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TESTING FINANCIAL STABILITY OF CONTINUING CARE RETIREMENT COMMUNITIES

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ABSTRACT

This paper introduces continuing care retirement communities (CCRCs) to the *Transactions*. It outlines the major recent developments in financing procedures and regulatory requirements aimed at keeping these entities solvent. In particular, it describes the Actuarially Based Financial Management System (ABFM) created in 1990 by the American Academy of Actuaries and the *Statement of Position 90-8* promulgated by the American Institute of Certified Public Accountants (AICPA).

The paper aims to guide the actuary in making sound judgments of the differing results that arise from these professional requirements and naturally stresses the merits of a comprehensive actuarial approach.

I. INTRODUCTION

The growing senior population and the steadily increasing segment of this population residing in CCRCs have focused ever-increasing attention of operators and regulators upon meeting the financial guarantees to their residents.

The lankmark work of Winklevoss and Powell, published by the Pension Research Council in 1984 [11],* introduced actuaries to this world of CCRCs: senior housing arrangements that bring with them actuarial concepts of selection of risks, health insurance, life insurance, and pensions all rolled into one—plus the additional fascination of real property valuations and the delivery of health care services. Literature published by the Society of Actuaries and other actuarial bodies, however, is sparse. Much of actuaries' work is recorded only in committee minutes of the American Academy of Actuaries, actuarial meeting seminars and open forums, and occasional articles in actuarial newsletters.

The Academy's Committee on CCRCs, with Jarvis Farley as primary drafter, published its Statement of Standards in 1987, which became

*It is noteworthy that this extremely important book was never reviewed in the *Transactions*. A brief review by David L. Hewitt appeared in *The Actuary*, May 1984 [7].

Actuarial Standard of Practice (ASOP) No. 3 in 1990. In 1994 that ASOP underwent a revision in principles and reformatting.

The period 1990–1994 saw creation of *Statement of Position 90-8* on the Generally Accepted Accounting Principles (SOP-GAAP) of the American Institute of Certified Public Accountants on CCRCs; this SOP was the first exclusively on CCRCs. A number of new state regulations and changes to the National Association of Insurance Commissioners' (NAIC) accounting manual were also issued during this period. This paper describes the methodologies and the effects of inconsistencies between them.

The paper is organized into the following sections:

II. Evolution of Today's CCRC Financial Statements and Regulation
III. Definitions and Summaries of Standards of Practice
IV. Resident Contracts and Their Actuarial Implications
V. Differences between Standards of Practice Set by Accounting and Actuarial Professional Bodies and Their Implications for Budgeting and Pricing
VI. Regulatory Accounting Requirements
VII. Conclusion.

The paper provides analyses of the differing results obtained by alternative accounting and actuarial standards to help actuaries understand their consequences, including their impact upon the emergence of earnings.

The authors acknowledge personal debt to the late Jarvis Farley, a friend who identified the importance of actuarial involvement to ensure the financial stability of these facilities. This paper is dedicated to his memory.

II. EVOLUTION OF TODAY'S CCRC FINANCIAL STATEMENTS AND REGULATION

The early CCRCs, copied from European originals, were sponsored by religious bodies that depended upon charitable contributions to cover costs not funded by the residents. So there was no role for regulators to perform other than to monitor the good faith of the organizers. We believe it was not until the 1970s that any North American actuary began to advise these communities on their prospects for making good on their promises to the residents.

As recently as the early 1980s, only a handful of state authorities required CCRCs to demonstrate their financial viability. The state-by-state history is beyond this paper's scope, but we note that the State of New York's Insurance Department prohibited formation of CCRCs until 1991, when the

department issued comprehensive financial accounting methods and standards.

It was not until 1988 that the NAIC formed a working group to provide guidance to state insurance departments. The work of that group was completed in 1994, and details on its final report are described in Section VI.

III. DEFINITIONS AND SUMMARIES OF STANDARDS OF PRACTICE

A. Actuarial Definitions

Actuarial Standard of Practice No. 3 (ASOP No. 3) [2] defines essential terms. Those of most importance to an understanding of this paper are defined below. A knowledge of all terms and practices in *ASOP No. 3* is recommended.

Continuing Care Retirement Community. A residential facility for retired people that provides stated housekeeping, social, and health care services in return for some combination of an advance fee, periodic fees, and additional fees.

Residency Agreement. The contract between a CCRC and the resident(s) of a living unit (apartment, cottage, villa, health center unit, and the like) in the community.

Advance Fee. An amount payable by the resident at the inception of a residency agreement, also known as endowment fee, entry fee, or founder's fee.

Nonrefundable Advance Fee. The portion of an advance fee to which the CCRC is unconditionally entitled under the terms of the residency agreement.

Periodic Fees. Amounts payable periodically (usually monthly) during the existence of a residency agreement.

Refundable Advance Fee. The portion of an advance fee, designated in the residency agreement, that is to be returned to the resident or the resident's estate either upon termination of the agreement or upon resale of the unit.

Additional Fees. Amounts that may be payable in accordance with a residency agreement for services made available but not covered by the advance fee and the periodic fees.

Health Center. A place associated with a CCRC where health care (primarily bed nursing care) is provided to residents in accordance with a residency agreement.

Actuarial Balance Sheet. A cumulative measure of the CCRC's assets and liabilities, as of the valuation date. The values of some asset and liability items, such as cash, receivables, accruals, and deposits in escrow, are taken directly from the accounting balance sheet. The values of future periodic fees, operating expenses and refunds are measured as actuarial present values for the closed group.

Actuarial Present Values (APV). The calculation of APVs requires the use of assumptions of mortality, transfers, withdrawal, interest, inflation, changes in periodic fees, changes in advance fees, revenues, expenses, and other pertinent contingencies.

Closed Group. The resident population of the CCRC as of the valuation date.

Permanent Transfer. A resident's move from one level of care to another without expectation of returning to the former level.

Temporary Transfer. A resident's move from one level of care to another with the expectation of returning to the former level.

Physical Property. Physical assets such as land, building, furniture, fixtures, and equipment that belong to the community. These assets (excluding land) are assumed to depreciate over their respective lifetimes.

Other terms are defined when introduced.

B. Actuarial Standards of Practice

ASOP No. 3 provides as follows:

Assets. The values of some items, including *cash* and *receivables*, are taken directly from the accounting balance sheet. *Future periodic fees* are determined by projecting the fees payable by surviving members of the closed group in each future year and discounting the result back to the valuation date. The estimate of future fees usually reflects current rates adjusted for projected future fee increases. Projected fee inflation should reflect appropriate practical, competitive, contractual, and economic considerations.

Value of Physical Property for Assets Currently in Service. The part of the value of assets in service on the valuation date appropriately allocated to current residents is calculated as follows:

a. Each item of property is assigned an assumed useful lifetime and an appropriate rate of inflation.
b. The annual capital expense for the use of an asset is developed for each year using its useful lifetime and is calculated as one of a series of annual amounts. The present value of this series, discounted to the time

of acquisition, equals the cost of the asset. This series may be decreasing, level, or increasing. The discounted value of the asset at any later measurement date equals the discounted value of the remaining expense stream.

Liabilities. The values of some items, including *accruals* and *deposits in escrow*, are taken directly from the accounting balance sheet. The actuarial value of long-term debt is the discounted value of the principal and interest stream as of the valuation date.

The value of *future operating expenses* in question for each future year should be developed by allocating the portion of the expenses represented by the appropriate closed-group population projection (or other allocation base) and discounting the result back to the valuation date. The estimate should reflect future cost inflation, and the allocation should reflect underlying expense consumption patterns. For example, certain health center expenses may be allocated in proportion to the number of occupied beds.

The actuarial present value of *the future use of physical property* is the discounted value of the expense for the physical property and its replacement. The expense stream as of the valuation date is described in item b of the list above. The development of the annual capital expense stream and allocation to the survivorship group is described below:

a. It is assumed that each asset will be replaced at the end of its useful lifetime with a new asset. The cost of the new asset is assumed to equal the original cost indexed for inflation. The asset is continually replaced at the end of successive useful lifetimes. A calculation is made as follows for each such replacement during the survivorship of the closed group:
   i. The part of each future year's capital expense that relates to a specific closed group is determined by estimating the ratio of closed-group use to total community use. The ratio may be in proportion to the population, to the number of community occupied beds or units, to square footage, or to some other appropriate measure. For years during fill-up or material change in population, it may be appropriate to substitute a target or ultimate level of use for the actual estimated level of total use.
   ii. The current actuarial liability for the promised future use of a physical asset (and its replacements) with respect to a specific closed group is the sum (for all years) of the part of such capital expense in each future year related to the group or cohort of residents, as determined in (i), discounted to the valuation date.

The actuarial present value of *future refunds* is obtained from an estimate of the amounts and timing of refunds, which are then discounted back to the valuation date.

C. AICPA Statement of Position [11]

As a basis for comparison of this standard to *ASOP No. 3*, the actuary should understand important terms in the AICPA Guide and their treatments and applications.

Refundable Advance Fees. This is the estimated amount of advance fees that is expected to be refunded to current residents under the terms of the contracts; it should be accounted for and reported as a liability. The estimated amount should be based on the individual facility's own experience or, if records are not available, on the experience of comparable facilities. The remaining amount of advance fees should be accounted for as deferred revenue within the liability section of the balance sheet.

The deferred revenue should be amortized to income over future periods based on the estimated life of the resident or contract term, if shorter. The period of amortization should be adjusted annually based on the actuarially determined estimated remaining life expectancy of each individual or joint-and-last-survivor life expectancy of each pair of residents occupying the same unit.

Fees Refundable to Residents Only from Reoccupancy Proceeds of a Contract-Holder's Unit. That portion of fees that will be paid to current residents or their designees only to the extent of the proceeds of reoccupancy of a contract-holder's unit should be accounted for as deferred revenue. Similar amounts received from new residents in excess of the amount to be paid to previous residents or their designees should also be deferred. The deferred revenue should be amortized to income over future periods based on the remaining useful life of the facility.

Nonrefundable Advance Fees. These fees represent payment for future services and should be accounted for as deferred revenue. If a CCRC has sufficient historical experience and relevant statistical data about life expectancies, then it should consider that information when determining the remaining life of residents. A CCRC with insufficient historical experience or reliable actuarial data may use relevant other data. The deferred revenue should be amortized to income over future periods based on the estimated life of the resident or contract term, if shorter. The period of amortization should be adjusted annually based on the actuarially determined estimated

remaining life expectancy of each individual or joint-and-last-survivor life expectancy of each pair of residents occupying the same unit.

The Obligation to Provide Future Services and the Use of Facilities to Current Residents. The liability, called the *future service obligation (FSO)*, is the present value of future net cash flows, minus the balance of unamortized deferred revenue, plus depreciation of facilities to be charged related to the contracts, plus unamortized costs of acquiring the related initial continuing care contracts, if applicable.

This future service obligation, a new requirement introduced by SOP-GAAP, has had the effect of bringing actuarial and accounting standards into essential agreement with each other. Previously the tendency was to dismiss the need for this liability item because of the CCRC's presumed unlimited ability to raise fees or to conclude that any loss on a contract is irrelevant because fees of new residents can offset losses on old contracts [4]. However, as pointed out in Section V, the actuarial and accounting approaches still differ substantially in contracts that provide for holding advance fee refunds until living units have been reoccupied.

Cash inflows include revenue contractually committed to support the residents and inflows resulting from periodic fees including anticipated increases in accordance with contract terms. Cash outflows comprise operating expenses, including interest expense and excluding selling and general and administrative expenses. Anticipated cost increases affecting these operating expenses should be considered in determining cash outflows. The expected inflation rate as well as other factors should be considered in determining the discount rate. The period of amortization should be adjusted annually based on the actuarially determined estimated remaining life expectancy of each individual or joint-and-last-survivor life expectancy of each pair of residents occupying the same unit.

