

## **Aged-Care Support in Japan: Perspectives and Challenges**

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### Abstract

Global aging experts are beginning to express grave concern about the extent of medical and social services that will be demanded in years to come by a growing but increasingly frail older population. It is in this context that long-term care (LTC) benefits become an important public policy issue with extraordinary fiscal implications as the world ages. This paper explores economic aspects of the market for long term care with a special focus on Japan. First, we describe the LTC system in Japan as presently implemented, and we highlight some aspects of the program that are novel and potentially of interest to other countries seeking models for long-term care provision. Next we discuss alternative projections of Japanese LTC utilization and costs. Finally, since Japan appears likely to experience important shortfalls in LTC in the future, we discuss whether such services might be more efficiently organized and financed under alternate forms of provision.

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*“Veneration of the elderly – a central tenet of both Eastern and Western religious and cultural traditions – obliges family and society to maintain and enhance the well-being of those who are old, particularly if they need assistance.”*

Garber (1999:166)

### **Introduction**

As global aging progresses, experts have begun to express concern regarding the extent and cost of medical and social services that must be devoted to this growing and increasingly frail older population. It is in this context that long-term care (LTC) benefits become an important public policy issue with extraordinary fiscal implications as the world ages. This paper explores the topic of aged-care support in Japan to understand the status quo and what projections suggest for the future. Of Japan's 127 million people, some 19% are currently age 65+; the fraction elderly is therefore half again as high as in the US, with 290 million people and 12% elderly, and Australia, which has 19.7 million people and 13% elderly (USCIA, 2003).<sup>1</sup> As populations age, there is increasing need for medical care for the frail. Currently, in Japan, around 4% of the elderly live in nursing homes, a proportion similar to the US (ACHA, 2003; Ikegami and Yamada, 1996).

In this paper, we discuss economic aspects of the market for long term care with a special focus on Japan. First, we describe the LTC system in Japan as presently implemented, and we highlight some aspects of the program that are of interest to analysts seeking new models for long-term care provision. Next, we devote some attention to regional differences in entitlement and utilization rates, which will potentially require important cross-subsidization flows in years to

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<sup>1</sup> In Japan, of the 127 million people, elderly men made up 9.9 million and elderly women 13.8 million; in the US of the 290 million, men were 14.9 million and women 21 million; and of the 19.7 million Australians, elderly men totaled 1.1 million and elderly women 1.4 million (USCIA, 2003).

come. Next, we discuss alternative projections of aggregate Japanese LTC utilization and costs. Finally, since Japan appears likely to experience important future shortfalls in LTC, we discuss possible roles for private provision of LTC insurance services.

### **Defining Long Term Care**

Though the term “long-term care” is widely used, there is no single agreed-on definition of the concept. Medical experts such as Alan Garber (1996) equate the LTC concept with *ongoing medical care*, particularly that designed to comfort those who “suffer from the disabling effects of diseases and injuries that medical treatment can neither cure nor fully relieve” (p. 143). Similarly, health economists such as Edward Norton (2000: 957) emphasize care provided to those with *chronic medical conditions* who require medical and palliative care. On the other hand, health services researchers such as Nelda McCall (2001: 3) propose a more expansive notion, one that encompasses a “*continuum of medical and social services* designed to support the needs of people living with chronic health problems that affect their ability to perform everyday activities.” A broad approach to LTC is also taken by healthcare management specialists such as Pratt (1999: 6) who identifies LTC according to the users of these services. Those he defines as people who are physically or mentally dependent on others, and who consequently require *health, social, personal, and other services* for a sustained period of time.

Since experts differ in what they mean by LTC, it is not surprising that LTC providers are many and diverse, and the product mix included in LTC varies by country and over time. Of course, the traditional nexus of support for the elderly and disabled throughout history was the family, with multigenerational households exchanging goods and services in a mutual support system. People lacking that option were forced to turn to “poorhouses” financed by charities and

other welfare organizations (Pratt, 1999). In the last 50 years, however, many developed countries experienced dramatic fertility declines and rising longevity, all of which contributed to rapid population aging. Combined with a more mobile population, these facts produced a sharp fall in the prevalence of multigenerational households, making it increasingly difficult for the relatively small working-age cohort to care at home for its long-lived and needy elderly parents.

Partly in response, governments in many developed nations have begun to establish, finance, and otherwise support nursing homes, which today have become the care institution most closely associated with the notion of long-term care, yet the wide range of services today associated with LTC may be summarized as follows (Pratt, 1999: 21-22):

- *Nursing Facilities*: Also known as nursing homes, these are residential institutions licensed by government agencies that provide room and board as well as nursing care and some therapeutic services. In the US, a further distinction is made between *Subacute Care* facilities which are very high-level and usually short-stay nursing facilities; *Skilled Nursing Facilities* (SNF) which deliver intensive nursing services (e.g. IV treatments, occupational and physical therapy) over longer periods of time; and non-skilled nursing facilities which provide long-term and lower-level medical intervention.<sup>2</sup>
- *Assisted Living/Residential Care facilities*: This category of residential caregiving facility accepts people requiring assistance with both regular and instrumental activities of daily living.
- *Adult Day Care services*: These are non-residential programs providing consumers with meals, social and educational activities, and supervision.<sup>3</sup>
- *Home Health Care services*: Generally these offer consumers services in their own homes for a few hours a week, including a dietary consultation, a modest level of nursing attention, and some therapy.<sup>4</sup>
- *Hospice Care*: Support is offered by trained but often volunteer staff for those in the

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<sup>2</sup> In many countries, people are classified as being “severely disabled” if they cannot execute at least two of the five Activities of Daily Living (ADLs; Weiner et al., 1994: 5). ADLs involve the ability to bath, dress, eat, maintain continence, self-toilet, and transfer in and out of bed. The typical US nursing home resident requires help with at least 4 (ADLs), which makes it extremely difficult for them to remain in their own homes even with home care (MetLife 2003). In the US, 4.5% of people 65+ were in a nursing home in 2000 (MetLife, 2003), but the percentage rose rapidly with age: 18% of those 85+ were in a nursing home. Nursing home costs in 2002 in the US cost \$50-60,000 annually, just for room and board (MetLife 2003).

<sup>3</sup> A simplified list of the so-called Instrumental Activities of Daily Living (IADLs) includes preparing meals, doing housework, taking medication, shopping, using transportation, managing money, and using the telephone (Powell, 1999).

<sup>4</sup> In the US, paid home care services were used by 28% of people 50-64 needing help with ADLs, and 48% of those age 75-84 (MetLife 2003). Hourly rates for home health aides averaged \$18/hour in 2003 (MetLife 2003).

final stages of a terminal illness.

Experts often propose that these services and facilities should be thought of as arrayed along a so-called continuum of care. In the ideal case, a customer's case would be managed in a coherent and integrated way, and this care would be paid for without gaps. It is worth emphasizing, however, that in practice the institutions and entities which provide care deemed useful and/or necessary for the physically and mentally dependent often are not integrated in a comprehensive way, either in terms of services or financing. Furthermore, even today, much of the care for the long-lived and needy elderly is still provided informally by relatives, throughout the developed and developing world (McCall, 2001).

### **Socially-Provided versus Privately-Provided LTC**

While some disagreement remains regarding *what* should be included in the LTC concept, an even more contentious debate has raged for many years regarding *who should pay* for long-term care and *how it should be delivered*.<sup>5</sup> Some believe that private-sector insurers can develop and market insurance products that efficiently provide the needed protection against the possibly catastrophic costs associated with having to go into a nursing home. Others take the position that LTC insurance cannot be provided in a competitive market, necessitating that a governmental entity mandate participation in a social insurance scheme.

Many who favor the social insurance approach argue that LTC should be provided via a central delivery system paid for by mandatory premiums (taxes dedicated to the LTC program).

Proponents of the social provision viewpoint offer several arguments to support their case:

- a) Consumers are underinformed of the risks and costs associated with LTC, so they must be protected by a paternalistic system from failing to purchase LTC insurance;

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<sup>5</sup> See for example Garber (1999), Pratt (1999), and McCall and Korb (2001).

- b) A private LTC insurance market would suffer from adverse selection: those who anticipate requiring care would buy insurance coverage, driving up premiums for the rest of the population and destroying the risk pool;
- c) A private LTC market would suffer from moral hazard: those who lack insurance would not use LTC services but might overuse the services if they had insurance, thus driving up premiums and producing a market breakdown;
- d) LTC costs are often catastrophic and many people cannot afford to buy insurance to cover them; and
- e) The elderly should not be forced to sell their homes and spend down all their assets, if they need LTC coverage.

Some of these arguments could be addressed with efforts to make private markets work better, rather than necessarily implying that a LTC system must be mandated and centrally-run. For instance, misinformed consumers could be better apprised of LTC costs, which could enhance demand for privately provided insurance products. And some of the arguments would mean that mandating participation in a LTC system and probably some regulation of prices would help preserve the risk pool, though they do not necessarily imply that the services themselves would need to be provided by a government entity. Mandating participation in the LTC system would mitigate the adverse selection problem, though it would not help on the moral hazard front. That is, to ensure that people did not overutilize care, it would still be necessary to establish strict requirements for care provision as well as deductibles and co-insurance. And finally, the equity arguments (d and e) imply that people with low income and/or low financial wealth should be subsidized. Of course, whom and what to subsidize will surely be a matter of debate, but this view requires that all participate so the better-off do not opt out. Again, the social provision view need not require that the government set prices or directly dispense services, though ultimately some rationing would be required if market prices are not used to allocate LTC benefits across those with a demand for services.

By contrast, those who stress the need for market approaches to LTC insurance emphasize several distinct arguments to support their case, including the following:

- a) Consumers may not purchase private LTC insurance because they perceive that government “safety net” programs will care for them if they become indigent; accordingly, low demand for private insurance results at least in part from government “crowd-out”;
- b) Governmental provision of subsidized care could inefficiently boost utilization whereas private insurance might mitigate this tendency with deductibles and co-insurance;
- c) Many people might be able to finance LTC by saving for their own old age, by liquidating private assets (including housing equity) to cover costs, or by receiving care from their families (which many elderly would prefer);
- d) Subsidized government provision can cause inefficiencies in both the labor and the LTC markets, and evasion associated with redistributive taxation;
- e) Privately purchased LTC insurance coverage would permit tailoring of care to consumers’ particular needs and wishes, better than a single menu offered by government.

