The Feasibility of a Long-Term Services and Supports Social Insurance Program for Hawaii

A Report to the Hawaii State Legislature

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1 The problems of seeing long-term needs

The picture of long-term care (LTC), also referred to as long-term services and supports (LTSS) in this report, is in many ways a collage. Pieces come from all possible viewpoints and sometimes overlap or even obscure each other. To begin the process of setting policy to address the problems—family outcomes—services—workforce—financing—access, it is necessary to look at some of the pieces:

- Baby boomers and other generations can be strapped between the costs of everyday life and the costs of long-term care for their parents and planning for themselves;[1]
- Women at risk of becoming poor and of having no one to care for them in their own old age;[2]
- Elders seeing their life savings threatened;
- Employers who will lose revenue as employee productivity drops from stress and taking time off to juggle long-term care costs and responsibilities.
- Employed caregivers often have to reduce hours or take early retirement, thus jeopardizing their own financial stability[3].

The financing options available to the community are also at best little cuttings from what might be a more comprehensive picture:

- Draining elder citizens' cash to cover long-term services and supports for their disabilities and limitations;
- Liquidation of non-housing assets to pay nursing home costs[4];
- Conversion of housing assets to pay care costs, via sale or reverse mortgages;
- Coverage with private long-term care insurance;
- "Spending Down" to the income and asset levels required for Medicaid to pay for long-term care costs.

[1] Boomers, in particular, faced the loss of 22.4% of their net worth between 2007 and 2010. Lori A. Trawinski, Assets and Debt across Generations: The Middle Class Balance Sheet, 1989-2010. AARP Policy Institute, Middle Class Security Project, January 2013, p. 10.

[2] It is well known that never-married, never-partnered people have fewer potential caregivers.

[3] An additional complication affects women who withdraw from the labor force to become caregivers—their own income and future retirement benefits may be diminished.

[4] There may not be much ground for optimism about covering LTSS costs from household assets. Census Bureau analyses of the Survey of Income and Program Participation find that by groupings of monthly household income in quintiles, the first through fourth quintiles hold average non-housing assets in the amounts of (1) $1,397; (2) $6,340; (3) $15,324, and (4)$45,331. Thus the lowest 80% of the population by monthly income does not hold over $45,331 in assets, on the average. U.S. Census Bureau, Survey of Income and Program Participation, 208 Panel Wave 10. Interned Release Date 3/21/2013, Updated 5/13/2013.

Within the family, the views forward to older ages become more mixed. Baby boomers find themselves caught preparing for their own aging needs (the oldest already retired and the youngest entering the final years of earning and investment before retirement) and also considering the needs of their elderly parents and growing children. The children of the boomers may be at the beginnings of careers or attending institutions of higher learning. For the children of the boomers, the image of age is anything other than clear. The only perspective on aging and frailty they have might come from interacting with their increasingly frail grandparents. With only partial, if any at all, understanding of age decline, today's youth may have little regard of their own potential long-term care needs.

In point of fact, it is difficult for the boomers to think about and fund long-term services and supports (for themselves and for their parents)—the opportunities may have passed. Financial hardships over the last decade (the impact of rising gas prices, 9/11, the housing bubble, recession of 2008, etc.) may have eroded the boomers' optimism, shaking their financial confidence. The interest bearing investments with which many had hoped to fund or supplement retirement often yield very little now. The insurance products that offered hope in 2000 may have been re-priced, or may call for more rigorous underwriting standards—and thus restrict a larger segment of potential customers from purchase. The cash for long-term care insurance may take a back seat to other family financial needs—adequate life insurance, disability income insurance, college tuition, and the like. The Kaiser Family Foundation report on buying long-term care insurance (LTCI) sets out broad conditions of affordability[6]:

> Affordability criteria include: 1) Could afford LTCI: The couple meets the American Council on Life Insurance (ACLI)standards, based on income and age of the family head, for the purchase of LTCI for both spouses; 2) Adequate retirement savings: The couple is saving enough, relative to earned income, to prepare for retirement, taking into account current age, education, and eligibility for a defined benefit pension plan. Savings include home equity; 3) Life insurance: If the couple has minor children or one spouse is employed less than full time, the couple has life insurance with a face value equal to at least four times the principal earner's annual earnings. (This is less than financial planners generally recommend.) Couples with both members employed full-time and no children are assumed not to need life insurance; 4) Health insurance: All family members have public or private health coverage; 5) Disability income insurance: The principal earner has some form of disability insurance in addition to Social Security.

The situation surrounding long-term care is complex. To plan for long-term care requires understanding of age, frailty, and financial planning.

[6] Mark Merlis. *Private Long-Term Care Insurance: Who Should Buy It and What Should They Buy?* The Kaiser Family Foundation, March, 2003. http://kaiserfamilyfoundation.files.wordpress.com/2013/01/private-long-term-care-insurance-who-should-buy-it-and-what-should-they-buy-report.pdf

This collage is now quite messy. If the long-term care financing of last resort is Medicaid, it comes at the cost of a family's assets and restriction of income for a spouse staying at home. Various mechanisms for sheltering assets from Medicaid "look-back" have been explored over the years: most are seemingly adaptable for relatively wealthy families; some "shelters" have been eroded through changes in the Medicaid asset rules; and others, such as "Medicaid Partnership Programs", depend on the constancy of the elder or the family—the ability to continue private LTCI premium payments long into the future.

To summarize, the problems of seeing long-term care needs are that it requires particular forethought and expertise that people may not have. To foresee potential long-term care needs requires knowledge and understanding of aging and frailty that may only come from experience (either personally or secondarily through the lives of family and friends). To plan for long-term care requires financial expertise (to ensure care resources) and policy expertise (federal, state, community, and private care provisions can interact with each other or deal with completely different domains and navigating all of these programs can be time and resource consuming).

What is clear is that any public policy to help families adjust to providing care, to accommodate care needs to workplace requirements, and to plan rational family financial commitments must attempt to knit together the snippets of the collage of care and financing. The Executive Office on Aging (EOA) has identified strategies to address the overlapping needs. These strategies help to identify actions that can be taken and new perceptions that may be created:

- Empower older people, their families, and other consumers to make informed decisions about, and to be able to easily access, existing health and long-term supports and service options;
- Enable seniors to remain in their own homes with high quality of life for as long as possible through the provision of home and community-based services, including supports for family caregivers;
- Empower older people to stay active and healthy among other ways including Older Americans Act services and the new prevention benefits under Medicare; and
- Ensure the rights of older people and prevent their abuse, neglect and exploitation.

With the 2006 Amendments to the Older Americans Act, Hawaii's Executive Office on Aging (EOA) has incorporated the objectives of the Administration on Aging's *Choices for Independence* into the Hawaii state plan:

- Empower participants to make informed decisions about their care options;

- Help aged at high risk of nursing home placement, but not eligible for Medicaid, to remain in their own homes and communities through flexible financing and service models (including consumer-directed models); and
- Build evidence-based prevention into community based systems of services, enabling older people to make behavioral changes that reduce risk of disease, disability and injury.[7]

1.1 Hawaii's aging population profile

The EOA State Plan presents a global assessment of Hawaii's population as it ages. The Plan makes the special conditions of aging in the Hawaii population clear: Hawaii's rate of growth for the older segment of the population is nearly the highest in the nation. The text box quotes the plan.[8]

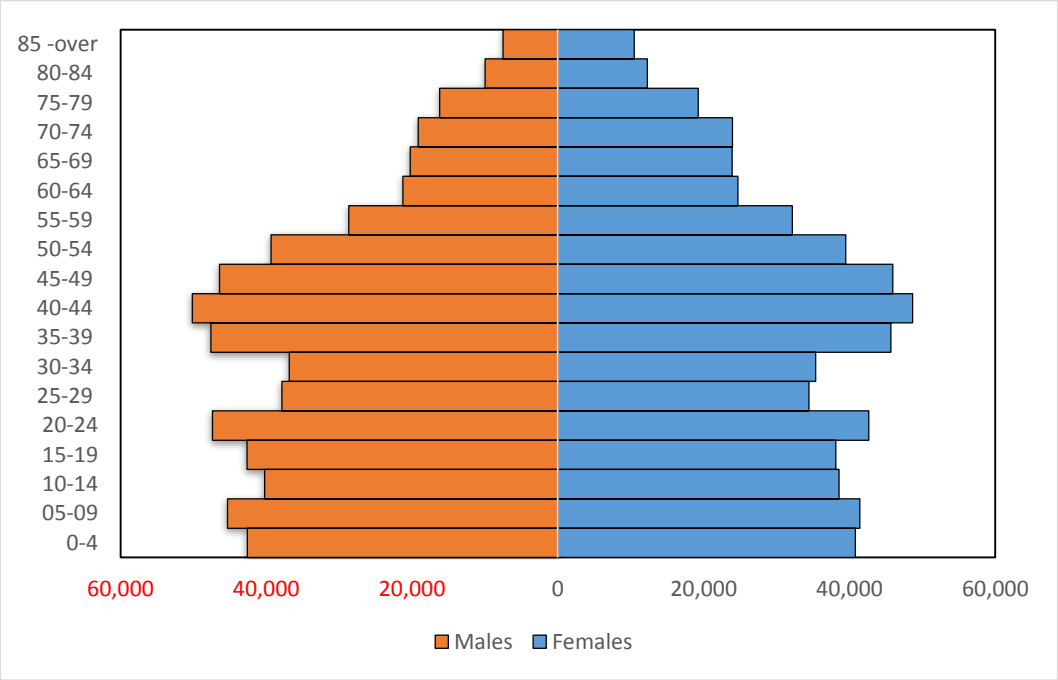
- In 1980, the older adult population in Hawaii (60 years or older) was 115,670, and represented 11.9% of the total population. By 2010, there were 277,360 older adults that represented 21.4% of the total population. The overall increase in the 60 years or older population in Hawaii from 2000 to 2010 was 34%, 10% points higher than the national rate of growth for this age group. Over a thirty year period (1980 - 2010), the older adult population increased by approximately 139.8% while the total population only increased by 34.2%.
- Moreover, older adults are living longer. In 1980, there were only 5,692 individuals 85 years or older, that represented 0.6% of the population. By 2010, this 85 years or older group increased to 30,238, or 2.3% of the population. The overall increase in the 85 years or older population in Hawaii from 2000 to 2010 was 72%, or 42.6% points higher than the national rate of growth for this age group. This increase has serious implications for the long-term care systems in Hawaii.
- Only Alaska and Nevada had higher rates of growth. Over the thirty year period (1980 - 2010), the 85+ population increased by 431.5% while the total population only increased by 34.2%.
- The Hawaii Department of Business, Economic Development and Tourism estimates that by 2035, the older adult population (474,586 individuals, 60 years or older) will represent 29.7% of the total population, a 310.3% increase during the 55 year period from 1980 - 2035, whereas the total population will only increase 65.1% during this same 55 year period. The 85+ group will increase 1157.5% during this 55 year period, again illustrating decreasing mortality and greater life expectancy.

[7] http://health.hawaii.gov/eoa/files/2013/07/Hawaii-State-Plan-On-Aging.pdf, p8. Referenced October 1, 2014.
[8] http://health.hawaii.gov/eoa/files/2013/07/Hawaii-State-Plan-On-Aging.pdf, p12. Referenced October 1, 2014.

In the work to follow, it will be essential to attend to this shifting age population. The EOA State Plan summarizes the changes in the age profile that we must take into account:

> The growth in older adults will change the population age structure from pyramid shape as shown below for 2000 by gender, to a square shape where all age brackets will become closer in number, as shown in Figure 2 for 2040 by gender. As seen in Figure 1, the aging of Hawaii's population is more evident for the female population.[9]

Figure 1. Age Distribution for the Resident Population of Hawaii, 2000

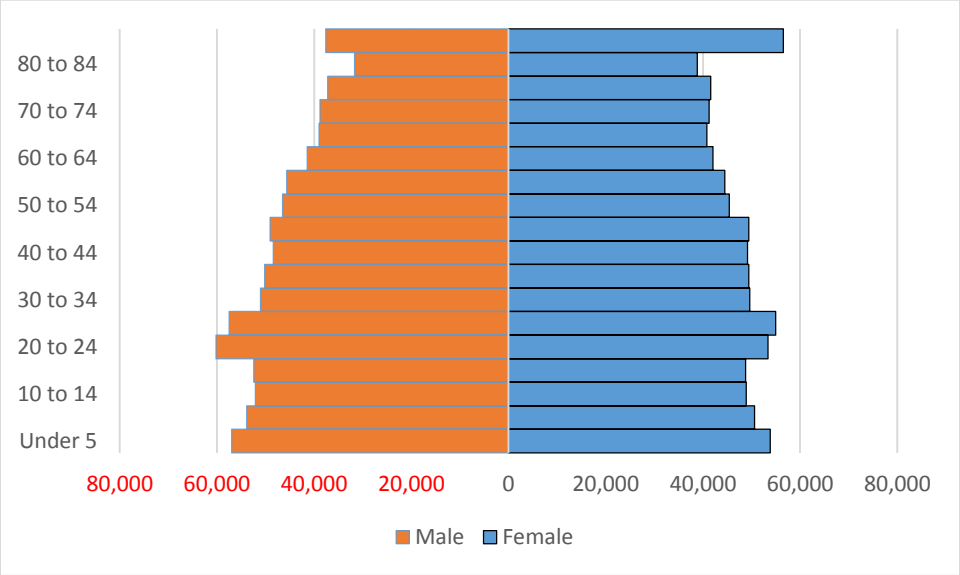


The overall effects of migration, increasing health, and decreasing mortality rates are shown in Figure 2:[10]

[9] http://health.hawaii.gov/eoa/files/2013/07/Hawaii-State-Plan-On-Aging.pdf. Pp. 15-16. Referenced October 1, 2014. State of Hawaii Databook, Department of Business, Economic Development and Tourism, 2000.

[10] Source: *Hawaii State Department of Business, Economic Development & Tourism, Population and Economic Projections for the State of Hawaii to 2040 - DBEDT 2040 Series* (March 2012) http://hawaii.gov/dbedt/info/economic/data_reports/2040-long-range-forecast Accessed October 13, 2014.

Figure 2. Age Distribution for the Resident Population of Hawaii, 2040



The EOA Plan expresses strong certainty that the demand for long-term services and supports will grow with:

> The demand for long-term supports and community-based services will increase, associated with the need for housing, transportation, caregiver services, disease prevention and health promotion services, mental health services, nutrition, education, recreation and other services. However, cause for optimism exists because the boomers represent the healthiest and best-educated generation to retire, but will nonetheless need services. Seniors need to be made aware through education, communication, and public awareness campaigns, that keeping healthy using preventive techniques can often delay the need for long-term services and supports.

Hawaii's population profile is shifting toward one with a larger share of older adults than has been seen in the past. This shift presents challenges for predicting care needs as well as for estimating and planning for the workforce to provide care.

Finally, Hawaii is an archipelago state. It is imperative that each county create its own long-term services and supports delivery system. Even with national funds form the Administration on Aging (AOA), it is difficult to deliver to those in one county the AOA services presented in another county. Likewise the cost of creating comprehensive LTSS delivery systems in the areas of the State with sparse populations is substantial.

1.2 The states' tasks

The United States Administration on Aging sets out broad national policies for defining and providing mechanisms for "aging in place," expanded choice, and quality control of aging services. The states, however, must actually build the mechanisms for providing these services. The earliest developments were the implementation of state Medicaid programs, extension of benefits for long-term care in facilities, and the expansion to waiver programs to provided payment for care in community settings. The states must administer the eligibility reviews, set rules, and negotiate payment and other implementation details with the federal government.

Some states are moving ahead with more aggressive programs. Vermont, under Act 48, has initiated the framework for a single-payer medical insurance program covering both regular preventative and acute care, and long-term services and supports.[11]

In Hawaii, a mixture of programs strive to provide aging services. The services provided through the Medicaid program address many needs of Hawaii's older citizens, but they do so only after a test of sufficient poverty to qualify for benefits. The Medicaid benefit, other things equal, does not extend to the middle class. Hawaii's commitment to providing services for all of its people led to programs such as Kupuna Care—which delivers services for the non-poor, disabled elders under broad eligibility guidelines. These service delivery programs for the elderly, however, do not touch the broad issues of financing long-term services and supports for the whole population. We turn to this issue with a brief note on the State of Hawaii's efforts to frame Long-Term Care (LTC) financing packages for the population.

2 A brief review of the history of LTC financing proposals in Hawaii

Hawaii's legislature and the Executive Office on Aging have worked on several approaches for covering long-term services and supports needs for Hawaii's elders since the late 1980's. Several programmatic efforts emerged.

2.1 First program proposals—1992, 2003

The Executive Office on Aging (EOA) of the State of Hawaii (EOA) examined the extant commercial LTC insurance policies on the Hawaii market, reviewed plans by public retiree' groups to solicit specially priced LTC insurance for members, and assessed the long-term outcomes of publically assisted private LTC insurance policies via tax incentives and Medicaid "look-back" waivers. An advisory group was organized, which led to the basic framework of a state plan.

These early discussions were broadened to wider community involvement and the development of a series of white papers on long-term care. There was early agreement that LTC financing would be the driver in assuring the system could develop as the need and demand

[11] Health Care Reform Financing Plan, In accordance with Act 48, Section 9. State of Vermont, Agency of Administration, Health Care Reform.. January 24, 2013. http://hcr.vermont.gov/sites/hcr/files/2013/Health%20Care%20Reform%20Financing%20Plan_typos%26formatting%20corrected_012913.pdf. Accessed September 8, 2014.

grew. This led to the initiation of the LTC Financing Project with the task of the project group to examine the full range of mechanisms for funding care for elders as they became disabled.

The seminal framework for assessing the nation's problem of paying for care for disabled elders was written by Alice Rivlin and Joshua Wiener and associates Raymond Hanley and Denise Spence*, Caring for the Disabled Elderly: Who Will Pay?* This Brookings Institution project explored a wide variety of financing mechanisms, examining who might participate, how broad the participation might be, and how many people would get care. The study set the standard for examining financing packages, first by studying the fundamentals of the option, such as the principles of private insurance policies, or the effects of Medicaid income and asset restrictions. Then the examination explored what would happen if a proposed financing plan were put into place for the U.S. population. This approach to exploring the consequences of each program option formed the basis of the 1992 Family Hope Program proposal and the 2003 Care Plus design.

The Hawaii team followed this procedure by fundamental analyses of the common financing mechanisms. Appendix B presents the analysis of traditional long-term care insurance (LTCI). The Hawaii team then contracted with Lewin/ICF, the firm maintaining the Brookings/ICF micro simulation model used in the Rivlin and Wiener volume to adapt the model to fit the Hawaii population. This model was used to examine the logical consequences of adopting each of several different financing mechanisms. The Hawaii team decoded the entire Brookings/ICF model and spelled out modifications that would be necessary for an assessment of state programs. Thus expanded, the model served as a device for running 25 thousand cases through a set of random events to track the changes in their lives. The simulation runs allowed the team to assess the magnitude of the effects that could be obtained with alternate policy packages. In addition the Hawaii team contracted with a well-respected health care actuarial firm to build pricing models for both private sector and public sector proposals, so that discussions could be based on financing plans sufficient for the public interest.

The 1992 Family Hope program was followed by the 2002-3 Care Plus financing proposal. Both are described in detail in Appendix A.

3 The Hawaii Long-Term Care Commission

Considering the increasing pressure on state budgets of institutional long-term care and the increasing inability of most families to plan for paying institutional care costs, the legislature passed Act 224 in the 2008 legislative session:

> The legislature finds that virtually all of Hawaii's elders want to age-in-place at home rather than in a care home or institution, and that many elders will require more intensive services and caregiving at the end of their lives. Over the years, a number of initiatives have been undertaken to begin the needed transformation of the services and programs that support seniors and persons with disabilities in Hawaii, such as Quest-ExA, the expansion of Kupuna Care, the Aging and Disability Resource Center, and the Going Home Plus Program.

However, the State of Hawaii has not taken a comprehensive look at needed systems reforms, nor developed a solid plan about how to prepare for the future service needs of these rapidly expanding, vulnerable populations.

The legislature further finds that the costs of institutional care have escalated beyond the financial means of most elders. The State's portion of Medicaid expenditures has increased steadily over the years and is projected to increase significantly as baby boomers begin to retire. As Hawaii's population ages, the number of frail and disabled individuals will also increase, placing a precipitous demand on the need for long-term care services, as well as significant cost pressures on the state budget. The legislature therefore finds that there is a need to plan for the future to make quality long-term care services as accessible, efficient, and effective as possible.

Act 224 established the Hawaii Long-Term Care Commission which reviewed the breadth of measures possible for funding long-term care in Hawaii. In 2012 the Commission released its final report, with a set of clear recommendations in response to the legislative directive.[12]

- Construct a long-term care education and awareness campaign
- As a source of private long-term care funding, encourage life insurance
- Support funding for Kupuna Care
- Do not enact tax incentives for the purchase of private long-term care insurance
- Enact a mandatory limited public long-term care insurance program in Hawai'i
- Reconstruct the regulation of domiciliary care facilities, including Adult Residential Care Homes, Extended Care Adult Residential Care Homes, Community Care Foster Homes, Assisted Living Facilities, and nursing homes
- Strengthen Aging and Disability Resource Centers and expand their role
- Consolidate Hawai'i state departments responsible for long-term care into a single agency or department to improve accountability, policy coordination and efficiency. (HLTCC 2012)

In response to the Commission's report, the 2013 legislative session introduced HB1, which funded a feasibility study for a mandatory limited term, limited benefit social insurance program. This took form as HB1SD2. The final version of the bill was in fact issued as a concurrent resolution, with the funds envisioned for the effort moved into the EOA budget. The specifications of the resolution are presented in the first column of Table 1.

[12] http://www.publicpolicycenter.hawaii.edu/projects-programs/long-term-care.html, referenced October 12, 2014.

Table 1. Specifications for design and assessment of a prospective state long-term services and support insurance program pursuant to HB1SD2

Specification	Assessment	Location
(1) A projection of the contribution rates necessary to keep the trust fund dedicated to providing long-term care benefits actuarially sound over the short-range and long-range future periods;	Each of the four separate program options presents a Fund Table—a table of the premiums or taxes coming in, the interest earned, and the benefits and administrative expenses going out for each year through 2088.	Sec. 5.3.1-Sec 5.3.4
(2) The method for collecting premiums;	In premium-based and income-tax based programs, collections would be via the N-11 Resident Income Tax return form. In the GET based program, collections would be via a surcharge on the general excise tax.	Sec. 5.1
(3) An estimate of the expected future income to and disbursements to be made from the trust fund in future years;	In the discussion of each program option, the income and outflow projected for the trust fund are illustrated.	Sec. 5.3.1-Sec 5.3.4
(4) A projection of the amount of benefit each resident of the State would derive from paying into a trust fund dedicated to providing long-term care benefits;	In the discussion of each program option we present graphs of the number of those drawing benefits and the average benefit drawn by age.	Figs. 14, 15, 17, 18, 19, 21, 22.
(5) An estimate of how long the contributions would need to be collected before benefits could be paid out;	The program proposals all include a ten-year vesting requirement. Full benefits would be acquired at 1/10 of the face value for each year of membership. Should a member miss consecutive payments, the benefit would be lost at the rate of 1/10 of the benefit value for each consecutive missed year of payments.	Secs. 5.1, 5.2, 5.3
(6) An estimate of the likely impact on Medicaid rolls, if any;	The effect on Medicaid rolls and costs will be released in a separate report in May, 2015.	
(7) A statement on the minimum and maximum age for employed persons to be eligible to enroll;	Setting a minimum age for enrollment of 25 avoids creating tax and record-keeping issues for the youngest workers. The standard for working person enrollment may be taken from tax return filings. Younger persons with limited employment will have substantially lower wage filings than those past the age of 25. Whole population options assume a maximum enrollment age of 99 years.	
(8) Definition of "employment" for purposes of determining eligibility of benefits;	In the discussion of the employment-restricted programs, there is a brief presentation of the tools that may be used to establish an equitable sense of 'working.'	Secs. 5.3.1, 5.3.3
(9) Minimum period of premium payment before eligibility of benefits;	The program versions proposed here begin payment of benefits after the 5th year of premium payment.	Sec. 8.1.1
(10) A statement on the length of benefit coverage;	Principle program versions proposed here offer coverage of 365 non-contiguous benefit days.	
(11) A statement on the amount of cash benefit, whether it varies by disability level, and whether it has an inflation adjustment over time;	The cash benefit proposed for the beginning of the program is $70 per day of service. The benefit may be increased by the Trustees, subject to actuarial assessment. An estimate of 5%	Sec. 8.3.1

Specification	Assessment	Location
	annually in benefits to adjust for inflation is computed into the funding requirements. Benefits not scaled to disability..	
(12) A statement on whether individuals need to pay in for life, until retirement, or until they have paid in for a specified number of years;	In all program versions proposed here, individuals pay premiums for life.	Sec 8.1
(13) A statement on whether premiums should be level or increase with inflation over time;	All program versions proposed here have premiums that increase with inflation over time.	Secs. 5.3.3, 5.3.4
(14) A statement on whether low-income individuals should be exempt from participation;	In the premium-based and income-tax based programs, low income individuals may be exempted by setting a minimum Hawaii AGI or Hawaii Taxable Income for the contribution to be computed. In the GET based program, everyone filing an N-11 tax return should be included, as the cost is financed by everyone in the state.	Sec. 4.3
(15) A statement on a graduated, sliding fee premium;	Any program version with a flat, fixed annual premium will not adjust to meet the member's available income. Programs based prospectively on the income tax or on the general excise tax automatically index to increasing income or expenditures.	Secs. 5.4.3, 5.4.4
(16) A statement on how the program should be administered;	Consistent with HRS 346C, the program proposed shall be administered by a Board of Trustees of the Hawaii Long-Term Care Benefits Trust Fund. In addition, the State's implementation of the Aging and Disability Resource Centers (ADRC) provides a locus for measurement of disability and establishment of qualifications for benefits.	Sec. 5.1 and Fn. 60 & 61.
(17) A statement of actuarial assumptions and methods used to determine costs and a detailed explanation of any change in actuarial assumptions or methods;	The actuarial assumptions are given in the actuary's Chapter 8.	Sec. 8.2
(18) A statement on tax incentives for the purchase of long-term care insurance;	A statement on tax incentives for the purchase of long-term care insurance is given in Chapter 6 and in detail in Appendix E.	Sec. 6..0, App. E
(19) A statement on the return of investment to specifically address where the resources will reside, such as in a special fund or separate account for long-term care resources, and the investment strategy for these resources; and	In accordance with HRS 346C, the Trust Fund resources shall reside in a separate Trust Fund. Investment strategy is described in HRS 346C-__. Investment strategy implementation shall be the responsibility of the Trustees, under HRS 346C.	Secs. 5.1 and Fn. 60, 61
(20) A statement on the Medicaid or long-term care public-private partnership plan that has been adopted in other states.	A statement on the Medicaid/Public-Private partnership plan is given in Chapter 7. A detailed review of existing research on these programs is given in Appendix F.	Sec. 7.0, App. F

4 Fundamental program principles

The fundamental characteristics of the 2014 program options are: (1) mandatory membership; (2) limited benefit periods; and (3) limited benefit amounts. An additional provision of the Commission was to recommend that the program initially be restricted to working households in the population. This provision will be explored as an option. Each of these features raises some non-obvious questions about what the benefit shall be and to whom it shall be delivered.

The programs discussed here share a set of common characteristics that will make comparison of outcomes and effects possible.

- An initial limited indemnity benefit of $70 per day with graduated inflation adjustments.
- A limit of 365 days of not necessarily consecutive service.
- The HIPAA disability trigger requiring assistance with 2 or more Activities of Daily Living (ADLs) or cognitive impairment (Please See Section 8.2, p. 85)).
- A 30 day elimination period before payment of benefits.
- No underwriting of an individual's risk of care, providing that they were not receiving long-term supports or services at the beginning of membership.
- A 10 year process of incrementally vesting the full value of the benefit or "de-vesting" in the even a person fails to meet membership requirements. This serves to protect against predatory migration, and also safeguards the interests of Hawaii residents who have been long-term contributors.

4.1 Limited benefit period

The proposed program options offer 365 days (consecutive or not) of LTSS benefits starting at, $70 per day.[13] Providing a benefit for a limited period accomplishes several objectives. The first is to provide a mechanism for delivering assistance relatively early in a person's period of disability. Many private sector LTCI policies require a 90 or 100 day elimination period.[14] The period is long enough that the benefit can be plausibly considered "long-term" as opposed to a temporary benefit delivered to cover recuperation from some short term disability, surgery, or other limitation of activities of daily living. In addition, starting a benefit after 90 or 100 days links to the end of services covered by Medicare for acute care rehabilitation.

[13] Market LTCI policies are offered at various benefit levels, sometimes starting around $70 per day on upward. This benefit is indexed from 2017 so it will be higher at the first payout dates, for example, in 2022.

[14] Tables in the 2014 Sourcebook for LTC Insurance Information report 92% of 2012 sales having elimination periods of 90-100 days.

While there is no fixed rule about how long a program should provide a care benefit, there are some common sense standards.[15] First, does it kick in early enough to help avoid disrupting family and caregivers' lives when suddenly services have to be found or provided?[16] Is it long enough to permit a family or caregivers to adjust needs and schedules so that care can be provided for a longer period? Does it cover sufficiently most people's care needs—does it last long enough? Is the magnitude of the whole program within the limits that legislators and taxpayers will consent to fund? Does it cover a significant segment of the aging community, or is it restricted to a relatively small group of beneficiaries?

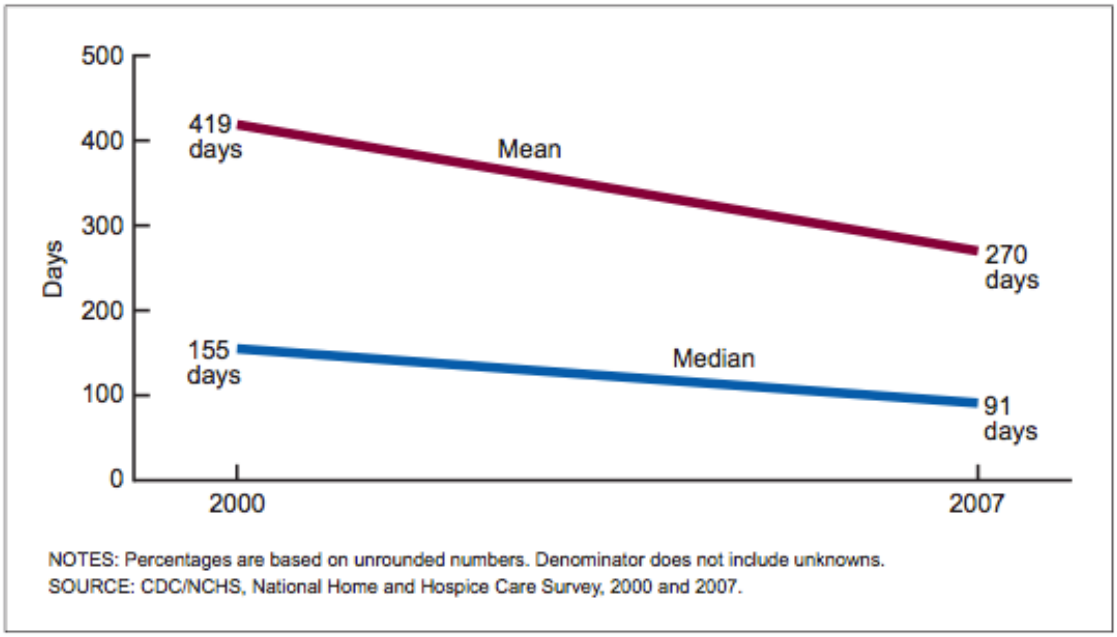
Centers for Disease Control (CDC) studies suggest the number of days a person receives home health care in his or her own home is decreasing.[17]

[15] John O'Leary's expert group study for the Society of Actuaries strongly endorsed up-front coverage, "panelists actually rated the short-term care approach more viable from a consumer perspective (79 percent versus 74 percent). Panelist commentary suggested that for many middle-income consumers, they might exhaust their resources before they get to avail themselves of the catastrophic benefits. On the other hand, the short-term product, while limited in terms of total benefits, would provide consumer value because of higher potential for use along with more affordability." John O'Leary, Land This Plane: A Delphi Research Study of Long-Term Care Financing Strategies, p. 26. Society of Actuaries, 2014.

[16] O'Leary's group of LTCI and LTSS experts were asked to assess alternate ways of covering LTSS needs. One of O'Leary's respondents contributed a telling commentary on people's often questionable reliance on filial assistance that is a clear question about our expectations of family in Hawaii: "How can you require a child living in California to help their parent in New York? What if the parent does not want their child's help? What if the child has much worse physical health than their parent?" John O'Leary, Land This Plane: A Delphi Research Study of Long-Term Care Financing Strategies. Society of Actuaries, 2014.

[17] It is possible that some of this decline reflects changes in provider. There is no particular reason to assume, however, that service users are changing providers more frequently over time.

Figure 3. Length service for home health care patients in their own homes aged 85 and over, United States, 2000 and 2007



This drop in length of stay is due to Medicare requirements for reimbursable services—namely that the patient must show evidence of rehabilitation. Services then stop when the patent's progress has plateaued and requires custodial care. This occurs even when there is a continued need for custodial level home care service. That is why the private duty home care agency industry has expanded so greatly.[18]

Similar patterns are seen for age groups from 65 up.[19]

Table 2. Length of service (in days) for home health care patients by selected characteristics, United States, 2007

Age	Mean	Median
65-74 years	256	69
75-84 years	213	50
85 years and over	270	91

[18] Personal communication, Dr. Cullen Hayashida, November 15, 2014.
[19] Centers for Disease Control. Home Health Care and Discharged Hospice Care Patients: United States, 2000 and 2007. *National Health Statistics Reports*, No. 38, April 27, 2011.

