U.S. Department of Health and Human Services
Assistant Secretary for Planning and Evaluation
Office of Disability, Aging and Long-Term Care Policy

LONG-TERM CARE SERVICE SUPPLY:

LEVELS AND BEHAVIOR

1984

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THE SUPPLY OF INSTITUTIONAL LONG-TERM CARE DESCRIPTIVE ANALYSIS OF ITS GROWTH AND CURRENT STATE

A. INTRODUCTION

In this paper we attempt to describe the current supply of institutional long-term care and to discuss the developments in the last 20 years that have affected that supply. We have not attempted to model quantitatively the growth of institutional care or its variation across areas. Earlier attempts to do so indicated the processes determining the levels and growth of such care were too complex for simple modeling and that data available were either too sparse or crude to support more sophisticated efforts (Scanlon, 1981).

We have adopted an expansive definition of long-term care institutions. We included any facility type which provided care to persons with either chronic physical or mental impairments or illnesses. A broad definition is essential to explain the growth in particular types of institutions, since shifting of responsibility for particular types of patients among institutions has been an important element in the history of institutional long-term care.

The institutions included do not provide exclusively long-term care. A portion of their patients enter for short stays with the expectation of sufficient recovery for return to community life. Twenty-one percent of nursing home admissions are discharged to return home within 30 days (NCHS, 1979). Almost 80 percent of current public mental hospital admissions are released within three months (Goldman et al., 1980). Despite their provision of short-term care, these institutions are a major source of care for persons with permanent chronic impairments.

In attempting to document supply both historically and comprehensively, we had to utilize several data sources. The principal sources were the Counts of Persons in Institutions and Other Group Quarters from the Census of Population, the National Center for Health Statistics' Master Facility Inventory (MFI), the Health Care Financing Administration's Medicare-Medicaid Automated Certification System (MMACS), and various data compiled by the National Institute for Mental Health. Only the Census of Population attempts to enumerate all persons in any type of institution or group quarters. The Census, though, counts persons rather than beds. It provides a measure of use rather than supply and becomes a poor proxy of supply to the extent occupancy rates vary. The other data sources have a more limited scope than the Census. In addition, their scopes overlap to some degree and it is impossible in some instances to identify the precise nature or the extent of the overlap.

In all instances, one must be concerned about the quality of these data. Problems of poorly defined universes, undercounts, and response error are significant. The data had to be used as they are the only information on institutional care available. They must, however, be used cautiously. Specific caveats are indicated throughout the paper.

Inconsistencies among the data sources, where more than one seemingly measured the same populations, were detected. (These are more extensively discussed in Appendix A.) These inconsistencies suggest that the comparisons of the different data sources may not be valid. Reported historical trends must be interpreted cautiously when they involve several data sources. For longer term comparisons, it is almost always necessary to compare several sources as the latest Census information is 1970 and the other data sources do not predate 1967.

The broad trends in institutional care use are described in the next section. The following section focuses on the growth of the nursing home and personal care home industry. It includes a description of the major policy changes affecting, the industry and measures of their impact. The subsequent section details of the size and characteristics of the current industry. The final section describes trends in the care of the mentally impaired and the characteristics of the current facilities.

B. TRENDS IN INSTITUTIONAL CARE

The number of persons reported in long-term care institutions increased 44 percent from 1.1 million in 1950 to 1.7 million in 1970. This growth reflected the 34 percent increase in the U.S. population plus an 8 percent increase in the rate of institutionalization.

These overall statistics mask important differences both among time periods and population groups. Changes in per capita utilization accelerated through time. The percentage increase in per capita utilization for the entire population was twice as large between 1960 and 1970 as in the preceding decade (Table I-1). As the overall rate increased, there were major changes in the demographic mix of institutional residents. Between 1960 and 1970, the percentage of persons under 65 institutionalized declined 32 percent, while that percentage for persons over 65 increased 56 percent. In each case, these changes were significantly larger than those in the earlier period.

The decline in institutionalization for persons under age 65 principally reflected reductions in the use rate of mental and. tuberculosis hospitals. These rates declined 37 and 80 percent, respectively. Some of the reduced use of these institutional types was offset by increased use of nursing homes and chronic disease hospitals. The utilization rate of these institutions by persons under 65 increased about 17 percent

Two-fifths of the institutional growth for persons 65 and over between 1960 and 1970 is attributable to growth in the total number of persons 65 plus and the remainder

to an increase in the rate of institutionalization (Table I-2). Some increase in the rate of institutionalization is expected due to the aging of the population. Individual's likelihood of being institutionalized increases with age (Table I-3) so that a population with more older people will have more institutionalized persons. Thirty-four percent of the increased rate is due to this aging effect. The remainder represents an increase holding the age composition of the population constant. It may be thought of as the real increase in the rate of institutionalization. The proportion of persons over 65 in institutions would have had to increase from 3.64 percent to 3.99 percent between 1960 and 1970 to keep pace with population change and allow behavior to remain constant. The increase from 3.99 percent to 4.78 percent reflects a change in behavior as a larger fraction of people at each age enter institutions.

TABLE I-1. Number of Persons and Percent of U.S. Population Residing in Long-Term Care Institutions as Reported by Census of Population

	1950		1960		1970	
	Persons	Percent of Population	Persons	Percent of Population	Persons	Percent of Population
ALL AGES						
All LTC Institutions	1,161,974	0.76	1,406,266	0.78	1,670,167	0.82
Nursing Homes	296,783	0.20	469,717	0.26	927,514	0.46
With Nursing Care	N/A	N/A	200,609	0.11	298,881	0.15
Not Known to have Nursing Care	N/A	N/A	269,108	0.15	628,633	0.31
Mental Institutions[1]	747,817	0.50	804,773	0.44	635,882	0.31
TB & Chronic Diseases	96,375	0.06	107,485	0.06	84,032	0.04
Physically Handicapped	20,999	0.01	5,486	0.003	6,879	0.003
Blind & Deaf	N/A	N/A	18,805	0.01	15,860	0.008
UNDER 65						
All LTC Institutions	783,459	0.56	798,349	0.49	710,330	0.38
Nursing Homes	79,247	0.06	81,764	0.05	131,707	0.07
With Nursing Care	N/A	N/A	27,830	0.02	41,573	0.02
Not Known to have Nursing Care	N/A	N/A	53,934	0.03	90,134	0.05
Mental Institutions	602,287	0.44	622,171	0.37	512,112	0.28
TB & Chronic Diseases	80,926	0.06	70,123	0.04	43,772	0.02
Physically Handicapped	N/A	N/A	N/A	N/A	N/A	N/A
Blind & Deaf	N/A	N/A	N/A	N/A	N/A	N/A
65 & OVER						
All LTC Institutions	378,515	3.05	607,917	3.64	959,837	4.78
Nursing Homes	217,536	1.77	387,953	2.32	795,807	3.96
With Nursing Care	N/A	N/A	172,779	1.03	257,308	1.28
Not Known to have Nursing Care	N/A	N/A	215,174	1.29	538,499	2.68
Mental Institutions	145,530	1.19	182,602	1.09	123,770	0.62
TB & Chronic Diseases	15,449	0.13	37,362	0.22	40,260	0.20
Physically Handicapped	N/A	N/A	N/A	N/A	N/A	N/A
Blind & Deaf	N/A	N/A	N/A	N/A	N/A	N/A

SOURCE: U.S. Bureau of the Census, U.S. Census of Population: 1950. Vol. IV, Special Reports, Part 2, Chapter C, Institutional Population. U.S. Government Printing Office, Washington, D.C., 1953.

U.S. Bureau of the Census, U.S. Census of Population: 1960. Subject Reports: Final Report PC92)-8A: Inmates of Institutions, U.S. Government Printing Office, Washington, D.C., 1963.

U.S. Bureau of the Census, U.S. Census of Population: 1970. Subject Reports: Final Report PC92)-4E: Persons in Institutions and Other Group Quarters, U.S. Government Printing Office, Washington, D.C., 1973.

1. Includes mental hospitals, facilities for mentally impaired and residential treatment centers.

TABLE I-2. Components of Institutional Population Growth Persons 65 and Over, 1950-1970				
Factor	1950-1960		1960-1970	
	Average Annual Growth Rate	Percent of Institutional Growth Attributable to this Factor	Average Annual Growth Rate	Percent of Institutional Growth Attributable to this Factor
Growth of Population 65 and over	3.00%	64.2%	1.86%	41.1%
Increase in Rate of Institutionalization	1.67	35.8	2.67	58.9
Change in Age Composition of Population 65 and Over	0.39	6.4	0.91	20.1
Change in Age Adjusted Rate of Institutionalization	1.28	27.4	1.76	38.8
Total Institutional Population Persons 65 and Over	4.67%	100.0%	4.53%	100.0%

SOURCE: Calculated from data in the 1950, 1960, and 1970 Censuses of Institutions.

U.S. Bureau of the Census, U.S. Census of Population: 1950. Vol. IV Special Reports, Part 2 Chapter C, "Institutional Population." U.S. Government Printing Office. Washington, D.C., 1953.

U.S. Bureau of the Census, U.S. Census of Population: 1960. Subject Reports: Final Report PC(2)-8A, "Inmates of Institutions," U.S. Government Printing Office. Washington, D.C. 1963.

U.S. Bureau of the Census, U.S. Census of Population: 1970. Subject Reports: Final Report PC(2)-4E, "Persons in Institutions and Other Group Quarters." U.S. Government Printing Office, Washington, D.C., 1973.

TABLE I-3. Proportion of the Elderly in Institutions by Age Cohort, 1950-1970			
Age Group	1950	1960	1970
65-69	1.8%	1.8%	1.7%
70-74	2.6%	2.6%	2.7%
75-79	4.3%	4.3%	5.1%
80-84	6.6%	7.8%	10.2%
85+	11.7%	12.6%	17.9%

SOURCE: U.S. Bureau of the Census, U.S. Census of Population: 1950. Vol. IV, Special Reports, Part 2, Chapter C, Institutional Population. U.S. Government Printing Office, Washington, D.C., 1953.

U.S. Bureau of the Census, U.S. Census of Population: 1960. Subject Reports: Final Report PC(2)-8A: Inmates of Institutions, U.S. Government Printing Office, Washington, D.C., 1963.

U.S. Bureau of the Census, U.S. Census of Population: 1970. Subject Reports" Final Report PC(2)-4E: Persons in Institutions and Other Group Quarters. U.S. Government Printing Office, Washington, D.C., 1973.

As with the persons under 65, there were considerable shifts in use among the types of institutions by persons 65 and over. The largest increase was in nursing homes or homes for the aged, with the utilization rate rising from 2.3 percent to 4.0 percent. Use of institutions for the mentally impaired declined from 1.0 percent to 0.6 percent.

Data from the MFI and preliminary 1980 Census information indicate that since 1970, the growth of institutional use may have slowed. The MFI data indicate that the number of institutionalized persons increased 1.1 percent per year between 1971 and 1976 (Table I-4). This compares to 1.7 percent growth observed in the Census data between 1960 and 1970. Since 1970, all the growth has occurred in nursing homes, with the other institutional types experiencing declining use. We estimated from the 1980 Census information available that approximately 1,336,000 persons over 65 were in long-term care institutions in 1980[1] This represents a 3.31 percent annual growth since 1970, compared to the 4.53 percent rate for the previous decade.

TABLE I-4. Number of Residents in Long Term Care Institutions as Reported by Master Facility Inventory, 1971-1976

	1971 Residents[1]	1976 Residents[2]
All LTC Institutions	1,720,726	1,813,965
Nursing Homes	1,075,724	1,293,285
Mental Institutions	584,800	476,393
TB & Chronic Disease Hospital	31,781	23,749
Physically Handicapped	7,035	3,670
Blind and Deaf	21,436	17,138

SOURCE:

1. U.S. Department of Health, Education and Welfare, Health Resources Administration, National Center for Health Statistics, Vital and Health Statistics, Series 14 Number 12, "Inpatient Health Facilities as Reported from the 1971 MFI Survey." U.S. Government Printing Office. Washington, D.C., 1974.
2. U.S. Department of Health, Education and Welfare, Office of Health Research, Statistics, and Technology, National Center for Health Statistics, Vital and Health Statistics, Series 14 Number 23, "Inpatient Health Facilities as Reported from the 1976 MFI Survey." U.S. Government Printing Office. Washington, D.C., 1980.

C. DEVELOPMENT OF THE NURSING AND PERSONAL CARE HOME INDUSTRY

Growth in nursing homes has been the principal component of institutional growth over the past thirty years. In part, this was a natural development associated with an increase in the population over 65 and a shift in the composition of that population toward a larger proportion of people being very old (over 75 and over 85). According to the Census, the number of persons in nursing homes and homes for the aged grew at an annual rate of 5.7 percent between 1950 and 1970. About 1.0 percentage point of this was due to the growth and the change in the age distribution of the population. The remainder reflected the increase in the age adjusted rate. Data from the National Center for Health Statistics indicate that this trend continued into the 1970s. The annual rate of nursing home growth from 1967 to 1977 was 5.44 percent,

[1] The 1980 Census of Institutions data available were counts of persons by age in all institutions. Since 99.2 percent of persons over 65 were in long-term care institutions in 1970, we felt applying this rate to the 1980 population 65+ in institutions would provide a reasonable estimate. We did not believe this approach would be reliable for persons under 65.

with 3.85 percent due to population changes and 1.59 percent to increased utilization rates.

Greatly expanded public financing, particularly from federal revenues, accommodated the growth necessitated by the population change and likely contributed significantly to the increased utilization rates. Beginning in 1956, federal financing of care in nursing homes has been progressively broadened by a series of programmatic changes. In response, states and individuals have substituted utilization of these homes for provision of long-term care at home and in other institutions, principally mental hospitals. Simultaneous with the growth, the nature of these institutions and the care they provide has undergone profound changes. A major shift in emphasis toward skilled or nursing services occurred. More demanding licensure standards precipitated considerable facility turnover, with many smaller homes closing to be replaced by new larger ones.

Public sector expenditures for nursing homes grew three times faster than the bed supply. The strain on public budgets led to economic incentives to discourage additional growth and direct controls to restrict it. These, in turn, have produced secondary effects that may be leading to ownership of greater proportions of homes by multi-facility chains.

Increased Public Financing

Federal financing of nursing home care in a significant way began in 1956. At that time, the medical vendor payment program under Old Age Assistance (OAA) was modified. Previously, federal matching dollars had been limited to a specific level for each recipient. The program was changed to set the limit on federal matching in terms of an average level for all recipients. The limit on expenditures for an individual had generally precluded federal support of nursing home care. The new provision meant that the high cost of nursing home care for some individuals could be averaged with lower cost care provided other recipients and the federal government would share in all these expenditures.

The Kerr-Mills bill in 1960 established a medically needy program for the elderly known as Medical Assistance for the Aged (MAA). It allowed states to pay for medical services for persons whose incomes were above the eligibility level for OAA but whose medical expenses would reduce those incomes below the OAA level.

Under both OAA and MAA, there was a ceiling on the amount of medical vendor payments that would be matched. The passage of Medicaid, Title XIX of the Social Security Act, in 1965 eliminated that ceiling. The federal matching share was also increased. At a minimum, states were guaranteed an increase of 5 percent in their matching rate under Medicaid The Medicaid law required that state programs cover services in skilled nursing homes, whereas coverage of nursing home care under OAA and MAA was at the state's discretion.

While the Medicaid program initially covered nursing home care only in skilled nursing homes, Title X2 of the Social Security Act was amended in 1967 to allow federal matching of payments in intermediate care facilities on the same terms as any Medicaid services. In 1971, coverage of intermediate care facilities was transferred to the Medicaid program.

Public funding of nursing home care increased as additional states responded to the increased federal incentives and provided coverage for nursing home care under OAA, MAA, or Medicaid. In 1960, 22 states had medical vendor payment programs under OAA. By 1975, all states, except Arizona, had a Medicaid program. Although coverage of intermediate care facilities was optional, all state Medicaid programs included them.

The increased federal participation significantly reduced local government responsibility for funding nursing home care. Local government financing of long-term care had been important historically. County and city homes accounted for one-quarter of residents in 1950. Medical vendor payment programs under OAA and MAA often required local government financial participation. In some instances, local governments were also given some responsibility for establishing program policies. A very important aspect of this was negotiation of rates to be paid private nursing homes.

Under Medicaid, the local government's roles have been reduced considerably. In 1976, only fourteen states required any local contributions. Most of these involved relatively small amounts; the exception being New York where the state and the local governments contribute equally to the non-federal share.

The displacement of local money with state/federal money likely increased the willingness to support nursing home care. State governments became the key decision maker. Their broader and more flexible revenue sources would make it easier for them to fund services for the poor. If this is the case, the shift to state programs would be reflected in more liberal eligibility policies, and higher provider reimbursement levels. Both would tend to encourage increased service use and growth.

Change in the federal vendor payment programs that reduced what residents and their families would have to pay for nursing home care undoubtedly contributed to increased demand. Under OAA, there were no federal requirements regarding patient cost sharing. States could and did sometimes pay for only part of the cost of an eligible's nursing home care. The individual or the family would have to be able to pay the remainder to obtain care. MAA was basically similar, only forbidding states to put any lien on recipient's property prior to their death. The Medicaid law put severe limits on what could be required of a recipient or their family. Only the financial position of a married recipient's spouse or a minor recipient's parent could be considered in determining eligibility. Under OAA and MAA, some states had included incomes of adult children and other relatives as well. Medicaid initially allowed family supplementation of payments to nursing homes. However, this practice was prohibited in 1972.

The Medicare program, enacted in 1965, had a transitory though significant effect on the nursing home bed supply. Medicare provided coverage for extended care facilities for patients being discharged from hospitals. This benefit was intended to be a limited one both because of a maximum of 100 days of coverage per episode of illness and a requirement that the patient require intensive daily skilled services. Liberal interpretation of the benefit plus lucrative elements of the reimbursement policy led to considerable expansion by corporations. (Stuart and Spitz, 1973.) Revision to the reimbursement methods and stricter interpretation of benefit rules in 1969 severely reduced Medicare's market share. Since that time, the program has had a very limited role in affecting the course of the nursing home industry.

Determinants of Nursing Home Bed Supplies

The effect of this program evolution was to put state governments in the role of controlling the growth and size of the nursing home industry. Prior to Medicaid, public programs accounted for only one-third of industry revenue. By 1970, the public share had reached 49 percent and by 1980 it stood at 57 percent. The overwhelming bulk, 50 percent of nursing home expenditures, comes from Medicaid. Medicaid's influence is even greater since it controls the price paid homes for a larger share of residents, probably about 60 percent. For eligibles with some independent income, Medicaid only pays part of the cost of care. Individuals must contribute their incomes to support their care. The Medicaid program then pays the difference between the program's established price for nursing home care and what the patients contribute.

While Medicaid's market share and influence is considerable, research has shown that homes generally do not serve all Medicaid residents possible.[2] Instead, private patients receive preference and whatever beds remain are filled with Medicaid patients.

That not all Medicaid eligibles demanding nursing home care are not served is not surprising. Expenditures on nursing home care is the largest single component of almost all state Medicaid programs. It averaged 34.9 percent of total Medicaid expenditures in 1979. As noted earlier, the rate of growth of Medicaid expenditures has been quite spectacular. Since Medicaid began, they have grown 22.4 percent per year, faster than any other health service and over twice as fast as total state and local government spending. It is clearly in states' interests to attempt to control nursing home expenditures.

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[2] This research is reported in William J. Scanlon (1980). That study analyzed nursing home utilization in 1969 and 1973 and concluded there was excess demand from Medicaid eligibles in that more Medicaid eligibles sought nursing home care than the nursing homes were willing to serve. An analysis using 1977 data reported in Weissert and Scanlon (1983) produced similar results. There are indications that this excess demand likely persists. The growth of the nursing home bed supply since 1973 has not kept pace with the growth of the elderly population, the principal users of nursing homes. In addition, a significant number of hospital days are used by patients awaiting placement in a nursing home. (See Judith Feder and William Scanlon, 1982).

States have attempted to control them primarily through the supply side of the market. Initially reimbursement policy and later reimbursement along with certificate of need were used to affect the number of beds. Reimbursement, licensure standards and level of care definitions were used to influence the unit cost of care.

Influencing supply rather than demand seems preferable to states as considerations apart from controlling nursing home expenditures make reducing eligibility undesirable. Medicaid eligibility policies are a part of states' overall public assistance policies. Basically, states must extend eligibility for nursing home care to all people eligible for case assistance. To reduce the income levels of assistance to restrict the number of people seeking nursing home care may require a major reduction in the number of persons eligible for cash assistance. The state might be unwilling to affect large numbers of cash recipients in order to reduce the demand for nursing home care. Even states who set nursing home income standards above cash assistance levels may be reluctant to reduce eligibility. Such action would constitute a direct refusal to assist people needing care but unable to afford it. Reductions in eligibility are likely to generate considerable political controversy.

Historically states used reimbursement rates as the means of controlling the supply of beds available to public assistance and Medicaid patients. Rates were established with budgetary objectives in mind and adjusted according to the experience that resulted. When expenditures exceeded targets, rates would not be increased or not increased enough to keep pace with inflation. Alternatively, rates might be increased if expenditures were lower than anticipated recognizing that the increase could promote additional access for publically supported patients' or better quality homes.

Beginning in the early 1970s, states began to abandon reimbursement as the principal means of regulating supply. In part, this was a response to the uncertainty involved. After setting a rate or specifying a reimbursement system, the state would not know how operators would respond in either the short or long term. At risk were the possibilities of incurring a deficit if the rate was too generous and homes accepted too many Medicaid patients. Alternatively, the homes might severely restrict Medicaid use.[3]

States also have conflicting objectives in setting reimbursement rates. Low rates are desirable to limit the number of beds, but they may force reductions in the quality of care. Nursing home care is a complex product and its recipients are somewhat defenseless. It is impossible to insure minimal quality through regulation and periodic monitoring. States may then wish to increase reimbursement to reduce pressure on operators to cut quality, despite the higher per unit expenditures and likely increased bed supply.

[3] Limited utilization of nursing homes would not be a state concern for purely altruistic reasons. The state likely recognizes that homes would be expected to serve only those patients who could be cared for profitably or at no loss. Patients with greater care needs would be shunned when rates are low and some would end up in hospitals at potentially higher cost to the state.

A change in the federal Medicaid law encouraged reduced reliance on reimbursement. Section 249 of the 1972 Social Security Amendments required states to reimburse homes on a reasonable cost related basis. While this did not mean that states must pay all costs for allowable services to every home, it curtailed the latitude states had in setting rates. The states responded to Section 249 by devising a wide range of systems. By and large, a clear intention of these systems was control of per unit costs as evidenced by many provisions on what costs are allowable, ceilings on the percentage of homes whose costs will be fully reimbursed, limited passthrough of capital costs, and predetermined rates of increase to compensate for inflation and other changes in costs.

In place of reimbursement, states have increasingly employed direct controls of the bed supply through certificate of need laws. This approach eliminates any uncertainty regarding supplier responses to modifying reimbursement rates. It also allows reimbursement policy to be used to encourage higher quality without the fear that suppliers will use increased revenues for expansion.[4]

Which states use certificate of need to regulate the nursing home bed supply cannot be readily determined. The 1974 National Health Planning Act mandated that states, as a condition of public health funding, enact a CON statute that included nursing homes. All states have CON laws. However, states may choose whether or not to utilize the law to restrict the bed supply and may alter that decision depending on their experience and current goals. In a study of the application of CON to the nursing home industry, wide variation was found in how states were using CON to affect the bed supply (Feder and Scanlon, 1980). It was also found that states shift their policies when their fiscal position changes or previous experience proves unsatisfactory.

The influence of state policy can be seen in the wide variation in the rate of growth and the levels of the nursing home bed supply across states. Immediately after the beginning of the Medicaid program in 1967, the nursing home bed supply ranged from 11.9, beds per thousand elderly in West Virginia to 81.8 beds per thousand elderly in Iowa (Table I-5). During the next six years, the annual rate of growth ranged from .37 percent in Utah to 13.38 percent in Alaska. The considerable variation in growth meant that despite the increased federal role associated with Medicaid, per capita elderly supply levels maintained their wide range across states.

Measuring the Impact of Policy Changes on the Nursing Home Bed Supply

Tying specific programmatic changes to the growth of the nursing home industry is an impossible task. This task is confounded by the nature and the frequency of those changes. As outlined above, several major changes in federal, policy took place

[4] Certificate of need does not quarantee higher quality. In fact, it grants some monopoly power to operators who can reduce quality without fear of market repercussions. Both residents and the state are vulnerable. Residents can not leave a poor quality home since a bed in another home is less likely to exist. The state has more difficulty in disciplining a home. Its major weapon, closure, cannot be used because there is nowhere to transfer a home's residents.

between 1960 and 1980. These changes represent the tip of the iceberg. Federal policies established the basic framework in which OAA, MAA, and Medicaid have operated. States responded with different lags in implementing those changes. Furthermore, each state has responsibility for designing its own program within the federal framework. States make frequent changes in various policies that affect nursing homes, in an attempt to fine tune them to achieve certain goals.

