MILLIMAN REPORT

Long-Term Services and Supports Feasibility Study

Commissioned by the Massachusetts Executive Office of Health and Human Services

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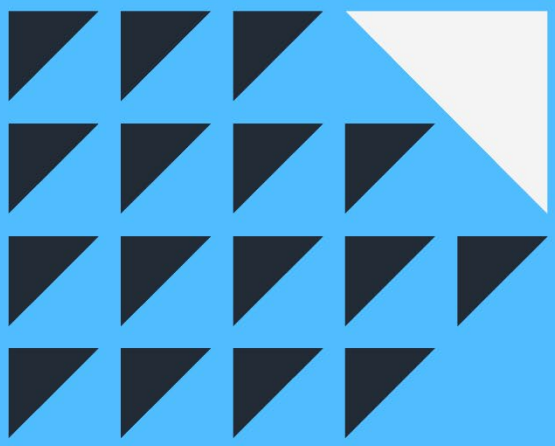

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I. OVERVIEW

The Massachusetts Executive Office of Health and Human Services (EOHHS) selected Milliman through a competitive bid process to provide modeling and actuarial analysis as part of a study to examine the feasibility of public and private options to help individuals prepare to meet their long-term services and supports (LTSS) needs. A Task Order described the requirements of the study and can be found at line 4000-0300 of Chapter 28 of the Acts of 2023 of the Commonwealth of Massachusetts.[1]

Readers of this report should possess a certain level of expertise and background in actuarial projections related to financing long-term care (LTC) benefits in order to understand the significance of the assumptions used and their impact on the modeled results. Readers should be advised by actuaries or other professionals competent in the area of these types of actuarial projections so as to properly interpret the estimates.

Any estimates around required program revenue included in this report are for feasibility purposes only and not intended, and should not be used, for setting the program tax rate. The information included in this report should only be considered in its entirety. Please see Section IX for additional caveats and limitations.

SCOPE OF ENGAGEMENT AND WORK PROCESS

The scope of our engagement includes three main components:

1. **An analysis of public and private long-term care financing programs that exist in the Commonwealth.** This analysis is found in Appendix A.
2. **Modeling of three public long-term care insurance programs funded through a payroll deduction, including a front-end, limited duration program; a back-end, limited duration program; and a back-end, catastrophic (i.e., unlimited duration) program.** Our analysis of the public program is detailed in the body of this report. It includes calculations of payroll taxes for Core Plans, alternatives, and sensitivities; Long-Term Care Actuarial Values (LTC AVs) for Core Plans and alternatives; rate setting, financial, and legal considerations for program implementation; and additional information on our methodology, assumptions, and caveats.

   Another important component of the actuarial analysis required by the Task Order is an examination of the potential financial impact of a public long-term care insurance program on the state Medicaid program, MassHealth. This analysis is found in Appendix C.
3. **An analysis of the impact of tax alternatives and other incentives for the purchase of private long-term care insurance.** This analysis is found in Appendix D.

All of the above analysis was informed by a robust stakeholder engagement process, which included presentations, interviews, and discussions with industry stakeholders. These stakeholders provided insightful feedback and approached the issue of LTSS financing from unique perspectives. Details of the stakeholder engagement process, along with the findings, can be found in Appendix B.

INTRODUCTION TO LONG-TERM ACTUARIAL PROJECTIONS

This report includes estimates projected many years into the future. Actual expenditures and revenue for a potential program will inevitably vary from the estimates shown in this the report given the need to project results many years into the future. Examples of items that are difficult to project years into the future include the level of utilization of LTC services over time, the duration of care needs, charge trends by site of care, the emergence of new service and care modalities, wage growth and labor force participation, mortality rates for individuals not receiving care, mortality rates for individuals receiving care, the effectiveness of regulations and procedures to determine coverage and qualifications

[1] MA Legislature (2024). Chapter 28 of the Acts of 2023. Retrieved on October 23, 2024 from https://malegislature.gov/Laws/SessionLaws/Acts/2023/Chapter28

for benefits, migration patterns into and out of Massachusetts, and program participation for voluntary components of a program. Section VIII provides further background on our modeling methodology and assumptions.

We modeled cash flows over a 75-year projection horizon, as 75 years is a common period over which to evaluate a public program using a "pay-as-you-go" funding approach. Timeframes using a different number of analysis years were outside the scope of this report. For the purposes of this report, the estimated level required payroll tax rates are only valid for a 75-year analysis horizon. Section VI provides further information on rate setting considerations.

DEFINITIONS

We offer the following definitions of terms and metrics that are referenced throughout this report.

- **Adverse Selection**: Refers to when individuals with different than "average expected risk" make decisions that financially disadvantage a program due to individuals knowing more about their needs or characteristics than the program. Voluntary programs or features are more susceptible to adverse selection when there is guaranteed coverage and individual choice with no underwriting or rating classes.
- **Core Plans**: The Task Order prescribed the modeling of three distinct programs, which we refer to as the "Core Plans:" a front-end, limited duration program (which we refer to as "Front-End"); a limited duration, back-end catastrophic program (which we refer to as "Back-End"); and an unlimited duration program (which we refer to as "Catastrophic"). Section III of this report describes the plan parameters and results for the three Core Plans. The Core Plans serve as "anchor points" for our alternative testing (presented in Section IV) and sensitivity testing (presented in Section VII). This allows testing to be illustrated as incremental impacts for ease of presentation. The Core Plans are not intended to represent "recommended" plan designs.
- **Fund Ratio**: Is calculated as the projected fund balance in any given year as a percentage of the next year's program expenditures. This metric can be used to evaluate the fund's sufficiency to pay expected benefit payments in any program year.
- **Long-Term Care Actuarial Value (LTC AV)**: Represents how much coverage a particular LTC insurance benefit provides versus the amount left to be covered by other sources (such as individuals' out-of-pocket resources, private insurance, Medicaid, etc.).[2] For example, a plan with a 60% LTC AV means that, for every dollar of LTC costs expected to be incurred by an individual, the insurance plan is expected to pay 60 cents on average, whereas the remainder of the LTC costs (40 cents) must be covered by other sources. LTC AV results are presented in Section V of this report.
- **Long-Term Services and Supports (LTSS)**: Is a range of services and supports for individuals who need assistance with daily living tasks, such as bathing, dressing, eating, ambulation, transfers, toileting, and other health-related tasks. Often, this type of assistance is needed by individuals who experience functional limitations due to age or to physical or cognitive disability.

  In this report, we use the terms LTSS and LTC interchangeably for broadly describing the services covered under a potential LTSS financing program. LTSS includes services provided in:

  - *Institutional settings:* Includes skilled, intermediate, and custodial care provided in an institutional facility setting, such as a nursing home or dedicated wing of a hospital. Program coverage can include both the services rendered and the room and board in an institutional setting.
  - *Home and community-based settings (HCBS):* Includes care provided in a person's own home or in a community-based setting, such as an assisted living facility or adult family home. Program coverage can include both the services rendered and the room and board in a community-based setting.

[2] https://www.milliman.com/en/insight/rethinking-ltc-benefit-design-evaluation

II. EXECUTIVE SUMMARY

The Massachusetts Executive Office of Health and Human Services (EOHHS) commissioned Milliman to conduct a feasibility study on LTSS financing options. This study aims to help evaluate the viability of certain public and private solutions to help residents of Massachusetts meet their future LTSS needs.

KEY FINDINGS

We summarize the key findings from the report in the subsections below.

Core Plans

We modeled three public long-term care insurance programs, referred to as Core Plans: the Front-End Plan, which provides short-term benefits at the start of care; the Back-End Plan, which offers extended care benefits after an initial period; and the Catastrophic Plan, which covers unlimited care after a longer initial period. The stakeholder engagement process informed the details of the benefit parameters we modeled for each of the Core Plans. Based on these parameters, we estimate the payroll tax rates required to fund the Core Plans over a 75-year period range from 0.68% to 2.74%, before any sensitivity testing.

Section III of this report documents the Core Plans' key design features and the resulting payroll tax rates required to finance the benefits.

Plan Alternatives

Based on stakeholder input we explored a variety of plan alternatives, including changes to benefit structure, covered services, total benefits, monthly benefit maximums, benefit inflation rates, elimination periods, benefit eligibility criteria, minimum age for benefits, vesting requirements, program revenue sources, population exclusions, portability, dependent coverage, and coinsurance. Estimated payroll tax rates required to fund plan alternatives over a 75-year period range from less than 0.50% to greater than 5.0%.

Section IV of this report documents the plan alternative results.

Long-Term Care Actuarial Value (LTC AV)

LTC AV measures the coverage level of a plan relative to expected LTSS costs. We calculate LTC AVs for the Core Plans ranging from 5% to 45%, meaning that we expect the Core Plans to cover, on average, anywhere from 5% to 45% of total expected LTSS costs.

Section V of this report presents additional information on the LTC AV concept, variability among Core Plan results, and impact of plan alternatives on LTC AV.

Considerations for Program Implementation

A public program could provide a new financing source to Massachusetts residents to help cover LTSS costs. There are many important considerations for implementing a program, including level of benefits, affordability, and risk management features.

Section VI of this report provides rate setting, financial, and legal considerations for program implementation.

Assumption Sensitivities

We conducted sensitivity tests on key modeling assumptions, including migration, mortality, vesting, birth rates, wage growth, employment, investment rates, incidence rates, utilization rates, and administrative expenses. These tests demonstrate that financial outcomes are highly sensitive to these underlying assumptions. Across the select sensitivities we conducted, estimated payroll tax rates range from 0.42% to 3.79%.

Section VII of this report provides the detailed results of our sensitivity analysis.

III. CORE PLANS

The Task Order prescribed the modeling of three distinct programs, all funded through a payroll deduction, which we refer to as Core Plans:

- A front-end, limited duration program ("Front-End")
- A limited duration, back-end catastrophic program ("Back-End")
- An unlimited duration program ("Catastrophic")

Beyond the prescribed details from the Task Order, the parameters for the Core Plans were based on stakeholder feedback and discussions with EOHHS. Additional information on our stakeholder engagement process and key findings can be found in Appendix B.

PROGRAM PARAMETERS FOR CORE PLANS

The Core Plan features are outlined in the table below, which is followed by additional details. The parameters of the Core Plan were determined through conversations with stakeholders and EOHHS, but they do not necessarily represent recommended designs. Many stakeholders emphasized the importance of understanding the financial tradeoffs of different benefit features, as presented in this report, before recommending a plan design. The Core Plans also serve as a reference point throughout the report to evaluate the incremental cost or savings associated with other alternatives and assumption sensitivities. Tests on alternative plan designs and the sensitivity of changing program features, eligible population, and other modeling assumptions relative to Core Plans are discussed in Sections IV and VII of this report.

Figure 1
Massachusetts LTSS Feasibility Study
Key Parameters for Core Plans

Parameter	Front-End	Back-End	Catastrophic
Benefit structure	Reimbursement	Reimbursement	Reimbursement
Covered services	Facility and home care	Facility and home care	Facility and home care
Monthly benefit maximum	$7,500	$7,500	$7,500
Total lifetime benefit	$75,000	$150,000	Unlimited
Benefit Inflation	3%	3%	3%
Elimination period	30 days	2 years	3 years
Benefit eligibility criteria	HIPAA definition	HIPAA definition	HIPAA definition
Minimum age for benefits	None	None	None
Vesting requirements	10 years total	10 years total	10 years total
Program revenue source	Payroll tax on all wages	Payroll tax on all wages	Payroll tax on all wages

Additional Details on Program Parameters

- **Benefit structure:** Reimbursement
  - Benefit structure refers to the method by which benefit payments will be disbursed to beneficiaries.
  - Benefits are paid via reimbursement for an individual's actual incurred covered expenses. We assume the program would reimburse benefits in line with commercial or "usual and customary" rates (as opposed to any type of fee schedule or Medicare-level rates).
- **Covered services:** Facility and home care (i.e., consistent with comprehensive services that may be covered in the private LTC insurance market)
  - *Institutional settings*

    Includes skilled, intermediate, and custodial care provided in an institutional facility setting, such as a nursing home or dedicated wing of a hospital. We assume program coverage includes both the services rendered and the room and board in an institutional setting.

- *Home and community-based settings*

  Includes care provided in a person's own home or in a community-based setting, such as an assisted living facility or adult family home. We assume program coverage includes both the services rendered and the room and board in a community-based setting (e.g., in an assisted living facility). Home care benefits refer to services and supports designed to support individuals "aging in place," such as home health aides, homemaker services, and chore services. We assume the Core Plans do not cover informal care provided by loved ones.

- **Monthly benefit maximum:** $7,500 as of 2026
  - Benefits are paid by reimbursing an individual for actual expenses incurred, up to a monthly maximum.
  - A higher or lower monthly benefit maximum changes how quickly qualified beneficiaries may exhaust their total benefit pool.
  - The monthly maximum will increase at a rate of 3% per year.
- **Total lifetime benefit (i.e., pool of money):** Varies by Core Plan
  - Individuals are able to access program benefits until they exhaust their total lifetime benefit.
  - The total lifetime benefit is $75,000 for the Front-End plan, $150,000 for the Back-End plan, and Unlimited for the Catastrophic plan as of 2026.
  - For context, we can calculate the approximate amount of time it would take individuals to exhaust their total benefit pool if they used the full $7,500 monthly benefit each month. The Front-End design would provide approximately 10 months of coverage, and the Back-End design would provide approximately 20 months of coverage. The Catastrophic design would provide Lifetime (or unlimited) coverage.
  - The total benefit will increase at a rate of 3% per year.
- **Benefit inflation:** 3%
  - Benefit inflation refers to the rate at which benefits (monthly maximum and total lifetime benefits) will be increased each year.
  - For individuals on claim, we assumed inflation would be applied to the claimant's remaining benefit pool amount.
  - Under the Core Plans, a 3% inflation rate is used.
- **Elimination period:** Varies by Core Plan
  - The elimination period refers to the length of time after satisfying the benefit eligibility criteria before a beneficiary will start receiving benefits (i.e., during the elimination period, individuals are responsible for paying for their LTSS need out-of-pocket or through other means).
  - The elimination period is 30 calendar days for the Front-End plan, two calendar years for the Back-End plan, and three calendar years for the Catastrophic plan.
- **Benefit eligibility criteria:** HIPAA definition for benefit eligibility[3]
  - Benefit eligibility refers to the definition of disability that must be met for individuals to qualify for benefits.
  - The Core Plans assume individuals must meet the Health Insurance Portability and Accountability Act (HIPAA) definition, which is standard on private LTC insurance policies.

[3] 26 U.S. Code § 7702B - Treatment of qualified long-term care insurance. (n.d.). Retrieved February 19, 2020, from https://www.law.cornell.edu/uscode/text/26/7702B.

  - The HIPAA definition requires individuals to meet at least one of the following criteria:
    - Requires assistance with at least two activities of daily living (ADLs; including bathing, dressing, transferring, continence, toileting, and eating) for a period expected to last at least 90 days.
    - Has a severe cognitive impairment necessitating substantial supervision.
- **Minimum age for benefits:** None
  - Under the Core Plans, individuals may become qualified for benefits at any age so long as vesting requirements are met. Since vesting parameters require individuals contribute to the payroll tax for at least 10 years before being eligible to receive benefits, in practice no children would be eligible for program benefits under the Core Plans.
- **Vesting requirements:** 10 years total
  - Vesting refers to the process by which individuals must pay the payroll tax for a specified number of years to qualify for benefits. Under the Core Plans, individuals need to work for a total of 10 years throughout their entire employment history after the program's inception.
  - Those who work at least 500 hours per year receive a vesting credit for that year.
  - The vesting criteria are crucial to the program's financial projections, as they limit benefit eligibility to individuals who have contributed to the program via the payroll tax. Additionally, the criteria create a "pre-funding" period during which the program collects revenue for multiple years before paying out benefits.
- **Program revenue source:** Payroll tax on all wages
  - Financing for the program will come solely from payroll tax payments (e.g., there are no premiums required in addition to the tax on wages).
  - For our Core Plans, we assume the same payroll tax rate is applied to all wages for all workers. We assume “all wages” to be consistent with the Federal Insurance Contributions Act (FICA) definition[4] of wages.
- **Coordination of benefits:** First payer
  - We assume that the program would be the “first payer” of LTSS benefits. As such, we did not assume there would be any lag between benefit eligibility and benefit payments (beyond elimination periods or cost sharing features).
  - Given Medicaid is a payer of last resort, we assume the LTSS program would result in lower Medicaid costs than what would occur absent the program. More information on the potential fiscal impact to Medicaid can be found in Appendix C.

REQUIRED PAYROLL TAX RATES FOR CORE PLANS

Figure 2 illustrates the payroll tax rates required for each Core Plan over a 75-year period. We project that payroll tax rates ranging from 0.68% to 2.74% would be necessary to finance the Core Plans within this timeframe. Please note, the estimates provided in this report are intended to assist in evaluating the feasibility of a new LTSS benefit program using design elements requested by stakeholders and EOHHS. These estimates are for feasibility purposes only and should not be used for setting a program payroll tax rate.

[4] https://www.irs.gov/taxtopics/tc751

Figure 2
Massachusetts LTSS Feasibility Study
Required Payroll Tax Rates for Core Plans

	Front-End	Back-End	Catastrophic
Total benefit[1]	$75,000	$150,000	Unlimited
Elimination period	30 days	2 years	3 years
Required Payroll Tax Rate	0.68%	0.88%	2.74%

[1] As of 2026 and indexed at 3.0% thereafter.

The payroll taxes presented here are calculated over a 75-year projection horizon. **To cover program costs beyond 75 years, we would expect a different (potentially higher) tax rate would be required once the population receiving benefits has stabilized.** In practice, the tax rate could be set to the 75-year rate initially and then adjusted before the end of the 75-year period. We anticipate that this would be part of a continuous monitoring of the fund. Section VI of this report includes additional discussion related to the program tax rate and fund balance calculation. The amounts shown in Figure 2 do not reflect any revenue from assumed savings or reductions in other state-funded programs. To the extent that those savings are diverted to this program, the tax rate may vary.

It is important to note that the estimated payroll taxes presented in Figure 2 are highly sensitive to the underlying projection assumptions used in the modeling. Section VII details our sensitivity tests of the key assumptions. Based on testing various key assumptions individually, we observe that the required tax rate for the Front-End Core Plan can increase or decrease by approximately 50%. Sensitivity testing results should be considered when evaluating the feasibility of offering a new LTSS benefit program. Understanding the sensitivity of the program results under different conditions and the program's ability to adjust features when actual experience differs from expectations are crucial initial steps for informing rate setting.

CONTEXT AROUND LEVEL OF PAYROLL TAX RATES

To provide context for the payroll tax rates, the figure below illustrates the resulting monthly tax amounts in dollars for various annual wages. For our Core Plans, we assume the same payroll tax rate is applied to all wages.

Figure 3
Massachusetts LTSS Feasibility Study
Equivalent Monthly Payroll Tax for Various Annual Eligible Wages

Annual Eligible Wages	Front-End (0.68% Tax Rate)	Back-End (0.88% Tax Rate)	Catastrophic (2.74% Tax Rate)
$50,000	$28	$37	$114
$75,000	$42	$55	$171
$100,000	$56	$73	$229
$125,000	$70	$92	$286
$150,000	$84	$110	$343
$200,000	$113	$147	$457

From an individual's perspective, a worker will contribute to the program throughout his or her wage-earning lifetime. The annual dollar amount that an individual will contribute will vary as an individual's wages increase and / or decrease throughout their career. To contrast, private long-term care insurance (LTCI) is, on average, purchased in individuals' late 50s[5] and is intended to be a level amount charged annually until benefits begin or policy termination. Given these structural differences, it is not appropriate to compare the dollar amounts in the figure above to private LTCI premium levels without additional consideration.