Deferred Revenue. AICPA guidelines recognize that a liability called deferred revenue be held for payments of various types that have been made to provide future goods and services. Deferred revenue items are taken into income in future years as their amounts are reduced according to appropriate schedules.

IV. RESIDENT CONTRACTS AND THEIR ACTUARIAL IMPLICATIONS

CCRC contracts with their residents contain a variety of agreements about health services, apartment services, social services, meals, and the like. From

an actuarial standpoint, however, the most important agreements concern advance fees (sometimes called endowments), periodic charges and the CCRC's ability to raise them, and the provision of health centers for temporary or permanent skilled nursing care needs.

Under ABFM, the projections used to produce a balance sheet as of a given time are based on the closed group of residents at that time. These projections implicitly assume that new entrants will fill vacancies arising from the deaths and withdrawals among the members of the closed group. Even though revenue and expenses associated with those new entrants are not reflected in the balance sheet, the implicit assumption is necessary because, in the absence of new entrants, the CCRC would inevitably fail.

The contracts usually have no limitations on annual increases in periodic fees. As a result, potential conflict between operators and residents arises about required services and need for surplus funds. Fee increases are frequently limited in fact by fees at competitor facilities nearby and by the facility's need to be able to attract new entrants.

The financial system resembles a combination of a single-premium and a (variable) monthly premium insurance policy. Marketing the plan can be aided by offering a low single premium at the expense of high periodic fees (or plans to raise them). Increases planned for advance fees, however, do not directly affect the balance sheet because they apply only to those not yet members of the existing resident group.

We now examine the types of advance fees, mortality, morbidity and transfer rates, nursing care provisions, periodic fees, and asset liquidity considerations.

A. Advance Fees

The advance fee, perhaps the unique aspect of CCRCs, is usually a component of the resident contract. The origin of the advance fee and its perpetuation today result from several factors:

- Early religiously based facilities frequently required that entrants convey all or most of their assets to the facility in exchange for lifetime care.
- New facilities frequently need to guarantee payment of construction loans by getting major dollar commitments from their first cadres of residents.
- Advance fees help to ensure low turnover of residents and, for those who do withdraw, a financial return commensurate with fixed expenses the CCRC has incurred for marketing, construction costs, and the like.

Advance fees vary today generally between $100,000 and $500,000 depending upon building costs, unit size, single or double occupancy, and the advance fee refund provision. The advance fee refund may decrease rapidly to zero at a rate of, say, 1% per month of residence, or it may remain as high as 95%. Nonrefundable advance fees should be, and usually are, substantially lower than those of the refundable types.

A few CCRCs vary advance fees by age. It seems that greater equity would result if more CCRCs were to vary advance fees according to age at admission and sex.

- In CCRCs that provide substantial refunds, of perhaps 75% to 95%, older entrants clearly are treated more favorably than younger ones; those with longer prospective longevity subsidize those with shorter longevity by having their fees tied up longer and generating more investment income to the facility.
- In CCRCs that provide small or no refunds, the situation is of course reversed. This arrangement would be expected to make the facility especially attractive to healthy young residents.
- There is perhaps a middle-ground schedule of refund percentages by period of residence and by age and sex that would substantially reduce such inequities.

B. Mortality, Morbidity, and Transfer Rates

The actuarial basis for calculating present values of a community's income and outgo streams is of course rooted in the expected experience of each facility. The decrements include the death rates by age and sex for residents in independent living units (ILU), in personal care units (PC), and in skilled nursing (SN). In addition, for each resident in any level of care, experience rates of transfer to any other level of care, and costs associated therewith, must be established.

Supervisory bodies have not so far undertaken to legislate "safe harbor" values for these decrements. One concern is that legitimizing an "industry" table might lead to unsound projections. For newly organized facilities, the assumption is usually made that experience will be the same as that at similar facilities with similar medical and financial underwriting standards for admitting new entrants. If these same assumptions were used for a facility with more lenient qualification standards, severe financial problems might result from, in particular, excessive personal care and nursing expenses. The 1983 Table *a* [10] is commonly used as a basis for the decrements, a different

percentage factor being applied to the table's rates for each different decrement. Winklevoss and Powell [11] shows actual experience, circa 1983, of several CCRCs relative to that table. The Society's CCRC Experience Project Oversight Group has developed a plan for collecting and analyzing the combined experience of many communities and is seeking to bring it into use. Regardless of the source of original assumptions, actuarial analyses and revision of the assumptions are necessary as experience develops.

This paper does not intend to suggest what the decrements and transfer rates are, or the mechanics of estimating transfer and death rates. Table 1 is illustrative only. It shows the age 80–100 values of the decrement table in the Model for Studying the Actuarial Aspects of CCRCs released in 1991 [3] by the Society of Actuaries Research Management Committee. That model produces, inter alia, closed group projections upon which present values are based.

The ILU death rates are low in relation to familiar population and annuitant tables because residents in poor health have been transferred to the PC and SN categories. Speculation about the overall mortality experience of CCRC residents relative to the 1983*a* Table can be resolved by combining the experience segments. The results for ages 80–100 derived from entry age 80 are shown in Table 2.

The 1983*a* Table experience was derived from the experience among holders of individual annuity policies and is therefore very low. The overall 87.3% ratio for men and the 87.5% ratio for women of mortality experience to that of the 1983*a* Table indicate that the selection techniques, living conditions and residents' sense of security produce the excellent mortality experience of many CCRCs.

C. Nursing Care Provisions

An essential CCRC ingredient is the promise to cover some or all nursing care expenses, the health center often being on the CCRC's premises. This benefit may be self-funded or commercially insured through an insurance vehicle, first marketed during the last several years, patterned after group long-term-care coverage.

CCRCs historically have provided complete life care by providing nursing care or long-term care on site funded by a component of advance fees and periodic fees. Self-funding is the most widely used alternative today; the insurance vehicle, however, has grown in popularity among recently opened facilities.

TABLE 1

ILLUSTRATIVE CCRC MORTALITY AND TRANSFER FACTORS

	Mortality Rates						Transfer to PC		Transfer to SN				
	ILU		PC		SN		ILU		ILU		PC		
Age	Male	Female	Male	Female	Male	Female	Male	Female	Male	Female	Male	Female	Withdrawals
80	0.0329	0.0182	0.0578	0.0445	0.1445	0.0714	0.0118	0.0200	0.0136	0.0136	0.0630	0.0706	0.0050
81	0.0362	0.0205	0.0636	0.0499	0.1553	0.0801	0.0125	0.0228	0.0146	0.0146	0.0675	0.0754	0.0050
82	0.0399	0.0232	0.0697	0.0559	0.1673	0.0898	0.0134	0.0260	0.0158	0.0158	0.0719	0.0803	0.0050
83	0.0438	0.0262	0.0764	0.0626	0.1806	0.0996	0.0143	0.0296	0.0175	0.0175	0.0763	0.0857	0.0050
84	0.0482	0.0297	0.0835	0.0699	0.1954	0.1092	0.0151	0.0336	0.0198	0.0198	0.0808	0.0900	0.0050
85	0.0530	0.0335	0.0910	0.0780	0.2118	0.1186	0.0161	0.0380	0.0224	0.0224	0.0861	0.0951	0.0050
86	0.0582	0.0378	0.0989	0.0867	0.2300	0.1280	0.0170	0.0428	0.0256	0.0256	0.0914	0.1024	0.0050
87	0.0639	0.0426	0.1071	0.0961	0.2499	0.1374	0.0181	0.0479	0.0292	0.0292	0.0969	0.1087	0.0050
88	0.0701	0.0479	0.1158	0.1060	0.2718	0.1481	0.0191	0.0534	0.0329	0.0329	0.1022	0.1149	0.0050
89	0.0769	0.0539	0.1248	0.1165	0.2957	0.1602	0.0201	0.0593	0.0365	0.0365	0.1075	0.1212	0.0050
90	0.0842	0.0604	0.1342	0.1274	0.3217	0.1741	0.0213	0.0656	0.0402	0.0402	0.1139	0.1287	0.0050
91	0.0922	0.0677	0.1441	0.1386	0.3500	0.1900	0.0224	0.0722	0.0439	0.0439	0.1202	0.1363	0.0050
92	0.1008	0.0753	0.1546	0.1501	0.3805	0.2080	0.0237	0.0779	0.0475	0.0475	0.1267	0.1439	0.0050
93	0.1102	0.0834	0.1656	0.1619	0.4136	0.2283	0.0249	0.0827	0.0516	0.0516	0.1331	0.1515	0.0050
94	0.1204	0.0917	0.1773	0.1739	0.4412	0.2510	0.0261	0.0865	0.0563	0.0563	0.1394	0.1592	0.0050
95	0.1312	0.1003	0.1898	0.1862	0.4630	0.2764	0.0275	0.0893	0.0614	0.0614	0.1467	0.1681	0.0050
96	0.1427	0.1090	0.2032	0.1992	0.4785	0.3044	0.0288	0.0912	0.0670	0.0670	0.1541	0.1771	0.0050
97	0.1550	0.1177	0.2176	0.2129	0.4874	0.3353	0.0301	0.0927	0.0731	0.0731	0.1613	0.1861	0.0050
98	0.1679	0.1265	0.2332	0.2278	0.4891	0.3693	0.0315	0.0939	0.0837	0.0837	0.1687	0.1952	0.0050
99	0.1814	0.1355	0.2504	0.2441	0.4912	0.4065	0.0330	0.0946	0.0988	0.0988	0.1761	0.2042	0.0050
100	0.1956	0.1446	0.2692	0.2623	0.4939	0.4381	0.0345	0.0950	0.1185	0.1185	0.1844	0.2145	0.0050

TABLE 2

COMBINED ILU, PC AND SN MORTALITY RATES COMPARED TO 1983*a* RATES BY SEX ("MODEL" TABLE BASIS)

	Male			Female		
Age	1983*a* Table	Table 1	Ratio	1983*a* Table	Table 1	Ratio
80	0.0570	0.0371	65.1%	0.0364	0.0226	62.1%
81	0.0628	0.0420	66.9	0.0410	0.0260	63.5
82	0.0691	0.0475	68.7	0.0461	0.0302	65.4
83	0.0759	0.0544	71.7	0.0519	0.0351	67.7
84	0.0832	0.0607	73.0	0.0583	0.0407	69.8
85	0.0910	0.0681	74.8	0.0655	0.0474	72.4
86	0.0991	0.0781	78.8	0.0735	0.0551	74.9
87	0.1076	0.0863	80.2	0.0823	0.0633	76.9
88	0.1163	0.0983	84.5	0.0920	0.0727	79.0
89	0.1254	0.1096	87.4	0.1025	0.0838	81.8
90	0.1349	0.1225	90.8	0.1136	0.0964	84.8
91	0.1449	0.1359	93.8	0.1252	0.1093	87.3
92	0.1554	0.1520	97.8	0.1372	0.1245	90.7
93	0.1666	0.1646	98.9	0.1495	0.1410	94.3
94	0.1785	0.1833	102.7	0.1618	0.1593	98.4
95	0.1912	0.1953	102.1	0.1742	0.1782	102.3
96	0.2047	0.2121	103.6	0.1865	0.1997	107.0
97	0.2191	0.2206	100.7	0.1982	0.2218	111.9
98	0.2347	0.2425	103.3	0.2111	0.2467	116.9
99	0.2519	0.2498	99.2	0.2244	0.2718	121.1
Average*			87.3%			87.5%

*Based on 1983 Table *a* Exposed-to-Risk.

Under a self-funded arrangement, the facility's actuary can measure and project nursing care costs within the framework of his or her comprehensive review of fees and expenses.

