29
Intact	2	8	48
(Base)	(253)	(203)	(101)
Missing %	16	8	7
(Base)	(303)	(221)	(108)

Interpretation: At six months, 39 per cent of those whose functioning is 'severe' at admission were dead (based on 646 people). Of those who scored 'severe' at admission, 15 per cent were unrecorded or missing at six months (based on 758 people).

Tool 6: Predicting lifetime cost

36. Two factors determine the the total lifetime cost of a place in a care home:

- the weekly cost of a place
- The length of time that the person will remain there.

The weekly cost

37. In general, the average weekly cost of a placement will be set at the outset and as few people move, for the reasons described in Chapter 10 it may be assumed that this will remain the cost for the remainder of their life, apart from cost-of-living increases.

38. If the weekly cost is unknown for any reason, perhaps ahead of a placement, it may be estimated using the tool shown in table 11.12. This is based on an analysis of the initial placement charge (or average cost in the case of local authority homes). This formula is derived from a log regression of 2,067 cases where initial gross charge was known.

Table 11.12: Formula for imputing weekly charge

Factor	Coefficient
All residents	5.950
Local authority	
Shire county	–0.210
Metropolitan district	–0.276
Inner London	–0.085
Outer London	0.000
Placement	
Nursing home	0.001
Local authority residential home	–0.115
Voluntary residential home	–0.207
Private residential home	–0.285
Dual registered (residential bed)	–0.273
Dual registered (nursing bed)	0.000
Barthel score on first admission	
0–4	0.032
5–8	0.036
9–12	0.023
13–20	0.000

39. Standard errors are not shown, but all factors are statistically significant. R^2 = 0.68. To use this tool, first sum the relevant coefficients, and calculate exp(Sum).

40. **Example:** Someone in a shire county placed in a nursing home, with a Barthel score of 7.

Factor	Coefficient
All residents	5.950
Shire county	–0.210
Nursing home	0.001
Barthel score 5–8	0.036
Sum of coefficients	5.777

Then the expected average weekly gross cost is exp(5.777) = £323 (at 1996 prices).

41. For imputing assessed net weekly charge, where in addition the financial position of the resident is unknown, £95 may be deducted in the case of

residential homes and £105 in the case of nursing and dual-registered homes, to allow for average income.

42. Note that the companion volume, Netten et al. (2001a) provides a considerably more detailed cost analysis.

The lifetime cost

43. The very things that are likely to promote high weekly costs, such as disability and placement in nursing care, are also associated with a shorter life span and so lower lifetime costs. We have already shown how unpredictable life expectancy is, and put together, the result is that if the placement cost (or charge) is unknown, the lifetime cost is for all practical purposes unpredictable.

44. If the initial weekly placement cost is known, then the lifetime cost is best estimated simply by multiplying that cost by expected survival, for which see tool 4.

Appendix 1

PSSRU Survey of Admissions to Residential and Nursing Homes for Elderly People, October 1995–January 1996

RSL Research Services Ltd Research Services House Elmgrove Road Harrow HA1 2QG United Kingdom Telephone 0181 861 6000 Fax 0181 861 5515

J5954/SS

SURVEY OF ADMISSIONS TO RESIDENTIAL AND NURSING HOMES FOR ELDERLY PEOPLE IN [redacted] - SOCIAL WORKERS

1995

Socio-demographic

1. CRRIS number: ☐☐☐☐☐☐

2. Date of birth: Day ☐☐ Month ☐☐ Year ☐☐

3. Gender: Male ☐1 Female ☐2

4. Marital status:
   - married or living as married ..... ☐1
   - not living as married (including separated and recently widowed) ..... ☐2

5. Ethnic origin:

White	☐1	Black Caribbean	☐6	Chinese	☐11
Irish	☐2	Black other	☐7	Mixed race	☐12
Turkish Cypriot	☐3	Indian	☐8	Other	☐13
Greek Cypriot	☐4	Bangladeshi	☐9	Not known	☐14
Black African	☐5	Pakistani	☐10		

Private household

QUESTIONS 6 TO 10 MUST BE COMPLETED FOR ALL PEOPLE ADMITTED FROM A DOMESTIC HOUSEHOLD, SHELTERED ACCOMMODATION, OR WHO HAD BEEN LIVING IN SUCH ACCOMMODATION AT ANY TIME DURING THE EIGHT WEEKS PRIOR TO ADMISSION. THE ANSWERS SHOULD RELATE TO THE LAST ADDRESS AT WHICH THE PERSON LIVED.

