PSSRU

Personal Social Services
Research Unit

www.ukc.ac.uk/PSSRU/

Outputs and uses of the survey of residential and nursing home care of elderly people

Ann Netten, Robin Darton and Pamela Brown

PSSRU discussion paper 1246
December 1996

Outputs and Uses of the
Survey of Residential and Nursing Home Care of Elderly People

Ann Netten, Robin Darton and Pamela Brown[1]

1. Introduction

There is considerable potential in the survey of residential and nursing homes care for a number of valuable analyses with important policy implications. The latter are not discussed in any depth here as this paper represents a first step in clarifying the planned and potential uses of the survey data. Before considering these it is helpful to summarise the data available and timing of collections.

On completion the three part survey of residential and nursing home care of elderly people will yield two principal data sets:

- a longitudinal data set containing information about 2,500 people admitted to publicly funded residential and nursing home care in 18 local authorities between October 1995 and January 1996; and
- a cross-sectional data set containing information about approximately 600 homes and 12,000 residents of homes in 21 local authorities in November 1996.

For the longitudinal data set information has been collected to date about the household, dependency, and financial characteristics of admissions; mortality and location one month after admission; and mortality, location and dependency characteristics six months after admission. Further follow-ups identifying mortality, location and dependency characteristics of survivors are planned for 18 months, 30 months and 42 months after admission. For those leaving residential care information is being collected about reasons for leaving, location, dependency, and service receipt at each wave.

The cross-sectional data collection is currently underway. The data set will contain information about the dependency and funding arrangements of a random sample of up to 20 permanent and 20 short-stay residents in each of the homes and management, policies, physical characteristics, services provided and quality of care in the homes. Information about dependency characteristics has been collected on the same basis as for the longitudinal survey.

The potential value of these data sets is considerable. If a good proportion of the homes that individuals in the longitudinal survey were admitted to are also in the cross-sectional survey then it is planned to link the two data sets, which will further add to the value of the data collected. The planned and potential outputs from the data sets fall into three categories: those that fall within the commissioned project; those that feed into other projects and streams of work; and those for which there are no resources currently committed.

---

[1] With contributions from Jules Forder and Raphael Wittenberg.

The following headings and associated outlines are not exhaustive. Apart from further analyses that may become relevant in the future, experience tells us that this type of data set is a valuable source of information generating ad hoc enquiries from the Department. The paper describes the feedback process required for those involved in providing the data before identifying planned analyses within the project and when the results are likely to flow through. Those areas of work for which there are already plans to draw on the survey are described before the paper concludes by identifying potential future analyses should resources be available.

2. Feedback to participants

An important aspect of the survey is keeping those who have been involved in the survey informed of results. To date the authorities involved in the admissions survey have received their own data and anonymised data for the survey as a whole, associated documentation and tabulated results for their authority compared with other authorities[2]. A brief handout on the profile of admissions associated with a poster presentation at the British Congress of Gerontology has also been circulated to authorities. Presentations on the report for SSA purposes, the dependency characteristics of admissions and the costs of placement were given to representatives of authorities in September 1996.

In addition, early in 1997 each authority is to be sent an individual report designed to be accessible to both management and fieldworkers outlining the results of the admissions survey. It will describe in general terms the findings from the whole sample and compare these to the findings for their specific authority and for all local authorities of the same type, (other counties, metropolitan boroughs or London boroughs). The report will first give a picture of admissions in terms of whether they originated from a hospital or the community, what the main reasons were for admission, what services were being received prior to admission, what type of home or bed clients were admitted to, how many had survived one month after admission and how many had moved to another location. Second, the characteristics of people being admitted will be described in demographic and dependency terms, including the need for any type of nursing care and the illnesses clients were reported to be suffering from. Throughout, comparisons will be made between those admitted from hospital or from the community and between those admitted to a residential bed and those admitted to a nursing bed so that a picture of those different populations can be obtained and some judgements made about practice and the appropriateness of placements. Finally, the gross costs of placements and the local authorities' contribution to the costs will be enumerated.