TABLE I-5. Growth in Nursing Home Beds Per Thousand Elderly, 1967-1973			
State	**1967 Beds Per Elderly**	**Annual Growth Rate**	**1973 Beds per Elderly**
Alabama	29.9	5.58%	41.8
Alaska	24.3	19.38%	77.8
Arizona	31.2	0.61%	32.4
Arkansas	47.8	6.31%	69.9
California	52.0	6.68%	77.6
Colorado	62.7	4.64%	82.7
Connecticut	59.5	4.03%	75.8
Delaware	35.6	4.51%	46.7
District of Columbia	29.9	6.60%	44.4
Florida	27.4	1.10%	29.3
Georgia	34.2	10.57%	64.4
Hawaii	36.5	6.16%	52.8
Idaho	48.7	2.47%	56.5
Illinois	47.1	6.88%	71.2
Indiana	46.6	5.94%	66.6
Iowa	81.8	3.09%	98.5
Kansas	68.1	3.28%	82.8
Kentucky	37.0	5.47%	51.4
Louisiana	36.5	5.79%	51.7
Maine	52.7	6.22%	76.5
Maryland	37.8	6.22%	54.9
Massachusetts	63.1	4.43%	82.3
Michigan	40.4	7.05%	61.7
Minnesota	73.8	5.87%	105.0
Mississippi	18.5	9.61%	32.9
Missouri	42.6	5.09%	57.8
Montana	48.9	5.01%	66.0
Nebraska	65.3	5.74%	92.2
Nevada	32.3	2.87%	38.4
New Hampshire	55.2	3.89%	69.7
New Jersey	35.1	4.75%	46.7
New Mexico	33.1	3.46%	40.8
New York	31.8	6.34%	46.6
North Carolina	38.9	3.57%	48.2
North Dakota	78.6	3.07%	94.5
Ohio	50.6	3.63%	62.9
Oklahoma	68.8	4.92%	92.4
Oregon	65.1	2.28%	74.7
Pennsylvania	39.4	3.86%	49.6
Rhode Island	49.7	2.93%	59.3
South Carolina	28.4	4.89%	38.1
South Dakota	67.0	5.62%	93.9

TABLE I-5 (*continued*)			
State	**1967 Beds Per Elderly**	**Annual Growth Rate**	**1973 Beds per Elderly**
Tennessee	24.2	6.46%	35.6
Texas	49.2	6.82%	74.0
Utah	54.6	0.37%	53.3
Vermont	59.9	4.39%	78.0
Virginia	30.2	5.36%	41.6
Washington	58.8	7.11%	90.1
West Virginia	11.9	11.31%	23.4
Wisconsin	57.6	10.01%	105.0
Wyoming	34.7	8.92%	59.4

SOURCE: Calculated from published data from the 1967 and 1973 MFI Surveys.

U.S. Department of Health, Education and Welfare, National Center for Health Statistics, Vital and Health Statistics Series 14 Number 4, "Inpatient Health Facilities as Reported from the 1967 MFI Survey," U.S. Government Printing Office, Washington, D.C., 1972.

U.S. Department of Health, Education and Welfare, Health Services and Mental Health Administration, National Center for Health Statistics, Vital and Health Statistics, Series 14 Number 16, "Inpatient Health Facilities as Reported from the 1973 MFI Survey," U.S. Government Printing Office, Washington, D.C., 1976.

Nursing homes respond not so much to the policy of the moment, but to their expectation regarding future policies. Nursing homes represent a long term capital investment that cannot be readily shifted from one use to another. Decisions to expand an existing facility, build a new one, or close are based on expected revenues over a long time horizon. Policies in effect in a given year are important to investment decisions to the extent homes believe they reflect future policies. If a state has a history of relatively stable, consistent policies, homes may regard current policy as a decent predictor of future policies. When a state has modified its policies repeatedly in an attempt to find the combination that serves it best, homes would discount any prediction based on current policy.

Attempts to estimate the proportions of nursing home growth attributable to specific policies have generally led to inconclusive findings. Scanlon (1981) estimated models of nursing home investment decisions, including decisions to expand or close by existing homes and decisions of new homes to enter the market. He related these to state reimbursement policy, licensure standards, demand factors and current supply.

Reimbursement policy included both the level of payment and the method of determining it. Presumably, higher rates encourage more nursing home investment and discourage closures. The method may have an important impact as well; however, which method homes would prefer is ambiguous. First, flat rate methods were contrasted with cost-based ones. Under the former, homes receive the same amount regardless of their actual costs. Reducing costs then yields more profit to the home. With cost-based systems, homes must incur costs to receive reimbursement or to keep subsequent years' rates at or above current levels. Incentives to contain costs and potential for profits are reduced. When the amount paid is the same, homes would likely be able to earn greater profits under a flat rate system. They might tend to want to

invest more in those states. Higher profits under flat rate systems may be only short term. Since the rate does not necessarily rise when costs do, homes may prefer cost-based systems. Current profits may be smaller in a cost-based system, but long term profits may be better since the state is committed to increase rates as cost increase.

The estimation of these models using data on growth from 1967 to 1969 and 1971 to 1973 indicated that reimbursement levels or methods had no statistically significant impact on the rate of new homes opening or existing homes closing. The level of reimbursement, but not the method, did have statistically significant positive impact on the number of beds added by existing homes. The size of the impact was rather small. A 10 percent increase in the rate would increase the rate of expansion about one-half a percent. Other policy variables such as certificate of need or licensure standards had no significant impact.

Malhorta et al. (1981) estimated a total growth and a supply equation using the same data and a dummy variable for the reimbursement method, without a control for the level. Not surprisingly, they obtained similar results; there was no difference in impact between flat rate and cost related methods.

They also tested for impacts of particular features of the different methods. For the cost related systems, these included whether rates were prospectively or retrospectively determined; whether profits were paid as a return on equity, a percentage of costs, or as a fixed amount per patient day; whether accelerated depreciation was allowed in computing costs; whether limits were placed on total recognizable costs; whether an audit system existed to validate cost reports; and finally, whether adjustments were made to prevent average per diem costs from being inflated by low occupancy rates. They found that a limitation on recognized total cost or an occupancy rate adjustment had a significant (.10 level) impact on growth. As expected, their impacts were negative, reducing growth. The impact of allowing accelerated depreciation was also significant, though the direction of the impact was negative--the opposite of what was expected.

A similar endeavor was undertaken for the states with flat rate systems. These systems were distinguished according to whether the system provided different rates for different types of patients, whether rates, differed for different groups of homes and the level of the rate. Only the systems with patient related rates had a significant impact. However, no conclusion can legitimately be drawn from this part of their analysis. They had only 12 observations to begin with; only 2 states had patient-related rates; and 3 varied rates for groups of homes.

Despite the insignificant findings in these two studies, nursing homes probably do respond to the economic incentives in public policies. This is, a largely proprietary industry that in other studies has been shown to respond to economic incentives. Studies of nursing home behavior regarding allocation of beds to patients (Bishop, 1980, and Scanlon, 1980) indicate very strongly that nursing homes respond rationally to economic incentives. Their models indicated that homes served all private patients

first and then allocated their remaining beds to Medicaid patients. The Bishop model indicated that homes provided more beds to Medicaid patients when the program had higher rates.

The absence of a demonstrated link between nursing home investment and various public policies likely reflects the inability to deal with the complexity of their interaction with the limited data available. Statistical modeling relies on the ability to summarize in a few simple variables the critical dimensions of a policy or a phenomenon. The policies affecting nursing homes have too many dimensions which affect profitability and hence investment. Identifying one dimension of a policy does little to identify others. Each state employs a somewhat different combination of policies. Elements of each combination can reinforce or offset the incentives created other elements. For instance, states may allow accelerated depreciation in computing cost-related rates; they may or may not simultaneously restrict the basis for depreciation to the original construction cost of the facility rather than the inflated purchase price paid by current owners. The combination would considerably reduce the investment incentives associated with accelerated depreciation.

Measuring policy impacts through modeling is also handicapped by the timing problem mentioned above. That is, current policies may not indicate the expectations upon which businessmen base investment decisions. Related is the fact that the states do not set policies in a vacuum. Rather, they may be as much a reaction to growth as a cause. A state may adopt policies that are restrictive after experiencing unacceptably high growth. Even after these policies are in place, growth may remain strong for some time as investments and construction planned and initiated under previous policies start adding beds to the supply. Examining contemporaneous data might suggest that a restrictive policy encourages growth.

Changes in the Structure of the Industry

Perhaps equalling the importance of the growth of the nursing home industry in the past thirty years is the profound changes the industry has undergone. These included a shift in the ownership distribution away from government operated to private homes and a substitution of larger more nursing oriented facilities for small personal care ones. While these shifts have already taken place, there are indications that another is occurring. There appears to be some growth in the concentration of the industry as multi-facility firms expand by purchasing existing facilities rather than constructing new ones.

The change in the ownership distribution seemed to accompany the development of the vendor payment program. As. seen in Table I-6, proprietary and government operated homes represented roughly equal shares of the industry in 1950 with a somewhat smaller share controlled by nonprofits. From that point, the proprietary homes began to dominate. Their increased share was due primarily to their experiencing much more rapid growth than the other ownership groups. Between 1960 and 1970, their patient population reported by the Census increased six-fold while

nonprofit homes' only doubled and government's declined slightly. The composition appears to have remained stable since 1970. Data from the MFI indicate approximately the same proportions for 1976.

The most dramatic shift that occurred involved the substitution of large for small facilities and an increase in the nursing orientation of homes. These changes were a direct result of increased federal and state structural and staffing standards that began with efforts by the Public Health Service in the early 1960s to upgrade nursing homes. This movement became formalized with the passage of Medicare and Medicaid.

Medicare and Medicaid defined extensive standards that facilities had to meet. Besides guaranteeing a certain level of quality, a major purpose of these standards was to define the type of care- that would be covered. The programs intended to cover nursing home care that included skilled nursing or rehabilitation services. Even care in intermediate care facilities, covered initially under Title XI and later under Medicaid, was to involve such services, albeit at less intensive levels.

TABLE I-6. Ownership Distribution of Nursing and Personal Care Homes

	Proprietary		Non-Profit		Government		Total	
	Patients	Percent of Total	Patients	Percent of Total	Patients	Percent of Total	Patients	Percent of Total
1950[1]	110,070	37.2%	71,430	24.2%	114,060	38.6%	295,560	100%
1960[1]	272,422	58.0%	104,752	22.3%	92,543	19.7%	469,717	100%
1970[1]	661,888	71.4%	159,887	17.2%	105,739	11.4%	927,514	100%
1976[2]	880,012	68.4%	275,030	21.3%	138,234	10.7%	1,293,285	100%

SOURCE: U.S. Department of Health, Education and Welfare, National Center for Health Statistics, Inpatient Health Facilities Statistics, United States, Hyattsville, Maryland 1980.

U.S. Bureau of the Census, U.S. Census of Population: 1950. Vol. IV, Special Reports, Part 2, Chapter C, Institutional Population. U.S. Government Printing Office, Washington, D.C., 1953.

U.S. Bureau of the Census, U.S. Census of Population: 1960. Subject Reports: Final Report PC(2)-8A: Inmates of Institutions. U.S. Government Printing Office, Washington, D.C., 1963.

U.S. Bureau of the Census, U.S. Census of Population: 1970. Subject Reports: Final Report PC(2)-4E: Persons in Institutions and Other Group Quarters. U.S. Government Printing Office, Washington, D.C., 1973.

1. Based on data from Census of Population
2. Based on data from Master Facility Inventory

In 1966, Medicare established staffing standards for its Extended Care Facilities (ECFs), the original name for skilled nursing facilities. These standards initially required a registered nurse round the clock. Additional staff had to be employed to meet patient needs. Medicaid adopted similar rules for its skilled nursing homes (SNHs) in 1970. The 1972 Amendments to the Social Security Act created a common definition for ECFs and SNHs designating them both as skilled nursing facilities (SNFs). The new standards for SNFs were basically the same, a noticeable exception being a decrease in the number of shifts covered with RN staffing from three to one, the day shift. The amendments also required that SNFs meet the 1967 Life Safety Code standards regarding the design and outfitting of the building or they would be decertified.[5]

[5] Facilities built with Hill Burton funds, largely nonprofit and some government homes, previously had to meet similar structural standards.

Title XI, which covered intermediate care facilities until 1971, had no provisions for standards. When transferred to Medicaid, the law specified that standards were to be established. The standards which went into effect in 1974 required that one RN or LPN be employed full-time (i.e., 40 hours per week). Each patient's care had to be supervised by a physician, though this could and almost always is done on a consultant basis rather than having a physician on staff. ICFs were also required to meet the Life Safety Code standards.

To be certified for Medicare or Medicaid, SNFs and ICFs had to comply with the more stringent of federal standards or state licensure standards. Many states went well beyond the federal standards in specifying the level and type of staffing required per patient in each type of home. States tended to increase these requirements during the first decade of Medicare and Medicaid. In part, public scandals receiving widespread media attention plus increased patient advocacy undoubtedly augmented interest in these changes.

Some of the impact of the staffing standards can be seen in the movement of the facilities from the MPI classification of personal care homes to homes providing nursing care. Between 1967 and 1976, the proportion of facilities providing nursing care increased from 75.7 percent to 80.3 percent.

The most visible impact of the federally mandated standards was the closure of many small homes and their replacement by larger facilities. This was brought about by the introduction of the Life Safety Code. The code mandated that nursing home structures meet certain minimal standards related to fire safety and barrier free environments. Its most significant requirement in terms of being difficult for existing homes to comply with was mandating that sprinkler systems be installed. Historically, a large share of nursing homes were very small-scale operations. Almost 40 percent of homes in 1969 had fewer than 25 beds. Many homes were simply converted residences operated by the owners who lived on site. Approximately 13 percent of homes had less than 10 beds. The sprinkler requirement is reported as being a particular burden for these smaller homes (Dunlop, 1979). Many were forced to cease operations because the renovation costs to install sprinklers were too high.

The viability of small homes was also likely affected by the more rigorous staffing standards adopted by many states during this period. Requiring more staff particularly within specific categories may increase the slack time of employees in small homes when different types of labor are nonsubstitutable. These could significantly raise per unit labor costs which would be a problem if revenues could not be adjusted accordingly.

Over 6,000 or 28 percent of the homes operating in 1971 had closed by 1976. These homes contained 34.3 beds on average, compared to a mean size of 54.5 beds for all facilities. About 4,800 new homes opened in the same period. They had an

average bed size of 74.7 beds. The net result was that the average home size increased in those five years by 26 percent from 54.5 to 68.9.[6]

The final structural shift occurring in the nursing home industry appears to be associated with states' employment of certificate of need restrictions on investments rather than reimbursement as the means of controlling the bed supply. The result of this policy is if someone wishes to invest in the industry the easiest method in many states may be the purchase of an existing home rather than attempting to get a certificate to construct a new home. For existing operators wanting to expand, purchase of another home may again be the easiest approach.

Reportedly, large multi-facility chains are now expanding by purchasing individually owned facilities. How extensive this has become is difficult to document. Security and Exchange Commission reports in 1978 indicated that 59 publically traded corportions controlled about 12 percent of the nursing home beds.[7] The 1977 National Nursing Home Survey (NNHS) reported that 28 percent of facilities containing 36 percent of the beds belonged to chains. How many large chains there are among these facilities cannot be determined. The NNES data could include many small 2-3 facility chains which would not represent a major change from individually owned facilities.

D. CURRENT SUPPLY OF NURSING HOMES AND PERSONAL CARE/BOARDING HOMES

Certified Nursing Homes

Our intent in this section is to estimate the level and distribution of nursing home services currently available in the United States. We consider as nursing homes facilities eligible for certification by Medicare or Medicaid. In the next section, we provide similar information for personal care-homes. These homes presumably supply less intensive services and would therefore not qualify as, a Medicare or Medicaid certified facility.

In developing these estimates, we have primarily relied upon two data sources--the Medicare/Medicaid Automated Certifiction System (MMACS) and the Master Facility Inventory (MFI). The MMACS data provide more current estimates, 1980, but they are limited to facilities actually certified for Medicare or Medicaid. Some facilities providing services at the level of a Medicare or Medicaid nursing home may choose not to participate. We have, therefore, used the older MFI data (1976-1978) as well, to provide estimates of the total nursing home supply.

[6] These estimates were derived from a file containing matched records from the 1971, 1973 and 1976 MFI's prepared by The Urban Institute under a previous grant. This work is described in Scanlon and Feder (1980).

[7] National Council of Health Centers, unpublished data.

MMACS data indicate there are 14,615 facilities currently certified for participation in Medicare and/or Medicaid, containing approximately 1.5 million beds. Table I-7 shows the distribution of facilities certified and total beds by state. Table I-8 indicates the number of total beds per elderly person by state. They range from .01 in Arizona to .12 in Minnesota.

When we examine the national distribution of certified facilities and total beds according to certification category (Table I-9), we find that 6,463 or 44.2 percent of all facilities are certified only at the ICF level. The next largest group, 2,591 facilities or 17.7 percent of the total, is certified under Medicare and Medicaid as SNF-ICFs. These facilities contain 46.9 percent of the total 1.5 million beds.

TABLE I-7. Counts of Medicare and/or Medicaid Certified Nursing Home Facilities and Beds, 1980
(MMACS Bed and Facility Counts Tables by Type and State Total)

	Total Facilities	Medicare Beds	Medicaid Skilled Beds	Medicaid ICF Beds[1]	IMR Certified Beds[2]	Total Beds
TOTAL	14,615	445,440	645,208	916,987	59,453	1,502,990
Alabama	230	12,940	12,966	7,984	578	21,486
Alaska	14	323	518	540	5	653
Arizona	23	815	0	0	0	2,595
Arkansas	213	315	8,821	10,778	1,720	21,248
California	1,200	90,423	101,683	24,325	215	116,787
Colorado	209	5,671	11,008	15,235	817	21,382
Connecticut	246	18,443	19,586	3,772	0	24,865
Delaware	36	957	771	1,998	0	3,612
District of Columbia	7	326	276	582	0	1,356
Florida	353	22,131	30,796	29,602	804	39,084
Georgia	331	5,927	20,628	25,094	819	32,336
Hawaii	37	1,734	1,603	1,101	91	3,695
Idaho	65	3,265	4,449	4,630	0	5,071
Illinois	812	8,141	26,306	79,208	6,222	102,009
Indiana	468	6,415	7,185	30,288	1,955	46,843
Iowa	428	692	708	29,873	0	25,458
Kansas	373	1,264	2,926	23,867	14	26,115
Kentucky	224	4,227	4,227	12,804	1,112	23,503
Louisiana	233	1,561	1,359	22,503	3,926	28,109
Maine	143	367	349	8,183	198	9,674
Maryland	197	8,943	5,615	18,840	837	23,763
Massachusetts	520	6,504	13,419	23,960	0	43,656
Michigan	494	21,174	22,737	40,086	4,661	53,894
Minnesota	729	3,841	21,761	22,695	5,878	57,558
Mississippi	182	549	10,185	10,006	907	15,671
Missouri	248	4,534	8,484	20,801	0	27,449
Montana	100	2,872	3,337	6,163	17	4,711
Nebraska	221	1,087	2,040	16,747	136	18,467
Nevada	28	1,802	1,802	2,019	0	2,067
New Hampshire	74	809	809	5,576	0	6,808
New Jersey	255	15,847	25,019	27,978	0	34,371
New Mexico	44	223	223	3,176	482	4,290
New York	601	67,717	67,759	25,773	0	99,642
North Carolina	229	7,747	8,138	10,877	929	23,609
North Dakota	73	3,635	3,635	4,516	0	5,536

TABLE I-7 (*continued*)						
	Total Facilities	**Medicare Beds**	**Medicaid Skilled Beds**	**Medicaid ICF Beds[1]**	**IMR Certified Beds[2]**	**Total Beds**
Ohio	911	31,249	38,736	59,631	3,417	78,090
Oklahoma	360	411	0	27,263	1,456	31,617
Oregon	191	2,900	2,996	10,665	1,978	16,771
Pennsylvania	629	38,622	50,813	14,484	3,863	82,388
Rhode Island	121	1,848	1,869	6,026	94	9,053
South Carolina	159	6,877	6,768	9,296	742	12,859
South Dakota	108	472	3,731	5,829	905	8,082
Tennessee	241	2,969	2,796	22,158	2,295	27,724
Texas	1,003	2,358	14,615	82,744	7,622	110,226
Utah	91	1,511	2,198	4,879	1,217	6,845
Vermont	46	665	736	2,174	0	3,088
Virginia	174	1,642	1,466	17,401	0	25,125
Washington	326	9,338	22,860	23,632	0	31,721
West Virginia	80	2,693	2,693	5,214	0	5,980
Wisconsin	511	8,494	40,403	52,107	3,541	62,143
Wyoming	26	170	1,400	1,904	0	1,905

SOURCE: Medicare and Medicaid Automated Certification System, Tabulated Data.

1. ICF means intermediate care facility.
2. IMR means intermediate care facility for the mentally retarded.

TABLE I-8. Total Beds per Elderly and Dependent Persons, By State			
	Beds Per Elderly Person	**Total Elderly Population**	**Total Beds**
Arizona	0.01	306,971	2,595
District of Columbia	0.02	74,202	1,356
West Virginia	0.03	237,868	5,980
Florida	0.02	1,684,972	39,084
Nevada	0.03	65,767	2,067
Alaska	0.06	11,530	653
New Mexico	0.04	115,690	4,290
North Carolina	0.04	602,273	23,609
New Jersey	0.04	859,682	34,371
Hawaii	0.05	76,230	3,695
South Carolina	0.05	287,287	12,859
Missouri	0.04	648,289	27,449
New York	0.05	2,160,558	99,642
California	0.05	2,414,755	116,787
Virginia	0.05	505,204	25,125
Wyoming	0.05	37,218	1,905
Alabama	0.05	439,938	21,486
Vermont	0.05	58,166	3,088
Tennessee	0.05	517,524	27,724
Mississippi	0.05	289,357	15,671
Idaho	0.05	93,680	5,071
Pennsylvania	0.05	1,531,107	82,388
Maryland	0.06	395,594	23,763
Oregon	0.06	303,284	16,771
Michigan	0.06	912,321	53,894
Delaware	0.06	59,284	3,612
Kentucky	0.06	409,853	23,503

TABLE I-8 (*continued*)			
	Beds Per Elderly Person	**Total Elderly Population**	**Total Beds**
Utah	0.06	109,220	6,845
Georgia	0.06	516,808	32,336
Massachusetts	0.06	726,531	43,656
Ohio	0.07	1,169,437	78,090
New Hampshire	0.07	102,967	6,808
Louisiana	0.07	403,939	28,109
Connecticut	0.07	364,864	24,865
Maine	0.07	140,918	9,674
North Dakota	0.07	80,447	5,536
Arkansas	0.07	312,331	21,248
Washington	0.07	431,417	31,721
Rhode Island	0.07	126,922	9,053
Texas	0.08	1,317,040	110,226
Indiana	0.08	585,425	46,843
Montana	0.08	84,559	6,711
Illinois	0.08	1,261,160	102,009
Colorado	0.09	247,261	21,382
Kansas	0.09	306,179	26,115
Oklahoma	0.08	376,042	31,617
South Dakota	0.09	91,014	8,082
Nebraska	0.09	205,576	18,467
Iowa	0.09	387,498	35,458
Wisconsin	0.11	564,228	62,143
Minnesota	0.12	479,746	57,558
SOURCE: Tabulated data from the 1980 MMACS file.			

TABLE I-9. Number of Facilities and Beds by Certification Level, MMACS						
	Total Facilities	**Medicare Beds**	**Medicaid Skilled Beds**	**Medicaid ICF Beds**	**IMR Beds**	**Total Beds**
Medicare SNF	183	10,716	---	---	---	18,291
Medicaid SNF	851	---	71,045	---	---	79,600
Medicare/Medicaid SNF	2,028	202,367	202,411	---	---	234,760
Medicaid ICF	6,463	---	---	502,290	---	550,760
Medicare SNF/Medicaid SNF-ICF	2,591	214,470	215,088	252,103	---	335,491
Medicaid SNF/ICF	1,596	---	143,238	151,252	---	183,909
Medicare SNF-ICF	48	3,472	---	4,786	---	7,144
ICF-IMR	25	---	---	3,065	3,654	4,585
IMR	533	---	---	---	55,799	55,799
Hospital	297	14,415	13,426	3,491	---	32,639
TOTAL	14,615	445,440	645,208	916,987	59,453	1,502,990
SOURCE: Tabulated data from the 1980 MMACS.						

Tables I-10 through I-14 present information on the characteristics of existing homes. For each certification category, Table I-10 shows the distribution of facilities by size. Table I-11 reports the distribution of beds by facility size. The most striking feature is the high concentration of ICF-MR and IMR beds in a small number of large facilities. Seventy percent of all ICF-MR beds are found in five facilities with 200 or more beds.

Among IMR only facilities, 61 percent of total beds are contained in the 9 percent of certified facilities which have 300 or more beds.

At the SNP level, we find tht 58 percent of the facilities fall into the 75-300 bed range and contain 75 percent of the total beds. In Medicaid only SNP facilities, those with 50-200 beds account for 74 percent of all certified homes and 77 percent of total beds. Three quarters of all ICF only beds are housed in facilities with 50-200 beds, with such facilities accounting for 70 percent of ICF only homes. Those facilities certified as Medicare and Medicaid ICF's have 82 percent of their beds concentrated in facilities of 100-300 beds.

Table I-12 displays the distribution of facilities and total beds by type of ownership in each facility certification category. The majority of all certified facilities are operated as proprietary facilities, with 68.8 percent of all homes and 65.7 percent of total beds falling into that category. A substantial portion of proprietary homes, 47.7 percent, are certified only as ICFs while an even greater share of ICF only homes are operated under a proprietary form of ownership. At the SNP level, 65.5 percent of Medicare certified homes are proprietary ownerships as are 64.8 percent of Medicaid homes and 73.9 percent of Medicare-Medicaid SNFs. In contrast, IMRs and hospital based nursing homes are predominantly nonprofit. Among all IMR's, 40.4 percent are operated as nonprofits as are 56.2 percent of all of all hospitals. Nonprofit ownership is the second most predominant form among the other certification categories. At the SNF level, 31.7 percent of Medicare homes are nonprofit compared to 22 percent of Medicaid homes and 18.3 percent of dual Medicare-Medicaid facilities.

