CHAPTER 8

Actuarial Data Requirements for Continuing Care Retirement Communities ("CCRCs")

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Introduction

The purpose of this chapter is to define the types of actuarial data that are useful to managers of continuing care retirement communities (CCRCs) in formulating policies about the operations of their facilities. There are many types of data that CCRCs already collect for regulatory and accounting purposes. These data, however, do not often match what is needed for operational and financial management. In order to identify the most appropriate information, it is necessary to specify the questions and issues that a CCRC manager wishes to address. Managers of CCRCs generally seek answers to three basic questions:

1. **What should my CCRC "expect" for entry fee receipts and refunds during the next fiscal year and what is the potential variation in this expectation?** This information depends on the turnover by type of unit and assumptions about the contract type that new entrants select when filling a vacant unit.
2. **What are my CCRC's monthly fee revenues for contractholders by level of care?** This information depends on the number of contractholders in each level of care, their contract types, and possibly how long a resident has lived in that level of care.
3. **How many beds (units) does my CCRC need to accommodate our promise to contractholders that they will always have a healthcare bed, and how do we manage admissions of private pay residents to meet our contractholder obligations?** This information depends on resident longevity by level of care and transfer rates among levels of care for contractholders.

Each of these issues requires that managers make assumptions about future "population flows." Actuarial science provides tools to assist in making better decisions, provided that the underlying assumptions are credible. The remainder of this chapter discusses the types of data needed to select credible assumptions.

History

For a long period, data on the longevity of seniors living independently and their usage of asissted living or nursing care services were difficult to locate. The primary actuarial question raised by managers of CCRCs was: "How many nursing beds do we need for our contractholders?" Later this question was expanded to include assisted living.

The need for credible projections was critical because it affected planning for the total size of the facility, as well as the financial well-being of the CCRC since many contracts limited fee increases as residents transferred to more costly levels of care. The initial actuarial models focused on projecting the location of continuing care contractholders. However, the challenge was selecting assumptions because empirical data were not available. Many actuaries made judgment calls for assumptions about longevity and healthcare usage. Early studies often began by requesting data collection from those CCRCs that had the data so that assumptions could be tailored to better match a specific CCRC's experience.

Data for First-generation Models

Prior to the advent of computer modeling for CCRCs, most financial and healthcare need assumptions were developed empirically. Industry planners used rules-of-thumb that were developed from unknown sources, or the experience of a "so-called" similar facility. These assumptions were applied to all situations, regardless of whether resident demographics matched the source of the rule-of-thumb or the similar community.

In the early 1980s, computer resources became widely available and modeling of CCRCs was more economically feasible. More robust statistical techniques could be applied to answer planning questions.

The actuarial mathematics for developing a model to generate these statistics is based on analysis of information about residents that predicts how long a resident will survive in a specific level of care and the probability of transferring between levels of care. This information depends upon the resident's gender, age, coupled status, time since initial move into the facility, and current location. Other factors that may come into play for projections are issues that relate to entry fee amortization or monthly fees actually paid, if different from standard contract fees. The following data are needed for each resident:

- Name
- Roommate at entry
- Gender
- Entry date
- Birth date
- Unit type at entry
- Current unit type

- Contract type
- First and second person entry fees paid
- First and second person current monthly fees
- Movement (admission/discharge) dates and level of care

Limitations of First-generation Actuarial Model

As mentioned previously, the current actuarial model generates several statistics that are needed for capacity planning and financial analysis. However, there are some limitations in actuarial projections for CCRCs.

One issue relates to the relatively small population size of a CCRC. Traditionally, actuarial science is applied to populations with 10,000 or more members such as a pension plan or employee group. In those situations, the impact of variations from the expected projections is typically not material. This is not the case, however, with a CCRC whose contractholder population is usually 400 residents or less. This means that users of CCRC actuarial projections should not expect their experience to exactly match the projections during the next year. However, over three to five years the rolling average of experience statistics should match the projections.

In addition, transfers among levels of care are extremely difficult to project because actual transfers involve decisions by individuals as opposed to a strict medical assessment or management policy. Residents who "should" be transferred to another level of care may refuse to move. Unless management follows policies to "challenge" resident desires, residents may hire private duty aides to assist them in remaining in an independent living unit.