In other words, many who favor a market-based insurance approach to LTC provision would thus argue that markets are likely more efficient than governments at establishing prices and quantities of long-term care services sold. Some concerned that the poor could end up without care would likely favour a voucher system so that a minimum level of care could be provided to destitute consumers requiring LTC, but resulting low benefits and restrictions on access would mean that most consumers would have to pay for care at prices reflective of economic resource costs. Such an approach, if combined with mandatory participation, would still embody some inefficiencies, but it would offer consumers incentives to seek lower-cost alternatives, and to undertake more self-provision, either through saving or insurance, than would be the case otherwise.

### **Aged-care Provision in Japan**

The current LTC system in Japan is a relatively recent addition to the country’s mandatory national health care system established in 1961. Under the Japanese national healthcare plan, individuals are assigned coverage for medical care based on their location of residence or job (Ikegami and Campbell, 1999). Each employer or municipality (prefecture) then must offer mandatory healthcare coverage financed by premiums levied on household heads (in the case of the community-based plans), or shared half by employers and half by employees (for

company-based plans; Ikegami, 2003). Self-employed workers pay the entire healthcare premium themselves. National fee schedules are set by the government and apply to all providers in Japan; medical care providers are further prohibited from balance billing (Ikegami, 2003). In 2002, for instance, fees for medical procedures were cut by the central authority by 1.3% overall, and by 5-30% for some services such as CT scans and MRIs. Drug fees are also set centrally and were reduced 5% in 2002; drug competition is permitted as long as prices are below the centrally-set fee (Ikegami 2003).

When citizens reach retirement age, they are required to join the Citizens' Health Insurance plan (CHI), a decentralized system providing various levels of home care and also institutional care. As part of this system and particularly from 1973 on, the frail elderly were entitled to free hospitalization even if they did not require intensive medical care; as a consequence, by 1993 the elderly accounted for almost half of all hospital beds and one-third stayed over one year (Campbell and Ikegami, 2000). This phenomenon, termed "social hospitalization," was the target of reform under the Gold Plan of 1989 which was then revised in 1994. Under this approach, politicians formally acknowledged that care for the frail elderly was a problem of growing national consequence, and the central government instituted efforts to boost the number of nursing home slots, adult day-care centers, and home health aid providers. At the same time, municipalities were given a key role in setting eligibility standards and determining who was entitled, in keeping with public assistance philosophy.

The present LTC program in Japan was introduced in 2000, with four key objectives according to the Japan Ministry of Health, Labor, and Welfare (JMHLW, 2003). First, the approach was intended to reduce the burden of home care of the elderly, a burden traditionally borne by women. In other words, this program represented a major shift in the responsibility for

elderly care away from the family, and toward the state (Campbell and Ikegami, 2000). Second, the new system sought to make more transparent the relationship between benefits received and premiums paid into the system. Third, the new program insurance tried to integrate what had been a vertically-divided system of health, medical and welfare services operating relatively independently, so as to provide a means by which customers would receive comprehensive services from a variety of institutions of their choice. Fourth, by separating LTC care from health care insurance coverage, the new insurance program sought to reduce the number of “social hospitalization” cases where elderly were hospitalized simply because of lack of viable alternatives.

#### *Program Benefits*

Focusing first on system benefits under the Japanese public LTC system, it is explicitly intended to provide in-home services (at-home care) and also services at facilities (institutional care).<sup>6</sup> All persons age 65+ are eligible, along with people age 30-64 with age-related disabilities. Eligibility is determined based on condition, rather than income and/or assets, and is to be reevaluated every six months (Campbell and Ikegami, 2000).

To receive LTC benefits, an individual must undergo a lengthy and information-intensive disclosure process, beginning with application to an expert committee which collects extensive information and applies a computer algorithm with 85 items including income and asset data as well as health information (Ikegami, 2003). Facilities-based services are offered only to customers who are certified by the LTC expert committee as needing such care.<sup>7</sup> These committees must

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<sup>6</sup> Unless otherwise noted this discussion is adapted from JMHLW (2003).

<sup>7</sup> The government has defined several categories of care required. The first category, indicating the least care, is the so-called “Support Required” condition; here the consumer lives independently but requires any assistance for Instrumental Activities of Daily Livings (IADLs) such as taking medication and phone calls. Five levels of “Care Required” have been distinguished, all of which require that the consumer cannot live independently and requires care in basic Activities of Daily Lives (ADLs). Care Level 1 is defined as having more IADLs than the “Support Required” category; this individual would require partial care for daily living and care for IADL. Care Level 2 is defined as

make a screening determination based on the opinions of doctors within 30 days of application (Campbell and Ikegami, 2000). While standards for long-term care requirement certification are required to be uniformly and objectively determined nationwide, each municipality appoints its own examiner group usually comprised of two physicians and other care providers. It is interesting that no municipal government officials directly charged with budget responsibilities serve on the committees, which may diminish the incentives for cost-cutting (Campbell and Ikegami, 2000).

At the time a person is certified in need of LTC, he is further determined as falling into one of six health condition categories identified as Care Levels 1-5, versus “support required.” Benefit entitlements correspond to each care level, though services provided may vary across regions. On the whole, long-term care “welfare” facilities mainly focus on the consumer’s activities of daily living, while health facilities are mainly oriented toward rehabilitation. LTC medical facilities are mainly health-care delivery institutions. As an example, the financial value accorded to in-home benefits and home-visit outpatient services varied in 2003 from ¥62,000- ¥358,000/month, and for short-stay service, people are entitled to 7-42 days in a facility every 6 months. Facility benefits are determined according to the level of long-term care required. After the municipality board assesses the customer’s eligibility and level of care needed, he is referred to a care manager who then consults with the customer as well as the patient’s doctor. After the customer approves the care plan, the care services actually delivered; customers are permitted to switch care managers at will.

Two types of services are offered under the LTC program. *In-home services* include a

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having additional need for help with ADLs in addition to the problems defined above. Care Level 3 requires more help with both IADLs and ADLs than Care Level 2 and the individual would require total care. Care Level 4 is defined as having all previously described conditions along with worse functioning in the ADL area; such an individual would find it difficult to live without care. Care Level 5 is defined as finding it impossible to live without care, and having worse ADLs than Care Level 4. To ensure uniformity of certification, primary judgment is based on estimating a consumer’s required “minutes of care” required per day as well as other indicators of dementia. These are described as typical requirements for each care level: Care Required: 25-32 minutes; Care Level 1: 32-50 minutes; Care Level 2:

variety of offerings including (1) home-visit/day services (home-visit long-term care, home-visit bathing, home-visit rehabilitation, day rehabilitation (day care), home-visit nursing care, day service, welfare devices leasing); (2) short-stay service/short-stay care; (3) in-home medical care management counselling; (4) care service for the elderly with dementia; (5) care service provided in for-profit private homes for the elderly; (6) allowance for purchase of welfare devices; and (7) allowance for home renovation (handrails, removal of level differences, etc.). *Services at facilities* are described according to three types of nursing homes: (1) long-term care welfare facilities for the elderly (special nursing homes for the elderly); (2) long-term care health facilities for the elderly; and (3) long-term care medical facilities for the elderly. The last type also includes sanatorium-type wards as well as wards for elderly patients with dementia, and hospitals with enhanced long-term care service provision (for three years after implementation). Medical care, per se, is not provided under the LTC program, but rather under the national healthcare system. In 2003, the All-Japan Federation of National Health Insurance Organizations (AJFNHIO, 2003) estimated that 3.7 million persons were certified as in need of some LTC. Of these, only 2.7 million received care, with at-home care users totalling 2 million (57.6%) and institutional care users totalling 0.7 million (20.0%).

Uniform nationwide rates for all covered LTC services are based on the units concept and set by the JMHLW. The Ministry has associated a given number of standard "units" for particular services, and then it values each unit depending on the service involved and by region (to take into account regional wage differentials of service providers). Currently a unit is worth ¥10-10.72, though this is to be revised every three years. For example, 231 units are associated with home-help service care ranging from 30 minutes to one hour (as of April 2003), regardless of actual care levels. This means that the price of home-help service in a typical area is ¥2,310, so the

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50-70 minutes; Care Level 3: 70-90 minutes; Care Level 4: 90-110 minutes; Care Level 5: Over 110 minutes.

customer pays 231 yen to receive that service and the municipality pays the rest. The number of units assigned to institutional care depends on the customer's required care level. For example, in a typical long-term care welfare facility, 959 units per day are allocated to a Care Level 5 case, and 677 units are associated with a day in a Care Level 1 environment. Further detail on the unit allowances for different types of care is provided in Table 1, arrayed by the condition of the elderly person.

*Table 1 here*

### *Program Financing*

Turning to financing, the Japanese public LTC system is a pay-as-you-go program, financed by a combination of earmarked premiums levied on insured persons and general tax revenue. Half of the program costs are paid by premiums assessed to workers and their employers as well as retirees (deducted from their public pensions); these premiums are collected by municipalities. It is worth noting that the LTC premiums are means-tested: for example, the “basic” premium is ¥3,293/month for “Category 1” individuals (JMHLW, 2003), but it is higher for other categories of individuals. Category 1 individuals must be age 65+, among whom some are exempted from municipal taxes by virtue of having very low income; the group also includes those on public assistance, people with confirmed disability, and widows and widowers whose total income in the previous year is less than 1.25 million yen. Category 2 persons are those age 40-64 who are insured by the national health insurance system. A Category 2 individual having income under ¥2.5 million annually pays a LTC premium of 1.25 times the “basic” amount, while an individual with income over that threshold must pay a premium set at 1.5 times the “basic” amount.<sup>8</sup> Premiums also vary across municipalities. Workers under the age of 40 do not currently

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<sup>8</sup> In addition, these premiums may be exempted and/or reduced “at times of emergencies” according to the JMHLW website.

pay premium taxes into the LTC system.