In terms of total beds, 65.7 percent of all beds are contained in proprietary homes, follwed by 2G.7 percent in nonprofits, 11.7 percent in government non-federal facilities and 1.9 percent under other ownership arrangements. Roughly 68.8 percent of all ICF only beds are in proprietary homes compared to 71.0 percent of Medicare-only SNFs and 62.7 percent of Medicaid-only SNFs.

When we examine facilities and beds by bed size and type of ownership (Table I-13 and Table I-14), we find that over one-third of all proprietary facilities reported in MMACS are in the 100-199 bed range and contain about 49 percent of total proprietary beds. Among nonprofits, 37.8 percent of all facilities fall into the 25-74 range, while an additional 44.6 percent are facilities with 75-199 beds. Approximately 51.3 percent of all nonprofit beds are found in the latter facility size.

We should note that in using the MM ACS data as a source of statistics for uncertified facilities, a warning about reliability must be added. The MMACS file contains administrative data which is not intended to produce counts of nursing homes or beds. We have attempted to use the information on this file to produce unduplicated counts of facilities and beds. We have assumed that the information contained on the file is for the most part accurate, disregarding fields that would only greatly exceed expected values. Fields such as total beds, which are not critical from an administrative viewpoint, may be less reliable.

TABLE I-10. Distribution of Facilities by Total Bed Size and Certification, MMACS*												
	Less Than 3	**3-9**	**10-24**	**25-49**	**50-74**	**75-99**	**100-199**	**200-299**	**300-499**	**500+**	**Total Facilities**	**Total Beds**
Medicare SNF	---	2 (1.09)	5 (2.73)	31 (16.94)	34 (18.58)	27 (14.75)	70 (38.25)	10 (5.46)	4 (2.19)	---	183	18,291
Medicaid SNF	---	---	30 (3.52)	154 (18.10)	214 (25.15)	143 (16.80)	276 (32.43)	25 (2.94)	4 (0.47)	5 (0.59)	851	79,600
Medicare & Medicaid SNF	---	---	19 (0.94)	218 (10.75)	356 (17.57)	485 (23.92)	739 (36.44)	151 (7.44)	42 (2.07)	18 (0.89)	2,028	234,760
Medicaid ICF	---	12 (0.18)	327 (5.06)	1,328 (20.55)	1,835 (28.39)	966 (14.95)	1,738 (26.89)	178 (2.75)	51 (0.79)	28 (0.43)	6,463	550,772
Medicare & Medicaid SNF & ICF	---	---	24 (0.93)	141 (5.44)	322 (12.43)	443 (17.10)	1,313 (50.68)	268 (10.34)	60 (2.32)	20 (0.77)	2,591	335,491
Medicaid SNF & ICF	---	1 (0.06)	18 (1.13)	128 (8.02)	324 (20.30)	279 (17.48)	699 (43.80)	100 (6.26)	40 (2.51)	7 (0.44)	1,596	183,909
Medicare SNF & Medicaid ICF	---	---	---	---	5 (10.42)	4 (8.33)	29 (60.42)	8 (16.67)	2 (4.17)	---	48	7,144
ICF-IMR	---	---	4 (16.00)	2 (8.00)	4 (16.00)	8 (32.00)	2 (8.00)	2 (8.00)	1 (4.00)	2 (8.00)	25	4,585
IMR	---	168 (31.52)	117 (21.95)	59 (11.06)	41 (7.69)	27 (5.06)	56 (10.51)	17 (3.19)	18 (3.38)	30 (5.63)	533	55,799
Hospital	---	4 (1.35)	41 (13.80)	91 (30.64)	50 (16.84)	38 (12.79)	40 (13.47)	11 (3.70)	11 (3.70)	11 (3.70)	297	32,639
TOTAL	---	168 (1.15)	563 (3.85)	2,134 (14.60)	3,165 (21.66)	2,409 (33.76)	4,934 (5.19)	759 (1.52)	222 (0.68)	100 (0.68)	14,615	1,502,990

SOURCE: Tabulated data from the 1980 MMACS file.

* When certified long-term care beds are part of a facility serving other purposes, such as a hospital, they may report total beds for both long-term care and other purposes. This is most pronounced for hospitals, but may happen for others, e.g., retirement centers.

TABLE I-11. Distribution of Beds by Total Bedsize and Certification, MMACS*												
	Less Than 3	**3-9**	**10-24**	**25-49**	**50-74**	**75-99**	**100-199**	**200-299**	**300-499**	**500+**	**Total Facilities**	**Total Beds**
Medicare SNF	---	15 (0.08)	90 (0.49)	1,233 (6.74)	1,984 (10.85)	2,416 (13.21)	8,983 (49.11)	2,253 (12.32)	1,317 (7.20)	---	183	18,291
Medicaid SNF	---	---	611 (0.77)	5,693 (7.15)	12,890 (16.19)	12,484 (15.68)	35,701 (44.85)	6,026 (7.57)	1,293 (1.62)	4,902 (6.16)	851	79,600
Medicare & Medicaid SNF	---	---	351 (0.15)	8,602 (3.66)	21,511 (9.16)	43,663 (18.68)	99,960 (42.58)	34,112 (14.53)	14,649 (6.24)	11,912 (5.07)	2,028	234,760
Medicaid ICF	---	88 (0.16)	6,385 (1.16)	50,431 (9.16)	109,678 (19.91)	83,603 (15.18)	219,388 (39.83)	41,162 (7.47)	18,530 (3.36)	21,507 (3.90)	6,463	550,772
Medicare & Medicaid SNF & ICF	---	---	434 (0.13)	5,702 (1.70)	19,542 (5.82)	39,346 (11.73)	174,013 (51.87)	62,145 (18.52)	21,857 (6.51)	12,452 (3.71)	2,596	335,491
Medicaid SNF & ICF	---	9 (0.00)	333 (0.18)	4,920 (2.67)	19,743 (10.74)	24,239 (13.18)	92,343 (50.21)	23,326 (12.68)	14,307 (7.78)	4,689 (2.55)	1,596	183,909
Medicare SNF & Medicaid ICF	---	---	---	---	292 (4.09)	333 (4.66)	4,024 (56.33)	1,830 (25.62)	665 (9.31)	---	48	7,144
ICF-IMR	---	---	68 (1.48)	72 (1.57)	230 (5.02)	697 (15.20)	293 (6.39)	457 (9.97)	348 (7.59)	2,420 (52.78)	25	4,585
IMR	---	1,130 (2.02)	1,609 (2.88)	2,178 (3.90)	2,518 4.51)	2,435 (4.36)	7,874 (14.11)	4,234 (7.59)	6,962 (12.48)	26,859 (48.13)	533	55,799
Hospital	---	20 (0.06)	691 (2.12)	3,334 (10.21)	2,932 (8.98)	3,250 (9.96)	5,358 (16.42)	2,806 (8.60)	3,988 (12.22)	10,260 (31.43)	297	32,639
TOTAL	---	1,122 (0.07)	10,220 (0.68)	81,499 (5.42)	190,158 (12.65)	211,451 (14.07)	643,874 (42.84)	175,619 (11.68)	79,677 (5.30)	74,125 (4.93)	14,615	1,502,990

SOURCE: Tabulated data from the 1980 MMACS file.

* When certified long-term care beds are part of a facility serving other purposes, such as a hospital, they may report total beds for both long-term care and other purposes. This is most pronounced for hospitals, but may happen for others, e.g., retirement centers.

TABLE I-12. Counts of Certified Facilities and Total Beds, MMACS* by Type of Ownership								
	Non-Profit		Proprietary		Gov't -- Non-Fed		Other	
	Facilities	Beds	Facilities	Beds	Facilities	Beds	Facilities	Beds
Medicare SNF	58	4,718	120	12,996	3	282	2	295
Medicaid SNF	186	15,020	548	49,801	97	13,338	15	1,219
Medicare/ Medicaid SNF	371	44,906	1,499	165,706	115	19,752	43	4,396
Medicaid ICF	1,106	104,678	4,749	378,067	451	54,973	147	11,591
Medicare/ Medicaid SNF, ICF	505	67,010	1,811	230,117	226	32,182	49	6,182
Medicaid SNF, ICF	402	45,861	998	111,816	167	23,065	29	3,167
Medicare SNF, ICF	7	779	39	6,148	2	217	---	---
ICF IMR	3	194	14	2,516	6	696	---	---
IMR	157	3,882	153	5,272	76	14,142	3	122
Hospital	167	16,232	21	2,586	98	13,325	11	496
TOTAL	2,962	303,280	9,952	965,025	1,241	171,972	299	27,468

SOURCE: Tabulated data from 1980 MMACS file.

* These counts exclude 161 facilities with a total of 35,245 beds with unreported type of ownership.

TABLE I-13. Distribution of Facilities by Total Bed Size and Type of Ownership, MMACS*					
Total Beds	Total	Proprietary	Nonprofit	Gov't -- Non-Fed	Other
Less than 3	---	---	---	---	---
3-9	168	66	75	26	1
10-24	563	320	161	72	10
25-49	2,134	1,375	483	237	39
50-74	3,165	2,183	636	266	80
75-99	2,409	1,762	464	128	55
100-199	4,934	3,688	856	290	100
200-299	759	469	183	96	11
300-499	222	74	80	65	3
500+	100	15	24	61	---
TOTAL FACILITIES	14,454	9,952	2,962	1,241	299
TOTAL BEDS	1,467,745	965,025	303,280	171,972	27,468
AVERAGE BED SIZE	102	97	102	138	92

SOURCE: Tabulated data from the 1980 MMACS file.

* These counts exclude 161 facilities with a total of 35,245 beds with unreported type of ownership.

TABLE I-14. Distribution of Beds by Total Bed Size and Type of Ownership, MMACS					
Total Beds	**Total**	**Proprietary**	**Nonprofit**	**Gov't -- Non-Fed**	**Other**
Less than 3	---	---	---	---	---
3-9	1,122	434	508	172	8
10-24	10,220	6,051	2,780	1,203	186
25-49	81,499	52,359	18,607	9,012	1,521
50-74	190,158	131,084	38,303	15,985	4,786
75-99	211,451	155,258	40,348	11,029	4,816
100-199	643,874	476,309	115,095	39,906	12,564
200-299	175,619	107,147	43,423	22,549	2,500
300-499	79,677	25,313	29,313	23,964	1,087
500+	74,125	11,070	14,903	48,152	---
TOTAL FACILITIES	14,454	9,952	2,962	1,241	299
TOTAL BEDS	1,467,745	965,025	303,280	171,972	27,468
AVERAGE BED SIZE	102	97	102	138	92
SOURCE: Tabulated data from the 1980 MMACS file.					

When we compared our MM ACS statistics with data from the 1978 MFI, relatively large discrepancies were noted (Table I-15) Since MMACS reports on a later year, its counts are expected to be higher. However, the differences exceed what would be attributable to industry growth. The 1978 MFI involved known underreporting in four states plus a rather large decline in beds from the previous survey in several others.[8] In all likelihood, the MMACS totals may overstate the number of beds, while distributional information may be more accurate.

Uncertified Nursing Homes

To this point, our discussion of facilities has encompassed only certified facilities. However, according to the 1978 MFI, there are 6,641 uncertified facilities with 246,148 beds. This is equivalent to 55 percent of certified facilities and 22 percent of total beds as reported by the MFI.

There is no direct way to determine the level of care which these uncertified homes provide. Some may be capable of being certified, but choose not to. Others may offer care less intensive than intermediate and cannot be certified.[9]

The MFI normally classified homes into four categories--nursing care, personal care with nursing, personal care, and domiciliary care. A home is classified on the basis of the services provided to residents and the type of staff it employs. The MFI did not classify homes in 1978 due to problems in the responses to classification questions.

We examined the 1976 MFI to determine how well the MFI's classification corresponded to certified/noncertified status. We anticipated that certified facilities, particularly SNFs, would be classified in the first two MFI categories as providing

[8] 1980 MFI data do not permit reliable identification of certified facilities.

[9] Because the federal standards for ICF certification are so minimal, whether a facility can be certified will depend primarily on the state's standards.

nursing care and that most ICFs would be in those categories as well. Table I-16 displays the cross tabulation of certification by MFI category. Approximately 86 percent of the facilities certified as skilled were in the two nursing categories. Ninety-four percent of the ICY only facilities are in these categories and 96 percent of the SNF-ICFs. The major discrepancies involved Medicare only and Medicare-ICF facilities. For these, 47 percent and 26 percent, respectively, are classified at the personal care or domiciliary care level.

TABLE I-15. Comparison of Number of Facilities, Total Beds and Average Bed Size in Certified Facilities, 1980 MMACS and 1978 MFI

	Facilities		Beds		Average Bed Size	
	MMACS	MFI	MMACS	MFI	MMACS	MFI
Medicare SNF	183	1,003	18,291	40,006	100	40
Medicaid SNF	851	1,243	79,600	107,734	93	87
Medicare & Medicaid SNF	2,028	2,031	234,760	212,751	116	105
Medicaid ICF	6,463	4,670	550,772	343,920	85	74
Medicare SNF, Medicaid SNF-ICF	2,591	1,446	335,491	201,543	129	139
Medicaid SNF-ICF	1,596	1,446	183,909	183,624	115	127
Medicare SNF - Medicaid ICF	48	242	7,144	13,008	149	54
TOTAL ABOVE CATEGORIES	13,760	12,081	1,409,967	1,102,586	103	91
TOTAL	14,615	12,081	1,502,990	1,102,646	103	91

SOURCE: Tabulated data from the 1978 Master Facility Inventory and the 1980 MMACS files.

Overall, classification as a nursing care or personal care with nursing home seems to be a rough indicator that the facility provides at least ICF level care. Distinguishing between SNF and ICF level care is not possible. The vast majority of ICFs fall into the nursing care category along with the SNFs. The inability to discriminate among them is not surprising given the variation in the practical definition of skilled care in state Medicaid programs. (Vladeck, 1979, and Feder and.Scanlon, 1981.)

TABLE I-16. Facilities by MFI Level of Care and Certification, 1976

	Total	Percent of Facilities Classified as			
		Nursing Care	Personal Care with Nursing	Personal Care	Domiciliary Care
TOTAL	20,505	65.51%	14.76%	19.44%	0.29%
SKILLED:					
Medicare SNF	1,115	30.49%	19.01%	50.31%	0.18%
Medicaid SNF	1,383	92.99%	3.83%	3.11%	0.07%
Medicare & Medicaid SNF	2,038	95.00%	3.68%	1.32%	0
SKILLED-INTERMEDIATE:					
Medicare SNF/ Medicaid SNF-ICF	1,478	91.81%	7.17%	1.01%	0
Medicaid SNF/ICF	1,591	92.39%	5.41%	2.20%	0
Medicare SNF/ Medicaid ICF	374	53.21%	20.05%	26.74%	0
INTERMEDIATE:					
Medicaid ICF	5,114	84.20%	9.41%	6.37%	0.02%
UNCERTIFIED:	7,412	34.2%	26.15%	38.84%	0.76%

SOURCE: Tabulated data from the 1976 MFI Survey.

In 1976, 34.25 percent of the uncertified facilities were classified as providing nursing care, 26.15 percent as personal care with nursing, 38.84 prcent as personal care facilities, and less than 1 percent were classified as domiciliary care. If we apply these percentages to the uncertified facilities from the 1978 MFI, we would expect to find 2,274 uncertified facilities classified as a nursing level of care, 1,736 as personal care with nursing. We might regard these as the number which could be certified. The remainder, 2,579 personal care and 50 domiciliary care facilities, would be considered as offering care below the level of a certified nursing home. This assignment is tenuous, however, because the nursing care and personal care with nursing proportions of total facilities fluctuated substantially between 1971 and 1976. (Scanlon, 1981.)

Personal Care/Boarding Home Industry

This section examines the supply of institutional services below the nursing home level. Our intent is to estimate the level and distribution of such facilities. Data limitations make these estimates more tenuous than those for the nursing home industry. The facilities included in this analysis are all uncertified supervised living arangements, which may provide personal care services, but would not provide skilled nursing services, e.g., intravenous fluids, injections, sterile dressings, or tube feeding. No standard nomenclature exists for these facilities and they are variably referred to as: domiciliary care facilities (DCF), congregate care facilities, board and care homes, community care homes, family care homes, adult foster care, homes for the aged, homes for adults, group homes, rest homes, residential care, sheltered care, homes for the developmentally disabled, and community living homes. However, they do generally conform to a common purpose, which is to provide room, board and protective oversight to the residents. Protective oversight involves such functions as providing required assistance with personal care, supervision of resident activities, monitoring of special diets, central storing and distribution of medication, assistance in taking medication, assistance with acquiring medical and dental care and supervision of residents' money or property. Protective oversight specifically excludes nursing care.

TABLE I-17. Uncertified Facilities by State, 1978 MFI

	Facilities	Beds
TOTAL	6,641	246,148
Alabama	24	1,825
Alaska	2	274
Arizona	65	4,884
Arkansas	37	3,614
California	1,882	44,687
Colorado	9	700
Connecticut	89	2,757
Delaware	11	346
District of Columbia	30	914
Florida	28	1,609
Georgia	64	5,285
Hawaii	66	631
Idaho	1	16
Illinois	125	8,739
Indiana	98	7,532

TABLE I-17 (*continued*)		
	Facilities	**Beds**
Iowa	135	7,948
Kansas	38	2,602
Kentucky	112	6,482
Louisiana	8	554
Maine	219	2,714
Maryland	42	2,673
Massachusetts	281	8,941
Michigan	123	8,580
Minnesota	48	1,913
Mississippi	19	3,913
Missouri	650	21,827
Montana	8	150
Nebraska	20	1,203
Nevada	9	338
New Hampshire	32	964
New Jersey	267	9,933
New Mexico	18	757
New York	412	23,559
North Carolina	420	8,982
North Dakota	14	646
Ohio	133	8,785
Oklahoma	21	1,625
Oregon	52	1,811
Pennsylvania	88	4,440
Rhode Island	5	169
South Carolina	71	2,016
South Dakota	34	1,621
Tennessee	56	2,017
Texas	65	3,866
Utah	9	211
Vermont	164	1,734
Virginia	203	6,132
Washington	227	9,178
West Virginia	73	2,551
Wisconsin	28	1,274
Wyoming	6	226
SOURCE: Tabulated data from the 1978 Master Facility Inventory		

In the previous section we noted that the 1978 MFI reported 6,641 uncertified facilities with 246,148 beds. Table I-17 displays the distribution of these facilities by state. As noted above, the 1978 MFI did not classify homes by nursing care, personal care with nursing, etc. In the 1976 MFI, 40 percent of the uncertified MFI nursing homes were classified as personal care or domiciliary care homes.

As shown in Table I-18, the distribution of uncertified facilities according to size is markedly different from that of certified facilities. Almost 60 percent of all uncertified facilities have fewer than 25 beds. However, only 17 percent of all beds are found in such facilities. Thus, uncertified facilities are characterized by a large number of small homes, and a small number of large homes.

Several types of personal care homes--family care homes and adult foster care homes--generally provide care for as few as 2 or 3 adults. The residents live in the home of the operator. Group homes, family care homes, boarding homes, community living homes, and the like frequently care for under 15 residents. Such facilities are subject to less stringent residential fire and safety codes than nursing homes.

The proportion of these homes operated on a proprietary basis exceeds that for the certified facilities. As Table I-19 demonstrates, 79 percent of all homes and approximately 62 percent of all beds are proprietary. Nonprofit facilities are again the second most prevalent form, while government ownership accounts for only 4.3 percent of all facilities and 12.2 percent of total beds. Table I-20 and Table I-21 display the distribution of facilities and beds by type of ownership and bed size.

Since uncertified facilities include many nursing homes, we contacted a number of state licensing agencies to obtain more current data on the number of licensed facilities and total bed capacity below the nursing home level. Since data collection was not intended as a purpose of our contract, we limited ourselves to the fourteen states which reported over 100 uncertified facilities in the 1976 MFI. Two additional states, Ohio and Pennsylvania, were also contacted, in order to include all of the states covered in a 1975 Booz, Allen & Hamilton, Inc. study entitled, “Study of the Impact of State Supplementation of SSI Payments for Domiciliary Care on SSI Recipients in Care,” performed for the Social Security Administration.

TABLE I-18. Uncertified Facilities and Beds by Bed Size, 1978 MFI

Bed Size	Facilities		Beds	
	Number	Percent	Number	Percent
1-2	14	0.21	26	0.01
3-9	2,020	30.42	11,210	4.55
10-24	1,946	29.30	31,153	12.66
25-49	1,201	18.08	42,411	17.23
50-74	622	9.37	36,784	14.94
75-99	292	4.40	25,293	10.40
100-199	427	6.43	56,293	22.87
200-299	70	1.05	16,393	6.66
300-499	30	0.45	11,070	4.50
500+	18	0.27	15,215	6.18
TOTAL	6,641	100.0	246,148	100.0

SOURCE: Tabulated data from the 1978 Master Facility Inventory.

TABLE I-19. Uncertified Facilities and Beds by Type of Ownership, 1978 MFI

	Facilities		Beds	
	Number	Percent	Number	Percent
Proprietary	5,271	79.37	152,289	61.87
Nonprofit	1,077	16.22	61,171	24.85
Gov’t -- Non-Fed	258	3.88	28,279	11.49
Gov’t -- Federal	35	0.53	4,409	1.79
TOTAL	6,641	100.00	246,148	100.00

SOURCE: Tabulated data from the 1978 Master Facility Inventory.

TABLE I-20. Uncertified Facilities by Type of Ownership and Bed Size, 1978 MFI								
Bed Size	Proprietary		Nonprofit		Gov't -- Non-Fed		Federal	
	Number	Percent	Number	Percent	Number	Percent	Number	Percent
1-2	11	0.21	2	0.19	1	0.39	---	---
3-9	1,882	35.70	108	10.03	19	7.36	11	31.43
10-24	1,622	30.77	275	25.53	48	18.60	1	2.86
25-49	839	15.92	289	26.83	67	25.97	6	17.14
50-74	403	7.65	177	16.43	41	15.89	1	2.86
75-99	204	3.87	68	6.31	15	5.81	5	14.29
100-199	270	5.12	115	10.68	36	13.95	6	17.14
200-299	32	0.61	27	2.51	9	3.49	2	5.71
300-499	6	0.11	12	1.11	11	4.26	1	2.86
500+	1	0.02	4	0.37	11	4.26	2	5.71
TOTAL	5,271	100.0	1,077	100.0	258	100.0	35	100.0
SOURCE: Tabulated data from the 1978 Master Facility Inventory.								

TABLE I-21. Beds in Uncertiried Facilities by Size of Faiclity, 1978 MFI								
Bed Size	Proprietary		Nonprofit		Gov't -- Non-Fed		Federal	
	Number	Percent	Number	Percent	Number	Percent	Number	Percent
1-2	21	0.01	3	0	2	0.01	---	---
3-9	10,387	6.82	662	1.08	102	0.36	59	1.34
10-24	25,724	16.89	4,617	7.55	792	2.80	20	0.45
25-49	29,120	19.12	10,471	17.12	2,581	9.13	239	5.42
50-74	23,863	15.67	10,503	17.17	2,360	8.35	58	1.32
75-99	18,024	11.84	5,860	9.58	1,278	4.52	431	9.78
100-199	35,186	23.10	15,579	24.47	4,806	16.99	722	16.38
200-299	7,378	4.84	6,366	10.41	2,248	7.95	401	9.10
300-499	2,077	1.36	4,698	7.68	3,902	13.80	393	8.91
500+	509	0.33	2,412	3.94	10,208	36.10	2,086	47.31
TOTAL	152,289	100.0	61,171	100.0	28,279	100.0	4,409	100.0
SOURCE: Tabulated data from the 1978 Master Facility Inventory.								

Under the Supplemental Security Income (SSI) program, states may, at their option, supplement the Federal SSI payments of persons residing in supervised living arrangements. Such arrangements include DCFs (the subject of the Booz-Allen & Hamilton report), board and care homes, adult foster care, and many of the other types of supervised living arrangements described earlier.

As of July 1980, 31 states and the District of Columbia supplemented the basic SSI payments to personsin domiciliary care facilities or other supervised living arrangements. As of September 1979, twenty-four states provided supplementation to recipients in adult foster care homes.

The sixteen states we contacted represent 96.75 percent of the total recipients and 92.14 percent of expenditures of federally administered state supplementation for supervised living arrangements.[10] California and New York alone accounted for 66 percent of all recipients and 64 percent of expenditures. A smaller share of the adult foster care Title XC program was accounted for by those states, at 49.12 percent of total expenditures and 34.68 percent of recipients.

[10] Data are not available from those states which administer their own supplementation programs.

Table I-22 compares the counts we obtained from the state licensing agencies with the uncertified facility count from the 1978 MFI and the 1975 Booz, Allen & Hamilton Inc. study. This comparison shows the 1981 state agency estimates reasonably close to the estimates derived by Booz, Allen & Hamilton, with the exception of New York and Ohio. For the most part, the difference in time periods represented by the two estimates is a sufficient explanation for any disparities. An indeterminate part of the discrepancy between the state and Booz Allen reported amounts in New York is due to adult foster care homes which are licensed at the county rather than the state level and are therefore excluded from the state reported amounts. Given that New York State had approximately 2,142 recipients of Title XX adult foster care assistance in 1979, the elimination of such homes could explain a major portion of the difference. The difference in Ohio has no readily apparent cause, as it appears that similar categories of facilities were included in each estimate.