6. What was the postcode of this persons **permanent** address? ☐☐☐☐ ☐☐☐☐

IF POSTCODE NOT KNOWN: Please enter this persons street name and town/village

Street name: _____ Town/village: _____

7. Please enter the number of people in each of these age groups who lived with this person at their permanent address:

- under retirement age ☐☐ - retirement age to 74 ☐☐ - 75 and over ☐☐ -LIVED ALONE ☐

8. What was the tenure of the household?

- owner occupied (inc. mortgaged) ..... ☐1
- rented from LA or new town or housing association ..... ☐2
- private rented accommodation ..... ☐3
- other (Specify) _____ ☐4

9. Who was the householder (the person who owned the home or who was responsible for the lease)?

- the elderly person and/or his/her marriage partner singly or jointly ..... ☐1
- someone else ..... ☐2

10. How long had the elderly person lived at this address?

- less than one year ..... ☐1 ➡
- one year or more ..... ☐2
- not known ..... ☐3

IF THEY HAD LIVED AT THIS ADDRESS LESS THAN ONE YEAR: Where were they living previously?

- in this local authority ..... ☐1
- in another local authority ..... ☐2
- not known ..... ☐3

Dependency

11. Does the elderly person have any long-standing illness, health problem or handicap which limits his/her activities? Include problems which are due to old age.

Yes ..... ☐1
No ..... ☐2

12. Does this person suffer from any of these? CODE ALL THAT APPLY

- dementia * ..... ☐
- depression * ..... ☐
- other psychiatric disorder * ..... ☐
- cardiovascular (heart)disease ☐
- respiratory/chest disease ..... ☐
- gastrointestinal disease ..... ☐
- malignancy (cancer) ..... ☐
- the effect of a stroke ..... ☐
- the effect of a fracture ..... ☐
- arthritis, rheumatism or osteoporosis ..... ☐
- effectively blind ..... ☐
- deafness ..... ☐
- NONE OF THESE ..... ☐

*Only include if medically diagnosed as suffering from

13. Does this person usually manage to: (IF HOSPITAL DISCHARGE: On discharge what do you expect this person will be able to do)

	ON OWN WITHOUT DIFFICULTY	ON OWN WITH DIFFICULTY	ONLY WITH HELP	NOT DONE
- Get up and down stairs or steps	1	2	3	4
- Go out of doors and walk down the road	1	2	3	4
- Get around indoors (except steps)	1	2	3	4
- Get in and out of bed (or chair)	1	2	3	4
- Get to WC	1	2	3	4
- Use WC	1	2	3	4
- Wash face and hands	1	2	3	4
- Bath, shower or wash all over	1	2	3	4
- Get dressed and undressed	1	2	3	4
- Feed self	1	2	3	4

14. Does this person usually use a wheelchair to get about (IF HOSPITAL DISCHARGE: Do you expect him/her to use a wheelchair long-term on discharge)

Yes..... 1
No..... 2

15. Which of these statements describes the elderly persons ability to control their bladder? (A person able to manage a catheter without assistance may be described as continent). Are they:

- continent..... 1
- have occasional accidents..... 2
- incontinent..... 3

16. Which of these statements describes the elderly persons ability to control their bowels? (A person able to manage a colostomy without assistance may be described as continent). Are they:

- continent..... 1
- have occasional accidents..... 2
- incontinent..... 3

17. Does the person have short-term memory problems? (CODE NO IF THEY APPEAR TO RECALL AFTER 5 MINUTES)

Yes..... 1
No..... 2

18. Is this person disorientated in time, space or person?

Yes..... 1
No..... 2

19. Which of these statements best describes this persons level of cognitive skills for tasks of daily living?

- independent: (decisions are reasonable/consistent)..... 1
- some problems: (difficulty in new situations)..... 2
- moderately impaired: (cues/supervision required)..... 3
- severely impaired: (never/rarely makes decisions)..... 4