The actuary's recommendation to the community about whether to self-fund or to insure should include a stochastic analysis of long-term potential for self-insured nursing care costs being higher than projected, compared to the essentially certain additional costs of the insurance company's expense and profit charges.

Despite its probable higher cost, long-term-care insurance may add to a facility's attractiveness because of the recognized security of a prestigious insurance company and by easing sponsors' concerns about early financial hazards.

D. Periodic Fees

It is common to expect increases in periodic residence fees at rates similar to the consumer price index or elements thereof based on hotel-type (restaurant, housekeeping, refurbishing) costs. Provided the community makes reasonably appropriate provision for inflation and interest rate increases and decreases, the size of the fee increase percentage is limited only by the ability and willingness of residents to accept it.

Periodic fees may be independent of the size of the unit or may vary moderately. The second occupant of a unit is usually charged an extra fee related to the additional food and use of general facilities available to residents.

One complex actuarial task is projecting future income and outgo streams as doubly occupied units of the closed group inevitably become singly occupied. Computer software such as the Society's model [3] assists with these calculations.

E. Asset Liquidity Considerations

The NAIC, in the Appendix to its 1994 accounting manual [9], focused attention on having adequate cash and other liquid assets available to meet cash needs—whether predictable or not. ABFM and SOP-GAAP emphasize cash-flow testing and maintaining adequate contingency margins. *ASOP No. 3* and the NAIC instructions emphasize that the possibility of cash deficiencies should be carefully monitored and safeguards taken to avoid the necessity of borrowing and to immunize investments appropriately.

The cash-flow analysis must recognize all elements of the ABFM balance sheet: physical asset replacement at replacement prices, inflation, interest, and fee increases. The term of the analysis should be related to the expected useful lifetime of the buildings, representing both the longest lifetimes and the largest proportion of assets' value. In addition (and some practitioners may wish to include this analysis within the basic cash-flow analysis), the cash flow of new debt and equity investments, and their redemptions, must be analyzed. This testing will reveal the availability of liquid funds to meet cash needs for physical plant replacements. In the absence of such a cash-flow analysis, avoidable borrowing or disposing of assets in possibly depressed financial markets before their maturity might become necessary.

Cash-flow projections are performed using open-group methods, whereby the financial effects of new residents replacing existing residents are taken into account. Open-group cash-flow projections are necessary at start-up and

also if there are plans to enlarge the facility, and to predict whether additional health center facilities will be needed as the population matures. Predictions of health center bed needs may be made through software such as the Society's model [3].

V. DIFFERENCES BETWEEN STANDARDS OF PRACTICE SET BY ACCOUNTING AND ACTUARIAL PROFESSIONAL BODIES AND THEIR IMPLICATIONS FOR BUDGETING AND PRICING

In 1990, Jarvis Farley provided the NAIC working group with a discussion draft [5] on the differences between SOP-GAAP and *ASOP No. 3* standards from which we have borrowed liberally in composing this analysis.

Perhaps the fundamental difference between the two methods described in Section IV is that the AICPA standard undertakes to measure the present while the AAA standard peers into the future. Actuaries recognize that this distinction is at the heart of the difference between the balance sheet of an insurance company and that of a manufacturing company. The CCRC is the insurance company, receiving income from contract-holders to help pay for future services, future use of facilities, and future health care. The comprehensive approach of ABFM provides essential tools for estimating a CCRC's financial ability to meet the promises in its current contracts, to test the adequancy of its fee structure, to set aside adequate reserves, to provide for replacement of components of its physical plant as they reach the ends of their useful lifetimes, and to provide early warning of impending financial difficulties.

At the intellectual foundation for ABFM is the concept that a CCRC be regarded as a permanently going concern; it cannot successfully be operated for a period of years and then closed down, and so must fill vacancies with new residents who pay adequate fees. To attract enough new residents, the facility—its financial condition, its physical appearance, and its general social ambiance—must be continuously maintained in a competitively appealing condition.

Specifically, the plant must be kept up. Elements of the plant—painting, carpets, furnishings, equipment (for apartments, health care, kitchen, housekeeping, groundskeeping, heating, elevators, roofs, and so on)—must all be replaced at the ends of their useful lifetimes. Funds must be provided to pay for such replacements.

ABFM lays a foundation for such funding by using replacement cost as the basis for valuing plant and calculating depreciation.† For the open group, depreciation expense related to any fixed plant category can be accumulated at projected interest and inflation rates to provide ultimate replacement funds. For the closed group, survivorship must also be taken into account to project future depreciation expenses to be reflected in the ABFM balance sheet.

Actuaries and others have taken issue with replacement cost accounting, because it implies mathematically that the same residents who "paid" for the plant and equipment at their original costs must also "pay" for their replacement—a concept antithetical to concepts of intergenerational equity. This does of course happen. On the other hand, and curiously enough, industry committees such as the NAIC Working Group on CCRCs (see Section VI) have established strong requirements for funding replacements with earmarked liquid assets. This has the same effect on the costs passed on to current residents as funding directly for replacement cost.

Actually, the more important difference between results of the methods of calculating net asset value is frequently the result of taking inflation into account in calculating depreciation costs rather than a constant periodic cost. One valuable advantage of using current asset values is that they present a realistic picture of year-by-year cash needed to fund replacements.

A. The Objectives of a Comprehensive Basis of Accounting

SOP-GAAP and ABFM both purport to constitute a "comprehensive basis of accounting." In actuality, SOP-GAAP makes no claim of satisfying all objectives that management would find essential. The AICPA presentation of SOP-GAAP holds that management must use other tools for purposes that SOP-GAAP does not satisfy. Table 3 shows Farley's analysis of those other purposes.

B. Sources of Earnings (or Changes in Surplus)

Tables 4–7 present balance sheets incorporating both SOP-GAAP and ABFM requirements.

Table 4 illustrates the actuarial assets and liabilities, in addition to items from the accountant's balance sheet, that constitute an ABFM balance sheet for a facility that refunds a large portion of advance fees; the last column

†Despite the positive features of replacement cost accounting, *ASOP No. 3* (1994) now recognizes only original cost accounting for physical facilities.

TABLE 3

DIFFERENCES BETWEEN SOP-GAAP AND ABFM [5]

Objective	Does SOP-GAAP Do So?	Does ABFM Do So?
1. To test long-term financial ability to carry out promises to residents	No	Yes
2. To test adequacy of fee structure	No	Yes
3. To provide fully for replacement of fixed assets	No	Yes
4. To avoid inadequate cash positions	Yes	Yes
5. To provide early warning of impending difficulties	To some extent	Yes

shows the difference between actual and expected earnings by source. It is prepared in accordance with *ASOP No. 3*, except that fixed assets are valued at replacement costs rather than acquisition costs. Note that the physical property is owned by a nonprofit corporation and carries no mortgage debt.

Lines 1, 2 and 7 are analyzed together with cash-flow data to obtain the gain from investment results relative to prior budget assumptions.

Fixed asset values in line 3 are based on historical costs adjusted by replacement cost indexes obtained from building industry publications. Each asset is assigned a probable useful lifetime. Line 4 shows accumulated depreciation based on the inflation-related method (each year's charge for depreciation being a function of the change in replacement values between year-ends and adjustments for interest and survivorship). Year-by-year changes in building cost inflation, even reductions sometimes, may cause significant fluctuations in values, making isolation of this source of gain or loss important.

Actuarial present values (APVs) are shown in lines 8–14. Each is the result of a present value formula that reflects estimated interest, inflation, rate increases, resident transfers to assisted living and nursing care, and an allocation of future depreciation expense to the present residents. Several practitioners have developed software to derive estimates of the future composition of closed groups: number, single and double residency, and location—apartment and health center—distributions year after year, for example, the program developed for the Society by Milliman & Robertson's team [3].

The "deemed" earning assets item referred to in line 13 means fixed assets and other invested assets less the sum of the APVs (including the APV of deemed earning assets itself) and the depreciation reserve. This is the portion

TABLE 4

ACTUARIALLY BASED (AUTHORS' FORMAT)*
(DOLLAR AMOUNTS IN THOUSANDS)

Line		12/31 This Year	12/31 Last Year	Actual Change	Expected Change	Source of Earnings
	Assets					
1	Liquid, inventory and receivables	$4,289	$4,196	$93	$93	$0
2	Securities	25,061	24,708	353	284	69
	Fixed assets					
3	Replacement cost	53,397	50,209	3,188		
4	Less depreciation reserve	13,050	11,839	1,211		
5	Net value	40,347	38,370	1,977	2,230	(253)
6	Total Assets	$69,697	$67,274			
	Liabilities					
7	Accruals, deposits and amounts payable	$1,665	$1,872	($207)	($207)	
	Discounted Values for the Closed Group					
8	Refundable entrance fees	$37,604	$36,400	$1,204	$923	($281)
9	Residence services	29,920	29,630	290	247	(43)
10	Health care services	17,094	16,994	100	131	31
11	Assistance-in-living	1,872	1,703	169	117	(52)
12	Depreciation expense	9,534	9,172	362	287	(75)
13	Return on "deemed" earning assets	4,754	4,738	16	16	0
14	Monthly fees	(36,154)	(35,549)	(605)	(572)	33
15	Total	$64,624	$63,088			
16	Total Liabilities	$66,289	$64,960			
17	*Surplus*	$3,408	$2,314			
18	Change in Surplus			$1,094		
19	Experience adjustments, total					($571)
20	Gain from expenses vs. budget					$125
21	Gain from changes in assumptions					0
22	Inherent earnings of operations					1,343
23	Earnings on surplus					197
24	Change in surplus					$1,094

*The depreciation reserve and the discounted values are actuarially based. The other items, in accordance with *ASOP No. 3*, 5.4.1, come directly from the accounting balance sheet without the use of actuarial techniques.

of these reserves that is invested in bricks and mortar, for which a "rental" charge must be made.

Actual-to-expected ratios are obtained by usual actuarial techniques. Although somewhat conservative actuarial assumptions may later result in a small net gain being realized, longer-term experience will usually necessitate changes in assumptions, which will be recognized in line 21 as they are made.

The change in surplus (line 24) shows not just the result of a budgeting or inflation assumption change on one year's results, but the effect of that change projected to all future years through which any present residents

remain in residence. Thus, the effect of, say, a staffing reduction in a current year reduces projected costs as well, a leveraging effect. Unless these one-time events are identified separately, the leveraged gain may tempt management to modify or reverse a sound decision already made. Line 20 reflects operating economies, and line 23 earnings on surplus funds.

Line 22 is the result that management should watch most closely. It displays the present value of future earnings generated from the pricing of its products and services less its expenses. This result's validity depends upon whether projected schedules of annual fee increases can be achieved, upon the validity of estimates of annual inflation and investment earnings, and upon demographic results. It is calculated by analyzing all sources of earnings.

C. Detailed Comparison of SOP-GAAP and Actuarial Approaches

Tables 5 and 6 illustrate differing accounting treatments of two CCRCs, which are assumed to be identical except for the conditions surrounding refunds. The essential differences are:

- *The treatment of advance fees.* While there is essential agreement in accounting treatment if these fees are unconditionally refundable, large differences are possible when refunds are conditional on reoccupancy. ABFM discounts the liability for advance fee refunds for interest and survivorship.
- *The treatment of physical plant values.* SOP-GAAP requires straight-line amortization of acquisition costs rather than the alternative of taking inflation into account, as is permitted by *ASOP No. 3.*

The following paragraphs contrast accounting treatments of refundable advance fees not conditional on reoccupancy with those so conditioned and with nonrefundable fees.

SOP-GAAP provides, as illustrated in Table 5, for dividing the advance fee paid by a resident in Lines 8–9 between the refundable amount, if any, and the nonrefundable amount remaining. If the contract provides for decreasing amounts of refund, it is necessary to estimate the timing to estimate the amount that will be needed. SOP-GAAP rules, however, require that such amount be held without discount for interest.