[5] https://brokerworldmag.com/2024-milliman-long-term-care-insurance-survey/

For additional context, the Massachusetts Paid Family and Medical Leave (PFML) Program is an example of a current Massachusetts program funded by a payroll tax. As of 2025, the PFML program charges a deduction of 0.88% on eligible wages. There are two primary reasons why the PFML program payroll tax rate is not a consistent point of comparison to the Core Plan payroll tax rates:

1. For the PFML program, the 0.88% tax rate is shared between the employee and employer, where the employee's maximum share is 0.46% and the remaining share (e.g., 0.42%) is covered by the employer.[6] For our Core Plan modeling, we do not examine whether or how the total required payroll tax rate would be split between employees and employers.
2. For the PFML program, eligible wages are capped at the Social Security contribution and benefit base (i.e., the taxable minimum). For earnings in 2025, the taxable minimum is $176,100.[7] For our Core Plan modeling we assume the same payroll tax rate is charged to all wages, including those above the Social Security cap. In Section IV we present an alternative to our Core Plans where wages are subject to the Social Security cap which, all else equal, increase the required payroll tax.

[6] https://www.mass.gov/info-details/paid-family-and-medical-leave-employer-contribution-rates-and-calculator

[7] https://www.ssa.gov/oact/cola/cbb.html

IV. PLAN ALTERNATIVES

In response to the wide variety of priorities, preferences, and ideas raised through the stakeholder engagement process (discussed further in Appendix B of this report), we modeled a variety of plan alternatives to help inform cost / benefit tradeoffs of program features. The plan alternatives described below are not intended to be an exhaustive list of options; rather, they serve as a broad sample of potential options that will help guide further discussions regarding parameters for a potential LTSS program.

We primarily modeled plan alternatives by changing one program feature at a time from the Core Plans, unless otherwise noted, to illustrate the isolated impact of that parameter. Most plan alternatives were built using the Front-End plan as the "anchor" plan (i.e., most plan alternatives change one program feature from the Front-End plan described in Section III). Note, however, the Front-End plan does not represent a recommended structure; rather, it is used as an illustrative reference point to evaluate the estimated high-level incremental cost or savings associated with other alternatives. Caution should be taken when combining plan alternative tests, as the tax impact of changing multiple plan features at the same time may be different than combining the tax rate impact when changing one plan feature at a time.

Figure 4 graphs the payroll tax rates for the Front-End alternatives modeled, where blue dots represent alternatives and the green line represents the payroll tax rate for the Front-End Core Plan (0.68%). As seen in this figure, we modeled alternatives richer and leaner than the Core Plans, with payroll tax rates ranging from 0.40% to 2.20% for Front-End designs. When applicable, we modeled certain alternatives relative to the Back-End and / or Catastrophic Core Plans, as well.

Below Figure 4, we provide additional discussion for each of the plan alternatives (with Figures 5 through 19).

FIGURE 4: IMPACT OF PLAN ALTERNATIVES ON REQUIRED PAYROLL TAX RATE: FRONT-END PLAN

DETAILED ALTERNATIVE RESULTS SHOWN IN FIGURES 5 THROUGH 19 BELOW

BENEFIT STRUCTURE ALTERNATIVES

Benefit structure alternatives consider the method by which benefit payments will be disbursed to qualified beneficiaries. The Core Plans use a *Reimbursement* structure, where individuals are reimbursed for actual incurred covered expenses. We modeled two benefit structure alternatives to each Core Plan which allow more flexibility for beneficiaries:

- **Cash:** Upon becoming eligible for benefits and satisfying the elimination period, qualified beneficiaries will receive the full monthly benefit maximum each month until the pool of money is exhausted or until benefit eligibility ceases, regardless of the amount of actual incurred services. The benefit of a cash structure is the flexibility it provides to beneficiaries in using funds (e.g., funds could support unpaid family caregivers), while the program incurs less administrative effort.
- **Reimbursement with partial cash:** This alternative blends the design elements under a reimbursement structure and cash structure using an 75% / 25% split, respectively, for the monthly maximum benefit. In practice, this structure could preserve a program goal of covering actual services incurred while providing some flexibility for less costly LTSS needs.

We developed adjustment factors to approximate potential differences in enrollee behavior under these more flexible benefit structures; for example, under a *Cash* plan, enrollees may be more likely to seek benefit eligibility because they will receive a cash benefit with little to no restrictions on its use. Under the *Reimbursement with partial cash* structure, we assume the program will be able to manage the smaller amount of benefits that are paid out on a cash basis in order to control potential overutilization.

Figure 5a
Massachusetts LTSS Feasibility Study
Required Payroll Tax Rates for Benefit Structure Alternatives - Front-End

	Required Payroll Tax Rate	Difference From Core Plan
Front-End Core Plan (Reimbursement)	0.68%	
Cash	0.84%	0.17%
Partial cash	0.71%	0.03%

Figure 5b
Massachusetts LTSS Feasibility Study
Required Payroll Tax Rates for Benefit Structure Alternatives - Back-End

	Required Payroll Tax Rate	Difference From Core Plan
Back-End Core Plan (Reimbursement)	0.88%	
Cash	1.10%	0.22%
Partial cash	0.93%	0.05%

Figure 5c
Massachusetts LTSS Feasibility Study
Required Payroll Tax Rates for Benefit Structure Alternatives - Catastrophic

	Required Payroll Tax Rate	Difference From Core Plan
Catastrophic Core Plan (Reimbursement)	2.74%	
Cash	3.43%	0.69%
Partial cash	2.88%	0.14%

COVERED SERVICES ALTERNATIVES

The alternative in Figure 6 consider the impact of changing the scope of services covered under the program. The Core Plans cover a comprehensive set of benefits, which includes both facility and home care. We modeled three alternatives to comprehensive covered services, each relative to the Front-End Core Plan:

- **Home and non-institutional facility care (i.e., excluding skilled nursing facility):** This alternatives limits covered services relative to the Core Plan, and therefore, decreases the required payroll tax rate.
- **Facility and home care, plus reimbursement for informal caregivers:** This alternative assumes that in addition to covering comprehensive benefits, the program would also provide a benefit to informal caregivers for their services.
- **Facility and home care, excluding room and board:** For our Core Plans, we assume coverage includes both the services rendered and room and board costs in a skilled nursing facility or assisted living facility setting. This alternative assumes that the program would only reimburse for services rendered but not the cost of room and board. This alternative has no impact, since we expect the average costs of services rendered in a skilled nursing facility or assisted living facility would still exceed the monthly maximum cost of care covered under the Front-End design, even without including the cost of room and board.

Figure 6
Massachusetts LTSS Feasibility Study
Required Payroll Tax Rates for Covered Services Alternatives – Front-End

	Required Payroll Tax Rate	Difference From Core Plan
Core Plan (Facility and home care)	0.68%	
Home and non-institutional facility care	0.51%	-0.17%
Facility and home care plus informal caregivers	0.84%	0.16%
Facility and home care excluding room and board	0.68%	0.00%*

** We would expect excluding room and board to decrease the required payroll tax, all else being equal, for a plan with a monthly maximum that is closer to the expected cost of care.*

TOTAL BENEFIT ALTERNATIVES

The total benefit alternatives consider the impact of increasing the total pool of money that qualified beneficiaries would be able to access. We modeled several total benefit alternatives to the Front-End and Back-End plans as shown in Figure 7 below. We do not assume the monthly benefit amounts change for these tests. In other words, all alternatives in assume a $7,500 monthly benefit maximum. Note, one of the Back-End alternatives ($112,500) was derived for illustration to have a similar payroll tax rate of the Front-End Core plan (0.68%).

Figure 7a
Massachusetts LTSS Feasibility Study
Required Payroll Tax Rates for Total Benefit Alternatives – Front-End
Monthly Benefit Maximum of $7,500

	Required Payroll Tax Rate	Difference From Core Plan
Front-End Core Plan ($75,000 benefit)	0.68%	
Total benefit of $50,000	0.47%	-0.21%
Total benefit of $150,000	1.24%	0.57%
Total benefit of $300,000	2.16%	1.48%

Figure 7b
Massachusetts LTSS Feasibility Study
Required Payroll Tax Rates for Total Benefit Alternatives – Back-End
Monthly Benefit Maximum of $7,500

	Required Payroll Tax Rate	Difference From Core Plan
Back-End Core Plan ($150,000 benefit)	0.88%	
Total benefit of $50,000	0.32%	-0.56%
Total benefit of $112,500	0.68%	-0.20%
Total benefit of $200,000	1.12%	0.24%
Total benefit of $300,000	1.54%	0.66%

MONTHLY BENEFIT MAXIMUM ALTERNATIVES

The monthly benefit maximum alternatives consider the impact of lowering or raising the monthly benefit maximum. The Core Plans assume a $7,500 monthly benefit maximum, or approximately $250 per day. A higher or lower monthly benefit maximum changes how quickly qualified beneficiaries may exhaust their total benefit pool. We modeled three monthly benefit maximum alternatives to each Core Plan as follows:

- Monthly benefit maximum of $3,000 (i.e., approximately $100 per day)
- Monthly benefit maximum of $9,000 (i.e., approximately $300 per day)
- No monthly benefit maximum (i.e., we assume qualified beneficiaries will incur the average cost of LTC services in Massachusetts, inflated at 4.0% for facility services and 3.0% for services incurred at home)

We do not assume the total benefit amounts change for these tests. In other words, all alternatives in Figure 8a are restricted to a $75,000 total benefit and all alternatives in Figure 8b are restricted to a $150,000 total benefit. Related to this, the impacts of the alternatives in Figure 8c relative to the Catastrophic Core Plan are larger than the impacts of the Front-End and Back-End alternatives. Since the Catastrophic tests have an unlimited total benefit, increasing or decreasing the monthly benefit maximum has a more direct impact on the tax rate.

Figure 8a
Massachusetts LTSS Feasibility Study
Required Payroll Tax Rates for Monthly Benefit Maximum Alternatives – Front-End
Total Lifetime Benefit of $75,000

	Required Payroll Tax Rate	Difference From Core Plan
Front-End Core Plan ($7,500 monthly maximum)	0.68%	
Monthly benefit maximum of $3,000	0.60%	-0.08%
Monthly benefit maximum of $9,000	0.68%	0.01%
No monthly benefit maximum	0.70%	0.03%

Figure 8b
Massachusetts LTSS Feasibility Study
Required Payroll Tax Rates for Monthly Benefit Maximum Alternatives – Back-End
Total Lifetime Benefit of $150,000

	Required Payroll Tax Rate	Difference From Core Plan
Back-End Core Plan ($7,500 monthly maximum)	0.88%	
Monthly benefit maximum of $3,000	0.72%	-0.16%
Monthly benefit maximum of $9,000	0.90%	0.02%
No monthly benefit maximum	0.94%	0.06%

Figure 8c
Massachusetts LTSS Feasibility Study
Required Payroll Tax Rates for Monthly Benefit Maximum Alternatives – Catastrophic
Unlimited Total Lifetime Benefit

	Required Payroll Tax Rate	Difference From Core Plan
Catastrophic Core Plan ($7,500 monthly maximum)	2.74%	
Monthly benefit maximum of $3,000	1.10%	-1.65%
Monthly benefit maximum of $9,000	3.19%	0.45%
No monthly benefit maximum	7.06%	4.32%

BENEFIT INFLATION ALTERNATIVES

Benefit inflation refers to the rate at which benefits (monthly maximum and total lifetime benefits) will be increased each year for the entire projection. Under the Core Plans, a 3.0% inflation rate is used. We modeled the following alternatives to the Front-End plan:

- 2.0% inflation rate
- 4.0% inflation rate
- 3.5% inflation rate, which can be viewed as a proxy roughly tied to long-term wage growth

Figure 9
Massachusetts LTSS Feasibility Study
Required Payroll Tax Rates for Benefit Inflation Alternatives – Front-End

	Required Payroll Tax Rate	Difference From Core Plan
Front-End Core Plan (3% benefit inflation)	0.68%	
Benefit inflation of 2%	0.43%	-0.25%
Benefit inflation of 4%	1.07%	0.39%
Benefit inflation tied to wage growth	0.81%	0.14%

ELIMINATION PERIOD ALTERNATIVES

We modeled alternatives to the Core Plans where we increased and decreased the elimination period (i.e., the length of time after satisfying the benefit eligibility criteria before a beneficiary will start receiving benefits). As seen in the figures below, all else equal, increasing the elimination period reduces the required payroll tax rate. Note, we tested a Catastrophic plan with no elimination period as a richer alternative design, though this alternative would likely not be considered truly "catastrophic" given the lack of elimination period.

Figure 10a
Massachusetts LTSS Feasibility Study
Required Payroll Tax Rates for Elimination Period Alternatives – Front-End

	Required Payroll Tax Rate	Difference From Core Plan
Front-End Core Plan (30-day elimination period)	0.68%	
No elimination period	0.69%	0.02%
90-day elimination period	0.65%	-0.03%

Figure 10b
Massachusetts LTSS Feasibility Study
Required Payroll Tax Rates for Elimination Period Alternatives – Back-End

	Required Payroll Tax Rate	Difference From Core Plan
Back-End Core Plan (2-year elimination period)	0.88%	
1-year elimination period	1.05%	0.16%
3-year elimination period	0.74%	-0.14%

Figure 10c
Massachusetts LTSS Feasibility Study
Required Payroll Tax Rates for Elimination Period Alternatives – Catastrophic

	Required Payroll Tax Rate	Difference From Core Plan
Catastrophic Core Plan (3-year elimination period)	2.74%	
No elimination period	4.77%	2.03%
2-year elimination period	3.31%	0.56%
4-year elimination period	2.27%	-0.47%

BENEFIT ELIGIBILITY ALTERNATIVE

Benefit eligibility refers to the definition of disability that must be met for individuals to qualify for benefits. The Core Plans assume individuals must meet the HIPAA definition. We modeled a benefit eligibility alternative to the Front-End plan in which we assume benefit eligibility is determined based on a physician's medical assessment and approval. This approach is expected to have a more lenient eligibility standard, which, all else being equal, would result in an increased required payroll tax rate.

Figure 11
Massachusetts LTSS Feasibility Study
Required Payroll Tax Rates for Benefit Eligibility Alternative – Front-End

	Required Payroll Tax Rate	Difference From Core Plan
Front-End Core Plan (HIPAA definition)	0.68%	
Eligibility based on physician's medical assessment	0.77%	0.09%

VESTING REQUIREMENT ALTERNATIVES

Vesting refers to the process by which individuals must pay the payroll tax for a specified number of years to qualify for benefits. Under the Core Plans, individuals need to work at least 500 hours per year for a total of 10 years throughout their entire employment history after the program's inception. We modeled two vesting alternatives relative to the Front-End Core Plan.

- **Vesting requirement of 10 years with prorated credits:** Like the Core Plan, individuals will be eligible for full benefits after a 10-year vesting period. Individuals with less than 10-years of vesting will be eligible for partial benefits. Prorated benefits will grade uniformly up to 100%, where individuals can access 10% (i.e., 1/10) of the benefit for each year they earn a vesting credit.
- **Vesting requirement of 20 years with prorated credits:** Individuals will be eligible for full benefits after a 20-year vesting period. Individuals with less than 20-years of vesting will be eligible for partial benefits. Prorated benefits will grade uniformly up to 100%, where individuals can access 5% (i.e., 1/20) of the benefit for each year they earn a vesting credit.

Figure 12
Massachusetts LTSS Feasibility Study
Required Payroll Tax Rates for Vesting Alternatives – Front-End

	Required Payroll Tax Rate	Difference From Core Plan
Front-End Core Plan (Vesting requirement of 10 years)	0.68%	
Vesting requirement of 10 years with prorated benefits	0.76%	0.08%
Vesting requirement of 20 years with prorated benefits	0.66%	-0.02%

MINIMUM AGE FOR BENEFITS ALTERNATIVES

Under the Core Plans, individuals may become qualified for benefits at any age so long as vesting requirements are met. We modeled two alternatives to the Front-End plan that limit benefit eligibility to only individuals ages 55 and above or ages 65 and above, respectively.

Figure 13 Massachusetts LTSS Feasibility Study Required Payroll Tax Rates for Minimum Age for Benefit Alternatives – Front-End		
	Required Payroll Tax Rate	Difference From Core Plan
Front-End Core Plan (Minimum age 0 for benefit eligibility)	0.68%	
Minimum age 55 for benefit eligibility	0.64%	-0.03%
Minimum age 65 for benefit eligibility	0.60%	-0.07%

PROGRAM REVENUE ALTERNATIVES

The Core Plans use a level tax rate on all wages. We modeled the following revenue alternatives relative to the Front-End Core Plan.

- **Tax on wages subject to Social Security cap:** As of 2025, the Social Security threshold is $176,100, meaning no wages in excess of this amount are subject to the Social Security tax.[8] Under this alternative, we assume only wages below the Social Security threshold will be taxed. We leverage projections of Social Security taxable wages from the OASDI Trustees Report to project the Social Security cap and wage base into the future.
- **$25 monthly premium for individuals aged 65+:** Under this alternative, vested individuals (both disabled and non-disabled) must pay a $25 monthly premium beginning at age 65 and continuing until benefits are exhausted or the individual dies. We assume the premium is mandatory. In addition to providing additional revenue for the program, the premium creates a mechanism for tracking vested individuals after they may have retired and are no longer contributing to the program via the payroll tax.
- **Tax on all wages above a specified multiple of Federal Poverty Level (FPL):** Under these alternatives, wages below a specified FPL will not be taxed. Regardless of whether an individual is earning wages above or below the specified FPL, they will still be eligible to receive benefits under the LTSS program if they meet vesting requirements determined by their work history. For reference, the 2025 FPL is $15,650,[9] which translates to the following amounts for the thresholds for our modeling:
  - 138% FPL in 2025: $21,597
  - 300% FPL in 2025: $46,950
  - 600% FPL in 2025: $93,900

Figure 14 Massachusetts LTSS Feasibility Study Required Payroll Tax Rates for Revenue Alternatives – Front-End		
	Required Payroll Tax Rate	Difference From Core Plan
Front-End Core Plan (Tax on all wages)	0.68%	
Tax on wages subject to Social Security cap	0.82%	0.14%
$25 monthly premium for individuals aged 65+	0.64%	-0.03%
Tax on all wages above 138% FPL	0.91%	0.23%
Tax on all wages above 300% FPL	1.42%	0.74%
Tax on all wages above 600% FPL	5.96%	5.29%

[8] https://www.ssa.gov/oact/cola/cbb.html

[9] https://www.federalregister.gov/documents/2025/01/17/2025-01377/annual-update-of-the-hhs-poverty-guidelines

POPULATION EXCLUSION ALTERNATIVES

The Core Plans assume individuals who work in Massachusetts but reside in another state are excluded from the participation in the LTSS program. Otherwise, the program is mandatory for all Massachusetts workers. We modeled the following two alternatives to the Front-End plan where additional populations are excluded from the program. Note, for these alternatives we assume the tested populations are excluded (i.e., completely removed from the program), rather than given a voluntary choice to participate or opt out.