20. Which of these statements best describes this persons ability to communicate with others?

- understood: (expresses ideas clearly)..... 1
- usually understood: (difficulty finding right words or finishing thoughts - needs prompting)..... 2
- sometimes understood: (limited ability, but can express basic needs) 3
- rarely/never understood: (at best carer can interpret person specific sounds or body language)..... 4

21. How often does this person display any problem behaviour? (e.g. wandering, physical or verbal abuse, antisocial acts - excludes depressive symptoms)

- never/very unusual (less than weekly)..... 1
- sometimes (more than weekly, but not daily)..... 2
- frequently (at least daily)..... 3

22. Does the person need any of the following types of nursing care*: CODE ALL THAT APPLY

- daily dressing..... ☐
- regular injections..... ☐
- procedures associated with being bedfast (e.g. bedbath)..... ☐
- complex appliances or prostheses that require assistance..... ☐
- feeding requiring nursing skills (e.g. tube)..... ☐
- other nursing care (Specify)_____ ☐
- NONE OF THE ABOVE..... ☐

*Only include ongoing nursing tasks they are likely to continue to need after admission to residential or nursing home care

Admission

23. What is the name of the home?

Home address - Street
Town/village
County
Postcode

24. What providing sector is the home from?

- LA 1
- voluntary/not for profit 2
- private 3

25. What type of home have they been admitted to?

- nursing home 1
- residential home 2
- dual registered - into a residential bed 3
- dual registered - into a nursing bed 4

26. What was the admission date?

Day Month Year

27. Where was person admitted to the home from:

	In this authority:	In another authority:
- domestic household	1	1
- sheltered housing	2	2
- LA residential care	3	3
- other residential care	4	4
- NHS nursing home	5	5
- other nursing home	6	6
- a hospital	7	7
- other	8	8

IF ADMITTED FROM HOSPITAL WHAT TYPE OF WARD THEY WERE IN:

- geriatric 1
- orthopaedic 2
- rehabilitation 3
- psychiatric 4
- general medical 5
- other 6
- psycho-geriatric 7
- surgical 8

IF NOT ADMITTED FROM HOSPITAL: Did the elderly person receive any of the following services before admission?

- In-patient hospital care during the last 12 months ☐
- Domiciliary nursing services weekly or more often ☐
- L.A. arranged home care: 5 hours per week or less ☐
- L.A. arranged home care: over 5 hours per week ☐
- NONE OF THESE ☐
- NOT APPLIC./NOT KNOWN (already permanent resident) ☐

28. What were the major reasons for admission to care? CODE ALL THAT APPLY

- physical health problems ☐
- mental health problems ☐
- functional disablement ☐
- need for rehabilitation ☐
- carer stress ☐
- family breakdown ☐
- elder abuse ☐
- lack of motivation ☐
- fear of being a victim of crime ☐
- domestic home physically unsuitable ☐
- overcrowded accommodation ☐
- homelessness ☐
- other (Specify) _____ ☐

29 **IF ALREADY IN RESIDENTIAL/NURSING CARE:** Is assessment or review needed because of:

- admission as emergency placement 1
- transfer from a residential home (bed) to a nursing home (bed) 2
- transfer from short-stay to permanent care 3
- loss of a top-up(s) 4
- inability to continue funding own care 5
- other (Specify) _____ 6

30. What type of contract is there between the LA and the home for this person?

-Standing offer 1
-Single purchase 2
-Other 3
- LA 4

31. Was the contracted price?

- set in advance, at the LA's standard rate or tariff 1
- set in advance, with this home 2
- negotiated individually for this client 3
- other (Specify) _____ 4

Benefits

32. Was this person or his/her partner receiving income support before admission?

Yes 1
No 2

33. Was this person or his/her partner receiving attendance allowance before admission?

Yes 1
No 2

34. Was housing benefit claimed in respect of the domestic household or sheltered accommodation where the elderly person was previously living?