The government initially set premium levels in 2000 and revised them in 2003; intentions are to again revise premiums every three years hereafter. Annual LTC expenditures in 2002 totalled ¥5.2 trillion (AJFNHIO, 2002), with premiums valued at just over half of 1% of annual earnings, amounting to about 33% of the total cost (Campbell and Ikegami, 2000). Premiums paid by the elderly (age 65+) cover 17% of the program's cost. The remainder of program costs are paid from central government coffers (25% of the cost), prefectures (12.5%), and municipalities (12.5%).

In addition to premiums, eligible consumers must pay additional out-of-pocket amounts for services and care. The eligible person must pay a 10% co-insurance amount for each insured service, and he is also responsible for meal charges in the nursing home. These co-pays are set by service and type of care, and vary depending on the consumer's care level but not his income level. After spending up to a threshold, the consumer must pay for 100% of the additional cost, until hitting a stop-loss threshold called the "high-cost long-term care service limit." Above that threshold, additional expenses incurred by the consumer are covered by the LTC program at 100%. The stop-loss threshold is reduced for low-income consumers, in some cases by more than half.<sup>9</sup> In 2003, for instance, a Care Level 3 consumer faced an out-of-pocket limit for care services of 26,750 units/month, with one unit equal to ¥10. In other words, he was eligible to use care services worth ¥267,500 in a month simply by paying ¥26,750. For meals, the standard charges amounted to ¥23,400/mo (or ¥780/day). If the cost of services consumed exceeded this limit, the consumer would have to pay for all the additional services, up to an out-of-pocket maximum of ¥37,200/month for a non means-tested consumer. After that point, all additional costs would be

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<sup>9</sup> An old-age welfare pension recipient has an out-of-pocket limit of ¥15,000/month; a municipal tax-exempted person's limit is ¥24,600/month; and a regular taxpayer has a limit of ¥37,200/month.

paid by the system.

### **Regional Differences in Dependency, Capacity, Utilization and Costs**

One rather interesting aspect of the Japanese LTC system is that some aspects are highly centralized, while others are quite decentralized. The central government requires that LTC services can only be provided by non-profit nursing homes and hospitals, whereas home-care services may also be provided by private for-profit firms. Prices of services and units of care are also set by the central government, but each municipality – of which there are 3,200 of them – then decides which people are eligible for what kinds of care. Municipalities set premium levels for LTC at the local level, and they also collect premiums from workers and retirees in their locales. And finally, the “insurance carriers” of this long-term coverage are the municipal governments which in turn approve the care providers. In the case of at-home care, these include local government service organizations and non-profit outfits and more recently, for-profit firms. Since fees are set centrally, providers are intended to compete based on quality of care, though it is not yet known whether consumers and their families are able to judge, and act on, the information provided.

A consequence of this “decentralized yet centralized” approach is that there are important regional differences in provision and capacity. Each community has different income and age structures, which results in rather interesting utilization patterns by region, as is shown in Figure 1 and Table 4, taken from the All-Japan Federation of National Health Insurance Organizations (AJFNHIO, 2003).<sup>10</sup> While the percentage of elderly as a fraction of the Japanese working age population (defined as 15-64) averages 31%, it varies from a low of 19% to a high of 43%. Also there are substantially different concentrations of elderly requiring services across the country,

meaning some local areas are more likely to confront serious financing problems than others. For example, elderly entitled to LTC services amount to only 4% of the working-age population overall, and 14% of the elderly population. Nevertheless the range is again large, from 2 to 7% of the working-age group, and from 12 to 18% of the elderly. Figure 1 groups the 47 Japanese prefectures by region, and the graphic makes clear that there is substantial regional unevenness in terms of where the elderly live, with higher concentrations in the southern regions of the nation and lower rates in the Kanto region. Entitlement ratios are less different, as is clear in Figure 1 and Table 2.

*Figure 1 and Table 2 here*

Evidently the elderly in Japan, as in other countries, are not dispersed evenly across the countryside. In the past, many elderly remained behind in rural sectors of the country when their children moved to the cities in search of work. In the future, some argue that the elderly will become increasingly concentrated in a few urban prefectures. For instance, Doteuchi (2003) suggests that the largest growth in elderly populations will be concentrated in the nation's top major metropolitan areas, particularly Tokyo and Osaka. This concentration raises concerns, since elderly urban housing is often crowded and of low-quality, it may be ill-suited for those with physical limitations, and often the living situation may be inappropriate for those needed frequent services and attention.

Another important point to note is the substantial differences in terms of LTC capacity across regions, particularly regarding the number of beds available in institutions. Figure 2 and Table 4 indicate that beds per 1000 elderly average 33 overall, with a high of 50 and a low of 22; the ratio of beds/eligible elderly averages 238 per 1000, but the low is 169 and the high is 319. Interestingly, the capacity is highest per capita in the Tyubu region, and also in the south of the

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<sup>10</sup> These figures are derived from Statistics Bureau (2003).

country (AJFNHIO, 2003).

*Figure 2 here*

Utilization ratios are also of interest, insofar as they reflect regional differences which will likely translate into uneven cost patterns across the nation. Figure 3 indicates the regional variability in institutional care users per elderly, which averages a 3% rate overall, with a range from 2 to 5%. An even larger range is observed for at-home care user, where the national average of 8% covers a range is from 5 to 10%. Here too it appears that utilization rates are lowest in the Kanto region, and highest in the south of the country, particularly Miyazaki and Okinawa.

*Figure 3 here*

A related consideration regarding the current decentralized LTC system is that it appears to be suffering excess demand for its services. Kishida (2002: 269) writes that “since LTC insurance was initiated, there has been a sharp increase in applications to these special skilled nursing homes, and waiting periods of 6 months to one year are not unusual.” Asahi Shinbun (2003) reports that a survey of prefectural governments found over 200,000 elderly people were on waiting lists seeking entrance to special care homes, among the subset of offices keeping records (only 27 of the 47 responded with data). The article also found substantial shortfalls since in 2001, residences for those age 65+ who could not care for themselves were operating at 97 percent capacity, and the national capacity was only for 314,000 residents in total. Ikegami (nd) finds a substantial rise in the fraction of the elderly population certified as needing care over time, from 10.5% in 2000 to 14.1% in 2002, versus the anticipated ratio used for planning purposes of 12%. Of those certified, the percent actually receiving benefits rose from 76.1% in 2000 to 77.8% by 2002, with the remainder waiting to be accepted in institutional facilities. As the population becomes more aware of the benefits available, it is likely that excess demand will rise.

To the extent that Japanese LTC services are priced in such a way that they reflect shortages, one would expect that capacity problems such as these would result in higher costs per user in the different regions of the country. On the other hand, cost pressures might not be registered very strongly, compared to a model where prices are set by markets, since the government currently establishes service fees and changes them only every three years. Figure 4 therefore confirms a very low degree of variability across the country in cost per user, with the average institutional cost per user of institutional services totalling about ¥ 43,000 annually and at-home care for homecare users amounting to about ¥11,000 annually. The standard deviations around these numbers are quite small, on the order of ¥900-1,000. Evidently, substantial differences in utilization and capacity are not playing out in terms of regional cost differentials at present.

*Figure 4 here*

It must also be noted that regional disparities are also influencing the revenue side of the program. Ikegami (2003) has argued that joblessness is contributing to lower system revenues, particularly in some prefectures hardest hit by the long recession. In addition, approximately 40% of the elderly participants pay no premiums, due to either evasion or waivers. There is increasing awareness of a need to bring cross-subsidization into play. To this end, the government has earmarked a sum in the amount of 5% of the program's budget, to be used to adjust for differences in municipalities' financial capabilities. The subsidies will differ across municipality. In addition, the government has said that it intends to introduce new financial management techniques to oversee cost control efforts.

In order to analyze the observed patterns further, we turn briefly to a multivariate analysis of the determinants of LTC entitlement and utilization patterns across Japanese prefectures. In

particular, three dependent variables are selected for analysis: observed prefectural entitlement rates among the elderly, and utilization rates for both institutional care and at-home care. These are regressed on three explanatory variables also measured at the prefectural level: geographic area, population density, and per-person cost of institutional or at-home care.<sup>11</sup> The goal is to evaluate whether, in particular, use of the more expensive institutional LTC care services is higher in rural vs urban areas, whether population density raises or lowers the use of institutional care, and whether higher per person cost of care is associated with higher or lower institutionalization rates.

The particular functional form we use is as follows:

$$Dep\ Var_{it} = f(\text{Area}_{it}, \text{Population density}_{it}, \text{Price of Care}_{it})$$

where *i* refers to the prefecture, and *t* refers to the year of the data (2000 and 2001 information was used in the analyses). Table 3 summarizes the results, though we remind the reader that these are reduced-form formulations, making it difficult to separately identify demand and supply. Panel A summarizes findings for entitlement rates, and we see that entitlement rates are currently lower in the more densely populated areas of Japan. This confirms that rural areas are the most likely to have higher percentages of elderly needing LTC, a finding that may change in the future.

Furthermore, entitlement rates appear to be uncorrelated with the user cost of all LTC care, but they are positively associated with the price of institutional care and negatively related to the price of at-home care. This may reflect municipalities' greater willingness to certify more elderly as needing care when the cost of institutionalization is higher, or conversely it could simply mean that greater demand drives up the price of institutional care.