It is also planned to produce a leaflet summarising the results of the cross-sectional survey. This will be circulated to all homes and local authorities that participated in the cross-sectional survey towards the end of 1997. Results of the longitudinal analyses will be provided in summary form for local authorities probably in a newsletter format as and when the data become available.

---

[2] Data sets anonymised to ward level have also been provided for the Department of Health and local government associations.

3. Completed and planned analyses

To date a number of reports have been produced (see Appendix A). In addition to technical reports of the surveys there will be:
1. a report of the six-month wave of the longitudinal survey produced in draft for February, to be finalised in the light of comments from the Advisory Group;
2. two papers further analysing admissions data, drafts available in February 1997;
3. an interim report of the cross-sectional survey produced in June 1997;
4. a final report of the cross-sectional survey produced in December 1997;
5. a report of the 18 month wave of the longitudinal survey in February 1998;
6. a report of the 30 month wave of the longitudinal survey in March 1999;
7. a report of the 42 month wave of the longitudinal survey in February 2000;
8. a series of newsletters summarising the main findings;
9. a number of focused papers to be published in journals throughout the study period.

Where possible in the discussion below the timing of the analyses has been indicated in relation to these planned outputs. Appendix B summarises the contents of the first four of the outputs.

3. 1 Standard Spending Assessment purposes
An important purpose in commissioning the study was to feed in to the discussions about the SSA formulae. A number of prediction equations of need for residential and nursing home care based on local circumstances have been estimated on the basis of the results of the survey of admissions (Bebbington, et. al., 1996). These analyses did not address the issue of local cost variations as these are explicitly included in the SSA process through the Area Cost Adjustment (ACA).

The cross-sectional data will be used to explore reasons for local variations in cost such as input prices, contractual arrangements, competitiveness in local markets. We have developed links with the PSSRU/Nuffield Institute Mixed Economy of Care programme of work (see sections 3.3 and 4.3 below) and will draw on their expertise in developing appropriate indicators. In so doing we will be able to consider how well the ACA seems to encapsulate those cost variations relevant to residential and nursing home care beyond the control of the LA. The data will not allow an estimate of an "alternative" ACA, they will merely identify whether there seem to be sufficient problems to warrant further work and in what direction those problems lie. The results of this analysis should be available in June.

There will be limits to the degree to which any analysis could feed into further SSA related work. The only information collected about residents in the cross-sectional data set which is directly comparable to variables used in the formulae to feed into the SSA discussions is age. The other variables included in the formulae all were concerned with circumstances on admission which can not be collected in a cross-sectional survey as respondents often do not have access to the information. However, it will be possible to compare dependency of admissions with dependency of existing residents. Moreover, the cross-sectional data set will allow a comparison of the dependency characteristics of local authority funded permanent residents with other types of resident including short-term placements, privately funded residents and

those with preserved rights. Such uses will have an impact on the costs faced by local authorities and, in the case of short-stay cases, the costs of packages of care of people supported in the community. The survey will yield information about the extent of regular short term provision, average length of stay and cost per stay.

The longitudinal follow-up of admissions over time will allow an investigation of whether allowing for how long financial commitment will last affect the estimated equations. That is, are the characteristics of those who die or leave residential care within six months systematically related to those factors entered into the prediction equations. Weighting the equations by how long people remain in care will allow this question to be addressed. An analysis based on mortality and discharges during the first six months after admission should be available by February 1997.

3.2 Characteristics of residents

Previous studies of residential and nursing home care have provided a valuable picture of the population of homes but have all been cross-sectional. The longitudinal data set provides the first comprehensive picture of the characteristics of residents at the point of admission in the context of their paths into care. It would be expected that distinctions between -nursing home and residential home residents would be clearer at the point of admission than in the residential care population as a whole. It is also possible to identify to some extent the impact of social factors on where people are admitted to. The analysis will explore the implications of supply factors on dependency levels on admission. An outline of the main results will be available for the February advisory group meeting.

Dependency characteristics will be collected using the same questions over time but necessarily the respondents will change. Particular care will be necessary when comparing assessments made by social workers prior to admission with assessments by the home six months after admission. Nevertheless it is hoped that a valuable picture of changing dependency over time will be identified once the longitudinal survey is complete (see section 4.2 below).