ABFM is similar to SOP-GAAP in that the estimated amounts of future advance fee refunds to present residents are projected. However, in ABFM, such amounts are determined by discounting for mortality and interest as in

TABLE 5

SOP-GAAP FOR A CCRC WHICH DOES NOT CONDITION ENTRANCE FEE REFUNDS ON REOCCUPANCY
(DOLLAR AMOUNTS IN THOUSANDS)

Line		12/31 This Year	12/31 Last Year	Change
	Assets			
1	Liquid, inventory and receivables	$4,289	$4,196	$93
2	Securities	25,061	24,708	353
	Fixed assets			
3	Historical cost	39,217	37,053	2,164
4	Less depreciation reserve	11,607	10,308	1,299
5	Net value	27,610	26,745	865
6	Total Assets	$56,960	$55,649	
	Liabilities			
7	Accruals, deposits and amounts payable	$1,665	$1,872	($207)
	Discounted Values for the Closed Group			
8	Refundable entrance fees	$50,328	$50,193	135
9	Nonrefundable entrance fees	3,556	3,663	(107)
10	Residence services	29,920	29,630	290
1	Health care services	17,094	16,994	100
12	Assistance-in-living	1,872	1,703	169
13	Depreciation expense	9,534	9,172	362
14	Return on "deemed" earning assets	0	0	0
15	Monthly fees	(36,154)	(35,549)	(605)
16	Total	$76,150	$75,806	344
17	Total Liabilities	$77,815	$77,678	
18	*Surplus*	($20,855)	($22,029)	
19	Change in surplus			$1,174

reserving for a single-premium last-survivor life insurance policy. This produces a material difference between the two methods. The difference is largest, of course, when amounts to be refunded reduce slowly or have a small maximum reduction.

SOP-GAAP makes an important distinction between refunds made unconditionally and those that are subject to reoccupancy. As illustrated in Table 6, the portion of fees that will be paid to current residents or their designees when the unit has been reoccupied is accounted for as deferred revenue. Usually, the new residents' advance fees will exceed the refund, in which case that excess is also taken into income over the remaining useful life of the facility. This seems to imply that no liability need be held for refundable fees to the last generation of residents at the end of the CCRC's useful lifetime. *ASOP No. 3* recognizes that this approach has been used and notes that: "This approach may introduce inequities between generations of community residents, and may understate the fees required from future

TABLE 6

SOP-GAAP FOR A CCRC WHICH CONDITIONS ENTRANCE FEE REFUNDS ON REOCCUPANCY
(DOLLAR AMOUNTS IN THOUSANDS)

Line		12/31 This Year	12/31 Last Year	Change
	Assets			
1	Liquid, inventory and receivables	$4,289	$4,196	$93
2	Securities	25,061	24,708	353
	Fixed assets			
3	Historical cost	39,217	37,053	2,164
4	Less depreciation reserve	11,607	10,308	1,299
5	Net value	27,610	26,745	865
6	Total Assets	$56,960	$55,649	
	Liabilities			
7	Accruals, deposits and amounts payable	$1,665	$1,872	($207)
	Discounted Values for the Closed Group			
8	Refundable entrance fees	$50,328	$50,193	135
9	Nonrefundable entrance fees	3,556	3,663	(107)
10	Residence services	SOP-GAAP provides		
11	Health care services	that these "future		
12	Assistance-in-living	service obligations"		
13	Depreciation expense	are not held if they are		
14	Return on "deemed" earning assets	less than deferred		
15	Monthly fees	revenue (lines 8–9),		
16	Total	$53,884	$53,856	28
17	Total Liabilities	$55,549	$55,728	
18	*Surplus*	$1,411	($79)	
19	Change in surplus			$1,490

residents, leading to cash flow problems in future years." In this paper, we show as the ABFM system the conservative approach of setting an actuarially discounted liability for each resident or pair of residents, on the assumption that at some time during the facility's finite existence advance fee refunds must become unconditional. We therefore assume that each unit will be reoccupied and that the liability is the same as for a nonconditional refund agreement.

SOP-GAAP is silent about the accounting treatment in the event of change from a conditional to a nonconditional contract.

D. Treatment of Nonrefundable Advance Fees

For nonrefundable advance fees, SOP-GAAP holds that these represent payment for future services and should be accounted for as deferred revenue and amortized to income over the estimated years of residence (for all residents combined) or contract term, if shorter. It also permits other than

straight-line amortization if costs are expected to be significantly higher in the later years of residence [4].

E. Advance Fee Amortization—An Outmoded Approach

It was understood long ago that nonrefundable advance fee income had to be protected from inadvertently being spent before the resident who paid it had died. Somebody introduced the idea of furnishing that protection by spreading the sum more or less evenly over the resident's lifetime.

Unfortunately the notion spread among managements and their advisors that expectation of life and resident's lifetime meant substantially the same thing. This error exists today; actuaries may have been at fault in failing to point out that resident deaths are not bunched closely around the so-called life expectancy calculated at time of entry. A discussion of this matter by David L. Hewitt appears in the *Proceedings of the Conference of Actuaries in Public Practice* [8].

As time went on, various amortization procedures were adopted. None of them, even the adjustment from expectation at entry to expectations altered yearly as residents survive [4], accomplishes the desired purpose of matching income with expense even roughly.

Now that the Academy of Actuaries has produced ABFM, it seems incumbent upon our profession to give the cumbersome and inaccurate amortization system in all its forms its quietus. This will require acceptance of balance sheets incorporating the ABFM system as illustrated in this paper.

F. The Future Service Obligation

The future service obligation (FSO) is equal to the present value of future net cash flows, which are lines 10–13 and 15 less unamortized deferred revenue, all adjusted for unamortized acquisition costs, ignoring any negative result.

As illustrated in Table 6, unamortized deferred revenue usually far more than offsets the universally negative cash flows, depreciation and unamortized costs. As a result, CCRC management can increase cash outflow (by adding to staff, for example) or can reduce cash inflow (by reducing or eliminating annual increases in periodic fees, for example) without affecting the SOP-GAAP balance sheet. It is only after future (negative) net cash flows exceed deferred revenue that the full damage of the imbalance becomes evident.

G. Development Expenses

SOP-GAAP requires capitalization of the direct and indirect costs of developing the facility to the point of housing its first residents (for example, staff expenses and consultants' fees in actuarial, accounting, architecture, food service, marketing, and medical specialties) and direct costs of acquiring subsequent contracts (for example, advertising) that are expected to be paid for from future advance fees and periodic fees. These costs are to be amortized on a straight-line basis over a period of years estimated to be the average number of years of residence for that first group of residents. Indirect costs of acquiring subsequent continuing care contracts are treated as regular operating expenses.

ASOP No. 3 is silent on this issue, but the practicing actuary will recognize that the principles set forth for amortization of expenses attributable to any closed group are applicable to these initial expenses.

Table 4 shows fixed asset values based on replacement cost; the amortization method is inflation-related as permitted in *ASOP No. 3*. SOP-GAAP does not address the valuation basis of assets—replacement cost or acquisition cost. However, basic GAAP prescribes straight-line amortization, which is consisitent with valuing assets at their fixed acquisition costs.

The discussion of the effects of differing accounting standards has concentrated on the high-refund situation, in which the greatest differences occur in balance sheet surplus between ABFM and SOP-GAAP.

Table 7 depicts SOP-GAAP treatment when no refund is offered. Here, because actuarial liabilities, called by SOP-GAAP the future service obligation, exceed deferred revenue in lines 8–9, that FSO must be established as a liability in lieu of the deferred income liability. Line 8 is now zero. Because of the absence of refunds, we have assigned a token $15,000 to that income source. It is, however, to be expected that management would have set lower advance and periodic fees.

An ABFM statement for the same situation would be quite close to, if not identical with, the SOP-GAAP profit picture. The only possible difference between the two would arise if inflation-related depreciation were used under ABFM.

VI. REGULATORY ACCOUNTING REQUIREMENTS

Existing state regulations vary widely, many of these differences depending on the nature of the regulating agency (that is, whether social welfare,

TABLE 7

SOP-GAAP FOR A CCRC WHICH DOES NOT PROVIDE ENTRANCE FEE REFUNDS
(DOLLAR AMOUNTS IN THOUSANDS)

Line		12/31 This Year	12/31 Last Year	Change
	Assets			
1	Liquid, inventory and receivables	$4,289	$4,196	$93
2	Securities	25,061	24,708	353
	Fixed assets			
3	Historical cost	39,217	37,053	2,164
4	Less depreciation reserve	11,607	10,308	1,299
5	Net value	27,610	26,745	865
6	Total Assets	$56,960	$55,649	
	Liabilities			
7	Accruals, deposits and amounts payable	$1,665	$1,872	($207)
	Discounted Values for the Closed Group			
8	Refundable entrance fees	Not included — less than FSO.		
9	Nonrefundable entrance fees			
10	Residence services	29,920	29,630	(290)
11	Health care services	17,094	16,994	(100)
12	Assistance-in-living	1,872	1,703	(169)
13	Depreciation expense	9,534	9,172	(362)
14	Return on "deemed" earning assets	0	0	0
15	Monthly fees	(15,000)	(15,000)	0
16	Total	$43,420	$42,499	($921)
17	Total Liabilities	$45,085	$44,371	
18	*Surplus*	$11,875	$11,278	
19	Change in Surplus			$597

hospital, insurance, or other state department). The authors welcome discussion from regulators about the principles underlying their approaches.

In early 1990 the NAIC Working Group on CCRCs began preparing an advisory on the numerous differences between *ASOP No. 3* and the AICPA's *Statement of Position 90-8*. The result was a clarifying addendum to NAIC's accounting practices manual for insurance companies. This material reflected recognition that CCRCs "have significant risk characteristics that embody elements of life insurance, annuities, and health benefit programs." The requirements recommended therein cover principally asset liquidity and future service obligations.

The NAIC ruled that assets for debt service and operations must be at least the sum of stipulated principal payments due in the next 12 months (with provision for balloon payments) plus 20% of the facility's anticipated operating expenses of the current year. Liquid asets for asset repair and replacement must be accumulated annually at a rate of 1/60th of the cost of

buildings and related fixtures plus 1/15th of the cost of furniture and equipment, and in each case the annual accrual must be increased proportionately to the rise in the Consumer Price Index. Reserve reductions are permitted as replacements are made.

The NAIC text comments:

> These provisions reflect the fact that CCRCs are highly sensitive to swings in cash flow and should be positioned to meet future obligations without undue reliance upon borrowing. . . . .it is strongly urged that CCRC's use actuarial forecasting to favorably influence rate setting and future stability.

With respect to the major differences between the accountants' and the actuaries' pronouncements on future service obligation, the NAIC says this:

> At this time, facilities report on both methods. The variances produced under these methods are focused toward somewhat differing goals. Both rely heavily upon assumptions regarding future cash flows and occupancy rates. Other assumptions respecting mortality, morbidity, population flows and amortization of deferred revenues from subscribers all leverage the resources of a CCRC when considering ultimate espected costs. No generally accepted actuarial tables are available to quantify expected mortality and morbidity. Turnover of living units is often keyed to economic forces peculiar to a specific facility and the nature of the continuing care contract, e.g., a return of capital model; a fee for service model. Differing contracts obligate for varying degrees of health care. Finally, inflation's effect must be also factored to determine the need for subscriber revenues.
>
> Based upon the foregoing there is a need for periodic actuarial review of the propriety of assumptions and an assessment of the need for a contingency margin respecting adverse deviation from expected results. Maintenance of such a margin will dampen the effects of inflation rate fluctuations and variability experienced regarding cost elements that are influenced by economics and survivorship.
>
> Therefore, the use of either method is allowed provided that reasonable assumptions are utilized and adequate margins are maintained. An actuarial certification not less frequently than once every three years is in order.