For the current proposed program options, it is expected that the benefit period will cover about one-half of the long-term support and services needs of the aged insured population.

4.1.1 Will the benefit help people at a critical point in their disability?

Some benefit packages in the past have restricted the point in disability at which a benefit would be paid. Early private Long-Term Care Insurance (LTCI) policies often required a prior hospitalization, and many required 90 or 100 day waiting periods (exclusion periods) after reaching the benefit trigger and during which the patient paid cash for services, before the insurance program benefits could be paid. The proposed program starts benefits after 30 days of paid services[20], after reaching the benefit trigger. This allows for more effective coordination of benefits for care providers. Moving the first payments forward represents a substantial benefit for the family.

4.1.2 Does it allow for other forms of assistance where these may be most effective?

The proposed benefit programs effectively partition the risk of long-term care into two pieces, a front portion and a back portion. The proposed programs cover the front portion—starting 30 days from the onset of services (once the disability trigger has been reached). The service package does not run so long as to make other, longer term support unnecessary. This division, and the restriction of the benefit period reinforces the role of the individual's own planning in covering his or her long-term needs. Complete public financing is not seen as feasible in most of the United States. Public financing that leaves an area to be covered by private LTC insurance, by family savings, or by other family efforts provides substantial private opportunities to protect family well-being.[21] Program benefits will delay the possible reliance

[20] In principle this requirement is to assure that the ADL disability is in fact something like long-term, and not a short period of rehabilitation after acute care—which would be typically covered by Medicare. In the event an individual was released from acute care or from Medicare rehabilitation after 30 days of service with 2 ADLs, the elimination period should be considered as having been satisfied. This standard might be modified to count other services received, but this might be a potential expansion of services—a non-trivial task for a Trust Fund Board of Trustees.

[21] John O'Leary, noted the dimensions of public support for social insurance to fund long-term services and supports:

> Social insurance is needed as part of the solution. The most surprising finding of the survey is the overwhelming degree to which the panelists agreed on the need for a social insurance component as part of the ultimate LTC financing solution. It appears that panelists felt that private insurance and savings, while essential components of the LTC financing solution, would not be sufficient by themselves to satisfy all the financing requirements without a supplementary social insurance component. ….The government needs to take an active role in the LTC financial solution. Over 90 percent of panelists agreed on the need for the government to take an active role developing and implementing LTC financing solutions.

John O'Leary, Land This Plane: A Delphi Research Study of Long-Term Care Financing Strategies. Society of Actuaries, 2014.

on Medicaid for home and community services, thus, bringing much needed assistance to the families with frail members.

How would an existing LTC insurance policy fit into this program? An existing LTCI policy which starts benefits after 100 days of paid services would begin payments a good way through the benefit period offered by these proposed packages. The proposals discussed in this report offer a level of benefits that can be delivered in the home or in community settings. For persons with no private LTCI policy, the 365 day benefit may be stretched by not using services every day. For the person with a private LTCI policy, the nursing home portion of the benefits provided may have to be deferred because a nursing home bed may not be available. The proposed programs here start early in the care sequence and enable a more financially secure stay at home.[22] The most important coordination, though, is with Medicaid. Since the proposed Hawaii social insurance package provides benefits without setting income or asset limits, it may reduce the pressure for spending down or disposing of income and assets to qualify for Medicaid benefits.[23] The proposed social insurance program is not primarily intended to create a Medicaid offset. Any offset would be limited because the program has a limited quantity of 365 service days. The greatest number of users of the program will be the large segment of the population which is not Medicaid eligible, and would generally not meet both the asset and the income limitations of Medicaid.

4.2 Limited size of benefit

Limiting the size of the benefit accomplishes several goals. One is that it forces attention to the level of care we may definitely need, as opposed to a level of care that is on a cost-free "wish list." The proposed benefit size and duration must address the services most people use. The length of benefit must also be based on some sense of how long a benefit is likely to be used in the insured population.

[22] One might ask whether it would be appropriate to use Medicaid services simultaneously. As a matter of efficiency and protection of family income and assets the goal would be to use the proposed program services before needing to go through the financial privation of qualifying for Medicaid benefits.

[23] Baird, Hurd and Rohwedder examine the way in which moving assets out of family assets (as opposed to spending assets on care) interacts with Medicaid rules on spend-down:

> There are policies in place to limit the extent and avenues to which individuals may deplete their assets in order to qualify for Medicaid. The primary obstacle is a penalty period assessed over a defined look-back period, which delays eligibility for otherwise eligible Medicaid applicants for non-market transfers of assets. These may include, for example, inter vivos transfers to children or charitable contributions. Medicaid policy makers walk the fine line of making these penalty assessments too stringent, and thus denying Medicaid eligibility to needy seniors, or making them too lenient, and encouraging heightened strategic asset transfers at the cost of heightened Medicaid expenditure towards individuals who otherwise would be able to (at least partially) afford long-term care.

Matthew Baird, Michael Hurd and Susan Rohwedder. Medicaid Spend-down: The Importance of Strategic Asset Transfer to Reach Medicaid Eligibility. NBER Working Paper March 16, 2014. p.1-2.

4.2.1 Covering a limited population or covering the whole population?

The LTC Commission recommended a "Working Population" model. This poses a fundamental question—what are the costs and the likely effects of building a program for a limited population versus an entire population of able youth and elders?

4.2.1.1 For an entire society: What is the real risk?

The image we often have of the need for care is that "I need maximum benefits for life" or "I need care for at least five years" or perhaps, "We need to cover ourselves until at least 100." These wishes, however, are at best described as wants, not needs. For events that occur in the future we really do not know what our actual needs may be. We can say something about what we expect them to be. When we look at a whole population, or a really big sample, we can tally those who reach some particular level of frailty (and thus may need assistance) for every age. For a particular segment of the society, for example, people at age 40, we can compute and illustrate the lifetime risk of using home care (HC) or institutional care. Figure 4 shows the estimated probability of using care before death for men and women. It is important to note that these probabilities run all the way out to the end of life for each age—but the end of life is different for each person.[24] The short term picture looks somewhat different. Figure 5 shows the pattern of use of institutional services, and Figure 6 shows the pattern of use of home care services for each age at which service is used.[25]

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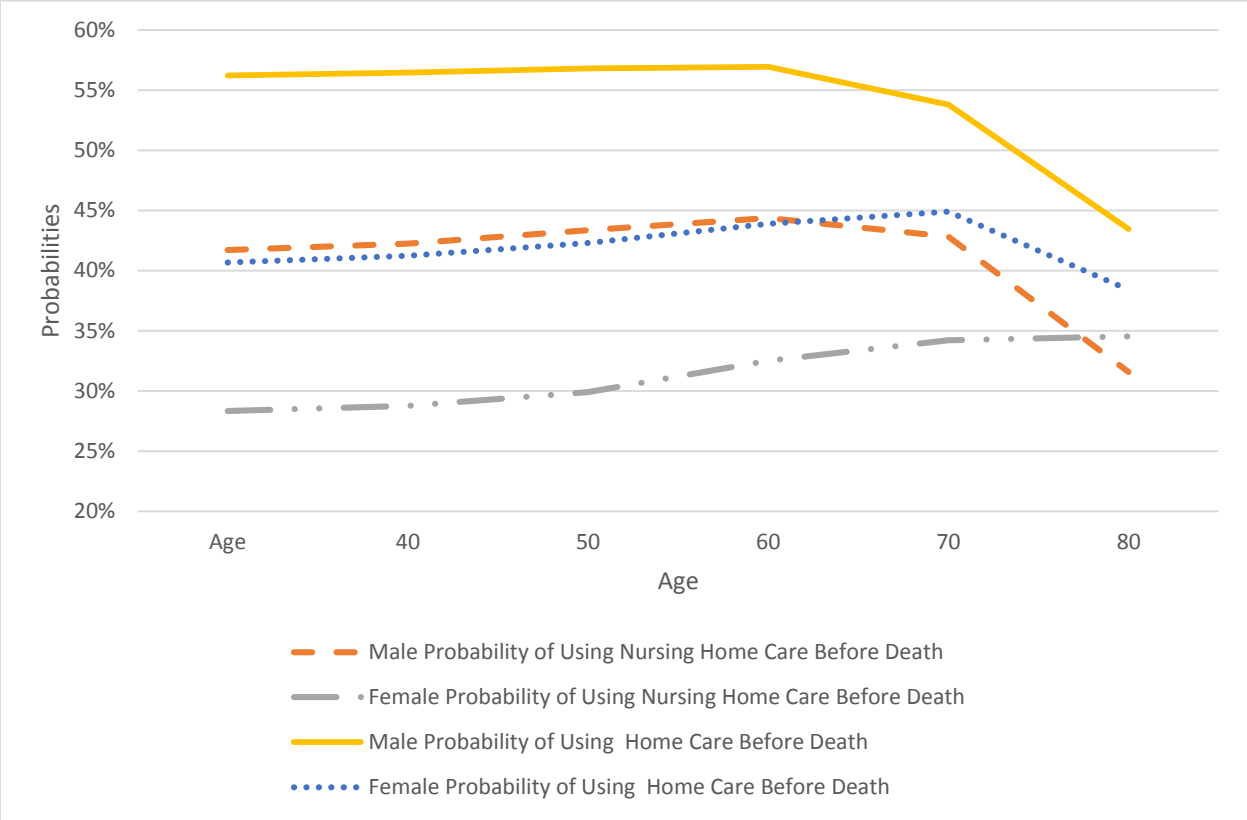
[24] Hurd, Michaud and Rohwedder point out the life forces—death and frailty-- that drive home care and nursing home risks:

> Our results also highlight that there are two competing forces that affect lifetime risk: nursing home risk and mortality risk. Both of these depend in a non-trivial way on socio- demographic characteristics. For example, smokers have a higher risk of entering a nursing home conditional on being alive. But since they also face higher mortality risks, this reduces lifetime exposure to nursing home risk. We find that females, white and non-smokers face the highest risks of ever entering a nursing home.

Michael Hurd, Pierre-Carl Michaud and Susann Rohwedder. The Lifetime Risk of Nursing Home Use. Chapter in NBER book Discoveries in the Economics of Aging (2014), David A. Wise, editor (p. 81 - 109).

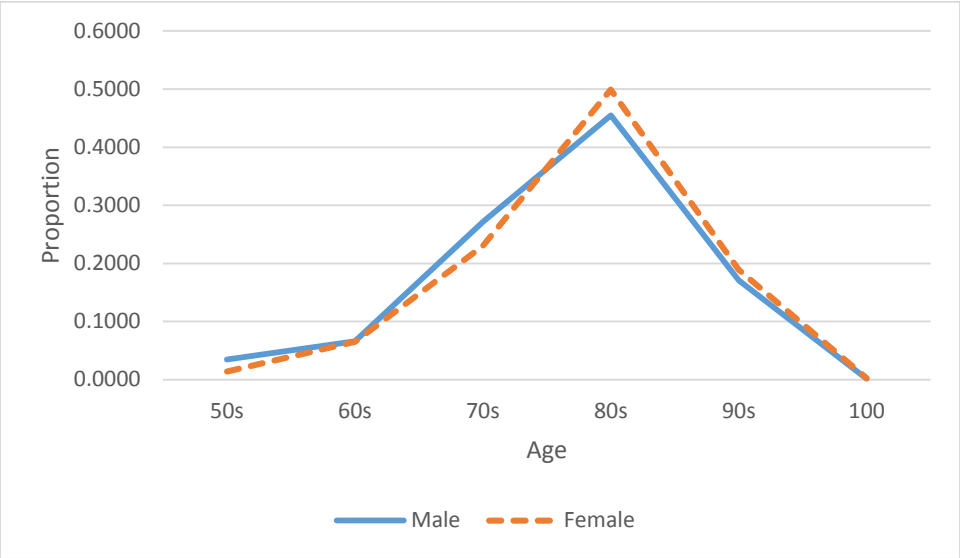
[25] These charts plot the pattern of care use of those who are projected to need care after age 50. So, looking at female nursing home use, of the 41% of women age 50 who are projected to use nursing home care before they die (Figure 4), 37% of them will use nursing home care while they are 80 something years old (Figure 5). The total graphed proportions equal 100% of those projected to use care after age 50.

Figure 4. ***Probabilities of Using Care Services Before Death by Age and Gender***



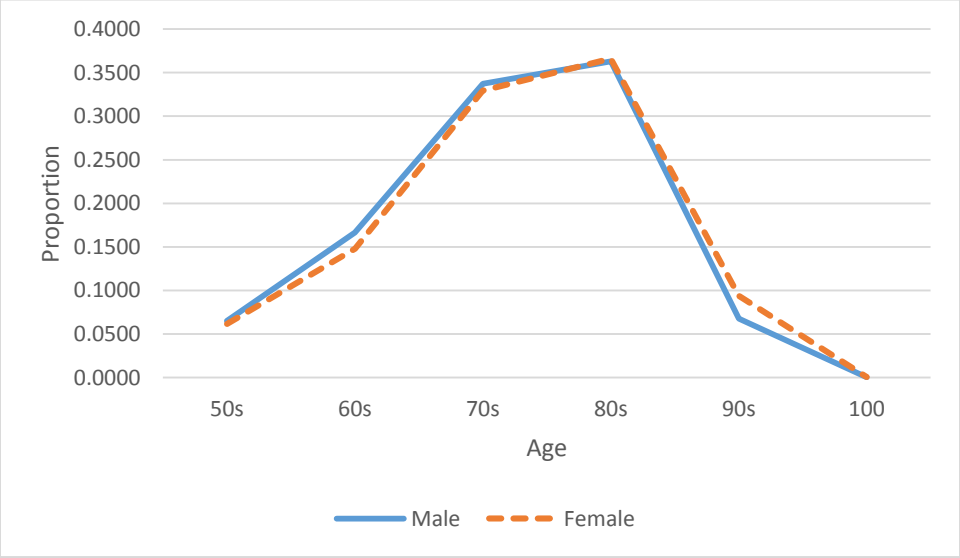
Source: Original data, HistoricalData table from the Actuarial Research Corporation Hawaii Long Term Care Model Version 9. Additional computations by Lawrence H. Nitz, University of Hawaii, Ivan I. Sanidad, University of Hawaii, and Edward Armentraut, Actuarial Research Corporation, November 2014.

Figure 5. Probabilities of Using Home Care Services by Age Decades



Source: Original data, HistoricalData table from the Actuarial Research Corporation Hawaii Long Term Care Model Version 9. Additional computations by Lawrence H. Nitz, University of Hawaii, Ivan I. Sanidad, University of Hawaii, and Edward Armentraut, Actuarial Research Corporation, November 2014.

Figure 6. Pattern of Home Care Services Use by Age Decades



Source: Original data, HistoricalData table from the Actuarial Research Corporation Hawaii Long Term Care Model Version 9. Additional computations by Lawrence H. Nitz, University of Hawaii, Ivan I. Sanidad, University of Hawaii, and Edward Armentraut, Actuarial Research Corporation, November 2014.

Young people, for the most part, do not become frail frequently. In fact, frailty is rare until past the age of 65. After that, the number of people in a population who become frail each year of age rises. But, there may not be very many people in the highest age ranges. It is projected that of 100,000 births, there are about 99,906 alive and healthy at age 20, and 376 alive and healthy at age 100[26]. This means that very few people are exposed to the risk of being disabled between the ages of 99 and 100, but many more face disability risks in their 80s.[27] Appendix C presents a table of this survival, called a life table, and calculates the risk that a person in any year who had not been disabled, may become disabled—losing the ability to accomplish two or more of the activities of daily living (ADLs) without assistance. The life table must capture two effects which any long-term insurance program must account for—the growing frailty with age—and the growth of the fraction of the Hawaii population that arrives via migration.

The lesson for us at this point is that most people will not experience the risk of disability at age 99, but many will face it at age 80 or 85. In addition, most people facing a disability will not experience it forever, and most not even for five or possibly three years. Many will experience a disability for a year or less. It is psychologically comforting to think of having insured coverage for a disability that might last five years—but most will not. It is comforting to think of having some kind of protection until age 100—but only 5% of females and 2% of males are likely to see that age.

It is also comforting to think of obtaining a large amount of insurance coverage—in the hundreds of thousands of dollars per year to provide for a long nursing home stay. Yet the bed may not be there for a part of that potential stay—someone else is using it. The idea of a nursing home may sound clean and inviting when we are negotiating a long and complex insurance document—but the reality may be that we prefer our own house, with the mangos and papayas in the back yard.

The goal of these prospective programs is to propose a limited length of benefit that will "capture" the largest share of the population. This shorter than lifetime benefit—365 days of services—will not cover lifetime care, and is not targeted at covering the costs of nursing home care. It is intended to bridge the family's ability to adjust schedules, arrange work hours, and keep caregivers' regular jobs and benefits safe—especially those of women in the labor force who are not yet ready or able to retire.

Finally, the "Cadillac program" of the private insurance market often offers five or more years of nursing home support at $250 or $300 per day, inflated at 5% per year, which could result in paying benefits of a half-million dollars in the early years, and more later. That is more a

[26] Based on Appendix C using female population and home care.

[27] Of those who will eventually fall to frailty the numbers include about 44% of males and 49% of females who will start nursing home care in their 80s and 34% of males and 35% of females who will start home care in their 80s. Before these people hit the age of 80, 60% of males and 56% of females will have begun home care.

Lamborghini program—few of us would buy that for ourselves—and even fewer could keep up the premium payments over time.[28]

4.2.1.2 For a working population—how to define who is in, who is out, and whether this is the right choice.

Experience with Hawaii's 1973 Prepaid Health Care Act raises sticky questions as to how we might define "working" for purposes of a social insurance program. In the Prepaid Act case, the floor is 19 hours per week—but for over three weeks a month. Working 18 hours or for only 3 weeks does not qualify an employee for employer-paid health insurance. There is no effective way to merge the two or three part-time jobs a person might hold to define a "full time employee." Under the ERISA exemption that allows the Hawaii Prepaid Act to function, it is not possible to amend the program to collect a fractional premium for part-time workers. Defining "working" for purposes of long-term services and supports insurance can have the same effect—that is, creating a floor that becomes a ceiling for many who had hoped for access to the insurance product.

Two other options exist to address the "working" definition. One goal of the specification was to exclude the poor and to hold off for the present the need to insure those already of an advanced age—as one group would be Medicaid eligible almost immediately, and the other might soon be in need of services, but would not have contributed substantially to the program. One option is to set a minimum and a maximum age for the starting cohorts, retaining only the minimum age as the program matures. Another option is to define working as a flow of income number—the amount listed in the Hawaii N-11 Resident Income Tax Return as "Hawaii AGI" on Line 20. This amount is the federal Adjusted Gross Income, augmented by interest earned on out-of-state bonds and several other adjustments, from which non-taxable pension benefits have been deducted. An alternative entry is on Line 26, the Hawaii Taxable Income, which deducts allowable personal exemptions. It is in principle possible to set a full time work "floor" for the Line 20 Hawaii AGI or Line 26 Hawaii Taxable Income, below which premiums or LTC trust fund income taxes would not be collected.

4.2.2 Why social insurance? Why not simple general funds financing? Why not plain private long-term care insurance?

The goal of all insurance programs is to spread risk. We generally cannot insure things that consume constant costs. There is no insurance families can buy to cover the risk of their children's pizza bill. There is no insurance to cover the cost of the auto owner's tank of gasoline every week. In an imaginary economy we might find someone willing to write the pizza or the gasoline policy, but that insurer would have to charge at least the average price of pizza for a

[28] We should consider whether these Cadillac/Lamborghini plans are over-insuring the risk of needing LTSS late in life? This study proposes that the state should facilitate covering the more common place risks of the majority and not the extraordinary risks of the few.

year or the total of gasoline purchases, plus an amount to run the imaginary insurance company. This would be in fact more than the cost of the pizza or the gasoline—because the pizza and gasoline purchases are not rare events, but steady streams of use. There is no real way to share the risk of these costs.

In systematic studies of citizen preference for ways to address the costs of long-term services and supports (LTSS) strong support for broad social insurance proposals has been found.

The Leading Age organization of non-profit institutions considered a series of options for funding long-term services and supports. Two, in particular, speak to the role of social insurance in covering the community's needs:

> **Common Good:** This pathway would create a public program to meet basic, "front-end" LTSS needs for working and retired Americans, by providing cash and/or services for a defined dollar or time limit. Underpinning this pathway is the view that long-term care is a risk common to all Americans, a risk most effectively and fairly handled by pooling that risk (such as unemployment insurance for joblessness or longevity via social security). Participation would be either required or strongly incentivized and premiums would be based partially on income. Because coverage would not be comprehensive, the safety net remains for people who have not met minimum contribution requirements, are outside the program, or are unable to afford LTSS expenditures that exceed those covered by the program. The private sector would be encouraged to develop supplemental and catastrophic need products, a market segment that has proven relatively successful in other countries (e.g., France, Germany, and Israel). [Comas-Herrera, A., et al., "Barriers and Opportunities for Private Long-term Care Insurance in England: what Can we Learn from Other Countries?" Chapter in McGuire, A. and Costa-Font, J., eds., Elgar Edward LSE Companion to Health Policy, Elgar Edward, 2012.] Compared to the status quo, the safety net shrinks substantially and virtually all Americans would be covered in a way that supports individuals in the context of family and community. While this pathway would reduce pressure on state and federal Medicaid budgets and cover most people in need, its mandatory nature and departure from our current heritage of self-reliance will present challenges to adoption. However, survey data of Americans 40 and older suggest openness to such an approach, with 66 percent strongly or somewhat favoring a government-administered long-term care insurance program similar to Medicare. [AP NORC Survey][29]

An additional path explored in the Leading Edge report is a comprehensive program:

> **Comprehensive:** This pathway combines the public catastrophic coverage and the front- end common good coverage to create a comprehensive program for LTSS needs providing a benefit

[29] *A Framework for Addressing Americans' Financial Risk for Long-Term Services and Supports*. A Leading Age Finance Task Force Report. October 2014, p. 13.

> of cash and/or services. Personal responsibility would come in the form of co-payments or deductibles—a feature of most long- term care systems in the world today. Participation would be mandatory, nearly eliminating the safety net, which would remain only for those who cannot afford their share of co-pays/deductibles or who remain outside the system for a variety of reasons. While this pathway would reduce pressure on state and federal Medicaid budgets and cover the most people in need, it would be a radical departure from our current heritage of self-reliance and responsibility.[30]

In some policy contexts, social insurance programs for LTSS are seen as a measure for saving money in a Medicaid program. The proposed program benefits are directed toward those who will most likely not benefit from Medicaid, so the offset to Medicaid expenditures may be limited in this generation.

The number of people who become frail in their 85th year is still quite a rare event. From the table in Appendix C, the probability of an 85-year-old reaching a 2 ADL disability level and needing home care (HC) in that year is about 3.7% for men and 3.5% for women. This is about several times the risk facing a 60-year old, but it is still a small number. This is a risk that we can share.

But do we want to share risks in a society only among those in a narrow risk class? All of us start out young and face very little risk of disability in our early years. We do not stay young, however, and face more risk as the years go on. Why not then insure our risks when we are very young? If not when young, then perhaps a little older? In point of fact, few are interested in securing long-term care when they are young. When we get older, however, our bodies, our experiences, and our health may change. The 99% healthy population of 20-year-olds may not be 99% healthy at the age of 60. Some who want to insure themselves but wait until age 60 will not qualify to purchase coverage. The rational insurance company must underwrite the applicants—it must sort them out into the categories for which it is willing to carry the risk and the categories for which it is not. This means that some proportion of the 60-year-olds in the population will not be able to secure long-term care insurance. The Kaiser Family Foundation report on purchasing LTCI examined the proportions of people who would prospectively pass underwriting standards by age.[31]

[30] *A Framework for Addressing Americans' Financial Risk for Long-Term Services and Supports*. A Leading Age Finance Task Force Report. October 2014, p. 14.

[31] The Kaiser Family Foundation report examines several concerns for early versus late purchase of LTCI. The risk of failing underwriting standards when one is older is illustrated in the table: by the age of 60 for example, 25% of women will not be able to purchase LTCI. On the other hand, purchasing early may bind the buyer to a set of services or a benefit concept that will prove to be much less valuable years down the road. Mark Merlis. *Private Long-Term Care Insurance: Who Should Buy It and What Should They Buy*. Kaiser Family Foundation, 2003.

Table 3. Merlis' Assessment of the Effect of Insurers' Underwriting Screens

Table ES-2. Percent of Population Passing Specified Underwriting Screens, by Age and Sex, 1996

Age group	Men	Women	Total
40-44	93%	85%	89%
45-49	92%	81%	86%
50-54	89%	79%	84%
55-59	87%	73%	80%
60-64	84%	75%	79%
65-69	74%	71%	72%
70-74	69%	67%	68%
75-79	61%	63%	62%

Source: 1996 Medical Expenditures Panel Survey

The situation is completely different if an insurance program takes everyone. In the long run, the risk pattern of the population becomes that of the youngest members. This means that the risk of providing care and the cost of care is substantially less than the risks faced in a pool in which the people applying for insurance can choose when they wish to seek coverage. In that pool, many seek coverage when they have some concerns about not being able to escape the insured event. Many of these will not be offered coverage. Those who secure coverage, in order to keep it, must pay the premiums regularly. To pay the premiums they must have the funds available for years into the future.[32]

A social insurance program can cover a population because it takes all of the cases, some high risk and some low. Over time, the population comes to resemble the lowest risk cases. But this works only if the program takes everyone. When it does so, it shares the risk across the entire group. Because we live in a population a long time, we receive coverage for different levels of risk as we age.[33]

There is another distinction between the private insurance project and the social insurance project. If a social insurance package takes everyone, the costs of marketing and record

[32] A serious flaw in the design of the CLASS Act long-term care provision of the Affordable Care Act brought about termination of the provision. Because the proposed program was voluntary, and targeted toward older people, but did not underwrite applicants, it faced the risks of higher usage, higher premiums after a short experience period, and then flight of healthy members when premiums were raised. The result would have been increasing disability levels among the insured population.

[33] Taking everyone in the population allows accounting for the increasing age profile Hawaii is expected to experience.

keeping are minimal. [34] The private insurance firm must cover the costs of marketing—to have policyholders, someone has to go out and recruit them. This is an unavoidable cost of the private insurer.

4.2.2.1 What level of services will provide the most immediate, direct assistance?

The most difficult services to anticipate are those that one first begins to need. When one first needs help getting out of bed, moving across the room, bathing and other critical activities, the sudden or growing need is a challenge to the elder and to the family and caregivers. The family clearly needs assistance fairly early in the disability path, and this need is changing with shifts in the composition of the family.[35] The services needed vary—from mobility assistance to bathing and dressing. Often critical services may be obtained in community settings, such as adult day care centers. Other services are best delivered at home. Some services need only provide respite for the caregivers so they can proceed with their jobs and other normal obligations. At the beginning of this path, however, there may be little need for continual care, and even less for full service nursing home residency.

4.2.2.2 More people will use assistance in their homes or community settings than will experience long nursing home stays

In Hawaii most people prefer to stay in their homes as they age. In fact, more are likely to use home care (HC) services than residential care. The Actuarial Research Corporation's Hawaii Long-Term Care Model estimates that in 2025 about 27,000 people in Hawaii meet the 2 ADL trigger criterion for a social insurance benefit. Under an insured program, most of these folks would receive benefits. For this reason, a program that provides for home care (HC) offers the first benefits to the most potential users[36]. This has been systematically examined by several states; A New York study shows a clear downward trend in nursing home stays relative to home care stays.[37] This is consistent with CMS goals to 'rebalance' Medicaid expenditures away from institutional services in favor of home and community based services. CMS is sponsoring

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[34] Even some of the earliest systematic studies of Medicare administrative costs show the total cost for work performed by the government and by private contractors in disbursing Medicare benefits was less than 5% of the total program benefits. (Ronald J. Vogel and Roger D. Blair, An Analysis of Medicare Administrative Costs, *Social Security Bulletin*, August 1974, pp. 3-23. Most private LTCI insurers spend over 30% of premium receipts on administration and marketing.

[35] Allen, Piette and Mor point to the caregiving consequences of changes in American social patterns. Looking ahead recent research has document a doubling of childlessness among American women from 1980 to 2000 (Hayford, 2013). This change will translate into shrinkage of the pool of potential helps among those 65 and older starting soon after 2020. Susan Allen, Elizabeth Piette and Vincent Mor. The Adverse Consequences of Unmet Need among Older Persons Living in the Community: Dual-Eligible Versus Medicare-Only Beneficiaries. *Journals of Gerontology, Series B: Psychological Sciences and Social Sciences* 69(7), S58-S58. Doi: 10:10.1093/geronb/gbu124. S. R. HAYFORD. Marriage (still) matters. The contributions of demographic changes to trends in childlessness in the United States. *Demography*, 50, 1641-1661. Doi: 1353/dem.2007.0026.

[36] Recent Department of Health reporting indicates that there is a total of about 12,000 facility beds in Hawaii, including nursing home, adult residential care homes (ARCHs), and adult foster care homes. This is less than half the number of persons with 2+ ADL deficiencies.

[37] New York Department of Health. Partnership Program Quarterly Update, 2nd Quarter, 2004., p. 13.

Money Follows the Person demonstrations that encourage innovations for providing community based care. Kupuna Care is another such program. One would expect changes in Medicaid funding to result in systemic changes that would eventually affect LTSS services for other people who need LTC.[38]

4.2.2.3 The onset of ADL loss presents an immediate care obligation on the family for which preparations or family work-life adjustments may not have been possible.

It is difficult to visualize the tasks of care when one has not yet performed or experienced them. Yet to begin to provide ADL assistance creates a set of demands in the household and among the caregivers that may be very hard to accommodate. A program that begins relatively soon after it has become necessary to purchase additional care services provides a degree of relief to the patient and the family that would otherwise not be possible with a benefit structure that required longer waiting periods. Tomita and colleagues (2004) illustrate the kinds of help that individuals with one or more activity of daily living deficits (ADLs) or instrumental activities of daily living (IADL) deficits may use.[39]

[38] More information about innovative home and community services can be found on the website: www.mathematica-mpr.com/our-publications-and-findings/projects/research-and-evaluation-of-the-money-follows-the-person-mfp-demonstration-grants

[39] Tomita, M. R., Mann, W. C., Fraas, L. F., & Stanton, K. M. (2004). "Predictors of the Use of Assistive Devices that Address Physical Impairments Among Community-Based Frail Elders." *Journal of Applied Gerontology*, 23, 141-155. This study was not a national sample, but was collected from patients referred by disability screening and aging services facilities in Georgia and Florida. The critical criterion was that the patient lived in the community, not in an institution, and had at least one ADL or IADL deficiency. The sample is thus an opportunity or convenience sample, but the assessment of device use and the patient condition was exceptionally detailed. It is clear that there are many needs beyond simple mobility that patients have begun to use. The authors condensed many different assistance devices into collective categories—"environmental controls" easily covers light switches, TV controllers, and the like; "balance aids" –canes, walking sticks and walkers, etc.

***Table 4**. Types of Assistive Device Used Among Tomita and Colleagues (2004) Sample Using Consumer Assessment Study Data*

Type of Motor-Impairment Device	*Frequency*	*%*	*Number of Device Use per Person*
ADL-bathing	1,300	19.7	1.87
Environmental control devices	799	12.1	1.15
Balance aid	759	11.5	1.09
Fine-motor devices	703	10.7	1.01
Meal preparation	694	10.5	1.00
ADL-hygiene	548	8.3	0.79
Special phone features and accessories	466	7.1	0.67
Reachers	340	5.2	0.49
Wheelchair	220	3.3	0.32
Special seating system	218	3.3	0.31
ADL-dressing	216	3.3	0.31
Special switches and controls	100	1.5	0.14
Leisure	85	1.3	0.12
ADL-eating	82	1.2	0.12
ADL-grooming	57	0.9	0.08
Total	6,587	100	9.49

NOTE: ADL = activities of daily living.

A tabulation of EOA data for services organized through the Kupuna Care Program gives an indication of the intensity of use of non-Medicaid, non-Medicare, publically assisted home and community services in Hawaii.[40]

Table 5. Distribution of Services Delivered by Kupuna Care, 2013

Services (Kupuna Care)	Unduplicated Count of Persons Served	Service Units	Total Service Expenditure
Personal Care	1,005	81,355	$2,447,470
Homemaker	767	16,281	$367,669
Chore Service	572	4,088	$92,880
Home Delivered Meals	2,614	328,787	$2,647,664
Adult Day Care/Health	225	56,566	$517,129
Case Management	1,338	25,112	$1,218,743

In certain ways the patient in the nursing home frees the family and caregivers from some care obligations, but typically only after a long period of in-home care. While we might imagine that the caregiving responsibilities are lower for the family of the patient in the nursing facility this comes only after substantial effort has been expended in the home. This home care cycle may be of indeterminate length, until bed space in a nursing home or adult residential care home becomes available. Assistance while the elder is in his or her home, then becomes invaluable.

4.2.2.4 What does care at home or in the community cost?

The cost of care varies dramatically across the country. For the most part, persons with 2 ADL deficiencies can manage quite well with additional care in their own homes or in community facilities, such as day-care or day-health centers. The Genworth insurance organization publishes an annual survey of LTC costs. Table 6 is extracted from the 2014 survey:[41]

[40] Executive Office on Aging, 2013 Report to AOA: Elderly Clients Receiving Registered Services, Utilization and Expenditure Profiles, P. 22. Detailed definitions of services are provide in the EOA table of Title III services, Cluster 1, 2, and 3.

[41] Genworth 2014 Cost of Care Survey: Home Care Providers, Adult Day health Care Facilities, Assisted Living Facilities and Nursing Homes.