*Table 3 here*

The empirical relationship between utilization rates for at-home care and institutional care

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<sup>11</sup> The prefectural area and population statistics are available at JMPMPAPT (2003). The price per person of institutional and at-home care is derived from JMHLW (2003).

is presented in Panel B of Table 3. The equations for at-home care are not particularly precisely estimated, with low levels of explained variance. Population density and area are not particularly statistically significant, though the negative signs do suggest more densely populated areas have lower at-home utilization rates. It is interesting that at-home care utilization rates are negatively, but weakly, associated with at-home care utilization, but there is a strong positive effect of institutional care prices. This latter effect may indicate substitution: that is, higher-priced institutional LTC may increase the demand for at-home care. Finally we examine the institutional user rate among the elderly, and here again we find important negative effects of population density: the elderly in higher-density areas are much less likely to be institutionalized, even holding constant price of care. It is interesting that institutionalization rates are positively associated with the price of institutional care but negatively associated with at-home care prices. These effects seem again to suggest that greater demand drives up the relative price of institutional care. Further research will be required to determine which factors are more important in the structural relationship.

### **Public LTC Service Utilization and Cost Projections**

To evaluate how the public component of Japanese LTC may evolve over time as the population ages, it is useful to assess existing models of utilization and cost projections. The reader is reminded that LTC projections are necessarily fraught with uncertainty. Data on existing utilization patterns which are then multiplied by population projections can result in imperfect projections because of increases in demand when care services are subsidized and available. There may, however, be reductions in demand if copays and deductibles are raised, or if the existence of the LTC system contributes to the rehabilitation and recovery from illness and injury. In addition,

some experts would project substantial declines in future utilization rates as a result of more resilient older populations. For instance Fries (1980) contended in a controversial but influential paper that “[e]xtension of adult vigor far into a fixed life span compresses the period of senescence near the end of life.” Subsequent research offers additional empirical support of this view including Lubitz et al. (2003) who suggests that longer lifespans may not necessarily boost healthcare spending per capita. In any event, future morbidity declines will probably not offset cost increases attributable to the rise in the percentage of the population that is elderly (Garber, 1999).

A group working to generate projections of possible future LTC need and utilization is the Japanese Ministry of Health, Labor, and Welfare, relying on the methodology used by the Research Group on Elderly Care and Support Systems for Autonomous Living. To date their methodology has not been explicated in a formal document, and the resulting estimates remain quasi-official. It is known that the office estimates the number of demented elderly for every five years going forward from the period 2005 to 2045, and it also estimates government net expenditures (aka “Evaluation Payments”) and the share of national income and social security expenditures accounted for by these LTC costs for the years 2005, 2015 and 2025.

A different projection by Kishida (1998) estimated the number of elderly needing care and found far more shortfalls than MHW found. Relying on the 1993 incidence rates from the Ministry of Health and Welfare’s Research Group on Elderly Care and Support Systems for Autonomous Living, he concluded that more people would require care over time than the government estimates, and by 2020 he concluded that the number needing care would rise to 4.8M (assuming a 3% annual growth rate) and the percent needing care will grow till 2030. He uses the “current” unit costs of LT care services. These projections are “much higher than the MHW’s rough estimate made in

1995 for total LTC expenditures” – they had forecasted for 2000 4.2 trillion yet in total instead of 8.5. The diff is mainly because Kishida includes living expenses for elderly, and he also imputes a value to the care provided by family members to the elderly (no breakdown of exactly comparable numbers, however).

Since projections of elderly eligibles and costs of LTC vary substantially, we have assembled a summary of the likely alternatives for future patterns in Table 4. These rely on historical data for the number of elderly requiring LTC in Japan during the 1990s (see Table 5), though it must be recalled that utilization patterns could well be higher inasmuch as the current LTC system went into effect in 2000. It is therefore likely that historical trends may represent an underestimate of costs of LTC care, given the population aging and likely increased demand for LTC services. Table 6 offers the official projections of the number of elderly expected as of 2025 as well as the frail, bedridden, weak, and numbers expected to need LTC services in that year.

*Tables 4, 5, 6 here*

Based on these numbers, we can bound the range of cost estimates for LTC in Japan by 2025. Assuming that costs per eligible person remain constant by 2025 and that the share of users does not change, total costs will reach ¥9 trillion as compared to ¥5.2 trillion currently (AJFNHIO, 2002). Assuming that the share of at-home users rises at historical rates, but holding at-home costs as well as institutional users and costs fixed, the projected expenditures would exceed ¥10 trillion. Allowing both the number of at-home users and cost of home care to rise at historical rates would boost estimated costs to ¥26 trillion. The figures would be massively higher if the cost and utilization rates for institutional users increased at historical rates, as well.

In the future, more sophisticated projection models could be developed for Japan, if data permitted the analysis of statistical transitions between different health status categories which

influence healthcare utilization and cost patterns. In the US case, for example, Robinson (1996) has developed transition matrices that differ by age and sex, using panel data on the elderly for the period 1982-1989.

### **Prospects for Private LTC Insurance**

Given the catastrophic size of the potential expenses involved in long-term care, it is striking that the private insurance market plays such a small role in Japan as well as in many other developed nations. For instance, Garber (1999) argues that the “most striking feature” of the US health care system is its failure to develop much of a private insurance sector. Only one in five married couples deemed to be able to afford private LTC insurance in the US, for instance, is adequately protected against this risk in retirement (Merlis, 2003). Many attribute this shortcoming to the pervasive influence of public programs such as Medicare and Medicaid, which tend to crowd out privately-provided LTC insurance (Doerpinghaus and Gustavson, 2002). The wealthy tend to self-insure, leaving the middle class as the group potentially most interested in private LTC coverage. It is widely believed, however, that this middle group thinks that their LTC will be met through Medicare (which it does not), so hence do not purchase individual policies. Better marketing on the insurers’ part could correct this misinformation, yet this has not yet gone very far.

#### *The Demand for Private LTC Insurance*

Several factors will influence Japanese demand for LTC in future years which are difficult to predict, including developments in health care and technology, and changes in length of time during which the elderly population experiences periods of frailty. Perhaps the greatest unknown is how attitudes in Japan will continue to evolve given what is widely recognized as a fundamental

change in the society's approach to care for the elderly. On the one hand, establishing an entitlement-oriented LTC program in Japan will surely make it possible for older persons to accept services without social stigma. On the other hand, demand for LTC may not grow as quickly as the elderly population. This is what occurred in the US recently as a result of falling disability rates in the older population. Indeed, decreased morbidity among the elderly may mean that more people are able to care for their spouses in a nonmarket setting, thus reducing the demand for institutional LTC (Lakdawalla and Philipson, 2003). In addition, levels of wealth will surely influence the demand for care, by directly shaping older consumers' ability to pay for care, and indirectly by influencing younger workers' ability to pay for rising premiums associated with the national mandatory system.

Another key factor affecting the demand for LTC will be the attractiveness of these services to elderly consumers, particularly institutionalization, as compared to the alternatives of at-home care or residential living of some other sort (Pauly, 1990). In other words, people may be less likely to opt for institutionalization if attractive and low out-of-pocket cost substitutes are available. The medical literature on this topic is discouraging, since it suggests that home care is not a particularly effective substitute for nursing home care. One well-designed experimental program in the US, known the Channeling Demonstration project, showed that assigning expert case managers to help frail customers remain in the community increased costs and patient satisfaction, but did not forestall health deterioration, nursing home admission, or death (Garber, 1999:148). From a quality-adjusted perspective, then, the economics profession has concluded that the price elasticity for nursing facilities among the very ill is fairly small. On the other hand, some aspects of nursing home demand do appear to be price-sensitive, particularly among those in nursing facilities for short stays (Garber and MaCurdy, 1992).

In Japan's case, a variety of price elasticities for different types of institutional care were evaluated by Noguchi and Shimizutani (2002) who examined the determinants of nursing home exit and reentry. Using a unique dataset on Japanese nursing homes from Kaigo Service Shisetsu Zigyousho Chousa (Survey on Care Service Providers) conducted by the government in 2000, they showed that a one percentage point rise in consumers' cost of institutional care increased their probability of returning home by only 0.04 percentage points from long-term care welfare facilities. The estimates were much larger, 3.7 percentage points, for exits from long-term care health facilities. It is also interesting that they found large price elasticities with respect to re-hospitalization probabilities: a one percentage point increase in consumer costs cut re-entry to a health care facility by 3.3 percentage points, and by 1.9 percentage points to a medical care facility. Evidently, at-home care is a substitute for some institutional care, but care in medical institutions is complementary for nursing home care. It is also apparent that the elderly in relatively lower care levels, who face higher self-burden in the event of needing long-term care, also tend to be re-hospitalized if they lack family members with whom they can live. Consequently, policies that address the residential patterns of those who are "socially hospitalized" in Japan could well focus on that category of elderly consumers. Finally, the research study found that the price elasticity with respect to duration of stay in nursing homes is -1.7 percentage points for long-term care welfare facilities, and -1.8 percentage points for health facilities. These rather large elasticities imply that price policy may be effective in inducing clients to reduce consumption of institutional care in favour of at-home care, though the effect is relatively smaller for consumers in long-term care welfare facilities as compared to health facilities.

Another issue of relevance in this arena is whether preferences are biased toward public and/or nonprofit care providers, and away from for-profit providers. In the Japanese context,

Noguchi and Shimizutani (2003) found that 40% of the at-home care providers are customers of the for-profit sector. Thus the introduction of public LTC insurance in Japan did not foreclose the entrance of profit-oriented firms to the market. Their evidence also showed that households with higher care needs or having acquaintances who are medical doctors or professional caregivers were more likely to choose a nonprofit provider. This is partly in response to the legal requirement that these firms are the only ones permitted to provide medical and institutional care, and also a result of the fact that nonprofits were early participants in the marketplace, having been permitted to operate prior to the LTC reform. While for-profit providers are therefore disadvantaged, the study found that households with greater knowledge of supplier choices did select the for-profit firms as caregivers. This suggests that, over time, greater information about the positive aspects of the for-profit firms will render the at-home care market more competitive.