Yes 1
No 2

FOR REFERENCE ONLY:

Which team carried out the assessment: _____

What is the teams extension number: _____

IF DIFFERENT TO THE ABOVE: Which was the budget-holding team: _____

- Research Services Ltd Research Services House Elmgrove Road Harrow HA1 2QG United Kingdom Telephone 0181 861 6000 Fax 0181 861

J5954/SS

SURVEY OF ADMISSIONS TO RESIDENTIAL AND NURSING HOMES FOR ELDERLY PEOPLE IN [redacted] - FINANCE SECTION

1. CRRIS number: ☐☐☐☐☐☐

2. What is their total income, from all sources, per week? (This should be the total income taken into account for the purposes of making a financial assessment)

   TO NEAREST POUND £☐☐☐☐

3. What is their total capital? (This should be the capital included the purposes of the financial assessment. DO NOT include the value of any property)

   TO NEAREST THOUSAND £☐☐☐☐☐☐,000

4. What is the estimated net value of any property that can be included for the purpose of a financial assessment?

   TO NEAREST THOUSAND £☐☐☐☐☐☐,000

   Not known ☐ Not applicable ☐

5. What is the total weekly gross cost of placement?

   TO NEAREST POUND £☐☐☐☐

6. What is this LA's agreed weekly contribution? ENTER ZERO IN ALL BOXES IF NOT APPLICABLE

   TO NEAREST POUND £☐☐☐☐

7. What, if any, is the client's agreed weekly contribution? ENTER ZERO IN ALL BOXES IF NOT APPLICABLE

   TO NEAREST POUND £☐☐☐☐

8. What, if any, is the weekly contribution from other private individuals (this includes "top-ups")? ENTER ZERO IN ALL BOXES IF NOT APPLICABLE

   TO NEAREST POUND £☐☐☐☐

9. What, if any, is the weekly contribution from any other organisations? ENTER ZERO IN ALL BOXES IF NOT APPLICABLE

   TO NEAREST POUND £☐☐☐☐

IF APPLICABLE: What are these other organisations (specify)?

_____

PLEASE ENSURE THAT THE AMOUNTS GIVEN AT QUESTIONS 6 TO 9 ADD-UP TO THE AMOUNT GIVEN AT QUESTION 5.

Appendix 2

PSSRU Survey of Admissions to Residential and Nursing Homes for Elderly People: 18 Month Follow-Up Questionnaire

Reference: J7256/SC
Serial no.: «SERIAL»

RSL

Social Research

May 1997

«Home_Manager»
«LADD1»
«LADD2»
«LADD3»
«LADD4»
«LADD5» «LADD6»

Dear «Salutation»,

SURVEY OF ADMISSIONS TO RESIDENTIAL AND NURSING HOME CARE FOR ELDERLY PEOPLE - 18 MONTH FOLLOW-UP QUESTIONNAIRE

RSL - Research Services Ltd, in conjunction with PSSRU at the University of Kent, are carrying out this research project on behalf of the Department of Health. The aim of this research is to track mortality and changes in dependency over time. This will help our understanding of the long-term implications of admissions to residential and nursing home care. We have enclosed some information with this form which explains in more detail about this project.

The person identified below was first admitted to residential or nursing care on the date shown. We are interested to find out what their situation was 18 months **after** they were admitted. If this person died before this date or if they were no longer a resident of this home you only have to complete the next page of the questionnaire. If they died or moved **since** this date, please complete the whole questionnaire.

Client name/reference number:	«NAME»
Date first admitted to residential/nursing care:	«ADMINDATE»
Date 18 months **after** initial admission:	«ADMINDATE1»

Please inform the elderly person of this survey to establish that they do not mind PSSRU and RSL monitoring some of their assessment information. Stress that the information will only be presented in totals and that their details will be treated in the strictest confidence.

Completed questionnaires should be returned to RSL in the supplied envelope. If you have any queries please contact me at RSL on 0181 861 8000.

Thank you for your co-operation. Yours sincerely,

Samantha Clemens

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1. Date you are completing this questionnaire: Day ☐☐ Month ☐☐ Year ☐☐

2. We would like to know where this person was 18 months after they were initially admitted into residential or nursing care. The appropriate 18 month date is shown on the front of this form. Please tick a box which says where this elderly person was on this date. If the person has died since this date, please tell us where they were on this date. TICK THE APPROPRIATE BOX

ON THE 18 MONTH DATE, THEY WERE IN THIS HOME*:
In a registered residential bed (or Local Authority Home bed)..... [1] ➔*Go to Q6*
In a registered nursing bed..... [2] ➔*Go to Q6*
THEY WERE IN A DIFFERENT HOME:
Moved to a nursing home/hospice..... [3]
Moved to residential home..... [4] *Please answer Q3-Q5*
Moved to a dual registered home - into a residential bed..... [5]
Moved to a dual registered home - into a nursing bed..... [6]
ELSEWHERE:
In hospital (their bed is not being kept open)..... [7]
In private household..... [8] *Please answer Q3-Q5*
DIED BEFORE THIS DATE..... [9]

* If temporarily absent, please tick the type of bed being held open for them.