Over recent years there has been increasing evidence of changing patterns of use of residential care with local authority provision being reduced and increasing numbers of people living in independent provision. The introduction of the reforms has reinforced these trends which started in the late 1980's. The cross-sectional data set will have the advantage that it has been collected in such a way as to provide comparisons with previous surveys. It will be possible to identify how the current population, three years after local authorities took on responsibility for assessing all publicly funded admissions, compares with the population of homes in the mid 1980s. It will also be possible to examine the extent to which homes previously managed by local authorities form a separate sector of provision with more in common with one another and current local authority provision than with other independent providers.

In addition the cross-sectional data set will provide a number of points of comparison which will illuminate the current use of residential and nursing homes. The type of question which will be addressed includes:
- How do short-term residents compare with permanent residents, do they tend to be more or less likely to be suffering from dementia?

- How do preserved rights residents compare with those funded by local authorities?
- What is the length of stay and dependency of residents who have become the responsibility of local authority during their stay (spend-down cases)?
- How do privately funded residents compare with people who are publicly funded;
- How do recently admitted publicly and privately funded residents compare? Is there any evidence that privately funded residents are less dependent on admission than publicly funded residents?

Initially the comparison will focus on whether there are any SSA implications (see section 3.1 above). The results of this analysis will be available in June. Further descriptions and analyses for other purposes will be available by December 1997.

3.3 Costs of care

Residential and nursing home care is a very costly option in the care of elderly people and as such it is of interest to identify how these costs vary and what affects the costs of care. Of particular interest is the relationship between dependency and costs which forms a basic building block in analyses of lifetime costs and expected changes in the unit costs of residential care with a changing population. Ideally the relationship that needs to be unpicked is the longitudinal relationship between dependency and costs: how home costs change as their resident population changes. In practice, this would take a very long time to establish satisfactorily and the cross-sectional relationship which uses homes with different resident populations and costs or fees is the most practical basis for analysis.

The cross-sectional data collection will provide a basis for estimation but even on a cross-sectional basis the relationship between costs and dependency is a complex one. It is not possible to deduce much about the relationship unless other causes of variation, such as factor prices, quality of care, sector of provision, use of homes for the provision of short term care and other intermediate outputs such as meals-on-wheels services, are taken into account. The costs of an establishment, in so far as they are related to dependency, reflect the dependency of the overall population of the home (including privately funded residents) in the financial year to which the cost data relate. When fees (representing the cost to the purchaser) are taken as the dependent variable issues such as the relationship between fees charged and external or "market level" features such as measures of market competition, product differentiation; and local authority price regulation strategies[3]. Residual variation would be expected to reflect the impact of dependency on costs of care.

Assuming that a relationship between fees and dependency can be found[4] a number of different ways of measuring dependency will be explored to identify which measures of the dependency of the resident population seem to be most sensitive to the resource consequences. This analysis will be completed in June. The analysis of local authority

---

[3] This analysis would draw on the expertise of the PSSRU Mixed Economy of Care team and would also explore the divergence between costs and prices (see section 4.3 below) and the sensitivity of fees to the demand for and supply of home places.

[4] One concern is that if local authorities are very dominant in the purchase of care and are adopting very inflexible approaches to what they will pay for then the influence of a more dependent population will be found through reduced levels of quality of care and other stresses in the home rather than in higher levels of fees. If this is the case then the focus of the analysis will have to be on such variations.

home costs requires information about expenditure in the financial year 1996/7. It is planned to collect the information during September 1997 and complete the analyses by December 1997.

A paper analysing factors that affect the costs of placements with independent providers will be available for the February Advisory Group meeting. This will consider the impact of influences on the demand and supply for residential and nursing home care and local authority contracting practices. The most important influence on cost is whether an individual is placed in a residential or nursing homes which raises the issues of what affects this decision and appropriateness of placements.