- **Exclusion for policyholders of private long-term care insurance (LTCI):** Under this alternative, we assumed all individuals covered by a private LTC insurance policy as of December 31, 2024 would be permanently excluded from the program. These individuals would not contribute to the tax rate or qualify for benefits. We assumed this would be a "one-time" exclusion and that after program inception any individuals who purchase private LTC insurance policies would still be mandated to participate in the program. In Massachusetts, we observed approximately 10% of the adult population age 60 and older owns a stand-alone private long-term care insurance policy as of 2023.[10] Given the relatively small size of this population and the fact that most of these individuals may be retired or nearing retirement (which would preclude them from contributing to the payroll tax or vesting in the program and receiving benefits), the impact of this test Is minimal. Introducing choice to a feature like this (e.g., giving individuals the option to participate or not) or making the exclusion ongoing so that individuals could select against the program would add significant costs to the program beyond the impact we have modeled in the following figure.
- **Exclusion for self-employed workers:** Under this alternative, we assumed all wages earned by self-employed individuals would be excluded from the program. This means that self-employed wages would not be subject to the payroll tax rate nor would the wages be considered for accumulating vesting credits or accessing benefits. In other words, a worker who is self-employed for their entire career would be fully excluded from the program. However, workers who are only self-employed for a portion of their careers would still be assessed the payroll tax on their non-self-employed wages and would still be eligible for benefits if they meet the vesting criteria based on their work history (excluding self-employed history). Since we assume self-employed workers to have wages and morbidity generally in line with the general population, removing this population from the program has a relatively small impact on the required payroll tax rate.

Figure 15
Massachusetts LTSS Feasibility Study
Required Payroll Tax Rates for Population Exclusion Alternatives – Front-End

	Required Payroll Tax Rate	Difference From Core Plan
Front-End Core Plan	0.68%	
One-time exclusion for policyholders of private LTCI	0.69%	0.01%
Ongoing exclusion for self-employed workers	0.69%	0.01%

To contrast the alternatives modeled above, the WA Cares Fund program in Washington state features a number of voluntary provisions.[11] Provisions include both a one-time optional opt-out for individuals who had purchased LTCI before November 1, 2021[12] (which was a one-time election, but also gave individuals the opportunity to purchase LTCI and then opt-out of the program) and a voluntary opt-in for self-employed individuals.[13] Provisions such as these would be more costly than the structures presented in the figure above since they are voluntary and present individuals with additional choices and opportunities to select against the program.

[10] Summarized from company-submitted financial annual statement: Long-Term Care Experience Reporting Form 5 (source: Aggregated data from SNL Financial: http://www.snl.com).
[11] Revised Code of Washington 50B.04.055: Exemptions – Voluntary exemptions – Criteria, rules, and procedures (2022). Retrieved September 21, 2022 from https://app.leg.wa.gov/RCW/default.aspx?cite=50B.04.055
[12] https://wacaresfund.wa.gov/how-it-works/exemptions
[13] RCW 50B.04.090: Election of coverage-self-employed persons. (n.d.). Retrieved October 2, 2022, from https://app.leg.wa.gov/RCW/default.aspx?Cite=50B.04.090

PORTABILITY ALTERNATIVE

We modeled an alternative to the Front-End plan that introduces a "portability" provision, whereby individuals who leave Massachusetts can opt to retain vesting in the LTSS benefit provided they continue to pay the payroll tax. We tested two participation scenarios: 25% and 100%. For the 25% participation scenario we assumed that average claims for this population are double that of the general population. This would imply that claims are higher than average for those who elect to participate and / or premiums are lower than average for those who elect to participate. For example, if 25% of individuals in this population contribute to premiums, we assume 50% of claims are added to the program's cash flows. We anticipate that this benefit could experience significant adverse selection because individuals who are vested and have little to no remaining wages (such as retired workers) may be more inclined to participate.

Anytime choice or a voluntary aspect to participation is introduced into a program, unpredictability related to participation rates and adverse selection can make rate modeling challenging. While the exact magnitude of adverse selection is unknown, we do expect there to be some level of adverse selection to be present given the voluntary nature of the portable benefit. If a portable benefit were more seriously considered, it would be important to conduct more detailed participation and adverse selection scenario testing.

Figure 16
Massachusetts LTSS Feasibility Study
Required Payroll Tax Rates for Portability Alternatives

	Required Payroll Tax Rate	Difference From Core Plan
Front-End Core Plan (No portability)	0.68%	
Portability - 25% participation*	1.03%	0.36%
Portability - 100% participation scenario	0.96%	0.28%

** We project adverse selection by assuming claims of those participating are 25% higher relative to premium participation.*

The counts of individuals we project to migrate out of the state each year have a large influence on the results of the tests in the figures above and are also a difficult assumption to project. To the extent more or less individuals move out of the state than what we are projecting, we would expect the impact to these alternatives to also be more or less than what we are projecting in the figure above.

DEPENDENT COVERAGE ALTERNATIVES

We modeled two alternatives to the Front-End plan that provide benefits to dependents of the individual contributing to the payroll tax:

- **Shared spouse benefit:** Once a worker becomes vested, any spouse or domestic partner living in the worker's household who qualifies under the benefit eligibility criteria can draw from the vested worker's benefit pool. Note, that we do not assume that two vested individuals within the same household can share their benefits.
- **Pre-claim 50% death benefit:** If a worker becomes vested but dies before accessing his or her LTSS benefit, half of the benefit amount will be paid to the worker's surviving heirs in the year of death. Note, we do not assume a death benefit is paid when someone has already accessed any of their LTSS benefit (even if they have not exhausted that benefit). Paying out the full remaining LTSS benefit as a death benefit would increase the cost of this additional feature.

Figure 17
Massachusetts LTSS Feasibility Study
Required Payroll Tax Rates for Dependent Coverage Alternatives - Front-End

	Required Payroll Tax Rate	Difference From Core Plan
Front-End Core Plan	0.68%	
Shared spouse benefit	0.85%	0.17%
Pre-claim 50% death benefit	0.99%	0.31%

COINSURANCE ALTERNATIVES

Coinsurance is a type of cost sharing by which the beneficiary is responsible for paying a level percentage of all costs for covered services. For example, if a beneficiary incurs $9,000 in costs in one month, under a 10% coinsurance plan with no monthly benefit maximum, the beneficiary would be responsible for $900, and the plan would be responsible for $8,100. However, because the Core Plans use a $7,500 monthly benefit maximum, the plan responsibility would be capped at $7,500, and the member would be responsible for $1,500.

We modeled four alternatives to the Front-End plan that introduce a coinsurance provision:

- **Beneficiary pays 10% coinsurance:** For this alternative, the Front-End Core Plan's monthly benefit maximum of $7,500 is retained. Since 90% of the median cost of LTSS exceeds the $7,500 monthly benefit maximum in most care settings, the impact of this alternative is minimal.
- **Beneficiary pays 25% coinsurance:** For this alternative, the Front-End Core Plan's monthly benefit maximum of $7,500 is retained. Since 75% of the median cost of LTSS exceeds the $7,500 monthly benefit maximum in most care settings, the impact of this alternative is minimal.
- **Beneficiary pays 10% coinsurance, no monthly maximum:** Under this design, we assume the beneficiary is no longer subject to a monthly benefit maximum. Instead, we assume the plan covers 90% of the average cost of care and the beneficiary pays the remaining 10%. We assume the total initial benefit pool is still limited to $75,000.
- **Beneficiary pays 10% coinsurance, no monthly maximum:** Under this design, we assume the beneficiary is no longer subject to a monthly benefit maximum. Instead, we assume the plan covers 75% of the average cost of care and the beneficiary pays the remaining 25%. We assume the total initial benefit pool is still limited to $75,000.

Figure 18
Massachusetts LTSS Feasibility Study
Required Payroll Tax Rates for Coinsurance Alternatives – Front-End

	Required Payroll Tax Rate	Difference From Core Plan
Front-End Core Plan (No coinsurance)	0.68%	
Beneficiary pays 10% coinsurance	0.67%	-0.01%
Beneficiary pays 25% coinsurance	0.66%	-0.02%
Beneficiary pays 10% coins, no monthly max	0.70%	0.02%
Beneficiary pays 25% coins, no monthly max	0.69%	0.01%

CASH BENEFIT DURING ELIMINATION PERIOD ALTERNATIVES

Because the Back-End and Catastrophic plans have significant elimination periods, we modeled plan alternatives to each of those Core Plans in which a lump sum of cash ($7,500 or $15,000) would be available to beneficiaries after a shorter 30-day elimination period. For the Back-End Core Plan, we assumed this cash benefit would not be taken out of the beneficiary's $150,000 total benefit, but instead be offered in addition to that pool. This design addresses a concern some stakeholders raised about Back-End and Catastrophic designs offering no benefits to individuals at their beginning of their LTSS need, including for many individuals who may not survive a lengthy elimination period.

Figure 19a
Massachusetts LTSS Feasibility Study
Required Payroll Tax Rates for Additional Benefit Alternatives – Back-End

	Required Payroll Tax Rate	Difference From Core Plan
Back-End Core Plan	0.88%	
$7,500 cash provided during elimination period	0.93%	0.05%
$15,000 cash provided during elimination period	0.99%	0.10%

Figure 19b
Massachusetts LTSS Feasibility Study
Required Payroll Tax Rates for Additional Benefit Alternatives – Catastrophic

	Required Payroll Tax Rate	Difference From Core Plan
Core Plan (No cash benefit)	2.74%	
$7,500 cash provided during elimination period	2.80%	0.05%
$15,000 cash provided during elimination period	2.85%	0.10%

V. LONG-TERM CARE ACTUARIAL VALUE

The required payroll tax informs the cost of the program but does not necessarily indicate the value of the benefit to consumers. To compare the level of benefits for multiple plan designs on a consistent basis, we present results using a different metric: Long-Term Care Actuarial Value (LTC AV). LTC AV represents how much coverage a particular LTC insurance benefit provides versus the amount left to be covered by other sources (such as individuals' out-of-pocket resources, private insurance, Medicaid, etc.).[14] For example, a plan with a 60% LTC AV means that, for every dollar of LTC costs expected to be incurred by an individual, the insurance plan is expected to pay 60 cents on average, whereas the remainder of the LTC costs (40 cents) must be covered by other sources.

CORE PLAN LTC AV RESULTS

As shown in the figure below, **the Core Plans have LTC AVs ranging from 5% to 45%, meaning that we expect the Core Plans to cover, on average, anywhere from 5% to 45% of total expected LTSS costs**. **The LTC AV represents an average and should not be interpreted as bounds. For many individuals, the Core Plans would cover less than 5% of their actual LTSS costs, and for many other individuals, the designs would cover more than 45%.**

The range for each Core Plan is informed by the different LTC AVs produced at different claim ages and for different genders. In the figure below, we also present the LTC AV for a sample beginning age (50) and claim age (82). In this context, beginning age or "issue age" refers to the age at program inception (i.e., age in 2026). Throughout this section we use variations of this sample cell to help illustrate the incremental impact to the LTC AV of adjusting different plan parameters.

Figure 20
Massachusetts LTSS Feasibility Study
LTC Actuarial Values for Core Plans

Parameter	Front-End	Back-End	Catastrophic
Benefit structure	Reimbursement	Reimbursement	Reimbursement
Covered services	Facility and home care	Facility and home care	Facility and home care
Monthly benefit maximum	$7,500	$7,500	$7,500
Total benefit	$75,000	$150,000	Unlimited
Benefit inflation	3%	3%	3%
Elimination period	30 days	2 years	3 years
LTC AV	**5% to 15%**	**5% to 15%**	**15% to 45%**
LTC AV (Issue Age 50, Claim Age 82)	**9%**	**10%**	**27%**

On average, other sources--such as Medicaid, individuals contributing out-of-pocket, private LTCI, and other payers--would be responsible for the remaining LTSS costs outside of the LTC AV. For more information on the development of the LTC AV and background on how a plan's cost sharing parameters determine the average, please see the following article: Rethinking LTC benefit design evaluation.

LTC AV VARIABILITY

Many factors influence the LTC AV. In this section, we present examples of the variability of the LTC AVs for the Core Plans.

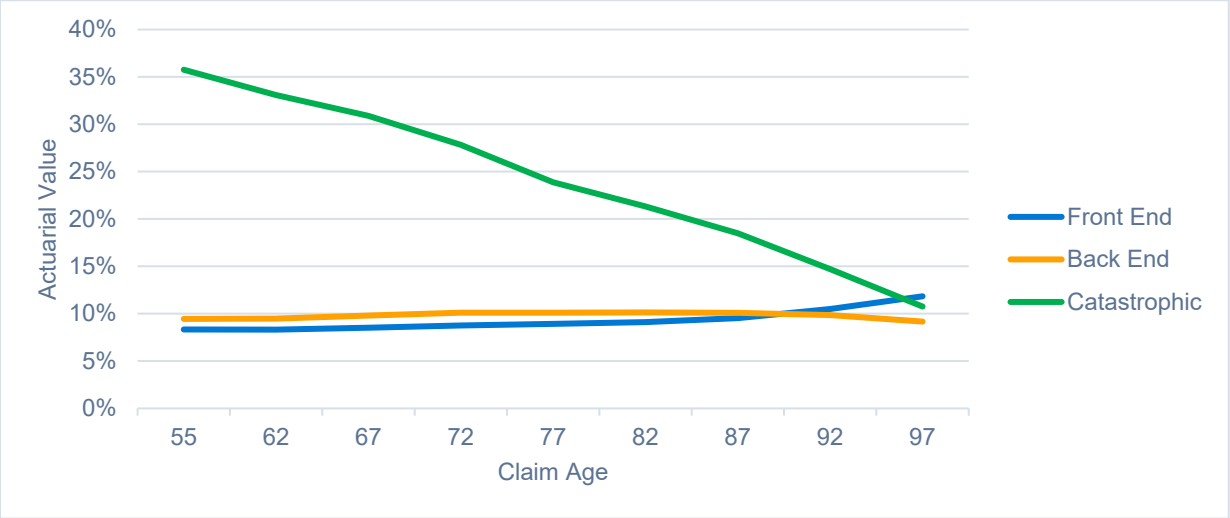
Variability by Claim Age

The figure below presents the LTC AV for the Core Plans by Claim Age. As shown in this figure, the Catastrophic plan's LTC AV decreased from claim age 55 to claim age 97, while the Front-End and Back-End designs are relatively steady (or slightly increasing) across all claim ages. The biggest driver of these patterns is that as claim age increases, the influence of benefit period decreases. The relative value of the Catastrophic plan's unlimited total benefit decreases as insureds age and claimant's remaining life expectancy and expected length of stay decreases. Additionally, as

[14] https://www.milliman.com/en/insight/rethinking-ltc-benefit-design-evaluation

individuals age, the probability of surviving a longer elimination period decreases. This increases the relative value of the Front-End plan (which has a 30-day elimination period) and decreases the relative value of the Back-End and Catastrophic designs, which have 2-year and 3-year elimination periods, respectively.

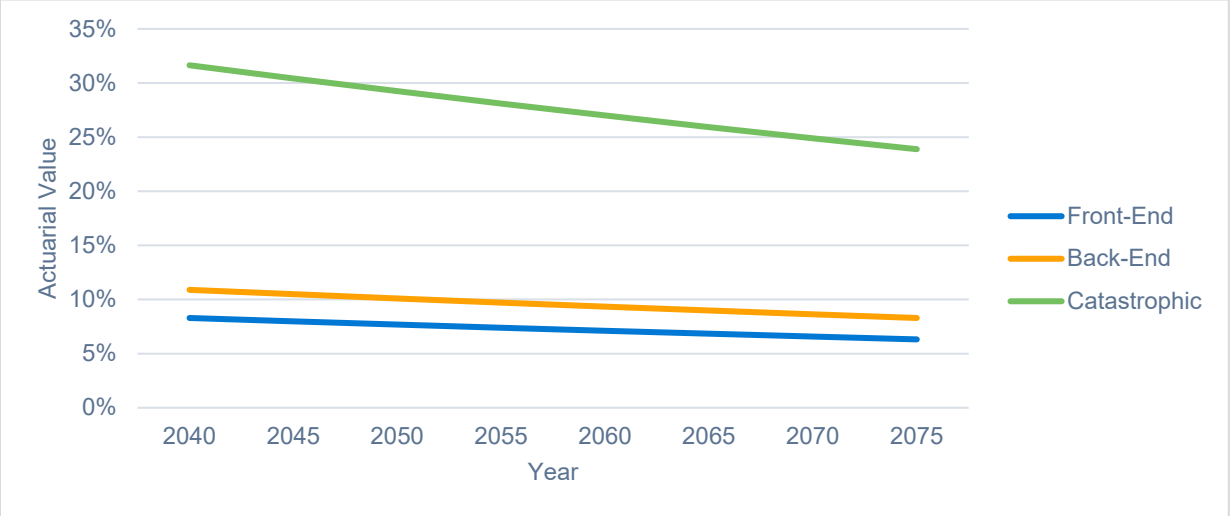
FIGURE 21: CORE PLAN LTC AVS BY CLAIM AGE FOR SAMPLE CELL



Variability by Projection Year

The figure below presents the LTC AV for the Core Plans by projection year, for a constant claim age of 82. This figure shows how the relative LTC AV across all three Core Plans decreases over the projection window. The decreasing pattern is driven by the relationship between the plan designs benefit inflation (which we model as 3%) and the assumed cost of care trend (which we assume to range from 3% to 4%). Given the relationship between these trends, we project the cost of LTSS to outpace the inflation of the benefit, resulting in a lower LTC AV over time. We see a larger impact from this effect later in this section when testing different benefit inflation rate alternatives.

FIGURE 22: CORE PLAN LTC AVS BY PROJECTION YEAR FOR SAMPLE CELL AT CLAIM AGE 82



Another factor that could contribute to the variation of LTC AVs over the projection period is mortality improvement. For the purposes of our LTC AV analysis testing, we use a consistent mortality table across all LTC AV calculations, but varying this assumption by projection year could have a material impact on results, especially for the Back-End and Catastrophic plans.

ALTERNATIVE RESULTS

In addition to analyzing the Core Plans, we calculated the LTC AV for a number of alternatives that were introduced in Section IV of this report. We do not calculate LTC AVs for every alternative modeled in Section IV, since not all alternatives will have an impact on LTC AV. For example, since the LTC AV focuses on expected total LTSS costs, alternatives focused on changing the revenue sources would not be impacted. Related to this, it is important to note that the LTC AV may not capture all aspects of a program's value (e.g., the LTC AV would not be impacted by coverage of additional services outside of the applicable services included in our calculation).

Total Benefit Alternatives

The total benefit alternatives consider the impact of increasing the total pool of money that qualified beneficiaries would be able to access. We modeled several total benefit alternatives to the Front-End and Back-End plans as shown in the figures below. The figures show that increasing the total benefit increases the LTC AVs, especially for the Front-End design which has a shorter elimination period. The Catastrophic Core Plan's total benefit is unlimited, so we did not model total benefit alternatives relative to that design.