Table 6. Cost of Long-Term Supports and Service Tasks, Genworth 2014 Survey for Hawaii

Service	Minimum	Median	Maximum	Five Year Annual Growth
Homemaker Services (Hour)	$19	$23	$25	2%
Home Health Services (Hour)	$22	$25	$28	2%
Adult Day Health Care (Day)	$54	$74	$170	3%

4.2.2.5 At what level of benefit does the program maximize the sharing of risk?

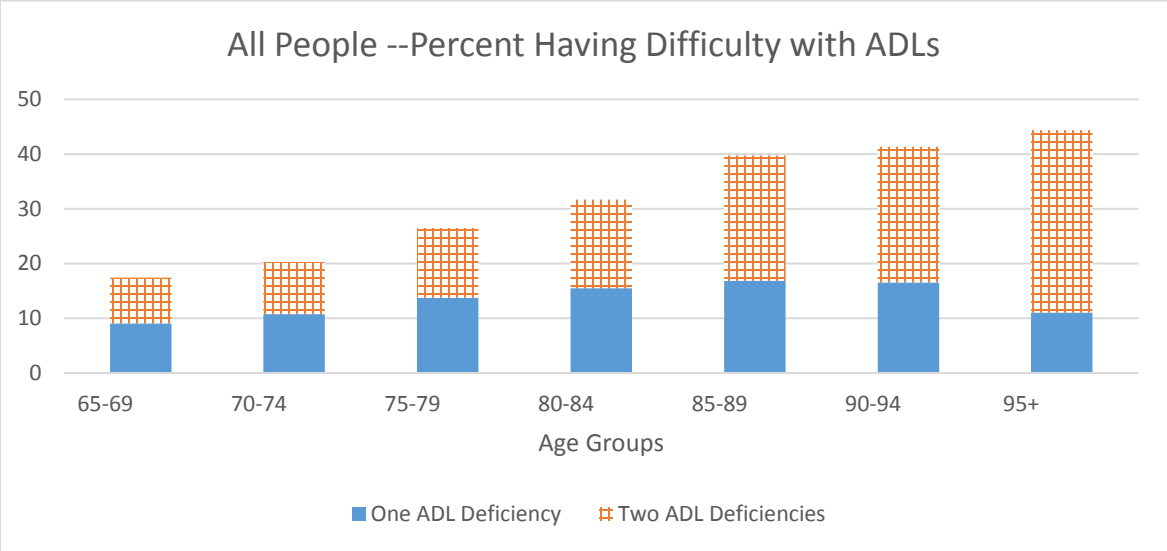
This question forces us to ask two different questions. One, is the level of disability that should be set as a trigger for benefits? Two, what should the size of the benefit be? The lower we set the trigger standard, of course, the more people will be covered at a low level of disability. Setting a disability trigger of the loss of just one of the activities of daily living (ADLs) will produce a large pool of eligible beneficiaries, but many with very little disability. This would be a very expensive program. Setting the trigger value at three ADL levels lost would be an exceptionally stringent standard—many persons at this level of care may be very hard to care for at home. Figure 7 illustrates the estimate of the numbers of persons over 60 who meet one and two ADL triggers. The standard of requiring hands-on assistance with 2 ADL follows a HIPAA definition used by CMS (Center for Medicare and Medicaid Services).

Hawaii's adoption of the Aging Disability Resource Centers (ADRC) program allows the State to test the relationship between measured disability and the provision of services without pressing strict mathematically specified measurement standards. Because the ADRC is available for broad assessment purposes, and because Kupuna Care can disburse services to individuals in somewhat fragile but not necessarily poverty-level financial circumstances, there is a mechanism for providing services below the level of 2 ADL failures and for assessing the effects. The link between ADRC evaluations and the effect of services provided early in the disability sequence offers a unique opportunity to test and re-test benefit trigger levels in the Hawaii population.

The Medicare Current Beneficiary Survey shows an increasing proportion of people have difficulty with one or more ADLs as age increases. Figure 7 illustrates the distribution of one and two+ ADL deficits in the 65+ Medicare population.[42]

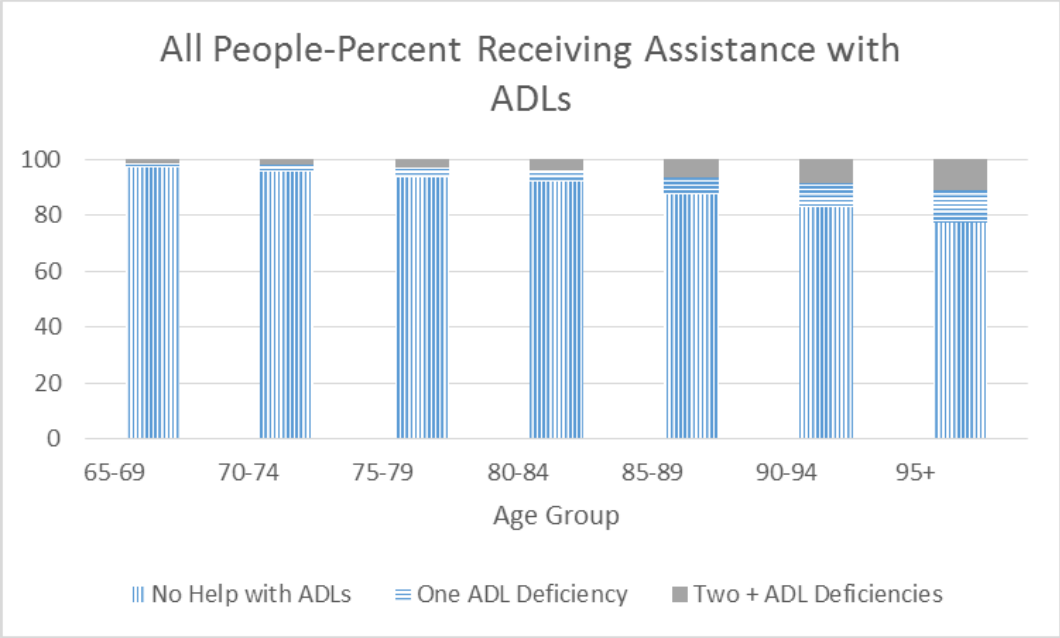
[42] Underlying table computed by Dr. Melissa Favreault, The Urban Institute, September, 2014.

Figure 7. Percentages of Population with One or Two and More ADL Difficulties



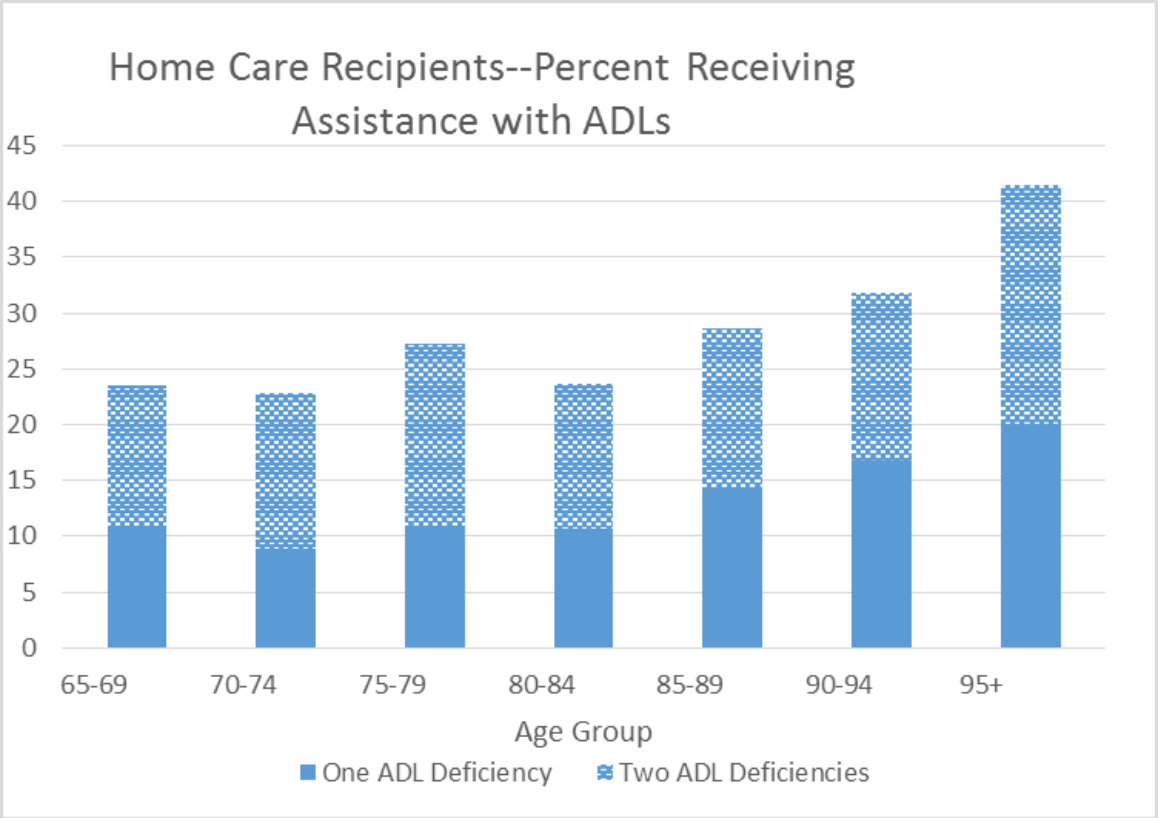
Relatively small proportions of people in the population actually receive help with ADLs, as shown in the next chart. These small percentage areas at the top of the bars are services received in a generally uninsured population.

Figure 8. Percent of Population Receiving Assistance with ADLs by Age Group



Once individuals begin to receive home care, the number receiving home care at the one-ADL level is nearly the size of the population receiving care at the two or more ADL level.[43] The effect of providing a benefit to the one-ADL level is in effect doubling the size of the population served.

Figure 9. Home Care Recipients—Assistance with ADLs by Age Group



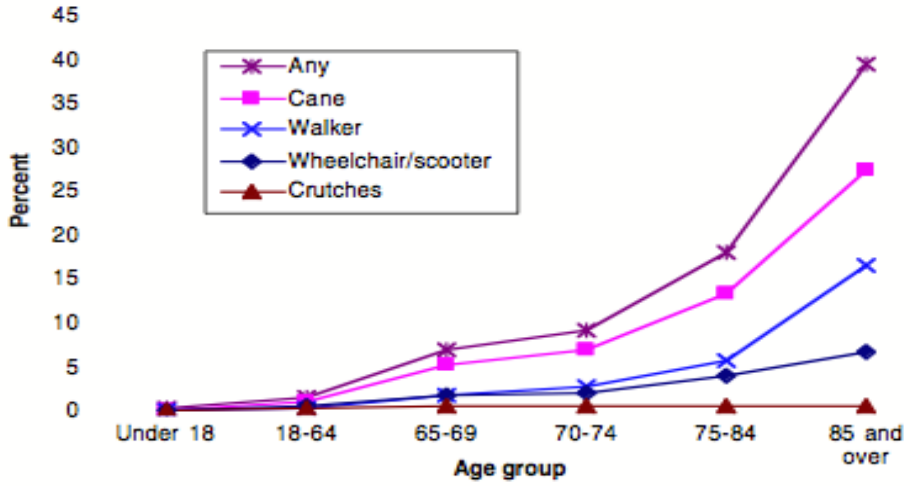
4.2.2.6 Which levels of care come first in the effort to restore or compensate for activities of daily living that cannot be continued without assistance?

Several contemporary studies examine the use of assistance, notably "assistive devices" by consumers to help with activities of daily living (ADLS). Mobility is one area in which needs appear to increase with age, as shown in the graph in Figure 10[44]:

[43] Underlying table computed by Dr. Melissa Favreault, The Urban Institute, September, 2014.

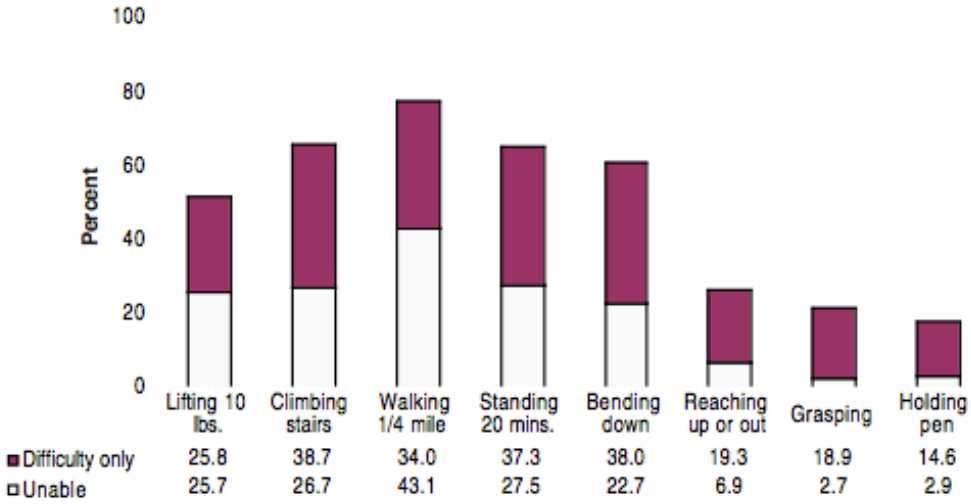
[44] Kaye H., Kang, T. and Mitchel, P.L. (2000). Mobility Device Use in the United States. Disability Statistics Report (14), Washington, D.C.: U.S. Department of Education, National Institute on Disability and Rehabilitation Research.

Figure 10. Proportion of Population Using Mobility Devices, by Age and Device



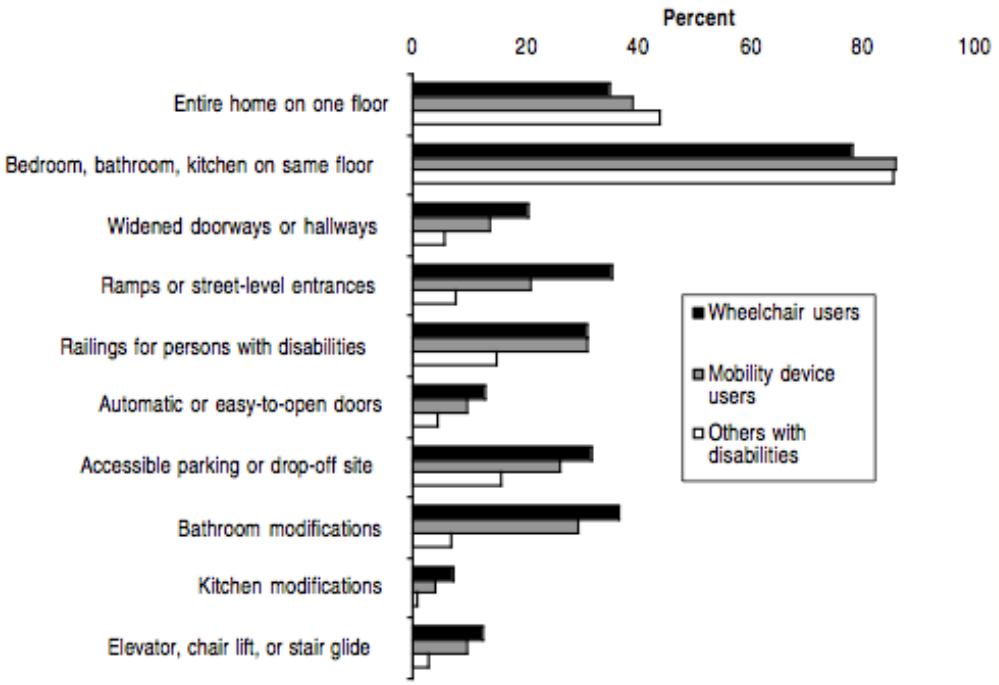
Use of assistive devices is not purely an issue of age, but also of specific functional limitations. Kaye *et.al.* (2000) illustrate the relationship between use of mobility devices of all kinds and degree of functional limitation:

Figure 11.*Proportion of Mobility Device Users with Functional Limitations, by Degree and Type of Limitation, Ages 18 and above*



Finally, assistive device use depends on the user's immediate home environment—some homes are easier to manage than others (Kaye, *et.al.* 2000):

Figure 11 *Proportion of Mobility Device Users and Non-users with Home Accessibility Features, by Type of Feature and Device, Ages 18 and Above.*



4.3 Membership: Eligibility

Each of the prospective programs will have requirements for eligibility and a procedure for vesting of the program benefits with Hawaii residents. Every social insurance program must define eligibility. That is, it must set out rules to identify the individuals who will be able to draw benefits, and the conditions that trigger the claim on those benefits. Social insurance programs for a whole nation are somewhat easier to define than those for a state or a part of a nation, because the notion of "membership" is pretty clearly defined for a nation in the definition of citizenship, or by some other global performance standard. The Social Security system pension benefit is available to U.S. residents who have worked at least 40 quarters (10 years) and paid the FICA taxes into the Social Security System, or the equivalent self-employment taxes.[45] In the traditional sense of U.S. citizenship and residency, most people do not commonly move across national boundaries—at least not without some substantial bureaucratic and legal procedures.

4.3.1 Constitutional issues

In the case of the 50 American states, however, movement across borders is accomplished with no interaction with a state office of any sort, and change of residence with relatively little interaction with the bureaucracy. This makes defining "membership" or "residency" for some particular state-funded program a much more difficult task. In the case of public college tuition

[45] Disability benefits are availability at lower coverage levels for those disabled early in their careers.

charged to a student who moves from one state into another, most states have set up procedures that require the prospective student to live and work in the state for a year, without enrolling in the public college. Then the newly minted "in-state" student must demonstrate that he or she has had an "ordinary" and bone-fide residency by providing employment documentation, rent receipts, paid utility bills, and the like. For other social benefits, however, the options are not so clear. The Section 1 of the Fourteenth Amendment to the Constitution states:

> "All persons born or naturalized in the United States, and subject to the jurisdiction thereof, are citizens of the United States and of the state wherein they reside. No state shall make or enforce any law which shall abridge the privileges or immunities of citizens of the United States; nor shall any state deprive any person of life, liberty, or property, without due process of law; nor deny to any person within its jurisdiction the equal protection of the laws."

The Privileges and Immunities clause of Article IV of the Constitution states: "The Citizens of each State shall be entitled to all Privileges and Immunities of Citizens in the several States." In the case of ***Paul v. Virginia***, 75 U.S. 168 (1868), the Supreme Court held:

> It was undoubtedly the object of the clause in question to place the citizens of each State upon the same footing with citizens of other States, so far as the advantages resulting from citizenship in those States are concerned. It relieves them from the disabilities of alienage in other States; it inhibits discriminating legislation against them by other States; it gives them the right of free ingress into other States, and egress from them; it insures to them in other States the same freedom possessed by the citizens of those States in the acquisition and enjoyment of property and in the pursuit of happiness; and it secures to them in other States the equal protection of their laws.

There is a long history of court cases on the Privileges and Immunities Clause. The sense of these cases is that the clause protects the basic rights of a person who goes from one state to another to travel, transact business or live. It does not necessarily protect "non-basic" rights such as the right to a hunting or fishing license.[46] The core of the Court's interpretations is that states must extend to those from other states the same fundamental rights as it extends to its own residents.

The residency issue with respect to welfare and social services benefits has often been decided on the basis of the source of the funding. With the Clinton era revisions to the welfare policies of the United States, moving from Aid for Families with Dependent Children (AFDC) to Temporary Assistance for Needy Families (TANF) the rules across the states have become much

[46] The discussion in Wikipedia sets out these cases in clear and accessible language. http://en.wikipedia.org/wiki/Privileges_and_Immunities_Clause, referenced September 15, 2014.

more complex.[47] To some degree, states may be seen to set their policies with respect to the benefit structures of neighboring states—in an attempt to allay welfare migration.[48]

The picture of the population for purposes of assessing long-term services and supports needs may be equally complex. First, a program to provide a long-term care or long-term services and supports benefit to the population is not likely to be seen as a fringe program or one in the realm of recreation or conservation (as in the case of the Montana elk-license license rulings. *Baldwin v. Fish and Game Commission of Montana* 436 U.S. 371 (1978). The Court found that hunting was a recreational activity, and not a fundamental right.) There are grounds for legitimate concern that any program created which dramatically restricts benefits to persons who came to Hawaii from elsewhere in a way not parallel to the provision of benefits to Hawaii residents would be subject to a serious challenge on the basis of denial of fundamental rights. In principle, any policy provision intended to deter migration for purposes of claiming long-term services and supports should treat old residents of the state and new residents the same.

4.3.2 Will Mandatory Membership Increase Outmigration?

Will the statewide implementation of a long-term care financing plan cause a reduction in out-migration of residents? To assess whether a public long-term care (LTC) financing plan for the state could influence mobility out of the state of Hawaii, it is important to first examine recent trends in net migration. Net migration is the difference between in-migration (moving to a state) and out-migration (moving to another state) during a given period. Negative net migration indicates that more migrants left the state than entered it.

Out-migration from Hawaii is not as common as before the new millennium. According to the recent US Census Bureau data, from April 1, 2010 to July 1, 2013 Hawaii's population changed by 43,753, which takes into account net migration, births, and deaths.[49] There were 35,073 deaths, 61,617 new births, with a natural increase of 26,544 and a positive net migration of 17, 517. During that period, only 6,104 people moved to another state from Hawaii, including those in the armed forces. According to the Department of Business, Economic Development and Tourism's analysis of recent census data, per day Hawaii had a net gain of 25 people who moved from or to foreign countries, offset by a net loss per day of eight people moving to or

[47] The Urban Institute has constructed an on-going database on the welfare rules of the states. This database tracks changes over time in the rules of the 50 states. http://anfdata.urban.org/wrd/wrdwelcome.cfm. Accessed September 15, 2014.

[48] The literature on welfare migration is disparate—results of analyses depend on the factors that may be controlled. Earlier studies suggested that there was no real migration from states with low welfare benefits to states with high welfare benefits (Schram, Nitz & Krueger, 1998 and Brueckner, 2000). Later studies, using more rigid controls for differences between states, and controlling for movement of welfare clients (poor single women with children) back to their birth states showed very substantial attraction from welfare differences. The movement, after accounting for state differences and historic family ties, was from low benefit states to high benefit states.

[49] http://files.hawaii.gov/dbedt/census/popestimate/2013_state_pop_hi/PEP_2013_PEPTCOMP1.pdf

from the U.S. mainland, for a net migration gain of 17 people.[50] Overall, when it comes to out-migration to other states in general, Hawaii is no longer ranked in the top 25 states for out-migration.[51] Between the years 1995 to 2000 Hawaii used to be among the highest states for out-migration: 125,160 people moved into the state while 201,293 moved out, for a net loss of 76,133 or a negative net migration.[52] In sum, Hawaii's recent positive net migration trend suggests that more people could help to contribute to a public long-term care (LTC) plan.

The population of Hawaii is increasing and many of the newcomers have relatively high socioeconomic status (SES), which could benefit a public LTC plan. According to the most recent Census Bureau's American Community Survey (2012), Hawaii is ranked 3rd as one of the fastest growing states with the most new residents (5.5% of its population).[53] Hawaii also ranked 5th for those newcomers from other states having the highest median incomes. Regarding education, another indicator of socio-economic status (SES), 37% of the newcomers had at least a bachelor's degree and 72.3% had some college or Associate degree. The median age of movers from another state was 27.6, which is working age. Thus, the newcomers of working age could contribute to a public LTC plan.

Why do people leave their homes and move to Hawaii in general? Many people move to Hawaii for the obvious reason of its quality of life and warm weather, but this paradise is expensive. Thus, a major reason why people choose to leave Hawaii is because it has the highest cost of living in the nation, according to a U.S. Commerce Department Bureau of Economic Analysis report.[54] Like other states, younger people and adults often move to Hawaii and away from Hawaii to find better employment opportunities. In contrast to the young, many of the elderly move to Hawaii to retire and most of them plan on staying. According to AARP's (2011) Successful Aging in Hawaii Survey, the majority (69%) of older residents in Hawaii expressed a desire to age-in-place, which means remain in their homes as they age.[55] A public LTC initiative could help the elderly achieve this goal of aging in their homes with dignity in Hawaii, a state with a high cost of living, which could prohibit people from being financially prepared for LTC during old age.

Many of the elderly in general are not prepared for their LTC expenses, especially in Hawaii. According to the (2012) AARP Survey of Hawaii Age 50+ residents on long-term care,[56] about half (52%) agreed with the statement, " I am not planning for my long-term care because I am just trying to meet my daily living expenses right now." The majority (59%) said that they will

[50] http://www.staradvertiser.com/news/breaking/20130314_Hawaii_population_up_1_percent_to_1392313_residents.html?id=198300281

[51] http://files.hawaii.gov/dbedt/economic/databook/2012-individual/01/016812.pdf

[52] http://www.census.gov/prod/2003pubs/censr-7.pdf

[53] http://www.governing.com/gov-data/residents-moving-to-new-state-demographics-population-statistics.html

[54] http://www.civilbeat.com/2013/09/19815-living-hawaii-why-is-the-price-of-paradise-so-high/

[55] http://assets.aarp.org/rgcenter/il/successful-aging-hawaii-11.pdf

[56] http://www.aarp.org/content/dam/aarp/research/surveys_statistics/health/2013/2012-AARP-Survey-of-Hawaii-50-Plus-Residents-on-Long-Term-Care-AARP.pdf

likely need long-term care in the future and most (64%) believe that they will be at least 75 years old before they need long-term care. A large majority (74%) did not want to depend on their family or friends for their long-term care needs, but almost half (49%) of them believed that they will have to depend on them. Furthermore, the majority (59%) supported a public long-term care insurance program.

Although most seniors in Hawaii want to stay in their homes for as long as possible and as their health permits, the reality is that many have to use their home equity to pay for their long-term care. They have to sell their homes and use the proceeds to pay for care in a smaller dwelling, an assisted living facility, or a relative's home. Yet moving to another home or state can be challenging, both emotionally and physically. Moreover, the funds from their home equity may not be adequate to meet long-term care needs whether they live in Hawaii or not.

4.3.3 Equal Treatment and Vesting

As long as a definition for *eligibility* allows all residents (of whatever length of residency) to qualify, equal treatment can be invoked. This principle of equal treatment allows the construction of a *vesting* procedure that allocates to each person a stipulated share of a program benefit for each year the individual has been a "member" of the program. So long as the basis for becoming a member are not arcane and not beyond the reach of people who have moved to Hawaii from another state, the procedure is consistent with equal treatment.

The long-term services and supports program proposed as a social insurance policy for Hawaii builds eligibility in increments by implementing a *vesting* procedure. This procedure was spelled out in *Financing Long-Term Care* (1991) and in the Temporary Trustees Report (2003). The rules create a membership which is open to everyone, and consist of very few components:

- The benefit for any given year is fixed, with projected periodic inflation adjustment by a board of trustees, subject to funds available and maintenance of long-term solvency.
- The membership criterion is derived from a fundamental interaction of a citizen with the State of Hawaii—the filing of a Hawaii Resident Income Tax Return (N11).[57]
- For each year an individual files a return, he or she shall acquire the right to 1/10 of the face value of the LTSS benefit. Persons filing joint returns shall each be counted.
- After 10 years of filing the N11 resident tax return, the individual shall be vested in the entire face value of the benefit, which may be drawn when the individual meets the insuring clause of the program (for example, needing hands-on assistance with 2 or more ADLs [Activities of Daily living]).
- A person who fails to file for one year shall be granted a grace period.
- Failing to file for a second year will result in de-vesting 1/10 of the face value of the benefit.

[57] The exact procedure will differ a little with variations of the program suggested in this report. For purposes of this section, we shall assume that simply filing the return is used as the indicator of eligibility for an eventual benefit.

- The same procedure shall apply to further failures to file.[58]
- Membership is mandatory for all persons in the stipulated target category; payments will be made for life.

The result of this vesting and de-vesting arrangement shall be that benefit claims will be quite small during the early years of the program, but will stabilize when most residents have made 10 consecutive filings. Because it is tied to filing Hawaii income tax, as opposed to maintaining physical presence here but tax filing in another state, the benefit rests on a stable, easily documented transaction.

5 Basic program

5.1 Program administration

The program proposed here would be administered by a Board of Trustees of the Hawaii Long-Term Care Benefits Trust Fund. The framework for this board is provided in HRS 346C.[59] The establishment and definition of the Trustees is given by:

> **Universal Citation:** HI Rev Stat § 346C-3 (2011 through Reg Sess)
>
> **[§346C-3] Composition of the board.** (a) The board of trustees of the long-term care financing program shall consist of five regular members and one ex-officio nonvoting member to be appointed by the governor as provided in section 26-34; provided that:
>
> (1) The terms of members shall be six years; and
>
> (2) The initial appointments may be staggered in accordance with section 26-34(a).
>
> [(b)] The members of the board of trustees shall have experience in accounting, business, finance, law, or other similar fields, and experience equivalent to five years as an officer or manager of a viable business, community, or organization involved with insurance management, portfolio management, health care management, or similar field. The composition of the board of trustees shall represent a diversity of relevant experience.
>
> [(c)] The board of trustees shall elect a chairperson from among themselves. The trustees shall serve without compensation. [L 2002, c 245, pt of §2]

The duties and responsibilities of the Trustees are described as:

> **Universal Citation:** HI Rev Stat § 346C-4 (2011 through Reg Sess)
>
> **[§346C-4] Fiduciary and other obligations of the board of trustees.** (a) The board of trustees shall:

[58] The ARC actuarial pricing model has the capability to estimate assuming that the de-vesting procedure can be turned off for persons who have contributed for years, but cease to contribute when retired because of non-taxable Hawaii retirement income. In the pricing examples to follow, persons who have paid in over a long period of time are not de-vested after age 65.

[59] Appointment procedures call for confirmation by the Hawaii State Senate.

(1) Have and maintain a fiduciary obligation for the program;

(2) Discharge their duties solely in the best interest of the program;

(3) Not knowingly participate in or undertake to conceal an act or omission of a trustee, when the act or omission is known to be a breach of fiduciary responsibility; or fail to discharge specific fiduciary responsibilities in a manner that enables another trustee to commit a breach; or having knowledge of a breach, fail to take whatever action that is reasonable and appropriate under the circumstances to remedy the breach;

(4) Act with the care, skill, prudence, and diligence under the circumstances then prevailing, that a prudent trustee, acting in a like capacity and familiar with similar matters would use in conducting an enterprise of similar character and purpose; and

(5) Maintain proper books of accounts and records of the administration of the program.

(b) The board of trustees may contract with a qualified entity to administer the program or to process claims for benefit payments, or both; provided that the entity shall be appropriately licensed under chapter 431. Selection of the entity shall be subject to chapter 103D; provided that the insurance commissioner shall advise the board of trustees in selection of the entity.

(c) In lieu of subsection (b), the board of trustees may contract with a qualified entity to assume the risk of underwriting loss under the program at a capitated rate of payment to the entity. The entity shall be appropriately licensed under chapter 431 and adequately capitalized. Selection of the entity shall be subject to chapter 103D; provided that the state insurance commissioner shall advise the board of trustees in the selection of the entity. An entity selected under this subsection shall perform the functions under subsection (b), in addition to assuming the risk. [L 2002, c 245, pt of §2]

The Trustees' obligations with respect to Trust Fund investments are as follows:

Universal Citation: HI Rev Stat § 346C-6 (2011 through Reg Sess)

[§346C-6] Investments. (a) With the advice of the director of finance to ensure investment soundness, the board of trustees shall invest moneys in the long-term care benefits fund solely in:

(1) Obligations of any of the following classes:

(A) Obligations issued or guaranteed as to principal and interest by the United States or by any state thereof or by any municipal or political subdivision or school district of any of the foregoing; provided that the principal of and interest on such obligations are payable in currency of the United States, or sovereign debt instruments issued by agencies of, or guaranteed by foreign governments;

(B) Revenue bonds, whether or not permitted by any other provision hereof, of the State or any political subdivision thereof, including the board of water supply of the city and county of Honolulu, and street or improvement district bonds of any district or project in the State; and

(C) Obligations issued or guaranteed by any federal home loan bank including consolidated federal home loan bank obligations, the Home Owner's Loan Corporation, the Federal National Mortgage Association, or the Small Business Administration;

(2) Obligations eligible by law for purchase in the open market by federal reserve banks;

(3) Securities and futures contracts in which in the informed opinion of the board of trustees it is prudent to invest funds of the system, including currency, interest rate, bond, and stock index futures contracts and options on such contracts to hedge against anticipated changes in currencies, interest rates, and bond and stock prices that might otherwise have an adverse effect upon the value of the system's securities portfolios; covered put and call options on securities; and stock; whether or not the securities, stock, futures contracts, or options on futures are expressly authorized by or qualify under the foregoing paragraphs, and notwithstanding any limitation of any of the foregoing paragraphs; and

(4) Any other investments deemed secure on the advice of the state director of finance.

(b) The board of trustees shall submit to the legislature no later than January 1 of every year, an annual report for the preceding fiscal year. The annual report shall include information concerning:

(1) Investments, including the types and amounts;

(2) Current balance in the fund;

(3) Projected liabilities for the upcoming year;

(4) Current reserve requirements to meet the projected liabilities for the upcoming year;

(5) Amount of claims paid and taxes received in the year immediately preceding the issuance of the report; and

(6) Any other useful information to determine the fiscal soundness of the fund. [L 2002, c 245, pt of §2]

The stipulations of HRS 346C may require amendments to conform to contemporary standards of trustee fiduciary responsibility, to require an annual public actuarial report with specific details.[60]

[60] **"§346C-A Long-term care benefits trust fund; established.** (a) There is established in the state treasury the long-term care benefits trust fund, into which shall be deposited moneys collected from the long-term care fund surcharge on state tax under sections 237- and 238- . All moneys in the long-term care benefits trust fund, including income and capital gains earned therefrom, shall be used exclusively to pay defined benefits for the purposes of chapter 346C, including administrative expenses. No transfers shall be made from the long-term care benefits trust fund to any other fund for any purpose.

(b) The long-term care benefits trust fund shall be administered by the board of trustees.

(c) Moneys in the long-term care benefits trust fund shall be deposited into an interest-bearing account at any federally insured financial institution, separate and apart from the general fund of the State.