3.4 Appropriateness of placements
The longitudinal data set will allow an analysis of factors (including dependency, location of assessment, and reasons for admission) that affect whether individuals are placed in residential or nursing homes. In addition to factors affecting the initial decision there will be information about alterations in placement shortly after admission.

The cross sectional data set will allow an examination of the use of the types of home. This is of interest to those concerned with the funding of care as there is such a wide variation in costs between independent residential, independent nursing and local authority provision. In particular are nursing and residential homes catering for different types of residents in the wake of the reforms or is the overlap in type of resident cared for persisting under the new arrangements? It will also be possible to examine the role of specialist homes in catering for specific client groups.

The precise timing of these analyses is yet to be decided.

3.5 Length of stay and destinations of those who leave residential care
Those concerned with public funded residential care and with providing insurance to cover the costs of privately funded residential care have an active interest in how long commitments, once made, will last. To make any accurate assessment of the implications over time, there is a clear need for information about what happens to people after admission to residential care if authorities and others concerned with funding residents are to be able to plan appropriately.

Although most of the analysis of length of stay will draw on the longitudinal data set the cross-sectional data will allow a comparison of length of stay of the population of homes with past patterns.

The longitudinal data set will provide information about the characteristics of admissions under the current arrangements and expected changes in dependency state, length of stay and mortality over time. Once sufficient information is available (it is anticipated that this will be once 30 months data is available) the data will be analysed to predict expected length of stay and how this is related to characteristics on admission. This will be reported early in 1999. The last follow-up (42 months after admission) will refine this analysis to see how further information about mortality and changes in location affect predictions. In the meantime data from earlier waves will be used to identify rates of mortality, discharges from homes, moves from residential to nursing home care and levels of dependency of survivors. This will be related to the type of

home admitted to and circumstances on admission. The initial analysis for six months after admission will be available in February 1997.

One group of particular interest are those who leave residential care. Close to one hundred individuals who have left residential care during the first six months after admission are being tracked to establish the reasons for leaving care and levels of dependency. They will also be contacted in subsequent waves and any other people who leave during the study period will be followed up. Initial results will be available in February 1997.

4. Further analyses expected from linked projects and programmes

There are three other areas of PSSRU's work which are expected to draw on the data sets.

4.1 Study of demand and financing of long term care
PSSRU plan to use data from the surveys of residential care in the DH-funded study of demand and financing of long term care for elderly people. Use of the residential care data for this study was mentioned in the project outline and discussed at the August meeting between DH customers and the researchers.

The plan is to use in the cell-based model the data from the cross-sectional residential care survey to complement the parallel cross-sectional data from the General Household Survey. The data will be used to provide a breakdown by age, gender and dependency of those in residential care and nursing homes.

A microsimulation model would use data from the admissions survey and longitudinal follow up. The admissions data could be used, alongside GHS or other data, to provide estimated probabilities of entry to publicly funded residential care by age, gender and health state. An initial analysis has already been completed as one of the outputs of the survey (see Appendix A). The longitudinal data could be used to provide estimated mortality rates for those in residential care by age, gender and health state.

4.2. Estimation of health expectancy
Andrew Bebbington submitted a paper to the Working Group on Health Expectancy Measures concerning the use of the longitudinal data from the residential care survey in the estimation of health expectancy (Appendix C). The Working Group have argued that reliable estimation of trends in health expectancy requires longitudinal data to provide incidence rates and transition rates between health states.

The Working Group considered a proposal from the Department to collect initial longitudinal data in respect of the private household sector by commissioning ONS to follow up and reinterview the elderly sample in the 1994/5 GHS. Longitudinal data from the residential care survey could constitute broadly parallel data in respect of the publicly funded residential care sector.

4.3 Mixed economy of care

The data provide the opportunity for the MEOC programme to address issues and hypothesis in three main areas in addition to the costs analysis described above (section 3.3).

The divergence between costs and prices The price which purchasers pay for services need not be a true reflection of the (minimum) costs of producing those services for a number of reasons. Providers may be making profits beyond the "acceptable" rate of return (which is usually measured as part of the provider's costs). Also, providers may not be operating with an efficient production process (accounting for client characteristics, quality and so forth) so that actual costs - upon which prices are calculated - are above minimum costs.