FIGURE 23: LTC AVS BY CLAIM AGE FOR SAMPLE CELL- FRONT-END TOTAL BENEFIT ALTERNATIVES

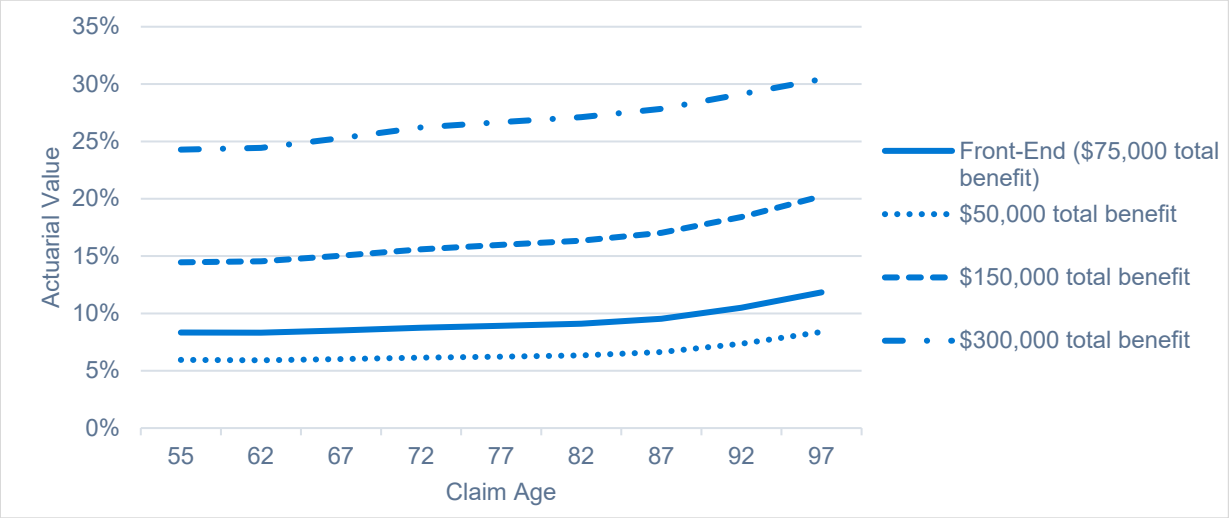
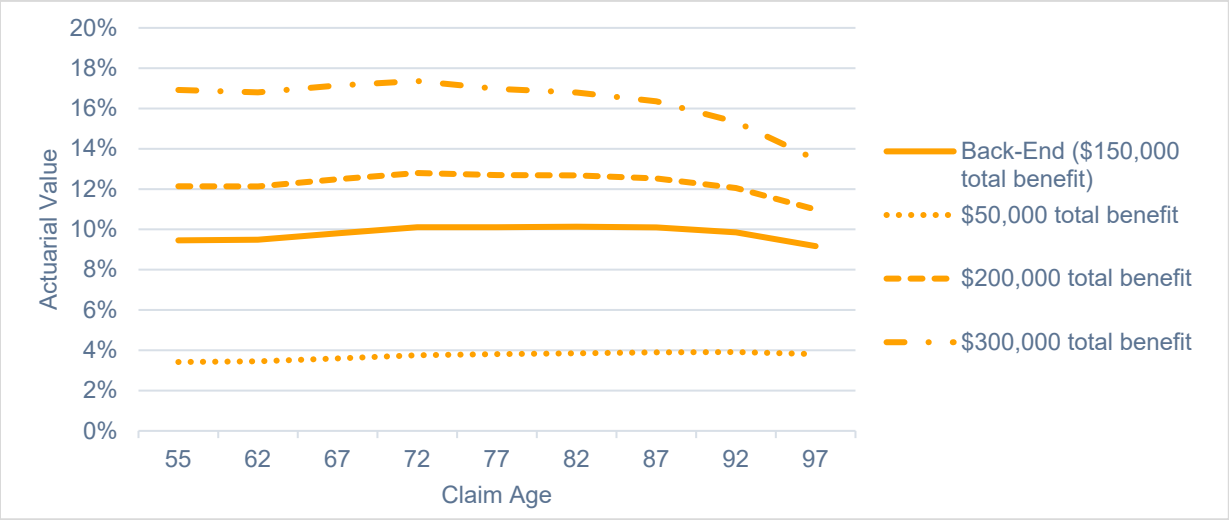


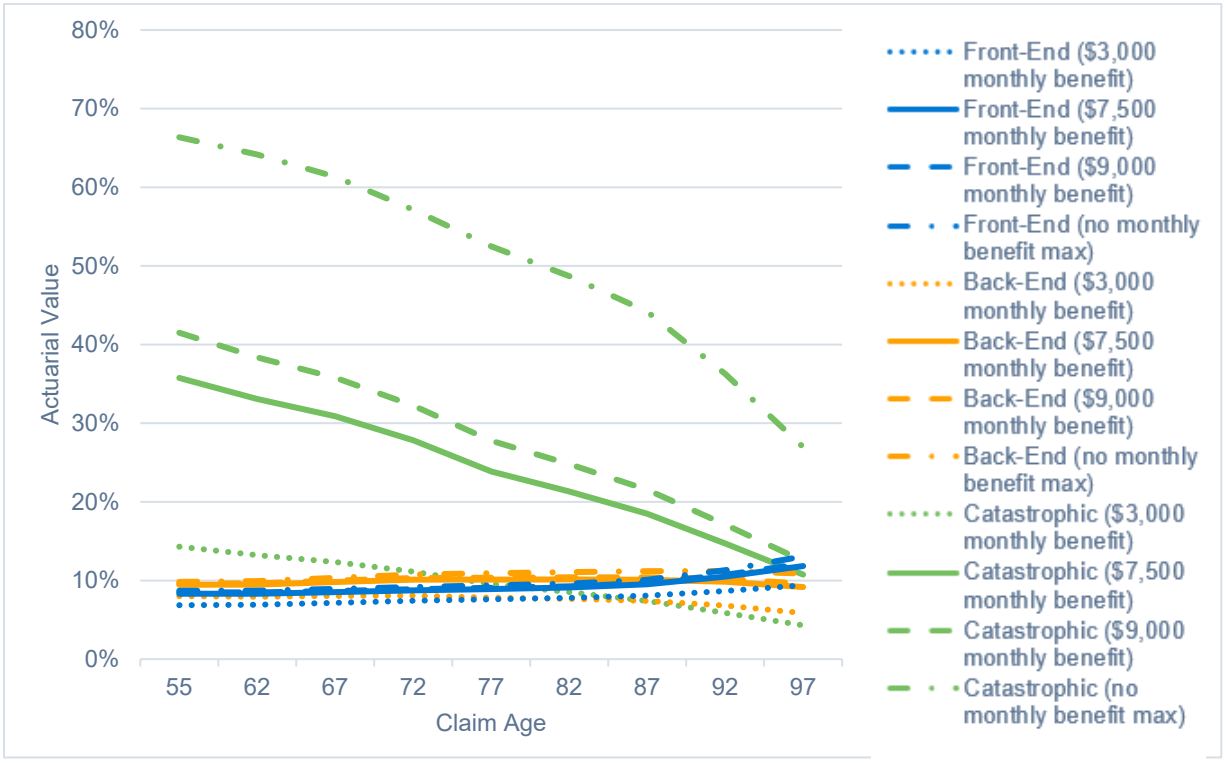
FIGURE 24: LTC AVS BY CLAIM AGE FOR SAMPLE CELL - BACK-END TOTAL BENEFIT ALTERNATIVES



Monthly Benefit Maximum Alternatives

The monthly benefit maximum alternatives consider the impact of lowering or raising the monthly benefit maximum. We retain the plan designs' total benefit maximums for these tests, where Front-End alternatives are limited to a $75,000 total benefit and Back-End alternatives are limited to a $150,000 total benefit. Given the total benefit pool remains unchanged, the impact of the alternatives for Front-End or Back-End is minimal. Since the Catastrophic tests have an unlimited total benefit, increasing or decreasing the monthly benefit maximum has a more direct impact on the LTC AVs.

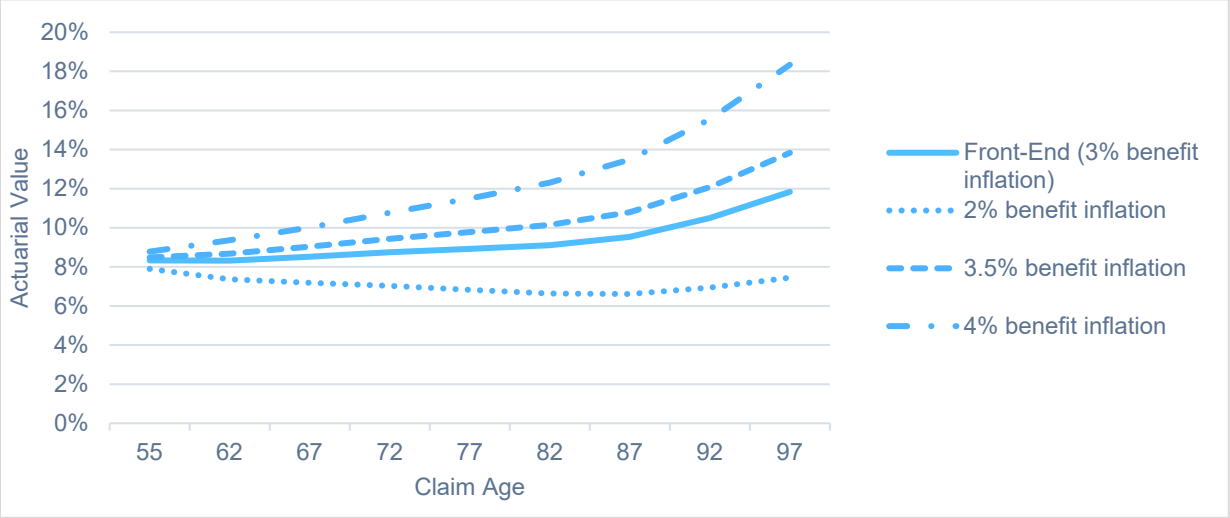
FIGURE 25: LTC AVS BY CLAIM AGE FOR SAMPLE CELL - MONTHLY BENEFIT MAXIMUM ALTERNATIVES



Benefit Inflation Alternatives

Benefit inflation refers to the rate at which benefits will be increased each year for the entire projection. We tested benefit inflation rates lower and higher than the Core Plan inflation rate of 3%. The impact of benefit inflation on the LTC AV compounds over time. Given data points in Figure 26 all represent an individual at issue age 50, the higher the claim age the more significant the impact of benefit inflation.

FIGURE 26: LTC AVS BY CLAIM AGE FOR SAMLE CELL - FRONT-END BENEFIT INFLATION ALTERNATIVES



Elimination Period Alternatives

The elimination period refers to the length of time after satisfying the benefit eligibility criteria before a beneficiary will start receiving benefits (i.e., during the elimination period, individuals are responsible for paying for their LTSS need out-of-pocket or through other means). As seen in the figures below, all else equal, increasing the elimination period reduces the LTC AV. The impact of the elimination period varies by claim age, however. As individuals age, the probability of surviving a longer elimination period decreases. This increases the relative value of the Front-End plan (which has a 30-day elimination period) and decreases the relative value of the Back-End and Catastrophic designs, which have 2-year and 3-year elimination periods, respectively.

FIGURE 27: LTC AVS BY CLAIM AGE FOR SAMPLE CELL - FRONT-END ELIMINATION PERIOD ALTERNATIVES

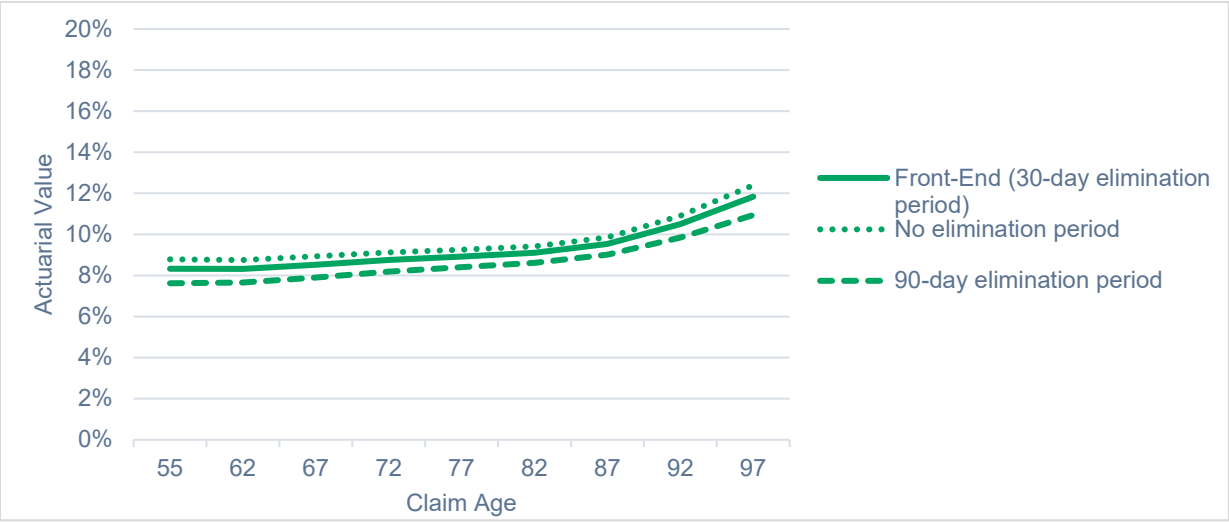


FIGURE 28: LTC AVS BY CLAIM AGE FOR SAMPLE CELL - BACK-END ELIMINATION PERIOD ALTERNATIVES

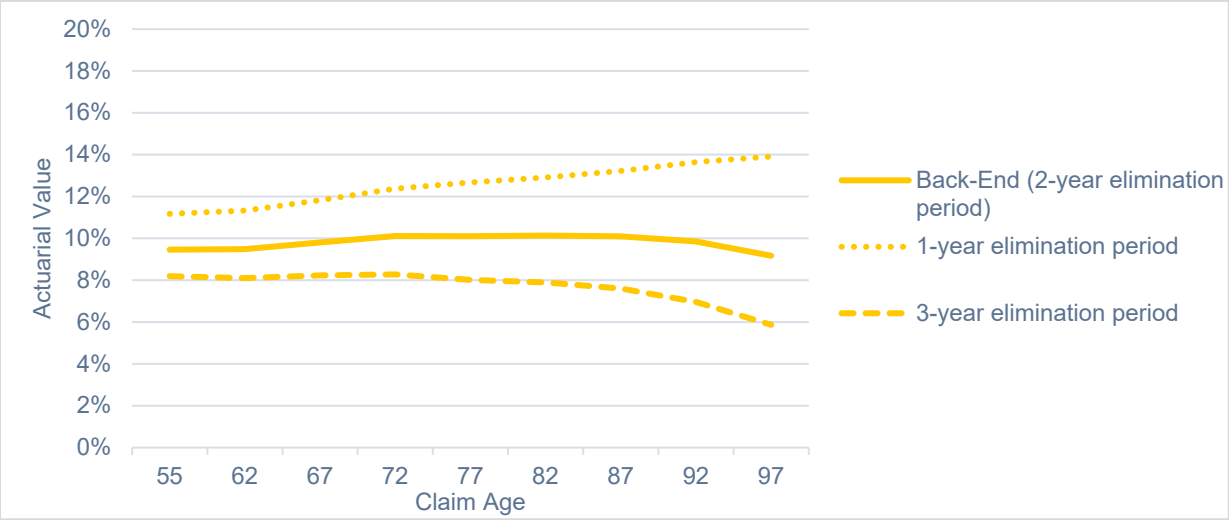
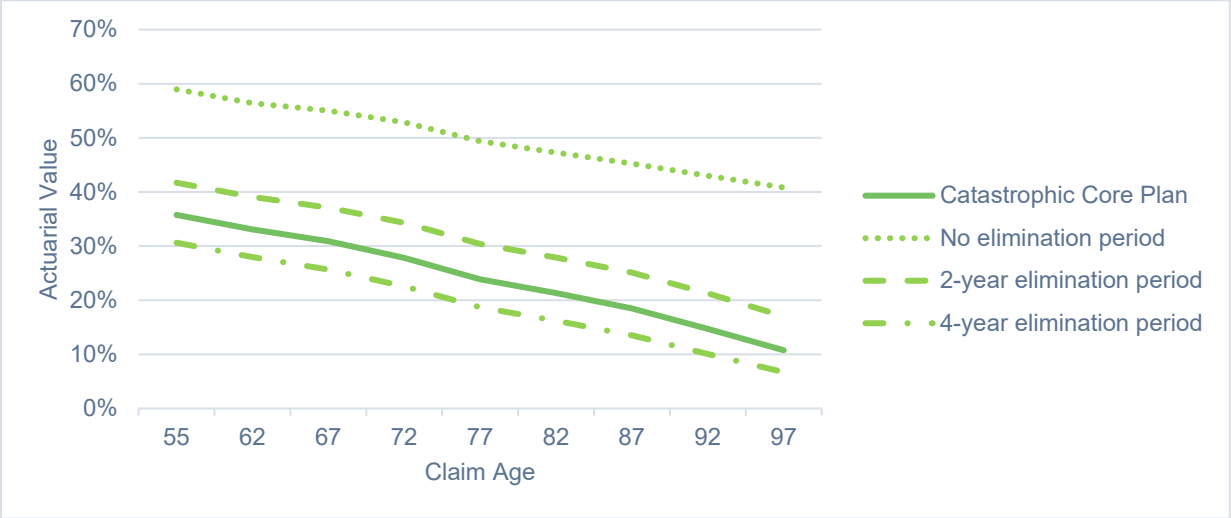


FIGURE 29: LTC AVS BY CLAIM AGE FOR SAMPLE CELL - CATASTROPHIC ELIMINATION PERIOD ALTERNATIVES



LTC AV CALCULATION

The LTC AV is calculated as the cost of LTSS expected to be covered by an insurance plan divided by the total expected cost of LTSS. The underlying applicable costs and services used to determine the AV need to be consistent to provide meaningful comparisons of plans. For purposes of this analysis, we assume applicable services include paid, formal LTC services assumed to be covered under the Core Plans after an individual satisfies benefit eligibility requirements. Notably, this includes the cost of room and board in a facility setting. LTC AV may not capture all aspects of a program's value (i.e., the AV would not be impacted by coverage of additional services outside of the applicable services included in our calculation).

To calculate the expected costs of applicable services we assume the following:

- LTSS costs include comprehensive covered services provided in a skilled nursing facility, assisted living facility, or home site of care reimbursed at commercial rates. We estimate the daily cost of care in each of these settings based on median costs in Massachusetts from the 2023 Genworth Cost of Care survey and other applicable sources. We project future annual cost of care assuming annual increases of 4% for facility care and 3% for home care.

- LTSS costs begin when an individual meets HIPAA eligibility criteria, or when an individual is unable to perform two of six ADLs, expected to last at least 90 days, or severe cognitive impairment.

Unless otherwise stated above, the assumptions we used to calculate the LTC AVs are generally consistent with those used to calculate the payroll tax rates documented in Section VIII of this report.