Actuaries naturally look forward to a revision in SOP-GAAP that will make it more, if not completely, compatible with ABFM. Such an event will of course greatly ease the tasks of insurance department regulators.

VII. CONCLUSION

Quite remarkable progress has been made in the last decade, and especially in the last five years, in the rules and procedures for measuring a CCRC's financial strength and the likelihood that it will be able to redeem its promises to its residents for many years ahead. One can rather confidently predict that the number of failures among these institutions will be smaller from now on than it has been in the past.

And progress has also been made in the respect and understanding between the two professions—accounting and actuarial—that are responsible for advising CCRC managements. More must yet be done in this direction, but there is full acceptance of the principle that neither profession can afford to ignore or denigrate the other.

We think that within the actuarial profession the biggest opportunity that has not yet been fully grasped is a willingness to pool the data about CCRCs that only actuaries are equipped to gather and disseminate. Our profession on this continent became convinced more than a century ago that effectiveness of our labors depends upon exchange of information and of ideas. It would be a sad step backward if this conviction were to weaken.

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DISCUSSION OF PRECEDING PAPER

J. DARRISON SILLESKY:

Jarvis Farley would have been very pleased with this excellent extension of the principles set forth in *Actuarial Standard of Practice (ASOP) No. 3.* The paper provides details and practical applications of what he originally called ABFA (but is now known as ABFM). I only wish to comment on the nursing care and financing sections of the paper, based on my own experience as recorded in the paper's reference [6].

The nonprofit CCRCs that dominate the current scene have had little incentive to insure this risk, from at least two standpoints, (a) financial stability and (b) residential relations.

Financial Stability

The most important factor to a CCRC's survival is not demographic or other financial risks, but its ability to keep its units *fully occupied.* To stay fully occupied, the CCRC must *compete on the basis of price* with local competition. We compare ourselves with diverse competitors, some of whom group-insure their nursing care. We estimate that their residents pay about 13% more in aggregate monthly fees merely to pay insurance company expense and profit charges. (Based on our studies, the roughly 42% net cost loading in the premiums applies to the assumed 30% of fees related to nursing care.) This cost advantage is most important to our competitive posture—thus to our occupancy rate—and thus to our financial stability.

At our facility we have never regretted carrying our own risks. Tests of the possibility that buying insurance could be a benefit to us have shown that stochastically the possibility is "off the chart." The tests made were the more complete sensitivity tests called for by the Academy's ASOP, and they test all our assumptions, both alone and in combinations [6]. These tests provide meaningful data about *all* possible contingencies, not just nursing care excesses. With these data we can make *prudent decisions about pricing, budgets, and needed surplus.*

Resident Relations

One must also consider the fact that insurance for groups, as usually written, does not have guaranteed premiums and will ultimately, through experience-rating, be cost-plus insurance for all but small facilities. Where a facility assumes its own risks, close monitoring of resident morbidity

facilitates smooth adjustment of resident charges, *as trends develop,* in contrast with situations in which there may be large unexpected and therefore *unbudgeted* increases in insurance rates. Thus, in the absence of an unlikely short-term catastrophic experience (and then cancellation of the insurance), we are talking dollar-swapping even if there were no loading.

We have always used our health center with some *flexibility,* in the best interests of our residents, regardless of insurance-type definitions of eligibility for nursing care transfer. Our medical and social staff, in cooperation with residents' families, can make more humane decisions about transfers among different types of nursing care than could an insurance company's claim adjuster.

I have talked about *financial stability* as a thing apart from *resident relations,* but in actuality you cannot have one without the other. This brings us full circle to the reason we retain the nursing care risk.

GARY L. BRACE:

Messrs. Moorhead and Fischer should be commended on the fine paper discussing financial solvency measures of CCRCs. There is very little published information on the subject, and this paper certainly fills a badly needed void.

My comments on the paper cover the five following areas:

1. Effect of competitive pressures on CCRCs
2. Appropriate mortality tables for CCRC residents
3. The use of long-term-care insurance coverage
4. Differences between ABFM and the ASOP
5. Interest earned on fixed assets.

Competitive Pressures

The authors mention that the competitive environment may sometimes prevent building adequate contingency amounts into the fee schedule. This limitation may come about due to prevalent fee levels in the market or pressure to keep fee increases to a minimum. Residents are, for the most part, on a fixed income and are sensitive to increases in fees. CCRC financial managers must always keep residents appraised of any proposed increases in monthly fee levels to get "buy-in" from the residents.

In addition, there are at least two other examples of the effect of the competitive environment on the practices of a CCRC financial manager. First

is the determination of the relative split between monthly and entry fees. Second is the relationship between the entry fee for a declining refund contract and a refundable contract.

The facility can establish any relationship between the monthly fees and entry fees as long as the total revenue equals total expenses plus contingencies. Depending upon both the competitive environment and housing market, some parts of the country may have slightly different relationships between the entry and monthly fees. For instance, in a "slow" housing market, prospective residents may prefer a "rental" fee structure with a low or nonexistent entry fee. Some facilities have developed the capacity for residents to "buydown" their monthly fee by paying an additional entry fee amount that reduces their monthly fee by an actuarially equivalent amount.

Many facilities price refundable entry fees based on fixed relationships with a declining refund contract entry fee. These relationships are sometimes based on shadow pricing of a competing facility or outdated rules of thumb specifying the relationship between the two types of entry fees. Some of the relationships used in the industry between the two types of entry fees were derived in a period of high interest rates. Since a refundable entry fee is essentially a single-premium endowment policy, this means that the refundable entry fee will be underpriced. Shadow pricing, or using these old entry fee relationships, is fortunately becoming less common.

Mortality Tables

The mortality tables presented by the authors are based on ratios to the 1983 Table *a*. Using multiples of the 1983 Table *a* may be appropriate for a certain distribution of ages within a certain level of care. However, the shape of the actual mortality curve of a CCRC resident population may not conform to the shape of the 1983 Table *a*. This is especially true in projecting the mortality pattern of residents in higher levels of care. In this case, the mortality patterns are affected more by the disability (or dependence) than the aging curve. Therefore, one might deduce that the shape of the mortality curve for residents in assisted and skilled care would be "flatter" than that for residents in independent living.

Long-Term-Care Insurance Coverage

I disagree with the authors' premise that the use of long-term-care (LTC) insurance coverage is growing. During the 1980s and early 1990s, there was a push by many carriers to market this coverage to facilities. The coverage

was mainly offered on a group basis with certain mandatory medical screening criteria. CCRCs found this coverage to be expensive due to the necessary expense and contingency loading by the carriers. In addition, many facilities do not feel the need for LTC insurance. This lack of need and perceived insulation from risk may be a result of the large amount of assets held by the facility and the close financial relationship with the facility sponsor.

There is some anecdotal evidence suggesting that for-profit facilities might find the LTC coverage more attractive than not-for-profit facilities. This may possibly be due to a for-profit's heightened awareness of the health center utilization risk and financial ramifications.

ABFM Versus SOP

The authors do a good job discussing differences between the GAAP Standard of Practice (SOP) and ABFM. The authors are exactly right; the SOP does not provide an accurate measure of financial solvency. Unfortunately, since the SOP is the first "mandated" reported measure of financial solvency, many facilities misinterpret the SOP to provide a complete measure of financial solvency.

In addition, the Future Service Obligation (FSO) defined in the SOP can be viewed as a contract termination liability that determines the direct cost of providing care to the group of existing residents. In addition to not providing for asset replacement costs, other costs outside the direct cost of providing care to the residents (for example, marketing) are not included in the calculation. Therefore, the FSO is indeed a liberal indicator of the financial solvency.

Interest Earned on Fixed Assets

The line in the actuarially based balance sheet on Table 4, "Return on 'Deemed' Interest Earnings," is typically a difficult concept for actuaries new to the industry. The item is the outcome of the present-value techniques utilized in the ABFM process. The item can be thought of as the interest amount that would be earned on the entry fee had it been invested. Instead, the entry fee is "traded" for the purchase of fixed assets, and a rental fee, which represents foregone interest, is implicitly included in the fee schedule.

Again, thank you to the authors for a fine article on CCRC financial solvency.

DANIEL W. PETTENGILL:

The Society is indebted to Messrs. Moorhead and Fischer for so ably bringing to its attention the need for actuaries both to be involved with CCRCs and to know the important differences between the Academy's excellent Actuarially Based Financial Management System (ABFM) and AICPA's *Statement of Position 90-8.* I concur with the authors that the ABFM is preferable.

At the risk of being a broken record, I would remind everyone that many, if not most, CCRCs are relatively small. Hence they can and often do experience marked fluctuations in their morbidity experience from year to year. An effort should be made to insure the nursing home benefit with a reputable insurance company, provided the cost thereof will not make the CCRC's rates noncompetitive. The CCRC that builds its own nursing home and is located in a community with a shortage of nursing home beds might for a while be able to loan out its excess beds to the community.

Another factor to keep in mind is that in some areas an oversupply of CCRC units and/or plain retirement community units either already exists or soon will exist. Such competition can make it very difficult to keep a CCRC's occupancy rate at a financially satisfactory level.

JOHN M. BRAGG:

Messrs. Moorhead and Fischer are to be thanked and congratulated for this landmark paper. I hope it will lead to increased and better regulation of CCRCs and greatly increased awareness among CCRC managers (and even residents) of the need for sound financial stability based on proper actuarial principles.

I am one of those in the actuarial profession who, over the last ten years, has developed data and methodology for second-to-die products, living-benefit products, viatical settlements, and long-term-care products (including nursing home and home care products). Much of this knowhow could be directly applicable to CCRC evaluations. It could be used to create provisional actuarial tables for such purposes. It will be a long time before CCRC data are available in sufficiently credible volume to permit direct measurement. (Thousands of deaths are needed to make a mortality study credible.) Such CCRC data as are available could be used to modify provisional tables.

Assisted living and nursing wing evaluations can probably be treated (as two separate matters) from the viewpoint of traditional health insurance

actuarial methodology. That methodology makes use of the functions *S, H,* and *K.* Once tables are established, it is possible to calculate active and disabled life reserves as well as net premiums (which would enter the CCRC's pricing policies). Active life reserves are applicable to those in living units and exist because of the likelihood that these people will eventually enter other statuses.

Values of *S* are already available for nursing home confinement (for purposes of long-term-care policies) and for living-benefit provisions in life insurance policies. Much work has been done on viatical settlements; the incidence and mortality patterns are known (by age and sex) for heart, stroke, and various cancer disablements. This information could be used to establish refined disabled life reserves, on a seriatim basis, for permanent residents of the nursing home wing.

A very large proportion of CCRC residents appear to be couples; the subject of last-survivor mortality therefore appears to be very important. CCRC actuaries should have access to computer generators that can calculate last survivorship mortality. Such generators should take into account special adjustments for the common disaster hazard and the heartbreak hazard (which deals with the likelihood that a surviving spouse will become substandard). For these and other reasons, second-to-die generators are tricky; the mortality curve is extremely steep and life expectancies are surprisingly long. (These facts are of importance in evaluating CCRC reoccupancy rates and refund arrangements, for example.)

Life expectancies should not be used in CCRC evaluations; rather, the underlying string of mortality rates should be employed to create commutation functions for use. (Modern personal computers are capable of producing commutation functions very rapidly on a custom-tailored basis.)

I should comment about the 1983 Individual Annuity Table,* which is apparently used for CCRC calculations. Bragg Associates has derived 1993 Aggregate Older Age Life Tables, based upon life insurance data for 1985–91 (excluding business for policy durations 1–5). A comparison follows:

*"Report of the Committee to Recommend a New Mortality Basis for Individual Annuity Valuation (Derivation of the 1983 Table *a*)," *TSA* XXXIII (1981): 695.