Measuring this price - cost surplus in practice is difficult: generally direct measurement of minimum costs is not possible by external observation. Nonetheless, two techniques are available which allow an inference of the extent of provider's surplus based on the prices they charge. The techniques are the *price elasticities* approach and *frontier analysis*. Both use information about the demand a provider experiences (the demand constraint), the characteristics of the service, client characteristics, quality factors and so forth (the production technology constraint).

The cross-sectional data set provides sufficient information for these techniques to be undertaken.

Stakeholder welfare The effects of local authority market management strategies on the welfare of users, purchasers and providers can also be considered. The data support a number of *welfare* measures:

(a) Direct outcome measures. The longitudinal data set will identify changes in client dependency over time.

(b) Output measures. Included in the cross-sectional data set are characteristics at the home level such as: the number of single room places, with en suite etc.; additional service availability; client choice as reflected by the number and range of contracted providers.

(c) Indirect measures. Welfare may be gauged indirectly according to the incidence of *transaction shortfalls* and provider market power. The former relate to the efficient use of LA resources in terms of potential wastage that may occur as a result of inappropriately governed transactions (with both independent and in-house providers). One such problem can occur when client dependency is inappropriately specified in a contract allowing the provider considerable influence in determining the type, intensity and price of services for the client. For example, if only a single residential care price is specified providers have the incentive to reject high dependency clients. Finally, provider market power can lead to an inflation of prices of costs which benefits the provider at the expense of the purchaser (and client).

In each case, statistical analysis can be used to determine the relationship between the welfare measures and factors such as:

(a) the type of provision: sector of home, organisational type (e.g. limited company, partnership), size of home.

(b) the type of LA commissioning arrangements. Welfare may be measured against the types of commissioning and market management strategies being employed in different authorities. It may then be possible to determine those combinations of commissioning arrangements that are most conducive to the welfare of users.

Insofar as LA policy can (directly) influence these two sets of factors, finding a systematic relationship between these factors and the welfare measures, implies that LA policy also influences welfare as defined.

Employment effects The data provide the opportunity to study and analyse the market for care home employees, looking at wages levels and the demand and supply of staff. This analysis can investigate these relationships in terms of types of positions: full-time/part-time composition, qualification, and so forth.

5. Further potential analyses

The following analyses are not planned at present but represent further potential uses of the data.

5.1 Long term effects of placements
If sufficient homes that individuals in the longitudinal survey were admitted to are also in the cross-sectional survey the data sets will be linked. If this is the case there is potential for linking outcomes for residents (with respect to changes in location and dependency) with the characteristics of the home into which they were admitted. This would allow analyses of the relationship between the characteristics of the home and changes in dependency over time. An area of particular interest is the appropriate placement of people with dementia.

5.2 Predicting life-time costs of those admitted to residential care
The issue of lifetime costs is of particular concern to those concerned with the continuing funding of residential care, both private and public. Any analysis of projected lifetime costs from the point of admission is dependent on outcome of previous analyses of expected length of stay, changes in dependency and the relationship between dependency and costs.

5.3 Quality of care
The survey includes a number of indicators of quality of care including the services provided, staffing levels and qualifications, the physical environment and the social climate of homes (as measured by the Sheltered Care Environment Scale (SCES)). There is potential for comparing some measures with previous surveys of residential care to see if there has been an improvement in quality of care following on the reforms and the emphasis on consumer choice. There is also potential to investigate the use of the SCES in a survey. If the measure, which has been (and is being) used in a number of in depth studies of quality of care, proves to be a valuable indicator the

survey could be used to identify English normative data. This would provide valuable contextual information for smaller scale in depth studies of quality of care.

6. Conclusion

It was identified above that this paper represents a first step in identifying planned and potential uses of the data collections resulting from the survey of residential and nursing home care of elderly people.   The results of initial analyses would be expected to generate interest in further analyses. At present the objective is to provide a basis on which to clarify priorities in the short term and identify some of the longer term potential.