VI. CONSIDERATIONS FOR PROGRAM IMPLEMENTATION

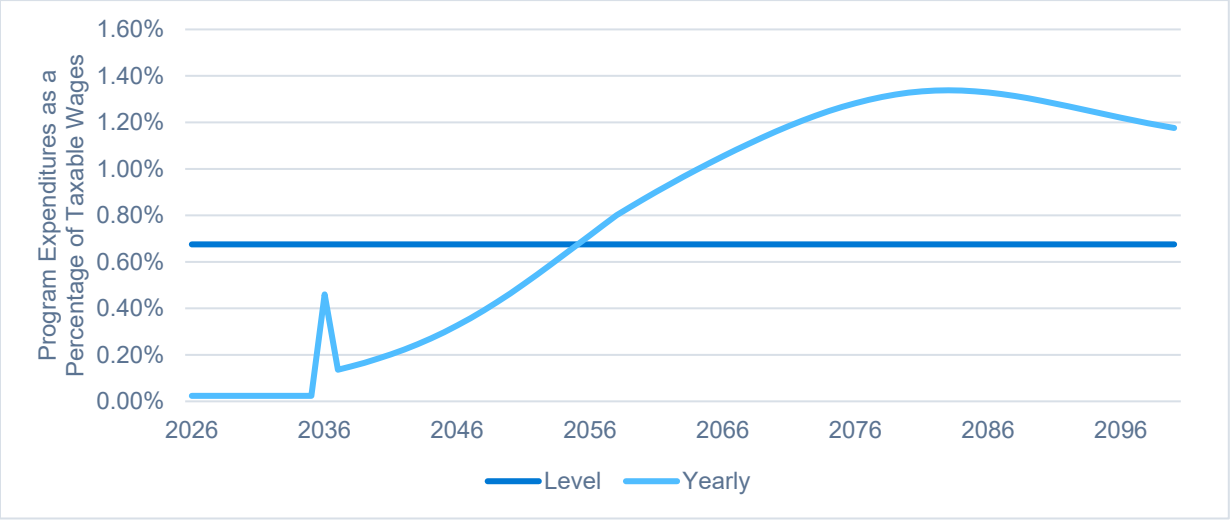
This section provides some additional context to the results provided thus far, as well as some forward-looking considerations for using the results of this study.

FUNDING PERIOD AND APPROACH TO FUNDING

A level payroll tax over the 75-year projection horizon represents the average funding needed to cover program expenditures over that period. However, program revenues and expenditures will not materialize in a level pattern over time. Figure 30 below shows the Front-End plan level payroll tax rate (i.e., 0.68%, dark blue line) over the 75-year projection horizon compared to the annual program expenditures expressed as a percentage of wages (light blue line), which could be considered the "yearly" required payroll tax if the goal were not to maintain a level payroll tax. This presentation illustrates how the relationship between revenues and expenditures changes over time.

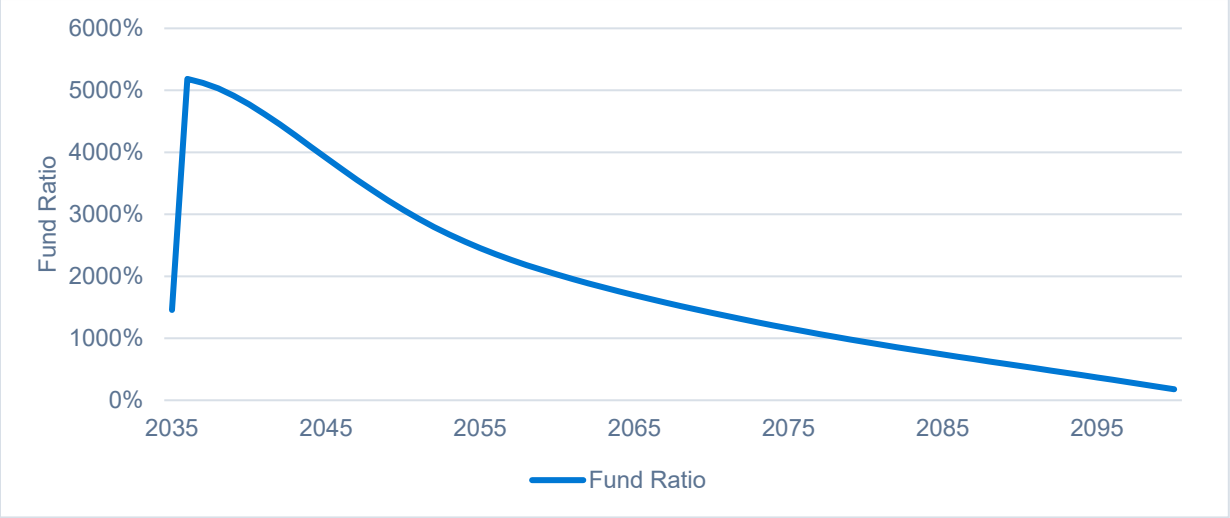
As shown in Figure 30, the yearly program expenditures as a percentage of wages are initially very low as the program is incurring some expenses but not yet paying out benefits until the first individuals will qualify under vesting rules. Expenditures are then estimated to spike due to projected "pent-up demand" when individuals can start claiming benefits in 2036. After returning to "normal" levels, the program expenditures as a percentage of wages are estimated to steadily increase as more of the population satisfies vesting requirements. After reaching a peak around 2083, program expenditures as a percentage of wages are estimated to start decreasing as wage growth (assumed to be 3.55% on an ultimate basis) outpaces the benefit indexing (assumed to be 3.0% for the entire projection).

FIGURE 30: LEVEL PAYROLL TAX RATE VS. YEARLY PROGRAM EXPENDITURES AS A PERCENTAGE OF TAXABLE WAGES - FRONT-END PLAN



Given a level payroll tax rate reflects an average across the 75-year projection horizon, it is important to analyze the funds built up from income collected compared with expected payments each year to ensure the fund balance is not negative in any given year. To help illustrate this concept, we define the "Fund Ratio" as the fund amount at the beginning of the year divided by program expenditures in that year. The ratio of available funds to expected program expenditures each year is critical to test because the program will be financed on a "pay-as-you-go" basis with no external funding sources. Figure 31 below illustrates the estimated fund ratio for each year for the program under the Front-End plan. As shown in Figure 31, the use of a level payroll tax rate creates an inherent level of prefunding over the 75-year projection horizon. Note, to the extent the program parameters and tax rate vary from the Front-End plan, this chart will vary, as well.

FIGURE 31: FUND RATIO – FRONT-END PLAN



We exclude the first 10 years of the program from Figure 31, as during these years the program is collecting revenue but not paying any benefits. As a result, during these years the fund ratio rises rapidly as income is collected and the only expenditures paid are minimal administrative expenses. Once benefit payments begin, there is a steep drop in fund ratio, driven by pent-up demand for benefits by working disabled individuals who meet vesting requirements immediately and have a qualifying LTSS need.

As seen in Figure 31, a sharp rise occurs after the initial pent-up demand starting in year 2035, followed by a gradual decline through the end of the projection as individuals become frail and utilize benefits. In all years, the fund ratio is over 100%, indicating the modeled program income is always sufficient to cover program expenditures across the entire projection horizon.

The level payroll tax rate (i.e., 0.68% for the Front-End plan) is not expected to be sufficient to maintain program solvency beyond the 75-year projection horizon. This is illustrated by Figure 30 above, where the final “yearly” payroll tax rate (light blue line) exceeds the “level” payroll tax rate (dark blue line), and by Figure 31, where the fund ratio is approaching 0%. In practice, the payroll tax rate could be set to the level rate initially and then increased before the end of the 75-year projection horizon. An alternative option could be a payroll tax rate than would change over time to maintain program solvency (i.e., a step-rate).

PUBLIC PROGRAM CONSIDERATIONS

A public LTSS program could provide a new financing source to Massachusetts residents to help cover LTSS costs.

A public program would ultimately be established through legislative action, as opposed to the issuance of a policy via a private insurance program. However, there are similarities between these two program types. Conditions of coverage, benefits, and financing are all specified by law or regulation, in a manner similar to how insurance contracts stipulate covered benefits. Individuals must earn coverage by making contributions to the program, just as private contracts require premium payments. Covered individuals have a right to benefits without being subjected to a means test. In addition, the level of benefits is typically related to the level and number of years in which contributions have been made. As such, the type of public program being considered in this report should not be thought of as social assistance (often referred to as “welfare”), which is generally characterized by benefits that are means-tested and financed from general revenues.

On the other hand, public insurance does differ from private insurance in some major ways. Private insurance is voluntary and based on the principle of "individual equity" and risk classification, which are necessary to obtain participation. Individual equity refers to how people are classified into groups of similar cost characteristics, such as age and health status, and a premium is charged such that each individual class finances its own expected benefits.

This classification of individuals into groups is known as *underwriting*. This process allows individuals to potentially be placed into a group deemed to be uninsurable. In other words, under private LTC insurance, those who already need LTC or are reasonably expected to need care in the near future cannot be offered insurance, or the insurance program will quickly fail.

Mandatory public insurance can contain elements of "social adequacy." For example, individuals with high incomes can cross-subsidize those with low incomes in order to provide a minimum adequate benefit to all, including individuals whose contributions are small. Also, those who are of advanced age when the program begins can be subsidized by younger (less risky) participants. Otherwise, benefits may be too low to meet program goals for many years.

Cross-subsidies are possible through a public program if the program is mandatory or subsidized. A universal, or nearly universal, program can anticipate that its costs will be "average" (and not just a high-cost subset of the population), and a mandatory program can assure that social goals can be pursued without jeopardizing the viability of the program (because low-cost individuals cannot drop out). Voluntary programs, including private insurance, must give primary attention to risk classification and individual equity. This means that premiums must reflect benefit levels, age, health status, and little else, which leads to underwriting. Thus, individuals who are young and healthy would have very low rates, while those who are old and / or unhealthy would not be able to purchase coverage.

Another aspect of mandatory public insurance is that such programs can modify benefits by changing laws or regulations to keep benefits and costs in balance with public goals and intentions. Such changes are usually applied prospectively such that benefits already granted are not taken away. Private insurance is based on the premise of a contractual right to benefits that cannot be modified once the contract is made (although disputes have arisen on contract meaning, which can result in court settlements where benefits are sometimes granted that were not intended).

To be viable, private insurance must be "fully funded" – i.e., it must have sufficient assets at any point in time to pay for future benefits earned from past contributions. Full funding protects the benefits of insured individuals in the event that either a large proportion of participants stop paying premiums or the plan terminates. Full funding also requires that current plan participants pay for their own benefits, not relying on new members to keep the plan solvent. Because public insurance programs are assured of new entrants and that the government will not default, they need not be fully funded; although, overall benefit levels must be lower because of the inadequate funding for the initial beneficiaries. Testing for the actuarial soundness of the public insurance programs is designed to ensure that benefits can be paid on a timely basis.

RATE SETTING CONSIDERATIONS

This report should only be used to assess the feasibility of introducing an LTSS program in Massachusetts. It is not intended, and should not be used, for setting a program rate. To set an appropriate rate, it is crucial to consider the appropriate level of margin or “cushion” above the modeled required tax rates shown in a feasibility study. In other words, an insurance program should consider how much additional program funds should be collected to account for situations where actual experience deviates from expectations. As Massachusetts is one of the pioneer states attempting to establish this type of program, there is significant uncertainty regarding expectations and certain pricing assumptions. This uncertainty should be considered in the context of the Actuarial Standards of Practice (ASOPs) that govern the actuarial soundness of insurance programs when determining the appropriate margin and.

The following considerations may be useful to determine the appropriate level of margin:

- The financial risks to the State and the sensitivity of key modeling assumptions
- The ability to monitor the program and adjust as needed
- The desired risk appetite and the financial goals of the program
- Additional factors may also be applicable

Financial Risks to the State and Sensitivity of Key Modeling Assumptions

To appropriately determine margin, it is crucial to understand the major sources of uncertainty that could impact the future of a public LTSS program. There is uncertainty regarding which program parameters may ultimately be selected, as well as how actual experience will deviate from modeling assumptions.

While a broad mix of plan designs was evaluated in this feasibility study, the potential LTSS program could have entirely different parameters or include a combination of features not previously modeled. It is important to consider how new parameters or features could affect the resulting modeled tax rate.

The required payroll tax rate is also highly sensitive to the underlying projection assumptions used in the long-term modeling. Variations in actual experience from these assumptions will affect the fund balance and the required revenue to maintain program solvency. As a result, there is considerable sensitivity and financial risk if these assumptions are not realized. Actuarial modeling for a public LTSS program requires a long-term perspective on the LTSS needs of individuals, presenting significant risks to any program intended to span decades. Many of these risks are discussed in more detail throughout this report. The following items summarize the major risks associated with a state-based public LTSS program:

- Long-term morbidity trends
- Long-term mortality trends
- Cost of care inflation
- Fertility rates
- Population migration
- Interest rates
- Wage growth
- Expense levels

To understand the sensitivity of the modeling assumptions, including the items listed above, and the variability of results under moderately favorable and moderately adverse conditions, please refer to Section VII of this report. The results of this testing should be considered when setting the rate for an LTSS program and determining the desired level of margin.

Ability to Monitor the Program and Adjust as Needed

Another important factor to consider is the ability to monitor the program and adjust if program experience emerges differently than expected. If the program establishes a process to closely monitor experience and quickly react by adjusting benefits or revenue, less margin may be needed. If such levers are not available, more margin may likely be appropriate to mitigate for potential adverse events.

When establishing an LTSS program, the program administrators should consider both how to monitor and how often to monitor experience. To monitor experience, an actuarial data warehouse should be established to collect eligibility, revenue, and benefits data. On the eligibility / revenue side, data elements, such as age, sex, marital status, vesting status, wage, and payroll tax contributed should be tracked longitudinally. On the benefits side, elements, such as benefit eligibility date, site of care, and paid claims should be tracked. This information will be critical in order to adjust projection assumptions. In terms of modeling frequency, major public LTC programs, such as the Federal LTC Insurance Program, regularly report on experience and funded status of the program. The analyses typically include sensitivity of various assumptions, such as interest rates, morbidity, and mortality.

Monitoring the program more frequently will give the LTSS program the ability to react more quickly to emerging experience. The sooner the program reacts, the less drastic action it will have to take. In other words, the more time a program waits to “course correct,” the higher the corrected payroll tax rate will need to be to keep the program solvent through the remaining years of the projection.

Desired Risk Appetite and Financial Goals of the Program

It is also important for program administrators to determine the appropriate risk appetite and financial goals for the program. Because the program is structured as a pay-as-you-go social insurance plan (with some pre-funding), the level of conservatism used in setting benefits and payroll taxes will impact beneficiaries throughout the 75-year projection differently. A more conservative approach to setting benefits relative to payroll taxes may benefit beneficiaries farther along in the projection as opposed to earlier beneficiaries. On the other hand, a more aggressive pricing approach may put more risk on later cohorts of beneficiaries; if results are less favorable than priced for, later cohorts may need to receive less benefits or pay more payroll taxes to maintain program solvency. Program administrators may want to consider the following questions, among many others:

- What does “success” look like for the LTSS program?
- What metrics can be used to evaluate the program’s success on an ongoing basis?
- How can consumers be confident that the program will indeed deliver what was promised? Should ensuring consumer confidence be a priority of the program?
- How does the program ensure the funds invested are used appropriately?
- How should the program interact with existing private insurance and public programs? How can this be evaluated?

Asking questions like these will help administrators to establish the proper rate setting and risk management framework required to implement and evaluate the program’s financial goals.

LEGAL RISKS TO THE STATE

Before implementing a state-based public LTSS program, the State should consider legal risks of such a program. We are not attorneys and cannot provide legal advice or analysis. Our comments are based on our general knowledge and experience in long-term care. The potential legal risk associated with any potential LTSS financing solution should be examined subsequent to this initial feasibility study when additional details of a program are available and specified. Massachusetts may consider the following potential challenges as a starting point.

- Mandatory Consideration: A program that could be viewed as mandatory could have some legal considerations. The State could look to other government programs with mandatory taxes and fees to help identify potential challenges.
- Equity: It may be difficult to assure that two people who are alike in similar respects are treated similarly from a benefit perspective. This may simply highlight the importance of the assessment function to mitigate legal risk and included a mechanism for third party review to mitigate claims risk.
- Mispricing / Rate Increases: If the plan is mispriced or tax rates need to be increased, participants could raise objections. The State should consider adding rules to outline corrective actions the State can pursue if experience materializes different than pricing.
- Benefit Coverage: The specifics of how the plan covers benefits, pays for certain benefits, and caveats that might interfere with getting benefits such as leaving the state, not fulfilling the vesting period must be clearly defined.

VII. ASSUMPTION SENSITIVITIES

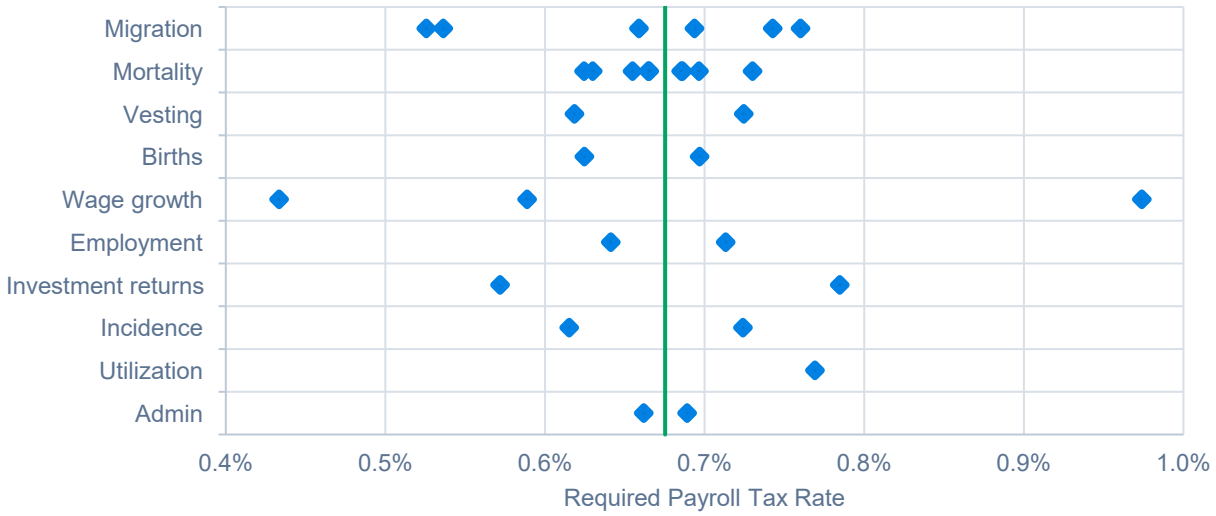
As introduced in Section VI, the sensitivity of payroll tax results under different conditions, as well as the program's ability to adjust features when experience materializes differently from expectations, are vital components for the monitoring of an LTSS program. The results in this section demonstrate that financial outcomes are highly sensitive to the underlying modeling assumptions used.

This section summarizes sensitivity testing of key assumptions. The tests included in this section were selected to illustrate the sensitivity of results to a broad range of assumptions at different levels, but the results contained herein are not intended to be bounds of all possible outcomes.

Figure 32 below summarizes the required payroll tax produced by each of our sensitivity tests (blue markers) relative to the Front-End Core Plan (green line). A wider "gap" between the dashed green line represents greater sensitivity. We provide details on each of the tests modeled in the subsections that follow. Unless noted otherwise, we expect the sensitivity of the Back-End and Catastrophic designs to be relatively consistent with the Front-End impact on a multiplicative basis.