Age	$1000q_x$ 1993 Bragg Aggregate	$1000q_x$ 1983 IAM Basic
	Male	
75	30.73	38.986
85	87.30	101.261
95	214.69	212.291
	Female	
75	19.02	22.383
85	66.78	72.368
95	210.86	193.795

The 1983 IAM table appears to be inadequately high, especially for males. Annuitant mortality could be even lower than the 1993 Bragg Aggregate, and further improvement may have taken place since 1991. The implications for CCRC evaluations could be severe.

It is my hope that the Moorhead-Fischer paper will stimulate much further research on the important subject of CCRC financing.

THOMAS S. BURKE*:

I enjoyed reading "Testing Financial Stability of Continuing Care Retirement Communities." I believe the paper accurately describes the need for further work on financial presentation in the area of CCRCs to allow accountants and actuaries to assess the likelihood that a CCRC will be able to meet its promises to residents. This need *cannot be understated.*

I also believe that the actuarial profession holds the key to finding a more meaningful financial statement presentation, and I agree with the authors' statement "that within the actuarial profession the biggest opportunity that has not yet been fully grasped is a willingness to pool the data about CCRCs that only actuaries are equipped to gather and disseminate."

I hope that your efforts are rewarded by the stimulation of further work on this topic by the actuarial profession.

ROBERT J. CALLAHAN:

I was first introduced to continuing care retirement communities about 1984 or 1985 while the State of New York was considering legislation to

*Mr. Burke, not a member of the Society, is Chief Examiner of the New Hampshire Insurance Department, Concord, and chaired the NAIC Committee on CCRCs, which prepared the report contained in the NAIC Accounting Practices and Procedures Manual [9].

permit the development and operation of CCRCs. While the paper notes that the State of New York Insurance Department prohibited formation of CCRCs until 1991, there were various agencies concerned, such as the Division of the Budget, Social Services, the office of the Aging, and the Health Department. The Health Department had the responsibility for regulating nursing homes. The enabling legislation created a Life Care Council composed of representatives of various interested state departments and representatives of the public, primarily those with interests in the aging, nursing homes and life care for the elderly. The Health Department was made the lead regulatory agency, and the Insurance Department was given the responsibility for reviewing and approving the life care contract and the financial condition of the life care community.

There were various practical considerations. Most of the CCRCs were using high advance or entrance fees. Many of the applications would be expected to sell their homes to raise the entrance fees. Public officials wanted some assurance that the developers would remain in the life care community business and not be primarily real estate developers likely to pull out once they have their money for constructing the facility. Since most of the fee arrangements consisted of a combination of a high advance fee and variable monthly fees, there was an attitude, as the authors note, that reserves need not be maintained since the CCRC had the right to increase the monthly fees. In New York reserves were set as the higher of reserves calculated retrospectively and of reserves calculated prospectively. An educational process was required to sell this dual requirement and adjustments were made to provide for release of excess amounts accumulated.

In New York, perhaps the great majority of individuals in nursing homes are on Medicaid. While Medicaid was originally intended for the financial indigents, many of the rich have found ways to qualify by divesting themselves of their assets when they became terminal and had to go into a nursing home. While assets have to be divested by a year or two before entering the home, in a maintenance of the buildings, they should last far longer than even 60 years, especially in light of the clientele. I can point to numerous buildings more than 60 years old that are still in good condition. The house my parents had built about 65 years ago is probably worth 30 times what they originally paid for it. If a building becomes depreciated to zero but is still in good condition, what is to prevent the operator from selling the buildings and keeping the proceeds even though it builds a completely new facility out of the replacement fund accumulated? Should the capital gains

stay with the facility? When we start talking about something that may happen 60 years hence, it is time for me to conclude my remarks.

DAVID L. HEWITT:

This paper analyzes the development of actuarial standards for CCRCs, from 1984 to 1994, and contrasts them with the 1990 accounting position. It also discusses the important tie-in with state regulators through the NAIC. The authors have an established reputation for careful documentation. Their paper is likely to be viewed as a basic source record.

Most of this paper uses the expressions *ASOP No. 3* and actuarially based financial management system (ABFM) interchangeably. But in their mention of replacement cost accounting, the authors make a distinction. They identify ABFM with the earlier, 1987–90 version of the ASOP—and would like to retain its replacement-cost approach to expensing physical facilities. They interpret it as asking that residents pay: (a) for using current facilities, (b) for using any replacements during their lifetimes, and (c) to help finance the first replacement occurring after their deaths—no matter how long after. By contrast, they criticize the current (1994) version of the ASOP as limiting itself to original cost accounting. In fact, the current ASOP provides a detailed method of allocating expenses for the use of current and replacement facilities during residents' lifetimes. And it spells out a method of valuing facilities that is consistent with this expense allocation. Furthermore, we have demonstrated that the value of facilities under this method is mathematically equal to current replacement cost less accumulated provision for replacement.* The real question raised by the authors' views is whether it is valid to charge residents both for their actual use of facilities now and in the future and for financing facilities they will never see.

I would dissent from the authors' general observation that the *SOP 90-8* accounting position brings "actuarial and accounting standards into essential agreement." To me, the weight of their analysis leans in the other direction: They point out that the accountants' "obligation to provide future services" omits certain elements, such as administrative expenses; that its amount is reduced by a large item of unamortized deferred revenue (which is stated as a separate liability); and that if the calculated result would be negative, it will be ignored. They go on to discuss some of the problems this can present.

*HEWITT, DAVID L., AND TORRANCE, H. SELWYN, "Actuarial Accounting for the Physical Assets of a CCRC," *Proceedings, Conference of Consulting Actuaries* XLIII (1993): 412–20.

I agree with the paper's helpful discussion of advance fee amortization as prescribed by the accountants.

The authors acknowledge the important contributions of Jarvis Farley in shaping the 1987 actuarial standard and in communicating it to the NAIC. They also cite the pioneering Winklevoss-Powell book published in 1984. Alwyn V. Powell, coauthor of that book, chaired the Academy CCRC committee that wrote the actuarial standard and mediated decisions as to its content; in my opinion he was the leading source of its ideas. Farley added an eloquent voice, drawing on his own experience; he also prepared a timely first draft of the standard for the committee's use, enabling us to get it completed in 1987.

I would note for the record that the Interim Actuarial Standards Board was publisher of the original standard in 1987. The permanent ASB reissued it without change as *ASOP No. 3* in 1990 and published the current version of *ASOP No. 3* in 1994 (based on the content of its exposure draft called 1993 Revision).

The actuarial profession has come a long way in codifying its CCRC standards. This paper offers a detailed overview. It diplomatically alludes to the need for more understanding between accountants and actuaries. The CCRC industry and its regulators are still bedeviled by the fact that the accountants—who hold a controlling grip on financial reporting—have been unwilling to work with the actuaries to reach a goal of complementary and consistent standards, in an area relying on actuarial expertise.

JOHN H. COOK:

My own CCRC is only one of about 1,000 CRCCs throughout the U.S. At this time more than a quarter of a million senior citizens in the U.S. have joined with a community of others with the expectation of living out their lifetimes together. The experience shows that typically only about 2% of the residents who join a CCRC ever withdraw, and very few ever leave after more than five years of residence.

In spite of its current large volume, the CCRC industry is relatively new, at least in the state of New Jersey. We have 17 communities operating now, and before my own was opened six years ago, there were only five. Throughout the country there have been more than 100 of them for some 30 years. Most of those have been in the north central and western states, and there has been relatively little effective state regulation of their operations and

financial statements. The state of New York, with the second-largest population of senior citizens, did not have even one, until a year ago. There had been regulation until recently prohibiting residential health care facilities from accepting prepayment for basic services for more than a three-month period.*

Now that increasing numbers of our senior citizens are investing substantial portions of their life savings in prepaying for their care during their final years, it becomes even more important to protect them from the financial chaos they would experience if their facility should become unable to live up to its promises. I feel indebted to the authors of this paper for focusing attention on this.

The Pension Research Council for years had been concerned with the security of those mechanisms designed to provide the financial resources needed for a secure old age. About 15 years ago the council added to its concern the security of arrangements that seek to provide old age security and health care in kind. Now it is time for the regulatory bodies to look to the security of the CCRC industry, much as they have directed their attention in the past to the insurance business and the banking industry.

I am limiting my remarks to a few topics addressed by Fischer and Moorhead and to a few more that they did not address.

Fischer and Moorhead refer to the advisability of CCRCs throughout our country pooling their experience data for the purpose of an "intercompany" study of mortality and morbidity experience. This has been a common practice in the life insurance business for the last century, and it can prove of equal value to the continuing care retirement business. Those who will benefit the most from such a cooperative effort are the residents in the CCRCs themselves.

The financial stability of a CCRC depends heavily on a reasonable expectation of the level of mortality and morbidity that will be experienced by its residents. Pricing of the product, meaning entry fees and monthly service fees, are nothing more than rolls of the dice, unless they are based on reliable projections of future experience. The only reliable projection depends on valid studies of past experience.

Because of the limited amount of data in a single CCRC, it is necessary to consolidate data from many institutions to produce experience representative of future experience. I cannot emphasize that too strongly. In line with

*See also Mr. Callahan's discussion of the New York State Insurance Department's regulations.

that, I stress the need for careful inspection of the data and proper classification to avoid falling victim to misleading conclusions. This is especially true when a substantial portion of data comes from CCRCs with a relatively short history.

We are well aware of the differing experience rates under life insurance products when the selection procedures are casual or severe. The same is true for CCRC residents, probably to an even greater degree. I have observed morbidity experience within the first 12 months of operation of a CCRC that is many times the level of experience after a year or two of operation. An experience study that does not recognize this possibility can produce experience rates that are totally inappropriate for use in future pricing.

I am happy to recognize that an industry study of CCRC experience has already been initiated, sponsored by the American Association of Homes and Services for the Aged, and funded by the National Institute on Aging.

It is typical that the only liability item on the balance sheet for a CCRC that exceeds unamortized entry fees is bonded indebtedness. The fact that unamortized entry fees are a liability item declares that there exists an obligation. In spite of this, the only method of amortization approved by the AICPA in *SOP 90-8* fails to recognize any real relationship between the obligation (whatever it is) and the amount of the unamortized entry fee.

When an entry fee is charged upon admittance to residence in a CCRC, the contract does not distinguish obligations that are paid for by the entry fee. What is clear from first principles is that the sum of the entry fee and the present value of future monthly services fees is equal to the present value of all future resident services. The contract does not distinguish between those that are prepaid and those that will be paid for later. Philosophies differ on what is prepaid by the entry fee. What is almost universally accepted is that the entry fee is not all earned income at the time of its receipt, hence the liability item.

As I said at the beginning of my remarks, I am indebted to the authors for addressing the financial stability of CCRCs. I have three other interrelated concerns: the financial stability of the individual residents in a CCRC, financial screening of applications, and benevolent funds to assist those who may later be unable to pay fees in their entirety.

I can cite the experience of the 1980s when the real estate market was at its height, CD rates were double digit, and before the stock market crash of 1987. And it must be remembered that CCRCs, either explicitly or implicitly, guarantee lifetime care. Many applicants were approved for entry based on an apparently sound financial condition. Many were soon in a precarious

financial situation. Some CCRCs maintain a benevolent fund, most of which comes from bequests from decreased residents, and this fund provides the subsidy necessary to maintain a needy resident. Newer CCRCs have not been able in short time to accrue such substantial funds. My own CCRC, six years old, has been developing such a fund for the last three or four years. The endowment fund committee, of which I am chairperson, conducted a confidential anonymous survey of our residents two years ago, and the results were a surprise and shock to us. I recommend that other CCRCs develop projections of future needs and provide adequately for these costs.