TABLE I-22. Personal Care Facilities As Reported by the 1978 MFI, State Licensing Agencies and Booz, Allen & Hamilton

State	Uncertified Facilities, 1978 MFI	Facilities Reported Below Nursing Home Level by State Agencies, 1981	1975 Booz-Allen Report
California	1,882	5,121	5,481
Illinois	125	90	---
Iowa	135	277	---
Kentucky	112	640	---
Maine	219	309	---
Massachusetts	281	252	287
Michigan	123	3,414	3,760
Missouri	650	385	---
New Jersey	267	N.A.	280
New York	412	2,064	5,577
North Carolina	420	973	---
Ohio	133	824	1,296
Pennsylvania	88	2,958	204
Vermont	164	164	---
Virginia	203	318	---
Washington	227	1,133	---

SOURCE: National Center for Health Statistics, Master Facility Inventory, tabulated data. Urban Institute Telephone survey of state licensure agencies, and Booz, Allen & Hamilton, Inc., "Study of the Impact of State Supplementation of SSI Payments for Domiciliary Care on SSI Recipients in Care." Prepared for the Department of Health, Education and Welfare, Social Security Administration, Baltimore, Maryland. June 1975.

The most significant discrepancies are found between the 1978 MFI and the other two sources of estimates. For Vermont the counts are identical. In Massachusetts and Illinois, the differences are small in terms of absolute numbers, but still sizable in percentage terms, approximately 10 and 30 percent. Other differences are much larger and in both directions. MFI estimates for Michigan are 3.6 percent of those reported by the state while those for Missouri are 168 percent of the state reported number of facilities. The undercounts are greatest among the states with large numbers of facilities, such as California, Michigan, New York, Ohio, Pennsylvania and Washington. The MFI does not include homes which serve fewer than three residents. It is possible,

therefore, that an indeterminate number of the small family homes reported by the states would be considered outside the scope of the MFI.

We can not identify homes with fewer than 3 residents in the state agency courts, but can exclude family-type homes providing care for under 5 residents. When we did this difference in the California MPI. state reported estimates is greatly diminished. However, large discrepancies still remain for other states.

It is clear from this comparison that the MFI estimates of uncertified facilities can not be used to measure the supply of personal care homes. Their use leads to severe underestimates. The scope of the MPI survey involves only "nursing homes." While some, of those "nursing homes" could not qualify for Medicaid certification because of the very low intensity care they offer, that care may still exceed that offered in many personal care homes. Very low intensity personal care homes would fall outside the its scope. Since our criteria for selecting states to contact was that they had over 100 uncertified facilities reported on the MFI, there may be more states than reported here that are large licensors of personal care homes services.

States do not always license personal care or foster care facilities, particularly when they are very small. To obtain some idea about how prevalent this form of care might be, we examined the 1976 Survey of Income and Education. The SIE is a 1976 survey of approximately 150,000 households and 450,000 persons, producing state reliable population estimates. It is a hierarchical file with household, family and person records for each housing unit identified in the sample. We attempted to gather information from that file on the number of group quarters households[11] with elderly or disabled persons as a proxy measure of group homes or community centered supervised living arrangements. However, this proved infeasible since group quarters households, although present on the SIE were not originally included in the sampling frame and therefore were not assigned a household weight.

It was possible, however, to obtain state estimates of the number of households containing elderly or disabled persons who were unrelated to the other household members. These persons are called secondary unrelated individuals and may include such persons as boarders or lodgers as well as persons participating in adult foster care or a small family home type of personal care program. Unfortunately, they also include any person living with friends.

SIE estimates of the population in 1976, show that there were 18 million households with at least one elderly and/or disabled person. Of those, 428,846 were households containing a secondary unrelated individual. As shown in Table I-23, in 50 percent of those or 215,930 households, the secondary unrelated individual was elderly and/or disabled.

[11] Defined as households containing five or more unrelated individuals.

Ninety-four percent of those households contained one unrelated individual who was aged and/or disabled, 4.8 percent had two such persons, and 1.6 percent reported more than two elderly and/or disabled unrelated individuals.

It is possible that residing in a rented room (or in an adult foster care arrangement) may provide an. individual with sufficient assistance to obviate the need for institutional care. If we liken the household with an elderly and/or disabled unrelated individual to a personal care home, we can obtain a rough estimate of such arrangements which may not be identified by any other data base. The SIE estimates there were 26,853 such households in New York, 16 thousand in California, 13 thousand in Illinois, and 15.7 thousand in Pennsylvania. It seems likely, therefore, that the true level of small-scale supervised living arrangements is higher than estimates from existing data bases indicate.

TABLE I-23. Estimates of Households with Elderly and Disabled Secondary Unrelated Individuals by State, SIE 1976

State	Number of Households With One Elderly and/or Disabled Unrelated-Individual	Number of Households With Two Elderly and/or Disabled Unrelated Individuals	Number of Households With More Than Two Elderly and/or Disabled Unrelated Individuals	Total Number of Households With Elderly and/or Disabled Unrelated Individuals
Alabama	5,755	---	615	6,370
Alaska	42	---	---	42
Arizona	1,651	---	---	1,651
Arkansas	1,217	---	---	1,217
California	16,249	---	---	16,249
Colorado	856	---	---	856
Connecticut	3,702	---	---	3,702
Delaware	948	---	---	948
District of Columbia	1,442	311	---	1,753
Florida	7,722	---	1,481	9,203
Georgia	2,965	---	---	2,965
Hawaii	479	209	226	914
Idaho	544	58	---	602
Illinois	12,286	1,521	---	13,807
Indiana	3,972	---	---	3,972
Iowa	1,752	244	---	1,996
Kansas	1,738	---	---	1,738
Kentucky	2,151	---	---	2,151
Louisiana	4,774	---	---	4,774
Maine	3,338	---	---	3,338
Maryland	5,863	---	---	5,863
Massachusetts	4,880	---	---	4,880
Michigan	9,861	1,963	---	11,824
Minnesota	4,085	---	---	4,085
Mississippi	2,515	---	---	2,515
Missouri	5,001	1,277	---	6,278
Montana	709	---	---	709
Nebraska	583	---	---	583
Nevada	420	---	---	420
New Hampshire	767	---	---	767
New Jersey	5,896	---	---	5,896
New Mexico	997	---	---	997
New York	23,970	2,883	---	26,853
North Carolina	2,895	---	---	2,895
North Dakota	275	77	---	352
Ohio	7,272	811	---	8,083
Oklahoma	1,495	---	---	1,495
Oregon	4,100	---	---	4,100

TABLE I-23 (*continued*)				
State	**Number of Households With One Elderly and/or Disabled Unrelated-Individual**	**Number of Households With Two Elderly and/or Disabled Unrelated Individuals**	**Number of Households With More Than Two Elderly and/or Disabled Unrelated Individuals**	**Total Number of Households With Elderly and/or Disabled Unrelated Individuals**
Pennsylvania	15,766	---	---	15,766
Rhode Island	553	---	---	553
South Carolina	2,182	---	---	2,182
South Dakota	592	---	---	592
Tennessee	7,187	---	---	7,187
Texas	1,967	---	---	1,967
Utah	87	93	---	180
Vermont	585	---	53	638
Virginia	5,987	---	790	6,777
Washington	2,195	---	---	2,195
West Virginia	3,591	---	367	3,958
Wisconsin	6,088	837	---	6,925
Wyoming	168	---	---	168
TOTAL	202,116	10,282	3,532	215,930
SOURCE: Tabulated data from the 1976 Survey of Income and Education.				

E. INSTITUTIONAL CARE FOR THE MENTALLY IMPAIRED

The Changing Locus of Institutional Care for the Mentally Impaired

The most dramatic change in institutional long-term care of the past thirty years has been in the treatment of mental illness. This change, known popularly as deinstitutionalization, reduced the populations of state and county mental hospitals one-third between 1960 and 1976 (Cicchinelli et al., 1981). Their populations were cut in half again between 1976 and 1978. Per capita use dropped by almost one-half since 1960.

A combination of factors has produced this decline. Foremost was a shift was facilitated by the development of certain drugs which allow persons with mental illnesses to function adequately in the community. There also was a reported change in philosophy on the part of mental health professionals concerning the appropriate mode for treatment and the conditions requiring institutionalization. Several court decisions requiring care be provided under the least restrictive circumstances consistent with patient and public safety reinforced this change.

Cicchinelli et al. (1981) identify three phases to the deinstitutionalization movement. The first, beginning in the mid-1950s, was characterized by a gradual decline in state and county mental hospital populations. This decline reduced their patient populations from a peak in 1955 of about 559,000 residents to about 504,000 in 1963. During the second phase, the decline accelerated rapidly, with patient populations reduced 57 percent by 1974. The rate of decline has since slowed considerably. The 1979 population totalled about 170,000 persons compared to 215,500 in 1974.

The two major elements associated with this decline were the change in the way public mental hospitals treated patients and the substitution of other institutional types for public mental hospitals. The former is probably the most significant. While public

mental hospitals' average daily census declined 70 percent, the admissions rate increased 120 percent from 180,000 per year to about 400,000 per year. The number of episodes of care then declined only 27 percent. The length of stay dropped to 26 days compared to an approximately 3-year average stay in 1954. In addition to the impact of new drugs, it would appear that the intensity of treatment has also affected lengths of stay. Instead of providing only a custodial environment, these institutions have been reoriented toward active treatment of the short term patient. A very rough indicator of this increased intensity is the change in staffing. Full-time staff per patient day increased almost threefold from .55 to 1.47 between 1968 and 1978 (AHA, 1979). However, as the amount of outpatient care provided by these hospitals increased substantially, only a fraction of the increased staff represent the greater intensity of inpatient care.

Substitution of other institutional types was the second major factor associated with the reduced use of public mental hospitals. This substitution involved increased use of other facilities devoted exclusively to the mentally impaired as well as nursing homes which provided care to a broader spectrum of patients. The motivation for this substitution was to reduce the cost of care to the state. This involved both reducing the total cost of caring for a patient by substituting lower cost private for more expensive publically operated facilities and transferring some of the cost to the federal government through the Medicaid program.

How much of the public mental hospital deinstitutionalization involved transfers to other institutions for the mentally impaired and how much to nursing homes is difficult to determine. Consistent data on the use of other insitutions are only available from the Census through 1970. As seen in Table I-24, a portion of the decline in public mental hospitals between 1960 and 1970 is offset by growth in the populations of private mental hospitals, residential treatment centers, and facilities for the mentally handicapped. Indeed, the rate of decline for all facilities for the mentally impaired is less than half the rate of decline for the public mental hospitals. These statistics also indicate that the substitution of other facilities for the mentally impaired was more important for persons under 65 than for those over 65. Only 9 percent of the reduced public mental hospital use by persons over 65 was offset by increased use of other facilities for the mentally impaired.

What substitution has occured since 1970 is important, since the decline in public mental hospital use in the seventies was almost as great as between 1960 and 1970. The only data available are from the MFI. These data unfortunately do not provide a consistent time series. The scope for inclusion of other health facilities in the MFI survey and the classification used for publication changed between 1971 and 1976. The statistics for 1976 include halfway houses for the emotionally disturbed, alcoholics, and drug abusers. These had been included in a miscellaneous category in 1971.

Table I-25 shows that between 1971 and 1973 facilities for the mentally impaired other than psychiatric hospitals grew. The psychiatric hospitals include public mental hospitals. How much of this growth was real rather than a change in classification of existing facilities cannot be determined from published data. Patient censuses in

facilities other than psychiatric hospitals declined between 1973 and 1976. However, their rate of decline was only abut one-third that of the psychiatric hospitals. The decline in all facilities for the mentally impaired reported in the MFI was about 7 percent per year between 1973 and 1976 compared to a 12 percent decline for public mental hospitals.

TABLE I-24. Utilization of Facilities for the Mentally Impaired by Age

	1950		1960		1970	
	Number	Percent of Population	Number	Percent of Population	Number	Percent of Population
ALL AGES						
Total Mental Hospitals	613,828	0.41%	624,724	0.34%	424,091	0.21%
Federal	59,847	0.04%	63,226	0.03%	42,953	0.02%
State, County, City	537,413	0.36%	541,625	0.30%	349,514	0.17%
Private	16,368	0.01%	19,873	0.01%	31,624	0.02%
Residential Treatment Centers	N/A	N/A	5,322	0.003%	9,799	0.005%
Facilities for Mentally Handicapped	134,189	0.9%	174,727	0.10%	201,992	0.10%
Total	747,817		804,733		635,882	
PERSONS UNDER 65						
Total Mental Hospitals	472,282	0.34%	447,437	0.27%	311,246	0.17%
Federal	57,173	0.04%	50,707	0.03%	33,145	0.02%
State, County, City	405,591	0.29%	385,564	0.23%	254,592	0.14%
Private	9,518	0.01%	11,166	0.01%	23,509	0.01%
Residential Treatment Centers	N/A	N/A	4,769	0.003%	9,601	0.005%
Facilities for Mentally Handicapped	130,005	0.09%	169,965	0.10%	191,265	0.10%
Total			622,171		512,112	
PERSONS 65 AND OVER						
Total Mental Hospitals	141,346	1.15%	177,287	1.06%	112,845	0.56%
Federal	2,674	0.02%	12,519	0.07%	9,808	0.05%
State, County, City	131,822	1.07%	156,061	0.93%	94,922	0.47%
Private	6,850	0.06%	8,707	0.05%	8,115	0.04%
Residential Treatment Centers	N/A	N/A	553	0.003%	198	0.001%
Facilities for Mentally Handicapped	4,184	0.03%	4,762	0.03%	10,727	0.05%
Total			182,602		123,770	

SOURCE: U.S. Bureau of the Census, U.S. Census of Population: 1950. Vol. IV, Special Reports, Part 2, Chapter C, Institutional Population. U.S. Government Printing Office, Washington, D.C., 1953.

U.S. Bureau of the Census, U.S. Census of Population: 1960. Subject Reports: Final Report PC(2)-8A: Inmates of Institutions. U.S. Government Printing Office, Washington, D.C., 1963.

U.S. Bureau of the Census, U.S. Census of Population: 1970. Subject Reports: Final Report PC(2)-4E: Persons in Institutions and Other Group Quarters. U.S. Government Printing Office, Washington, D.C., 1973.

Data presented in a paper by Goldman et al. (1980) indicate that substitution is continuing. Their statistics, reported in Table I-26, show that private psychiatric hospitals, psychiatric units of general hospitals, and community mental health centers all continued to expand between 1971 and 1975. Among the potential substitutes for public mental hospitals only residential treatment center use declined.

TABLE I-25. Facilities for the Mentally Impaired as Reported by the Master Facility Inventory, 1971-1976									
	Facilities			Beds			Patients		
	1971	1973	1976	1971	1973	1976	1971	1973	1976
Psychiatric Hospitals	533	508	502	418,487	338,574	244,358	347,958	282,634	202,632
Institutions for Mentally Impaired	2,111	2,630[1]	3,462	249,905	277,262	248,300	226,217	242,629	219,608
Alcohol and Drug Abuse	166	809[2]	933	13,341	33,128	28,156	10,625	24,702	22,427
Total	2,810	3,947	4,797	681,733	648,964	520,814	584,800	549,965	444,667

SOURCE: U.S. Department of Health, Education & Welfare National Center for Health Statistics, Inpatient Health Facilities. Hyattsville, Maryland 1974.

U.S. Department of Health, Education & Welfare, National Center for Health Statistics, Inpatient Health Facilities. Hyattsville, Maryland, 1976.

U.S. Department of Health, Education & Welfare, National Center for Health Statistics, Inpatient Health Facilities. Hyattsville, Maryland, 1980.

1. Halfway houses for the emotionally disturbed included in this category for the first time accounting for some of the increase.
2. Halfway houses for alcoholics and drug abusers included in this category for the first time accounting for some of the increase.

Use of nursing homes in place of public mental hospitals is the other form of substitution. Cicchinelli et al., report nursing homes were the principal substitute form of institutional care for the elderly while for younger persons, board and care and other less intensive types of institutions predominated. This difference is attributable to the fact that the elderly are more likely to have physical problems in addition to their mental problems and their age makes them more compatible with other nursing home residents. Treatment and care of these physical problems may require the more extensive services of a nursing home. As Table I-27 indicates, almost 70 percent of nursing home residents who had a mental disorder as their primary diagnoses had at least one other diagnosis as well.

Economic considerations also were likely to influence the use of nursing homes as a substitute. Persons over 65 qualify as a categorically eligible group under federal welfare and medical assistance programs. Those with low incomes would therefore be entitled to Medicaid support in a nursing home. As seen in Table I-28, Medicaid supports the largest share of nursing home patients with a mental diagnosis.

TABLE I-26. Number and Percent Change in Inpatient Days of Care in Mental Health Facilities, United States 1971, 1973, 1975

Type of Hospital	Patient Days (in 000's)			% Change 1971-1975
	1971	1973	1975	
Total	153,105	125,906	104,908	-31.5
Psychiatric Hospital Total	132,784	104,648	82,009	-38.2
State & County Hospital	119,200	92,210	70,584	-40.8
Private Hospitals	4,220	4,108	4,401	+4.3
VA Hospitals	9,364	8,331	7,024	-25.0
General Hospital Psychiatric Units				
VA Hospitals	4,913	4,654	4,701	-4.3
Other	6,826	6,990	8,349	-22.3
Residential Treatment Center	6,356	6,338	5,900	-7.2
Community Mental Health Centers	2,225	3,276	3,948	+77.4

SOURCE: Howard H. Goldman, Carl A. Taube, and Daniel A. Regier, "The Present and the Future Role of the State Mental Hospital: Summary". Paper presented at Annual Meeting of American Psychiatric Association, San Francisco, California, May 1980.

TABLE I-27. Distribution of Other Diagnosis in Nursing Home Patients With Mental Disorder as Primary Diagnosis

Other Diagnosis	Percent of Persons with Mental Disorder as Primary Diagnosis
Circulatory	45.4%
Paralysis or Stroke	8.6
Musculoskeletal	24.5
Blind or Deaf	13.0
Cancer	2.0
Other	21.3
None	30.8

SOURCE: National Center for Health Statistics, U.S. Department of Health, Education & Welfare, The National Nursing Home Survey: 1977 Summary for the United States, Hyattsville, Maryland, July, 1979.

TABLE I-28. Source of Payment for Nursing Home Patients With Mental Diagnosis						
	Certified Facilities		Non-Certified		All Facilities	
	Mental Only	Mental Plus Other Diagnoses	Mental Only	Mental Plus Other Diagnoses	Mental Only	Mental Plus Other Diagnoses
Medicaid	60.4	60.5	---	---	47.9	55.0
Public Assistance or Other Gov't	11.7	7.5	44.6	27.7	18.3	8.8
VA	2.8	1.4	2.3	6.4	2.7	1.5
Private	23.3	28.5	47.3	55.0	28.1	31.5
Other	1.8	2.2	5.8	10.9	3.0	3.2
	100.0	100.0	100.0	100.0	100.0	100.0
SOURCE: National Center for Health Statistics, U.S. Department of Health, Education and Welfare, The National Nursing Home Survey: 1977 Summary for the United States, Hyattsville, Maryland, July 1979.						

As noted in the UnderSecretary's Task Force on Long Term Care's "Report on Nursing Home Bed Supply Policy, it is difficult to estimate the amount of substitution which has occured. Underreporting of persons in nursing homes with mental diagnoses is encouraged by the fact that Medicaid will not fund a nursing home which has more than 50 percent of its patients with a mental disorder. Further, elderly persons who were senile, confused, or belligerent, in the past were probably cared for in both public mental hospitals and nursing homes. The increase of persons with mental diagnoses in nursing homes could not be wholly attributed to the reduction in mental hospital population. Rather same fraction would be due to the other factors affecting nursing home use, the growth of the elderly population, its altered composition, and the increased rate of institutionalization.

Table I-29 presents the numbers of persons in nursing homes with mental diagnoses between 1963 and 1977. The fraction of nursing home residents with mental diagnoses increased more than one-third from 44 to 60 percent, while the absolute number increased by 554 thousand. These increases were considerably larger than the decline in public mental hospital use by the elderly which amounted to about 110 thousand.

The Current Supply of Mental Health Services

This section focuses on the current supply and distribution of inpatient psychiatric services. The information presented here was derived from two main sources of published data: the 1978 Master Facility Inventory; and the National Institute of Mental Health (NIMH) Survey of State and County Mental Health Inpatient Services and Patient Characteristics.

The NIMH survey includes only state and county mental hospitals. Published reports include information on the number of additions and resident patients at the end of the year by age and diagnosis. An "addition during the year includes persons admitted or readmitted as well as returns from extended leave and transfers from other facilities. Resident patients at the end of the year include those persons present in the

inpatient service at the end of the year and those away on short leave who are expected to return to the inpatient service. (U.S. DHSS, NIMH, 1981)

TABLE I-29. Number of Persons With A Mental Diagnosis in Nursing Homes, Selected Years

	1963	1969	1977
Persons with a Mental Diagnosis	221,721	426,712	775,800
Total Nursing Home Residents	505,242	815,130	1,302,100
Percent of Total Residents who have a Mental Diagnosis	43.9%	52.3%	59.6%
Average Annual Growth Rate -- Persons with a Mental Diagnosis		10.9%	6.6%
Average Annual Growth Rate -- Total Nursing Home Residents		8.0%	5.2%

SOURCE: U.S. Department of Health, Education and Welfare, National Center for Health Statistics, Vital and Health Statistics, Series 12 Number 2, "Characteristics of Residents in Institutions for the Aged and Chronically Ill, April-June 1963," U.S. Government Printing Office, Washington, D.C., 1965.

U.S. Department of Health, Education and Welfare, National Center for Health Statistics, Vital and Health Statistics, Series 12 Number 19, "Characteristics of Residents in Nursing and Personal Care Homes, June-August 1969," U.S. Government Printing Office, Washington, D.C., 1973.

U.S. Department of Health, Education and Welfare, National Center for Health Statistics, Vital and Health Statistics, Series 13 Number 51, "Characteristics of Nursing Home Residents, Health Status, and Care Received: National Nursing Home Survey, United States, May-December 1977," U.S. Government Printing Office, Washington, D.C., 1981.

The MFI reported 500 psychiatric hospitals and 212,431 total beds in 1978. Table I-30 shows the distribution of these by state and displays beds per capita as well. According to the MFI, over half of the total hospitals and 45.8 percent of total beds are located in seven states: California, Massachusetts, Michigan, New York, Ohio, Pennsylvania and Texas. Per capita beds, however, vary even among these states, from 0.5 beds per 1,000 persons in California to 1.8 in New York. Hawaii, Arkansas, and Nevada have the smallest ratios of beds per 1,000 population at 0.2, while the District of Columbia has the highest ratio at 3.2.

Table I-31 shows the NINE reported distribution of state and county mental hospitals by state. According to that source, there were 287 such facilities in 1978. Nine states--Illinois, Michigan, New Jersey, New York, Ohio, Pennsylvania, Texas, Virginia and Washington--are known to have 10 or more non-federal government facilities, accounting for 50.9 percent of all such facilities. New York has the largest number of such facilities, with a total of 37.

Table I-32 presents the distribution of psychiatric hospitals by ownership. State and county hospitals provide the largest share of mental health care. Non-federal, government facilities are 52.4 percent of the total. They contain 81 percent of all beds. Proprietary ownerships are the next largest in terms of facilities, but smaller in terms of beds than Federal ownership.

TABLE I-30. Psychiatric Hospitals, Beds, and Per Capita Beds, by State, 1978 MFI			
	Hospitals	**Beds**	**Beds Per 1,000 Population**
U.S. TOTAL	500	212,431	1.0
Alabama	6	3,441	0.9
Alaska	1	200	0.5
Arizona	4	961	0.4
Arkansas	1	442	0.2
California	40	10,989	0.5
Colorado	8	2,105	0.8
Connecticut	11	3,617	1.2
Delaware	2	638	1.1
District of Columbia	2	2,151	3.2
Florida	19	7,485	0.9
Georgia	16	6,163	1.2
Hawaii	1	199	0.2
Idaho	2	247	0.3
Illinois	20	5,453	0.5
Indiana	13	5,938	1.1
Iowa	6	2,367	0.8
Kansas	8	1,808	0.8
Kentucky	6	1,522	0.4
Louisiana	8	3,453	0.9
Maine	2	986	0.9
Maryland	13	6,947	1.7
Massachusetts	25	7,864	1.4
Michigan	20	6,551	0.7
Minnesota	8	3,728	0.9
Mississippi	3	2,797	1.2
Missouri	8	3,951	0.8
Montana	1	566	0.7
Nebraska	3	564	0.4
Nevada	1	118	0.2
New Hampshire	2	863	1.0
New Jersey	14	9,594	1.3
New Mexico	3	1,001	0.8
New York	47	32,215	1.8
North Carolina	12	6,354	1.1
North Dakota	1	798	1.2
Ohio	24	8,496	0.8
Oklahoma	6	2,777	1.0
Oregon	4	1,866	0.8
Pennsylvania	35	18,141	1.5
Rhode Island	3	1,343	1.4
South Carolina	5	3,948	1.4
South Dakota	1	664	1.0
Tennessee	13	4,861	1.1
Texas	23	9,193	0.7
Utah	1	390	0.3
Vermont	2	557	1.1

TABLE I-30 (*continued*)			
	Hospitals	**Beds**	**Beds Per 1,000 Population**
Virginia	18	7,363	1.4
Washington	5	2,053	0.5
West Virginia	6	2,609	1.4
Wisconsin	15	3,396	0.7
Wyoming	2	698	1.6
SOURCE: U.S. Department of Health and Human Services, National Center for Health Statistics, Inpatient Health Facilities, United States, 1978, Hyattsville, Maryland, March 1981. Table 17, p. 29.			