Below Figure 32, we provide additional discussion for each of the sensitivity tests (with Figures 33 through 43).

FIGURE 32: IMPACT OF ASSUMPTION SENSITIVITIES ON REQUIRED PAYROLL TAX RATE: FRONT-END PLAN



SENSITIVITY TESTING TO MIGRATION

Migration influences the overall population of Massachusetts, and thus, may impact the modeled payroll tax rate. The Core Plans assume a net annual migration consistent with projections from the American Community Survey. We ran six sensitivities on the Front-End plan: two where we increased or decreased in-migration (domestic and international) by 25%, two where we increased or decreased out-migration (domestic and international) by 25%, and two where we increase or decrease the spread between in- and out-migration by 25%.

Figure 33 Massachusetts LTSS Feasibility Study Required Payroll Tax Rates for Migration Assumption Sensitivities – Front-End		
	Required Payroll Tax Rate	Difference From Core Plan
Front-End Core Plan	0.68%	
High net migration	0.66%	-0.02%
Low net migration	0.69%	0.02%
High in-migration	0.74%	0.07%
Low in-migration	0.54%	-0.14%
High out-migration	0.53%	-0.15%
Low out-migration	0.76%	0.08%

SENSITIVITY TESTING TO MORTALITY

In our modeling, we applied separate mortality rates to active (i.e., non-disabled) lives and disabled lives. Mortality rates have generally been decreasing by age over the last 100 years, and we assume future improvement of mortality rates in the Baseline based on OASDI projections. As mortality rates decrease, the life expectancy of the population increases, thus increasing the pool of individuals who may incur an LTSS need (all else equal).

We ran six sensitivities: increasing or decreasing mortality rates at each age by 10% for all lives, as well as tests where we only change the mortality for active lives and disabled lives, respectively. Additionally, we ran three mortality improvement scenarios (no improvement, high improvement, and low improvement, where the high and low scenarios are derived from the 2024 OASDI Trustees Report projections).

Because mortality and mortality improvement assumptions do not have a level impact across all three Core Plans, we provide sensitivity testing to mortality for each of the Front-End, Back-End, and Catastrophic plans.

Figure 34a Massachusetts LTSS Feasibility Study Required Payroll Tax Rates for Mortality Assumption Sensitivities – Front-End		
	Required Payroll Tax Rate	Difference From Core Plan
Front-End Core Plan	0.68%	
High mortality	0.65%	-0.02%
Low mortality	0.70%	0.02%
High active mortality	0.66%	-0.01%
Low active mortality	0.69%	0.01%
High disabled mortality	0.67%	-0.01%
Low disabled mortality	0.69%	0.01%
No mortality improvement	0.62%	-0.05%
High mortality improvement	0.73%	0.05%
Low mortality improvement	0.63%	-0.05%

Figure 34b
Massachusetts LTSS Feasibility Study
Required Payroll Tax Rates for Mortality Assumption Sensitivities – Back-End

	Required Payroll Tax Rate	Difference From Core Plan
Back-End Core Plan	0.88%	
High mortality	0.82%	-0.06%
Low mortality	0.93%	0.05%
High active mortality	0.86%	-0.02%
Low active mortality	0.89%	0.00%
High disabled mortality	0.83%	-0.05%
Low disabled mortality	0.92%	0.04%
No mortality improvement	0.68%	-0.20%
High mortality improvement	1.03%	0.15%
Low mortality improvement	0.75%	-0.13%

Figure 34c
Massachusetts LTSS Feasibility Study
Required Payroll Tax Rates for Mortality Assumption Sensitivities - Catastrophic

	Required Payroll Tax Rate	Difference From Core Plan
Catastrophic Core Plan	2.74%	
High mortality	2.37%	-0.37%
Low mortality	3.07%	0.32%
High active mortality	2.66%	-0.08%
Low active mortality	2.72%	-0.02%
High disabled mortality	2.39%	-0.35%
Low disabled mortality	3.03%	0.29%
No mortality improvement	1.58%	-1.16%
High mortality improvement	3.79%	1.05%
Low mortality improvement	2.03%	-0.72%

SENSITIVITY TESTING TO VESTING

To become qualified to receive benefits under the Core Plans, individuals must pay the payroll tax rate for a specified number of years. An individual becomes vested (or qualified) for benefits by working at least 500 hours per year for 10 total years during his or her entire work history.

We ran two sensitivities on the Front-End plan related to vesting: increasing or decreasing the percentage of individuals who are vested in each year by 10%. For some cohorts, we did not increase by a full 10% to keep the vesting rates below the assumed ultimate vesting rate cap.

Figure 35
Massachusetts LTSS Feasibility Study
Required Payroll Tax Rates for Vesting Assumption Sensitivities – Front-End

	Required Payroll Tax Rate	Difference From Core Plan
Front-End Core Plan	0.68%	
High vesting	0.72%	0.05%
Low vesting	0.62%	-0.06%

SENSITIVITY TESTING TO BIRTHS

Under the Core Plans, birth rates are sourced from information provided in the 2024 OASDI Trustees Report calibrated to Massachusetts data. We ran two sensitivities on the Front-End plan, using either the high or low birth rate patterns observed by state across the country (e.g., the “high birth rates” test sets the Massachusetts birth rate to the state with the highest birth rate). As more children are born, the average age of the population decreases, and there are more working individuals relative to the elderly, resulting in a larger wage base.

Figure 36
Massachusetts LTSS Feasibility Study
Required Payroll Tax Rates for Birth Assumption Sensitivities – Front-End

	Required Payroll Tax Rate	Difference From Core Plan
Front-End Core Plan	0.68%	
High births	0.62%	-0.05%
Low births	0.70%	0.02%

SENSITIVITY TESTING TO WAGE GROWTH

As wages increase, the payroll tax base increases and the payroll tax rate necessary to fund program benefits decreases. We acknowledge that wage growth may accompany price inflation, but for these sensitivities, we examine the impact of modifying wage growth in isolation. Wage growth assumptions under the Core Plans derive from the 2024 OASDI Trustees Report intermediate assumption (3.55% in the ultimate year). We tested two sensitivities on the Front-End plan, using either the high or low 2024 Trustees Report assumptions (4.77% and 2.34% in the ultimate year, respectively).

Separately, we observed Massachusetts wages to be approximately 24% higher than the national average. Under the Core Plans, we maintain the 24% differential for the first 10 years of projected wages, and then grade down the differential to 0% over the subsequent 25 years, such that our projected wages will approximate national average wages from OASDI by year 35 of the projection. As a third sensitivity test on the Front-End plan, we "turn off" this grade-down and thus maintain the 24% differential for the entire projection.

Figure 37
Massachusetts LTSS Feasibility Study
Required Payroll Tax Rates for Wage Growth Assumption Sensitivities – Front-End

	Required Payroll Tax Rate	Difference From Core Plan
Front-End Core Plan	0.68%	
High wage growth	0.97%	0.30%
Low wage growth	0.43%	-0.24%
No grade-down of wage ratio	0.59%	-0.09%

SENSITIVITY TESTING TO EMPLOYMENT

We tested two sensitivities on the Front-End plan related to employment rates, in which we increase or decrease the count of workers in every year by 5%. For this test, we assumed the annual increase or decrease in employment only impacts the number of individuals paying the payroll tax and does not have an impact on the assumed vesting rate for individuals (which may be affected by a change in employment levels.)

Figure 38
Massachusetts LTSS Feasibility Study
Required Payroll Tax Rates for Employment Assumption Sensitivities – Front-End

	Required Payroll Tax Rate	Difference From Core Plan
Front-End Core Plan	0.68%	
High employment	0.64%	-0.03%
Low employment	0.71%	0.04%

SENSITIVITY TESTING TO INVESTMENT RATES

The investment rate determines the level of investment income earned on the program fund. We tested two sensitivities on the Front-End plan, increasing or decreasing the net investment earned rates by 100 basis points for each year of the projection.

Figure 39
Massachusetts LTSS Feasibility Study
Required Payroll Tax Rates for Investment Rate Assumption Sensitivities – Front-End

	Required Payroll Tax Rate	Difference From Core Plan
Front-End Core Plan	0.68%	
Plus 100 basis points	0.57%	-0.10%
Minus 100 basis points	0.78%	0.11%

SENSITIVITY TESTING TO INCIDENCE

We ran two sensitivities on the Front-End plan in which we increase or decrease claim incidence rates by 20%. As an example, if the "base" incidence rate assumption were 15% for a 90-year-old male, here we would test the impact of changing the incidence rate to 18% (i.e., 15% x (1 + 20%) = 18%) and 12% (i.e., 15% x (1 - 20%) = 12%).

Figure 40
Massachusetts LTSS Feasibility Study
Required Payroll Tax Rates for Incidence Assumption Sensitivities – Front-End

	Required Payroll Tax Rate	Difference From Core Plan
Front-End Core Plan	0.68%	
High incidence	0.72%	0.05%
Low incidence	0.62%	-0.06%

SENSITIVITY TESTING TO UTILIZATION

We conducted a sensitivity test on the Front-End plan to evaluate the impact of immediately paying out the entire lifetime benefit when a beneficiary goes on claim. In practice, beneficiaries are limited in the amount they are reimbursed per month up to the monthly benefit limit, preventing them from accessing their entire benefit immediately. We also assume that some individuals terminate their claim (e.g., die or recover) before fully utilizing their lifetime benefit pool. This test demonstrates the influence of our claim termination rates on the required payroll tax rate.

Figure 41
Massachusetts LTSS Feasibility Study
Required Payroll Tax Rates for Assumption Sensitivities - Utilization

	Required Payroll Tax Rate	Difference From Core Plan
Front-End Core Plan	0.68%	
Immediate lifetime pool payout	0.77%	0.09%

SENSITIVITY TESTING TO ADMINISTRATIVE EXPENSES

Under the Core Plans, we assume administrative expenses equal to 3.5% of payroll taxes plus 3.5% of claims. We tested two sensitivities on the Front-End plan, using higher (4.5% of payroll taxes plus 4.5% of claims) or lower (2.5% of payroll taxes plus 2.5% of claims) expenses.

Figure 42
Massachusetts LTSS Feasibility Study
Required Payroll Tax Rates for Assumption Sensitivities - Expenses

	Required Payroll Tax Rate	Difference From Core Plan
Front-End Core Plan	0.68%	
High administrative expenses	0.69%	0.01%
Low administrative expenses	0.66%	-0.01%

SENSITIVITY TESTING TO ASSUMPTIONS IN COMBINATION

We ran two "combined" scenarios on the Front-End plan to further highlight the modeling sensitivity for certain key assumptions:

- Combined "positive" scenario: increased the wage growth to use the high rates from the 2024 OASDI Trustees Report, increased net investment earned rates by 100 basis points annually, and decreased incidence by 20%
- Combined "adverse" scenario: decreased the wage growth to use the low rates from the 2024 OASDI Trustees Report, decreased net investment earned rates by 100 basis points annually, and increased incidence by 20%

Figure 43
Massachusetts LTSS Feasibility Study
Required Payroll Tax Rates for Assumption Sensitivities - Combined Sensitivities

	Required Payroll Tax Rate	Difference From Core Plan
Front-End Core Plan	0.68%	
Combined positive scenario	0.42%	-0.26%
Combined adverse scenario	1.09%	0.42%

VIII. METHODOLOGY AND ASSUMPTIONS

We modeled all plans as a long-term care social insurance benefit for workers funded through a payroll deduction. The payroll deduction would take the form of a mandatory state tax on wages (including self-employment reported wages) for all workers (except for Massachusetts workers residing outside of the state, who would be automatically exempted from program participation). Coverage would be limited to workers and would not include spousal coverage. Funding would be "pay-as-you-go" for a social insurance program (though the program does include some measure of pre-funding).

For each Core Plan, we modeled revenue (payroll tax), investment income, benefit payments, administration expenses, and balance of a trust fund. Our projection model produces year-by-year cash flow projections, such that the value and scope of the program can be estimated for any of the years in the projection period window. Revenue collected under the program is assumed to be placed into a trust fund for the sole purpose of paying expected program benefits and expenses.

We project beneficiaries and costs using Milliman's projection modeling software, Integrate. The projection starts with the actual historical population of Massachusetts by age and sex and is forecasted using assumptions related to the rate of births, deaths, and migration in and out of Massachusetts in each future year.

To calculate the beneficiaries and costs for the projected population in each year, the model utilizes Milliman's proprietary *LTC Guidelines (Guidelines*) calibrated from an insured basis to the estimated Massachusetts population characteristics. The *Guidelines* provide frequencies, continuance curves, utilization assumptions, and claims costs developed from a large number of product designs based on data from the past two decades. The *Guidelines* are updated triennially to reflect the most comprehensive and current information available in the market.

The projection is for the 75-year period 2026 through 2101. A 75-year projection has been established by the Social Security Administration (SSA) and the Centers for Medicare and Medicaid Services (CMS) as the standard projection period for determining the financial status of a public insurance program. The 75-year period covers the expected lifetime of the majority of residents just entering their working ages. Thus, a 75-year projection period covers all the working years and all of the benefit years of those just beginning their participation. Income to the program consists of payroll tax revenue and interest earned on the fund. Expenditures to the program consist of benefit payments for covered services and administrative expenses. We projected each of these items on a year-by-year basis for 75 years.

DEMOGRAPHIC ASSUMPTIONS

The demographic assumptions relate to the projection of the population of Massachusetts. The covered population is of fundamental importance in the estimation of costs. The income to the program depends on the number of contributors and the outgo of the program depends on the number of beneficiaries. Estimates of the number of contributors and of the number of beneficiaries are based on the population projection.

The estimate of the population starts with the census count of the resident population for Massachusetts by age and sex. The starting population includes an estimated level of disabled individuals (i.e., in need of LTC services) at the start of the projection.

We reviewed the projected population over the 75-year horizon for reasonableness compared to forecasts in the 2024 Old-Age, Survivors, and Disability Insurance (OASDI) Trustees Report[15] and the UMass Donohue Institute (UMDI) "Massachusetts Population Projections" from May 2024[16] (2024 UMDI Population Projections). As part of our reasonableness review, we compared our projection of Massachusetts lives by age bucket and sex to those projected in the UMDI study. While the OASDI report only has projections at a nationwide level, we compared population growth

[15] Social Security Administration (2024). 2024 OASDI Trustees Report. Retrieved October 23, 2024 from https://www.ssa.gov/OACT/TR/2024/tr2024.pdf

[16] UMass Donohue Institute (2024). Massachusetts Population Projections. Retrieved July 22, 2024 from https://donahue.umass.edu/business-groups/economic-public-policy-research/massachusetts-population-estimates-program/population-projections

and the distribution of the population by attained age (i.e., less than 20, 20 to 64, and 65-plus) in our projection relative to the OASDI projections for each year.

Starting population

The estimate of the starting population comes from the American Community Survey (ACS) "2016 ACS 5-Year Data Profile"[17] by age and sex, calibrated to the 2024 UMDI Population Projections, which provide a census estimate by age bucket and sex.

Migration

We projected two types of migration separately in our modeling:

- *Domestic migration* – We projected the number of individuals who move into Massachusetts from another U.S. state (or out of Massachusetts to another U.S. state) each year using historical data from the ACS State-to-State Migration Flows files.[18] We assumed the age-gender distribution of domestic migrants in any year will resemble the age-gender distribution of in-state residents in that year. We tracked in-migration and out-migration separately.
- *International migration* – We projected the number of individuals who move into Massachusetts from another country (or out of Massachusetts to another country) each year using historical data from the ACS State-to-State Migration Flows files. We assumed the age-gender distribution of international migrants in any year to be based on ACS data specific to individuals moving into and out of the United States.[19] We tracked in-migration and out-migration separately; however, we did not model or track the legal status of international migrants.

Total net migration is calculated as domestic in-migration minus domestic out-migration plus international in-migration minus international out-migration. The ACS State-to-State Migration Flows files estimates current net migration to be 11,500. We assume annual net migration will hold steady at 11,500 during the 75-year projection horizon.

Births

We projected the number of births in Massachusetts in each future year using state-specific fertility rates from the Centers for Disease Control and Prevention's (CDC's) National Vital Statistics Report on births.[20] We trended these fertility rates according to the nationwide fertility rate projection provided in the 2024 OASDI Trustees Report. We modeled births by applying these fertility rates to the projected female population in Massachusetts by age and projection year.

Deaths

We applied separate mortality rates to the active lives (i.e., individuals not currently meeting the benefit eligibility threshold) versus disabled lives.

- Active life mortality: We calculated current and projected U.S. active life mortality rates by age and sex using multiple sources, including the Milliman *LTC Guidelines*, 2024 OASDI Trustees Report (after backing out disabled life mortality), Society of Actuaries (SOA) 2012 Individual Annuity Mortality (IAM) table (after backing out disabled life mortality), SOA Intercompany data, and the American Academy of Actuaries (AAA) 2021 Long-Term Care Insurance Mortality and Lapse Study.[21]

[17] American Community Survey (2017). State-to-State Migration Flows. Retrieved July 22, 2024 from https://www.census.gov/acs/www/data/data-tables-and-tools/data-profiles/2016/

[18] American Community Survey (2024). State-to-State Migration Flows. Retrieved October 23, 2024 from https://www.census.gov/data/tables/time-series/demo/geographic-mobility/state-to-state-migration.html

[19] American Community Survey (2024). Geographic Mobility by Selected Characteristics in the United States. Retrieved October 23, 2024 from https://data.census.gov/

[20] Centers for Disease Control and Prevention (2024). National Vital Statistics Reports: Births. Retrieved October 23, 2024 from https://www.cdc.gov/nchs/data/nvsr/nvsr73/nvsr73-02.pdf

[21] https://www.actuary.org/sites/default/files/2021-11/LTC_Valuation_Report_Nov.2021.pdf

- Disabled life mortality: We calculated current and projected U.S. disabled life mortality rates by age, sex, duration, and site of care using data from the Milliman *LTC Guidelines.*

The projected U.S. mortality rates were calibrated to Massachusetts using the CDC's age-adjusted mortality rates by state. This data shows that Massachusetts mortality rates are 6% to 10% less than the national average.

We estimated mortality improvement rates by age and sex using the 2024 OASDI Trustees Report. The Trustees Report mortality rates are projected through 2100. We assumed the annual rate of mortality improvement applies to both active and disabled lives.

ECONOMIC ASSUMPTIONS

Economic parameters, such as trends in the labor force, wages, and costs of LTC services, are of primary importance for the projection of the income and expenditures of the program. Because in this report we model programs financed by a payroll tax rate, labor force participation and wage level will directly affect annual program income. Likewise, the index used to trend benefits (if applicable) affects program liabilities in the future, and the interest rate assumption affects the investment income earned on the fund balance.

Workers

Rates of U.S. workers as a proportion of U.S. total lives by age and sex were provided to Milliman by the Social Security Administration. We adjusted these rates to Massachusetts-specific levels using the ratio of Massachusetts labor force participation rate (LFPR) to nationwide LFPR. To identify working disabled individuals, we leveraged Massachusetts-specific data on the rates of individuals employed while disabled from the American Community Survey.