NORMA L. EDWARDS AND RALPH E. EDWARDS:

As we, two actuaries, face the last final major decision of our lifetimes, selecting a CCRC, how fortunate we are for this paper and its guidance on the financial aspects. When we were younger, there was always the ability to adjust or recoup from any change in our circumstances. At this stage of life, with no children to call upon, our selection of lifestyle and monetary commitment can hardly be revoked. At last we have guidance from Moorhead and Fischer.

Still, the problems are not all solved. The paper gives detail on how and why ABFM and SOP-GAAP financial reports produce markedly different results. We also understand that the SOP-GAAP report is required to be published annually as part of a CCRC's audit. We thus have three related questions for the authors. First, how do CCRC residents respond to seeing two sets of figures, each of which purports to present the true financial position? Second, what if there is no actuarial report at all? Third, how can actuaries employed by accounting firms operate in this environment?

THOMAS K. HARTMAN:

CCRCs are quite fascinating to study from an actuarial point of view. There are just two areas I would like to comment on.

First, I like to think that the capital expenses for the physical plant consist of three pieces: depreciation charges, loan interest, and imputed income. Because of the interaction of these pieces, it might be useful for the paper to make specific mention of the treatment of loan interest.

The paper's development of the annual charge of an asset is similar to a loan amortization schedule in which the annual charge is the annual payment, the loan interest rate is the discount rate used, and the depreciation is the change in the value of the asset over the year.

In the absence of any debt, I would then consider my imputed income to be the annual charge minus the depreciation. However, because it is likely that a community will have some debt, at least when first established, I follow a modified procedure. A net asset value is calculated as the asset value during the year minus the debt during the year. The discount interest rate is then applied to this amount, and the result is the imputed income.

The sum of the depreciation, the imputed income, and the loan interest is then an expense.

A couple of minor comments might be useful here:

- The imputed income described above can be negative.
- In the case in which annual charges are increasing, the charges should not increase faster than the assumed inflation rate.
- In the case in which annual charges are increasing, this methodology can produce assets that initially increase in value instead of decreasing.
- In doing these calculations, care should be used in considering the timing during the year when depreciation, the annual charges, and loan payments occur along with when they are assumed to occur for purposes of calculating the actuarial reserve.

Another equivalent approach would be to have a charge in addition to the annual charge that reflects the difference between the loan interest rate and the discount rate. This could be positive or negative.

A simplified example might be useful. We will assume the following:

Beginning Asset	20,000,000
Current Year's Annual Charge	1,250,000
Discount Rate	5.50%
Beginning Loan	15,000,000
Loan Payment	1,400,000
Loan Interest Rate	8.00%

All payments and charges occur at the end of the year. (For purposes of calculation, the actuarial reserve for these would likely need to be adjusted to mid-year.)

Under the imputed income approach

$$\text{Net Asset} = 20{,}000{,}000 - 15{,}000{,}000 = 5{,}000{,}000$$
$$\text{Imputed Income} = 0.055 \times 5{,}000{,}000 = 275{,}000$$

The end assets value would be:

Beginning Asset Value	$20,000,000
Times Discount Rate	× 1.055
	$21,100,000
	−1,250,000
Ending Asset Value	$19,850,000

Please note the $19,850,000 would also be equal to the discounted value of the remaining annual charges. Depreciation for the year would be:

Beginning Value	$20,000,000
Minus Ending Value	−19,850,000
Depreciation =	$ 150,000

The charge for capital expense would be:

Depreciation	$ 150,000
Loan Interest $15,000,000 × .08 =	1,200,000
Imputed Income	275,000
	$1,625,000

An alternative calculation would consider the difference in the loan interest rate and the discount rate; in this case 8.00%−5.50%=2.50%

$$\text{Modified Loan Interest} = \$15{,}000{,}000 \times 0.025 = \$375{,}000.$$

Under this approach the charge for capital expenses becomes:

$$\$1{,}250{,}000 + \$375{,}000 = \$1{,}625{,}000.$$

As can be seen, the two approaches are actuarially equivalent.

Because of the special calculations needed, some comment concerning the handling of the loan interest seems warranted.

Second, for valuation purposes actuaries have traditionally thought in terms of net premiums. It may be useful to suggest a similar concept here. Consider a life care contract in which there is a $110,000 entrance fee, the present value of the periodic fees is also $110,000, and the present value of the expenses is $200,000. This was essentially designed with a 10% margin in the fee structure for contingencies, profit and contribution to surplus. If the gross premiums are used in calculating reserves, then the balance sheet looks like:

Assets = Entrance Fee	$110,000
Liability = PVFB − PVFF = $200,000 − $110,000 =	90,000
Surplus = Assets − Liabilities	$ 20,000

This means that the present value of all the assumed margins is released immediately. An established concept in valuation is that profits should not be recognized until the emerging experience has borne out their existence.

This suggests the use of a net premium in the present value of future fees calculation. It is also well established for valuation purposes that when premium (or in this case, fees) varies over time, the net premium is a constant percentage of each gross premium and the present value of such net premium equals the present value of benefits.

This example was designed to be easy, so that it can quickly be seen that the net entrance fee is $100,000 and the present value of the net periodic fees is $100,000. The balance sheet now becomes:

Assets	$110,000
Liabilities PVFB − PVFNPF = $200,000 − $100,000 =	100,000
Surplus	$ 10,000

The appropriate amount of the 10% margin in the entrance fee received is released to surplus.

ROBERT F. LINK:

Operations of a typical CCRC involve significant elements of insurance risk. It is therefore good that we have them under the actuarial microscope, and this paper is a good beginning. This discussion is more personal than professional.

My wife and I have considered the CCRC option and have so far resisted for our own reasons. However, we have done some checking and gotten some information. One CCRC gave us a brochure including a table of its monthly charges over time. It appeared that these charges had been increasing for some years at a compound annual rate just under 7%. I think some of the residents may have been a little testy about this.

Asking why these increases should so far outstrip increases in the CPI, I was told the following. When the CCRC opened for business, the health center was not immediately needed for the residents and so was opened to the public. This generated significant revenues. These were applied as an offset to the expenses covered by the monthly charges. As time passed and

residents moved into the health center, this revenue declined, and the monthly charges had to pick up the slack. (There were of course other factors in this pie, but the one I have described was a large one.)

This process produced in effect a kind of (I presume innocent) "lowballing" for people who considered this CCRC at its opening. They had every reason to expect charges to follow some reasonable index of costs, which shouldn't be very far from the CPI.

It seems to me that these revenues, to the extent that they were expected to disappear with time, should have been taken out of the operating budget covered by monthly charges. I would prefer to see them "capitalized" in some way and used either to reduce the going-in charges for residents or to create a contingency fund for unexpected problems.

Perhaps the authors will find within their framework some way of dealing with this kind of problem. And in any event, we thank them for the framework.

CECIL J. NESBITT:

The topic of the paper is one of which I have no special knowledge, and so I appreciate the thorough overview given by Messrs. Moorhead and Fischer. They have provided much information and insight into a complex subject that in one way or another we shall all have to address.

While I have some knowledge of pension funding mathematics and some insights into social security financing, I have had little experience with the complexities of a CCRC. My comments therefore are mercifully brief and emerge from limited experience.

One experience has been a public lecture by Rev. Dr. Hans Kung, who is here at Michigan as a Visiting Professor of Religious Thought. His lecture was entitled "Euthanasia: New Theological Perspective in Assisted Dying." In the lecture, he stressed each individual's responsibility for achieving a dignified death. This is a specially current topic in Michigan now because a number of assisted suicides have occurred, including that of a friend suffering from advanced symptoms of Lou Gehrig's disease. I cannot resist quoting another line from the lecture, namely, "Doctors are scared of lawyers; the lawyers are scared of judges; and the judges are scared of theologians."

Through biweekly visits over a four-year period to a local nursing home that another friend has entered, we have observed the deterioration of many

individuals, including that of our friend. One wonders what public benefit is emerging from such prolongation of subdued life.

On the other hand, many individuals wish to remain living independently in their own homes as long as possible. Others may be better served by relief from the responsibilities of home and daily care. We are in an age of transition where each family will have to decide the best course for the family to pursue. For single persons, the choice may be clearer.

Turning back to the paper, I note that in the earlier part there is reference to the *closed group* of CCRC members as of the valuation date. This is the usual approach of individual life insurance and annuities and of private pension funding. Later in the paper, there is reference to the *open group* of CCRC members. This may be appropriate if the CCRC is considered to be a permanent institution, as is usually the case for Old-Age Survivors and Disability Insurance (OASDI) and other large public benefit systems. The closed group analysis may be appropriate if the CCRC is considered to exist for only one term until the need for replacement develops. The open group analysis may apply if the CCRC is considered to exist for an indefinite number of years. There then appears a spectrum of financing methods depending on the proposed length of existence.

For OASDI and other large public benefit systems, we have developed at Michigan a theory of n-year roll-forward reserve financing or, even more simple, a theory of m-year ($m>n$) of stepwise level percent financing. For a CCRC that proposes to develop as a permanent institution, an open group analysis may be required but would increase the difference from the accounting approach.

The authors' paper provides careful comparison of an ABFM system with the SOP-GAAP approach of the accounting profession. The authors' analysis is enlightening for this transition period while experience develops. I am grateful for the authors' introduction to the complex questions of CCRCs.

MARK PEAVY:

Mr. Moorhead and Mr. Fischer have done an excellent job of providing an overview of the financial reporting aspects applicable to CCRCs. As they point out in their introduction, CCRCs are amazingly complex entities, combining aspects of life insurance, health insurance in a managed-care setting, and pensions, as well as property management. The authors included the proper amount of detail to enable the reader to understand the broad concepts being illustrated.

They have done a particularly good job of highlighting the differences between GAAP and actuarially based methods. As mentioned in the section on regulatory accounting requirements, "actuaries naturally look forward to a revision in SOP-GAAP that will make it more, if not completely, compatible with ABFM." I certainly share this desire, although I am not sure that this will happen anytime soon.

My skepticism stems from two concerns. First, having been involved in several meetings between accountants and actuaries involving financial reporting for CCRCs, it continually struck me how challenging it was for the two groups to communicate with one another. Each profession has its own fundamental principles on how things should be done. Trying to convince the other that a change is appropriate runs into two obstacles: (a) the professionals who are being asked to change don't have the training to immediately grasp all the implications of the proposed change, and (b) the proposals may run counter to practices that are deeply embedded in the other profession and seem to work adequately.

Second, assuming the challenge of clearly communicating the fundamental principles of each profession can be overcome, the possibility remains that the professionals may not agree with what they hear. I once asked a prominent accountant why he had such a reluctance to accept the methods suggested by ABFM.

His response was that, while the theory may be fine, he did not feel comfortable with what he perceived to be a lack of standard practice among actuaries in setting the assumptions underlying the APVs. He expressed the specific concern that two otherwise identical CCRCs might produce significantly dissimilar financial statements solely because their retained actuaries interpreted past experience differently or had differing perceptions of the future. It was his contention that GAAP, as implemented by the SOP, provided more objective standards that produced a greater consistency in financial statements. To the extent that his opinions are widely shared, achieving greater compatibility between ABFM and GAAP will prove difficult. Although the creation of standardized mortality and morbidity tables might ease his concerns, reaching a consensus on what those tables should be and how much variance from the tables would be permitted is clearly a long-term project.

H. SELWYN TORRANCE:

Those actuaries working with CCRCs owe a debt of gratitude to the authors of this fine paper. By commenting on some details I hope to add to its value.