Data from the American Hospital Association classifies the psychiatric hospital as short-term or long-term. (Long stay hospitals are those with average length of stay exceeding 30 days.) Table I-33 presents the distribution of long-term facilities by ownership type. Roughly 65 percent of the total facilities and 90 percent of all beds are classified as long-term. State and local government facilities have an even greater representation among long-term hospitals than they do among total facilities. Sixty-seven percent of all long-term psychiatric hospitals are operated by state and local governments and they contain 72 percent of the beds in long-term facilities. The Federal government has responsibility for the next largest share of beds, with almost 10 percent of all long-term beds.

TABLE I-31. State and County Psychiatric Hospitals, by State, 1978 NIMH	
	Hospitals
U.S. TOTAL	287
Alabama	4
Alaska	1
Arizona	1
Arkansas	1
California	6
Colorado	3
Connecticut	6
Delaware	2
District of Columbia	1
Florida	6
Georgia	8
Hawaii	1
Idaho	2
Illinois	15
Indiana	8
Iowa	5
Kansas	3
Kentucky	4
Louisiana	4
Maine	2
Maryland	5
Massachusetts	9
Michigan	12
Minnesota	7
Mississippi	2
Missouri	8

TABLE I-31 (*continued*)	
	Hospitals
Montana	1
Nebraska	4
Nevada	2
New Hampshire	1
New Jersey	10
New Mexico	1
New York	37
North Carolina	4
North Dakota	1
Ohio	18
Oklahoma	3
Oregon	3
Pennsylvania	20
Rhode Island	1
South Carolina	3
South Dakota	1
Tennessee	5
Texas	10
Utah	1
Vermont	1
Virginia	10
Washington	2
West Virginia	7
Wisconsin	14
Wyoming	1
SOURCE: NIMH Survey of State and County Mental Hospitals, page vi.	

TABLE I-32. Number of Psychiatric Hospitals and Beds, by Type of Ownership, 1978 MFI		
Type of Ownership	**Hospitals**	**Beds**
Federal Psychiatric Hospitals	24	23,056
Non-Federal Psychiatric Hospitals	476	189,375
Non-Government, Nonprofit	90	9,346
Church	12	1,173
Other	78	8,173
Proprietary	124	10,297
State & Local Government	262	169,732
TOTAL	500	212,431
SOURCE: U.S. Department of Health and Human Services, National Center for Health Statistics, Inpatient Health Facilities, 1978, Hyattsville, Maryland. March 1981. Tables 19 and 20, page 30.		

It is clear that government owned facilities are almost exclusively long-term. All Federal facilities are long-term or, if they have short-term units, they have long-term units as well. Ninety-eight percent of the beds in Federal facilities are classified as long-term. Among the non-Federal government facilities, 88 percent are long-term and 93.3 percent of their total beds are classified as long-term.

Facilities among the remaining ownership types are more evenly divided between the short-term and long-term classification. Fifty-one percent of all nonprofit facilities are long-term, containing 69.8 percent of total nonprofit beds. Only 41 percent of for-profit facilities are long-term; however, they include 53 percent of all for-profit beds.

Occupancy rates (presented in Table I-33) are slightly higher for Federal facilities than for state and local government facilities. They are lowest among investor owned facilities, at 74.5 percent. These rates probably tend to overstate the, occupancy of a given facility due to the questionnaire's definition of beds as “beds set up.” A bed set up is one which is fully staffed and ready to use. If utilization declined, facility operators would attempt to consolidate and minimize losses by cutting down on staff and therefore lowering the number of beds set up. Therefore, the validity of the calculated occupancy rates varies according to the proportion of beds set up to actual total beds.

TABLE I-33. Long-Term Psychiatric Hospitals, Beds, Admissions, Inpatient Days and Occupancy Rates by Type of Ownership, 1978

	Hospitals	Beds	Admissions	Inpatient Days	Occupancy Rate
Federal Psychiatric Hospitals	24	22,773	69,095	7,167,524	86.2%
Non-Federal Psychiatric Hospitals	364	212,783	357,912	65,048,841	83.8
Non-Gov’t, Non-Profit	48	6,820	20,566	2,142,533	86.1
Investor-Owned (for-profit)	57	5,458	29,929	1,483,881	74.5
State and Local Gov’t	259	200,505	307,417	61,422,427	83.9
TOTAL	388	235,556	426,007	72,216,365	84.0

SOURCE: American Hospital Association, Hospital Statistics, Chicago, Illinois. 1979 Table 4B, p. 15 and Table 13, p. 212.

TABLE I-34. Number of Psychiatric Hospitals by Bed Size, 1978

Bed Size	Number of Hospitals
All sizes	550
Less than 25 beds	16
25-49 beds	65
50-99 beds	112
100-199 beds	88
200-299 beds	30
300-499 beds	53
500 beds or more	191
1,000 beds or more	80

SOURCES: U.S. Department of Health and Human Services, National Center for Health Statistics, Inpatient Health Facilities 1978, Hyattsville, Maryland. March 1981. Table 18, page 30.

The number of facilities by size class is presented in Table I-34 and the distribution by size and ownership is presented in Table I-35. It is evident from these tables that the large facilities are predominantly government operated. Among state facilities, 57.7 percent have 500 or more beds, while 22 of the 24 Federal hospitals are in this category. These 22 facilities have an average bed size of 1,016. The combined

number of beds in Federal or state facilities with 500 or more beds, accounts for 77.25 percent of the total number of psychiatric hospital beds. Thus, over three-quarters of all psychiatric beds are found in very large non-local government institutions.

TABLE I-35. Total Psychiatric Hospitals by Type of Ownership and Size, 1978[1]

Ownership & Size	Hospitals	Beds	Admissions	Occupancy	Avg. Daily Census
Non-Government, Nonprofit	94	9,778	71,024	89.2	8,723
6-24 beds	7	140	3,422		108
25-49	19	738	7,853		579
50-99	36	2,607	25,390		2,002
100-199	21	2,796	22,582		2,338
200-299	6	1,491	4,881		1,301
300-399	1	325	1,412		285
400-499	2	791	5,183		715
500+	2	890	301		1,395
Investor Owned, For-Profit	139	10,267	102,234	71.0	7,290
6-24 beds	9	161	4,096		119
25-49	37	1,329	17,931		916
50-99	57	3,804	45,576		2,594
100-199	31	3,959	26,907		2,904
200-299	5	1,014	7,724		757
Local Government	16	4,385	18,124	---	3,602
25-49 beds	4	105	3,245		82
50-99	3	235	2,439		172
100-199	4	589	2,150		471
200-299	1	295	214		263
300-399	1	337	4,773		337
400-499	1	460	1,037		361
500+	1	2,364	4,266		1,955
State Government	277	210,480	388,820	---	170,312
25-49 beds	5	193	1,603		123
50-99	16	1,236	8,228		917
100-199	32	5,353	39,227		3,892
200-299	18	4,434	22,064		3,632
300-399	26	9,320	31,442		7,743
400-499	20	9,175	23,571		7,344
500+	160	180,769	262,685		146,921
Federal Government	24	23,158	72,362	85.7	19,355
300-399	1	333	1,492	82.9	276
400-499	1	470	3,881	89.9	422
500+	22	22,355	66,989	85.7	19,157
TOTAL PSYCHIATRIC[2]	550	262,953	683,876	---	213,531

SOURCE: American Hospital Association, Hospital Statistics, Chicago, Illinois, 1979. Table 2A, pp. 8-9, Table 2B, pp. 10-11, and Table 13, p. 212.

1. Excludes 1 non-government, nonprofit hospital, 3 investor-owned, for-profit hospitals, and 9 state or local hospitals, for unstated reasons, presumably due to lack of information or bed size.
2. Includes non-registered facilities (i.e., those facilities without AHA registration status). There were no non-registered Federal psychiatric hospitals in 1978. The non-federal, non-registered hospitals are included only in the total, since ownership classification is not reported.

The remaining ownership types operate much smaller facilities. The largest for-profit facilities have about 200 beds. Local government and nonprofits combined operate only nine facilities with 300 or more beds, with the exception of two local government facilities with over 1,000 beds each, the nine facilities described above include approximately 2,803 beds.

TABLE I-36. Long Term Psychiatric Hospitals by Type of Ownership and Size 1978*					
Ownership & Size	**Hospitals**	**Beds**	**Admissions**	**Occupancy**	**Avg. Daily Census**
Non-Government, Non-Profit	47	6,274	20,731	93.7	5,881
6-24 beds	1	20	68	130.0	26
25-49	10	402	1,969	83.6	336
50-99	14	1,047	4,178	75.0	785
100-199	12	1,690	7,292	81.7	1,380
200-299	6	1,491	4,881	87.3	1,301
300-399	1	325	1,412	87.7	285
400-499	1	409	630	91.2	373
500+	2	890	301	156.7	1,395
Investor Owned, For Profit	54	5,162	29,694	75.8	3,915
6-24 beds	1	18	77	77.8	14
25-49	8	300	1,391	76.7	230
50-99	20	1,389	8,680	73.4	1,020
100-199	23	3,073	16,777	76.0	2,335
200-299	2	382	2,769	82.7	316
Local Government	6	3,402	6,141	82.9	2,821
100-199	2	283	624	73.1	207
200-299	1	295	214	101.0	298
400-499	1	460	1,037	78.5	361
500+	2	2,364	4,266	82.7	1,955
State Government	244	199,238	312,003	81.0	161,340
25-49 beds	3	121	655	62.8	76
50-99	8	660	1,764	77.4	51
100-199	22	3,876	15,249	70.1	2,718
200-299	13	3,117	5,659	83.5	2,604
300-399	22	7,982	16,604	82.2	6,558
400-499	20	9,175	23,571	80.0	7,344
500+	156	174,307	248,501	81.2	141,529
Federal Government	24	23,158	72,362	85.7	19,855
300-399	1	333	1,492	82.9	276
400-499	1	470	3,881	89.8	422
500+	22	22,355	66,989	85.7	19,157
TOTAL PSYCHIATRIC	375	237,234	440,931	81.7	193,812

SOURCE: American Hospital Association, Hospital Statistics, Chicago, Illinois, 1979. Table 2B, pp. 10-11.

* Includes only AHA registered hospitals. also excludes 1 non-government, non-profit hospital, 3 investor owned, for profit hospitals, and 9 state or local hospitals, for unstated reasons, presumably due to lack of information on bed size.

By comparing Table I-35 and Table I-36, we can see that all of the large nonprofit and local government and all but four of the state government facilities are classified as long-term. While we noted earlier, that 77.25 percent of all psychiatric beds were found in large Federal and state facilities, we can further state that 75 percent of total beds are found in large long-term Federal or state facilities.

F. CONCLUSION

We have attempted here to provide an estimate of the supply of institutional long-term care. The result is very unsatisfying. We used all relevant data sources that were

available, yet the imprecision and incompleteness of our estimates are readily apparent. The one relatively comprehensive source, the decennial Census, had detailed data available only for 1970.

Not being able to document thoroughly institutional supply may have important implications for policy decisions. Decisions to add nursing home beds to deal with the heavy care patients currently excluded or with the growth of the elderly population, to offer community services under the Medicaid program, or to offer SSI supplementary payments to persons in board and care facilities are all somewhat contingent on the size of the long-term care population and the implications that size have for expenditures. Our analysis indicates that the long-term care population may be undercounted.

Currently, nursing homes under Medicare and particularly Medicaid are the central focus of policy as they are the principal recipients of public funds. Our estimates of these facilities, while not exact, are reasonably close. In contrast, the estimates of board and care and personal care facilities could represent only a modest fraction of the total. A consequence is that estimates of the population needing long-term care are understated. These estimates are typically made by combining the institutionalized population with the number of dependent persons in households.

A strategy for improving estimates for institutional care is not readily obvious. The decennial Census is the most complete enumeration. However, it does not collect information on dependency of persons in institutions and group quarters which would be needed to identify which facilities should be considered long-term care institutions and what types of populations they serve. Expanding other surveys, especially the MFI, to be more comprehensive would be the logical approach. However, the scope of such an effort could be quite considerable and to be most useful from a policy perspective, the survey would need to be designed to reflect the programmatic divisions in institutional long-term care.

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APPENDIX A: A Note on Data Reliability

The statistics in this paper were drawn from several data sources. Principally, they were the Counts of Persons in Institutions and Other Group Quarters from the Census of Population, the National Center for Health Statistics Master Facility Inventory (MFI), and the Health Care Financing Administration's Medicare-Medicaid Automated Certification System (MMACS). Each data set has a different universe and while in some cases comparisons of subsets would seem legitimate, discrepancies among the data sets appear to exist. Some of these are discussed below.

While the Census provides the most complete scope and longest historical series, it is both dated and inconsistent with the other sources. The latest year of Census data currently available is 1970. In Table I-37, we have compared the results of the 1970 Census with MFI data for 1969 and 1971. The Census and the 1969 MFI resident counts differ by only 1-2 percent. However, the Census total for 1970 is lower than the 1969 MFI total. Comparison of the 1969 and 1971 MFI indicate the institutional population was growing, so the Census figure would be expected to be higher.

TABLE I-37. Comparison of Census of Institutions and Master Facilities Inventory

	Census of Institutions[1]		Master Facility Inventory			
	1970		1969[2]		1971[3]	
	Facilities	Residents	Facilities	Residents	Facilities	Residents
Nursing Homes	24,037	927,514	18,910	943,876	22,004	1,075,724
Homes w/ Nursing Care	5,809	298,881	14,998	793,074	16,439	995,837
Others	18,228	628,633	3,912	56,701	5,565	79,887
Institutions for Mentally Impaired	3,103	635,882	1,961	630,571	2,810	584,800
Institutions for Physically Handicapped	222	6,879	41	3,477	94	7,035
Institutions for Blind and Deaf	180	15,860	123	21,232	143	21,436
Other	---	---	718	42,075	312	23,459
TB and Other Chronic Disease Hospitals	871	84,032	286	47,959	189	31,781
TOTAL	28,413	1,670,167	22,039	1,689,190	25,552	1,744,235

SOURCE:
1. U.S. Bureau of the Census, U.S. Census of Population: 1970 Subject Reports, Final Report PC (2)-4E, Persons in Institutions and Other Group Quarters, U.S. Government Printing Office, Washington, D.C., 1973.
2. U.S. Department of Health, Education and Welfare, Health Services and Mental Health Administration, National Center for Health Statistics, Vital Health Statistics, Series 14, Number 6, “Inpatient Health Facilities as Reported from the 1969 MFI Survey,” U.S. Government Printing Office, Washington, D.C., 1972.
3. U.S. Department of Health, Education and Welfare, Health Resources Administration, National Center for Health Statistics, Vital Health Statistics, Series 14, Number 12, “Inpatient Health Facilities as Reported from the 1981 MFI Survey,” U.S. Government Printing Office, Washington, D.C., 1974.

More important are the differences in the counts of facilities among the surveys. The Census identifies one-third fewer facilities than the 1969 MFI and 11 percent fewer than the 1971 MFI. Since the resident counts are much closer, these discrepancies

imply a large difference in average facility population. As seen in Table I-38, the institutions in the Census averaged 58.8 residents, while those in the MFI averaged 76.6 and 68.3 in the two years.

A portion of the difference arises from the differences in institutional definitions applied in each survey. The MFI excludes nursing and personal care homes with less than three beds. Such very small facilities would be included in the Census. While one does not normally picture a nursing home as such a small operation, historically a significant number of nursing homes were operated in owner-occupied private residences. These homes could have as few as two beds. How many of the Census's facilities have fewer than three beds cannot be determined from available data. Twenty-eight percent have fewer than 10 residents. Their average size is 3.1 residents, indicating many are probably outside the scope of the MFI.

TABLE I-38. Mean Facility Population

	Census of Institutions[1]	Master Facility Inventory	
	1970	1969[2]	1971[3]
Nursing Home	38.6	49.9	48.9
Homes With Nursing Care	51.5	52.9	60.6
Others	34.5	14.5	14.3
Institutions for Mentally Impaired	204.9	321.5	208.1
Institutions for Physically Handicapped	31.0	84.8	74.8
Institutions for Blind and Deaf	88.1	172.6	149.9
TB and Other Chronic Disease Hospitals	99.9	167.7	168.1
Others	---	147.1	75.2
All Facilities	58.8	76.6	68.3

SOURCE:

1. U.S. Bureau of the Census, U.S. Census of Population: 1970, Subject Reports: Final Report (PC (2))-4E: "Persons in Institutions and Other Group Quarters," U.S. Government Printing Office, Washington, D.C., 1973.
2. U.S. Department of Health, Education and Welfare, National Center for Health Statistics, Inpatient Health Facilities as Reported from the 1969 MFI Survey, U.S. Government Printing Office, Washington, D.C., 1972.
3. U.S. Department of Health, Education and Welfare, National Center for Health Statistics, Inpatient Health Facilities, as reported from the 1971 MFI survey, U.S Government Printing Office, Washington, D.C., 1974.

When the counts of facilities with more than 25 beds are compared, the Census and the MFI statistics are more similar (Table I-39). The Census counts are only 9.4 percent larger than the 1969 MFI and 10.0 percent smaller than the 1971 MFI. Given that the number of long-term care institutions, particularly larger ones, was undoubtedly increasing, these differences are consistent with the timing of the three surveys.

Data from the MFI and MMACS also differ significantly. In another paper, we have discussed in detail the nature of these differences.[12] Here we have reproduced a

[12] W. Scanlon and M. Sulvetta, "A Comparison of the Master Facility Inventory and Medicare/Medicaid Automated Certification System Data on Nursing Homes," Urban Institute Working Paper No. 1466-14, December 1981. Other comparisons are also presented in the section on nursing home supply.

summary table (Table I-40). It indicates that the 1980 MACS reported 2,534 more certified facilities than the 1978 MFI. Further, in the MMACS counts, the number of Medicare-certified skilled beds exceeded the MFI count by 51 percent, while Medicaid-certified skilled and intermediate care beds exceeded those counted in the MFI by 25 and 66 percent, respectively. The number of Medicare beds per facility differed substantially (25 percent), while Medicaid skilled beds per facility were about 3.5 percent larger in the MMACS data and intermediate care beds per facility were about 37 percent larger in the MMACS data than in the MFI.

TABLE I-39. Comparison of Facility Counts for Facilities With More than 25 Beds, 1970 Census of Population and 1969 and 1971 Master Facility Inventories

	Census	Master Facility Inventory	
	1970[1]	1969[2]	1971[3]
Nursing Home	11,989	11,465	13,738
Homes w/Nursing Care	---	10,785	---
Others	---	680	---
Institutions for Mentally Impaired	1,570	883	1,520
Institutions for Physically Handicapped	80	27	58
Institutions for Blind and Deaf	99	105	121
Other	---	252	153
TB & Chronic Disease	404	190	188
TOTAL	14,142	12,922	15,778

SOURCE:

1. U.S. Bureau of the Census, U.S. Census of Population: 1970, Subject Reports: Final Report (PC (2))-4E, "Persons in Institutions and Other Group Quarters," U.S. Government Printing Office, Washington, D.C., 1973.
2. U.S. Department of Health, Education and Welfare, National Center for Health Statistics, Inpatient Health Facilities as Reported from the 1969 MFI Survey, U.S. Government Printing Office, Washington, D.C., 1972.
3. U.S. Department of Health, Education and Welfare, National Center for Health Statistics, Inpatient Health Facilities as Reported from the 1971 MFI Survey, U.S. Government Printing Office, Washington, DC., 1974.

TABLE I-40. Facilities and Beds by Certification Type, 1978 MFI and 1980 MMACS

	Facilities		Beds					
			Medicare		Medicaid SNF		ICF	
	MFI	MMACS	MFI	MMACS	MFI	MMACS	MFI	MMACS
Medicare	1,003	183	34,396	10,716	---	---	---	---
Medicare -- ICF	242	48	8,020	3,472	---	---	10,662	4,786
Medicare -- Medicaid SNF	2,031	2,028	159,129	202,367	194,682	202,441	---	---
Medicare -- Medicaid SNF-ICF	1,446	2,591	93,686	214,470	121,843	215,088	106,779	252,103
Medicaid SNF	1,243	851	---	---	101,209	71,045	---	---
Medicaid SNF-ICF	1,446	1,596	---	---	97,515	143,238	96,593	151,252
Medicaid ICF	4,670	6,463	---	---	---	---	322,945	502,290
All Certified Facilities	12,081	14,615	295,231	445,440	515,249	645,208	551,643	916,987

SOURCE: Tabulated data from the 1978 Master Facility Inventory and 1980 MMACS files

While the differences between the Census and the MFI seem mostly attributable to differences in scope and timing, those factors are less likely to explain differences betweenthe MFI and the MMACS data.. The scope of certified facilities in the two

sources-should be identical. Timing should be less of a factor, since facility growth was probably very limited between 1978 and 1980. The MFI data indicate the number of certified nursing homes declined 28 percent between 1976 and 1978. MMACS data show a 9 percent increase in certified facilities between 1978 and 1980.

The MFI decline is in part attributable to problems with MPI data collection in 1978. The MFI adopted a new method of data collection beginning in 1978. The MFI has reported some problems in its latest published survey in 1978. Underreporting led to the inability to produce the nursing home counts in four states and the counts, of other facilities (institutions for the mentally impaired, physically handicapped, etc.) for all states. In addition, data for 16 states indicate a loss of more than 10 percent of their nursing home beds between 1976 and 1978, with 7 of these states reporting a loss of more than 20 percent. MMACS data, while not perfectly reliable historically, do not indicate a decline of this magnitude.[13]

These inconsistencies suggest that the different data sources cannot be reliably compared. As long as the individual data bases are consistent across years, comparison of their findings will be valid. We cannot assess how well they have maintained their reliability. Only the 1970 Census can be compared to some external benchmark, the 1969 and 1971 MFIs.

[13] MMACS is an administrative data file containing records for all current and previously certified facilities. We computed counts of facilities by year using initial application and termination dates.

CAUSES OF INCREASED MEDICARE SPENDING FOR HOME HEALTH

A. INTRODUCTION

1. Focus and Organization of the Paper

This paper presents an analysis of recent trends in Medicare expenditures for home health care. It examines the underlying causes of the substantial growth in expenditures to determine the relative impact of each contributing factor. This includes a discussion of recent changes in market composition, utilization, pricing, and reimbursement for home health services.

The original purpose of this study was to examine expenditure trends for home care and the impact of public and private sources of payment on expenditure growth.[14] Unfortunately, a careful review of existing data revealed that they were insufficient to support such an analysis. Time series data on Medicaid and Title XX expenditures for home care services were found to be unavailable in many instances and incomplete where they did exist. Information on the private financing of home care was not available.

One potentially rich source of data, a survey of home health agencies conducted by the National Home Caring Council, may yet provide useful data. However, at the present time, the limited number of agencies responding and the nonresponse rates for key data elements among those participating in the survey, precluded our use of that data.[15]

An additional data source which was investigated and subsequently rejected was the Medicare/Medicaid Automated Certification System (MMACS) home health agency file. While this file does not contain data on costs, charges or reimbursements, it does provide information on staff size by job category and agency type. Our original intention was to use these data to analyze variations in agency size and composition by agency type. Such information would be useful in understanding the factors contributing to the wide dispersion of average charges across agency types and in measuring access to home health care. However, preliminary data processing revealed serious errors in these data fields resulting in mean agency staff sizes frequently exceeding 1,000. Additional investigation confirmed the questionable nature of these fields and we were therefore unable to use the MMACS data in this analysis.

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[14] Public funding for home health is authorized under three titles of the Social Security Act: Title XVIII (Medicare); Title XIX (Medicaid); and Title XX (Social Services).

[15] This survey is being conducted by the National Home Caring Council, Mrs. Florence Moore, Executive Director. The author wishes to thank the Council, Mrs. Moore, and Dr. Eugene Shinn (consultant to the Council) for the cooperative and generous manner in which they shared preliminary survey results with The Urban Institute.

These data constraints forced us to narrow our original focus to an analysis of trends in Medicare expenditures for home health care. While more limited in scope than originally planned, the analysis still provides valuable insight into the causes of growth in the home health industry. Medicare dominates public home health funding, accounting for 86 percent of all home health agency public charges in 1979.[16] Medicare home health expenditures totalled $640 million in 1980, more than 4.5 times the $140.8 million expended by Medicaid for home health care.[17] Additionally, Medicare expenditures have grown enormously, so that regardless of what has happened to private financing, Medicare has supported enormous growth in the home health industry. Understanding the patterns of growth in that industry may be a useful guide to future developments in in-home care in general.

While published data on the Medicare home health program also suffer from deficiencies, they are of sufficient accuracy and completeness to warrant undertaking this analysis. The data problems which do exist will be discussed in the sections where they are most relevant.

The following section defines home health and presents a brief historical perspective of home health services as covered by Medicare, including relevant legislative and policy changes. Section II presents the trends in Medicare home health expenditures. It explores changes in the relationship of reimbursements to charges; number of persons served; number of visits; and charges per visit. Section III contains a summary of findings and conclusions.

2. Medicare's Coverage of Home Health

Home health care can generally be defined as care prescribed by a physician that is provided to individuals in their homes. It may include such services as nursing care, physical, occupational, or speech therapy, medical social services, dietetic counselling, and personal care services provided by home health aides. Such services may be provided as part of a recuperative process following illness or injury, or may be provided over an extended period of time to assist the chronically ill or disabled to function in a home setting.

Medicare, enacted in 1965 under Title XVIII of the Social Security Act, is a Federal health insurance program covering all aged or disabled persons eligible for Social Security payments.[18] Medicare consists of a hospital insurance component, Part

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[16] Health Care Financing Administration, "Use of Home Health Services, 1979" Health Care Financing Notes, Baltimore, Maryland, November 1980, p. 1.