#### *The Supply of Private LTC Insurance*

The supply of private LTC is deeply influenced by the probability of adverse selection. To some extent, underwriting in private markets should reduce adverse selection, but it is important to note that the assessment technology remains in its infancy (Garber, 1996). Of course, mandating LTC coverage mitigates the problem of adverse selection in the purchase of the insurance, but it does not help in terms of service utilization. Asymmetric information remains a concern regarding who needs the benefits: it is expensive and difficult to assess each person's case individually. There is some interesting recent research finding no positive correlation between LTC insurance purchase and the probability of entering a nursing home; indeed, Finkelstein and McGarry (2003) find that those who purchased LTC insurance in the US were more cautious and less likely to go into a nursing home, than those without coverage. For this reason, their research suggests that LTC insurance prices may not be unduly influenced by actuarially unfair selection, which eases

the policy concerns about out-of-reach pricing.

There is increasing interest in developing approaches to measure the quality of care given in nursing homes and other LTC institutions. Carpenter et al. (2001) discussed five indicators for evaluating quality: falls by patients per month, the presence of pressure ulcers, fecal incontinence, restraint use, and social interaction with others. They reported that Japan had very low rates of pressure ulcers, while US homes had very good rates of social interaction but also high rates of falls and restraints. Those authors proposed that all nursing homes be encouraged to gather data on these and other performance measures, and that insurers link outcomes to reimbursement patterns.

Further information on the quality differentials between for-profit versus public sector and nonprofit providers in the home-care marketplace in Japan is provided by Shimizutani and Suzuki (2002). That study reported that for-profit firms appear to have less experienced and trained staff, but the differences could be explained by the age of the business. Not surprisingly, younger firms had somewhat less experienced staff, but they also proved to have better information processing systems, better handling of accidents/emergencies, and better hygiene practices. Controlling on service quality, that study reported that public providers cost slightly less, but newer firms were more efficient than older providers. These findings therefore confirm that competition contributes to improving the quality and efficiency of the market for at-home LTC services.

There may also be other valid reasons explaining why insurers have moved slowly into the LTC marketplace in the developed world. One issue is that there is inevitably substantial and fundamental uncertainty regarding the future paths of diseases, medical breakthroughs, and technological advances. Each of these could dramatically change future life expectancies, life years in frail condition, and consequent medical costs. Also the mere existence of LTC insurance can potentially make it easier for families to “unload” their relatives to nursing homes, which

would fit with the concept of “social hospitalization” mentioned in the Japanese context above. Both factors help explain why private LTC policies in the US have had daily and lifetime (and sometimes financial) caps on coverage offered. In the past, many private policies did not guarantee renewability either, though this may be changing of late. And researchers have noted that private LTC policies are often not price indexed, meaning that the consumer remains at risk for out-of-pocket expenses over the long term. Perhaps most importantly, private policies have tended to be silent regarding what they will pay if the government were to dramatically change its policies regarding medical care coverage, out of pocket requirements, spend-down policies, and the like. Such uncertainty on the consumer’s part regarding the ultimate value of the private insurance surely serves to depress demand.

In the Japanese context, some have talked about expanding the market for privately-financed medical care but several obstacles currently appear to impede expansion. Balance-billing by providers is not permitted, nor are investor-owned hospitals (Ikegami, 2003). Further, the government currently limits private insurance benefits to the provision of at-home care. Until private firms are permitted to operate nursing homes for the elderly, it is unlikely that market answers to the LTC challenge will be successful (Go, 2003). At-home care services are not thus restricted, but public funding or tax subsidies are not allowed to finance them. For this reason, private firms are at a substantial disadvantage vis a vis government-run operations.

Prior to the introduction of the public LTC program, private LTC insurance was not very widely sold in Japan. A key problem facing private insurers was adverse selection, due to the difficulty of measuring peoples’ true health status. Now that the public LTC program has taken on the role of determining care needs and implied care levels required, this may make it easier for private insurers to predict and price risks.

Thus far, the niche for private LTC insurance in Japan has been mainly complementary to the public LTC program. One source of demand is for care if required before age 65, since the public program focuses on the elderly. Another possible source of demand would be for coverage to cover the co-insurance required by the public program – namely, the 10% of the service costs that the consumer must bear under the program.

There are signs that interest in private LTC is growing in Japan. For instance, the share of those with LTC insurance contacts in 2003 was 16% of those who purchased life insurance, more than a doubling of the rate only three years before (7%; Japan Institute of Life Insurance, 2003). Providers of private LTC currently include private life insurance companies (e.g. Nippon Life Insurance Company); private property and casualty insurance companies; the National Mutual Insurance Federation of Agricultural Cooperatives (Zenkyoren); and the Postal Life Insurance Service of the Japan Postal system. As a rule the insurance policies stipulated rather severe thresholds for disability, such as the condition of being bed-ridden or diagnosed as demented for more than a six-month period. For instance, a consumer who becomes bedridden for over six months after age 50 may receive ¥1.8 million for ten years, under a policy offered by Sumitomo Life Insurance Company. Recently, however, there has been product innovation in this market, expanding the definition of the conditions required to receive benefits. For example, a policy sold by Sumitomo Life Insurance Company provides an income benefit if care is required for at least 30 days; another provider, American Family Insurance Company, pays benefits to consumers who are certified by the government as entitled to Care Level 1 or 2.

### **Potential Policy Responses**

When thinking about potential policy responses to challenges in the Japanese LTC

environment, it is useful to remember that government providers in other countries have often underestimated the demand for subsidized care when launching a new system. For instance, Pratt (1999) notes that when the US government established public support for LTC under the Medicare and Medicaid programs, it assumed that then-current utilization rates would continue, but demand proved to be far greater than anticipated. If rationing continues to be a problem, either the government will have to raise mandatory premiums or other taxes to pay for enhanced benefits, or the market for private LTC insurance will have to be opened up.

To this end, some have proposed the development of private LTC insurance policies sold through benefit plans offered by employers. In the past, US employers have exhibited little interest in subsidizing this form of insurance directly (Weiner et al., 1994), but the 1996 Health Insurance Portability and Accountability Act (HIPAA) allows employer-paid premiums to be excluded from workers' salaries for tax purposes, and benefits are nontaxable up to a limit of actual LTC expenses (Rappaport and Stanger, 1997). Additionally US legislators have recently introduced bills to make LTC insurance premiums tax deductible to employees who purchase the private insurance via an employer-based flexible benefits or "cafeteria" plan. These are plans where workers are granted by their firms a fixed dollar amount which then they can allocate across a range of benefit offerings. In addition, the proposed bill would grant a tax credit of \$3,000 per year to families who provide LTC services to relatives. Both provisions have an estimated revenue cost to the government of \$30B over the next decade (Rovner, 2003). Whether that or another legislative initiative will pass is unclear, but it does seem that tax subsidies for LTC purchase are likely in the future.

Another approach that would use the workplace as a nexus for LTC provision would be to permit workers to elect to use their mandatory LTC premiums to purchase private coverage,

perhaps of a catastrophic-only sort. Contracting out in this fashion, would give workers the responsibility of shopping around for LTC coverage, and it would also offer the advantage of lower costs and more competitive products for those of working age. On the other hand, to the extent that the current government program is simply a pay-as-you-go tax-and-transfer system, rather than an insurance program with actuarially-fair premiums and reserves, allowing some workers to contract out would likely exacerbate financing problems for the portion of the program supporting the elderly.

One concern with tax incentives for LTC care is that they might be insufficient to induce low-wage workers to purchase enough LTC coverage. Nevertheless, rising costs of government financed-care have prompted a move to private market provision of care in several countries, including the UK, Germany, Australia, and Sweden (Go, 2003). Though not-for-profit providers have traditionally dominated the market in Europe, LTC services are increasingly being provided by for-profit companies as in the US and the UK.

A proposal receiving attention in the West is to combine private LTC insurance with annuity products, which would potentially boost the market for both annuities and LTC cover. Thus Spillman *et al.* (2001) and Murtaugh *et al.* (2001) have devised an arrangement whereby a privately-sold life annuity product provides monthly payments that rise in the event that the insured party is certified as chronically and permanently disabled. For example, at retirement the annuity would begin paying \$1,000/month to the purchaser, but the cash payment would rise to \$2,000/mo if the participant was certified to need help with at least two ADLs (after a one-month waiting period), or if he were certified as having been cognitively impaired (for a minimum of 90 days). Other formulas could also be envisioned, of course. The proposal's appeal is that the two-tiered coverage –longevity protection due to the annuity, plus a step-up in cash benefits if

disabled – may attract more buyers than would a simple life annuity or a simple LTC scheme. This would be expected to reduce the potential for adverse selection which otherwise has been seen as a major obstacle to annuity sales (Brown et al. 1999).

Providing the elderly with cash benefits instead of service benefits does give consumers a wider range of choices than the current service-based approach embodies. Yet it is interesting that in Japan, a voucher system or cash benefit was discussed and rejected in the late 1990s (Campbell and Ikegami, 2000). The major concerns were that providing cash might not afford needed relief to (mainly female) caregivers of the elderly, and also that offering cash might induce substantial increases in demand. Further, it appears that policymakers felt that shortages of formal care would best be met by provision of new service facilities. To this day, these facilities are still constructed with heavy capital subsidies from the public sector. Consequently, government policy still tends to discourage innovative privately-sold forms of LTC including assisted living, group homes, and graduated retirement care communities. To date, LTC service benefits have also been limited to room and board coverage and have not been integrated with medical care benefits. This limits providers' incentives to manage residential, medical, and rehabilitative needs in a coherent and systematic fashion. Finally, problems may arise if people are discharged from LTC institutions due to reaching their charge limits while still in need of medical care.

It should be noted that there are advantages to the Japanese system of providing service instead of cash benefits, with means-tested premiums, co-pays, and out-of-pocket limits. One is that consumers are actually quite well protected against catastrophic LTC costs. This is in sharp contrast with private LTC insurance packages on offer in the US, which pay the LTC consumer a specified daily dollar benefit over a specified and limited number of years. The US format has the advantage of limiting insurers' liability, but it does mean that elderly patients may be left without

coverage after exhausting the privately-financed benefit. This in turn would lead them to have to draw down other assets, sell their houses, and/or rely on Medicaid, the public plan for the indigent.