§346C-B Funding for program; expenditures. (a) The program shall be funded through:

(1) Deposits into the long-term care benefits trust fund; and

(2) Appropriations as necessary to enable the trust fund to meet its immediate obligations for five years forward from any point in time to pay for long-term care services as may be required by this chapter.

(b) The board of trustees may make expenditures from the long-term care benefits trust fund as necessary to pay for claims for qualifying long-term care services under this chapter.

§346C-C Actuarial report and actuarial opinion. (a) The board of trustees shall cause to be prepared an actuarial report and actuarial opinion, as defined by the Actuarial Standards Board of the American Academy of Actuaries. The report and opinion shall be prepared by a member of the American Academy of Actuaries who is a fellow of the Society of Actuaries, certifying that the program is in actuarial balance. Costs of the actuarial report shall be deemed an administrative expense.

(b) The actuarial report under subsection (a) shall contain a statement by the actuary certifying that the techniques and methods used are generally accepted within the actuarial profession and that the assumptions and cost estimates used are reasonable. The report shall include:

(1) An estimate of the expected future income to and disbursements from the Hawaii long-term care benefits trust fund during each of the next ten ensuing fiscal years;

(2) A projection of the tax rates necessary to keep the Hawaii long-term care benefits trust fund actuarially sound over the short-range and long-range future periods;

(3) A statement of actuarial assumptions and methods used to determine costs and a detailed explanation of any change in actuarial assumptions or methods;

(4) The current and projected number of participants and beneficiaries and the current and projected amounts paid in taxes, defined benefits, current and permanent benefit defined benefits, and the like, aggregated by current and past Hawaii taxpayer status and age;

(5) The current value of accumulated assets of the Hawaii long-term care financing program and the value of assets used by the actuary in any computation of the amount of required taxes; and

(6) The results of short-range and long-range actuarial sensitivity analyses.

(c) Based upon the actuarial report and actuarial opinion under subsection (b), the board of trustees shall report to the legislature, no later than twenty days prior to the convening of each regular session, any recommended statutory amendments to the long-term care surcharge on state tax.

(d) The actuarial report shall demonstrate actuarial solvency for seventy-five years and be submitted annually to the governor and the legislature.

(e) All work products, papers, documents, and data used or prepared by the actuary in preparing the actuarial report shall be subject to chapter 92F.

§346C-D Obligations of the qualified entity to administer the program. If a qualified entity is contracted by the board of trustees to administer the program pursuant to section 346C-4(b), the qualified entity shall:

(1) Establish a procedure to allow individuals to prove eligibility for receipt of long-term care benefits, including qualifications and length and proof of residency status in cases where the individuals were not required to file a state tax return;

(2) Ensure against fraud and abuse in claims for and payment of long-term care services; and

(3) Implement procedures to safeguard the confidentiality of information in its possession; provided that the entity may disclose information pertaining to the taxpayer's vesting status to the taxpayer, the taxpayer's spouse, or the taxpayer's designated representative as indicated by a general power of attorney or a designated agent as indicated by a power of attorney for health care.

§346C-E Defined benefit. (a) Beginning no earlier than the day following the end of the fifth year of long-term care surcharge on state tax collections, payment of defined benefits for long-term care services shall commence. The defined benefit shall be $70 a day up to a cumulative period of three hundred sixty-five days; provided that the daily defined benefit may be adjusted from time to time by the board of trustees.

(b) Payment of a defined benefit shall begin after the thirtieth day following the date of the approval of the written certification under section 346C-8(b) and shall be made to the recipient of a long-term care service, or to the legal representative of the recipient in the name of the recipient, as a reimbursement for long-term care service expenditures. The amount of the defined benefit shall not be qualified by the income of the recipient.

(c) The defined benefit under the program shall be primary to private insurance and medicaid benefits. An individual shall not receive a defined benefit while the individual is receiving medicare benefits for long-term care; provided that if medicare benefits are exhausted, the individual shall be required to qualify under section 346C-8.

(d) Prior to adoption of any administrative adjustment to the amount of the long-term care benefit, the board of trustees shall request a review and an opinion by the actuary in the actuarial report under section 346C-C.

(e) The defined benefit received under this section shall not constitute income and shall be excluded from the state income tax pursuant to section 235-7(a)(6).

§346C-F Vesting to receive a defined benefit. (a) Any individual who has paid Hawaii resident income tax for ten years shall be fully vested to receive the defined benefit.

(b) An individual shall earn one-tenth of the defined benefit for each year that the individual pays the income tax. An individual shall be allowed one year of non-payment of the income tax without penalty; provided that after one year of non-payment, the individual shall forfeit one-tenth of the defined benefit amount for each year of non-payment.

§346C-G Rulemaking. The board of trustees shall adopt rules, pursuant to chapter 91, necessary for the purposes of this chapter."

SECTION 6. Section 346C-4, Hawaii Revised Statutes, is amended by amending subsection (a) to read as follows:

"(a) The board of trustees shall:

(1) Have and maintain a fiduciary obligation for the program;

(2) Discharge their duties solely in the best interest of the program;

(3) Not knowingly participate in or undertake to conceal an act or omission of a trustee, when the act or omission is known to be a breach of fiduciary responsibility; or fail to discharge specific fiduciary responsibilities in a manner that enables another trustee to commit a breach; or having knowledge of a breach, fail to take whatever action that is reasonable and appropriate under the circumstances to remedy the breach;

(4) Act with the care, skill, prudence, and diligence under the circumstances then prevailing, that a prudent trustee, acting in a like capacity and familiar with similar matters would use in conducting an enterprise of similar character and purpose; [and]

(5) Establish a procedure to allow individuals to prove eligibility for receipt of long-term care benefits, including qualifications and length and proof of residency status in cases where the individuals were not required to file a state tax return; and

[(5)] (6) Maintain proper books of accounts and records of the administration of the program."

SECTION 7. Section 346C-6, Hawaii Revised Statutes, is amended by amending subsection (a) to read as follows:

"(a) With the advice of the director of finance to ensure investment soundness, the board of trustees shall invest moneys in the long-term care benefits trust fund [solely] in[:] investments with sufficient liquidity to allow market transactions to meet expected payout requirements without substantial loss in value or unreasonable delay. The board of trustees shall invest solely in:

(1) Obligations of any of the following classes:

(A) Obligations issued or guaranteed as to principal and interest by the United States or by any state thereof or by any municipal or political subdivision or school district of any of the foregoing; provided that the principal of and interest on such obligations are payable in currency of the United States, or sovereign debt instruments issued by agencies of, or guaranteed by foreign governments;

(B) Revenue bonds, whether or not permitted by any other provision hereof, of the State or any political subdivision thereof, including the board of water supply of the city and county of Honolulu, and street or improvement district bonds of any district or project in the State; and

(C) Obligations issued or guaranteed by any federal home loan bank including consolidated federal home loan bank obligations, the Home Owner's Loan Corporation, the Federal National Mortgage Association, or the Small Business Administration;

(2) Obligations eligible by law for purchase in the open market by federal reserve banks; and

(3) Securities and futures contracts in which in the informed opinion of the board of trustees it is prudent to invest funds of the system, including currency, interest rate, bond, and stock index futures contracts and options on such contracts to hedge against anticipated changes in currencies, interest rates, and bond and stock prices that might otherwise have an adverse effect upon the value of the system's securities portfolios; covered put and call options on securities; and stock; whether or not the securities, stock, futures contracts, or

options on futures are expressly authorized by or qualify under the foregoing paragraphs, and notwithstanding any limitation of any of the foregoing paragraphs[; and

(4) Any other investments deemed secure on the advice of the state director of finance]."

SECTION 8. Section 346C-7, Hawaii Revised Statutes, is amended to read as follows:

"[[]§346C-7[]] Annual audits of the long-term care benefits trust fund. The auditor shall conduct an audit of the long-term care benefits trust fund annually for the first three years from the date the fund first receives deposits, and every three years thereafter; provided that the auditor may modify the time periods after the first three years as appropriate to the circumstances. The auditor shall publish a report of the results of every audit, including any recommendations."

SECTION 9. Section 235-116, Hawaii Revised Statutes, is amended to read as follows:

"§235-116 Disclosure of returns unlawful; penalty. All tax returns and return information required to be filed under this chapter shall be confidential, including any copy of any portion of a federal return that may be attached to a state tax return, or any information reflected in the copy of such federal return[.], except that the director of taxation shall provide tax return information to the board of trustees of the long-term care financing program pursuant to section 231-C. It shall be unlawful for any person, or any officer or employee of the State, including the auditor or the auditor's agent with regard to tax return information obtained pursuant to section 23-5(a), to make known intentionally information imparted by any income tax return or estimate made under sections 235-92, 235-94, 235-95, and 235-97 or wilfully to permit any income tax return or estimate so made or copy thereof to be seen or examined by any person other than the taxpayer or the taxpayer's authorized agent, persons duly authorized by the State in connection with their official duties, the Multistate Tax Commission or the authorized representative thereof, except as otherwise provided by law. Any offense against the foregoing provisions shall be punishable as a class C felony."

PART IV

SECTION 10. Section 36-27, Hawaii Revised Statutes, is amended by amending subsection (a) to read as follows:

"(a) Except as provided in this section, and notwithstanding any other law to the contrary, from time to time, the director of finance, for the purpose of defraying the prorated estimate of central service expenses of government in relation to all special funds, except the:

(1) Special out-of-school time instructional program fund under section 302A-1310;
(2) School cafeteria special funds of the department of education;
(3) Special funds of the University of Hawaii;
(4) State educational facilities improvement special fund;
(5) Convention center enterprise special fund under section 201B-8;
(6) Special funds established by section 206E-6;
(7) Housing loan program revenue bond special fund;
(8) Housing project bond special fund;
(9) Aloha Tower fund created by section 206J-17;
(10) Funds of the employees' retirement system created by section 88-109;
(11) Hawaii hurricane relief fund established under chapter 431P;
(12) Hawaii health systems corporation special funds and the subaccounts of its regional system boards;
(13) Tourism special fund established under section 201B-11;
(14) Universal service fund established under section 269-42;
(15) Emergency and budget reserve fund under section 328L-3;
(16) Public schools special fees and charges fund under section 302A-1130;
(17) Sport fish special fund under section 187A-9.5;
(18) Glass advance disposal fee established by section 342G-82;
(19) Center for nursing special fund under section 304A-2163;
(20) Passenger facility charge special fund established by section 261-5.5;
(21) Court interpreting services revolving fund under section 607-1.5;
(22) Hawaii cancer research special fund;

(23) Community health centers special fund;
(24) Emergency medical services special fund;
(25) Rental motor vehicle customer facility charge special fund established under section 261-5.6;
(26) Shared services technology special fund under section 27-43;
(27) Automated victim information and notification system special fund established under section 353-136;
(28) Deposit beverage container deposit special fund under section 342G-104; and
(29) Hospital sustainability program special fund under Act 217, Session Laws of Hawaii 2012, as amended by Act 141, Session Laws of Hawaii 2013;
[[](30)[]]Nursing facility sustainability program special fund under Act 156, Session Laws of Hawaii 2012;
[[](31)[]]Hawaii 3R's school improvement fund] under section 302A-1502.4; [and]
[[](32)[]]After-school plus program revolving fund under section 302A-1149.5[,]; and
(33) Long-term care benefits trust fund established under chapter 346C,
shall deduct 5 per cent of all receipts of all special funds, which deduction shall be transferred to the general fund of the State and become general realizations of the State. All officers of the State and other persons having power to allocate or disburse any special funds shall cooperate with the director in effecting these transfers. To determine the proper revenue base upon which the central service assessment is to be calculated, the director shall adopt rules pursuant to chapter 91 for the purpose of suspending or limiting the application of the central service assessment of any fund. No later than twenty days prior to the convening of each regular session of the legislature, the director shall report all central service assessments made during the preceding fiscal year."

SECTION 11. Section 36-30, Hawaii Revised Statutes, is amended by amending subsection (a) to read as follows:

"(a) Each special fund, except the:
(1) Transportation use special fund established by section 261D-1;
(2) Special out-of-school time instructional program fund under section 302A-1310;
(3) School cafeteria special funds of the department of education;
(4) Special funds of the University of Hawaii;
(5) State educational facilities improvement special fund;
(6) Special funds established by section 206E-6;
(7) Aloha Tower fund created by section 206J-17;
(8) Funds of the employees' retirement system created by section 88-109;
(9) Hawaii hurricane relief fund established under section 431P-2;
(10) Convention center enterprise special fund established under section 201B-8;
(11) Hawaii health systems corporation special funds and the subaccounts of its regional system boards;
(12) Tourism special fund established under section 201B-11;
(13) Universal service fund established under section 269-42;
(14) Emergency and budget reserve fund under section 328L-3;
(15) Public schools special fees and charges fund under section 302A-1130;
(16) Sport fish special fund under section 187A-9.5;
(17) Center for nursing special fund under section 304A-2163;
(18) Passenger facility charge special fund established by section 261-5.5;
(19) Court interpreting services revolving fund under section 607-1.5;
(20) Hawaii cancer research special fund;
(21) Community health centers special fund;
(22) Emergency medical services special fund;
(23) Rental motor vehicle customer facility charge special fund established under section 261-5.6;
(24) Shared services technology special fund under section 27-43;
(25) Nursing facility sustainability program special fund established pursuant to Act 156, Session Laws of Hawaii 2012;

Segments of tax law must be amended to provide legal protection for records pertaining to the program members and beneficiaries.[61] Operational obligations of the board necessarily include identifying ways to coordinate services, benefits, definitions, practice standards with related entities, such as Medicaid. It

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(26) Automated victim information and notification system special fund established under section 353-136; [and]

(27) Hospital sustainability program special fund under Act 217, Session Laws of Hawaii 2012, as amended by Act 141, Session Laws of Hawaii 2013[,]; and

(28) Long-term care benefits trust fund established under chapter 346C,

shall be responsible for its pro rata share of the administrative expenses incurred by the department responsible for the operations supported by the special fund concerned."

PART V

SECTION 12. There is appropriated out of the general revenues of the State of Hawaii the sum of $ or so much thereof as may be necessary for fiscal year 2015-2016 and the same sum or so much thereof as may be necessary for fiscal year 2016-2017 for start-up costs for the implementation and collection of the long-term care surcharge on state tax.

The sums appropriated shall be expended by the department of taxation for the purposes of this Act.

PART VI

SECTION 13. In codifying the new sections added by sections 4 and 5 of this Act, the revisor of statutes shall substitute appropriate section numbers for the letters used in designating the new sections in this Act.

SECTION 14. Statutory material to be repealed is bracketed and stricken. New statutory material is underscored.

SECTION 15. This Act shall take effect upon its approval; provided that:

(1) The amendments made to section 36-27(a), Hawaii Revised Statutes, by section 10 of this Act shall not be repealed when that section is reenacted on June 30, 2015, pursuant to Act 79, Session Laws of Hawaii 2009, and Act 124, Session Laws of Hawaii 2014; and

(2) The amendments made to section 36-30(a), Hawaii Revised Statutes, by section 11 of this Act shall not be repealed when that section is reenacted on June 30, 2015, pursuant to Act 79, Session Laws of Hawaii 2009, and Act 124, Session Laws of Hawaii 2014.

[61] **§231-B Annual data.** The director of taxation shall compile, in machine-readable files (read-only computer compact disk or other suitable media), annual data on taxpayer names and social security numbers who have filed Hawaii resident income tax returns for the year. The files compiled shall be:

(1) Transmitted to the board of trustees of the long-term care financing program under chapter 346C annually no later than three months after the date on which individual income tax returns are due; and

(2) Used by the board of trustees of the long-term care financing program solely for the purpose of:

(A) Maintaining an administrative file of taxpayers eligible for long-term care benefits under chapter 346C;

(B) Determining the payment status of each individual taxpayer eligible for long-term care benefits under chapter 346C; and

(C) Computing vesting credits gained or lost for eligible taxpayers.

§231-C Confidentiality. (a) For purposes of chapter 346C, the director of taxation shall provide annually to the board of trustees of the long-term care financing program the following information from the most recent tax return concerning each taxpayer who has filed a Hawaii resident income tax single or joint return:

(1) Name, address, and social security number;

(2) Filing status; and

(3) Taxable year and date of filing of the tax return.

(b) The information under subsection (a) shall be used by the board of trustees solely for the purpose of determining eligibility to receive defined benefits; provided that the information may be accessed by a qualified entity contracted pursuant to section 346C-4(b) to administer the long-term care financing program."

has, of course the responsibility to revise benefits, eligibility criteria and other aspects of the program to assure fiscal reliability, community support and maximum benefit to the greatest number.

5.2 The actuarial policy models

The models presented here were devised to provide the broadest possible benefits to the Hawaii population as defined in each of the alternative versions of a social insurance LTSS program. Early discussions of the prospective features of each program were based on somewhat optimistic assumptions about inflation in benefits, costs of operation, and long-run returns on investment, using Version 4 of the ARC Hawaii 2014 LTC Model. Early assumptions were adjusted in the current model Version 9. The current dollar rate of return is derived from the October, 2014 estimates by the Social Security Actuary, and is systematically lower than estimates provided in the previous year. The real rate of return was adjusted to provide a more conservative, smaller estimate of the returns after inflation over the long run. These adjustments make the estimates substantially more conservative, providing larger allowances for operating costs.[62]

An additional area of revision is derived from current information on the use of home care and facility or institutional services. Since Hawaii has a lower supply of facility beds compared to other states, many of the current facility occupants are in fact at quite high ADL levels relative to the U.S. as a whole (see, for example, Tables 3.7a and 3.7b in the CMS report Nursing Home Data Compendium 2013 edition)[63]. They are also more likely to be severely cognitively impaired (see Tables 3.8a and 3.8b) relative to occupants in the U.S. as a whole. People with 2 ADLs in the U.S. population who might be in nursing homes, will, in Hawaii more likely receive care at home. To estimate the need in Hawaii, to deliver a benefit to people with 2+ we must use the numbers of people who start to use nursing home services at ADLs as well as those who start to use home care at the same ADL level.[64] Adjusting the probability of use tables to cover both populations also produces more conservative estimates of the benefits a program must provide to the Hawaii population.

Earlier model results were based on a relatively optimistic expectation that the Trustees of a fund would be allowed to raise benefits no more than 2.75% per year. The current computations were based on an assumption of benefit increases of up to 3.1% per year. This

[62] The experience of CMS with Medicare and Medicaid operating costs (not benefits) suggests that a social insurance fund should be able to disburse services for costs under 4% of income. The same value was set for collection of revenues—although when an operating tax department is used for revenue collection, with limited additional duties, substantial savings may be realized. The ultimate goal of estimating operating expenses is to provide for the fund to cover its own service costs, without repeated appeals to the legislature—which might follow from extremely low operating cost estimates.

[63] http://www.cms.gov/Medicare/Provider-Enrollment-and-Certification/CertificationandComplianc/downloads/nursinghomedatacompendium_508.pdf.

[64] National sources of usage data typically refer to home care, nursing homes and assisted living. To estimate the population of persons with 2 + ADLs for Hawaii, it is necessary to combine the populations of nursing homes, adult residential care homes (ARCHS) and adult foster homes to produce a representative picture of the population with 2+ ADLs.

change in assumptions raises the size of the fund needed for any given year, but provides a substantial cushion for solvency of the trust in the long run.

The effect of revising these assumptions in the actuarial model is that extremely optimistic impressions of the cost of funding program benefits are not supported. The estimates provided in this report are more robust and conservative.

5.3 Four models

The guidance for this project, given by the Long-Term Care Commission and HB1SD2 of 2013, suggests beginning an examination of a financing program targeting the working population of Hawaii. A critical variant of this proposal would be a package that targeted the entire population. The financing options—fixed premiums, income tax, or a surcharge on the general excise tax each call out variations on the population to be covered.

Common to all of the proposals is a single definition of benefits, general membership requirements, and details of financing. This section presents the four prospective models in terms of collection rates required, assets necessary to cover anticipated service demand, levels of benefits paid, and so forth.

5.3.1 Flat premium program—for working Hawaii residents

Features of the Flat Premium "Working" Program

- Entry age between 25 and 65.
- Mandatory membership.
- Ten year vesting and de-vesting provision.
- Premiums charged annually by an adjustment to Hawaii Resident Income Tax Return (N13).
- Spousal coverage incorporated via the tax return for couples filing joint returns.
- Benefit package of $70/day for 365 not-necessarily consecutive days of service.
- Inflation adjustments to benefit amount at labor cost inflation rate of 3.1% per year, funds available.
- Benefit is a reimbursement for costs paid for services.
- Reimbursements for beneficiaries living with a family would cover services purchased for five days during the work week.
- Program requires a functional definition of "working."
- Premium or tax must be incremented every year to compensate for population aging and in-migration of mature adults.

The logic of tailoring a social insurance program initially for working residents is to provide some control for acquiring a body of insurance subscribers who would immediately or in very short order be eligible for benefits. The retired and other older members of the population will not have opportunity to contribute to the social insurance program for more than a few years. Starting a program with working persons in one way preselects those generally healthy enough to work. As the first batch of members matures in the program, it would be necessary to establish a mechanism for them to continue their membership as they retire. Implicit in the "working people" program is the need for a mechanism to enroll the spouses who are not working or not in the labor market.

The "working" model takes advantage of the fact that the working population is younger and generally healthier than the total population. This advantage works out over time, but initially the effect is that the flat premiums are substantially smaller than those which might be established for a full population model. To implement a program targeted initially at "working" people poses both a definitional question and a mechanism question. The first question is: "What does "working" mean? The second is: "How is the qualifying information collected?"

There are some issues with the process of defining "working." Covering a spouse not in the labor market is not a logically difficult task. The difficult task is setting a standard for "working" which cannot be manipulated, or lead to unexpected outcomes. The Hawaii Prepaid Health Care Act defines a standard of half-time or more which has led to the creation of a multitude of 19 hour per week jobs, or full time jobs with a week per month without work. The effect of this form of scheduling was to exclude large numbers of people from coverage by the Prepaid Act. A definition based on a number of hours worked, such as 35 or 37, opens the door to inadvertently redefining a worker out of full time work status. In the event a firm or an office cuts back work hours under economic pressure, any such fixed standard could push an employee below the coverage floor—e.g., short-hours positions might be offered at 33 hours per week---for perfectly benign business reasons—inadvertently defeating the intent of providing coverage for working people.

Collecting the qualifying information for a definition of "working" would typically require some kind of application form or documentation. The logic of using a voluntary enrollment process for a mandatory insurance program would at best be difficult to implement. An application form filed by a resident could be sufficiently clear to identify the resident and spouse. But an application form not filed would provide no information on the non-filer, nor would it assure that person coverage under the program.

The ideal way to gather qualifying information would be from an existing data collection mechanism which covers all plausibly eligible persons. The Hawaii Resident Income Tax return does that task—it captures all permanent residents required to file, but it does not gather information directly about work relationships. It collects limited age information (related to

extra exemptions for people beyond a certain age), and limited information on occupation. Hours worked and full/part-time status are not information items on the form. [65]

5.3.2 Flat premium—whole population

Extending the flat premium program to the full population simplifies the definition of eligible beneficiary, but extends the risk profile of the population initially covered. Taking in all of the older residents of Hawaii at start of program, includes larger numbers of people who may need services sooner—an 85 year-old is more likely to need assistance sooner than a 66 year-old.

Features of the Flat Premium "Whole Population" Program

- Entry age between 25 and 99.
- Mandatory membership.
- Ten year vesting, de-vesting procedure.
- Premiums charged annually by an adjustment to Hawaii Resident Income Tax Return (N13).
- Spousal coverage incorporated via the tax return for couples filing joint returns.
- Benefit package of $70/day for 365 not-necessarily consecutive days of service.
- Inflation adjustments at labor cost inflation rate of 3.1% per year, as funds available.
- Benefit is a reimbursement for costs paid for services.
- Reimbursements for beneficiaries living with a family would cover services purchased for five days during the work week.
- Premium or tax must be incremented every year to compensate for population aging and in-migration of mature adults.
- Because the bulk of the population is included, there is no need to define "working" for purposes of program membership.

This has implications for building reserves to meet early needs. It also incorporates in one step the increase in the older portion of the age profile that occurred in the last decade or so. The shift in the age profile has the consequence of requiring either larger annual adjustments of the program premium or tax rate—or an increase in the initial premium that would stave off future rate increases to some extent.

[65] An alternative to an hours worked definition, would be a definition of working based on the categories in the income tax return. In this collection model Hawaii AGI on Line 20 excludes retirement income; the remainder Hawaii AGI would be counted toward the definition of work. To exclude the very young, as they are beginning their working career, and the very low income persons who would automatically qualify for Medicaid, it would be appropriate to set a floor income which would be designated "working income." This value might include Schedule C income, Farm income or Schedule E rents and royalty incomes, as incorporated in the federal AGI. Retirement income would be excluded by the adjustment that computes the Hawaii AGI on N-11 Form Line 20.

5.3.3 Income-tax surcharge—whole population

The Long-Term Care Commission requested a proposed program option with a graduated fee. One efficient mechanism for a graduated fee is to incorporate it into an existing graduated policy, such as an income tax. The effect of an addition to the income tax, by surcharge or rate increase, is to adopt the existing graduation plan. This effect is usually progressive, with persons earning more income paying more for the program. There is a certain degree of efficiency, as the tax collection mechanism can ride on the income tax processing process. There is also a substantial capture of the population since the conditions under which one does not file an income tax return, and the numbers of people affected are limited. There is also an efficiency from being able to collect the name, address, and tax-id information of the residents who would become beneficiaries of a social insurance program by way of the information filed on every tax return.[66]

There are distinct disadvantages to any income-tax based program, however. The income tax is not a very popular tax among members of the public. A surcharge or rate adjustment will not always be well received. Even though there are benefits promised in the future, the time span for some people may be too long for them to see the utility of the surcharge. There may be other membership or eligibility issues that would be difficult to resolve from existing Hawaii N11 tax forms. Notably, the form does not ask the taxpayer's age, except for a checkbox for those age 65 and over. As a consequence, determining whether a taxpayer is over some minimum age, or under some maximum age other than 65 requires additional data collection.

A surrogate measure can set a membership criterion for young people. Setting a floor of income below which an individual would not be charged the Long-Term Supports Services and Supports tax could relieve them of the tax obligation until their income increased. For example the 2005 analysis of Hawaii income tax returns suggest that a floor of $10,000 Adjusted Gross Income (AGI) would exclude about 60,000 of Hawaii's some 600,000 returns.[67] The average tax liability of the filers under $10,000 was only $123.[68] Moving the floor to $20,000 AGI would exclude an additional 77,000 tax filers—for whom the average tax bill is only $452. Altogether, that is about 31% of the 2005 taxpayers. The Hawaii Medicaid ceiling for couples is $2879 per month—about $34,500 per year. For estimating purposes, the models based on income tax will exclude incomes and filers below a lower bound.[69]

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[66] Suitable legislation affecting the confidentiality of the tax return, the duties of the Director of Taxation, and of the Trustees of any Long-Term Services and Supports Trust Fund following the discourse in notes 27 and 28 above would have to be enacted. SB 1088 of 2003 had proposed language to accomplish the confidentiality, payment, and collection issues for the program proposed at that time. Similar legislation could be tailored to the program sketched here.

[67] http://files.hawaii.gov/tax/stats/stats/indinc/05indinc.pdf. P.20.

[68] http://files.hawaii.gov/tax/stats/stats/indinc/05indinc.pdf. P.39.

[69] Very low income taxpayers are very likely to be Medicaid eligible, based on their income. For this group of taxpayers, creating a tax to cover a benefit that they would normally receive from the Medicaid program would in fact be regressive. There will be tax filers, however, who have very low tax obligations because they have little or

Features of the Income Tax Surcharge "Working Population" Program

- Entry age between 25 and 99.
- Mandatory membership.
- Ten year vesting, de-vesting procedure.
- Premiums charged annually by rate surcharge adjustment to Hawaii Resident Income Tax Return (N13).
- Spousal coverage incorporated via the tax return for couples filing joint returns.
- Benefit package of $70/day for 365 not-necessarily consecutive days of service.
- Inflation adjustments at labor cost inflation rate of 3.1% per year, as funds available.
- Benefit is a reimbursement for costs paid for services.
- Reimbursements for beneficiaries living with a family would cover services purchased for five days during the work week.
- Tax collections increase automatically as income goes up, and should need legislative adjustment only rarely.

5.3.4 General excise tax surcharge funded program—whole population

A General Excise Tax Long-Term Services and Supports Trust Fund would provide program support that would reach beyond the body of Hawaii income tax filers. As much as 35% of the General Excise Tax (GET) is paid by people passing through. The incidence of a GET adjustment would not fully fall on Hawaii residents. In order to allocate benefits to eligible Hawaii residents it would be necessary to build a membership tally from some administrative procedure. For purposes of identifying residents, the tax filing status of each resident could be used—by collecting information from the tax return. No money would be collected from the income tax return, however. Since everyone in the population pays the GET, standards of fairness might be violated if the GET based program excluded individuals on the basis of their earned income. Including all N-11 tax filers would bring a number of lower income people and retirees whose income was exempted from Hawaii income taxes into the fold. Cost estimates provide funds for paying these benefits.

no income from taxable sources—their income is from pension benefits not taxed in Hawaii. A decision to cover this group from an income-tax rate based collection would require defining a base on which the social insurance surcharge could be collected, and understanding or accepting the effect on the non-taxability of certain pension benefits in Hawaii.

Features of a General Excise Tax Based "Whole Population" Program

- Mandatory membership.
- Ten year vesting, de-vesting procedure.
- Premiums charged by single rate adjustment to the Hawaii General Excise Tax.
- Spousal coverage and membership information incorporated via the ID information on the tax return for couples filing joint returns and for persons filing individual returns.
- A portion of the social insurance charge would be paid by visitors to the state.
- Benefit package of $70/day for 365 not-necessarily consecutive days of service.
- Inflation adjustments at labor cost inflation rate of 3.1% per year, as funds available.
- Benefit is a reimbursement for costs paid for services.
- Reimbursements for beneficiaries living with a family would cover services purchased for five days during the work week.
- Tax collections increase automatically as expenditures in the Hawaii economy grow, and should need legislative adjustment only rarely

5.4 Solvency of the four program models

The four models share the same benefit package, to allow meaningful comparisons among them. The questions of "Can we set a higher benefit level?" or "Can the benefit period be longer?" or "Can we reduce the money cost in the early years?" will always be raised. In several of the cases examined below we introduce variations on the proposed program, changing the premium cost, for example, or making the benefit period longer.

There are some very practical constraints as to what we can manipulate in an actuarial pricing program without bringing the program into default status. The easiest thing to alter, without much danger, is the benefit level: if we want the benefit to be twice $70 (i.e., $140) a day, the cost will be exactly twice the cost of the initial program. Once the model is specified, the relationship between the size of the benefit and the cost of the program is linear, assuming no behavioral changes resulting from the change in benefit rate.

Adding to the benefit period, however, follows a different pattern. The probability of needing benefits between the 365th day of service and the 465th day of service is much lower than the probability of using services between the 265th day of service and the 365th day. The period is still 100 days, but the risk of needing care for each successive period declines. It is therefore cheaper to provide a number of days of extra service, because each additional day has a lower probability of occurrence.

Adjusting the cost for any fixed benefit is the most complicated. The money values in the model are subject to compounding—funds must be carried forward and earnings on the reserves must be

accounted for. Thus every dollar collected today and held in reserve acquires an interest premium for each year held, and this amount compounds. In addition, if the benefit is adjusted upward for inflation (whether with a fixed schedule or on an as-needed basis), the upward adjustments compound—each x% adjustment being applied to the previous year's benefit. The temptation to see a surplus—a difference between funds coming in and funds going out and "squeeze" the surplus out by reducing the premium easily leads to a program which at some future date will spend more than it takes in or even go negative. An example of this "squeeze-out" is shown in the following pages.

"Why can't benefits begin right away?" This question calls out technical, rather than fundamental answers. One technical issue is that creating the disbursing mechanism, if it is to work correctly, will take a couple of years. Another is that the vesting program, which protects against benefit migration, also protects against constitutional challenges. Because the benefits paid in early years of residency and program membership are the same and are small, it pays the individual to defer service requests for a couple of years until the benefit paid is more substantial. For this reason, it is practical to start the benefit payments in the fifth year of the program. As a result, there will be some built-up demand in the first couple of years of benefits—but this demand is adequately covered by the fund balances.

The presentations to follow will generally present a table and three figures.

- The Flow of Funds Chart—The money coming into the fund and going out by year
- The Fund Table—An extract of the 2017-2070 segment of the table which accounts for the fund income, the interest earned, the benefit payments, and the operating costs. The table also gives the fund balances every year and computes the fund ratio. [70] The full table through 2088 is given in the Excel workbooks in the electronic appendices to this report.
- The number of beneficiaries under the program by year. This varies almost exclusively by whether the program is targeted at the working population or the whole population.
- The average benefit payment to beneficiaries by year. Note that some beneficiaries have very short periods of use, and others will use the full time available. Because the usage is tallied by year, a person who starts after January 1 of any year and uses all 365 days of benefit will necessarily have some benefits tallied in the following year, making the annual benefit appear lower. (Think of someone using benefits the last 100 days of a year and the first 100 days of the next year—this use will appear in the annual table as only 100 days for each year. For programs based on the income tax for working persons, the bulk of the insured are young, and have very few claims in early years, likely for short periods, so the average benefits do not begin to creep up until somewhat later than for the whole population.