[17] It should also be noted that New York State accounted for 46.6 percent of total Medicaid expenditures for home health in 1980. Excluding New York, total Medicaid expenditures for home health amounted to $75.2 million, less than 1/5th of Medicare expenditures.

[18] The Social Security Amendments of 1972 extended Medicare coverage to persons receiving Social Security on the basis of disability or end-stage renal disease. The disabled population are only covered after they have received social security disability payments for two years.

A, and a supplementary medical insurance component (SMI), Part B. Enrollment in Part A is automatic for all persons eligible. Part A covers hospitalization, skilled nursing facility care, and home health services. Part B covers physician services, hospital outpatient services, laboratory and radiology services and home health care to persons not eligible for Part A. Enrollment in Part B is voluntary and requires a premium payment. It is open to individuals age 65 or older or those eligible for participation in Part A. Approximately 95 percent of those enrolled in Part A choose to participate in Part B.

Home health services under Medicare are provided only to individuals requiring skilled care. The services are aimed at rehabilitation rather than provision of continuing in-home support services. Medicare home health cannot truly be regarded as a long-term care program in that coverage is extended only when the individual is homebound, under a physician's care, and in need of either part-time or intermittent nursing care and/or physical or speech therapy.[19] Covered services under both Part A and Part B include:

1. Skilled nursing care ordered by a physician, provided on an intermittent basis and performed by or under the direct supervision of a licensed nurse;
2. Physical, speech, and occupational therapy;
3. Medical social services when prescribed by a physician and included in the plan of treatment;
4. Home health aide services primarily provided to assist with the patient's personal care, under the supervision of a registered nurse. Housekeeping type services performed by a home health aide are permitted only if such services do not substantially increase the amount of time required within the visit above that needed to attend to the patient's personal care;
5. Medical supplies and appliances, excluding drugs; and
6. Services of interns and residents in training when the home health agency services are provided in connection with a hospital providing such medical services under an approved teaching program.

In its original form, Medicare covered a maximum of one hundred home health visits each under Part A and Part B. Part A provided home health coverage only to those individuals with a prior three-day stay in a hospital or a stay of any duration in a skilled nursing facility (SNP) where at least one day was paid by Medicare. The need for home health care had to be related to the illness for which the person received inpatient services. A plan for home health care had to be established by a physician within two weeks of discharge, from the institution and coverage was restricted to 100 visits during the year following discharge from the hospital or SNF.

[19] The Omnibus Reconciliation Act of 1980 permitted persons to qualify for Medicare coverage based solely on a need for occupational therapy. That provision was rescinded by the Omnibus Reconciliation Act of 1981 to the extent that the need for occupational therapy is insufficient in and of itself as a qualifying condition for coverage of home health services. However, individuals who initially qualified for services on the basis of other needs may continue to receive services if their sole remaining need is for occupational therapy.

SMI or Part B coverage was extended only to those individuals who did not have a prior institutionalization or had exhausted their Part A coverage. Reimbursement was restricted to one hundred visits in any calendar year. Beneficiaries under Part B were required to satisfy an annual deductible of sixty dollars, and, until 1973, a 20 percent coinsurance on home health services.

Despite the absence of a prior hospitalization requirement for Part B services, the predominant number of home health services have always been provided under Part A. As Table II-1 shows, approximately 73 percent of all Medicare reimbursements for home health services in 1980 were paid by Part A, with the percentage paid under Part A increasing steadily since 1967.

TABLE II-1. Medicare Reimbursements for Home Health Services by Program and Type of Enrollee, Selected Years

	1967	1974	1978	1980
Total Reimbursements -- All Enrollees	$43	$136	$435	$640
Part A	26	96	317	467
Percent Distribution	60.5%	70.6%	72.9%	72.9%
Part B	17	40	118	173
Percent Distribution	39.5%	29.4%	27.1%	27.1%
Total Reimbursements -- Aged Enrollees	$43	$127	$400	$589
Part A	26	90	293	431
Percent Distribution	60.5%	70.9%	73.2%	73.3%
Part B	17	37	107	157
Percent Distribution	39.5%	29.1%	26.8%	26.7%
Total Reimbursements -- Disabled Enrollees	N.A.	$9	$35	$51
Part A	N.A.	6	24	36
Percent Distribution	N.A.	66.6%	68.6%	70.6%
Part B	N.A.	3	11	15
Percent Distribution	N.A.	33.3%	31.4%	29.4%

SOURCE: Health Care Financing Administration, Office of Research, Demonstrations, and Statistics, Health Care Financing Notes, "Medicare: Summary of Use and Reimbursement by Person, 1978," Baltimore, Maryland, August 1981, p. 3.

The predominance of Part A coverage suggests that most individuals who satisfy Medicare's coverage requirements have experienced a period of institutionalization. Recipients under Part A rarely exhaust their benefits and require additional coverage under Part B. The average number of visits per person served was 20.6 in 1974 and 23.4 in 1980. The true constraining factor in Medicare coverage, therefore, is neither the prior hospitalization requirement, nor the 100-visit maximum, but the requirement for skilled intermittent or part-time care. In this sense, utilization of home health services is controlled in a manner analagous to that of nursing home use--through level of care requirements rather than through a specified maximum period of coverage.

The prior institutionalization requirement and 100 day maximum visit limitation were removed by Congress in the 1980 Medicare and Medicaid Amendments.[20] It is expected that these two changes will have little impact upon the program. The annual deductible under Part B was also eliminated by the 1980 Amendments.

Reimbursement for home health services is made on behalf of the beneficiary on the basis of reasonable costs. Since 1973, there has been a ceiling on these reimbursements. The 1981 Medicare and Medicaid Amendments[21] reduced the reimbursement limits applied to home health agencies from the 80th percentile of reasonable costs to the 75th percentile. The Tax Equity and Fiscal Responsibility Act of 1982 established (effective October 1, 1982) a single payment limit for hospital-based and free-standing facilities. Prior to that time, hospital-based home health agencies were reimbursed under separate reasonable cost calculations from those imposed upon other agency types.

Services must be provided by a Medicare participating home health agency or by others under arrangements made by the participating agency. There are seven basic types of home health agencies which include:[22]

- Visiting Nurse Associations: Voluntary agencies administered, by a board of directors and generally financed through earnings, contributions, community chest and united funds. One of the primary functions of visiting nurse associations is care of the sick at home.

- Government Agencies: Official (public) agencies supported by tax funds and administered by a unit of state or local government. These agencies are generally administered by state, city or county Health or welfare Departments.

- Combined Government and Voluntary Agencies: Agencies which are administered jointly by a voluntary and offical agency supported by tax funds, earnings, contributions, community chest and united funds.

- Hospital-Based Agencies: Home care programs administered by a hospital.

- Proprietary Agencies: Home care programs administered by for-profit business corporations.

- Private Nonprofit Agencies: Non-official, nonprofit agencies which may or may not be church-related.

[20] Title IX of the Omnibus Reconciliation Act of 1980 (Public Law 96-499).

[21] Title XXI of the Omnibus Reconciliation Act of 1981 (Public Law 97-35).

[22] Description of these agency types is taken in part from the 1979 Survey of Community Health Nursing conducted by the National Center for Health Statistics, Office of Health Policy, Research and Statistics, Public Health Service, Department of Health and Human Services.

- Other Agencies: This category includes home health care programs administered by rehabilitation facilities or nursing homes.

Prior to July 1981, only public and nonprofit home health agencies could arrange for outside services with other agencies, although they were required to provide at least one of the necessary services. Proprietary agencies were forbidden to enter into such arrangements and were required to provide skilled nursing services and at least one other therapeutic service. In addition, proprietary home health agencies were eligible to participate in Medicare only when licensed under state law. Currently, only twenty-six states maintain licensing procedures, and for-profit agencies were therefore precluded from providing Medicare services in nearly half the states. Title VIII of the 1980 Medicare and Medicaid amendments eliminated the special licensing requirements for proprietary agencies effective as of July 1, 1981, thus permitting them to operate in any state regardless of licensing provisions.

B. TRENDS IN THE MEDICARE HOME HEALTH PROGRAM

1. Reimbursement for Home Health Services

Among Medicare covered types of service, home health services have experienced the largest increase in reimbursements, with the exception of outpatient services. Reimbursements increased from $43 million in 1967 to $662.1 million in 1980, an increase of 1439 percent. As seen in Table II-2, home health has accounted for an increasing percentage of total Medicare reimbursements since 1973, representing almost two percent of 1980 Medicare expenditures.

The decline in reimbursements in 1970 and 1971 can be attributed to the 1969 issuance of policy guidelines which more precisely defined terms of coverage. As previously noted, the Social Security Amendments of 1972, implemented in 1973, extended coverage to the disabled and persons with end-stage renal disease (ESRD), eliminated coinsurance provisions, and simplified payment procedures--all of which encouraged service expansion, despite narrow coverage definitions.

Reimbursements in 1974 exceeded those of the previous year by 55 percent. 17.5 percent of the increase was due to coverage of the disabled and ESRD population, which amounted to $9 million of the $144.3 million paid for home health services. Reimbursements have grown 26.1 percent per year since 1974. That year marks the inclusion of the non-aged eligibles, and will be the base year for our analysis of trends in the Medicare home health program.

From this point on, however, we will focus mainly upon the trend in home health charges, rather than the trend in reimbursements. This focus is necessitated by the lack of time series data concerning Medicare reimbursements by agency type. While data on reimbursements per state or per region are available, similar data are not available on a

type of agency basis. This is the most significant of the previously mentioned shortcomings in the Medicare data.

TABLE II-2. Total Medicare Reimbursement, Reimbursement for Home Health Services and Number of Home Health Visits, Calendar Years 1967-1980

Year	Total Medicare Reimbursement	Home Health Agency Reimbursement		Home Health Visits
		Amount	As Percent of Total Medicare Reimbursement	
1967	$4,239.0	$43.0	1.01	---
1969	6,284.0	81.1	1.29	8.5
1970	6,772.4	62.7	0.92	6.0
1971	7,486.9	57.2	0.76	4.8
1972	8,216.5	66.2	0.80	5.2
1973	9,639.2	93.3	0.97	6.4
1974	11,920.1	138.6	1.17	7.9
1975	14,749.3	214.9	1.46	10.8
1976	17,939.5	296.7	1.76	12.6
1977	21,094.3	370.6	1.76	15.8
1978	24,402.8	442.8	1.81	17.6
1979	28,267.0	541.3	1.91	19.9
1980	33,389.4	662.1	1.98	22.4

SOURCE: Health Care Financing Administration, Bureau of Data Management and Statistics, unpublished utilization statistics.

2. Trends in Home Health Charges

Medicare charge data are generally presented as “visit charges” and “total charges.” Visit charges are those which are directly linked to a home health visit. Total charges include visit charges and charges for other reimbursable services which are not directly associated with a specific visit. Throughout the 1974-1980 time period, the relationship between total charges, visit charges, and reimbursements has changed significantly.

Over time, Medicare has reimbursed an increasingly smaller percentage of charges. As shown in Table II-3, reimbursements exceeded visit charges in 1974 and 1975, and amounted to between 95 and 96 percent of total charges. By 1980, however, this relationship had changed so that reimbursements represented approximately 90 percent of visit charges and 86 percent of total charges. This changing relationship probably reflects the combined impact of charges rising faster than costs and the imposition of ceilings on cost reimbursements.

Summary data on visit charges and service provision are presented in Table II-4. An additional data problem is evident there. Prior to 1975, information concerning private nonprofit and “other” agencies was combined. As a result, the percentage changes for those two agency types presented in Table II-5, represent the 1975-1980 time period rather than 1974-1980.

Between 1974 and 1980, visit charges increased nearly 435 percent across all agency types. The number of persons served increased by 144 percent, and the number of visits grew by 178 percent. Although the largest percentage increase in visit charges occurred among the proprietary agencies, as shown in Table II-5, the for-profit agencies accounted for only 8.9 percent of the total growth in visit charges.

TABLE II-3. Relative Changes in Total Charges, Visit Charges, and Medicare Reimbursements, 1974-1980

	Total Charges	Visit Charges	Reimbursements		
			Amount	As a Percentage of:	
				Total Charges	Visit Charges
1974	$147,499	$137,406	$141,464	95.9%	102.9%
1975	227,001	211,994	215,497	94.9	101.6
1976	312,325	292,697	289,851	92.8	99.0
1977	407,827	385,224	363,785	89.2	94.4
1978	500,747	474,498	435,322	86.9	91.7
1979	601,476	572,263	518,263	86.2	90.6
1980	770,703	734,718	662,133	85.9	90.1

SOURCE: Health Care Financing Administration, Health Care Financing Program Statistics, "Medicare: Use of Home Health Services" series 1975-1980; 1974 data from Social Security Administration, Health Insurance Statistics, "Medicare Utilization of Home Health Services, 1974," Nov. 2, 1977.

TABLE II-4. Summary Data on Charges, Visits, and Persons Served by Agency Type

	All Agencies	Visiting Nurse Association	Combined Gov't & Voluntary	Government	Hospital Based	Proprietary	Private Nonprofit	Other
PERSONS SERVED (000's)								
1974	392.7	189.0	18.4	90.0	47.0	12.0	36.4	
1975	499.6	231.7	20.8	112.5	57.7	18.9	50.5	7.5
1976	588.7	245.8	18.7	124.0	63.3	24.5	103.6	8.8
1977	689.7	273.2	19.6	141.8	74.4	31.8	133.9	14.9
1978	769.3	297.4	21.3	152.1	87.8	37.5	160.8	12.5
1979	836.7	332.5	15.4	155.9	95.1	47.9	177.8	12.2
1980	957.4	376.9	16.2	173.5	113.8	61.7	201.6	13.7
Percent Change 1974-1980	143.8%	99.4%	-11.9%	92.8%	142.1%	414.2%	299.2%*	82.7%*
VISITS (000's)								
1974	8,070	3,565	280	1,843	905	375	1,102	
1975	10,805	4,555	322	2,331	1,159	603	1,656	177
1976	13,335	4,901	317	2,556	1,318	724	3,205	233
1977	15,548	5,655	366	2,968	1,565	846	3,800	347
1978	17,345	6,335	391	3,053	1,877	925	4,464	300
1979	19,159	7,223	279	3,110	2,013	1,221	5,023	290
1980	22,428	8,434	303	3,568	2,417	1,588	5,796	323
Percent Change 1974-1980	177.9%	164.6%	8.2%	93.6%	167.1%	323.5%	250.0%*	82.5%*
VISIT CHARGES (000's)								
1974	$137,406	$55,973	$5,054	$27,365	$19,382	7,303	$22,329	
1975	211,944	80,578	6,477	39,448	28,631	13,801	39,682	3,326
1976	292,697	93,925	7,140	47,500	35,229	18,461	85,376	5,066
1977	385,223	121,701	8,815	59,781	45,997	24,078	117,570	7,911
1978	474,498	149,159	10,028	67,511	58,949	29,353	151,557	7,942
1979	572,263	188,579	7,834	74,840	68,862	42,369	181,218	8,562
1980	734,718	244,102	9,777	94,189	92,088	60,580	223,639	10,343
Percent Change 1974-1980	434.7%	336.1%	93.5%	244.2%	375.1%	729.5%	463.6%*	210.9%*

TABLE II-4 (*continued*)								
	All Agencies	**Visiting Nurse Association**	**Combined Gov't & Voluntary**	**Government**	**Hospital Based**	**Proprietary**	**Private Nonprofit**	**Other**
AVERAGE VISITS PER PERSONS SERVED								
1974	20.6	18.9	15.2	20.5	19.3	31.2	30.3	
1975	21.6	19.7	15.5	20.7	20.1	32.0	32.8	23.8
1976	22.7	19.9	16.9	20.6	20.8	29.6	31.7	26.4
1977	22.5	20.7	18.7	20.9	21.0	26.6	28.4	23.4
1978	22.5	21.3	18.3	20.1	21.4	24.7	27.8	24.1
1979	22.9	21.7	18.1	20.0	21.2	25.5	28.3	23.8
1980	23.4	22.4	18.7	20.6	21.2	25.7	28.8	23.6
Percent Change 1974-1980	13.6%	18.5%	23.0%	0.0%	9.8%	-17.6%	-12.2%*	0.0%*
AVERAGE VISIT CHARGES PER PERSON SERVED								
1974	$350	$296	$275	$304	$413	$608	$614	
1975	424	348	311	351	497	731	786	445
1976	497	382	381	383	556	754	824	574
1977	559	443	450	422	618	757	878	532
1978	617	501	470	444	671	784	942	636
1979	684	567	509	480	724	885	1,019	704
1980	767	647	605	543	809	981	1,109	755
Percent Change 1974-1980	119.1%	118.6%	120.0%	78.6%	95.9%	61.3%	41.1%*	69.7%*
AVERAGE CHARGE PER VISIT								
1974	$17	$16	$18	$15	$21	$20	$20	
1975	20	18	20	17	25	23	24	19
1976	22	19	23	19	27	26	26	22
1977	25	21	24	20	29	28	31	23
1978	27	24	26	22	31	32	34	26
1979	30	26	28	24	34	35	36	30
1980	33	29	32	26	38	38	39	32
Percent Change 1974-1980	94.1%	81.2%	77.8%	73.35	80.9%	90.0%	62.5%*	68.4%*

SOURCE: Health Care Financing Administration, Health Care Financing Program Statistics, "Medicare Use of Home Health Services" series.
* Percent change 1975-1980.

TABLE II-5. Percentage Share of Increase in Visit Charges, Persons Served, and Visits, by Agency Type, 1975-1980			
Agency Type	**Percentage Share of Increase in Visit Charges**	**Percentage Share of Increase in Persons Served**	**Percentage Share of Increase in Visits**
All Agencies	100.0% ($522,774,000)	100.0% (457,800)	100.0% (11,623,000)
Visiting Nurse Associations	31.3	31.7	33.4
Combined Government and Voluntary	0.6	-1.0	-0.2
Government	10.5	13.3	10.6
Hospital-Based	12.1	12.2	10.8
Proprietary	8.9	9.3	8.5
Private Nonprofit	35.2	33.0	35.6
Other	1.3	1.4	1.3

Of the $522.7 million increase in visit charges between 1975 and 1980, 35.2 percent ($183.9 million) was attributable to private nonprofit agencies, and 31.3 percent ($163.5 million) derived from visiting nurse associations (VNAs). There were 457.8

thousand more persons served in 1980 than in 1975, and 33 percent of the increase in users were served by private nonprofit agencies, and 31.7 percent were served by VNAs. Similarly, 35.6 percent of the 11.6 million visit increase was due to private nonprofits and 33.4 percent was due to VNAs. Thus, approximately two-thirds of the increase in visit charges, persons served, and total visits is attributable to visiting nurse associations and private nonprofit agencies.

3. The Components of Change in Home Health Charges

Within agency types, it is possible to disaggregate visit charges into its separate components to identify the factors underlying the growth.

If we express visit charges as:

VISIT CHARGES = Visits/Person Served x Charges/Visit x Persons Served

we can examine the relative importance of each component of total visit charges.

TABLE II-6. Disaggregation of Changes in Visit Charges

	1974	1980	Growth Rate (g)	Percent of Growth Explained by Each Factor	1974	1980	Growth Rate	Percent of Growth Explained by Each Factor
	ALL AGENCIES				VNA"s			
Total Visit Charges	137,406	734,718	0.2794	1.0000	55,973	244,102	0.2454	1.000
Visits/Person Served	20.6	23.4	0.212	0.760	18.9	22.4	0.0283	0.1153
Charges/Visit	17	33	0.1105	0.3955	16	29	0.0991	0.4038
Persons Served	392.7	957.4	0.1485	0.5315	189.0	376.9	0.1150	0.4686
	COMBINED GOV'T & VOLUNTARY				GOVERNMENT			
Total Visit Charges	5,054	9,777	0.1099	1.0000	27,365	94,189	0.2060	1.0000
Visits/Person Served	18.9	22.4	0.0283	0.2575	20.5	20.6	0.0008	0.0039
Charges/Visit	18	32	0.0959	0.8726	15	26	0.0917	0.4451
Persons Served	18.4	16.2	-0.0212	-0.1929	90	173.5	0.1094	0.5311
	HOSPITAL BASED				PROPRIETARY			
Total Visit Charges	19,382	92,088	0.2597	1.0000	7,303	60,580	0.3526	1.0000
Visits/Person Served	19.3	21.2	0.0156	0.0601	31.2	25.7	-0.0323	-0.0916
Charges/Visit	21	38	0.0988	0.3804	20	38	0.1069	0.3032
Persons Served	47	113.8	0.1474	0.5676	12	61.7	0.2729	0.7739
	1975	1980	Growth Rate (g)	Percent of Growth Explained by Each Factor	1974	1980	Growth Rate	Percent of Growth Explained by Each Factor
	PRIVATE NONPROFIT				OTHER			
Total Visit Charges	39,682	223,639	0.2882	1.0000	3,326	10,343	0.1891	1.0000
Visits/Person Served	32.8	28.8	-0.0217	-0.0753	23.8	23.6	0.0014	0.0074
Charges/Visit	24	39	0.0809	0.2807	19	32	0.0869	0.4595
Persons Served	50.5	201.6	0.2307	0.8006	7.5	13.7	0.1004	0.5310

As shown in Table II-6, increased utilization was the major contributing factor in the growth of home health charges. Roughly 53 percent of the increase in visit charges

is explained by the increase in the number of persons served. This is especially true for private nonprofit agencies, with 80 percent of the growth in visit charges for that group explained by the increased number of persons served. Growth in proprietary agencies' charges is also dominated by growth in persons served. Also, like private nonprofits, proprietary agencies showed a negative rate of growth in the number of visits provided per person served, although the absolute number of visits they provided per person served was substantially higher than that observed among the remaining agency types.

The increased number of persons served is the predominant factor in the growth in visit charges across all agency types except for the combined government and voluntary agencies. That group of agencies actually served fewer persons in 1980 than in 1974, and the overwhelming contributing factor to their growth in visit charges was increased charges per visit.

The importance of increased utilization in explaining the growth in visit charges is confirmed by the striking rise in the number of persons served per 1,000 enrollees. In 1974, an average of 16.5 persons per thousand enrollees received home health visits; by 1980, that number had doubled to 33.6.

The increased utilization of home health services is consistent with, but greater than, the increased hospitalization observed throughout the period. The number of short-stay hospital discharges per 1,000 enrollees increased by 19.1 percent between 1974 and 1978, from 293 per 1,000 in 1974 to 349 per thousand in 1978.[23] Since most users of home health services qualify for those services after a hospital stay, an increase in hospital utilization can be expected to affect home health use. In addition, hospital length of stay declined from about 13 days to 10 during this period, which may be an important factor in home health demand.

The second largest contributing factor to increased visit charges (accounting for nearly 40 percent of the total growth in visit charges) is increased average charges per visit. Charges increased across all agency types. However, the smallest percentage increase was among the highest charge agency type--private non-profits. As shown earlier in Table II-4, private nonprofit agencies charge approximately 34 percent more per visit than visiting nurse associations. In 1980, the average charge per visit among private nonprofits was $39 compared to $29 for VNAs.

The third factor contributing to increased charges was the change in visits per person served. Although the average number of visits per person served declined among private nonprofit agencies, they still provided far more services per person than did other agency types--28.8 visits per person served in 1980, compared to 22.4 visits per person served by a VNA. Each person served by a private nonprofit agency in 1980 represented average visit charges of $1,109, compared to $647 for VNAs and $543 for government agencies. As the private nonprofits' share of the home health market increased over time, average charges increased in a commensurate manner. Other

[23] Health Care Financing Administration, Health Care Financing Notes, "Medicare: Inpatient Use of Short-Stay Hospitals, 1978," Baltimore, Maryland, April 1981, p. 6.

high charge agency types (i.e., hospital-based and proprietary agencies) have had a similar influence; however, they represent a much smaller market share than the nonprofit agencies, and their relative impact on charges is therefore much smaller.

As shown in Table II-7, while private nonprofit agencies accounted for 21 percent of all Medicare home health recipients in 1980, they accounted for 25.8 percent of total visits and 30.4 percent of visit charges. Visiting nurse associations still maintained the largest single market share in 1980, with 39.4 percent of the persons served, 37.6 percent of all visits provided, and 33.2 percent of all visit charges. However, each of these measures of market share represent a decline over their market position in 1975. Government agencies also experienced a decline in their relative market position between 1975 and 1980, so that by that year, they had been surpassed in all three measures by private nonprofit agencies.

Perhaps the most direct means of analyzing the higher charges observed among private nonprofit agencies would be to examine the relative staff size and composition of private nonprofits versus other agency types. However, the previously noted problems with the MMACS data base preclude such comparisons. An alternative, less direct approach, is to examine the composition of services provided by agency type to determine if private nonprofit agencies provide a more costly mix of services than that provided by VNAs or other lower charge agency types. Table II-8 presents such an analysis.

TABLE II-7. Relative Shares of Persons Served, Visits, and Visit Charges, by Type of Agency, 1975 and 1980

	All Agencies (000's)	Visiting Nurse Association	Combined Gov't & Voluntary	Government	Hospital Based	Proprietary	Private Nonprofit	Other
PERSONS SERVED								
1975	499.6	46.4%	4.2%	22.5%	11.5%	3.8%	10.1%	1.5%
1980	957.4	39.4	1.7	18.1	11.9	6.4	21.0	1.4
VISITS								
1975	10,805	42.2	3.0	21.6	10.7	5.6	15.3	1.6
1980	22,428	37.6	1.4	15.9	10.8	7.1	25.8	1.4
VISIT CHARGES								
1975	211,944	38.0	3.0	18.6	13.5	6.5	18.7	1.6
1980	734,718	33.2	1.3	12.8	12.5	8.2	30.4	1.4

SOURCE: 1975 data from Health Care Financing Administration, Research and Statistics Note, No. 2, "Medicare Utilization of Home Health Services, 1975," June 1978. 1980 data, unpublished statistics supplied by Health Care Financing Administration, Office of Statistics and Data Management.