A different approach to LTC would rely on dependents, particularly children, to bear a larger share of LTC costs among the elderly. A tactic adopted in New Zealand and China is to mandate that offspring of working age must support their own needy parents. This could be combined with an insurance-based approach, where private insurance coverage could be purchased by working-age children for their elderly families (Lee 2003). A different method of risk-pooling would be to require all workers, including those under the age of 40, to pay premiums for mandatory LTC insurance purchase, as suggested for Japan by Campbell and Ikegami (2000). This is consistent with the view that the risk pool is relatively homogeneous early in life, while more and more people at older ages would fail underwriting criteria if they waited to purchase LTC insurance later. For example, in US data, 89% of people age 40-44 could meet LTC underwriting criteria, but only 68% of those age 70-74 are healthy enough to meet the screens (Merlis, 2003).

An indirect way to have families “pay” for LTC would be to facilitate the development of reverse mortgages (RMs) for the elderly. These products can permit an elderly homeowner to borrow against the value of his house to enhance his current consumption, perhaps by retrofitting the home to make it suitable for elderly living. The lender receives no interest or principal payments until the homeowner dies or vacates his home, at which time the residence is sold and the proceeds used to repay his loan. RMs may be attractive to the elderly because they are permitted to remain in their homes until death, and in exchange, they benefit from additional retirement income. The important fact about a RM loan is that it is “non-recourse” loan, so that the borrower’s other assets cannot be accessed by the lender to cover loan repayment (Mitchell and Piggott, 2003). In

this event, turning home equity into liquid form enhances a retiree's ability to obtain LTC services while remaining out of the hospital. This is particularly key in the Japanese context since elderly Japanese appear to have housing equity that is some 50 percent larger than their US counterparts. Of course, taking an RM does have the effect of shrinking retirees' estates.

### **Conclusions and Future Research**

Our analysis of long-term care in the Japanese context has pointed out several interesting aspects of the LTC system launched in 2000. Experts differ in terms of what they mean by LTC, but the Japanese approach to LTC has focused mostly on providing at-home (nonmedical) services, as well as room and board for those requiring institutionalization. For historical reasons, health care continues to be paid for and delivered by the separate national health insurance system. The LTC system that has evolved in Japan today is quite a complex tax-and-transfer scheme, supported by mandatory but means-tested premiums levied on workers and retirees by local governments, as well as general tax revenue from central and local governments. Benefit eligibility is determined by local boards appointed by municipalities, but fees for benefits are set at the national level. Competition is permitted in the at-home care arena, but in the medical and institutional care arenas only non-profits and government providers are allowed. While there has been little demand for privately-sold LTC products, it does appear that demand has grown over the last three years.

We have also identified some upcoming challenges, and there are undoubtedly several clouds on the horizon. Our projections indicate that LTC costs will probably rise substantially in the future, which will, no doubt, be a central focus of the full-scale review of the Japanese LTC system planned for 2005. Some predict that the aging population and perception of LTC as an entitlement program will drive demand up and boost cost pressures. While deductibles, copays,

and caps do tend to curtail demand and hence expenditures somewhat, the substantial subsidies for LTC will surely boost future utilization rates. Rationing has already emerged and likely will be even more problematic in future years; these factors will undoubtedly contribute to political stresses over the next few years. Cost pressures and evasion problems will potentially also require extending the mandatory premiums to workers under age 40 who are not currently included in the system.

Another issue we have raised is the fact that the decentralized system tends to reflect regional disparities in the concentration of elderly and frail elderly. While some cross-subsidization does occur at the level of the central government, it is unclear how this will work if there are national LTC shortages. Additional research is required to help separate the roles of demand and supply for regional LTC entitlement and utilization patterns in Japan. Nevertheless, it does appear that placing the burden on municipalities of financing, determination of entitlement, and benefit provision will become even more problematic in the future, perhaps even prompting a move to full nationalization of financing and service delivery. It appears that the national standardization of eligibility criteria has also spurred the development of private LTC insurance policies. It may also be necessary to set national LTC quality standards for institutional and at-home care services, which then could be used for informing taxpayers, consumers, and potentially investors.

We also discussed ways to enhance additional private provision of LTC insurance. This would be appealing to the extent that the elderly have sufficient income/assets to purchase the coverage. Of course it does depend on LTC consumers and their relatives becoming sufficiently well-informed about quality and price of services to make the market function well. It also depends on the ability of private insurers to structure LTC policies that both attract consumers but

also mitigate adverse selection. One possibility might be to sell employer-based policies to workers at younger ages. Plan design features intended to limit moral hazard could logically draw on some already embodied in the current public LTC system, including co-insurance, deductibles, and the determination of need by a third party which is relatively free of conflicts-of-interest. In addition, privately provided LTC cash benefits could be an attractive alternative to the indemnity approach used by the government, which provides mainly services. Finally, we have identified a potential role for reverse mortgages, which could be a means of financing services and provide care for an increasingly long-lived and numerous Japanese elderly population.

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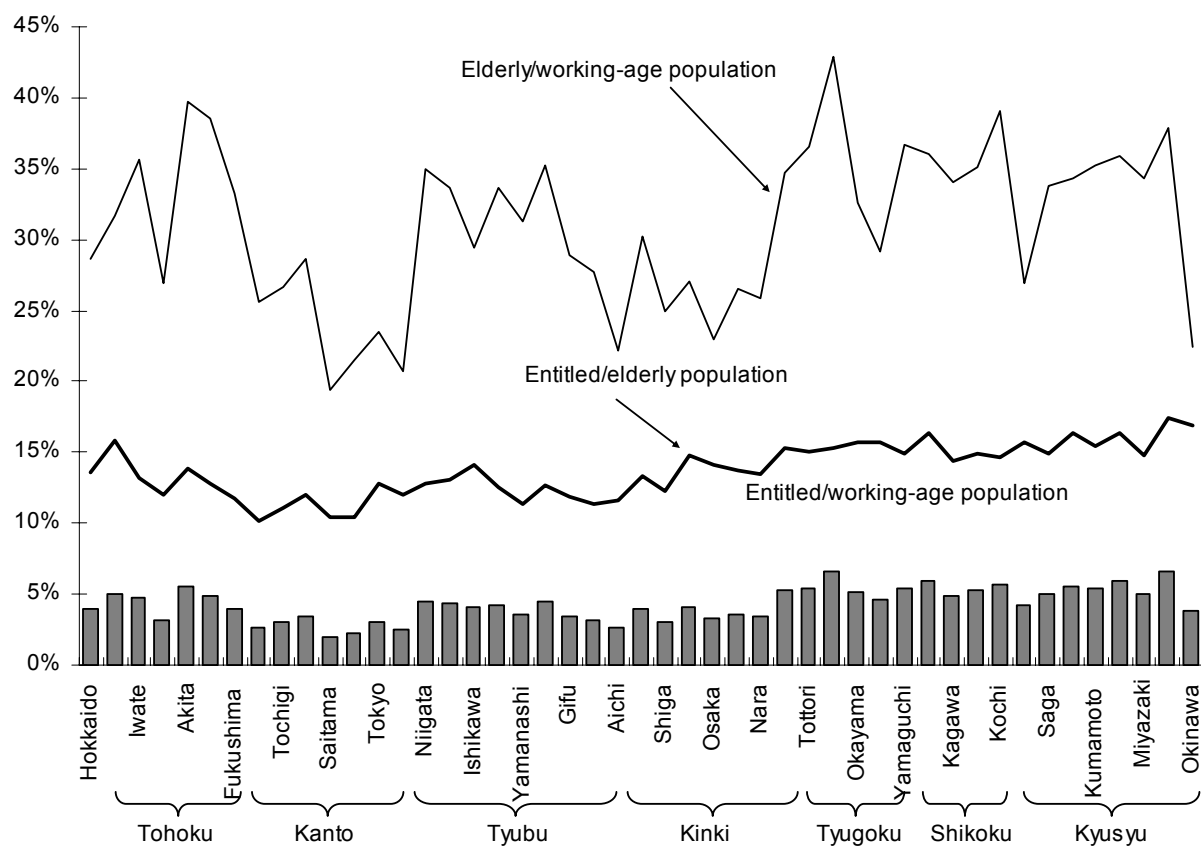
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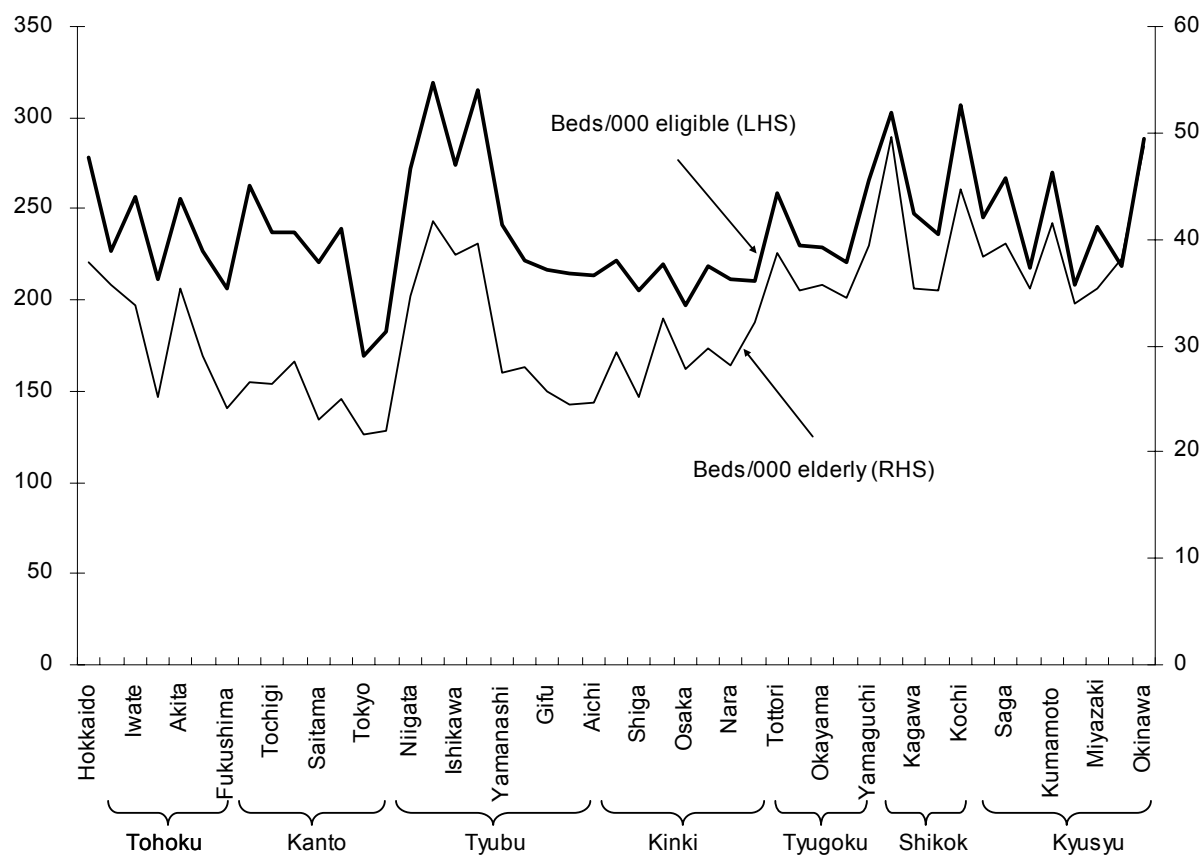
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**Figure 1. Dependency Ratios by Region: Japanese Elderly and Entitled to LTC**