ONLY ANSWER QUESTIONS 3 TO 5 IF THE ELDERLY PERSON WAS NO LONGER A RESIDENT OF THIS HOME AT THE 18 MONTH DATE. OTHERWISE, GO TO QUESTION 6.

3. On what date did the person leave this home/die?

Day ☐☐ Month ☐☐ Year ☐☐

4. IF MOVED FROM THIS HOME (CODES 3-8 AT Q2): Where did this person move to?

Name of home/hospital(if applicable:) _____

Address - Street & number _____
Town/village _____
County _____
Postcode ☐☐☐☐ ☐☐☐
Telephone number ☐☐☐☐☐ ☐☐☐☐☐☐☐☐

5. IF MOVED FROM THIS HOME: As far as you are aware, has this person died since they left this home?

Yes [1] ➔ IF KNOWN: On what date did this person die? Day ____ Month ____ Year ____
No [2]
Don't know [9]

If the person was no longer a resident of this home at the 18 month date given on the front of this form, please stop here and return this form to RSL in the envelope provided. Thank you for your help.

HOME DETAILS

6. What is this home's telephone number? ☐☐☐☐☐ ☐☐☐☐☐☐☐☐☐

7. Is this home a: TICK THE APPROPRIATE BOX

Private residential home..... 1	*Private nursing home*..... 2	*Private dual registered*..... 3
Voluntary residential home 4	*Voluntary nursing home*..... 5	*Voluntary dual registered*..... 6
Local authority home..... 7		

8. How many registered beds does this home have? ☐☐☐

RESIDENT DETAILS

9. At the front of this form is the date when this elderly person was first admitted to residential or nursing care. Is this the date on which they were admitted to this home?

Yes..... 1 → *Please go to Q12*
No..... 2 → *Please answer Q10 and 11*

IF ADMITTED TO THIS HOME ON DIFFERENT DATE

10. When was this person admitted to this home? (IF ADMITTED MORE THAN ONCE, PLEASE GIVE MOST RECENT DATE)

Day ☐☐ Month ☐☐ Year ☐☐

11. Where was this person admitted to the home from? TICK THE APPROPRIATE BOX

Domestic household..... 1	*A hospital*..... 5
Sheltered housing..... 2	*Somewhere else*..... 6
Residential care..... 3	*Don't know*..... 9
Nursing home..... 4	

TIME IN HOSPITAL

12. As far as you know, in the past 12 months, how much time (in total) has this person spent in hospital? IF THE PERSON CAME TO YOUR HOME LESS THAN 12 MONTHS AGO, PLEASE ANSWER FOR THE TIME THEY HAVE BEEN WITH YOU

No time spent in hospital..... 1	*Don't know*..... 0
Yes, time spent in hospital:	
Less than 2 weeks..... 2	*3-6 months*..... 6
2-4 weeks..... 3	*6-9 months*..... 7
1-2 months..... 4	*9-12 months*..... 8
2-3 months..... 5	*Don't know how long*..... 9

If the person was a resident of your home at the 18 month date, please can you fill in the following to let us know their level of dependency. As far as possible, please answer with respect to this person's usual abilities at the 18 month date. If they were temporarily absent at this time, please indicate their usual level of abilities.

13. At the 18 month date, did this person usually manage to: **TICK THE APPROPRIATE BOX FOR EACH ACTIVITY**

A - Get up and down stairs or steps?
On own without difficulty ... 1 *On own with difficulty* .. 2 *Only with help* 3 *Not done* ... 4

B - Go out of doors and walk down the road?
On own without difficulty ... 1 *On own with difficulty* .. 2 *Only with help* 3 *Not done* ... 4

C - Get around indoors (except steps)?
On own without difficulty ... 1 *On own with difficulty* .. 2 *Only with help* 3 *Not done* ... 4

D - Get in and out of bed (or chair)?
On own without difficulty ... 1 *On own with difficulty* .. 2 *Only with help* 3 *Not done* ... 4