In terms of the relative mix of services provided, there is a minimal difference between private non-profit agencies and VNAs. Not surprisingly, VNAs provide a greater percentage of nursing visits than do private nonprofit agencies (54.9 percent versus 47.6 percent). Private nonprofits provide slightly greater percentages of aide, therapist and other visits than VNAs. However, the magnitude of these differences is so small that differing service mix cannot explain the variation in agency charges.

It is evident from Table II-8 that the previously noted differences in average charges per visit across agency types persist across service categories. Average charges per visit by private nonprofit agency staff exceed those of VNAs by $9 for a

nursing care visit, $1.1 for a home health aide or physical therapist visit, and $14 for other types of visits. It is interesting to note that the highest charge differentials occur for those service categories which VNAs are less likely to offer--the non-nursing visits. Unfortunately, existing data do not permit us to explain why on average a nursing visit is $9 more expensive when provided by a nonprofit than a VNA, or why "other" services are $14 more expensive. We can at best note the price differentials.

4. Factors Influencing Changes in Home Health Use

Having established that the major factor in expanding home health charges is increased utilization, the logical remaining question is why has utilization increased so dramatically? .The previously noted increased hospitalization rate of the recent past is insufficient to explain the rapid growth in home health use. it is possible that the rapid growth in utilization has occurred in areas which were previously underserved in that they had a limited supply of home health services relative to the population of potential users. In order to investigate this possibility, we have examined the relationship between utilization and supply of home health services on a subnational level.[24] If the growth in utilization is in fact a response to unmet need, the areas with the largest increase in utilization should have been the areas with the lowest initial ratio of agencies to enrollees.

The measures of both supply and access to care used in this analysis are imperfect ones which we are forced to use due to data constraints. Ideally, supply of home health services in a given area would be measured as total home health agency staff, and access to care would be measured as the ratio of agency staff to enrollees. In the absence of data on agency staff size, we have instead defined the supply of home health services as the number of agencies, and access to care has been defined as the number of agencies per 10,000 enrollees. These measures are of more limited value because they do not truly gauge the size of the home health provider capability within an area. For example, a net decline in the number of home health agencies may actually disguise a net increase in the number of home health workers, since smaller agencies may be replaced by larger ones.[25]

[24] In addition, where significant changes in supply are observed, we have examined the relative importance of licensure laws in the area.

[25] An additional data constraint is evident in this analysis. Data on utilization rates are available at the Census division level without distinction as to agency type. Information on the supply of home health agencies by agency type is available at the Census region level, while information on the supply of agencies regardless of type is available at the state level.

TABLE II-8. Visit Charges, Visits, and Persons Served, by Type of Agency and Type of Visit, 1980								
	All Agencies	Visiting Nurse Association	Combined Gov't & Voluntary	Government	Hospital Based	Proprietary	Private Nonprofit	Other
VISIT CHARGES (000's)								
Total	$734,718	$244,102	$9,777	$94,189	$92,088	$60,580	$223,639	$10,343
Nursing Care	409,206	142,491	6,717	58,948	53,641	29,527	111,058	6,825
Home Health Aide	200,512	63,245	1,641	24,232	21,188	18,390	69,805	2,012
Physical Therapy	90,442	26,632	990	8,467	12,151	9,692	31,466	1,045
Other	34,558	11,732	430	2,542	5,108	2,972	11,310	462
PERCENT OF VISITS CHARGES								
All Visits	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
Nursing Care	55.7	58.4	68.7	62.6	58.2	48.7	49.7	66.0
Home Health Aide	27.3	25.9	16.8	25.7	23.0	30.4	31.2	19.5
Physical Therapy	12.3	10.9	10.1	9.0	13.2	16.0	14.1	10.1
Other	4.7	4.8	4.4	2.7	5.5	4.9	5.1	4.5
AVERAGE NUMBER OF VISITS PER PERSON SERVED								
All Persons	23.4	22.4	18.7	20.6	21.2	25.7	28.8	23.6
Nursing Care	13.0	12.8	11.7	11.9	12.5	13.0	14.8	15.8
Home Health Aide	20.8	20.7	17.1	22.5	18.9	18.5	21.5	20.0
Physical Therapy	10.2	9.1	9.7	9.1	9.4	12.2	12.6	9.5
Other	6.7	6.4	10.8	7.7	6.1	5.5	7.4	8.6
AVERAGE CHARGE PER VISIT								
All Visits	$33	$29	$32	$26	$38	$38	$39	$32
Nursing Care	35	31	36	30	39	41	40	34
Home Health Aide	28	24	22	20	33	33	35	25
Physical Therapy	36	31	32	28	41	42	42	37
Other	38	35	35	30	43	45	41	35
AVERAGE VISIT CHARGES PER PERSON SERVED								
All Persons	$767	$647	$605	$543	$809	$981	$1,109	$755
Nursing Care	450	393	426	354	493	529	595	533
Home Health Aide	578	499	374	454	622	601	747	518
Physical Therapy	372	284	314	259	382	506	527	348
Other	256	222	374	233	263	247	304	302
PERSONS SERVED (000's)*								
Total	957.4	376.9	16.2	173.5	113.8	61.7	201.6	13.7
Nursing Care	909.1	362.7	15.8	166.4	108.8	55.8	186.8	12.8
Home Health Aide	346.6	126.7	4.4	53.4	34.1	30.6	93.5	3.9
Physical Therapy	243.3	93.8	3.2	32.7	31.8	19.1	59.8	3.0
Other	135.4	53.1	1.2	10.9	19.4	12.0	37.3	1.5

TABLE II-8 (*continued*)								
	All Agencies	**Visiting Nurse Association**	**Combined Gov't & Voluntary**	**Government**	**Hospital Based**	**Proprietary**	**Private Nonprofit**	**Other**
PERCENT OF PERSONS RECEIVING VISITS*								
All Visits	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
Nursing Care	95.0	96.2	97.5	95.9	95.6	90.4	92.7	93.4
Home Health Aide	36.2	33.6	27.2	30.8	30.0	49.6	46.4	28.5
Physical Therapy	25.4	24.9	19.8	18.8	27.9	31.0	29.7	21.9
Other	14.1	14.1	7.4	6.3	17.0	19.4	18.5	10.9
VISITS (000's)								
Total	22,428	8,434	303	3,568	2,417	1,588	5,796	623
Nursing Care	11,848	4,628	185	1,987	1,361	724	2,761	202
Home Health Aide	7,197	2,624	75	1,200	643	565	2,011	79
Physical Therapy	2,491	852	31	298	299	233	750	28
Other	892	330	12	84	114	66	275	12
PERCENT OF VISITS								
All Visits	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
Nursing Care	52.8	54.9	61.1	55.7	56.3	45.6	47.6	62.5
Home Health Aide	32.1	31.1	24.8	33.6	26.6	35.6	34.7	24.5
Physical Therapy	11.1	10.1	10.2	8.4	12.4	14.7	12.9	8.7
Other	4.0	3.9	4.0	2.4	4.7	4.2	4.7	3.7
* Numbers do not add to totals since each person may receive more than one type of visit.								

The areas of largest growth in utilization between 1974 and 1980 were the North Central states and the South. The number of persons served per 1,000 enrollees grew by 122.8 percent in each of those areas during that time period (Table II-9). These two regions also exhibited substantial growth in the number of home health agencies, with the East North Central states experiencing a 29.2 percent increase, and the West North Central states agency growth amounting to 41.4 percent. A "catching up" phenomenon is evident in East North Central states where, with the exception of Wisconsin, the ratio of agencies to enrollees was relatively low in 1974. The expansion shown by 1980 (excluding Ohio) perhaps fullfilled previously unmet needs for home health care. This argument is supported somewhat by the fact that user rates in the East North Central states were the lowest in the country in 1974 (Table II-9).

TABLE II-9. Number of Persons Served and Persons Served Per 1,000 Enrollee by Geographic Area and Year

Geographic Area and Year	Persons Served	
	Number	Per 1,000 Enrollee
TOTAL, ALL AREAS		
1974	392.7	16.5
1975	499.6	20.2
1976	588.7	22.9
1977	689.7	26.1
1978	769.7	28.3
1979	836.7	30.0
1980	957.4	33.6
Percent Change 1974-1980	143.8	103.6
NORTHEAST		
1974	143.8	24.4
1975	175.9	29.2
1976	198.1	32.2
1977	229.7	36.5
1978	253.5	39.6
1979	272.4	41.7
1980	308.7	46.5
Percent Change 1974-1980	114.7	90.6
NORTH CENTRAL		
1974	82.8	12.7
1975	101.5	15.2
1976	118.6	17.4
1977	142.2	20.4
1978	161.9	22.9
1979	177.8	24.7
1980	206.9	28.3
Percent Change 1974-1980	149.9	122.8
SOUTH		
1974	102.3	13.6
1975	139.0	17.7
1976	171.7	21.2
1977	199.3	23.7
1978	218.8	25.1
1979	240.6	26.8
1980	279.9	30.3
Percent Change 1974-1980	173.6	122.8

TABLE II-9 (*continued*)		
Geographic Area and Year	**Persons Served**	
	Number	**Per 1,000 Enrollee**
WEST		
1974	60.2	15.9
1975	78.4	19.9
1976	93.1	22.8
1977	108.3	25.5
1978	121.9	27.7
1979	131.8	29.0
1980	148.1	31.7
Percent Change 1974-1980	146.0	99.4
OTHER AREAS		
1974	3.7	13.2
1975	4.9	16.3
1976	7.3	23.0
1977	10.2	29.9
1978	13.6	20.9
1979	14.0	24.5
1980	13.8	23.5
Percent Change 1974-1980	272.9	78.0
SOURCE: Health Care Financing Administration, unpublished statistics		

In the West North Central area, the largest absolute growth was in government agencies, however in percentage terms, the largest growth was among private nonprofits which doubled in number. The greatest percentage growth in the East North Central states was among hospital-based, proprietary, and private nonprofit agencies. Three of the five states in that region had licensure laws prior to 1980 and the number of proprietary agencies grew by 157 percent between 1976 and 1980.[26]

Within the Southern division, agencies grew by nearly 20 percent in the South Atlantic and 38 percent in the East South Central states (Table II-10). In the East South Central region, the largest agency growth was among private nonprofit and proprietary agencies. Private nonprofit agencies increased from 32 to 64, and proprietary agencies grew by 286 percent, from 7 agencies in 1976 to 27 by 1980. Both Kentucky and Tennessee, two of the four states in the region, had licensure laws prior to 1980.

[26] Data on the number of home health agencies were not individually reported for proprietary, private nonprofit and other agency types prior to 1975. Data on the number of agencies by type in 1975 is unavailable for every agency type. Therefore, in order to analyze agency growth among proprietaries, nonprofits and other agency types, we are confined by data constraints to the 1976-1980 time period.

TABLE II-10. Number of Home Health Agencies by Type of Agency and Division									
	All Agencies			Visiting Nurse Association			Combined Gov't & Voluntary		
	1974	1980	Pct. Change	1974	1980	Pct. Change	1974	1980	Pct. Change
All Areas	2,343	2,859	22.0%	533	511	-4.1%	52	50	-3.8%
United States	2,329	2,830	21.5	532	510	-4.1	52	50	-3.8%
New England	343	317	-7.6	238	212	-10.9	9	3	-66.7
Middle Atlantic	282	281	0.0	93	92	-1.1	5	5	0.0
East North Central	335	433	29.2	86	85	-1.2	11	11	0.0
West North Central	244	345	41.4	25	20	-20.0	5	11	120.0
South Atlantic	338	404	19.5	27	40	48.1	12	7	-41.7
East South Central	298	410	37.6	9	9	0.0	---	5	-41.7
West South Central	254	305	20.1	11	11	0.0	1	3	200.0
Mountain	91	127	39.6	12	10	-16.6	5	5	0.0
Pacific	144	207	43.8	31	31	0.0	4	0	-100.0
	Government			Hospital Based			Proprietary, Private Nonprofit, Other		
	1974	1980	Pct. Change	1974	1980	Pct. Change	1974	1980	Pct. Change
All Areas	1,299	1,274	-1.9%	277	349	26.0%	182	674	270.3%
United States	1,298	1,272	-2.0	269	344	27.9	178	653	266.8
New England	68	54	-2.0	25	21	-16.0	3	27	800.0
Middle Atlantic	90	74	-17.8	86	80	-6.9	8	30	275.0
East North Central	189	205	8.5	33	48	45.4	16	84	425.0
West North Central	174	240	37.9	37	47	27.0	3	27	800.0
South Atlantic	250	157	-37.2	20	30	50.0	29	170	486.2
East South Central	254	264	3.9	22	36	63.6	13	96	638.5
West South Central	178	171	-3.9	7	14	100.0	57	106	85.9
Mountain	51	67	31.4	13	23	76.9	10	22	120.0
Pacific	44	40	-9.1	26	45	73.1	39	91	133.3

TABLE II-10. (*continued*)									
	Proprietary			Private Nonprofit			Other		
	1976	1980	Pct. Change	1976	1980	Pct. Change	1976	1980	Pct. Change
United States	90	165	83.3%	263	422	60.5%	49	66	34.7%
New England	0	0	0.0	14	18	28.6	4	9	125.0
Middle Atlantic	0	1	100.0	10	21	110.0	5	8	60.0
East North Central	7	18	157.1	32	59	84.4	11	7	-36.4
West North Central	0	0	0.0	10	20	100.0	5	7	40.0
South Atlantic	8	36	350.0	88	119	35.2	6	15	150.0
East South Central	7	27	285.7	32	64	100.0	4	5	25.0
West South Central	26	29	11.5	56	71	26.8	5	6	20.0
Mountain	6	6	0.0	5	12	140.0	5	4	-20.0
Pacific	36	48	33.3	16	38	137.5	4	5	20.0

SOURCE: Health Care Administration, unpublished statistics, 1976 data from Health Care Financing Administration, Health Care Financing Program Statistics, "Medicare: Use of Home Health Services, 1976," Table 10, p. 12.

Six of the nine states in the South Atlantic licensed proprietaries prior to 1980. In that region, proprietary agencies grew by 350 percent between 1976 and 1980, from 8 agencies in 1976 to 36 in 1980. Despite that enormous growth rate, proprietary agencies still represented only 6.3 percent of the agencies in that area in 1980. The predominant form of home health agency in the South Atlantic was government organized. Private nonprofit agencies grew rapidly, however, representing nearly 30 percent of all agencies in the South Atlantic by 1980. While government agencies still dominate the area, their representation declined from 73.9 percent of all agencies in 1974 to 38.9 percent in 1980.

TABLE II-11. Ratio of Home Health Agencies to 10,000 Enrollees by State

	1974	1980		1974	1980
NEW ENGLAND			**EAST SOUTH CENTTRAL**		
Connecticut*	2.629	2.109	Alabama	1.677	1.812
Maine	1.448	1.136	Kentucky*	1.017	1.166
Massachusetts	2.284	1.759	Mississippi	3.144	4.144
New Hampshire	4.333	3.556	Tennessee*	1.907	2.545
Rhode Island*	1.088	0.939	**WEST SOUTH CENTRAL**		
Vermont	2.992	3.072	Arkansas	2.679	2.582
MIDDLE ATLANTIC			Louisiana*	1.928	1.602
New Jersey*	0.556	0.477	Oklahoma	1.425	1.594
New York*[1]	0.597	0.507	Texas*	0.403	0.528
Pennsylvania*[2]	0.703	0.690	**MOUNTAIN**		
EAST NORTH CENTRAL			Arizona*	0.465	0.396
Illinois*	0.684	0.977	Colorado	1.232	1.605
Indiana*	0.499	0.669	Idaho*	1.083	1.445
Michigan	0.542	0.629	Montana*	1.253	1.592
Ohio	0.892	0.836	Nevada*	0.680	1.094
Wisconsin*	1.243	1.442	New Mexico	0.627	1.467
WEST NORTH CENTRAL			Utah	0.971	0.764
Iowa	1.483	2.573	Wyoming	2.831	3.931
Kansas	1.078	---	**SOUTH ATLANTIC**		
Minnesota	1.352	1.595	Delaware	1.121	0.902
Missouri	1.352	1.595	District of Columbia	0.532	0.509
Nebraska	0.546	0.776	Florida*	0.318	0.759
North Dakota*	1.166	1.375	Georgia*[3]	0.325	1.124
South Dakota	2.337	2.642	Maryland*	0.662	0.710
PACIFIC			North Carolina*	0.990	1.251
Alaska	1.160	0.794	South Carolina*	0.676	0.637
California*	0.394	0.559	Virginia*	3.008	0.842
Hawaii*	1.442	1.106	West Virginia	0.743	1.088
Oregon*	0.968	0.937			
Washington	0.608	0.725			

SOURCE: Agencies data, 1974, Health Care Financing Administration, HCFA Program Statistics, "Medicare Health Insurance for the Aged and Disabled, Selected State Data, 1973-1977." 1980 agency data, Health Care Financing Administration, Health Care Financing Notes, "Participating Providers and Suppliers of Health Services, 1980." pp. 9-10; Enrollment data, Unpublished HCFA statistics; Licensure data, Unpublished HCFA data.

* Asterisks indicate those states with licensure laws.

1. New York licensure law specifically prohibits proprietary agencies.
2. Licensure law did not become effective until after 1980.
3. Licensure law became effective July 1, 1980.

Table II-11 shows that most of the growth in the South Atlantic occurred in Florida and Georgia. It appears from the ratio of agencies to 10,000 enrollees, that

these areas were underserved in 1974, and the growth in those states may represent a "catching up" phenomenon in terms of access to care.

Within other divisions, the same could be said for many states--Idaho, Nevada, and New Mexico, for example. However, counterexamples do exist in several states, such as Mississippi, South Dakota, and Wyoming. Mississippi, for example, showed a ratio of 3.1 agencies per 10,000 enrollees in 1974, the second highest in the nation, yet by 1980 the ratio had increased to 4.1. A similar situation can be observed in Wyoming, with a ratio of 2.8 in 1974, and 3.9 in 1980.

We thus observe a mixed picture with regard to the influence of supply and access to care upon utilization. In some areas, increases in utilization corresponded to an improvement in initially limited access to care. However, in other areas, utilization increased irrespective of relatively higher initial measures of access.

In yet another division, the Northeast, utilization continued to grow despite declines in our measure of supply. This is not surprising, however, since the major portion of the Northeast, the New England region, had the largest number of agencies per 10,000 enrollees of any region in the nation in both 1974 and 1980, despite a decline in the number of agencies during that period.[27]

As evidenced in Table II-9, the Northeast division has always far surpassed the remaining sectors of the country in terms of its home health user rate. In 1974 in the Northeast division, 24.4 persons were served per 1,000 enrollees; by 1980, the number had grown to 46.5 per 1,000 enrollees.

Within the Northeast division, the New England home health market has been dominated by visiting nurse associations. In 1974, they comprised nearly 70 percent of all home health agencies in that area. By 1980, that dominance had declined only slightly to roughly 67 percent (see Table II-10). One possible explanation for the high user rates in the New England area is the relative stability which has characterized the home health market there. Visiting nurse associations have been firmly entrenched there in large numbers for decades with nearly 45 percent of all visiting nurse associations located in the area. It is logical to expect that with such predominance and constancy in the market, the visiting nurse associations benefit from a heightened awareness of their presence on the part of hospital and skilled nursing facility staff. The VNAs have had both the time and the market strength to establish a smooth running referral system, and the large number of agencies in the area has aided access to services.

[27] This decline reflects the drop in the number of VNAs, government, combined government/voluntary and hospital-based agencies in that region during that period (see Table II-10). Although the number of private nonprofits and skilled nursing facility-based agencies grew in New England during the period, their growth was not sufficient in size to offset the decline in the other agency types. It remains to be seen whether proprietary agencies will enter into the home health market with the removal of licensing requirements.

Experience in the North Central and Southern divisions indicate that at least some of the increase in use can be attributed to an improvement in initially limited access. But experience elsewhere shows that increased use also reflected improved access where access was initially high and in the Northeast, where access declined.

C. SUMMARY AND CONCLUSIONS

This paper has presented an analysis of changes in the Medicare home health program during the 1974-1980 time period.. The focus upon Medicare home health is more limited than originally planned due to existing data constraints. However, the Medicare program dominates the home health public market, accounting for 86 percent of all agencies' public charges in 1979. Thus, the narrowing of our original scope does not significantly lessen the utility of such an analysis.

Medicare home health expenditures totalled approximately $640 million in 1980, a 343 percent increase over 1974 expenditures of $144 million. Data constraints forced us to examine factors affecting charges rather than reimbursements.[28]

Visit charges rose dramatically over the period increasing nearly 435 percent. Approximately 53 percent of the increase in visit charges is explained by the increase in persons served. The number of persons served increased by 144 percent, and total visits grew by 178 percent. Utilization rates rose from 16.5 persons served per 1,000 enrollees in 1974, to 33.6 in 1980. An additional 40 percent of the increase in visit charges is attributable to increased charges per visit. Little change was observed in the number of visits per person.

Of the $522.7 million increase in visit charges between 1975 and 1980, $183.9 million, or 35.2 percent of the increase, was attributable to private nonprofit agencies, and 31.3 percent ($163.5 million) derived from visiting nurse associations.

Private nonprofit agencies significantly increased their share of the home health market between 1975 and 1980. By the end of that period, private nonprofits had attained the second largest market share of all home health agency types, surpassed only by visiting nurse associations. VNAs treated 39.4 percent of all persons served, provided 37.6 percent of all visits, and accounted for 33.2 percent of visit charges. Private nonprofit agencies served 21 percent of the users, provided 25.8 percent of all visits, and accounted for 30.4 percent of visit charges.

The discrepancies between users and charges noted above reveal the higher prices charged by private nonprofit agencies than VNAs. While VNAs served 39 percent of all users, their charges only amounted to 33 percent of the total. Conversely, private

[28] Medicare reimbursements as a percentage of agency charges continuously declined throughout the period. In 1974, reimbursements exceeded visit charges (i.e., those charges directly associated with a visit) and amounted to 95 percent of total charges. By 1980, reimbursements represented 90 percent of visit charges and 86 percent of total charges.

nonprofits served only 21 percent of all users, but accounted for 30 percent of visit charges. Average charges per visit for VNAs in 1980 were $29, compared to $39 for private nonprofits. In addition to higher charges per visit, private nonprofit agencies provided on average a greater number of visits per person served--28.8 versus 22.4 among VNAs. These two factors, higher charges per visit, and more visits per person served, resulted in average charges per person served by a private nonprofit agency of $1,109, compared to $647 for those served by a visiting nurse association. Our ability to analyze and explain the cause for such divergent charges per visit is limited by data constraints.

The areas of most rapid growth in utilization of home health services were among the North Central states and the South. These two areas also exhibited substantial growth in the number of home health agencies per 10,000 enrollees--our proxy measure for access to care.

When we employ this measure of access to care, it is evident that outside the Northeast division, increased use reflected improved access. In the South and North Central divisions, this meant an improvement in an initially low measure of access to care. In the Northeast, use increased despite a decline in access. However, even with this decline, the Northeast still maintained the highest measure of access to care in the nation.

CHOOSING MEDICAID NURSING HOME PATIENTS

A. INTRODUCTION

A sellers' market predominates for nursing home care in many areas. More persons seek admission than homes can serve. Virtually all beds are filled at all times. Homes can select which patients to admit. Refusing service to a potential patient does not mean foregone revenue, as another patient will be quickly available to fill the empty bed. Refusing services to heavily dependent patients may actually increase net revenue as less dependent, less costly to care for, patients fill beds.

Descriptive studies of nursing homes' patient selection indicate that homes select patients according to their expected source of payment and their health care needs.[29] Private patients are almost always preferred. Private rates generally exceed Medicaid rates. Individual private patients requiring special services or care can be charged more than the usual rate for an average private patient. A home receives the same payment for all Medicaid patients classified at the same level of care. Serving Medicaid patients with more extensive care needs than others in the same level of care class may mean less net revenue.

An empirical study of patients awaiting discharge from hospitals to nursing homes in Massachusetts is consistent with the descriptive studies.[30] Private patients had the shortest waits (3 days). Medicaid patients' waiting time was much longer on the average (47 days), with the longest time experienced by Medicaid patients who were incontinent and who had frequent behavioral problems (129 days).

Although access problems to nursing homes do exist, they do not appear to be uniform across areas. Occupancy rates do vary, albeit in a limited range. In some areas, entering a nursing home is supposedly not difficult for any Medicaid patient regardless of their care needs, while for other areas, being admitted is virtually impossible for patients with certain needs.[31]

In this paper, we attempt to explain some of this variation, by examining the way Medicaid patient selection relates to measurable market conditions and characteristics of the nursing home. We have used a national data base, the 1977 National Nursing Home Survey (NNES).

It should be recognized at the outset that these data do not permit a direct test of the hypothesis that nursing homes discriminate in selecting patients. Rather than

[29] USDHHS Inspector General (1980), Feder and Scanlon (1982).

[30] Gruenberg and Willemain (1982).

[31] Feder and Scanlon (1982).

observing the selection process itself--seeing which patients are selected and which are rejected--we have data on the outcomes of the process--which patients are selected. Our analysis is based on how those outcomes may be influenced by various factors. However, the most critical element, the characteristics of rejected patients, is not observed or controlled directly.

The next section describes the hypothesized patient selection. The following section presents regression estimates. The final section presents conclusions and discusses policy implications of the findings and the patient selection hypothesis.