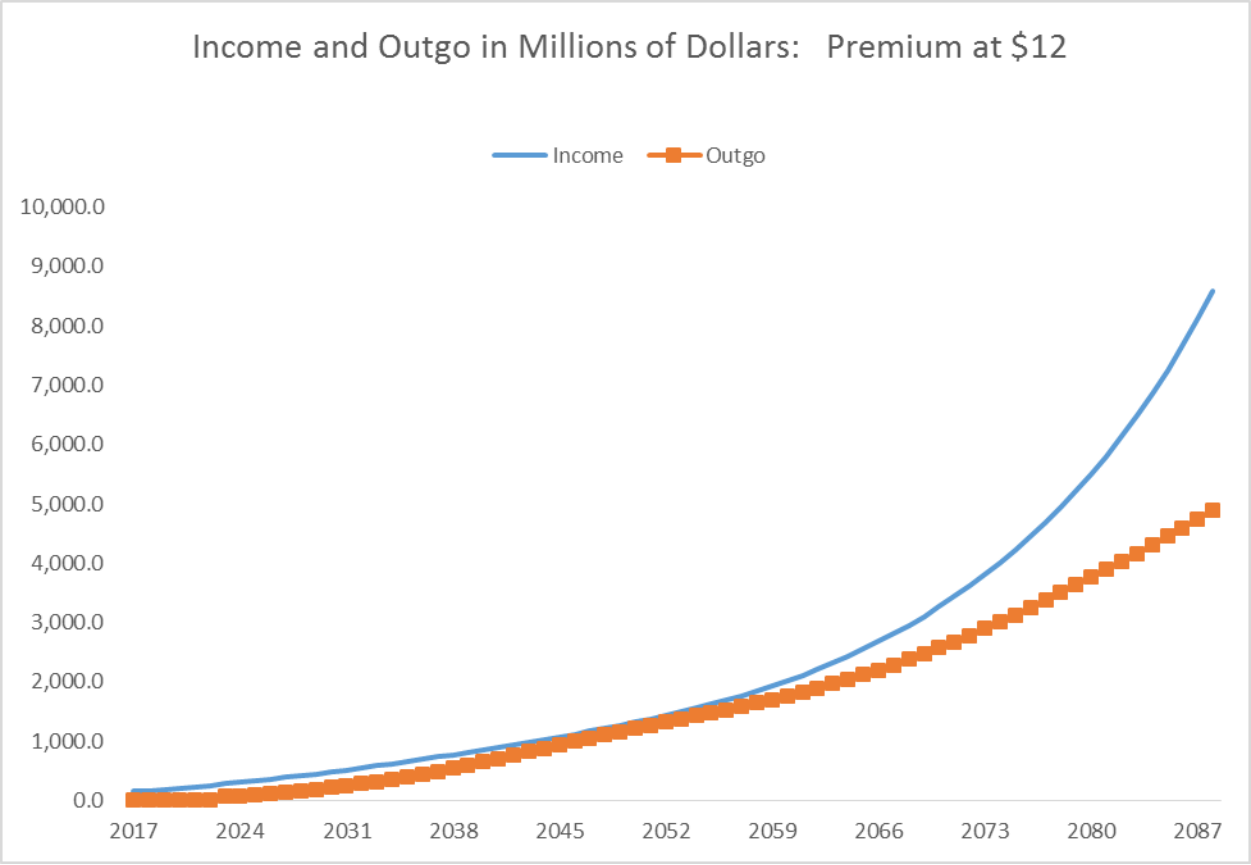
5.4.1 Working population premium based program

The premium based program for the working population requires a premium of $12 per month, which is increased 5% each year. The flow of funds is consistently positive; a surplus appears in the last decades of computation. The flow of funds graph is presented in Figure 13. Table 7 illustrates the flow of money from premiums and interest into the fund, and the flow of

[70] The Fund Ratio is the amount of funds in the trust fund at the end of the year divided by the expected benefit payouts for the next year. The desirable ratio is always well over 100%, which would only cover the funding needs for one year.

benefits and operating costs.[71] The fund ratio provides a measure of the solvency of the fund- the ability of the fund to cover expected benefit payments. The fund ratio is the total or reserves in the fund at the beginning of the year divided by the total expenditures the previous year. The fund ratio falls to 236% of the coming year's requirements in 2076, but is rising at the end of the computation period, 75 years. The program with these characteristics is only long-term solvent. The flow of funds pattern indicates more money spent than taken in (the column labeled 'Increase in Fund' is negative) from 2048 to 2062, thus for periods the fund is not reproducing itself. Extension of the benefit period at this premium is not feasible. Conservative planners may be disturbed by paying benefits for those years by drawing down the fund.

Figure 12. Flow of Funds, Working Population, $12 Initial Premium



[71] The funds tables are computed through 2088. They are truncated to 2070 to fit to the report page.

Table 7. ***Working*** *Population Funds Table,* ***$12 Initial Premium***

Table 1: Trust Fund Operations (in millions)

Working Population $12 Premium

Retur

Year	Premiums	Payroll Taxes	GET Taxes	Interest	TOTAL INCOME	Benefits	Admin Expenses	TOTAL OUTGO	INCREASE IN FUND	FUND BALANCE (EOY)	FUND RATIO (BOY)
									0		
2017	149.5	0.0	0.0	4.0	153.5	0.0	6.0	6.0	147.6	147.6	0%
2018	158.1	0.0	0.0	12.5	170.6	0.0	6.3	6.3	164.3	311.8	2334%
2019	168.1	0.0	0.0	22.0	190.1	0.0	6.7	6.7	183.4	495.2	4636%
2020	178.7	0.0	0.0	32.5	211.2	0.0	7.1	7.1	204.1	699.3	6928%
2021	189.8	0.0	0.0	44.3	234.0	0.0	7.6	7.6	226.4	925.7	9213%
2022	201.3	0.0	0.0	57.3	258.6	0.0	8.1	8.1	250.5	1,176.2	11495%
2023	213.5	0.0	0.0	69.8	283.3	61.1	11.0	72.1	211.2	1,387.4	1631%
2024	226.3	0.0	0.0	81.8	308.2	66.8	11.7	78.5	229.7	1,617.1	1767%
2025	240.0	0.0	0.0	94.5	334.5	84.7	13.0	97.6	236.9	1,854.0	1656%
2026	254.4	0.0	0.0	107.6	362.0	105.5	14.4	119.9	242.1	2,096.0	1546%
2027	269.7	0.0	0.0	120.8	390.5	129.8	16.0	145.8	244.7	2,340.8	1438%
2028	285.9	0.0	0.0	134.4	420.3	149.8	17.4	167.3	253.0	2,593.8	1399%
2029	303.0	0.0	0.0	148.4	451.3	172.6	19.0	191.6	259.7	2,853.5	1354%
2030	320.9	0.0	0.0	162.7	483.5	198.1	20.8	218.9	264.7	3,118.2	1304%
2031	339.8	0.0	0.0	177.2	516.9	226.4	22.6	249.0	267.9	3,386.1	1252%
2032	359.6	0.0	0.0	191.8	551.4	257.5	24.7	282.2	269.2	3,655.3	1200%
2033	380.5	0.0	0.0	206.4	587.0	291.6	26.9	318.5	268.4	3,923.7	1148%
2034	402.4	0.0	0.0	221.0	623.4	329.0	29.3	358.2	265.2	4,188.9	1095%
2035	425.6	0.0	0.0	235.3	660.8	369.4	31.8	401.2	259.6	4,448.6	1044%
2036	450.0	0.0	0.0	249.2	699.2	412.5	34.5	447.0	252.2	4,700.7	995%
2037	475.7	0.0	0.0	262.7	738.4	458.2	37.4	495.5	242.8	4,943.6	949%
2038	502.7	0.0	0.0	275.6	778.3	506.0	40.3	546.4	231.9	5,175.5	905%
2039	530.9	0.0	0.0	287.9	818.8	555.9	43.5	599.4	219.5	5,394.9	863%
2040	560.6	0.0	0.0	299.5	860.1	607.5	46.7	654.2	205.9	5,600.9	825%
2041	591.7	0.0	0.0	310.3	902.0	660.2	50.1	710.3	191.7	5,792.6	789%
2042	624.2	0.0	0.0	320.4	944.6	713.9	53.5	767.4	177.2	5,969.8	755%
2043	658.3	0.0	0.0	329.6	987.9	767.9	57.0	825.0	163.0	6,132.8	724%
2044	694.0	0.0	0.0	338.1	1,032.1	822.7	60.7	883.3	148.8	6,281.5	694%
2045	731.3	0.0	0.0	345.9	1,077.1	877.2	64.3	941.5	135.6	6,417.1	667%
2046	770.3	0.0	0.0	353.0	1,123.3	930.9	68.0	998.9	124.3	6,541.5	642%
2047	811.2	0.0	0.0	359.5	1,170.7	983.6	71.8	1,055.4	115.3	6,656.7	620%
2048	854.0	0.0	0.0	365.6	1,219.6	1,035.2	75.6	1,110.8	108.8	6,765.5	599%
2049	898.8	0.0	0.0	371.4	1,270.3	1,085.9	79.4	1,165.3	105.0	6,870.5	581%
2050	945.8	0.0	0.0	377.1	1,322.9	1,135.7	83.3	1,218.9	104.0	6,974.5	564%
2051	995.0	0.0	0.0	382.8	1,377.8	1,184.7	87.2	1,271.9	105.9	7,080.4	548%
2052	1,046.4	0.0	0.0	388.7	1,435.2	1,233.4	91.2	1,324.6	110.5	7,190.9	535%
2053	1,100.4	0.0	0.0	394.9	1,495.3	1,282.0	95.3	1,377.3	118.1	7,309.0	522%
2054	1,156.9	0.0	0.0	401.7	1,558.7	1,328.3	99.4	1,427.7	131.0	7,440.0	512%
2055	1,216.1	0.0	0.0	409.3	1,625.4	1,376.2	103.7	1,479.9	145.5	7,585.5	503%
2056	1,278.3	0.0	0.0	417.6	1,696.0	1,425.3	108.1	1,533.4	162.5	7,748.0	495%
2057	1,343.6	0.0	0.0	427.0	1,770.6	1,475.9	112.8	1,588.7	181.9	7,929.9	488%
2058	1,412.1	0.0	0.0	437.5	1,849.6	1,528.3	117.6	1,646.0	203.7	8,133.6	482%
2059	1,484.0	0.0	0.0	449.3	1,933.3	1,583.0	122.7	1,705.7	227.6	8,361.2	477%
2060	1,559.7	0.0	0.0	462.4	2,022.1	1,639.8	128.0	1,767.7	254.4	8,615.6	473%
2061	1,639.2	0.0	0.0	477.1	2,116.3	1,698.6	133.5	1,832.1	284.2	8,899.8	470%
2062	1,722.8	0.0	0.0	493.4	2,216.3	1,760.0	139.3	1,899.3	317.0	9,216.7	469%
2063	1,810.7	0.0	0.0	511.7	2,322.3	1,824.3	145.4	1,969.7	352.6	9,569.4	468%
2064	1,903.0	0.0	0.0	531.9	2,434.9	1,892.1	151.8	2,043.9	391.1	9,960.4	468%
2065	2,000.0	0.0	0.0	554.4	2,554.4	1,963.1	158.5	2,121.6	432.8	10,393.3	469%
2066	2,102.1	0.0	0.0	579.2	2,681.2	2,037.7	165.6	2,203.3	477.9	10,871.2	472%
2067	2,209.2	0.0	0.0	606.5	2,815.8	2,116.4	173.0	2,289.4	526.3	11,397.5	475%
2068	2,321.7	0.0	0.0	636.6	2,958.3	2,199.0	180.8	2,379.9	578.5	11,976.0	479%
2069	2,439.8	0.0	0.0	669.7	3,109.5	2,286.1	189.0	2,475.1	634.3	12,610.4	484%
2070	2,563.8	0.0	0.0	705.9	3,269.7	2,377.0	197.6	2,574.6	695.0	13,305.4	490%
2071	2,693.8	0.0	0.0	745.5	3,439.3	2,471.3	206.6	2,678.0	761.4	14,066.8	497%
2072	2,830.1	0.0	0.0	789.0	3,619.1	2,569.5	216.0	2,785.5	833.6	14,900.4	505%
2073	2,972.9	0.0	0.0	836.6	3,809.5	2,671.0	225.8	2,896.8	912.7	15,813.1	514%
2074	3,122.5	0.0	0.0	888.6	4,011.2	2,775.7	235.9	3,011.6	999.6	16,812.7	525%
2075	3,279.1	0.0	0.0	945.7	4,224.8	2,882.9	246.5	3,129.4	1,095.5	17,908.1	537%
2076	3,443.0	0.0	0.0	1,008.2	4,451.3	2,993.0	257.4	3,250.4	1,200.8	19,109.0	551%
2077	3,614.6	0.0	0.0	1,076.8	4,691.4	3,105.7	268.8	3,374.5	1,316.9	20,425.8	566%
2078	3,794.1	0.0	0.0	1,152.1	4,946.1	3,220.3	280.6	3,500.9	1,445.3	21,871.1	583%
2079	3,982.1	0.0	0.0	1,234.6	5,216.7	3,337.6	292.8	3,630.4	1,586.3	23,457.4	602%

The number of persons covered by the working population premium-based program is limited to those initially in the workforce, and those added to the workforce over time. Persons not in the workforce and not filing Hawaii resident tax returns will not build up vesting benefits. The numbers covered and the average benefits are illustrated in Figures 14 and 15.

Figure 13. Number of Beneficiaries, Working Population, $12 Starting Premium Year

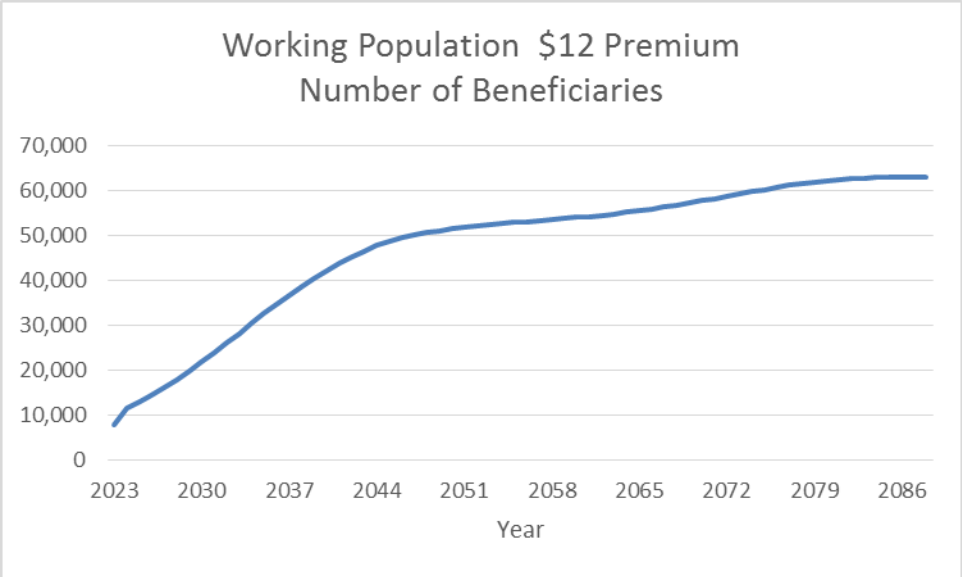
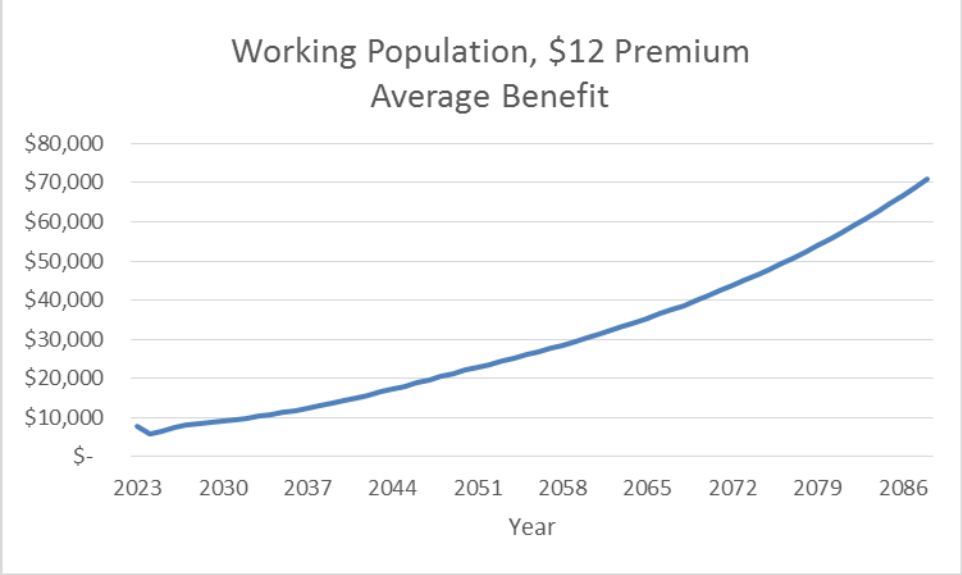


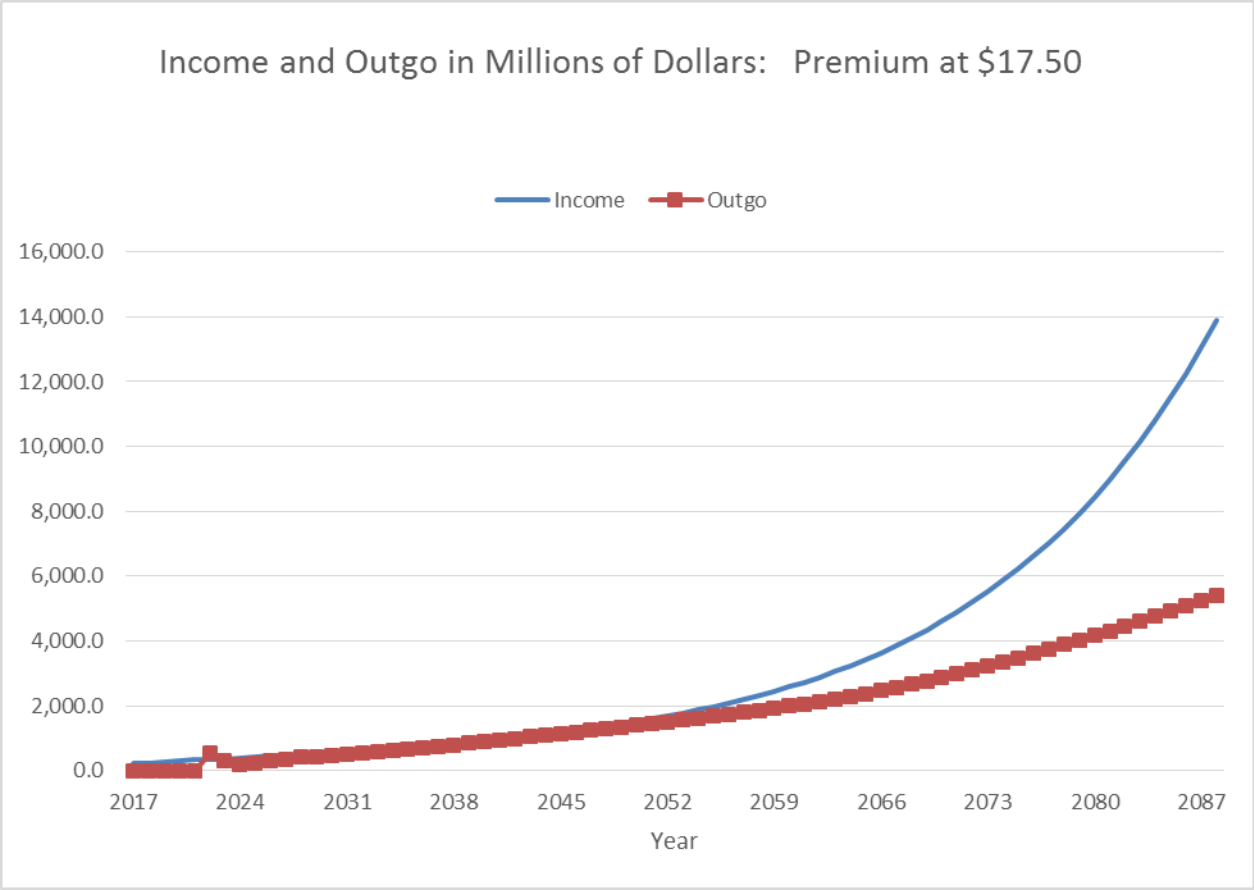
*Figure 14**. Average Benefit Payment, Working Population, $12 Starting Premium by Year***



5.4.2 Whole population premium based program

Extension of the premium based program to the whole population requires an initial premium of $17.50 per month, with a 5% annual increase. The increase covers the cost of inflation increments in benefits and the additional growth in the older segments of the population. Figure 16 illustrates the flow of funds into and out of the fund. Over the period from about 2017 through 2053 the income and outflow track very closely. Surplus funds only appear beyond 2055. The source and destination of funds is given in Table 8. This whole population model is not as robust as the premium model limited to working members. The fund ratio never drops below 237% of the next year's benefit requirements, but this is a much thinner margin than that obtained in the "workers only" model. The fund ratio is illustrated in Figure 18.

Figure 15. Flow of Funds, Whole Population , $17.50 Initial Premium



Distribution of benefits reflects the whole population model—usage begins effectively in the member population's late 60's and grows steadily to ages in the 90's, as shown in Figure 18. This is consistent with a program that will provide benefits to a younger person who becomes disabled during membership, but will address the needs of the older members, where disability levels are growing significantly over time.

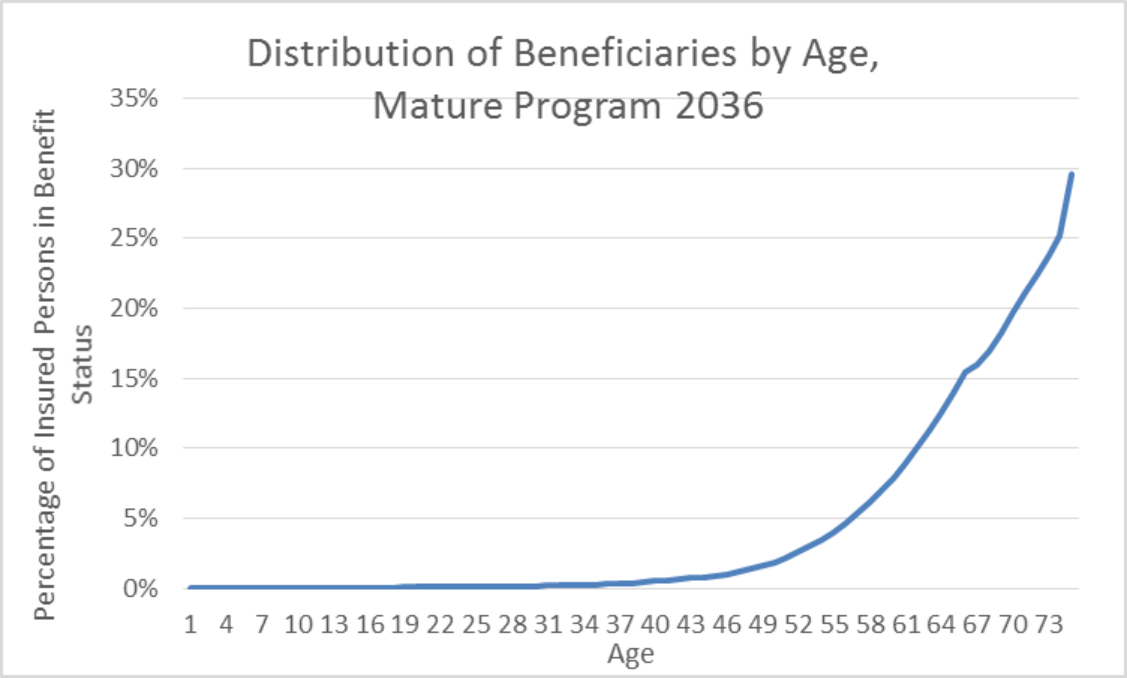
Table 8. Funds Table, Whole Population, $17.50 Initial Premium, 5% Growth

Whole Population Premium $17.50

Year	Premiums	Payroll Taxes	GET Taxes	Interest	TOTAL INCOME	Benefits	Admin Expenses	TOTAL OUTGO	INCREASE IN FUND	FUND BALANCE (EOY)	FUND RATIO (BOY)
									0		
2017	218.0	0.0	0.0	5.8	223.8	0.0	10.9	10.9	212.9	212.9	0%
2018	230.5	0.0	0.0	18.1	248.6	0.0	11.5	11.5	237.0	450.0	1848%
2019	245.2	0.0	0.0	31.7	276.9	0.0	12.3	12.3	264.7	714.6	3670%
2020	260.6	0.0	0.0	47.0	307.5	0.0	13.0	13.0	294.5	1,009.1	5485%
2021	276.7	0.0	0.0	63.9	340.6	0.0	13.8	13.8	326.8	1,335.9	7293%
2022	293.6	0.0	0.0	67.0	360.6	531.4	41.2	572.6	-212.0	1,123.9	233%
2023	311.4	0.0	0.0	62.1	373.6	309.4	31.0	340.4	33.2	1,157.1	330%
2024	330.3	0.0	0.0	67.9	398.2	193.0	26.2	219.1	179.1	1,336.1	528%
2025	350.2	0.0	0.0	77.2	427.5	235.0	29.3	264.3	163.2	1,499.3	506%
2026	371.3	0.0	0.0	85.5	456.8	282.1	32.7	314.8	142.1	1,641.4	476%
2027	393.6	0.0	0.0	92.5	486.1	334.9	36.4	371.3	114.8	1,756.2	442%
2028	417.2	0.0	0.0	98.0	515.2	389.5	40.3	429.8	85.4	1,841.6	409%
2029	442.2	0.0	0.0	102.5	544.7	422.8	43.2	466.0	78.7	1,920.2	395%
2030	468.4	0.0	0.0	106.7	575.1	452.7	46.1	498.7	76.4	1,996.6	385%
2031	496.1	0.0	0.0	110.8	606.8	484.6	49.0	533.7	73.2	2,069.8	374%
2032	525.2	0.0	0.0	114.6	639.8	518.8	52.2	570.9	68.9	2,138.7	363%
2033	555.8	0.0	0.0	118.2	674.0	554.9	55.5	610.4	63.6	2,202.4	350%
2034	587.9	0.0	0.0	121.5	709.4	593.0	59.0	652.1	57.3	2,259.7	338%
2035	621.7	0.0	0.0	124.5	746.2	633.1	62.7	695.9	50.3	2,310.0	325%
2036	657.5	0.0	0.0	127.0	784.5	674.7	66.6	741.3	43.2	2,353.2	312%
2037	695.1	0.0	0.0	129.2	824.2	717.7	70.6	788.3	35.9	2,389.1	299%
2038	734.5	0.0	0.0	130.9	865.4	761.7	74.8	836.5	28.9	2,418.1	286%
2039	775.8	0.0	0.0	132.3	908.1	806.7	79.1	885.8	22.3	2,440.4	273%
2040	819.1	0.0	0.0	133.4	952.5	852.5	83.6	936.1	16.4	2,456.7	261%
2041	864.4	0.0	0.0	134.1	998.6	898.9	88.2	987.1	11.5	2,468.2	249%
2042	911.9	0.0	0.0	134.7	1,046.6	945.9	92.9	1,038.8	7.8	2,476.0	238%
2043	961.6	0.0	0.0	135.0	1,096.7	993.2	97.7	1,091.0	5.7	2,481.7	227%
2044	1,013.7	0.0	0.0	135.3	1,149.0	1,041.0	102.7	1,143.7	5.3	2,487.0	217%
2045	1,068.1	0.0	0.0	135.7	1,203.8	1,089.0	107.9	1,196.9	6.9	2,493.9	208%
2046	1,125.0	0.0	0.0	136.2	1,261.2	1,137.0	113.1	1,250.1	11.1	2,505.0	200%
2047	1,184.6	0.0	0.0	136.9	1,321.6	1,185.4	118.5	1,303.9	17.7	2,522.7	192%
2048	1,247.1	0.0	0.0	138.2	1,385.3	1,233.8	124.0	1,357.9	27.4	2,550.1	186%
2049	1,312.6	0.0	0.0	140.0	1,452.6	1,282.8	129.8	1,412.6	40.0	2,590.1	181%
2050	1,381.1	0.0	0.0	142.6	1,523.7	1,332.3	135.7	1,468.0	55.7	2,645.9	176%
2051	1,452.9	0.0	0.0	146.2	1,599.1	1,382.3	141.8	1,524.1	75.0	2,720.9	174%
2052	1,528.1	0.0	0.0	150.9	1,679.0	1,433.2	148.1	1,581.3	97.7	2,818.5	172%
2053	1,606.9	0.0	0.0	156.9	1,763.8	1,485.1	154.6	1,639.7	124.1	2,942.7	172%
2054	1,689.5	0.0	0.0	164.5	1,854.0	1,538.3	161.4	1,699.7	154.3	3,096.9	173%
2055	1,776.0	0.0	0.0	173.8	1,949.8	1,593.1	168.5	1,761.6	188.2	3,285.1	176%
2056	1,866.7	0.0	0.0	185.1	2,051.9	1,649.3	175.8	1,825.1	226.7	3,511.9	180%
2057	1,962.1	0.0	0.0	198.7	2,160.7	1,707.3	183.5	1,890.7	270.0	3,781.9	186%
2058	2,062.1	0.0	0.0	214.7	2,276.8	1,767.2	191.5	1,958.7	318.1	4,100.0	193%
2059	2,167.2	0.0	0.0	233.5	2,400.7	1,829.7	199.8	2,029.6	371.1	4,471.1	202%
2060	2,277.7	0.0	0.0	255.3	2,533.0	1,894.6	208.6	2,103.2	429.8	4,901.0	213%
2061	2,393.9	0.0	0.0	280.5	2,674.3	1,961.8	217.8	2,179.6	494.7	5,395.6	225%
2062	2,516.0	0.0	0.0	309.3	2,825.3	2,032.1	227.4	2,259.5	565.8	5,961.4	239%
2063	2,644.3	0.0	0.0	342.3	2,986.5	2,105.7	237.5	2,343.2	643.3	6,604.7	254%
2064	2,779.1	0.0	0.0	379.6	3,158.7	2,183.2	248.1	2,431.3	727.4	7,332.1	272%
2065	2,920.9	0.0	0.0	421.7	3,342.6	2,264.5	259.3	2,523.7	818.8	8,151.0	291%
2066	3,069.8	0.0	0.0	469.0	3,538.9	2,349.9	271.0	2,620.9	918.0	9,069.0	311%
2067	3,226.4	0.0	0.0	521.9	3,748.3	2,439.9	283.3	2,723.2	1,025.1	10,094.0	333%
2068	3,390.6	0.0	0.0	580.9	3,971.6	2,534.4	296.3	2,830.6	1,140.9	11,235.0	357%
2069	3,563.1	0.0	0.0	646.5	4,209.6	2,633.8	309.8	2,943.7	1,266.0	12,500.9	382%
2070	3,744.2	0.0	0.0	719.2	4,463.4	2,737.6	324.1	3,061.7	1,401.6	13,902.6	408%

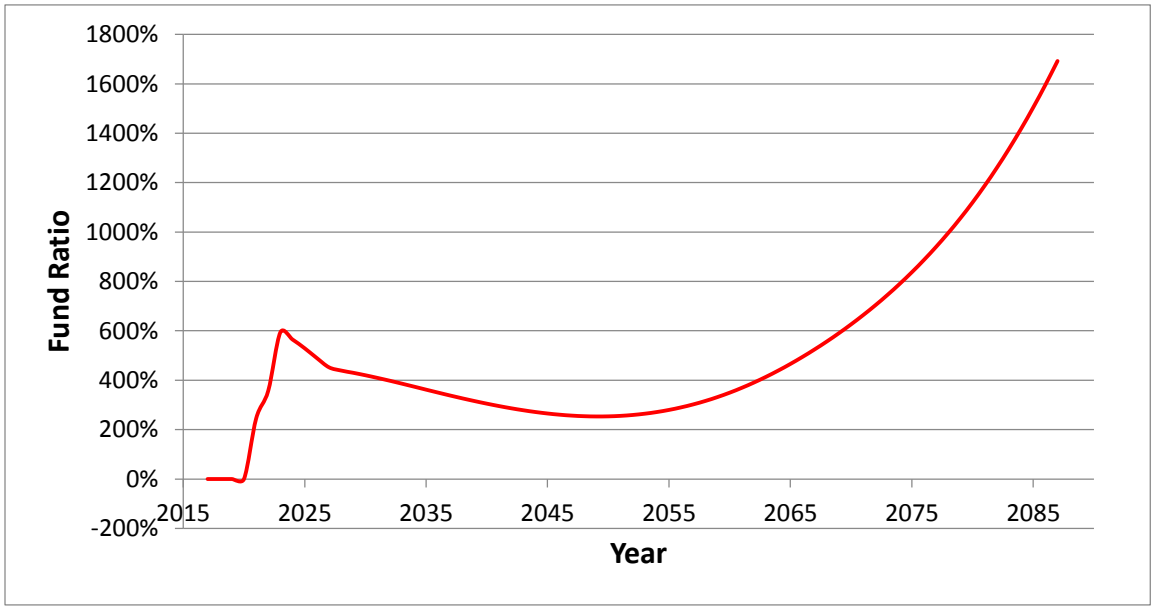
The distribution of beneficiaries by age is given in Figure 17.

Figure 16. Proportion of Beneficiaries by Age, Premium Program Whole Population



The funds ratio by year is given in Figure 18, and the average benefit payment to a recipient is given in Figure 19.