E - Move around while in bed?
On own without difficulty ... 1 *On own with difficulty* .. 2 *Only with help* 3 *Not done* ... 4

F - Get to WC?
On own without difficulty ... 1 *On own with difficulty* .. 2 *Only with help* 3 *Not done* ... 4

G - Use WC?
On own without difficulty ... 1 *On own with difficulty* .. 2 *Only with help* 3 *Not done* ... 4

H - Wash face and hands?
On own without difficulty ... 1 *On own with difficulty* .. 2 *Only with help* 3 *Not done* ... 4

I - Bath, shower or wash all over?
On own without difficulty ... 1 *On own with difficulty* .. 2 *Only with help* 3 *Not done* ... 4

J - Get dressed and undressed?
On own without difficulty ... 1 *On own with difficulty* .. 2 *Only with help* 3 *Not done* ... 4

K - Feed self?
On own without difficulty ... 1 *On own with difficulty* .. 2 *Only with help* 3 *Not done* ... 4

14. At the 18 month date, did this person usually use a wheelchair to get about?

Yes ..... ☐ 1 *No*..... ☐ 2

15. Which of these statements describes the elderly person's ability to control their bladder? (A person able to manage a catheter without assistance may be described as continent). Were they:

- *Continent*..... ☐ 1
- *Had occasional accidents*..... ☐ 2
- *Incontinent*..... ☐ 3

16. Which of these statements describes the elderly person's ability to control their bowels? (A person able to manage a colostomy without assistance may be described as continent). Were they:

- *Continent*..... ☐ 1
- *Has occasional accidents*..... ☐ 2
- *Incontinent*..... ☐ 3

17. At the 18 month date, did this person have short-term memory problems? (TICK NO IF THEY APPEAR TO RECALL AFTER 5 MINUTES)

Yes ..... ☐ 1 *No*..... ☐ 2

18. Was this person disorientated in time, space or person?

Yes ..... ☐ 1 *No*..... ☐ 2

19. Which of these statements best describes this person's level of cognitive skills for tasks of daily living at that time?

- *Independent: (decisions are reasonable/consistent)*..... ☐ 1
- *Some problems: (difficulty in new situations)*..... ☐ 2
- *Moderately impaired: (cues/supervision required).t*..... ☐ 3
- *Severely impaired: (never/rarely makes decisions)*..... ☐ 4

20. Which of these statements best describes this person's ability to communicate with others?

- *Understood: (expresses ideas clearly)*..... ☐ 1
- *Usually understood: (difficulty finding right words or finishing thoughts - needs prompting)*..... ☐ 2
- *Sometimes understood: (limited ability, but can express basic needs)*..... ☐ 3
- *Rarely/never understood:(at best carer can interpret person specific sounds or body language)*..... ☐ 4

21. At the 18 month date, how often did this person display any problem behaviour? (e.g. wandering, physical or verbal abuse, antisocial acts - excluding depressive symptoms)

- *Never/very unusual (less than weekly)*..... ☐ 1
- *Sometimes (more than weekly, but not daily)*..... ☐ 2
- *Frequently (at least daily)*..... ☐ 3

22. Was this person receiving any of the following types of nursing care: TICK ALL THAT APPLY

- *Daily dressing*..... ☐ 1
- *Regular injections*..... ☐ 2
- *Procedures associated with being bedfast (e.g. bedbath)*..... ☐ 3
- *Complex appliances or prostheses that require assistance*..... ☐ 4
- *Feeding requiring nursing skills (e.g. tube)*..... ☐ 5
- *Other nursing care (Specify)*..... ☐ 6

- NONE OF THE ABOVE..... ☐ 7

23. At the 18 month date, was this person still local authority funded (either partially or fully)?

Yes ..... ☐ 1 *No*..... ☐ 2

24. *Since* the 18 month date, has this person died or moved away from this Home?

No..... ☐ 1

Yes, died..... ☐ 2 → *On what date did this person die?* Day ____ Month ____ Year ___

Yes, moved:

to another Home ..... ☐ 3
to a hospital ..... ☐ 4
to a private household . ☐ 5

→ *Please give the date the person moved and the address they moved to:*
Date of move: Day _____ Month _____ Year _____
Address (if known):

Thank you for your co-operation.
Please return this form to RSL in the prepaid envelope provided.

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