B. THE PROCESS OF PATIENT SELECTION

The principal assumption underlying our analysis is that nursing homes select patients to maximize profits or net revenues. When admitting a patient, therefore, the care needs and expected revenue for that patient are compared with those for other prospective patients. In practice, these comparisons will not always involve actual patients. Homes will evaluate the attractiveness of an applicant in terms of others who might seek admission and how soon they might do so. For instance, a home that has a vacant bed might not admit a Medicaid patient who applies if the operator has the expectation that a private pay patient is likely to apply within a short time.

Homes' decisions presumably follow some basic rules which are deduced from the profit or net revenue maximization hypotheses. Private patients almost always receive first preference regardless of condition. Medicaid patients are admitted if a private patient can not be expected to apply within some short time. Lighter care Medicaid patients are more readily accepted; heavier care Medicaid patients gain admission only when neither a private or lighter care Medicaid patient can not soon be expected to apply.

In analyzing whether this process operates as described, the data we have available identify the characteristics of the patients admitted. We can not observe directly whether homes follow the hypothesized selection criteria, choosing the "best" patients from the pool of actual applicants. Instead, we must attempt to control indirectly for differences in the applicants to a particular home.

To do so and test whether the hypothesized selection process is a valid characterization of nursing home behavior we examine the probability that newly admitted Medicaid patients will have heavy care needs, controlling for characteristics of the nursing home and the local nursing home market and patient's payment source. More specifically, we hypothesize

(1) Prob (New Medicaid Patient has Need X) = F (Home Characteristics, Local Market Characteristics, Patient Payment Source)

where:

- Home Characteristics are:
  - Ownership (Proprietary Chain, Proprietary
  - Independent, Nonprofit, Government)
  - Health Labor Cost Per Day
  - Number of Beds
  - Occupancy Rate
  - Percentage of Days Paid by Medicaid
  - Certification

- Market Characteristics are:
  - Number of Unfilled Beds Per Elderly Person
  - Number of Nursing Home Beds Per Elderly Person
  - Proportion of Population that is Elderly
  - Climate

- Patient Payment Sources are:
  - Medicaid Only
  - Medicaid/Private Pay

The NINES does not directly survey a sample of admissions. Instead, samples of current and discharged residents are surveyed. An admission cohort can be created by combined observations admitted during the same period from both the current and discharged residents.[32] Unfortunately, very limited information is collected on these patients' health conditions or service needs at admission. Instead, the current resident and discharged resident survey instruments request information primarily on patient status at the time of the survey and at discharge, respectively.

To identify admission characteristics, we selected sampled patients with short lengths of stay (less than 60 days).[33] Substantial changes in health status or needs of a long-term care population might not be expected within 60 days. However, that assumption may be misleading in that 40 percent of nursing home admissions are discharged within 60 days. For most, the discharge presumably implies a change in health status, either deterioration leading to death or transfer to a hospital, or improvement and a return to the community.

It is, therefore, problematic whether the status at discharge can be regarded as a good proxy to status at admission. Marked differences exist in the prevalence of certain

[32] This approach was used by Liu and Manton (1983).

[33] The current residents sample with length of stay less than 60 days represents admissions during the two months preceding the survey. The discharged resident sample represents discharges for the entire year or, in other words, twelve months of admissions of persons who stayed less than 60 days. To weight the combined current and discharged resident samples to represent a sample of admissions, the discharged resident weights were divided by six. For the regression analyses, a one-sixth random sample of discharged residents was selected.

care needs between the current residents and the discharged residents according to their discharge destination as seen in Table III-1.

In selecting which patient characteristics to examine, we were constrained by differences in the information available in the two surveys. The discharged residents' questionnaire has fewer characteristics. We included all characteristics that have been reported as bases for discrimination that could be measured in both surveys. The charcteristics and the relative frequencies for new Medicaid patients are presented in Table III-2.

TABLE III-1. Percent of New Patients[1] Having Selected Conditions by Current Residency or Discharge Destination

	Current Residents	Discharged Residents' Destination		
		Home	Discharged Resident Other Health Facility	Dead
Incontinence				
Bowel	31.8	14.3	36.0	63.8
Bladder	38.8	15.0	45.6	74.3
Bedfast	7.5	3.6	20.5	54.7
Chairfast	33.7	15.1	29.9	27.5
Oxygen Therapy	2.2	2.5	9.5	24.2
Special Diet	43.5	37.2	47.4	52.3

SOURCE: 1977 National Nursing Home Survey tabulated data.

1. New patients are defined as those with lengths of stay less than 60 days.

TABLE III-2. Percentage of New Medicaid[1] Nursing Home Patients[2] Having Selected Conditions by Patient Payment Source (1977 National Nursing Home Survey of Current and Discharged Resident Data)

Incontinence	
Bowel	32.6
Bladder	38.9
Bowel or Bladder	43.0
Bedfast	13.6
Chairfast	27.8
Oxygen Therapy	5.5
Special Diet	48.1
Number of Patients	75,898

SOURCE: 1977 National Nursing Home Survey, tabulated data.

1. Includes patients with support from Medicaid or other government assistance or other government assistance or welfare.
2. New patients are defined as those with stays less than 60 days.

1. Home Characteristics

Home characteristics may affect the care needs of admitted Medicaid patients in two ways. First, they play a role in determining the pool of expected applicants. Second, they affect the decision rules a home would apply to maximize profits or net revenues.

The first effect is illustrated by homes that have had 80-90 percent of their patients on Medicaid in the past. They would not expect a large proportion of future applicants to be private pay. Given equivalent Medicaid markets, homes admitting a large number of Medicaid patients increase their likelihood of admitting a heavier care Medicaid patient. An example of the second effect could involve home size. Large homes with many beds can expect frequent turnover even with the long lengths of stay for individual patients. Hence, admitting a heavier care Medicaid patient to fill immediately an empty bed will not foreclose the opportunity to admit a private or lighter care Medicaid patient applying later as additional beds empty.

Ownership: A home's ownership type may affect the type of persons seeking admission as well as the home's criteria in deciding on admissions. Profit maximization seems to be a clear and reasonable goal for proprietary homes. Motivations or objectives of nonprofit homes are less obvious. Operating to maximize net revenue from individual patients is consistent with attempting to maximizing the quantity and/or quality of care provided. Greater net revenues provide funds to subsidize the care of additional patients to increase size or simply to augment quality, holding size constant.

These goals, however, may not be consistent with attempting to target care toward certain patients with particular care needs. A nonprofit home want to serve persons of a particular religious or fraternal group. These persons may then be admitted regardless of their impairment or payment source. Alternatively, some nonprofit homes may emphasize the quality of life in their homes through extensive rehabilitation or activities. Extremely impaired persons might not be admitted because they would be incapable of benefiting from that orientation. In these circumstances, heavy care Medicaid patients may not be admitted even when it is economically advantageous. However, if caring for such patients were a goal, they would be admitted despite it being economically disadvantageous.

Government operated facilities are perceived often as providers of last resort. That may be true for hospitals, but in the case of nursing homes it is less clearly the case. Hospitals serve as a back-up to nursing homes; and, therefore, very ill patients unable to get care in a nursing home may enter or remain in a hospital rather than enter a government facility. Government facilities might not admit the more impaired persons as defined in this analysis because they specialize in other types of difficult-to-place patients. Mentally ill patients would be one example. While a potential problem to a normal nursing home because of disruptive or dangerous behavior, patients with mental diagnoses may be admitted to government homes to avoid having them enter a public mental hospital. In the nursing home, federal Medicaid funds may contribute to the cost where as they would not in the public mental hospital.

We have distinguished between independent and chain proprietary homes to see if there are any differences. No strong a priori reason exists based on intuition or previous research to suggest the existence or nature of any difference. Both types of homes are likely profit maximizers. Whether the management in chains is more diligent or efficient in pursuing profit is speculative. Furthermore, the distinction between chain

and independently operated homes in the NNHS does not discriminate according to the number of homes in the chain. Even if the larger chains behave differently from the independents, two and three home chains may not.

Patient attitudes toward homes because of their ownership may strongly influence the pool of patients applying. Government homes may be shunned by private patients. Nonprofit homes may be perceived as "better" or more trustworthy than proprietary homes, thereby increasing the number of patients, especially private patients, seeking admission to nonprofits, other factors held constant.

The possible influences of ownership on patient selection are several and operate simultaneously for and against the likelihood of admitting certain patients. Predicting any net effect is, therefore, impossible.

Number of Beds: As noted earlier, the primary impact of home size on patient selection practice should be that larger homes are less discriminating since they have empty beds more frequently. A potential secondary effect would be poorer management in smaller facilities. Misestimating cost differences among patients, or having false expectations about the potential applicant pool, could result in suboptimal patient selection. These suboptimal practices could involve admitting either too few or too many patients of a given type.

Occupancy Rate: Occupancy rate is perhaps the key variable in this analysis. The central hypothesis is that homes discriminate when the market is tight and beds can always be filled. The most readily available and indeed, most relevant measure of market condition to a home is its own occupancy rate. Nursing homes are far from homogeneous, so that a home in a poor location or offering low quality care will not be attractive to patients and can have difficulty filling beds regardless of how much demand there is for other homes in the area.

Percentage of Days Paid by Medicaid: The composition of a home's past demand serves as an indicator of future demand. Homes that were heavily Medicaid, as noted, can expect to have mostly Medicaid patients apply in the future. They will be less likely to refuse to admit a heavier care Medicaid patient to await possible arrival of a preferred patient. Having a large number of Medicaid patients makes it more likely that the home will have some heavy care patients anyway, so holding a bed open is not optimal.

A counter argument is that these homes have less discretion for inter-patient subsidization and so must discriminate more intensely. Excess revenues from private patients can be used to cover costs of care for Medicaid patients above the Medicaid rate.[34] In heavily Medicaid homes, these revenues are limited and it is more profitable

[34] It should be noted that homes maximize profits by accepting Medicaid patients even when the Medicaid rate is less than the average cost of care. As long as the Medicaid rate exceeds the marginal or incremental cost, profits are maximized by accepting more Medicaid patients.

to spread the amount available among as many Medicaid patients as possible rather than subsidizing fewer heavy care ones.

Certification: Not all nursing homes deal with the same range of health problems. Homes staff to deal with particular types of patients. Rather than characterize this as discrimination, it is more appropriately regarded as specialization. The demand for nursing home care in an area may be large enough to permit efficiently sized homes to target care to only a segment of that demand. Such specialization is probably of benefit to patients in that the home focuses on serving persons with similar needs. Public policies encourage this specialization through level of care distinctions and possibly also benefit from it. Medicaid and Medicare rates are based on average costs, so they pay appropriately if their patients are average for the facility.

Distinguishing among homes in terms of the intensity or type of care they want to provide can not be done well with existing data. Certification level is the only available indicator. Certification is not a precise measure of what type of care is provided. What constitutes skilled and intermediate care differs considerably across states. In comparisons of selected states, it would be reasonable to conclude that the average skilled patient in one state had similar needs to the average intermediate patient in another.

Despite this shortcoming, it seems preferable to include certification levels as a control in the probability equation. On average, skilled facilities care for more dependent, sicker patients. As certification level is undoubtedly correlated with costs, size, and perhaps ownership, incorporating certification allows us to measure the independent effects of those other variables.

2. Market Characteristics

Which Medicaid patients enter nursing homes presumably depends on which other patients are competing for the same bed. Information on these other patients is not available to us as it may not be to a home. A home has expectations regarding these patients based on past experience. We have to utilize proxies which only indirectly indicate what a home can expect.

Two problems had to be faced in selecting market characteristics to control. The first was the limited area data available which would characterize the likely nursing home population. Only in Census years would detailed age, marital, and economic variables be obtainable. The second problem involved defining market areas. Homes' primary market areas undoubtedly do not follow neat jurisdictional boundaries. Even if they did, there is no way of knowing from national data which jurisdictions to include in a particular home's market area.

Cognizant that we could not overcome these problems, we have estimated market differences by using the counties of an SMSA as the market area for homes in metropolitan areas. For non-metropolitan homes, the single county in which the home is

located is treated as the market area. We have limited the market variables to those available on a county basis for 1976 or 1977. To add other variables would have involved extrapolation of 1970 Census data based on 1960-1970 trends. For small areas, such as counties, and for highly disaggregated variables, it was felt the results would be unreliable.

Unfilled Beds Per Elderly: Unfilled beds in the area serve as a summary measure- of both the demand and supply sides of the market. They indicate how tight the market is. For a patient, a tight market (few unfilled beds) would mean that more homes would be needed to be contacted to find an empty bed. For the home, a tight market means more patients applying. Homes in tight markets may then expect the wait between applicants to be shorter and hence may be more selective in their admissions.

Nursing Home Beds Per Elderly: The number and mix of applicants is likely also sensitive to the total number of beds per elderly in an area. More beds presumably means a greater fraction of total demand is satisfied. The patient selection hypothesis means that, as more demand is satisfied, a larger proportion of heavy care Medicaid patients would be admitted. Beds per elderly alone do not provide a proxy for the share of demand that is satisfied. If all demand is satisfied, variation in bed levels have no impact. While this paper presumes a general situation of excess demand, that may not be true for some areas. The inclusion of the unfilled beds variable provides a control so that the two variables jointly can be seen as some proxy for the number and mix of applicants.

While nursing homes' preferences are expected to produce a negative correlation between beds and mean care needs of admissions, state coverage policies may act as a counterforce. When limiting the number of nursing home patients it is willing to subsidize, a state may reasonably want those patients to be the ones with the greatest care needs. Through coverage policies, a state may restrict eligibility for Medicaid nursing home care to more dependent patients.[35]

Climate: Individuals' decisions to enter nursing homes probably depend more on whether they can get help to meet some need rather than whether they have the need. Being able to get sufficient help declines as the extensiveness of needs increases leading to higher rates of institutionalization for more dependent persons.

Climate may be a complicating factor that reduces the ability of persons with minimal needs from getting sufficient help. Persons with minimal needs may be able to depend on individuals outside their household to provide intermittent assistance. Indeed, they may manage while living alone or with another equally impaired person, e.g., an elderly spouse. These arrangements can be threatened or disrupted by severe winter weather, which prevents care givers from being able to perform reliably. The

[35] To be effective at this the state likely must make some provision for the people to be denied nursing home care. Actual examples of how states accomplish this would be subsidization of board and care homes and referral of persons to community services in preadmission screening programs.

result could be that the less severely impaired persons enter nursing homes to obtain a reliable source of needed help.

To control for this effect, we have included in the analysis annual heating degree days as a measure of the severity of an area's climate.[36]

3. Patient Source of Payment

We distinguished among Medicaid patients, identifying those that were Medicaid only and those that had both Medicaid and private income as payment sources. The latter can involve both patients with some private income who must cost share under Medicaid and patients who entered the home as private patients and converted to Medicaid. Whether homes would prefer either of these types to a Medicaid-only patient is problematic, since the total per diem payment received from all patients on Medicaid will be the same.

Preference for patients paying partially from private income may be associated with subtle forms of family support that are more likely for these patients. Requiring payments from families above the Medicaid rate has not been allowed since the early seventies. However, families might subsidize incidental expenses above the Medicaid-allowed personal needs allowance of $25 by or make philanthropic contributions to the nursing home.[37]

Homes can reduce the revenue loss from accepting Medicaid if they admit patients who only convert to Medicaid after some period as a private patient. When market conditions permit, homes reportedly pursue this practice vigorously. Contracts requiring up to two years as a private patient are reportedly conditions of admission to some homes.[38]

Appreciable revenue gains from requiring certain tenure as a private patient would accrue only after several months as a private patient. We have limited our sample to patients with lengths of stay less than 60 days. Homes would seemingly benefit little from having a patient who converted to Medicaid after one or two weeks rather than a patient on Medicaid at admission. Any preference homes have for these patients who rapidly convert would have to stem from myopia regarding the likelihood of conversion by particular patients. This seems unlikely, as homes appear to be quite careful and thorough in screening new applicants.

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[36] This variable proved to be an important determinant of nursing home utilization in a related study (Weissert and Scanlon (1982).

[37] Theoretically, subsidies of incidental expenses would be deducted from a patient's supplementary security income allowance or protected income. Whether those regulations are enforced is unknown.

[38] Feder and Scanlon (1982).

C. EMPIRICAL RESULTS

Equation (1) was estimated using a logistic regression method. The parameter estimates are reported in Table III-3. The estimates do not appear support the patient selection hypotheses. The overall relationship is significant at the .01 level only for the bedfast condition and is significant at the .05 level only for bowel incontinence and either bowel or bladder incontinence.

The individual coefficients on the key variables, occupancy rate, unfilled beds per elderly, and nursing home beds per elderly, are almost never significant. The exceptions are the unfilled beds coefficients in the chairfast and oxygen therapy equations. The former is positive as expected--admitted Medicaid patients are more likely to be chairfast in areas with more unfilled beds. The coefficient in the oxygen therapy case is considerably larger and negative, contrary to expectations.

TABLE III-3. Probability That New Medicaid Patients Have Selected Conditions as a Function of Patient Payment Source and Nursing Home and Market Characteristics (1977 National Nursing Home Survey Current and Discharged Resident Data) Logistic Regression Estimates

Independent Variable	Incontinent Bowel	Incontinent Bladder	Incontinent Bowel or Bladder	Bedfast	Chairfast	Oxygen Therapy	Special Diet
PATIENT PAYMENT SOURCE							
Medicaid Only	-0.430***	-0.496**	-0.479**	-0.123	-0.123	0.312	-0.352***
HOME CHARACTERISTICS							
Ownership							
Profit Chain	-0.017	0.472	0.297	-0.812***	0.429	-0.652	0.183
Profit Independent	0.173	0.482	0.395	-1.168**	0.784	-0.471	0.301
Nonprofit	-0.227	0.229	0.036	-1.311**	0.622	-2.13***	0.292
Number of Beds	-0.001	-0.001	-0.004	-0.00001	-0.001	-0.003	-0.001
Occupancy Rate	0.296	0.077	0.398	-1.209	0.783	-0.635	-0.377
Percentage of Days Paid by Medicaid	-0.146	0.220	-0.178	1.401**	-0.487	0.780	0.888***
Certification							
SNF	1.010*	1.046*	0.999*	0.717	0.714**	0.476	0.713**
SNF-ICF	0.627**	0.526*	0.320	1.135**	0.058	0.294	0.178
MARKET CHARACTERISTICS							
Unfilled Beds Per Elderly	-2.19	-4.994	-4.98	-20.193	38.446**	-103.35**	-24.951
Nursing Home Beds Per Elderly	3.686	5.056	5.059	5.457	-7.33	-12.550	0.601
Climate	-0.0001**	-0.0001	-0.0001	-0.0003*	0.0001	-0.00001	0.0001
Intercept	-0.776	-1.187	-0.875	-0.532	-1.868	-0.686	-0.701
D	0.054**	0.051***	0.054**	0.069*	0.051***	0.047***	0.042

* Significant at 0.01 level.
** Significant at 0.05 level.
*** Significant at 0.10 level.

A greater proportion of a home's days provided to Medicaid significantly increases the probability of new Medicaid patients being bedfast or on special diets. New Medicaid patients admitted to government homes were more likely to be bedfast than those admitted to either proprietary or nonprofit homes. Medicaid patients admitted

to nonprofit homes were significantly less likely to receive oxygen therapy than those admitted to either proprietary or government homes.

Being a Medicaid-only patient rather than being financed by Medicaid and some other source meant a lower probability of being incontinent or on a special diet.

The logistic results do not affirm the hypothesis that patient selection differences are related to identifiable home or market characteristics. However, several strong caveats need to be made concerning this analysis which suggest that it is inappropriate to reject the hypothesis.

One concern is whether the selected conditions identify the heavy care patient that a home will reject when market conditions permit. The conditions were selected because they had been reported as bases for discrimination and could be measured in the NNHS. Their relatively high prevalence suggests they are not the factors that distinguish the marginal heavy care patients. As reported in Table III-2, 43 percent of new Medicaid patients had some form of incontinence; 48 percent were on a special diet; and 28 percent were chairfast. Patients may clearly differ and still have a given condition. For example, incontinent patients could have very infrequent accidents or lack total control. Distinguishing between these two types was impossible.[39]

Assuming the heavy care patients are a fraction of those with the identified conditions, changes in the number of them admitted would affect the total number of patients with these conditions. However, detecting significant differences associated with varying exogenous characteristics is made more difficult because of likely random variation in the number of non heavy-care patients having the condition. Thus, with our relatively small sample and measurement problems among some explanatory variables, insignificant results, may not be surprising.

A second important caveat is that this analysis was an indirect test of the hypothesis. A direct test would involve a comparison of Medicaid patients admitted and rejected. Having data on admissions only means that homes which are very selective, admitting few or no Medicaid patients, carry very little weight in our sample.

To see whether the likelihood of admitting any Medicaid patients differs across facility types and markets, we compared the characteristics of facilities and markets associated with Medicaid admissions to those associated with non-Medicaid admissions in Table III-4. Medicaid patients were more likely admitted to government rather than nonprofit homes. The homes admitting Medicaid patients were larger and provided a 25 percent greater share of their days to Medicaid. Mean occupancy rates were slightly higher, as were unfilled beds and total beds per elderly.

[39] The NNHS current resident questionnaire did ask if incontinence were frequent. However, as both the discharged and current resident surveys had to be combined to form the admission proxy, we had to define conditions that could be consistently identified in both surveys.

All these differences, except the occupancy rate, are consistent with the hypotheses regarding patient selection. It would seem that the selection process might involve two stages. The first is a decision to admit any Medicaid patients; the second is which Medicaid patients to admit. By having data only on Medicaid admissions, homes choosing to admit no Medicaid patients are excluded. Also, homes which are at the margin and admit only a few Medicaid patients receive little weight in our analysis.

TABLE III-4. Mean Values[1] of Explanatory Variables From Patient Selection Equation for Homes and Market Areas Admitting New Medicaid and New Non-Medicaid Patients[2]

	Medicaid	Non-Medicaid
HOME CHARACTERISTICS		
Ownership Distribution		
Profit Chair	36.8%	33.7%
Profit Independent	36.6%	34.6%
Nonprofit	16.4%	24.8%
Government	10.2%	6.9%
Number of Beds	148.0	135.3
Occupancy Rate	89.3%	87.7%
Percentage of Days Paid by Medicaid	68.2%	55.0%
MARKET CHARACTERISTICS		
Unfilled Beds Per 1,000 Elderly	6.87	6.57
Nursing Home Beds Per 1,000 Elderly	71.3	69.8
Climate	4,507.4	4,759.3

SOURCE: 1977 National Nursing Home Survey, Current and Discharged Resident Files tabulated data.

1. Each mean is weighted by the number of new patients.
2. New patients are defined as those with stays less than 60 days.

D. CONCLUSION

The regression estimates do not affirm the hypothesis that patient selection differences are related to home or market conditions. The evidence does not seem strong enough to reject the hypothesis. A more definitive test would involve a direct examination of which patients are admitted and which are not admitted to specific homes. It would deal with the problem of an admission sample representing a skewed sample of homes. It would also be more sensitive to variation in access.

The empirical test attempted here implicitly assumed that the access problem for heavy care Medicaid patients involved whether or not they could get into a nursing home. Access difficulties for heavy care patients may instead involve the length of time required to gain admission to a nursing home and which nursing home they enter. Rather than unable to enter a nursing home at all, they may have to try many homes and wait until a bed becomes available. They may also have to enter a home which is not their first choice as preferred homes may not want to admit such heavy care Medicaid patients. Almost all Medicaid patients being admitted ultimately, regardless of their conditions, would account for the insignificant findings obtained here.

Undertaking such a direct test was impossible with existing data and may be difficult or impossible even with new data collection. Gathering historical information from nursing homes on rejected applicants is likely impossible. Rejecting applicants would, in most cases, be an informal undocumented process. Collecting data prospectively would be very intrusive and could affect the selection process. A second problem with examining a home's applicants may be that the appplicant stream has adjusted to the home's selection practice. Heavy care Medicaid patients may not bother to seek admission to homes known not to admit such patients.

The reality of such adaptive behavior is suggested by the response of one hospital discharge planner interviewed during a study of Medicare beneficiary access to SNP'S. Asked whether there was a problem in placing Medicare beneficiaries, the response was "No, no home will take them so we do not try."'

An alternative approach, which may be viable, would be to examine the experience of patients seeking nursing home placement. Both whether they were placed and how long it took could be related to market conditions and Medicaid policies such as reimbursement and utilization review. Knowing how home characteristics affected its process would be difficult to determine with such data. However, from a policy perspective, knowing how placements are affected by market conditions which may be the result of health planning actions or, by Medicaid policies, is likely more relevant.

This analysis has not demonstrated how nursing home Medicaid patient selection decisions are made. It also does not contradict any of the earlier descriptive evidence that homes do have selection criteria. Even suggesting that the findings might weakly indicate that access problems relate to waiting time, not ultimate placement, does not change the issue for Medicaid policy. Improving access for heavy care Medicaid patients has been perceived as making more efficient use of Medicaid dollars. It is a question of transferring such patient from a higher cost hospital to a nursing home. If nursing homes' selection criteria lead to either a lengthy wait or no possibility of admission, the nature of the problem for Medicaid is the same. Inducing nursing homes to alter those selection criteria presumably might save the program money.

It is important to note that the hypothesis tested here is a restricted version of the more basic premise that nursing homes select Medicaid patients according to their care needs. The hypothesis here assumes those selection criteria vary with home and market factors. Rejecting that assumption still leaves the possibility that selection criteria are extremely uniform across homes. Such uniformity may arise because variation in market condition may occur outside a range that would influence patient selection behavior. That is, virtually all nursing homes may have sufficient demand to be able to avoid certain heavy care Medicaid patients. Also, such uniformity may exist because there are no differences associated with noneconomic factors as was suggested as a possibility here, e.g., variation in motivation by ownership type.

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