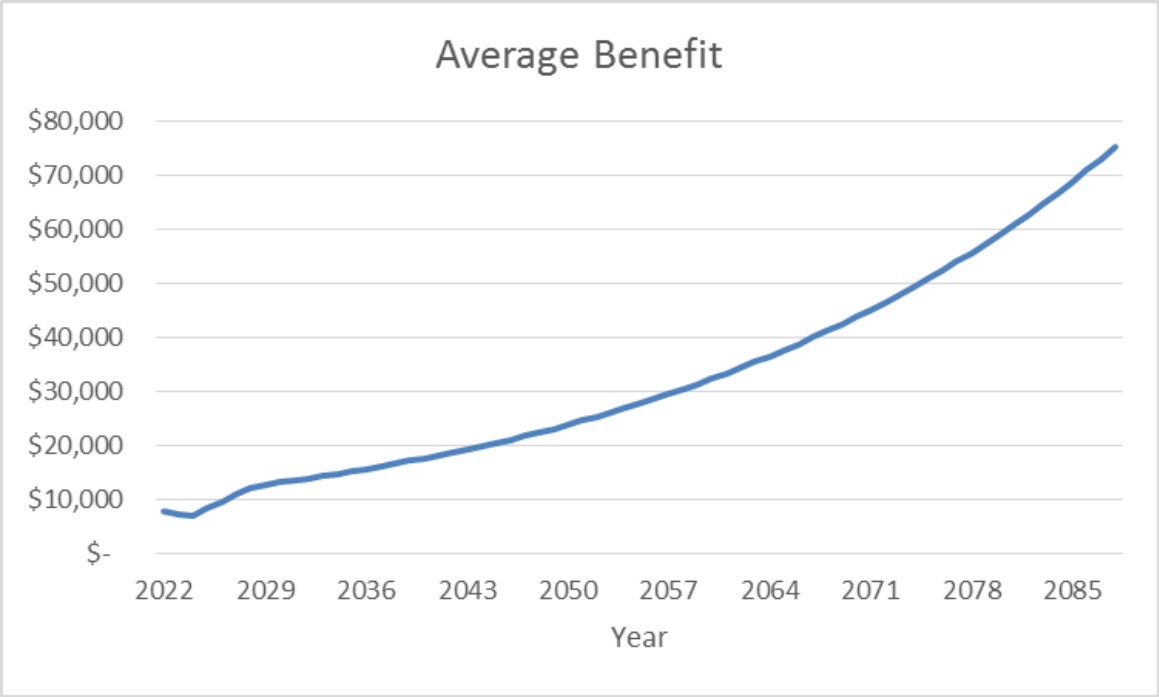
Figure 17. Fund Ratio by Year



Note the large dip in beneficiaries in the first couple of years of the program. Since this program includes all residents, and the benefits begin after the fifth year (nominally 2022) at the 50% of

face value level. The early high usage represents people who may have held off using the benefit until payments increased beyond the 10% and 20% of the first and second program years.

Figure 18. Average Benefit by Year



5.4.3 Working population income tax surcharge

The model for insuring the working population by way of an income tax surcharge requires an addition to the Hawaii Resident Income Tax of 0.70%. The graph of flow of funds is presented in Figure 20. The projection shows more than advisable amounts in the fund, and a steady growth in the amount added every year. The corresponding funds table is in Table 9. This program option is short-term solvent: the fund ratio hovers in the range of 600% or more for most of the 75 year computation period. But, the fund ratio declines steadily, reaching 527% in 2070 and continuing downward. This steady decline violates one of the rules of thumb of long-run solvency—that the fund ratio should be broadly increasing at the end of the planning period.

Figure 19. ***Flow of Funds, Working Population, 0.7% Income Tax***

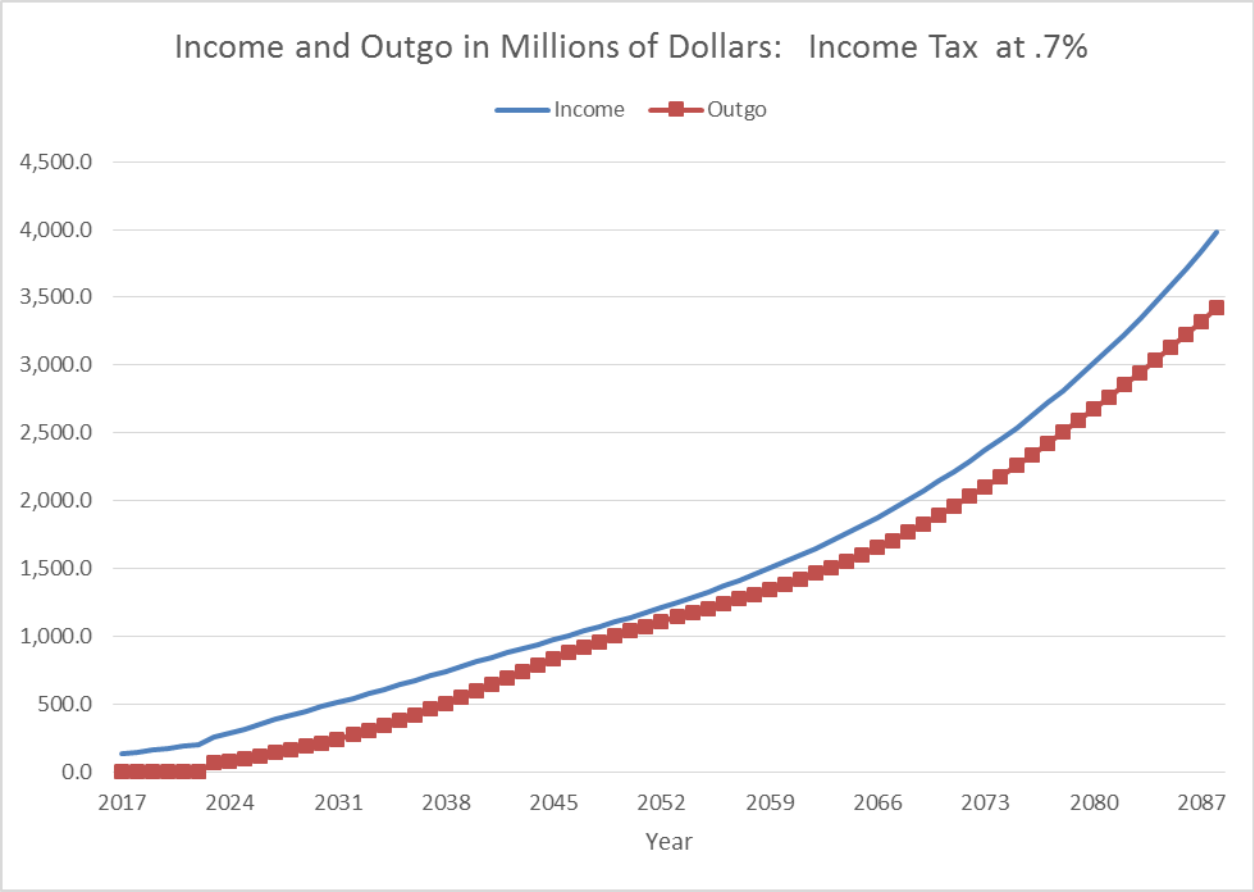


Table 9. *Funds Table, Working Population, 0.7% Income Tax*

Table 1: Trust Fund Operations (in millions)

Workers_income Tax_.7%

Retur

Year	Premiums	Payroll Taxes	GET Taxes	Interest	TOTAL INCOME	Benefits	Admin Expenses	TOTAL OUTGO	INCREASE IN FUND	FUND BALANCE (EOY)	FUND RATIO (BOY)
									0		
2017	0.0	128.7	0.0	3.4	132.2	0.0	6.4	6.4	125.7	125.7	0%
2018	0.0	135.2	0.0	10.6	145.9	0.0	6.8	6.8	139.1	264.8	1859%
2019	0.0	141.4	0.0	18.6	159.9	0.0	7.1	7.1	152.9	417.7	3747%
2020	0.0	147.2	0.0	27.3	174.5	0.0	7.4	7.4	167.1	584.9	5675%
2021	0.0	152.9	0.0	36.8	189.7	0.0	7.6	7.6	182.1	766.9	7651%
2022	0.0	158.2	0.0	47.2	205.4	0.0	7.9	7.9	197.5	964.4	9695%
2023	0.0	198.4	0.0	57.5	255.9	60.2	12.9	73.1	182.8	1,147.1	1319%
2024	0.0	218.1	0.0	68.1	286.2	65.6	14.2	79.8	206.4	1,353.6	1438%
2025	0.0	239.6	0.0	79.7	319.3	82.8	16.1	98.9	220.4	1,574.0	1368%
2026	0.0	262.7	0.0	92.1	354.8	102.7	18.3	120.9	233.8	1,807.8	1301%
2027	0.0	287.4	0.0	105.2	392.6	125.6	20.7	146.2	246.4	2,054.2	1236%
2028	0.0	302.8	0.0	118.8	421.6	144.3	22.4	166.6	255.0	2,309.2	1233%
2029	0.0	318.9	0.0	132.9	451.8	165.3	24.2	189.5	262.3	2,571.5	1219%
2030	0.0	335.5	0.0	147.4	482.9	188.7	26.2	214.9	267.9	2,839.4	1196%
2031	0.0	352.3	0.0	162.1	514.4	214.5	28.3	242.9	271.5	3,110.9	1169%
2032	0.0	369.3	0.0	176.9	546.2	242.8	30.6	273.4	272.8	3,383.7	1138%
2033	0.0	386.9	0.0	191.7	578.6	273.6	33.0	306.6	272.0	3,655.7	1104%
2034	0.0	405.0	0.0	206.5	611.4	307.0	35.6	342.6	268.9	3,924.6	1067%
2035	0.0	423.7	0.0	221.0	644.7	342.9	38.3	381.2	263.4	4,188.0	1029%
2036	0.0	442.9	0.0	235.1	678.0	380.9	41.2	422.1	255.9	4,443.9	992%
2037	0.0	462.7	0.0	248.8	711.5	420.7	44.2	464.9	246.7	4,690.6	956%
2038	0.0	483.0	0.0	261.9	744.9	461.9	47.2	509.2	235.7	4,926.3	921%
2039	0.0	503.8	0.0	274.4	778.3	504.4	50.4	554.8	223.5	5,149.8	888%
2040	0.0	525.5	0.0	286.3	811.7	547.7	53.7	601.4	210.4	5,360.1	856%
2041	0.0	547.7	0.0	297.3	845.0	591.4	57.0	648.3	196.7	5,556.8	827%
2042	0.0	570.4	0.0	307.7	878.0	635.1	60.3	695.4	182.6	5,739.4	799%
2043	0.0	593.4	0.0	317.2	910.7	678.5	63.6	742.1	168.6	5,908.0	773%
2044	0.0	616.9	0.0	326.0	942.9	721.8	66.9	788.7	154.2	6,062.1	749%
2045	0.0	640.8	0.0	334.1	974.9	764.2	70.3	834.4	140.5	6,202.6	726%
2046	0.0	665.8	0.0	341.4	1,007.2	805.1	73.5	878.6	128.5	6,331.1	706%
2047	0.0	691.7	0.0	348.1	1,039.8	844.4	76.8	921.2	118.7	6,449.8	687%
2048	0.0	718.5	0.0	354.4	1,072.9	881.9	80.0	961.9	111.0	6,560.8	671%
2049	0.0	746.4	0.0	360.3	1,106.6	917.8	83.2	1,001.0	105.7	6,666.5	655%
2050	0.0	775.6	0.0	366.0	1,141.5	952.2	86.4	1,038.6	102.9	6,769.4	642%
2051	0.0	805.5	0.0	371.5	1,177.1	985.2	89.5	1,074.8	102.3	6,871.7	630%
2052	0.0	836.1	0.0	377.1	1,213.3	1,017.3	92.7	1,110.0	103.3	6,975.0	619%
2053	0.0	867.9	0.0	382.9	1,250.8	1,048.6	95.8	1,144.4	106.4	7,081.4	609%
2054	0.0	900.2	0.0	388.8	1,289.1	1,077.1	98.9	1,176.0	113.1	7,194.5	602%
2055	0.0	933.4	0.0	395.2	1,328.6	1,106.4	102.0	1,208.4	120.2	7,314.7	595%
2056	0.0	967.6	0.0	402.0	1,369.5	1,136.1	105.2	1,241.3	128.2	7,442.9	589%
2057	0.0	1,002.6	0.0	409.2	1,411.8	1,166.6	108.5	1,275.0	136.7	7,579.6	584%
2058	0.0	1,039.0	0.0	416.9	1,455.8	1,198.0	111.8	1,309.9	146.0	7,725.6	579%
2059	0.0	1,076.9	0.0	425.1	1,502.0	1,231.0	115.4	1,346.4	155.7	7,881.3	574%
2060	0.0	1,116.4	0.0	433.9	1,550.2	1,265.1	119.1	1,384.2	166.0	8,047.3	569%
2061	0.0	1,156.8	0.0	443.2	1,600.0	1,300.5	122.9	1,423.4	176.6	8,223.9	565%
2062	0.0	1,198.6	0.0	453.1	1,651.6	1,337.7	126.8	1,464.5	187.2	8,411.1	562%
2063	0.0	1,242.1	0.0	463.6	1,705.7	1,376.8	130.9	1,507.8	197.9	8,609.0	558%
2064	0.0	1,287.0	0.0	474.6	1,761.6	1,418.5	135.3	1,553.8	207.8	8,816.8	554%
2065	0.0	1,333.0	0.0	486.2	1,819.2	1,462.5	139.8	1,602.3	216.9	9,033.7	550%
2066	0.0	1,380.8	0.0	498.2	1,879.0	1,509.2	144.5	1,653.7	225.4	9,259.1	546%
2067	0.0	1,430.7	0.0	510.7	1,941.4	1,558.8	149.5	1,708.3	233.1	9,492.2	542%
2068	0.0	1,482.5	0.0	523.6	2,006.1	1,611.4	154.7	1,766.1	240.0	9,732.2	537%
2069	0.0	1,536.6	0.0	536.9	2,073.4	1,667.5	160.2	1,827.7	245.8	9,978.0	532%
2070	0.0	1,593.4	0.0	550.4	2,143.8	1,726.3	166.0	1,892.3	251.5	10,229.4	527%

The total number of beneficiaries over time and the average benefits are given in Figures 21 and 22.

Figure 20. ***Total Beneficiares, Working Population, 0.70% Income Tax***

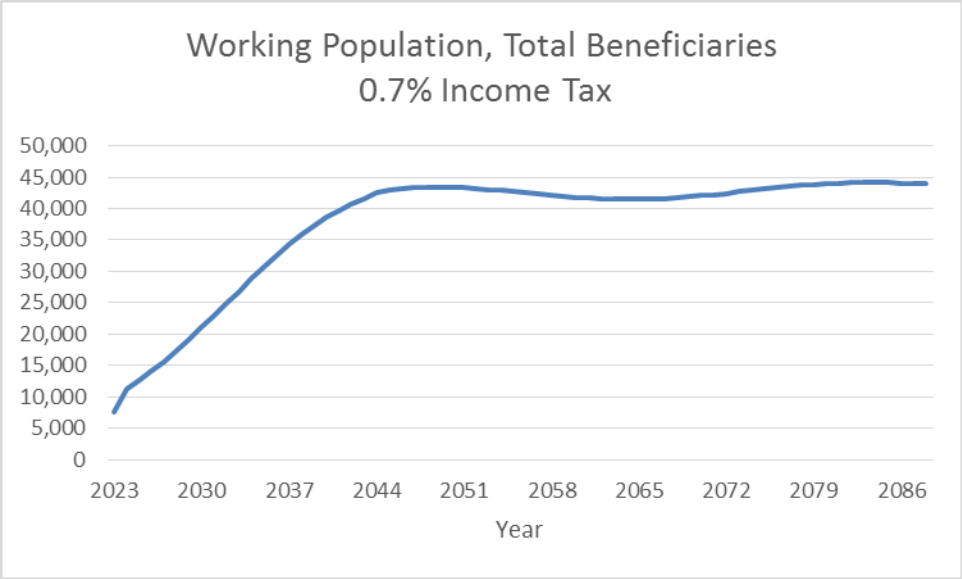
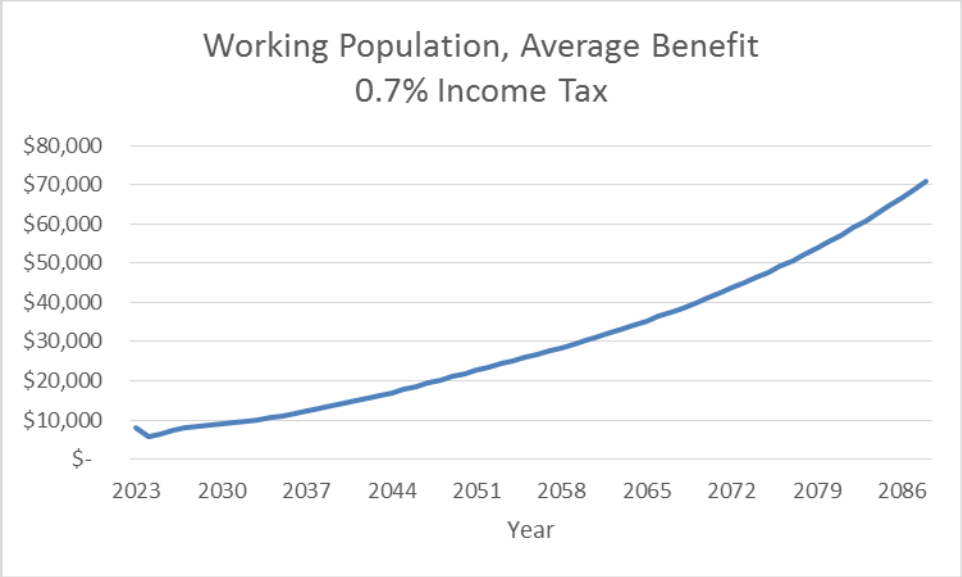


Figure 21. ***Average Benefits, Working Population, 0.70% Income Tax***



How sensitive is the tax model to changing the surcharge rate? Figure 23 shows the flow of funds graph for an income tax surcharge of 0.65%. The fund would go insolvent in the middle of the 75 year period when the out go is greater than income. The fund balances for a 0.65%

are given in Table 10. The fund begins negative expenditures in about 2047, and is completely insolvent in 2074.

Figure 22. ***Flow of Funds, Working Population, 0.65% Income Tax***

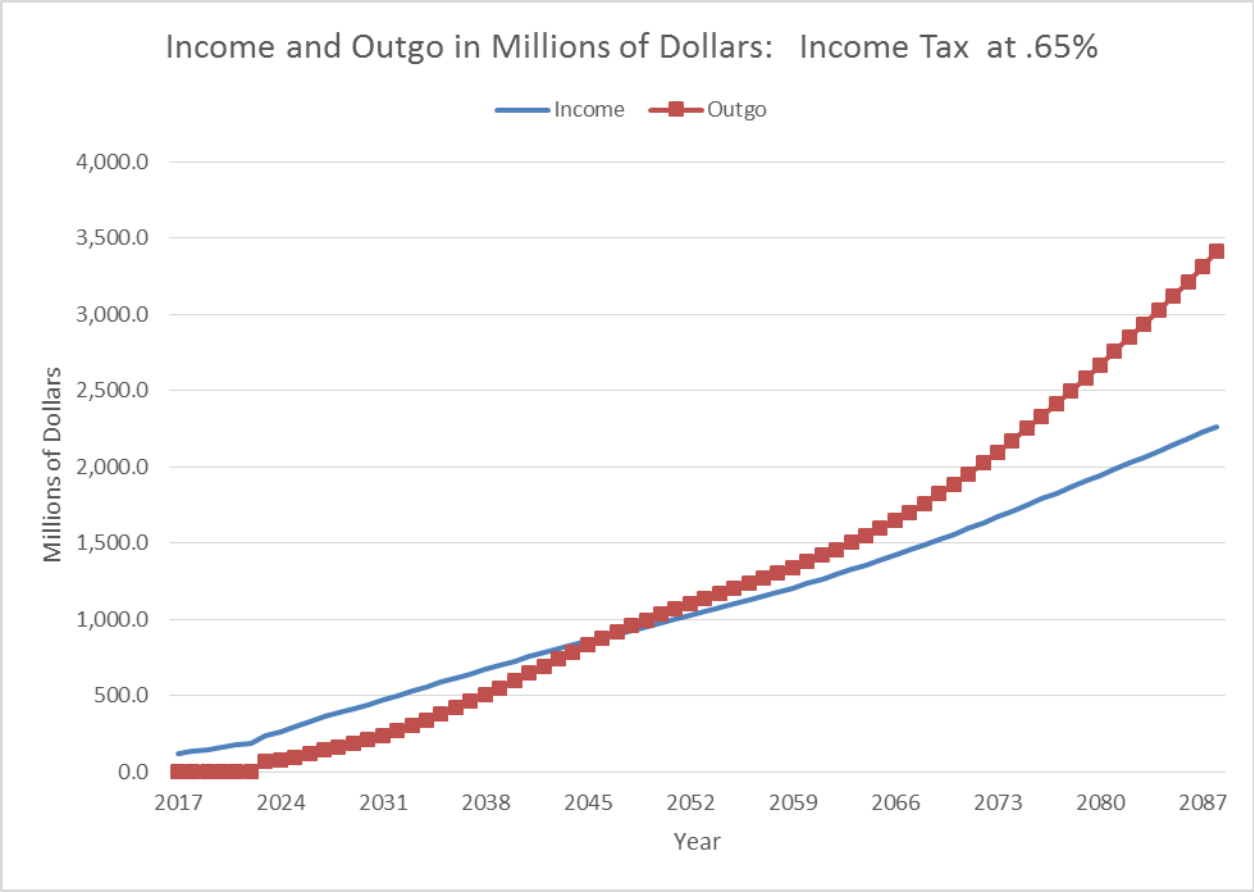


Table 10. Funds Table, Working Population, 0.65% Income Tax

Table 1: Trust Fund Operations (in millions) Retur

Workers_income Tax_.65%

Year	Premiums	Payroll Taxes	GET Taxes	Interest	TOTAL INCOME	Benefits	Admin Expenses	TOTAL OUTGO	INCREASE IN FUND	FUND BALANCE (EOY)	FUND RATIO (BOY)
									0		
2017	0.0	119.5	0.0	3.2	122.7	0.0	6.0	6.0	116.7	116.7	0%
2018	0.0	125.6	0.0	9.9	135.4	0.0	6.3	6.3	129.2	245.9	1859%
2019	0.0	131.3	0.0	17.3	148.5	0.0	6.6	6.6	142.0	387.9	3747%
2020	0.0	136.7	0.0	25.4	162.0	0.0	6.8	6.8	155.2	543.1	5675%
2021	0.0	142.0	0.0	34.2	176.1	0.0	7.1	7.1	169.1	712.1	7651%
2022	0.0	146.9	0.0	43.8	190.7	0.0	7.3	7.3	183.4	895.5	9695%
2023	0.0	184.2	0.0	53.3	237.5	60.2	12.2	72.4	165.1	1,060.6	1237%
2024	0.0	202.5	0.0	62.9	265.4	65.6	13.4	79.0	186.4	1,246.9	1342%
2025	0.0	222.5	0.0	73.3	295.8	82.8	15.3	98.1	197.7	1,444.7	1272%
2026	0.0	243.9	0.0	84.4	328.3	102.7	17.3	120.0	208.3	1,652.9	1204%
2027	0.0	266.9	0.0	96.0	362.9	125.6	19.6	145.2	217.6	1,870.6	1138%
2028	0.0	281.1	0.0	108.0	389.1	144.3	21.3	165.5	223.6	2,094.2	1130%
2029	0.0	296.1	0.0	120.3	416.4	165.3	23.1	188.4	228.0	2,322.2	1112%
2030	0.0	311.5	0.0	132.8	444.3	188.7	25.0	213.7	230.6	2,552.8	1087%
2031	0.0	327.1	0.0	145.3	472.5	214.5	27.1	241.6	230.9	2,783.6	1057%
2032	0.0	343.0	0.0	157.9	500.8	242.8	29.3	272.1	228.7	3,012.3	1023%
2033	0.0	359.2	0.0	170.2	529.4	273.6	31.6	305.2	224.2	3,236.5	987%
2034	0.0	376.1	0.0	182.2	558.3	307.0	34.2	341.2	217.1	3,453.7	949%
2035	0.0	393.4	0.0	193.8	587.2	342.9	36.8	379.7	207.5	3,661.1	910%
2036	0.0	411.3	0.0	204.8	616.1	380.9	39.6	420.5	195.5	3,856.7	871%
2037	0.0	429.7	0.0	215.0	644.7	420.7	42.5	463.2	181.5	4,038.2	833%
2038	0.0	448.5	0.0	224.5	672.9	461.9	45.5	507.4	165.5	4,203.7	796%
2039	0.0	467.8	0.0	233.0	700.9	504.4	48.6	553.0	147.8	4,351.5	760%
2040	0.0	487.9	0.0	240.6	728.5	547.7	51.8	599.5	129.0	4,480.6	726%
2041	0.0	508.5	0.0	247.1	755.6	591.4	55.0	646.4	109.2	4,589.8	693%
2042	0.0	529.6	0.0	252.4	782.1	635.1	58.2	693.4	88.7	4,678.5	662%
2043	0.0	551.0	0.0	256.7	807.7	678.5	61.5	740.0	67.7	4,746.2	632%
2044	0.0	572.8	0.0	259.8	832.6	721.8	64.7	786.5	46.1	4,792.3	603%
2045	0.0	595.1	0.0	261.7	856.8	764.2	68.0	832.1	24.6	4,816.9	576%
2046	0.0	618.2	0.0	262.5	880.7	805.1	71.2	876.2	4.5	4,821.4	550%
2047	0.0	642.3	0.0	262.3	904.6	844.4	74.3	918.7	-14.1	4,807.3	525%
2048	0.0	667.2	0.0	261.0	928.2	881.9	77.5	959.3	-31.1	4,776.2	501%
2049	0.0	693.1	0.0	258.9	952.0	917.8	80.5	998.3	-46.4	4,729.8	478%
2050	0.0	720.2	0.0	256.0	976.2	952.2	83.6	1,035.8	-59.6	4,670.2	457%
2051	0.0	748.0	0.0	252.5	1,000.4	985.2	86.7	1,071.9	-71.4	4,598.8	436%
2052	0.0	776.4	0.0	248.3	1,024.7	1,017.3	89.7	1,107.0	-82.3	4,516.5	415%
2053	0.0	805.9	0.0	243.5	1,049.5	1,048.6	92.7	1,141.3	-91.9	4,424.6	396%
2054	0.0	835.9	0.0	238.3	1,074.3	1,077.1	95.7	1,172.8	-98.5	4,326.2	377%
2055	0.0	866.7	0.0	232.8	1,099.5	1,106.4	98.7	1,205.1	-105.5	4,220.6	359%
2056	0.0	898.4	0.0	226.9	1,125.3	1,136.1	101.7	1,237.9	-112.6	4,108.1	341%
2057	0.0	931.0	0.0	220.5	1,151.5	1,166.6	104.9	1,271.5	-120.0	3,988.1	323%
2058	0.0	964.8	0.0	213.8	1,178.5	1,198.0	108.1	1,306.2	-127.6	3,860.5	305%
2059	0.0	1,000.0	0.0	206.6	1,206.6	1,231.0	111.5	1,342.5	-135.9	3,724.6	288%
2060	0.0	1,036.6	0.0	199.0	1,235.6	1,265.1	115.1	1,380.2	-144.6	3,579.9	270%
2061	0.0	1,074.2	0.0	190.8	1,265.0	1,300.5	118.7	1,419.2	-154.2	3,425.7	252%
2062	0.0	1,112.9	0.0	182.1	1,295.1	1,337.7	122.5	1,460.2	-165.1	3,260.6	235%
2063	0.0	1,153.4	0.0	172.8	1,326.2	1,376.8	126.5	1,503.4	-177.2	3,083.4	217%
2064	0.0	1,195.1	0.0	162.8	1,357.8	1,418.5	130.7	1,549.2	-191.4	2,892.0	199%
2065	0.0	1,237.8	0.0	151.9	1,389.6	1,462.5	135.0	1,597.5	-207.9	2,684.1	181%
2066	0.0	1,282.2	0.0	140.0	1,422.2	1,509.2	139.6	1,648.7	-226.5	2,457.6	163%
2067	0.0	1,328.5	0.0	127.1	1,455.6	1,558.8	144.4	1,703.2	-247.6	2,210.0	144%
2068	0.0	1,376.6	0.0	113.0	1,489.6	1,611.4	149.4	1,760.8	-271.2	1,938.8	126%
2069	0.0	1,426.8	0.0	97.5	1,524.3	1,667.5	154.7	1,822.2	-297.8	1,641.0	106%
2070	0.0	1,479.6	0.0	80.5	1,560.1	1,726.3	160.3	1,886.6	-326.6	1,314.4	87%
2071	0.0	1,534.9	0.0	61.9	1,596.8	1,787.7	166.1	1,953.9	-357.1	957.3	67%
2072	0.0	1,592.8	0.0	41.5	1,634.3	1,852.0	172.2	2,024.3	-390.0	567.4	47%
2073	0.0	1,653.1	0.0	19.3	1,672.4	1,918.9	178.6	2,097.5	-425.1	142.3	27%
2074	0.0	1,715.6	0.0	-4.8	1,710.8	1,988.1	185.2	2,173.2	-462.5	-320.2	7%
2075	0.0	1,780.5	0.0	-31.1	1,749.4	2,059.0	192.0	2,250.9	-501.6	-821.7	-14%
2076	0.0	1,847.9	0.0	-59.5	1,788.4	2,131.9	199.0	2,330.9	-542.5	-1,364.3	-35%
2077	0.0	1,917.9	0.0	-90.3	1,827.6	2,206.9	206.2	2,413.1	-585.5	-1,949.7	-57%
2078	0.0	1,990.1	0.0	-123.4	1,866.7	2,282.9	213.7	2,496.6	-629.9	-2,579.6	-78%
2079	0.0	2,064.9	0.0	-158.9	1,905.9	2,361.0	221.3	2,582.3	-676.4	-3,256.0	-100%
2080	0.0	2,142.5	0.0	-197.1	1,945.4	2,440.4	229.1	2,669.6	-724.1	-3,980.1	-122%
2081	0.0	2,223.0	0.0	-237.8	1,985.2	2,520.2	237.2	2,757.4	-772.2	-4,752.3	-144%
2082	0.0	2,306.2	0.0	-281.2	2,025.0	2,600.8	245.4	2,846.2	-821.2	-5,573.5	-167%
2083	0.0	2,392.2	0.0	-327.3	2,064.9	2,682.4	253.7	2,936.1	-871.2	-6,444.7	-190%
2084	0.0	2,481.1	0.0	-376.2	2,104.9	2,765.0	262.3	3,027.3	-922.4	-7,367.1	-213%
2085	0.0	2,572.8	0.0	-427.9	2,145.0	2,848.9	271.1	3,120.0	-975.0	-8,342.1	-236%
2086	0.0	2,667.4	0.0	-482.5	2,184.9	2,934.4	280.1	3,214.5	-1,029.7	-9,371.8	-260%
2087	0.0	2,765.2	0.0	-540.1	2,225.1	3,021.8	289.4	3,311.2	-1,086.1	-10,457.9	-283%
2088	0.0	2,867.1	0.0	-600.8	2,266.2	3,111.2	298.9	3,410.1	-1,143.9	-11,601.8	-307%

The income tax model for the working population is based on labor force participation. Spouses are automatically covered in the benefit plan. By implication, the single filer tax return would index the participation for a single individual or a married person filing separately. The joint filer tax return would index participation for both individuals on the return. The income tax surcharge is an automatically indexing charge—the funds collected increase with the growth of wages and other income.

There would appear to be a surplus collected in early years under the working-person income tax surcharge. Since working people are younger than the general population, there are expected to be few beneficiaries in the early decades of the program, increasing as these initial members age. One consideration might be to stagger the tax rate, taking less in early years and more later. This strategy puts any legislative body in a difficult position of being forced to raise taxes at some point in the future. Since future legislatures cannot be bound by current actions, this strategy may not be the best approach to funding a long-life project. If an anticipated funds shortfall were not addressed in time, the fund, as illustrated in Table 10, would default.

5.4.4 Whole population GET surcharge

The whole-population program based on a GET surcharge of .4% is solvent over the entire 75 year period, as indicted by Figure 24. The fund values in Table 11 indicate that the fund ratio does not drop below 590% of the next year's needs. Beyond 2060 a surplus appears. It is important to note that this program is funded from an addition to the general excise tax, and is thus paid by everyone. About 35% of the GET is paid by visitors to Hawaii, who will not be resident long enough to accrue benefits.