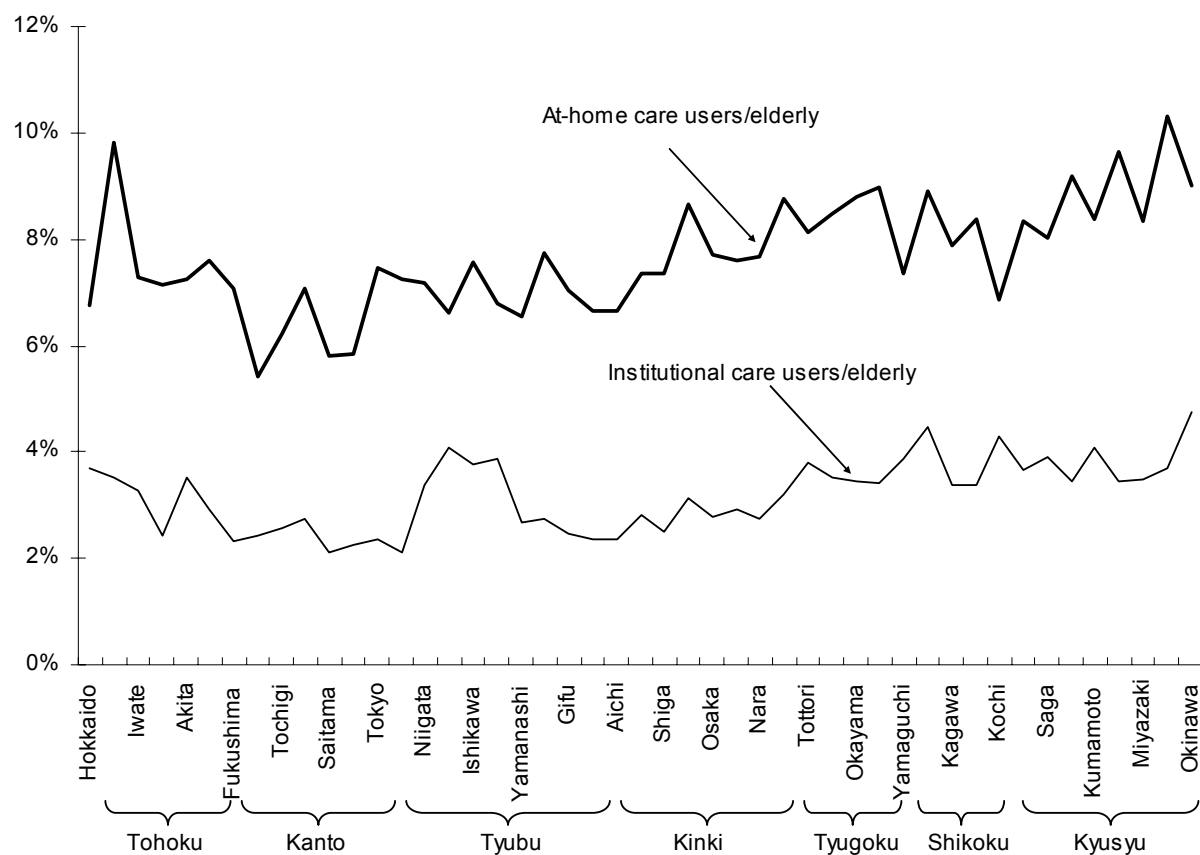
Source: Authors' calculations using data provided by Japan's Ministry of Health, Labor and Welfare; National Health Insurance Association of Japan; and Statistics Bureau of Japan.

**Figure 2. Institutional Care Capacity by Region in Japan**



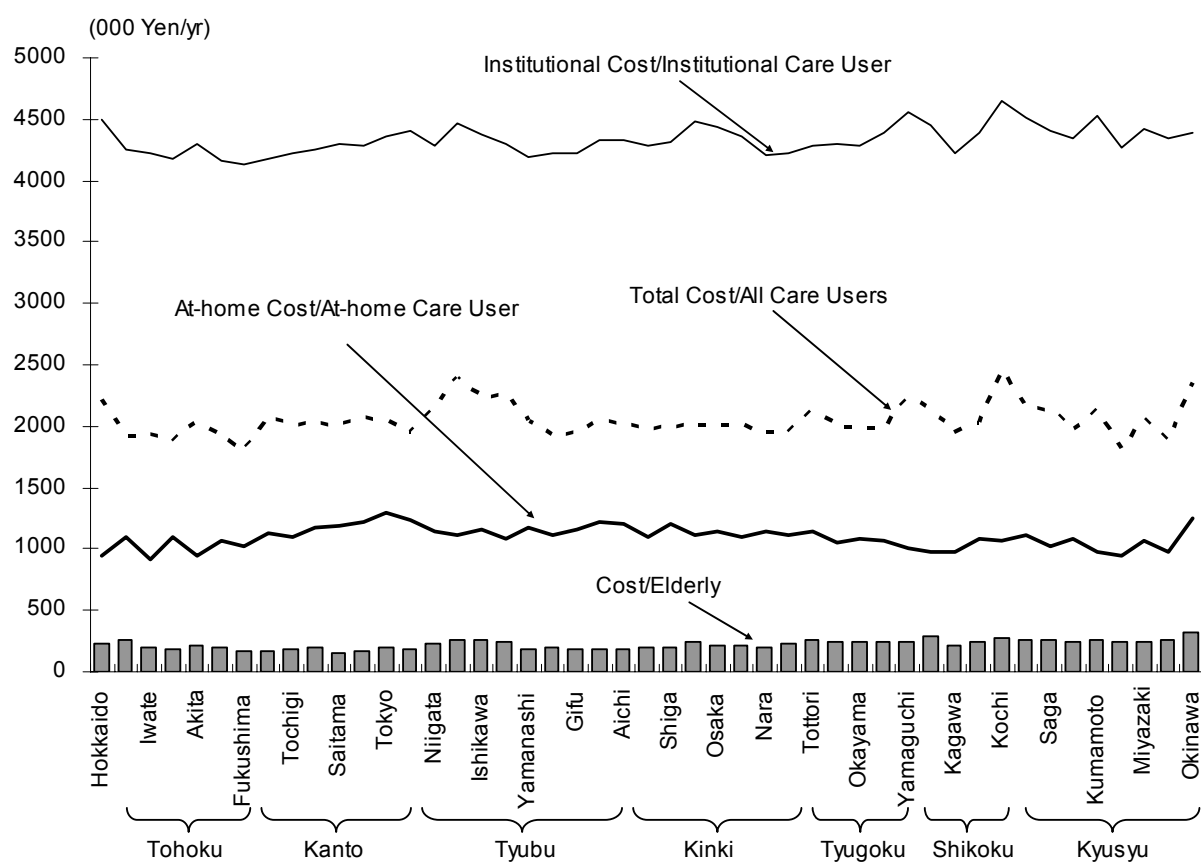
Source: Authors' calculations using data provided by Japan's Ministry of Health, Labor and Welfare; National Health Insurance Association of Japan; and Statistics Bureau of Japan.

**Figure 3. Long-term Care Utilization Rates by Region in Japan**



Source: Authors' calculations using data provided by Japan's Ministry of Health, Labor and Welfare; National Health Insurance Association of Japan; and Statistics Bureau of Japan.

**Figure 4. Long-term Care Cost/User by Region in Japan**



Source: Authors' calculations using data provided by Japan's Ministry of Health, Labor and Welfare; National Health Insurance Association of Japan; and Statistics Bureau of Japan.

**Table 1: Unit Allowances for LTC Services (2000 ¥)**

<i>Type Of Care</i>	<i>Condition of Elderly Person</i>	<i>Living Allowance</i>	<i>Mo'ly Care Expense</i>	<i>Annual Total Allowance</i>
<b>At-home care</b>				
Outside serv.	Bedridden	56,787	200,000	3,081,444
	Senile	56,787	200,000	3,081,444
	Frail	56,787	143,200	2,399,844
<b>At-home care</b>				
Family Care	Bedridden	56,787	180,000	2,841,444
	Senile	56,787	180,000	2,841,444
	Frail	56,787	128,880	2,288,004
<b>Institutional Care</b>				
Health Facility for elderly	Bedridden	66,780	298,907	4,414,539
	Senile	66,780	289,705	4,305,075
	Frail	66,780	185,213	3,050,211
<b>Institutional Care</b>				
Tokuyo Special nursing home	Bedridden	64,420	240,294	3,677,766
	Senile	64,420	232,961	3,589,770
	Frail	64,420	148,865	2,580,978
<b>Institutional Care</b>				
Fee-charging home	Bedridden	64,420	240,294	3,677,766
	Senile	64,420	232,961	3,589,770
	Frail	64,420	148,865	2,580,978
<b>Institutional Care</b>				
Hospital LTC ward	Bedridden	124,277	332,917	5,520,957

Source: Kishida (1998): 244.