Mortality, Morbidity, and Transfer Rates

There is a statement that "The 1983 *a* Table is commonly used as a basis for decrements, a different percentage factor being applied to the table's rates for each different decrement." I think that any implied blessing of this method is inappropriate. Actual rates may be found to be "shaped" quite differently from this table.

Even if an improved method is as simple as fitting observed data with one factor for higher ages and a different factor for lower ages, the difference between the factors may be quite significant.

Further, there is conjecture that some rates may be quite independent of age over a wide range of ages or even decrease over a range of ages. The method described will always force rates to increase as age increases, thus prejudging the outcome. The method should be modified to produce a table not inconsistent with the data.

Amortization of Entry Fees

There is a statement that (under the AICPA SOP on nonrefundable advance fees), "The deferred revenue should be amortized to income over future periods based on the estimated life of the resident or contract term, if shorter." The authors also note that it "permits other than straight-line amortization if costs are expected to be significantly higher in the later years of residence." However, it is necessary to highlight a very significant requirement, namely, that "Unamortized deferred revenue from nonrefundable advance fees should be recorded as revenue upon a resident's death or termination of the contract."

This immediate recognition upon death is a worrying feature of the AICPA SOP that conflicts with past practice of some communities that have spread the release on death, for example in accordance with the basis described in David Hewitt's paper (the paper's ref. [8]). Immediate recognition can be criticized as undesirable because of the volatility that it introduces and because a major element of the community's income remains unknown until the conclusion of its fiscal year. However, protests by the actuarial community have at best been muted.

Some feel that the SOP need not supplant what are essentially sound practices. However, state regulatory authorities are requesting certification of compliance with the AICPA SOP. To add to the confusion, some actuaries are implementing the SOP in a very literal manner (which is actuarially unsound), simply continuing to amortize without modifying the basis to recognize the release on death, but then also recognizing income on death. It is my view that compliance on a sound actuarial basis calls for amortization over life expectancy, taking into account the release upon death in such a way that the expected income follows the desired pattern. Thus, for example, for a resident in skilled nursing with remaining unamortized fee $F\{x\}$ at age x, probability of death $q\{x\}$, and expected income $\mathrm{E}\{x\}$, we have:

$$F\{x\} = \mathrm{E}\{x\} + (1.0 - q\{x\})\, F\{x + 1\}$$

that is, the unamortized fee provides the expected income plus the following year's unamortized fee upon survival. In the simplest design, $\mathrm{E}\{x\}$ is defined as 1 unit at all ages, although other definitions can be considered. The corresponding $F\{x\}$ can then be found at all ages by recursion.

If the corresponding income recognized in the year from age x to $(x+1)$ upon survival to $(x+1)$ is $J\{x\}$, then:

$$\mathrm{E}\{x\} = q\{x\}\, F\{x\} + (1.0 - q\{x\})\, J\{x\}$$

This can then be solved for $J\{x\}$ at all ages. The values may be found to follow no consistent trend, but, no matter, $\mathrm{E}\{x\}$ will follow the desired pattern. Similar (but more complex) equations may be formulated for those in lower level nursing care or independent living, and for couples.

Other Comments

There is a true statement that "*ASOP No. 3* provides ... each item of property is assigned an assumed useful lifetime." However, it may be necessary to treat the property as a composite of assets with different useful lifetimes. This becomes particularly important when projecting future cash flow, which, for example, may need to provide for a series of major repairs before ultimate replacement.

There is a true statement that "*ASOP No. 3* provides ... the values of some items ... are taken directly from the accounting balance sheet." However, the items specified are not all short term. Specifically, deposits in escrow may be held on average for as long as ten years in some communities,

and assumed earnings on those deposits may differ materially from contractual earnings that constitute the obligation. In that case it may be appropriate to value the difference.

(AUTHORS' REVIEW OF DISCUSSIONS)

ERNEST J. MOORHEAD AND NIELS H. FISCHER:

The contributors have added much value to this paper. We are grateful.

Three discussions deal in part with self-insuring nursing case costs rather than buying commercial insurance. Mr. Sillesky strongly supports self-insurance; the authors second his reasoning. The $17-million health care services liability in line 10 of our Table 4 illustrates the importance of this matter. That figure would have been about $7 million larger (using Mr. Sillesky's gross premium assumption) if commercial insurance had been used. Whether the insurance premiums are paid by the community or by the resident is not an issue; in either case the resident presumably ends up paying it all. Mr. Brace corrects the authors' presumption that commercial carriers have made inroads with LTC insurance sales; we assume that sound, independent actuarial advice is accountable. Mr. Pettengill suggests that small CCRCs examine the advantages of commercial insurance, but wisely with the proviso that competitiveness of their fee scale be a major consideration.

Mr. Brace, former chair of the Academy CCRC committee, adds a valuable dimension to the paper by exploring the competitive element and available pricing strategies, one of which may indeed be at the heart of the answer to Mr. Link's reference to the ill effects of starting with too low a fee scale and attempting to remedy this error later on. Doubtless both these gentlemen concur that full early occupancy backed by a long waiting list of reasonably committed people is an essential short-term objective. Mr. Brace also draws attention to deficiencies in the SOP's future services obligation definition and the background of the item "return on deemed interest earnings." We look forward with Mr. Brace and Mr. Torrance to development, now under way, of new industry-wide mortality and morbidity tables.

Regulatory authorities need to heed Mr. Pettengill's warning that oversupply of CCRCs in any area is a threat to all. And interested actuaries must make it our business to find out how much effective supervision of this kind is being exerted.

Mr. Bragg likens CCRC pricing and reserving to traditional health insurance and last-to-die mortality methodology, a valuable bridging of actuarial techniques. We believe that the Society's forthcoming experience study of CCRCs will provide data he would need. A longitudinal study of transfer rates and mortality rates in each residency category according to health conditions that arise during the journey, which he suggests, would be a valuable area for research. However, permanent nursing care residents are primarily victims of strokes, Alzheimer's, senility, or simply inability to dress or eat independently; rather few of them become victims of heart or cancer conditions about which, along with stroke-related conditions, most mortality data are concerned.

While we concur that the research Mr. Bragg suggests would be valuable, we doubt that an individual CCRC would benefit enough from seriatim valuations to warrant the additional data collection and analysis expense.

Mr. Burke speaks from the vantage point of one who chaired the NAIC CCRC committee that successfully fashioned a coherent Addendum to the *Accounting Practices and Procedures Manual* during its final year of 1994. We appreciate his view on actuarial involvement.

Mr. Callahan identifies the concerns of his state's insurance department and other regulatory agencies, the problem areas they address, and their resulting unique requirement that reserves be set at the higher of the prospective and retrospective levels. He raises a question that has always plagued accountants about the probable life span of a building. The authors acknowledge that any accounting system can only roughly approximate real estate depreciation.

Mr. Callahan and Mr. Hewitt dissent from the authors' view that SOP's future service obligation (FSO) "brings actuarial and accounting standards into essential agreement." We do stand by what we say, however. We grant that FSO seldom applies; entry fee refunds are usually conditional (Table 6); we later describe the accounting distortions that result. Nevertheless, the FSO is important because AICPA now recognizes in CCRC work the concept of computing actuarial present values from data on future fee increases, inflation, mortality, transfers, and interest; we liken adoption of the FSO to AICPA's acceptance of actuarial concepts for GAAP work with life companies.

Mr. Hewitt holds that the net asset item, line 5 of Table 4, is unaffected by whether original cost or replacement cost accounting is used. We agree, but the asset item is not at issue here. He makes the excellent observation that the 1994 *ASOP* recognizes replacement costs in some respects.

At issue is the difference between original cost and replacement cost accounting as it occurs in the liability item on line 12; here replacement cost accounting calls for making depreciation charges to the closed group for the replacement cost of each asset in service, and each of its replacements, until the last survivor of the closed group dies. As a result, each depreciation charge is higher than permitted by *ASOP No. 3.* Section 5.6.2(b) therein provides that "The present value of this series (of depreciation charges) discounted to the time of acquisition, equals the cost of the asset." The inflation index that Mr. Hewitt refers to has no mathematical impact; the intent of *ASOP No. 3,* to maintain intergenerational equity through original cost accounting, is accomplished. Thus, relating to Mr. Hewitt's second paragraph, *ASOP No. 3* requires the closed group to pay for an asset at its last purchase price, and replacement cost accounting makes them to pay for it as its next replacement price.

Mr. Cook warns that young CCRCs may find their own initially adverse morbidity experience discouraging. Contributing causes, perhaps not yet statistically measured, may include resident trauma arising from abrupt lifestyle change upon moving from one's home into a community, and the necessarily long period (often two years or even longer) between appraisal of a prospective entrant's health and welcoming that person into residence.

Another of Mr. Cook's concerns—that of finding an appropriate amortization for entry fees—fortunately does not arise under the actuarial approach. It seems unlikely that a good solution will be found for use with the accounting approach. Long-range projections seem to offer the sole opportunity for testing fee structure adequacy when that approach is relied upon.

Mr. and Mrs. Edwards ask questions that many actuaries, particularly CCRC residents and prospective residents, have posed. The regrettable fact is that in many CCRCs, the SOP-GAAP report is the only one made available to residents; usually only members of the residents' finance committees are privy to the ABFM statements—if an actuarial report is produced at all. A necessary exception, as in New York, reported by Mr. Callahan, is where legislation or regulation requires such disclosure.

As to how actuaries and accountants in the same accounting firm work together, it should be remembered that *ASOP No. 3* now does not permit the "component approach," which can be interpreted not to permit the actuary to provide an accountant with a piece of the SOP-GAAP report—such as assumptions or methodology for calculating the FSO. This can strain relationships. The "component approach" largely relates to having the

actuary provide advice on health care costs, the underlying assumption being that other costs are under control.

Mr. Hartman contributes welcome generalized analysis of physical plant through recognition of loan interest. His net premium concept is key to understanding otherwise bewildering aspects of the ABFM balance sheet so that full benefit may be derived from its role as predictor of things to come.

Dr. Nesbitt's insight into closed versus open group accounting is thought-provoking. The former often projects expenses based on 100% apartment reoccupancy, using unit costs derived from such an optimum-sized group. Of overriding concern to CCRC management, however, is CCRC perpetuation, for which open group analysis is needed. This involves sensitivity testing of unfavorable competitive and environmental factors, a process now described as dynamic financial condition analysis.[1]

Mr. Peavy, from his perspective as NAIC actuary and a participant in the committee work involving actuaries and accountants from the nonregulatory sector, provides a perceptive look into communications between actuaries and accountants. His doubt about imminent improvement in SOP-GAAP at any time soon is echoed by Mr. Hewitt, who reflects on his own committee experience.

Mr. Torrance provides valuable additional detail about shortcomings of the AICPA approach to amortizing entry fees. State regulatory authorities should be aware that the AICPA approach is actuarially unsound. His algebraic development of a sounder approach seems indisputable. Academy members know *ASOP No. 3,* which does not recognize entry fee amortization, as the rational approach—a source of frustration, indeed. Mr. Torrance also provides illuminating comments on difficulties in accounting for fixed assets under *ASOP No. 3.*

The gratifying response to this paper—the wide range of points well covered by so many knowledgeable people[2]—augurs well for the much needed increases in CCRC managements' reliance upon the actuarial approach to income statements and balance sheets, and likewise for timely emergence of more and better pooled statistics on mortality and morbidity data upon which managements can rely for sound planning and for preservation of equities between present and future generations of residents.

[1]The authors plan to prepare a paper on open group concerns for submission to the 1998 International Association of Actuaries meeting in Birmingham, England.

[2]The paper has 14 discussions and is, in fact, the second most discussed paper in the *Transactions'* 47-year history. The most discussions, 16, are of: LECKIE, ROBIN B. "Some Actuarial Considerations for Mutual Companies," *TSA* XXXI (1979): 187–259.