Figure 23. Flow of Funds, Whole Population, GET, 0.4% Whole Population

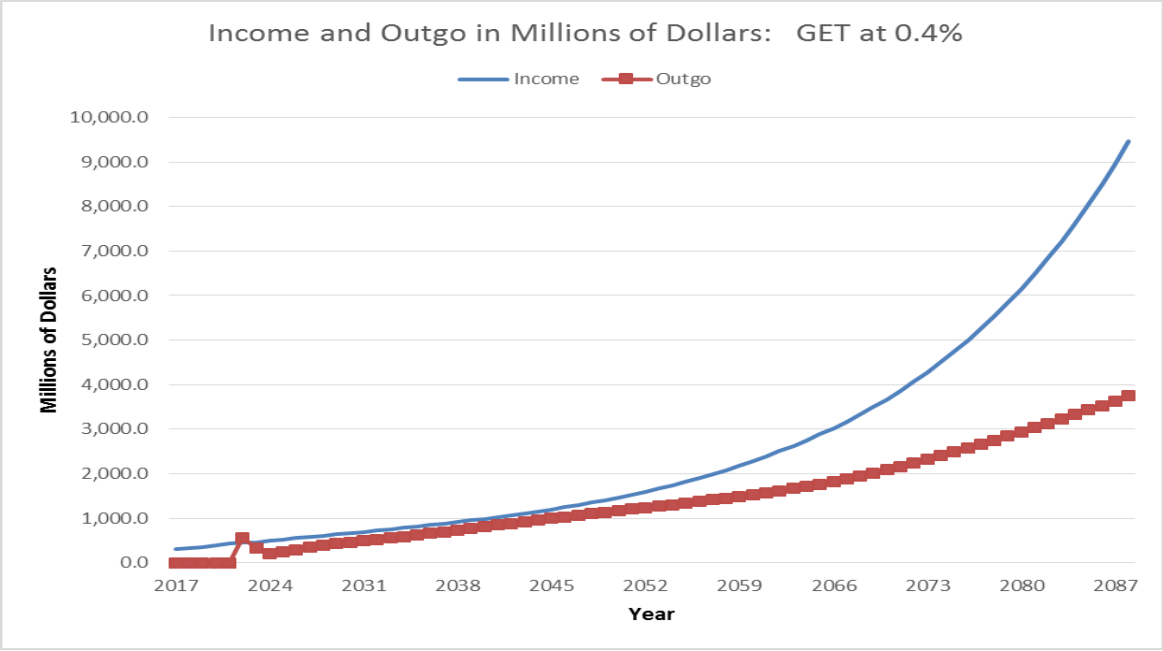


Table 11. Flow of Funds for 0.4% GET Based Program

Table 1: Trust Fund Operations (in millions)

GET 0.4%

Year	Premiums	Payroll Taxes	GET Taxes	Interest	TOTAL INCOME	Benefits	Admin Expenses	TOTAL OUTGO	INCREASE IN FUND	FUND BALANCE (EOY)	Return
									0		
2017	0.0	0.0	291.0	7.7	298.7	0.0	14.5	14.5	284.2	284.2	19.5
2018	0.0	0.0	303.5	24.0	327.5	0.0	15.2	15.2	312.3	596.5	3931%
2019	0.0	0.0	316.3	41.8	358.2	0.0	15.8	15.8	342.3	938.8	5936%
2020	0.0	0.0	328.9	61.3	390.2	0.0	16.4	16.4	373.8	1,312.6	7982%
2021	0.0	0.0	341.8	82.6	424.4	0.0	17.1	17.1	407.3	1,719.9	10064%
2022	0.0	0.0	354.7	90.3	444.9	526.9	44.1	570.9	-126.0	1,593.9	279%
2023	0.0	0.0	368.5	90.0	458.5	306.8	33.8	340.6	118.0	1,711.8	503%
2024	0.0	0.0	382.4	100.4	482.8	190.9	28.7	219.6	263.2	1,975.0	899%
2025	0.0	0.0	396.9	114.3	511.3	231.9	31.4	263.4	247.9	2,222.9	844%
2026	0.0	0.0	412.2	127.3	539.4	277.5	34.5	312.0	227.5	2,450.4	786%
2027	0.0	0.0	427.6	139.0	566.6	328.1	37.8	365.9	200.6	2,651.1	724%
2028	0.0	0.0	443.5	149.1	592.5	380.3	41.2	421.5	171.0	2,822.1	670%
2029	0.0	0.0	459.9	158.2	618.1	410.9	43.5	454.5	163.6	2,985.7	657%
2030	0.0	0.0	477.0	167.0	644.0	437.8	45.7	483.6	160.4	3,146.2	651%
2031	0.0	0.0	494.7	175.6	670.3	466.2	48.0	514.2	156.1	3,302.3	642%
2032	0.0	0.0	513.1	184.0	697.1	496.0	50.5	546.5	150.6	3,452.9	632%
2033	0.0	0.0	532.5	192.0	724.5	527.2	53.0	580.2	144.3	3,597.2	620%
2034	0.0	0.0	552.7	199.7	752.4	559.7	55.6	615.3	137.0	3,734.3	607%
2035	0.0	0.0	573.8	206.9	780.8	593.3	58.4	651.7	129.1	3,863.4	593%
2036	0.0	0.0	596.3	213.8	810.1	627.7	61.2	688.9	121.2	3,984.5	578%
2037	0.0	0.0	619.9	220.1	840.1	662.9	64.1	727.0	113.1	4,097.6	564%
2038	0.0	0.0	644.8	226.1	870.8	698.4	67.2	765.6	105.3	4,202.9	549%
2039	0.0	0.0	670.5	231.6	902.1	734.3	70.2	804.6	97.5	4,300.4	535%
2040	0.0	0.0	697.7	236.7	934.4	770.3	73.4	843.7	90.7	4,391.0	520%
2041	0.0	0.0	726.7	241.5	968.2	806.2	76.6	882.9	85.3	4,476.4	507%
2042	0.0	0.0	757.3	246.1	1,003.3	842.1	80.0	922.0	81.3	4,557.7	494%
2043	0.0	0.0	789.2	250.4	1,039.6	877.5	83.3	960.9	78.7	4,636.4	483%
2044	0.0	0.0	821.7	254.7	1,076.4	912.7	86.7	999.4	77.0	4,713.4	472%
2045	0.0	0.0	855.4	258.9	1,114.2	947.3	90.1	1,037.5	76.7	4,790.2	462%
2046	0.0	0.0	891.5	263.1	1,154.6	981.7	93.7	1,075.3	79.2	4,869.4	453%
2047	0.0	0.0	930.1	267.6	1,197.6	1,015.6	97.3	1,112.9	84.8	4,954.1	445%
2048	0.0	0.0	970.9	272.4	1,243.3	1,048.7	101.0	1,149.7	93.6	5,047.7	439%
2049	0.0	0.0	1,013.3	277.8	1,291.1	1,081.5	104.7	1,186.3	104.8	5,152.6	434%
2050	0.0	0.0	1,057.8	283.9	1,341.7	1,113.9	108.6	1,222.5	119.2	5,271.7	431%
2051	0.0	0.0	1,104.2	290.9	1,395.1	1,146.0	112.5	1,258.5	136.7	5,408.4	430%
2052	0.0	0.0	1,152.1	298.9	1,451.0	1,178.1	116.5	1,294.6	156.4	5,564.8	430%
2053	0.0	0.0	1,202.2	308.0	1,510.2	1,210.2	120.6	1,330.8	179.4	5,744.2	432%
2054	0.0	0.0	1,253.6	318.5	1,572.1	1,242.9	124.8	1,367.7	204.3	5,948.5	435%
2055	0.0	0.0	1,306.2	330.3	1,636.6	1,276.3	129.1	1,405.5	231.1	6,179.6	440%
2056	0.0	0.0	1,361.0	343.7	1,704.8	1,310.3	133.6	1,443.9	260.9	6,440.5	446%
2057	0.0	0.0	1,417.8	358.8	1,776.6	1,345.1	138.1	1,483.3	293.3	6,733.8	454%
2058	0.0	0.0	1,477.2	375.8	1,852.9	1,381.0	142.9	1,523.9	329.0	7,062.8	463%
2059	0.0	0.0	1,539.2	394.8	1,934.0	1,418.6	147.9	1,566.5	367.4	7,430.3	474%
2060	0.0	0.0	1,603.4	415.9	2,019.3	1,457.6	153.1	1,610.7	408.6	7,838.9	487%
2061	0.0	0.0	1,669.7	439.3	2,109.0	1,498.1	158.4	1,656.5	452.5	8,291.4	501%
2062	0.0	0.0	1,737.9	465.2	2,203.1	1,540.7	163.9	1,704.6	498.5	8,789.9	516%
2063	0.0	0.0	1,808.5	493.7	2,302.2	1,585.5	169.7	1,755.2	547.0	9,336.9	532%
2064	0.0	0.0	1,880.6	524.9	2,405.5	1,633.2	175.7	1,808.9	596.6	9,933.5	549%
2065	0.0	0.0	1,954.0	558.8	2,512.8	1,683.6	181.9	1,865.5	647.2	10,580.7	567%
2066	0.0	0.0	2,031.2	595.5	2,626.7	1,737.1	188.4	1,925.5	701.2	11,282.0	586%
2067	0.0	0.0	2,112.5	635.2	2,747.7	1,793.9	195.3	1,989.3	758.4	12,040.4	605%
2068	0.0	0.0	2,196.7	678.2	2,874.9	1,854.1	202.5	2,056.7	818.2	12,858.6	625%
2069	0.0	0.0	2,285.1	724.5	3,009.6	1,918.1	210.2	2,128.3	881.3	13,739.9	646%
2070	0.0	0.0	2,378.5	774.3	3,152.9	1,985.4	218.2	2,203.6	949.3	14,689.2	667%
2071	0.0	0.0	2,477.1	828.1	3,305.2	2,055.5	226.6	2,282.1	1,023.0	15,712.3	688%
2072	0.0	0.0	2,581.6	886.0	3,467.6	2,129.0	235.5	2,364.5	1,103.1	16,815.4	711%
2073	0.0	0.0	2,691.0	948.4	3,639.4	2,205.4	244.8	2,450.2	1,189.2	18,004.6	735%
2074	0.0	0.0	2,805.0	1,015.7	3,820.7	2,284.4	254.5	2,538.8	1,281.9	19,286.5	760%
2075	0.0	0.0	2,924.0	1,088.3	4,012.3	2,365.3	264.5	2,629.8	1,382.5	20,669.0	786%
2076	0.0	0.0	3,049.0	1,166.6	4,215.6	2,448.6	274.9	2,723.5	1,492.1	22,161.1	814%
2077	0.0	0.0	3,179.4	1,251.1	4,430.5	2,534.0	285.7	2,819.7	1,610.8	23,771.9	843%
2078	0.0	0.0	3,314.2	1,342.3	4,656.6	2,620.7	296.7	2,917.5	1,739.1	25,511.0	874%
2079	0.0	0.0	3,455.0	1,440.9	4,895.9	2,709.7	308.2	3,018.0	1,877.9	27,388.8	908%
2080	0.0	0.0	3,602.7	1,547.3	5,150.0	2,800.2	320.1	3,120.4	2,029.6	29,418.4	943%
2081	0.0	0.0	3,756.7	1,662.4	5,419.0	2,891.2	332.4	3,223.5	2,195.5	31,613.9	981%
2082	0.0	0.0	3,916.8	1,786.9	5,703.7	2,983.0	345.0	3,328.0	2,375.7	33,989.6	1021%
2083	0.0	0.0	4,083.3	1,921.6	6,004.9	3,076.0	358.0	3,434.0	2,570.9	36,560.6	1065%
2084	0.0	0.0	4,256.6	2,067.4	6,324.0	3,170.3	371.3	3,541.6	2,782.3	39,342.9	1111%
2085	0.0	0.0	4,435.3	2,225.2	6,660.5	3,266.0	385.1	3,651.1	3,009.4	42,352.3	1160%
2086	0.0	0.0	4,619.4	2,395.7	7,015.1	3,363.7	399.2	3,762.8	3,252.2	45,604.5	1212%
2087	0.0	0.0	4,810.7	2,580.0	7,390.7	3,463.5	413.7	3,877.2	3,513.5	49,118.0	1267%
2088	0.0	0.0	5,011.9	2,779.1	7,791.0	3,565.6	428.9	3,994.5	3,796.5	52,914.5	1325%

The suggestion of a possible surplus in out-years raises the question of the sensitivity of the tax rate on-the projected general excise tax base. Figure 25 shows the Flow of Funds graph for a 0.375 GET surcharge. The surplus seen in the out-years of the .4% model has been reduced, and the minimum fund ratio is about 350% of the next year's needs. Beyond the initial decade, the population is virtually 100% insured under the plan, subject to meeting the membership vesting criterion.

Figure 24. Flow of Funds, Whole Population, GET 0.375

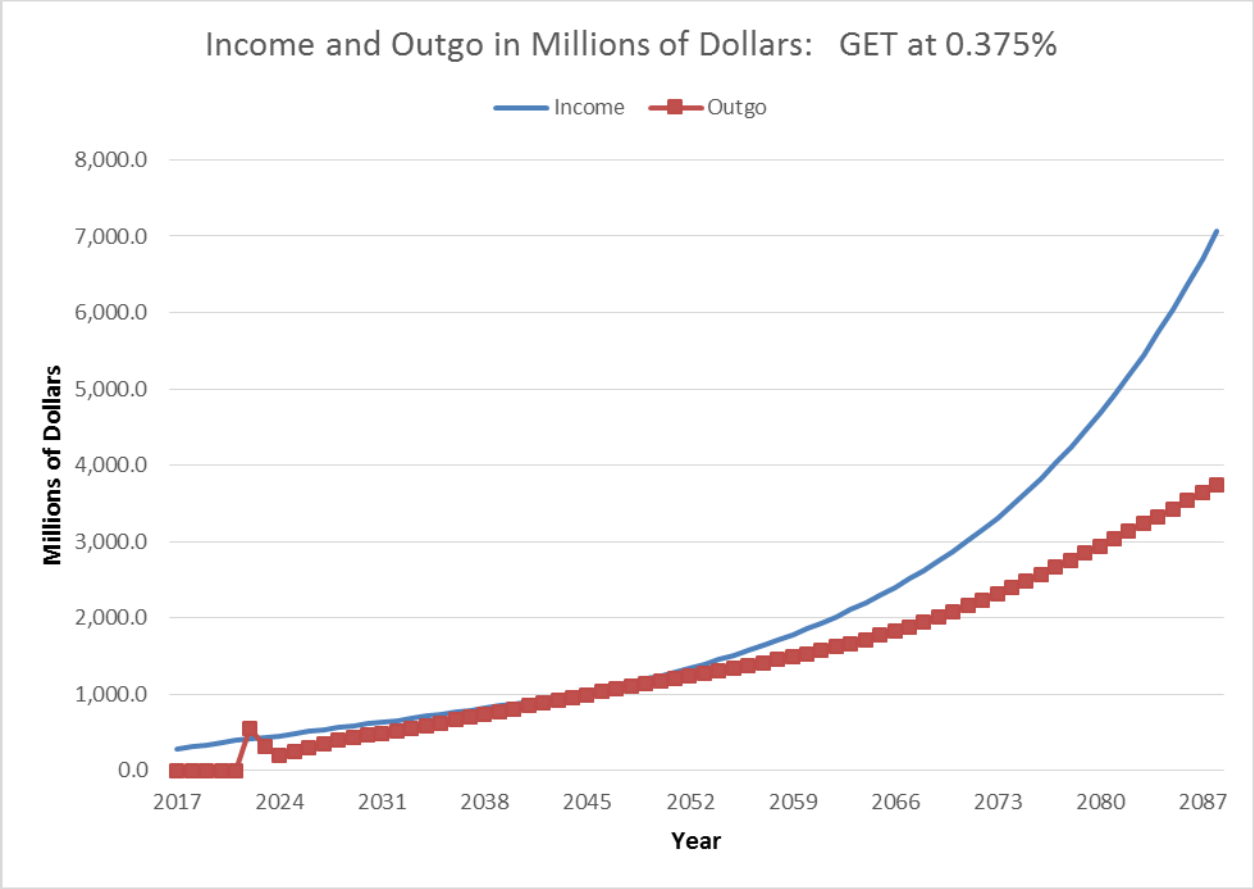


Table 12 gives the fund balances for the 0.375% GETthrough 2070.

Table 12. Flow of Funds for Whole Population, 0.375% GET

Table 1: Trust Fund Operations (in millions) Retur

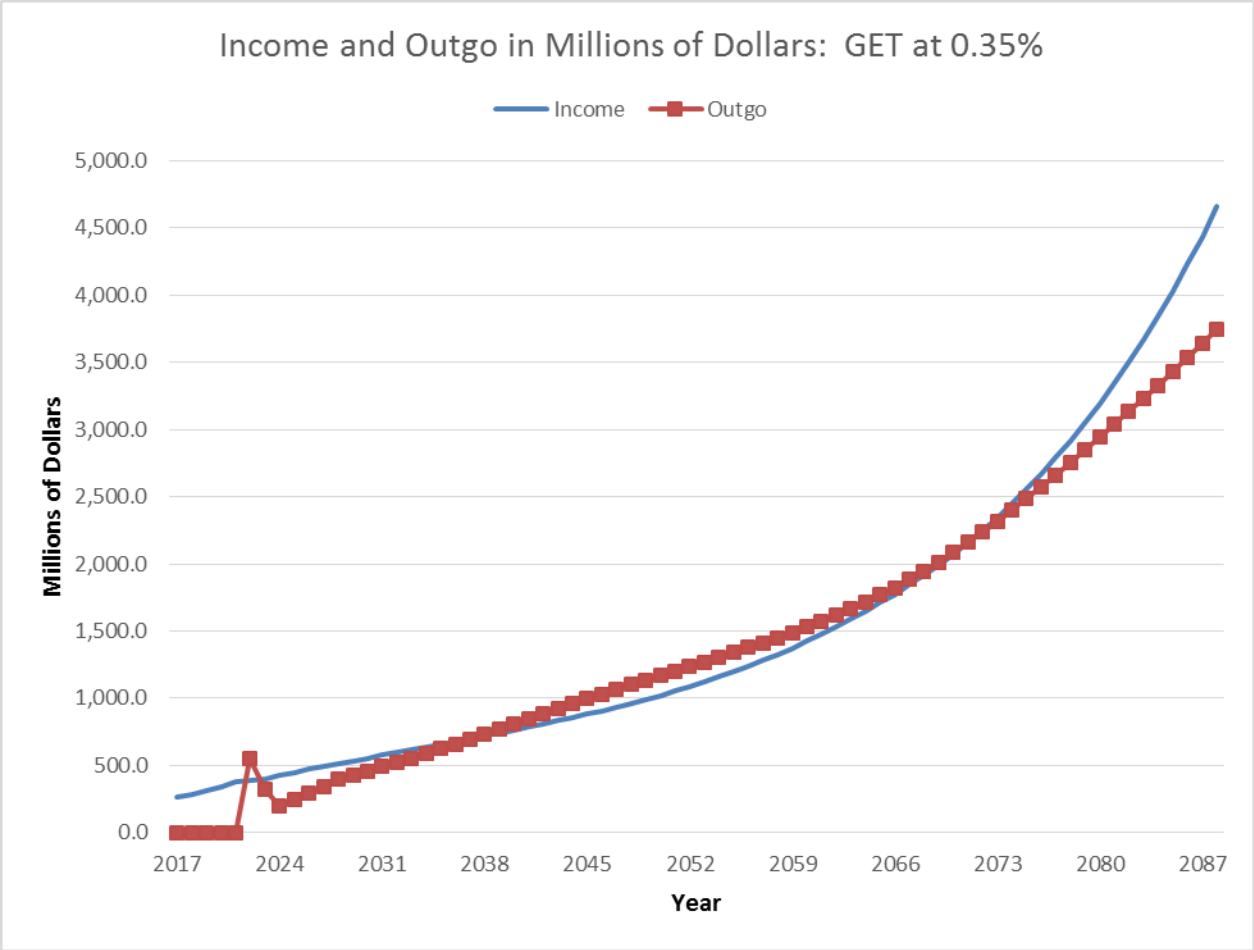
NH-UN5-365-xPov-xMH-Whole_0p4TR4_.375_GET_Solvent

Year	Premiums	Payroll Taxes	GET Taxes	Interest	TOTAL INCOME	Benefits	Admin Expenses	TOTAL OUTGO	INCREASE IN FUND	FUND BALANCE (EOY)	FUND RATIO (BOY)
									0		
2017	0.0	0.0	272.8	7.3	280.1	0.0	13.6	13.6	266.4	266.4	0%
2018	0.0	0.0	284.5	22.5	307.0	0.0	14.2	14.2	292.8	559.2	1873%
2019	0.0	0.0	296.6	39.2	335.8	0.0	14.8	14.8	320.9	880.2	3771%
2020	0.0	0.0	308.3	57.5	365.8	0.0	15.4	15.4	350.4	1,230.6	5709%
2021	0.0	0.0	320.4	77.4	397.8	0.0	16.0	16.0	381.8	1,612.4	7681%
2022	0.0	0.0	332.5	83.6	416.2	526.9	43.0	569.8	-153.7	1,458.7	283%
2023	0.0	0.0	345.5	81.9	427.3	306.8	32.6	339.4	87.9	1,546.6	430%
2024	0.0	0.0	358.5	90.5	449.0	190.9	27.5	218.4	230.6	1,777.2	708%
2025	0.0	0.0	372.1	102.6	474.7	231.9	30.2	262.1	212.6	1,989.8	678%
2026	0.0	0.0	386.4	113.6	499.9	277.5	33.2	310.7	189.3	2,179.1	641%
2027	0.0	0.0	400.9	123.0	523.9	328.1	36.5	364.6	159.4	2,338.4	598%
2028	0.0	0.0	415.7	130.8	546.6	380.3	39.8	420.1	126.5	2,464.9	557%
2029	0.0	0.0	431.2	137.4	568.6	410.9	42.1	453.0	115.6	2,580.5	544%
2030	0.0	0.0	447.2	143.5	590.7	437.8	44.2	482.1	108.6	2,689.1	535%
2031	0.0	0.0	463.8	149.2	613.0	466.2	46.5	512.7	100.3	2,789.4	525%
2032	0.0	0.0	481.0	154.4	635.4	496.0	48.9	544.9	90.6	2,880.0	512%
2033	0.0	0.0	499.2	159.1	658.3	527.2	51.3	578.5	79.8	2,959.7	498%
2034	0.0	0.0	518.1	163.1	681.2	559.7	53.9	613.6	67.6	3,027.3	482%
2035	0.0	0.0	538.0	166.4	704.4	593.3	56.6	649.9	54.5	3,081.8	466%
2036	0.0	0.0	559.1	169.0	728.1	627.7	59.3	687.1	41.0	3,122.8	449%
2037	0.0	0.0	581.2	170.8	752.0	662.9	62.2	725.1	27.0	3,149.8	431%
2038	0.0	0.0	604.5	171.9	776.4	698.4	65.1	763.6	12.8	3,162.6	413%
2039	0.0	0.0	628.6	172.2	800.8	734.3	68.1	802.5	-1.7	3,160.9	394%
2040	0.0	0.0	654.1	171.8	825.8	770.3	71.2	841.6	-15.7	3,145.2	376%
2041	0.0	0.0	681.3	170.6	851.8	806.2	74.4	880.6	-28.8	3,116.4	357%
2042	0.0	0.0	710.0	168.6	878.6	842.1	77.6	919.7	-41.1	3,075.4	339%
2043	0.0	0.0	739.9	166.1	906.0	877.5	80.9	958.4	-52.4	3,022.9	321%
2044	0.0	0.0	770.3	162.9	933.3	912.7	84.1	996.8	-63.5	2,959.4	303%
2045	0.0	0.0	801.9	159.2	961.1	947.3	87.5	1,034.8	-73.7	2,885.7	286%
2046	0.0	0.0	835.7	155.0	990.7	981.7	90.9	1,072.6	-81.8	2,803.9	269%
2047	0.0	0.0	871.9	150.4	1,022.3	1,015.6	94.4	1,110.0	-87.7	2,716.2	253%
2048	0.0	0.0	910.2	145.5	1,055.7	1,048.7	97.9	1,146.7	-91.0	2,625.2	237%
2049	0.0	0.0	950.0	140.5	1,090.4	1,081.5	101.6	1,183.1	-92.7	2,532.5	222%
2050	0.0	0.0	991.6	135.4	1,127.1	1,113.9	105.3	1,219.2	-92.1	2,440.4	208%
2051	0.0	0.0	1,035.2	130.5	1,165.7	1,146.0	109.1	1,255.0	-89.3	2,351.1	194%
2052	0.0	0.0	1,080.1	125.8	1,205.9	1,178.1	112.9	1,291.0	-85.1	2,266.0	182%
2053	0.0	0.0	1,127.1	121.3	1,248.4	1,210.2	116.9	1,327.1	-78.7	2,187.3	171%
2054	0.0	0.0	1,175.2	117.2	1,292.4	1,242.9	120.9	1,363.8	-71.4	2,115.9	160%
2055	0.0	0.0	1,224.6	113.5	1,338.1	1,276.3	125.0	1,401.4	-63.3	2,052.6	151%
2056	0.0	0.0	1,276.0	110.4	1,386.3	1,310.3	129.3	1,439.6	-53.3	1,999.3	143%
2057	0.0	0.0	1,329.2	107.8	1,436.9	1,345.1	133.7	1,478.8	-41.9	1,957.4	135%
2058	0.0	0.0	1,384.8	105.9	1,490.7	1,381.0	138.3	1,519.3	-28.6	1,928.8	129%
2059	0.0	0.0	1,443.0	104.7	1,547.7	1,418.6	143.1	1,561.7	-14.0	1,914.8	124%
2060	0.0	0.0	1,503.2	104.4	1,607.6	1,457.6	148.0	1,605.7	1.9	1,916.7	119%
2061	0.0	0.0	1,565.3	104.9	1,670.2	1,498.1	153.2	1,651.3	18.9	1,935.6	116%
2062	0.0	0.0	1,629.2	106.4	1,735.7	1,540.7	158.5	1,699.2	36.5	1,972.1	114%
2063	0.0	0.0	1,695.5	108.9	1,804.4	1,585.5	164.1	1,749.6	54.8	2,026.9	113%
2064	0.0	0.0	1,763.1	112.4	1,875.5	1,633.2	169.8	1,803.0	72.5	2,099.4	112%
2065	0.0	0.0	1,831.9	116.8	1,948.7	1,683.6	175.8	1,859.4	89.3	2,188.7	113%
2066	0.0	0.0	1,904.3	122.1	2,026.4	1,737.1	182.1	1,919.2	107.3	2,295.9	114%
2067	0.0	0.0	1,980.4	128.5	2,108.9	1,793.9	188.7	1,982.7	126.3	2,422.2	116%
2068	0.0	0.0	2,059.4	135.9	2,195.3	1,854.1	195.7	2,049.8	145.5	2,567.7	118%
2069	0.0	0.0	2,142.3	144.4	2,286.7	1,918.1	203.0	2,121.2	165.5	2,733.3	121%
2070	0.0	0.0	2,229.9	154.0	2,383.9	1,985.4	210.8	2,196.1	187.8	2,921.0	124%

Could this program work with an even smaller GET surcharge? Such as .35%? Figure 26 presents the flow of funds using a 0.35% surcharge to the GET. At the beginning and end of the analysis period, the fund shows positive balances. In about 2035, the fund begins to spend more than it takes in, and then reverses this pattern about 2073. The fund is insolvent in 2060. Small changes in rates, given a fixed assumption about periodic increases in benefits, can have

unexpected results when compounded over time.

Figure 25. Flow of Funds, Whole Population, GET 0.35%



5.5 Recapitulation of model results

The computations of plausible, solvent rates for the set of models allows comparison of two critical issues for any social insurance program: how many people should be covered, and how much is the society willing to pay. In the following Table 13, the proposals are summarized.

Table 13. Summary of Program Proposals

Program Name	Population Covered[72]	Fraction of Beneficiaries	Cost	Collection Mechanism
Working, Premium	Working population determined by minimum tax filing, kept in program after retirement for life.	A premium is charged for each named person on the tax return. The population is limited to those working. Retired persons and non-workers or persons below an income floor will not be taxed.	$12/month Per person 5% annual increase.	Collected by a direct computation on the Hawaii Resident Tax return. Premium tax would be collected on all returns with a Hawaii AGI over $20,000.
Whole Population, Premium	Whole population of tax filers, both single and joint returns.	The premium captures each individual individually on the tax return.	$17.50/month per person 5% annual increase	Hawaii Resident Tax return. The pricing formula is designed to cover the cost of both householder and spouse.
Working, Income Tax	Working population, determined from minimum tax filing, kept in population after retirement for life. The income floor, based on the wage and salary, business, and farm income values establish "working" for	Initially the working population. Over time those who join the labor force will be retained in the member pool as they retire. The result will be nearly total coverage of the population after the first two decades of the program.	0.68% to 0.7% surcharge to the income tax. Increase not anticipated.	A surcharge on the income tax rate would be applied to all the Hawaii Resident Income Tax Returns larger than a $20,000 AGI floor.

[72] A discussion about what would be available to persons not covered by each of the options is not in the scope of this report. Nevertheless, we can assume that persons under the $20,000 AGI floor would be eligible for Medicaid as they would likely have been under current law. For the two options in which the covered population is based upon working at the time of the implementation of the program, we can only assume that resources available under current law would still be available to persons who are not covered by the program, mainly persons already retired at the inception of the program.

Program Name	Population Covered[72]	Fraction of Beneficiaries	Cost	Collection Mechanism
	purposes of the program.			
Whole Population, GET Surcharge	Whole population, membership determined by minimum tax filing, kept in population after retirement by filing status.	Persons with income too low to file a Hawaii tax return will be excluded, unless some adjustment is made for filing status. Persons after retirement will be kept in the covered population, since they must file a Hawaii return in order to exclude retirement income from Hawaii Resident Income Tax. The tax filing will be used only for determining vesting. No funds will be collected on the income tax return for the program.	0.375% to 0.4% addition to the GET for 4% tax paying classes. Increase not anticipated.	The GET surcharge will be applied to the GET tax items paying the 4% tax. Credit for membership and vesting shall be based on successively filing Hawaii Resident Income Tax returns, for an individual or for both individuals on a joint return.

5.6 Implications of the several proposed programs

The ultimate questions of whether the long-term services and support needs of older Hawaii residents should be covered in part by a social insurance program, rather than fully by financing plans purchased on private initiative or Medicaid cannot be answered by the Hawaii actuarial pricing model. This is a pure policy decision. Different individuals, families and support groups view the notion of obligation in widely different frameworks. For some the individual's sole obligation is to look out for him or herself and the family, regardless of resources. For others, there is a recognition that not everyone has had, will have, or has ever had the resources to fund needs into the future: the money is simply not there. For others, the fact that many formerly middle class families must adjust to the Medicaid asset and income limits in order to secure assistance for either home care professionals or institutional services may be a serious moral issue: their elders are seen to deserve better than that. The other moral issue is whether society should tolerate the deliberate impoverishment of the elderly solely in order to access public assistance. Medicaid policy often has to play catch-up with estate planning vehicles.

The little questions are also a matter of policy. If a program is created, should it have big benefits or small? Should people be asked to contribute as they use the benefit—as they do when they pay copayments upon receiving insured medical care? How big should the benefit be? Should it cover a day in a long-term care facility? What are we willing to pay for 400 days of this care? Wouldn't this level of care duplicate existing long-term care insurance policies? In view of the number of folks with 2+ ADL deficiencies in Hawaii and the limited number of facility beds—do we think we could put all those folks in facilities? Do they want that kind of care?

In these discussions we have assumed a $70 per day benefit, counting from 2017, but allowing for 3.1% per year adjustment to cover rising costs. That is a little less than the cost of four hours of professional care—$80 plus—and in effect creates a co-pay that depends on the complexity of the care selected. Clearly this benefit size can be adjusted up (or down) by a linear adjustment to the cost to the participant (A benefit of $140 per day would cost twice that of $70 per day—a benefit of $50 per day, 5/7th of the cost of a $70 per day benefit.).

The success of any program depends on two critical, systematic processes.

- Decisions about the award of benefits must be made according to a public standard, adopted by the Trustees of the Trust Fund, and consistent with cautious advice of the fund actuaries.
- Decisions about the size and timing of increments in the benefits, the standards set for management and performance of fund investments, and the general administration of the program must be set by Trustees who take the administration as a fiduciary responsibility.

5.6.1 Policy implications and caveats

The broad conclusions of this pricing study rest on substantial work done across the United States. In one of the clearest assessments of the difficult interface between the Medicaid program and all private efforts to foster self-reliance in funding long-term services and supports, Richard Johnson concludes:[73]

> Very few older adults with disabilities have much income and wealth, and few had many financial resources earlier in life before they became disabled. Only about half of adults with disabilities in their seventies received annual per capita incomes in excess of $30,000 when they were in their fifties and were not disabled; only a quarter received more than about $50,000. Most older people who received Medicaid-financed nursing home care had very little wealth long before they received care. Only about a quarter held more than $100,000 in total household wealth 10 years before they were admitted to a nursing home, and only about 10 percent held more than $100,000 in non-housing wealth. Consequently, it seems unlikely that efforts to promote individual savings for long-term care, such as by purchasing individual long-term care or setting aside funds in other savings vehicles, would move many people off Medicaid or reduce program costs because most Medicaid nursing home residents never had the means to save much.

[73] *Income and Wealth of Older Adults Needing Long-Term Services and Supports.* Statement of Richard W. Johnson, Senior Fellow, The Urban Institute, Before the Commission on Long-Term Care August 1, 2013

It is worth noting some of the limitations of this research. For example, income, wealth, and Medicaid coverage are all reported by older respondents themselves or their proxies (usually their spouses or adult children), and the information they provide is not always accurate. The sample of older adults with disabilities on which the analyses are based is relatively small, which limits confidence in the estimates. Additionally, we observe Medicaid coverage only through ages 87 to 92, and some people do not receive Medicaid-financed nursing home care until even older ages. Those who do not obtain Medicaid coverage until they reach their nineties may have had more wealth when younger than those who obtain coverage sooner.

Despite these caveats, it is clear that Medicaid provides a vital safety net for older adults with disabilities. Most older adults who end up on the program would never have been able to earn enough income or accumulate enough wealth to cover their nursing home costs. It seems likely that Medicaid will continue to play an important role in long-term care financing as long as those with long-term care needs are disproportionately those with limited financial resources.

6 Remarks on tax incentives for long-term care insurance purchase[74]

The Hawaii Long-Term Care Commission (HLTCC) recommended against enacting tax incentives for the purchase of long-term care insurance (HLTCC 2012).[75] The three main reasons for this recommendation are as follows.

- Tax incentives do not significantly increase the number of people with long-term care insurance and thus are ineffective;
- Tax incentives are regressive as they are more valuable to higher-income individuals compared to low- and moderate-income individuals;
- The tax loss from the use of tax incentives for all people with private long-term care insurance would lead to other tax increases or cuts in other state spending.

Structural disadvantages associated with the use of tax incentives to finance long-term care limit their overall effect. (HLTCC 2012). Goda (2012) shows that tax incentives have a small impact on the number of people with long-term care insurance and are most popular among wealthier individuals. The use of tax incentives do not protect against long-term reliability issues of private long-term care insurance: the probability of lapse—wasting the tax benefit granted to policyholders who drop coverage (Merlis 2003; HLTCC 2012). Tax incentives cannot protect against premium rate increase on entire classes of policyholders, which bring additional policy lapses. (Johnson and Park 2011). Incentives to finance long-term care using tax benefits bring a substantial tax loss (Goda 2010; HLTCC 2012). Tax incentives may need to be "extremely large" in order to have a substantial impact on the number of people with long-term care insurance (HLTCC 2012: 38).