These issues mandate the development of second-generation actuarial models that provide a more robust set of answers to the three basic questions that were raised in the introduction. We are no longer able to assume that residents with disabilities, or needs, will be served in a specific level of care. We now require models that project a discrete set of disability or functional states by level of care, so managers can adjust their budgets to include support staff to provide for the overall changes in aggregate functional status of their contractholders.

Data for Second-generation Actuarial Models

In second generation actuarial models, we will still continue to need the same data that were collected for the first generation models. These data, however, must now be augmented because the location where a resident is served is no longer as relevant as the resident's functional status. Many facilities have a "pent-up" demand for services that are normally provided in more costly levels of care. In order to plan for this demand, managers need to be able to predict changes in functional status.

While there are numerous measures and assessment tools for quantifying functional status, we prefer to use a combination of tools that measure activities of daily living, instrumental activities of daily living, and cognitive impairment. Based on the measures of relative functional status, management can plan for staffing to serve their contractholder populatoin in less intensive care levels.

The simplified descriptions of activities of daily living (ADL) are: (1) bathing, (2) dressing, (3) eating, (4) continence, (5) toileting, and (6) transferring. The simplified description of instrumental activities of daily living (IADL) are: (1) preparing meals, (2) doing housework, (3) taking medication, (4) shopping, (5) using transportation, (6) managing money, and (6) using telephone.

The recommended tools for assessing ADL and IADL limitations are the Katz ADL scale and the Lawton IADL scale. The recommended tools for assessing cognitive impairment are the Folstein Mini-Mental State Exam (MMSE) and the Yesavage Geriatric Depression Scale (GDS). All of these tools have been validated and provide widely accepted measures of function for elderly populations.

The information regarding ADL and IADL limitations and cognitive impairment must be collected regularly and systematically. It is recommended that assessments be completed annually and upon permanent transfer to another level of care if that occurs between assessments.

Limitations of the the Second-generation Actuarial Model

By tracking changes in functional status, models can be developed that project the number of potential residents who might be moved to another level of care. The next step is to enhance the models to reflect management's policies and resident behaviors about moving between levels of care to better reflect the true experience of a CCRC. This will lead to more reliable model results and better information for planning and designing the size and staffing of a CCRC.

The major drawback to second-generation models is the additional time required for data collection (and maintenance) by staff of the CCRC. Experience indicates that the first-generation data collection requires about 15 minutes per resident per year. The second-generation data collection is likely to require 60 to 120 minutes per resident per year. Many facilities may not immediately perceive the value of these models to commit to the staff time that is needed.

A second drawback is that standard assumptions for functional status of CCRC residents are not currently available. Since very few CCRCs have historically collected ADL, IADL, and cognitive data on their residents, no one to our knowledge has developed baseline assumptions for CCRC residents. However, this situation will be remedied over time as CCRCs form data base coalitions for collecting and maintaining resident actuarial data.

Summary: What's Next and Third-generation Actuarial Models

As noted previously, managers of CCRCs need to collect data for operational and financial planning models. At the present time, these data requirements may not coincide with requirements of accounting systems or regulatory reporting. This means that additional effort, and costs, may be incurred by CCRCs to provide the most credible information for making effective decisions.

The next step in actuarial data collection is to begin to tie together additional types of initial assessments of residents and track their service utilization in order to determine how to equitably price (underwrite) contracts and reflect the appropriate level of risk associated with pre-existing conditions. With scientific analysis of these types of data, managers will be in a position to prudently offer a wide range of contracts to residents. This will allow a potential resident to design his/her own plan for financing the payment of long-term care or coordinating his/her CCRC contract with other third-party plans.

The advantage to this scenario is that contract provisions will no longer be a barrier for residents to move into a CCRC. The disadvantage is that it requires continuous and extensive data collection. If CCRCs were to start collecting these types of data today, the author estimates that by 2003 sufficient information could be accumulated for qualified analysts to develop models that greatly improve CCRC projections and flexibility in contract offerings. Of course, this effort is greatly facilitated by the development and use of computer-assisted data collection software.

Finally, and perhaps most importantly, actuaries and managers can begin to build databases that allow us to measure the financial impact of various intervention, prevention, and health maintenance protocols that may reduce the overall costs of a continuing care contract. These exciting achievements can only be attained if the industry and its providers are willing to bear the costs and start immediately on the collection and maintenance of resident data.