**Table 2. Descriptive Statistics Regarding LTC Capacity, Utilization, and Costs in Japan**

	Mean	Min	Max	SD
<i>Panel A: Dependency Ratios</i>				
Elderly/Working-age population	0.311	0.194	0.428	0.057
Entitled/Working-age population	0.043	0.020	0.066	0.012
Entitled/Elderly	0.137	0.102	0.175	0.019
<i>Panel B: Capacity</i>				
Beds/000 Elderly	32.489	21.590	49.645	6.910
Beds/000 Eligible	237.920	169.248	319.134	33.602
<i>Panel C: Utilization Ratios</i>				
Institutional care users/Elderly	0.032	0.021	0.048	0.007
At-home care users/Elderly	0.076	0.054	0.103	0.011
<i>Panel D: Cost Per Person (000 Yen/Year in 2000)</i>				
Inst. Cost/Instit. Care Users	4327.696	4132.435	4643.209	114.177
At-home cost/At-home care users	1093.457	912.445	1297.436	88.821
Total Cost/Total Care Users	2041.579	1797.901	2449.080	136.837
Total Cost/Total Elderly	220.591	159.787	321.980	35.893

Notes: Working-age=Age 15-64; Elderly=age 65+

Cost figures average 2001FY and 2002FY and are deflated by CPI

Sources: Authors' computations from data provided by the Ministry of Health, Labor and Welfare of Japan; National Health Insurance Association of Japan; and Statistics Bureau of Japan

**Table 3: Descriptive Regression Results for Utilization Rates**

	Constant	Area (Km squared)	Population Density	Per Person Price of Inst. Care	Per Person Price of At-home Care	Per Person Total User Cost	Adjusted R <sup>2</sup>
<b>Panel A: Entitlement</b>							
Entitled/elderly (x10**3)	-176.8139	-0.3401	-3.1987	0.0858	-0.0481		28.92%
	74.1147	0.1625	1.8172	0.0157	0.0226		
	-2.3857	-2.0926	-1.7602	5.4822	-2.1317		
Entitled / elderly (x10**3)	129.0553	-0.1112	-3.2831			0.0551	0.32%
	31.3071	0.1834	1.8831			0.0152	
	(4.1222 )	(-0.6065)	(-1.7435)			(0.3615 )	
<b>Panel B: Utilization Rate</b>							
At-home care user / elderly (x10**3)	100.5316	-0.1819	-0.9172		-0.01982		1.86%
	17.3200	0.1137	1.2534		0.01582		
	(5.8044 )	(-1.5992)	(-0.7318)		(-1.2528)		
At-home care user / elderly (x10**3)	-22.3893	-0.2165	-1.5742	0.0275	-0.0158		7.61%
	50.6827	0.1111	1.2427	0.0107	0.0154		
	-0.4418	-1.9477	-1.2668	2.5707	-1.0212		
Institutional care user / elderly (x10**3)	-123.7602	-0.0501	-2.9414	0.0365			51.89%
	18.2222	0.0425	0.4386	0.0042			
	(-6.7917)	(-1.1790)	(-6.7070)	8.6290			
Institutional care user / elderly (x10**3)	-97.0572	-0.0874	-2.2345	0.0351	-0.0191		56.62%
	19.1125	0.0419	0.4686	0.0040	0.0582		
	-5.0782	-2.0845	-4.7683	8.7030	-3.2893		

Source: Authors' computations, data described in Table 2.

Note: Darker shading indicates  $|t| \geq 1.96$ ; lighter shading indicates  $|t| \geq 1.65$  but  $|t| < 1.96$ .

**Table 4. Projected LTC Costs in Japan** (in trillion 2000 ¥)**A. Prior Estimates of National LTC Costs in Japan**

	1	2	3	4
1 <i>Study Authors and Date</i>	JMHW (1996)	Yashiro et.al (1996)	Noguchi & Shimizutani (2003)	JMHLW (2003)
2 <i>Projection Dates</i>	2000, 2010, 2025	2000, 2010, 2025	2010, 2015, 2025	# elderly with dementia: every 5 yrs to 2045 Costs: 2005, 2015, 2025
3 <i>Coverage</i>	# elderly # elderly requiring LTC # elderly bedridden # physically weak elderly # elderly with dementia	# elderly # elderly requiring LTC # elderly bedridden # physically weak elderly # elderly with dementia Total Costs	Costs of At-home Care (i) Home visit and day care (ii) Short stay	# elderly with dementia (rank 2-5 & 3-5) Total Evaluation Payments*
4 <i>Estimated Patient Pool</i>	# eligible=5.2m (2025) =16% of the elderly	# eligible=3.7m(2010) # eligible=4.9m(2025)		N.A.
5 <i>Estimated Cost per Patient</i>	N.A.			N.A.
6 <i>Estimated Total Program Costs Projected</i>	N.A.	2000: ¥10.3 Tr 2025: ¥33.2 Tr	(i) Home visit and day care; (ii) Short stay 2010: ¥3.1Tr (i) and ¥0.3 Tr (ii) 2015: ¥4.3 Tr (i) and ¥0.4 Tr. (ii) 2025: ¥4.8 Tr (i) and ¥0.5 Tr. (ii)	Evaluation Payments Only* ¥6 Trillion (2005) ¥12 Trillion (2015) ¥20 Trillion (2025)
7 <i>Estimated Program Costs as Share of National Income</i>	N.A.			1.5% (2005) 2.5% (2015) 3.5% (2025)
8 <i>Additional Comments</i>	Official projections			Quasi-official projections

Note: Evaluation Payments refer to payments made by the government, exclusive of the consumer's out of pocket and deductible amounts.

**Table 4 (cont)****B. Alternative LTC Cost Projections***1. Assumptions*

- a) The number of elderly in 2025: 34.7 million ▲  
 b) The share of eligible out of total elderly: 5.6 million (34.7 million \*(5.2/32.4=16.0%)) ►

*2. Projections*

*Case 1: Costs per eligible person in 2001-2003 of ¥1.6M assumed for 2025. ▼*

**Total Cost = 5.6 million \* ¥1.6 Million (av. 2001-03) = ¥8.96 Trillion.**

*Case 2-1: Adjusting only the number of users of at-home care*

Costs per institutional care user remain unchanged from 2001-2003 (about ¥4.3 million) ►

Costs per at-home care user remain unchanged from 2003 level (= ¥1.24 million) ►

Share of institutional care users set at 20.0% (vs 23.2% in 2001, 21.2% in 2002, and 20.0% in FY2003).►

Share of at-home care users increases by 1.5% annually to 74.1 % in 2025 (was 55.1% in 2001, 57.0% in 2002 and 57.6% in 2003).►

**Total Cost = ¥1.24 million \* 5.6 million \* 0.741 + ¥4.31million \* 5.6 million \* 0.200 = ¥9.97 trillion**

*Case 2-2 Adjusting the number of uses of at-home care*

Costs per at-home care user set at ¥1.32 million ◀

**Total Cost = ¥1.32million \* 5.6 million \* 0.741 + ¥4.31million \* 5.6 million \* 0.200 = ¥10.30 trillion**

*Case 3: Adjusting both the number of users of at-home care and cost of home care*

Costs per institutional care user remain unchanged from 2001-2003 level (about ¥4.3 million) ►

Costs per at-home care user rise 6.7 % annually (actual 2001-03 growth rate) to attain ¥5.164 million in 2025.►

Share of institutional care users set at 20.0% (vs 23.2% in 2001, 21.2% in 2002, and 20.0% in FY2003).►

Share of at-home care user increases by 1.5% annually to attain 74.1 % in 2025 (was 55.1% in 2001, 57.0% in 2002, and 57.6% in 2003).►

**Total Cost = ¥5.164million \* 5.6 million \* 0.741 + ¥4.31million \* 5.6 million \* 0.200 = ¥26.26 trillion**

*Notes:*

- ▲ Based on the medium variant (JNIPSSR 2003).
- Based on JMHLW (2002).
- ▼ Based on AJFNHIO (2003).
- ◀ Based on Noguchi and Shimizutani (2003).

**Table 5. Historical Data: Elderly Persons (age 65+) in Japan Requiring Long-term Care**

	<u>1993</u>	<u>1996</u>	<u>1998</u>
In Care	4.947	4.528	4.739
Conf. to Bed	0.793	0.694	0.684
Senile	0.917	0.794	0.807
Frail	2.249	2.077	2.077
Other Care	0.988	0.962	1.175

Source: JMHLW (various years) "Basic Survey on People's Life"

**Table 6: Current and Projected Number of Elderly Japanese Requiring LTC**

<i>Estimated Millions of Persons:</i>	<u>2000 (est)</u>	<i>Source</i>	<u>2000 (actual)</u>		<i>Source</i>	<u>2025</u>	<i>Source</i>
Elderly Persons	21.7	[a]	22		[b]	32.4	[g]
Elderly Persons Requiring LTC	2.8	[a]	2.9	*	[c]	5.2	[g]
Elderly Bedridden	1.2	[a]	0.4	+	[d]	2.3	[g]
Physically Weak Elderly	1.3	[a]	1.15	++	[e]	2.6	[g]
Elderly with Dementia	0.2	[a]	0.37	+++	[f]	0.4	[g]

*Notes:*

\*In 2001

+This figure includes only the number of bedridden in institutions and excludes those living in houses.

++ Care levels 3-5 only.

+++Care levels 3-5 in institutions only.

*Sources:*

[a] JMHLW (2000). "Survey on Care Service Providers"

[b] JMPMHAPT (2003)

[c] AJFNHIO (2003)

[d] Kaigo Service Shisetsu Jigyousho Chousa

[e] AJFNHIO (2003)

[f] Kaigo Service Shisetsu Jigyousho Chousa

[g] JMHLW (2002)