While tax credits are not necessarily as regressive as tax deductions, the reality which makes them worth more to higher-income people is that low- and moderate-income taxpayers are likely to not be able to afford to pay for long-term care insurance premiums out-of-pocket

[74] The following text is derived from the discussion in Appendix E.
[75] References given in Appendix E.

throughout the year (HLTCC 2012). Therefore, many low- and moderate-income people are not eligible to claim the tax credit at the year's end (HLTCC 2012). The exclusive nature of tax deductions makes them likely to increase inequality in utilization of long-term care services (HLTCC 2012).

Goda's (2011) research shows that even the most generous tax subsidy would not likely increase coverage among the population without adequate long-term care insurance. Since tax subsidies do not prove to increase the proportion of individuals with private long-term care insurance, people who benefit are mostly those who would have bought insurance without the incentive (Goda 2010; HLTCC 2012).

Using tax incentives to encourage the purchase of private long-term care insurance results in no effective long-term benefit (HLTCC 2012). The increasingly high cost of long-term care insurance and the potential for premiums to rise year to year puts financial strain on policyholders (Merlis 2003). Even with the tax incentive to purchase coverage, policyholders still face the possibility of lapse, which can lessen or eliminate the expected benefits associated with coverage (Merlis 2003). Those who do not renew their policies receive nothing in exchange for having paid premiums over the duration of their policy (Johnson and Uccello 2005).

Though premiums are priced according to benefits and the policyholder's age and health at the time of purchase, private long-term care insurers can raise premiums for an entire class of policyholders when they demonstrate that claims are higher than premium revenue (Johnson and Park 2011). Since many policies do not include non-forfeiture benefits, which guarantee partial benefits for those who lapse, many policyholders who lapse receive nothing after paying premiums over the course of their policy (Johnson and Uccello 2005). That tax incentives do not protect against premium rate increase or probability of lapse renders their long-term benefit unknown (Merlis 2003). In conclusion, tax incentives are likely to be ineffective, generate high costs, and provide a benefit nearly exclusive to higher income, asset-rich taxpayers (HTLCC 2012).

If tax incentives encourage persons to purchase long-term care insurance who lapse because they lack the resources for long-term enrollment, the reserves of the lapsed policyholders effectively subsidize the policyholders who can afford long-term enrollment. Of the latter group, it is not clear if the tax incentives would have influenced the decision to purchase a long-term care insurance policy. Thus such cases provide a transfer of wealth from the less well-off to the more well-off, clearly a regressive outcome. The current literature on tax incentives for purchase of long-term care insurance is reviewed in Appendix E.

7 Remarks on "public/private partnership" insurance options

The Long-Term Care Commission recommended against promoting "Public/Private" programs for a number of reasons including low penetration, lack of a demonstrated effect, and remoteness of the benefit. The partnership program concept is discussed in detail in Appendix F. This remark raises two issues that cast question on the long-term effect of the program.

7.1.1 Households with limited amounts of assets are most likely to lapse the policy in early years

Cramer and Jensen examined the factors in the nationwide Health and Retirement Study that drove lapse of long-term care insurance policies.[76] Buyers with asset levels of $200,000 and lower were 2.25 times more likely to drop their long-term care insurance policy than buyers with greater asset levels. In addition, men were more likely to drop their policies, as were those holding over $1.5 million in assets. Respondents who had had experience with ADLs were also 1.13 times more likely than non-disabled respondents to drop their policies. In an additional study Li and Jensen identified a number of additional factors contributing to people dropping their long-term care coverage.[77] These included being unsure of the monthly premium, whether the policy had inflation protection, having self-reported fair or poor health, not knowing the coverage of the policy. Having used LTC and receiving LTC insurance benefits were also associated with dropping the policy, as was being eligible for Medicaid.

Reports on the outcomes of the partnership program in California do not paint an optimistic picture of the chances for receiving the Medicaid benefits. Of 125,237 policies issued to date, 4,165 qualified to receive benefits under their private LTCI policies. Of these 426 have exhausted the policy benefits to date. Eight-nine of those who exhausted benefits were able to access Medicaid. [78]

These are fairly serious impediments to covering the risk of long-term services and supports with private policies—that appear to affect the people in the community with the fewest resources and support.

7.1.2 The Medicaid income limit is neglected in discussion of partnership programs

The use of Medicaid to cover long-term services and supports expenses has been discussed at the national level for years. In 2004, the Congressional Budget Office published a comprehensive review of the issues involved in Medicaid financing the disabled elderly. This report opened the issue of the long-term effect of the partnership programs.[79] The express goal of the partnership programs is to protect household assets from Medicaid look-back for those who purchase the partnership-qualified long-term care insurance policies, and draw all of those policy benefits. In principle, buying a $200,000 LTC insurance policy will provide protection of $200,000 in assets when the beneficiary turns to Medicaid, after exhausting the policy benefits.

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[76] Ann Thiesen Cramer and Gail A. Jensen. Why Do People Change Their Minds? Evidence from the Purchase of Long Term Care Insurance. Ch. 8 in Klaus P. Hofman, Psychology *of Decision Making in Economics, Business and Finance.* Nova Science Publishers, 2007.

[77] Yong Li and Gail A. Jensen. Why Do People let Their Long-term Care Insurance Lapse? Evidence from the Health and Retirement Study. *Applied Economic Perspectives and Policy* (2012), Volume 34, pp. 220-237.

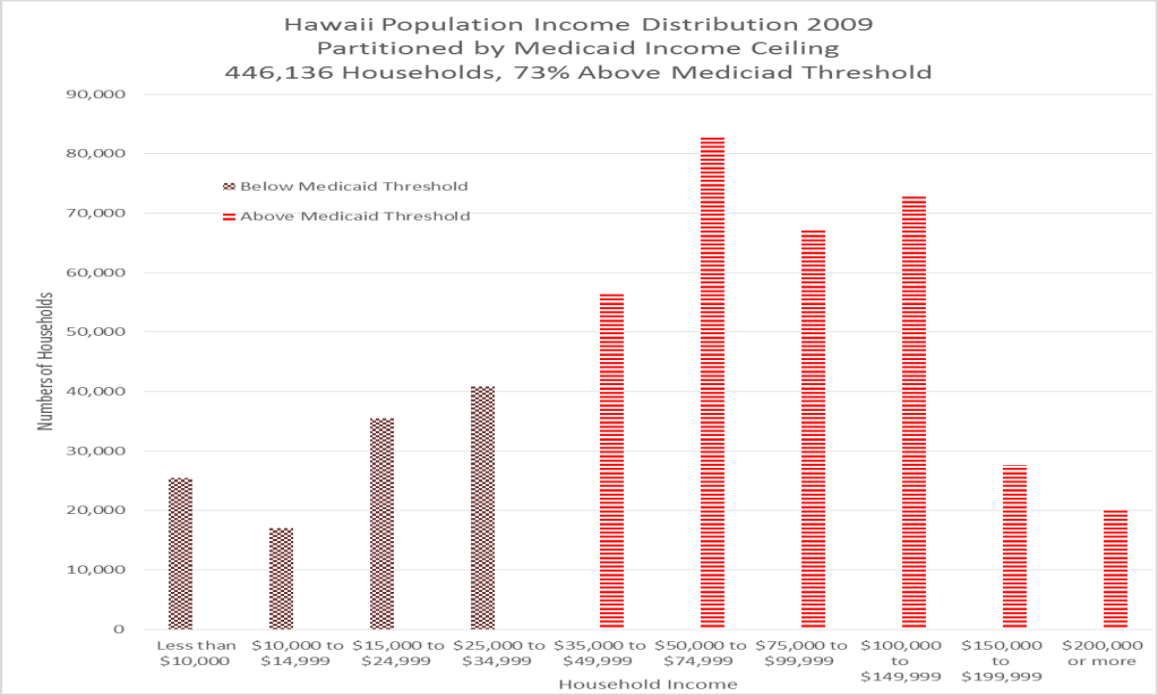
[78] California Partnership for Long-TermCAre. 4th Quarter of 2012 Quarterly Report. www.dhs.ca.gov/cpltc. Accessed November 12, 2014.

[79] Congressional Budget Office. *Financing Long-Term Care for the Elderly*. April, 2004

This is correct. But Medicaid also has an income test. In order to draw the Medicaid benefit, the patient has to qualify on both the amended asset test, and the income test. For Hawaii, the income limit for a one-person household is $1,487 for 2014.[80] For a two-person household, the limit is $2,879.[81]

The effect of the Medicaid income test is most easily illustrated by the income distribution for Hawaii households. The Census Bureau provides a detailed table with the distributions of all the states.[82] This table generates the following graph. The bars on the left in stipple are Medicaid qualified incomes for two-person households. That is, these are households with less than $35,000 a year in income. The bars in the right in horizontal stripes, are over the maximum Medicaid limit. The figure suggests that as much as 73% of the Hawaii population cannot qualify for Medicaid on the basis of income, even if an asset waiver is allowed.

Figure 26. Hawaii Population Disqualified by Medicaid Income Ceiling for Partnership Benefits



[80] http://www.medicaid.gov/AffordableCareAct/Medicaid-Moving-Forward-2014/Downloads/Medicaid-and-CHIP-Eligibility-Levels-Table_HHsize1.pdf. Accessed October 14, 2014.

[81] http://www.medicaid.gov/AffordableCareAct/Medicaid-Moving-Forward-2014/Downloads/Medicaid-and-CHIP-Eligibility-Levels-Table_HHsize2.pdf Accessed October 14, 2014.

[82] Table 706. **Household Income--Distribution by Income Level and State: 2009.** The American Community Survey universe includes the household population and the population living in institutions, college dormitories, and other group quarters. Based on a sample and subject to sampling variability; see http://www.census.gov/acs/www/SBasics/index.htm and http://www.census.gov/acs/www/AdvMeth/index.htm.

The high proportion of the population that would not qualify for Medicaid benefits based on their income should be a matter of concern for promoting the expansion of the partnership programs to Hawaii.

8 Assumptions for Hawaii LTC Model:

John Wilkin, FSA. Actuarial Research Corporation

8.1 Plan Description

The proposed Hawaii (HI) Long-Term Care (LTC) program would start collecting taxes in 2017 and start paying benefits in 2022.

8.1.1 Program Vesting Provisions

The covered population would consist of all Hawaii residents that are required to file a HI state income tax return. Thus, those whose income is less than that required for filing could not become covered simply by filing a return on a voluntary basis. For each year that an individual files a tax return, he will vest 10% of the daily benefit amount payable under the program. Thus, the earliest that the full daily benefit amount could become payable is after an individual files 10 tax returns. There is a divesting provision for those that do not file a tax return. This provision does not affect those over the age of 65. The first year that an individual does not file a return his vesting percentage stays the same. But if he does not file for two consecutive years, his vesting percentage will drop by 10 percentage points. It will continue to drop an additional 10 percentage points for each year that he does not file a tax return.

8.1.2 Eligibility for Benefit Payments

The requirements for becoming eligible for benefits in private long-term care insurance policies have been essentially standardized since the passage of the "Health Insurance Portability and Accountability Act of 1996" (HIPAA; Public Law 104-191). It is assumed that the proposed Hawaii program will use this same requirement for eligibility to program benefits. HIPPA required all qualified long-term care policies to provide benefits to individuals who were defined as being "chronically ill." The law defines a chronically ill individual as one "who has been certified by a licensed health care practitioner as—

i. being unable to perform (without substantial assistance from another individual) at least 2 activities of daily living for a period of at least 90 days due to a loss of functional capacity," or

ii. "requiring substantial supervision to protect such individual from threats to health and safety due to severe cognitive impairment."

The law goes on to define activities of daily living (ADLs) as:

i. Eating.

ii. Toileting.

iii. Transferring.

iv. Bathing.

v. Dressing.

vi. Continence.

8.1.3 Amount of Benefit Payments

The benefit amount payable under the proposed program is up to $70 per day for up to $25,500, which is equal to $70 per day times 365 days. The benefit can be paid whether the beneficiary is in a nursing home or in the community, once the individual meets the requirements of eligibility and satisfies the 30-day elimination period. The $70 per day is expected to be increased annually under legislative authority by an amount that takes into account inflation but that does not jeopardize the financial soundness of the program. It is expected that the financing of the program would be assessed in conjunction with the any increase in the maximum daily benefit. In the case of a program financed with premiums payments, the premiums may be increased. Unlike private long-term care insurance policies, premiums under the proposed program would be expected to increase through time. If the program is financed through payroll taxes or the GET tax, it may be that no increase in the tax rate is necessary with each increase in the daily maximum benefit because the tax base will be increasing.

8.2 Actuarial Assumptions

The projected costs of the proposed Hawaii program depends on many factors for which assumptions had to be made. Thus, these projected costs should not be viewed as predictions of what the actual costs will be but more as a likely possible outcome of the general level and trend in costs. The projected cash flow of income and outgo to the program was based on a projection of the population of Hawaii by age, gender, and year. Based on this underlying population projection, estimates of tax income and benefit eligibility were made. The population projection relied on four sets of assumptions.

1. A starting population
2. Projected fertility rates
3. Projected mortality rates
4. Projected migration

8.2.1 Starting Population

The starting population for 2010 was obtained from the website of the Bureau of the Census http://www.census.gov/prod/cen2010/doc/cd113.pdf. The population of Hawaii in 2010 was estimated at 1,360,301, consisting of 681,243 males and 679,058 females.

8.2.2 Fertility

Current, Hawaii-specific fertility rates by age of the mother were taken from the Department of Business, Economic Development, and Tourism (DBEDT) Long Range Projections 2040 Series, Table A-22. The fertility rates in this table were based on a tabulation of the births in Hawaii during the three years 2007-09, and resulted in a total fertility rate of 2.10 children per woman. It was assumed that the total fertility rate would remain at 2.1 children per woman for all future years.

8.2.3 Mortality

Mortality rates were determined using multiple data sources:

Current, Hawaii-specific mortality rates by age and sex were taken from the Department of Business, Economic Development, and Tourism (DBEDT) Long Range Projections 2040 Series.

Current and projected US mortality rates by age and sex were taken from the 2013 Old-Age, Survivors' and Disability Insurance (OASDI) Trustees Report, Alternative II assumptions, which projects mortality rates for the U.S. population through 2100. The projected US mortality trend is used to trend Hawaii mortality rates through time over the course of the projection period. The projected mortality rates from the Trustees Report are shown for selected years in the following table.

Table A 1. *Selected Hawaii and US Mortality Rates by Age and Sex*[83]

	Hawaii 2008		US 2008		US 2020		US 2030	
Age	Male	Female	Male	Female	Male	Female	Male	Female
40	0.2%	0.1%	0.2%	0.1%	0.2%	0.1%	0.2%	0.1%
50	0.5%	0.2%	0.5%	0.3%	0.5%	0.3%	0.5%	0.3%
60	0.9%	0.5%	1.1%	0.7%	0.9%	0.6%	0.8%	0.5%
70	1.9%	1.1%	2.5%	1.7%	2.0%	1.4%	1.8%	1.3%
80	4.8%	3.1%	6.2%	4.4%	5.2%	3.9%	4.7%	3.5%
90	13.7%	11.1%	17.0%	13.4%	15.3%	12.3%	14.5%	11.7%
100	32.5%	27.6%	36.3%	30.9%	34.2%	29.4%	32.4%	27.9%

8.2.4 Migration

Important features of the proposed Hawaii LTC program are the vesting and devesting provisions. Because it takes 10 years to fully vest, retirees will not be able to move to Hawaii and be immediately eligible for benefits. Similarly, those who work for a few years as young adults will not retain benefits if the move to the mainland. Thus, migration patterns into and out of the state are important considerations for projecting future costs.

We tabulated the number of in migrants and out migrants from the American Community Survey for the three years 2010 through 2012 and used the distribution by age and sex from this tabulation to distribute the total number of assumed migrants in future years. We assumed that the total number of in migrants would be 55 thousand and the total number of out migrants would be 57 thousand.

8.2.5 Lapse

Because the proposed program is mandatory there will be no voluntary lapses. However, there is a devesting provision for those who do not have to file an income tax return. There is no devesting after age 65.

[83] Probability of death at a given age and sex.

8.2.6 Interest

The interest rates used in modeling come from the 2014 OASDI Trustees Report. They start at 2.9% in 2014 and increase to an ultimate rate of 5.6% by 2023.

8.2.7 Expenses

Expenses were assumed to be 5% of taxes collected plus 5% of benefits paid.

8.2.8 Nursing Home Utilization

Frequency of Benefit – The model assumes that nursing home benefits are provided every day while on claim when calculating nursing home benefit payments.

Average Length of Stay (ALOS) – Nursing Home ALOS comes from a report of the Long-Term Care Experience Committee of the Society of Actuaries on "1985 National Nursing Home Survey (NNHS) Utilization Data" as presented in the "Transactions of the Society of Actuaries (SOA) 1988-89-90 Reports," Table 1. Lengths of stay are provided for ages at admission from 30 and under to 110 by sex.

The 1985 NNHS survey identifies nursing residents by condition. Residents can be classified into three categories based on their condition: (1) physical frailty as measured by their inability to perform activities of daily living (ADLs), (2) cognitive impairment such as Alzheimer's or senility, and (3) developmental conditions such as mental retardation or other congenital conditions. The SOA study classifies those whose conditions are in classifications (1) (ADLS) or (2) (cognitive impairment) as "insurable," while those in classification (3) are not. Thus, the study shows tabulations of the survey data including individuals in classifications (1) and (2) only (which it labels "insurable stays") and separately for all individuals, including those in classification (3) (which it labels "all stays"). We have assumed that individuals in classification (3) would not be eligible for the proposed Hawaii program because they would not file income tax returns. Therefore, lengths of stay for the "insurable stays" were used.

For each admission, the 1985 NNHS also identified the place of residence before the admission. From this information, it is clear that many nursing home admissions do not come directly from the community. Some are transfers from one nursing home to another, and some are actually a single nursing home stay that is interrupted by a stay in a hospital. The survey identifies each admission as a separate stay, while an insurance program would look at some of these stays as being combined into a single "benefit period" for purposes of applying the elimination period or the lifetime maximum benefit. The SOA study did combine these "connected" stays into what it called "benefit periods." We used the tables of lengths of stays using the "benefit period" concept.

One additional adjustment to the ALOS was made by increasing the ALOS from the SOA report by 10% to allow for moderately adverse experience. The National Association of Insurance Commissioners (NAIC) recommends that such an allowance be made to some parameter in the calculation of benefits costs for LTC programs.

Incidence – The development of the NH incidence rates began with the rates from the 1985 NNHS as shown in the above-mentioned article in the "Transactions of the Society of Actuaries 1988-89-90 Reports," Table 1. The study shows both prevalence rates and incidence rates for ages 30 and under to 110 by sex. Prevalence rates are calculated by dividing the number of nursing home residents by the population at a point in time. Incidence rates are calculated by dividing the number of nursing home

admission in a one year period by the population. We applied the prevalence rates for the "All Stays **Benefit Period Concept**" to the estimated population of Hawaii in 2014. This resulted in an estimate of 14,273 nursing home residents. However, the actual number of residents only about one half of that number. The combined total of nursing home residents and ARCH residents in Hawaii is 7,038. Therefore, we multiplied the nursing home incidence rates from the 1985 NNHS by the ratio of 7,038 to 14,273 and used these adjusted rates in the ARC Model.

***Table A 2**. Selected Nursing Home Incidence Rates and ALOS after Adjustments*[84]

	NH Incidence Rate		NH ALOS	
Age	Male	Female	Male	Female
20	0.02%	0.01%	908	1206
30	0.02%	0.01%	908	1208
40	0.03%	0.01%	854	1265
50	0.08%	0.03%	762	1268
60	0.14%	0.10%	708	1030
70	0.42%	0.57%	538	736
80	2.16%	2.54%	394	673
90	7.09%	7.65%	391	617
100	13.89%	13.89%	330	546

Continuance – NH continuance rates were also developed from the 1985 NNHS as shown in the "Transactions of the Society of Actuaries 1988-89-90 Reports," Table 11 and Table 17. Table 11 shows the proportion of admissions still resident at several days from admission, from 10 days through 9125 days (or 25 years). These rates are used to estimate the number of nursing home beneficiaries. Table 17 shows the proportion of total days in a nursing home that are after specified days from admission, also from 10 days through 9125 days. These rates are applied to the ALOS to estimate the number of days of benefit payments that occur after the deductible period of 30 days but before the lifetime maximum of 365 days. The continuance rates used were developed from insurable stays. We used the unisex continuance tables. The tables presented continuance rates for groups of ages at admission. We interpolated between these age groups to obtain continuance rates by single year of age at admission.

***Table A 3**. Selected Nursing Home Continuance – Days of Benefit*[85]

[84] : Incidence rates represent the probability of an individual requiring nursing home care by age and sex. ALOS is the average length of stay, in days, for an individual who enters a nursing home.

[85] Days of Benefit continuance rates represent the expected proportion of an individual's benefit payments remaining based on a beneficiary's age and months since incidence.

Days Since Incidence	Age					
	50	60	70	80	90	95+
0	100%	100%	100%	100%	100%	100%
30	96.5%	96.5%	95.3%	94.7%	94.6%	93.6%
60	93.6%	93.7%	91.6%	90.6%	90.3%	88.2%
90	91.1%	91.2%	88.5%	87.0%	86.5%	83.5%
182	84.9%	84.9%	80.5%	78.0%	76.9%	71.8%
365	74.5%	74.8%	67.8%	64.0%	61.8%	55.8%
730	59.0%	59.8%	48.0%	42.9%	38.8%	35.4%
1825	32.6%	31.3%	16.5%	11.5%	7.2%	8.2%
3650	12.7%	9.4%	2.4%	0.9%	.03%	.01%

***Table A 4**. Selected Nursing Home Continuance - Beneficiaries*[86]

Days Since Incidence	Age					
	50	60	70	80	90	100
0	100%	100%	100%	100%	100%	100%
30	84.9%	81.5%	78.4%	77.3%	78.4%	82.0%
60	70.9%	69.8%	66.4%	66.3%	67.6%	72.1%
90	62.0%	61.8%	58.1%	58.6%	60.0%	63.9%
182	49.6%	49.1%	45.3%	45.7%	47.4%	47.0%
365	42.8%	40.1%	37.5%	35.8%	37.8%	31.0%
730	26.3%	27.2%	26.2%	25.0%	26.2%	19.2%
1825	12.7%	17.6%	11.2%	7.9%	6.9%	6.1%
3650	5.2%	4.6%	1.3%	0.6%	0.04%	0.01%

From the "Days of Benefit" table, the calculation that the model performs to estimate the benefit days can be seen. As an example, if we take all individuals aged 80 that enter a nursing home, then 94.7% of their days will occur after the 30-day deductible period. About 62.0% of their days will occur after 395 days. The 62.0% is obtained by interpolation. The 395-day threshold is a combination of the 30-day deductible plus the 365-day lifetime benefit period. Thus, 32.7% (=94.7%-62.0%) of the total days in their nursing home stay will be covered by the proposed benefit period. The ALOs for males who enter a nursing home at age 80 is 394 and for females 673. Thus, the average male will have about 129 days of benefit and the average female will have 220 days of benefit.

8.2.9 HC Utilization

Frequency of Benefit – The model assumes that home care benefits are used five out of every seven days while on claim when calculating home care benefit payments.

Average Length of Stay (ALOS) - ALOS comes from the 1982-84-89 National Long Term Care Surveys (NLTCS) as tabulated and reported by Eric Stallard and Robert Yee in the report "Noninsured Home and Community-Based Long-Term Care Incidence and Continuance Tables" that was prepared for the Long-Term Care Experience Committee of the Society of Actuaries. These surveys include only those aged 65 or over. For ages below 65, ALOS is estimated by assuming that the ALOS increases by one percent for each year of age below age 65. Stallard and Yee tabulated ALOSs separately for individuals with 1 or more ADLS and for individuals with 2 or more ADLs. The ALOS is slightly longer for individuals with one or more ADLs than it is for individuals with two or more ADLs. For modeling, we interpolated between the ALOSs for 2+ADLs and 1+ADLs by assuming that 25% of those with 1 ADL would become eligible for

[86] Continuance rates represent the probability of an individual remaining in nursing home care given their age and months since entering a nursing home.

benefits. We also increased the resulting ALOS by 10% to include a margin for moderately adverse conditions. The resulting ALOSs used in modeling are shown in the table below.

Incidence– The HC incidence rates also come from the 1982-84-89 NLTCS. Stallard and Yee tabulated incidence rates by age for ages 65 to 109. We used two sets of incidence rates, rates for individuals with 1 or more ADLS and rates for individuals with 2 or more ADLs. Both sets of rates apply to individuals who need assistance to perform ADLs. As with the ALOSs, we interpolated between the 1+ADL rates and the 2+ADL rates, assuming that 25% of those with one ADL would qualify for benefits, even though the criteria for eligibility is two or more ADLs. Incidence rates for the population below age 65 are imputed using the relationship, prevalence rate = (incidence rate) *ALOS. The prevalence rates were calculated as described below.

Prevalence – HC prevalence rates come from the Health Interview Surveys from 1997 through 2009. Rates for the whole population as well as the working population are used in the model, depending on the population being modeled. The rates were tabulated for one or more ADLs and senility as well as 2 or more ADLs and senility. Rates were calculated by single year of age and single calendar year and then graduated by a two-dimensional Whittaker-Henderson formula. Thus, the graduated rates for 2009 include the most recent (downward) trends in rates of frailty. However, for conservativism, we did not project the incidence to continue to decline. The rates are calculated for ages 20 to 84 by sex.

***Table A 5**. Selected Home Care Incidence Rates and ALOS*[87]

	HC Incidence Rate		HC ALOS	
Age	Male	Female	Male	Female
20	0.06%	0.06%	2335	2227
30	0.06%	0.07%	2114	2016
40	0.09%	0.10%	1914	1825
50	0.21%	0.26%	1732	1653
60	0.37%	0.48%	1568	1496
70	1.80%	1.68%	1418	1373
80	4.37%	4.89%	1074	1272
90	7.85%	11.75%	1042	1110
100	9.90%	13.27%	942	1004

Continuance – HC continuance rates come from the Stallard-Yee study of the 1982-84-89 NLTCS. Continuance rates were tabulated for the first 180 months of frailty. The rates are reported at specified

[87] : Incidence rates represent the probability of an individual requiring home care by age and sex. ALOS is the average length of stay, in days, for an individual who enters a home care setting.

ages and by sex. Interpolation is used to determine continuance rates at intermediary ages. For ages below age 65, we assume the continuance rates are equal to age 65 continuances. Two sets of continuance rates are used, one for days of benefit and another for the proportion of beneficiaries still frail. As with nursing home calculations, the continuance for days of benefit is applied in the calculation of the benefit dollars and the continuance for beneficiaries is applied to the incidence in each year to determine the number of continuing beneficiaries. Selected values from the continuance tables are shown in the following tables.

***Table A 6**. Selected Male Home Care Continuance – Days of Benefit*[88]

Months Since Incidence	Age					
	65	70	75	80	85	90
0	100%	100%	100%	100%	100%	100%
1	98%	98%	97%	97%	97%	97%
2	96%	95%	95%	94%	93%	93%
3	93%	93%	92%	91%	90%	90%
6	87%	86%	85%	83%	81%	81%
12	76%	75%	71%	68%	66%	65%
18	66%	64%	60%	56%	54%	53%
24	58%	55%	50%	46%	43%	43%
36	44%	41%	35%	31%	29%	28%
60	25%	21%	17%	14%	12%	12%

[88] : Days of Benefit continuance rates represent the expected proportion of an individual's benefit payments remaining based on a beneficiary's age and months since incidence.

Table A 7. *Selected Female Home Care Continuance – Days of Benefit*[89]

Months Since Incidence	Age					
	65	70	75	80	85	90
0	100%	100%	100%	100%	100%	100%
1	98%	98%	97%	97%	97%	97%
2	95%	95%	95%	95%	94%	93%
3	93%	93%	93%	92%	91%	90%
6	87%	86%	86%	85%	83%	82%
12	75%	74%	73%	72%	69%	67%
18	66%	64%	63%	62%	58%	54%
24	57%	55%	54%	52%	48%	44%
36	43%	40%	39%	37%	32%	29%
60	24%	22%	21%	19%	15%	13%

[89] : Days of Benefit continuance rates represent the expected proportion of an individual's benefit payments remaining based on a beneficiary's age and months since incidence

***Table A 8**. Selected Male Home Care Continuance – Beneficiaries*[90]

Months Since Incidence	Age					
	65	70	75	80	85	90
0	100%	100%	100%	100%	100%	100%
1	98%	98%	98%	97%	97%	97%
2	96%	96%	95%	94%	94%	93%
3	94%	93%	93%	91%	90%	90%
6	88%	87%	86%	83%	82%	81%
12	77%	76%	74%	69%	67%	65%
18	67%	66%	63%	57%	54%	53%
24	59%	58%	54%	47%	44%	43%
36	45%	44%	38%	32%	29%	28%
60	26%	25%	19%	15%	13%	12%

[90] Continuance rates represent the probability of an individual remaining in home care given their age and months since entering a home care setting.

***Table A 9**. Selected Female Home Care Continuance – Beneficiaries*[91]

Months Since Incidence	Age					
	65	70	75	80	85	90
0	100%	100%	100%	100%	100%	100%
1	98%	98%	97%	97%	97%	97%
2	95%	95%	95%	95%	95%	94%
3	93%	93%	93%	93%	92%	91%
6	87%	87%	86%	86%	85%	82%
12	76%	75%	74%	73%	72%	67%
18	66%	65%	63%	63%	60%	55%
24	57%	56%	54%	54%	51%	45%
36	43%	42%	40%	39%	35%	30%
60	25%	23%	22%	21%	16%	13%

8.3 Actuarial Statement to accompany the report "The Feasibility of a Long-Term Services and Supports Social Insurance Program for Hawaii: A Report to the Hawaii State Legislature, December 1, 2014"

I, John Wilkin, was tasked to provide estimates of the income and outgo for several proposed social insurance programs covering long-term care services for the frail population of Hawaii. I am responsible for the methods, assumptions, and results presented in this report. I am qualified to make such projections because I have been working in the field of social insurance for over 40 years and in the field of long-term care for over 25 years. The purpose of these cost estimates is to convey the general level and trends in costs for the proposed programs, based on a reasonable set of assumptions. Because the proposed programs do not exist and no similar programs exist, there are no data that relate directly to the proposed programs. Therefore, the costs of such a program, if it were to be implemented, could vary significantly (either higher or lower) from the costs presented in this report.

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[91] Continuance rates represent the probability of an individual remaining in home care given their age and months since entering a home care setting.

9 List of appendices

Appendix A: A Review of the History of Long-Term Care Financing Strategies in Hawaii

Appendix B: Estimating the Cost of Risk-Pooled/Risk-Transfer Long-Term Care Financing Strategies

Appendix C: A Note on Reading the Actuarial Tables

Appendix D: A Review of Assistive Technology Research

Appendix E: A Review of Long-Term Care Insurance Tax Incentives and Other Financing Options

Appendix F: A Review of Long-Term Care Insurance Partnership Programs

Appendix G: In-Home Assessment and the Aging and Disability Resource Centers

Appendix H: Qualifications of the Actuary

10 List of Acronyms

AARP	AMERICAN ASSOCIATION OF RETIRED PERSONS
ACLI	AMERICAN COUNCIL ON LIFE INSURANCE
ADFC	AID FOR FAMILIES WITH DEPENDENT CHILDREN
ADL	ACTIVITIES OF DAILY LIVING
ADRC	AGING AND DISABILITY RESOURCE CENTERS
AGI	ADJUSTED GROWTH INCOME
ALOS	AVERAGE LENGTH OF STAY
AOA	ADMINISTRATION ON AGING
ARC	ACTUARIAL RESEARCH CORPORATION
ARCH	ADULT RESIDENTIAL CARE HOME
BOY	BEGINNING OF YEAR
CDC	CENTERS FOR DISEASE CONTROL
CLASS	COMMUNITY LIVING ASSISTANCE SERVICES AND SUPPORTS
CMS	CENTER FOR MEDICARE AND MEDICAID SERVICES
DBEDT	DEPARTMENT OF BUSINESS, ECONOMIC DEVELOPMENT, AND TOURISM
EOA	EXECUTIVE OFFICE ON AGING, STATE OF HAWAII DEPARTMENT OF HEALTH
EOY	END OF YEAR
ERISA	EMPLOYEE RETIREMENT INCOME SECURITY ACT
FICA	FEDERAL INSURANCE CONTRIBUTIONS ACT
GET	GENERAL EXISE TAX
HC	HOME CARE
HI	HAWAII
HIPPA	HEALTH INSURANCE PORTABILITY AND ACCOUNATABILITY ACT
HLTCC	HAWAII LONG TERM CARE COMMISSION
IADL	INSTRUMENTAL ACTIVITIES OF DAILY LIVING
LTC	LONG TERM CARE
LTCI	LONG TERM CARE INSURANCE
LTSS	LONG TERM SERVICES AND SUPPORTS

NBER	NATIONAL BUREAU OF ECONOMIC RESEARCH
NCHS	NATIONAL CENTER FOR HEALTH STATISTICS
NLTCS	NATIONAL LONG TERM CARE SURVEY
OASDI	OLD-AGE, SURVIVORS' AND DISABILITY INSURANCE
PABEA	POLICY ADVISORY BOARD FOR ELDER AFFAIRS
SES	SOCIOECONOMIC STATUS
SOA	SOCIETY OF ACTUARIES
TANF	TEMPORARY ASSISTANCE FOR NEEDY FAMILIES