Wages

Projections of U.S. average taxable earnings through 2100 are provided in the 2024 OASDI Trustees Report. Taxable earnings refer to the amount of covered earnings subject to the Social Security payroll tax. In order to estimate a wage base for our projections, we made the following adjustments to the OASDI taxable earnings:

- We adjusted from nationwide to Massachusetts-specific earnings using the ratio of the average income in Massachusetts over the average income in the United States. Income data for this adjustment comes from BLS Occupational Employment Statistics, which shows Massachusetts average income is approximately 24% higher than nationwide average income (as observed over calendar years 2019 to 2023). For our projection, we maintained the 24% differential for the first 10 years of the projection, and then graded off the Massachusetts-specific wage adjustment over the subsequent 25 years, such that our projected wages will approximate national average wages from OASDI by year 35 of the projection.
- Next, we converted the taxable earnings into covered earnings using the ratio of taxable earnings to covered earnings from the 2024 OASDI Trustees Report. Covered earnings represent the wage base subject to the Medicare tax after adjusting for the Social Security contribution and benefit base.
- Finally, we multiplied average gross wages subject to the modeled payroll tax rate by the projected count of workers in each projection year to determine the payroll tax rate base in that year.
- Note, we modeled several alternative designs with a wage-related element:
  - We modeled one alternative design that uses wage growth as a proxy for benefit inflation. The data sources described here were used to inform the modeling of that alternative design.
  - We also modeled one alternative design that carves out wages above the Social Security contribution and benefit base. We relied on information from the Social Security Administration[22] to inform the modeling of that alternative design.

[22] Social Security Administration (2025). Contribution and Benefit Base. Retrieved on October 23, 2024 from https://www.ssa.gov/oact/cola/cbb.html

- Finally, we modeled several alternative designs that carve out wages below a certain percentage of the Federal Poverty Limit (FPL). The data sources described here, coupled with information from ACS[23] on the count of workers by income-to-poverty ratio in Massachusetts, were used to inform the modeling of those designs.

Benefit inflation index

We inflated benefits using a level assumption of 3%.

Cost of care

We assume individuals will incur the average Massachusetts cost of care each month at private market rates depending on what services they are receiving (e.g., skilled nursing facility, assisted living facility, or home health care), subject to any plan maximums as applicable. We determined the median cost of care in Massachusetts by site of care starting with the 2023 Genworth Cost of Care Survey[24] (with adjustments to assisted living facility costs based on Milliman research) and inflated the values into the future using 4% facility (nursing home and assisted living) trend and 3% home health care trend. We selected these cost of care trends based on actuarial judgment and observed historical cost of care trends by site of care.

Vesting

In order to become eligible for benefits, a worker must become vested (or in other words, become insured). To vest, an individual must work and pay the payroll tax for a specified number of years. We used the 2006 Social Security Earnings Public Use Microdata File[25] (2006 is the most recent year the Microdata File was assembled) as our starting point to estimate the percentage of the population that would become vested by age, sex, and projection year. This data provides annual earnings information (i.e., a lifetime earnings profile) for a 1% random sample of all Social Security numbers issued before January 1, 2007.

Under the Core Plans, individuals are assumed to be fully vested if they work at least 500 hours per year for 10 years total over their lifetimes. To find the percentage of the working population meeting these requirements, we observed the work histories of the random sample of data. For each age, the percentage of individuals who had recorded income for eight years total is tabulated. We used eight instead of 10 years in this tabulation because becoming insured under this program provides an added incentive to potentially continue working for those who are almost insured. For each year of the program, we vary the number of years of work history to be included in this tabulation. For example, in year 10 of the program, we only considered work history for individuals going back 10 years to estimate vesting percentages. Because of this, the vesting percentages by age and gender vary in each program year. We used the American Time Use Survey to determine the percentage of workers who work more than 500 hours per year (approximately 95%) and applied this percentage to the vesting percentages by age, gender, and program year.

We adjusted our vesting assumptions for several subsets of the population.

- We observed that females' work histories changed significantly over the course of the data collection period (1951 through 2006), with the last five to ten years (i.e., 1996 to 2006) approximately equal to males' work histories. As such, we set the female vesting percentages equal to the male vesting percentages.
- We did not vary vesting assumptions for individuals who migrate into Massachusetts from another state or country.

[23] American Community Survey (2024). Count of workers by income-to-poverty ratio. Retrieved October 23, 2024 from https://data.census.gov/

[24] Genworth (2024). Cost of Care Survey: Median Cost Data Tables. Retrieved October 23, 2024 from https://pro.genworth.com/riiproweb/productinfo/pdf/282102.pdf

[25] Social Security Administration (2006). SSA Earnings Public-Use File, 2006. Retrieved October 23, 2024 from https://www.ssa.gov/policy/docs/microdata/epuf/index.html

- Since there is no minimum age for disability, we also considered individuals working while disabled. We assume 100% of individuals working while disabled will begin drawing benefits after ten years of work experience. This creates a "pent-up demand" effect in which a significant number of working disabled individuals will immediately qualify and begin using benefits when vested.
- We additionally modeled an alternative design related to vesting in which individuals are eligible to receive prorated benefits, or 10% of the full benefit amount for each year of payroll tax payments up to 100%. For these alternatives, we separately tabulate the percentage of individuals by number of years of recorded wages, since the years of wages will determine the prorated benefit amount. After segmenting by years vested, we apply a prorating adjustment to the assumed benefit for each cohort. For example, for individuals we project will have four years of vesting credits, we multiply their projected benefits by 40% (= 4 / 10). Finally, we modeled an alternative design using a full vesting standard of 20 years plus prorated benefits, or 5% of the full benefit amount for each year of payroll tax payments, are covered, using similar assumptions and methodology.

Interest rates

We assume a level interest rate of 4.25% for annual investment income earned on the trust fund. This assumption is based on discussions with EOHHS and was informed by the intermediate rate of return projections in the OASDI Trustees Report.

MORBIDITY ASSUMPTIONS

To calculate the beneficiaries and costs for the projected population in each year, we started with data and research from the Milliman *LTC Guidelines*. The *Guidelines* provide claim frequencies, continuance curves, utilization assumptions, and claims costs from a large number of fully insured LTC product designs sold over the past two decades. The *Guidelines* are periodically updated to reflect the most comprehensive and current information available in the market. The first set of *Guidelines* was developed in 1992 and is updated regularly, with the most recent edition completed in 2023.

We adjusted the *Guidelines* data from an insured basis to a general population basis consistent with assumed Massachusetts population characteristics. We did not assume any future morbidity improvement as part of our modeling.

Note, we also modeled alternative designs that utilize a Cash or Partial Cash benefit structure, and we modeled a separate alternative design that covers reimbursement for informal caregivers. For these alternatives, we relied also on information from the *Guidelines* to calibrate morbidity to these alternative benefit structures or service offerings.

At this time, there is no direct data source to use for comparison for a long-term care social insurance program, such as is the focus of this study. To review our projections for reasonableness, we reviewed model output for various claim statistics by projection year (such as claim incidence and prevalence rates) based on actuarial judgement and observations of projections for other of LTC programs.

Benefit eligibility criteria

A person's ability to perform activities of daily living (ADLs) and / or a person's cognitive ability in addition to physical abilities are frequently used as indications of the need for LTC services (and serve as the foundation for benefit eligibility criteria for many LTC programs). The Core Plans in this study use benefit eligibility criteria consistent with the private LTC insurance market (i.e., HIPAA eligibility criteria). Eligibility under these criteria is defined as requiring assistance with at least two out of six standard ADLs or having a severe cognitive impairment.

Note, we also modeled an alternative design where benefit eligibility is based on a physician's medical assessment and approval. For this alternative, we relied on information from the Milliman *LTC Guidelines* to calibrate claim incidence rates to this alternative benefit eligibility threshold.

Benefit utilization

Because the projected monthly cost of care in Massachusetts is at least as high as any of monthly benefit maximums across all Core Plan designs, we assumed 100% dollars utilization across all care paths. In terms of days utilization, we assumed home care beneficiaries incur services roughly five out of seven days per week, which would still result in beneficiaries incurring the monthly maximum of $7,500 per month. As a result, we assume 100% total utilization of the monthly maximum across all care paths.

For each of the alternatives, we analyzed the difference between the projected monthly cost of care in Massachusetts and the monthly benefit maximums. For several of the alternatives, such as the $9,000 monthly benefit maximum tests, we modeled utilization less than 100% in the home care setting as we expected the benefit maximum to exceed the monthly cost of care.

Since there is no minimum age for disability under the Core Plans, we also considered benefits for individuals working while disabled. We assumed the working disabled would also utilize the entire monthly maximum upon becoming vested.

Incidence

Incidence refers to the rate of new cases of qualifying individuals in a population satisfying the benefit eligibility criteria. We use the Milliman *LTC Guidelines* incidence rates as a starting basis for our projections; however, the *Guidelines* in their original form are representative of a fully-insured population. A fully-insured population will have different morbidity from the general population for a few reasons, including:

- Fully-insured data may have inherent anti-selection as it reflects individuals who choose to purchase coverage for care and may have reason to believe they will need care in the future.
- Fully-insured data typically reflects a higher average income and lower incidence than the general population, all else equal.
- Most private LTC insurance policyholders were required to complete underwriting, indicating they were relatively healthy at least when they first purchased coverage. There is no underwriting qualification as part of the modeled program designs (although individuals will need to be at least healthy enough to work in order to satisfy vesting requirements).

We calibrated the *Guidelines* incidence rates to a general population basis using a variety of data sources, including selection factors from the *Guidelines* and other industry general population prevalence studies. While general population data exists, morbidity data reflecting a “public option” program does not exist and was not used for this actuarial study. It is unknown how individuals will behave in reaction to the availability of a social insurance LTC benefit.

MISCELLANEOUS ASSUMPTIONS

We relied on the following additional assumptions to inform the modeling of certain plan alternatives.

Population exclusion alternatives

We modeled two alternatives to the Front-End plan that exclude certain subpopulations from the program.

- **One-time exclusion for policyholders of private LTCI**

  This alternative assumes all individuals covered by a private LTC insurance policy as of December 31, 2024 would be permanently excluded from the program. In Massachusetts, we observed approximately 10% of the adult population age 60 and older owns a stand-alone private long-term care insurance policy as of 2023.[26] We assumed wages for these individuals would be roughly $125,000 in 2026 and excluded them from the funding projections. This wage adjustment was graded off over the 75-year projection window as individuals with a private LTC policy as of December 31, 2024 become a smaller portion of the population.

[26] Summarized from company-submitted financial annual statement: Long-Term Care Experience Reporting Form 5 (source: Aggregated data from SNL Financial: http://www.snl.com).

- **Ongoing exclusion for self-employed workers**

  This plan alternative assumed all wages earned by self-employed individuals would be excluded from the program. We assumed on an ongoing basis all self-employed individuals would not contribute to the tax rate or have the ability to access to benefits. We rely on ACS data[27] to project the self-employed population in Massachusetts in each year of the projection. This data indicates approximately 330,000 individuals (or 8% of the workforce) are self-employed workers at the beginning of our projection with wages roughly 15% below that of the Massachusetts average wage.

Portability alternative

One plan alternative includes a portable benefit for individuals who have moved out of Massachusetts after meeting vesting requirements. Once a worker moves out of Massachusetts, they can elect to maintain coverage by continuing to pay a payroll tax. The individual would continue to pay a payroll tax on their wages each year until retirement.

We assumed 25% of individuals migrating out of Massachusetts would elect the portability benefit under this alternative. We also assumed a degree of adverse selection (i.e., we assumed two-times higher claim levels). The levels of participation and adverse selection have a large influence on the cost of portable benefits, and different assumptions would yield different projected payroll taxes and benefit payments. We chose the aforementioned participation and adverse selection assumptions for illustrative purposes; they are not intended to represent a "most likely outcome" of these unknown parameters.

Note, for eligible individuals who leave Massachusetts but elect to continue paying the payroll tax rate under the full portability alternative, we assumed their wage levels would be in-line with the nationwide average (i.e., we excluded the 24% Massachusetts-to-nationwide wage differential).

Dependent coverage alternatives

We modeled two alternatives to the Front-End plan that provide benefits to dependents of the individual contributing to the payroll tax:

- **Shared spouse benefit**

  This alternative assumes that once a worker becomes vested, any spouse or domestic partner living in the worker's household who qualifies under the benefit eligibility criteria can draw from the vested worker's benefit pool. We rely on ACS data[28] to estimate the prevalence of households with non-working spouses who could be eligible for benefits under this alternative. We use that data to increase our projection of vested individuals to include non-working individuals who may have access to their spouses' benefit pool.

- **Pre-claim 50% death benefit**

  This alternative assumes that if a worker becomes vested but dies before accessing his or her LTSS benefit, half of the benefit amount will be paid to the worker's surviving heirs in the year of death. We modeled this as an immediate payment of half of the total pool-of-money for every "healthy" (i.e., non-claimant) death in our projection. We do not assume a death benefit is paid when someone has already accessed any of their LTSS benefit (even if they have not exhausted that benefit).

ADMINISTRATIVE EXPENSES

Given the administrative structure of the program is not yet determined, we assumed administrative expenses to be 3.5% of payroll taxes and 3.5% of benefits based on our high-level review of other government programs and programs offering LTC benefits. This assumption is intended to reflect the average, long-term administrative needs of the program and may not be consistent with how expenses would fluctuate on an annual basis.

[27] American Community Survey (2020). Class of Worker by Sex for the Civilian Employed Population. Retrieved October 23, 2024 from https://data.census.gov

[28] American Community Survey (2020). Class of Worker by Sex for the Civilian Employed Population. Retrieved October 23, 2024 from https://data.census.gov

IX. CAVEATS AND LIMITATIONS

This report was prepared for the internal use of the Massachusetts Executive Office of Health and Human Services (EOHHS) and it should not be distributed, in whole or in part, to any external parties without the prior permission of Milliman, subject to the following exception:

- This report shall be a public record that shall be subject to disclosure to the State Legislature and its committees, persons participating in legislative reviews and deliberations, and parties making a request pursuant to the Massachusetts Public Records Law.

We do not intend this information to benefit or create a legal liability to any third party. This communication must be read in its entirety.

The information in this report contains actuarial modeling and analysis regarding payroll taxes, claims, and expenses projected regarding a potential program to finance long-term services and supports (LTSS) in the Commonwealth of Massachusetts. The report may not be appropriate, and should not be used, for other purposes.

Milliman has developed certain models to estimate the values included in this report. The intent of the models was to evaluate revenues and expenditures for a potential LTSS program. We reviewed the models, including their inputs, calculations, and outputs for consistency, reasonableness, and appropriateness to the intended purpose and in compliance with generally accepted actuarial practice and relevant ASOPs.

In completing this analysis, we relied on information provided by EOHHS, MassHealth, and publicly available data, which we accepted without audit. However, we did review this information for general reasonableness.

Many assumptions were used to construct the estimates in this report. Actual results will differ from the projections in this report. Experience should be monitored as it emerges, and corrective actions taken when necessary.

Guidelines issued by the American Academy of Actuaries require actuaries to include their professional qualifications in all actuarial communications. Chris Giese, Annie Gunnlaugsson, Evan Pollock, and Sam Smetek are members of the American Academy of Actuaries and meet the qualification standards for performing the analyses in this report.

EXHIBITS

Exhibit 1
Massachusetts LTSS Feasibility Study
Modeling Specifications

	#	Design	Benefit Structure	Covered Services	Total Benefit (Pool of Money)	Monthly Benefit Maximum	Benefit Inflation	Elimination Period	Benefit Eligibility	Minimum Age for Benefits	Vesting	Program Revenue	Population Exclusions	Other Design Parameters
Core Plans	1	Core Plan 1 - Front End (FE)	Reimbursement	Facility and home care	$75,000	$7,500 maximum	3% annual inflation	30 days	Private LTCI criteria	None	10 years total	Payroll tax on all wages	None (i.e., fully mandatory)	None
	2	Core Plan 2 - Back End (BE)	Reimbursement	Facility and home care	$150,000	$7,500 maximum	3% annual inflation	2 years	Private LTCI criteria	None	10 years total	Payroll tax on all wages	None (i.e., fully mandatory)	None
	3	Core Plan 3 - Catastrophic (CAT)	Reimbursement	Facility and home care	Lifetime	$7,500 maximum	3% annual inflation	3 years	Private LTCI criteria	None	10 years total	Payroll tax on all wages	None (i.e., fully mandatory)	None
Cash Alternatives	4	Cash - FE	Cash	Facility and home care	$75,000	$7,500 maximum	3% annual inflation	30 days	Private LTCI criteria	None	10 years total	Payroll tax on all wages	None (i.e., fully mandatory)	None
	5	Cash - BE	Cash	Facility and home care	$150,000	$7,500 maximum	3% annual inflation	2 years	Private LTCI criteria	None	10 years total	Payroll tax on all wages	None (i.e., fully mandatory)	None
	6	Cash - CAT	Cash	Facility and home care	Lifetime	$7,500 maximum	3% annual inflation	3 years	Private LTCI criteria	None	10 years total	Payroll tax on all wages	None (i.e., fully mandatory)	None
Partial Cash Alternatives	7	Partial cash - FE	Reimb w/ partial cash	Facility and home care	$75,000	$7,500 maximum	3% annual inflation	30 days	Private LTCI criteria	None	10 years total	Payroll tax on all wages	None (i.e., fully mandatory)	None
	8	Partial cash - BE	Reimb w/ partial cash	Facility and home care	$150,000	$7,500 maximum	3% annual inflation	2 years	Private LTCI criteria	None	10 years total	Payroll tax on all wages	None (i.e., fully mandatory)	None
	9	Partial cash - CAT	Reimb w/ partial cash	Facility and home care	Lifetime	$7,500 maximum	3% annual inflation	3 years	Private LTCI criteria	None	10 years total	Payroll tax on all wages	None (i.e., fully mandatory)	None
Covered Services Altern	10	Home and non-institutional facility care - FE	Reimbursement	Home and non-institutional residential care	$75,000	$7,500 maximum	3% annual inflation	30 days	Private LTCI criteria	None	10 years total	Payroll tax on all wages	None (i.e., fully mandatory)	None
	11	Plus informal caregivers - FE	Reimbursement	Facility and home care plus informal caregivers	$75,000	$7,500 maximum	3% annual inflation	30 days	Private LTCI criteria	None	10 years total	Payroll tax on all wages	None (i.e., fully mandatory)	None
	12	Excluding room and board - FE	Reimbursement	Facility and home care excl room and board	$75,000	$7,500 maximum	3% annual inflation	30 days	Private LTCI criteria	None	10 years total	Payroll tax on all wages	None (i.e., fully mandatory)	None
Total Benefit Alternatives	13	Total benefit of $50,000 - FE	Reimbursement	Facility and home care	$50,000	$7,500 maximum	3% annual inflation	30 days	Private LTCI criteria	None	10 years total	Payroll tax on all wages	None (i.e., fully mandatory)	None
	14	Total benefit of $150,000 - FE	Reimbursement	Facility and home care	$150,000	$7,500 maximum	3% annual inflation	30 days	Private LTCI criteria	None	10 years total	Payroll tax on all wages	None (i.e., fully mandatory)	None
	15	Total benefit of $300,000 - FE	Reimbursement	Facility and home care	$300,000	$7,500 maximum	3% annual inflation	30 days	Private LTCI criteria	None	10 years total	Payroll tax on all wages	None (i.e., fully mandatory)	None
	16	Total benefit of $50,000 - BE	Reimbursement	Facility and home care	$50,000	$7,500 maximum	3% annual inflation	2 years	Private LTCI criteria	None	10 years total	Payroll tax on all wages	None (i.e., fully mandatory)	None
	17	Total benefit of $200,000 - BE	Reimbursement	Facility and home care	$200,000	$7,500 maximum	3% annual inflation	2 years	Private LTCI criteria	None	10 years total	Payroll tax on all wages	None (i.e., fully mandatory)	None
	18	Total benefit of $300,000 - BE	Reimbursement	Facility and home care	$300,000	$7,500 maximum	3% annual inflation	2 years	Private LTCI criteria	None	10 years total	Payroll tax on all wages	None (i.e., fully mandatory)	None
Monthly Benefit Maximum Alternatives	19	Monthly benefit max of $3,000 - FE	Reimbursement	Facility and home care	$75,000	$3,000 maximum	3% annual inflation	30 days	Private LTCI criteria	None	10 years total	Payroll tax on all wages	None (i.e., fully mandatory)	None
	20	Monthly benefit max of $9,000 - FE	Reimbursement	Facility and home care	$75,000	$9,000 maximum	3% annual inflation	30 days	Private LTCI criteria	None	10 years total	Payroll tax on all wages	None (i.e., fully mandatory)	None
	21	No monthly benefit max - FE	Reimbursement	Facility and home care	$75,000	No maximum	3% annual total benefit inflation; No monthly	30 days	Private LTCI criteria	None	10 years total	Payroll tax on all wages	None (i.e., fully mandatory)	None
	22	Monthly benefit max of $3,000 - BE	Reimbursement	Facility and home care	$150,000	$3,000 maximum	3% annual inflation	2 years	Private LTCI criteria	None	10 years total	Payroll tax on all wages	None (i.e., fully mandatory)	None
	23	Monthly benefit max of $9,000 - BE	Reimbursement	Facility and home care	$150,000	$9,000 maximum	3% annual inflation	2 years	Private LTCI criteria	None	10 years total	Payroll tax on all wages	None (i.e., fully mandatory)	None
	24	No monthly benefit max - BE	Reimbursement	Facility and home care	$150,000	No maximum	3% annual total benefit inflation; No monthly	2 years	Private LTCI criteria	None	10 years total	Payroll tax on all wages	None (i.e., fully mandatory)	None
	25	Monthly benefit max of $3,000 - CAT	Reimbursement	Facility and home care	Lifetime	$3,000 maximum	3% annual inflation	3 years	Private LTCI criteria	None	10 years total	Payroll tax on all wages	None (i.e., fully mandatory)	None
	26	Monthly benefit max of $9,000 - CAT	Reimbursement	Facility and home care	Lifetime	$9,000 maximum	3% annual inflation	3 years	Private LTCI criteria	None	10 years total	Payroll tax on all wages	None (i.e., fully mandatory)	None
	27	No monthly benefit max - CAT	Reimbursement	Facility and home care	Lifetime	No maximum	No benefit inflation due to no monthly or total benefit	3 years	Private LTCI criteria	None	10 years total	Payroll tax on all wages	None (i.e., fully mandatory)	None
Benefit Inflation Alternat	28	Benefit inflation of 2% - FE	Reimbursement	Facility and home care	$75,000	$7,500 maximum	2% annual inflation	30 days	Private LTCI criteria	None	10 years total	Payroll tax on all wages	None (i.e., fully mandatory)	None
	29	Benefit inflation of 4% - FE	Reimbursement	Facility and home care	$75,000	$7,500 maximum	4% annual inflation	30 days	Private LTCI criteria	None	10 years total	Payroll tax on all wages	None (i.e., fully mandatory)	None
	30	Benefit inflation tied to wage growth - FE	Reimbursement	Facility and home care	$75,000	$7,500 maximum	Annual inflation tied to wage growth (~3.5%)	30 days	Private LTCI criteria	None	10 years total	Payroll tax on all wages	None (i.e., fully mandatory)	None

Exhibit 1
Massachusetts LTSS Feasibility Study
Modeling Specifications

	#	Design	Benefit Structure	Covered Services	Total Benefit (Pool of Money)	Monthly Benefit Maximum	Benefit Inflation	Elimination Period	Benefit Eligibility	Minimum Age for Benefits	Vesting	Program Revenue	Population Exclusions	Other Design Parameters
Elimination Period Alternatives	31	No elimination period - FE	Reimbursement	Facility and home care	$75,000	$7,500 maximum	3% annual inflation	0 days	Private LTCI criteria	None	10 years total	Payroll tax on all wages	None (i.e., fully mandatory)	None
	32	Elimination period of 90 days - FE	Reimbursement	Facility and home care	$75,000	$7,500 maximum	3% annual inflation	90 days	Private LTCI criteria	None	10 years total	Payroll tax on all wages	None (i.e., fully mandatory)	None
	33	Elimination period of 1 year - BE	Reimbursement	Facility and home care	$150,000	$7,500 maximum	3% annual inflation	1 year	Private LTCI criteria	None	10 years total	Payroll tax on all wages	None (i.e., fully mandatory)	None
	34	Elimination period of 3 years - BE	Reimbursement	Facility and home care	$150,000	$7,500 maximum	3% annual inflation	3 years	Private LTCI criteria	None	10 years total	Payroll tax on all wages	None (i.e., fully mandatory)	None
	35	No elimination period (Rich plan) - CAT	Reimbursement	Facility and home care	Lifetime	$7,500 maximum	3% annual inflation	0 days	Private LTCI criteria	None	10 years total	Payroll tax on all wages	None (i.e., fully mandatory)	None
	36	Elimination period of 2 years - CAT	Reimbursement	Facility and home care	Lifetime	$7,500 maximum	3% annual inflation	2 years	Private LTCI criteria	None	10 years total	Payroll tax on all wages	None (i.e., fully mandatory)	None
	37	Elimination period of 4 years - CAT	Reimbursement	Facility and home care	Lifetime	$7,500 maximum	3% annual inflation	4 years	Private LTCI criteria	None	10 years total	Payroll tax on all wages	None (i.e., fully mandatory)	None
Elig Crit	38	Physician's medical assessment - FE	Reimbursement	Facility and home care	$75,000	$7,500 maximum	3% annual inflation	30 days	Physician medical assessment	None	10 years total	Payroll tax on all wages	None (i.e., fully mandatory)	None
Min age Alterna	39	Minimum age 55 for benefit eligibility - FE	Reimbursement	Facility and home care	$75,000	$7,500 maximum	3% annual inflation	30 days	Private LTCI criteria	Age 55	10 years total	Payroll tax on all wages	None (i.e., fully mandatory)	None
	40	Minimum age 65 for benefit eligibility - FE	Reimbursement	Facility and home care	$75,000	$7,500 maximum	3% annual inflation	30 days	Private LTCI criteria	Age 65	10 years total	Payroll tax on all wages	None (i.e., fully mandatory)	None
Vesting Alternat	41	Vesting of 10 years with prorated benefits - FE	Reimbursement	Facility and home care	$75,000	$7,500 maximum	3% annual inflation	30 days	Private LTCI criteria	None	10 years total with partial vesting credits	Payroll tax on all wages	None (i.e., fully mandatory)	None
	42	Vesting of 20 years with prorated benefits - FE	Reimbursement	Facility and home care	$75,000	$7,500 maximum	3% annual inflation	30 days	Private LTCI criteria	None	20 years total with partial vesting credits	Payroll tax on all wages	None (i.e., fully mandatory)	None
Revenue Alternatives	43	Tax on wages subject to Social Security cap - FE	Reimbursement	Facility and home care	$75,000	$7,500 maximum	3% annual inflation	30 days	Private LTCI criteria	None	10 years total	Payroll tax, wages capped at SS threshold	None (i.e., fully mandatory)	None
	44	$25 premium for individuals aged 65+ - FE	Reimbursement	Facility and home care	$75,000	$7,500 maximum	3% annual inflation	30 days	Private LTCI criteria	None	10 years total	Tax on wages with $25/mo prem for 65+	None (i.e., fully mandatory)	None
	45	Tax on all wages above 138% FPL - FE	Reimbursement	Facility and home care	$75,000	$7,500 maximum	3% annual inflation	30 days	Private LTCI criteria	None	10 years total	Payroll tax on all wages above 138% FPL	None (i.e., fully mandatory)	None
	46	Tax on all wages above 300% FPL - FE	Reimbursement	Facility and home care	$75,000	$7,500 maximum	3% annual inflation	30 days	Private LTCI criteria	None	10 years total	Payroll tax on all wages above 300% FPL	None (i.e., fully mandatory)	None
	47	Tax on all wages above 600% FPL - FE	Reimbursement	Facility and home care	$75,000	$7,500 maximum	3% annual inflation	30 days	Private LTCI criteria	None	10 years total	Payroll tax on all wages above 600% FPL	None (i.e., fully mandatory)	None
Exemption Alter	48	Exemption of policyholders of private LTCI - FE	Reimbursement	Facility and home care	$75,000	$7,500 maximum	3% annual inflation	30 days	Private LTCI criteria	None	10 years total	Payroll tax on all wages	Exemption of policyholders of private LTCI before	None
	49	Exemption of self-employed individuals - FE	Reimbursement	Facility and home care	$75,000	$7,500 maximum	3% annual inflation	30 days	Private LTCI criteria	None	10 years total	Payroll tax on all wages	Exemption of self-employed workers	None
Miscellaneous Alternatives	50	Full benefit portability - FE	Reimbursement	Facility and home care	$75,000	$7,500 maximum	3% annual inflation	30 days	Private LTCI criteria	None	10 years total	Payroll tax on all wages	None (i.e., fully mandatory)	Full portability (Separate runs assuming 100%
	51	Shared spouse benefit - FE	Reimbursement	Facility and home care	$75,000	$7,500 maximum	3% annual inflation	30 days	Private LTCI criteria	None	10 years total	Payroll tax on all wages	None (i.e., fully mandatory)	Shared benefit for non-vested spouses
	52	Death benefit of 50% of the total lifetime benefit -	Reimbursement	Facility and home care	$75,000	$7,500 maximum	3% annual inflation	30 days	Private LTCI criteria	None	10 years total	Payroll tax on all wages	None (i.e., fully mandatory)	Death benefit of 50% of the total lifetime benefit
	53	Beneficiary pays 10% coinsurance - FE	Reimbursement	Facility and home care	$75,000	$7,500 maximum	3% annual inflation	30 days	Private LTCI criteria	None	10 years total	Payroll tax on all wages	None (i.e., fully mandatory)	Beneficiary pays 10% coinsurance
	54	Beneficiary pays 25% coinsurance - FE	Reimbursement	Facility and home care	$75,000	$7,500 maximum	3% annual inflation	30 days	Private LTCI criteria	None	10 years total	Payroll tax on all wages	None (i.e., fully mandatory)	Beneficiary pays 25% coinsurance
	55	Beneficiary pays 10% coins, no max - FE	Reimbursement	Facility and home care	$75,000	No maximum	3% annual total benefit inflation; No monthly	30 days	Private LTCI criteria	None	10 years total	Payroll tax on all wages	None (i.e., fully mandatory)	Beneficiary pays 10% coinsurance
	56	Beneficiary pays 25% coins, no max - FE	Reimbursement	Facility and home care	$75,000	No maximum	3% annual total benefit inflation; No monthly	30 days	Private LTCI criteria	None	10 years total	Payroll tax on all wages	None (i.e., fully mandatory)	Beneficiary pays 25% coinsurance
	57	$7,500 cash provided during EP - BE	Reimbursement	Facility and home care	$150,000	$7,500 maximum	3% annual inflation	2 years	Private LTCI criteria	None	10 years total	Payroll tax on all wages	None (i.e., fully mandatory)	$7,500 cash benefit during EP
	58	$15,000 cash provided during EP - BE	Reimbursement	Facility and home care	$150,000	$7,500 maximum	3% annual inflation	2 years	Private LTCI criteria	None	10 years total	Payroll tax on all wages	None (i.e., fully mandatory)	$15,000 cash benefit during EP
	59	$7,500 cash provided during EP - CAT	Reimbursement	Facility and home care	Lifetime	$7,500 maximum	3% annual inflation	3 years	Private LTCI criteria	None	10 years total	Payroll tax on all wages	None (i.e., fully mandatory)	$7,500 cash benefit during EP
	60	$15,000 cash provided during EP - CAT	Reimbursement	Facility and home care	Lifetime	$7,500 maximum	3% annual inflation	3 years	Private LTCI criteria	None	10 years total	Payroll tax on all wages	None (i.e., fully mandatory)	$15,000 cash benefit during EP

Exhibit 2
Massachusetts LTSS Feasibility Study
Required Payroll Tax Rates for Plan Alternatives

	Front-End		Back-End		Catastrophic	
	Tax Rate	Difference from Core Plan	Tax Rate	Difference from Core Plan	Tax Rate	Difference from Core Plan
Core Plan	**0.68%**		**0.88%**		**2.74%**	
Alternatives						
Cash	0.84%	0.17%	1.10%	0.22%	3.43%	0.69%
Partial cash	0.71%	0.03%	0.93%	0.05%	2.88%	0.14%
Home and non-institutional facility care	0.51%	-0.17%	n/a	n/a	n/a	n/a
Facility and home care plus informal caregivers	0.84%	0.16%	n/a	n/a	n/a	n/a
Facility and home care excluding room and board	0.68%	0.00%	n/a	n/a	n/a	n/a
Total benefit of $50,000	0.47%	-0.21%	0.32%	-0.56%	n/a	n/a
Total benefit of $112,500	n/a	n/a	0.68%	-0.20%	n/a	n/a
Total benefit of $150,000	1.24%	0.57%	n/a	n/a	n/a	n/a
Total benefit of $200,000	n/a	n/a	1.12%	0.24%	n/a	n/a
Total benefit of $300,000	2.16%	1.48%	1.54%	0.66%	n/a	n/a
Monthly benefit maximum of $3,000	0.60%	-0.08%	0.72%	-0.16%	1.10%	-1.65%
Monthly benefit maximum of $9,000	0.68%	0.01%	0.90%	0.02%	3.19%	0.45%
No monthly benefit maximum	0.70%	0.03%	0.94%	0.06%	7.06%	4.32%
Benefit inflation of 2%	0.43%	-0.25%	n/a	n/a	n/a	n/a
Benefit inflation of 4%	1.07%	0.39%	n/a	n/a	n/a	n/a
Benefit inflation tied to wage growth	0.81%	0.14%	n/a	n/a	n/a	n/a
No elimination period	0.69%	0.02%	n/a	n/a	4.77%	2.03%
Elimination period of 90 days	0.65%	-0.03%	n/a	n/a	n/a	n/a
Elimination period of 1 year	n/a	n/a	1.05%	0.16%	n/a	n/a
Elimination period of 3 years	n/a	n/a	0.74%	-0.14%	n/a	n/a
Elimination period of 2 years	n/a	n/a	n/a	n/a	3.31%	0.56%
Elimination period of 4 years	n/a	n/a	n/a	n/a	2.27%	-0.47%
Eligibility based on physician's medical assessment	0.77%	0.09%	n/a	n/a	n/a	n/a
Minimum age 55 for benefit eligibility	0.64%	-0.03%	n/a	n/a	n/a	n/a
Minimum age 65 for benefit eligibility	0.60%	-0.07%	n/a	n/a	n/a	n/a
Vesting requirement of 10 years with prorated benefits	0.76%	0.08%	n/a	n/a	n/a	n/a
Vesting requirement of 20 years with prorated benefits	0.66%	-0.02%	n/a	n/a	n/a	n/a
Tax on wages subject to Social Security cap	0.82%	0.14%	n/a	n/a	n/a	n/a
$25 monthly premium for individuals aged 65+	0.64%	-0.03%	n/a	n/a	n/a	n/a
Tax on all wages above 138% FPL	0.91%	0.23%	n/a	n/a	n/a	n/a
Tax on all wages above 300% FPL	1.42%	0.74%	n/a	n/a	n/a	n/a
Tax on all wages above 600% FPL	5.96%	5.29%	n/a	n/a	n/a	n/a
One-time exclusion for policyholders of private LTCI	0.69%	0.01%	n/a	n/a	n/a	n/a
Ongoing exclusion for self-employed workers	0.69%	0.01%	n/a	n/a	n/a	n/a
Full benefit portability - 25% participation scenario	1.03%	0.36%	n/a	n/a	n/a	n/a
Full benefit portability - 100% participation scenario	0.96%	0.28%	n/a	n/a	n/a	n/a
Shared spouse benefit	0.85%	0.17%	n/a	n/a	n/a	n/a
Pre-claim 50% death benefit	0.99%	0.31%	n/a	n/a	n/a	n/a
Beneficiary pays 10% coinsurance	0.67%	-0.01%	n/a	n/a	n/a	n/a
Beneficiary pays 25% coinsurance	0.66%	-0.02%	n/a	n/a	n/a	n/a
Beneficiary pays 10% coins, no monthly max	0.70%	0.02%	n/a	n/a	n/a	n/a
Beneficiary pays 25% coins, no monthly max	0.69%	0.01%	n/a	n/a	n/a	n/a
$7,500 cash provided during elimination period	n/a	n/a	0.93%	0.05%	2.80%	0.05%
$15,000 cash provided during elimination period	n/a	n/a	0.99%	0.10%	2.85%	0.10%

Exhibit 3
Massachusetts LTSS Feasibility Study
Required Payroll Tax Rates for Assumption Sensitivities

	Front-End		Back-End		Catastrophic	
	Tax Rate	Difference from Core Plan	Tax Rate	Difference from Core Plan	Tax Rate	Difference from Core Plan
Core Plan	**0.68%**		**0.88%**		**2.74%**	
Assumption Sensitivities						
Migration						
High net migration	0.66%	-0.02%	n/a	n/a	n/a	n/a
Low net migration	0.69%	0.02%	n/a	n/a	n/a	n/a
High in-migration	0.74%	0.07%	n/a	n/a	n/a	n/a
Low in-migration	0.54%	-0.14%	n/a	n/a	n/a	n/a
High out-migration	0.53%	-0.15%	n/a	n/a	n/a	n/a
Low out-migration	0.76%	0.08%	n/a	n/a	n/a	n/a
Mortality						
High mortality	0.65%	-0.02%	0.82%	-0.06%	2.37%	-0.37%
Low mortality	0.70%	0.02%	0.93%	0.05%	3.07%	0.32%
High active mortality	0.66%	-0.01%	0.86%	-0.02%	2.66%	-0.08%
Low active mortality	0.69%	0.01%	0.89%	0.00%	2.72%	-0.02%
High disabled mortality	0.67%	-0.01%	0.83%	-0.05%	2.39%	-0.35%
Low disabled mortality	0.69%	0.01%	0.92%	0.04%	3.03%	0.29%
No mortality improvement	0.62%	-0.05%	0.68%	-0.20%	1.58%	-1.16%
High mortality improvement	0.73%	0.05%	1.03%	0.15%	3.79%	1.05%
Low mortality improvement	0.63%	-0.05%	0.75%	-0.13%	2.03%	-0.72%
Vesting						
High vesting	0.72%	0.05%	n/a	n/a	n/a	n/a
Low vesting	0.62%	-0.06%	n/a	n/a	n/a	n/a
Births						
High births	0.62%	-0.05%	n/a	n/a	n/a	n/a
Low births	0.70%	0.02%	n/a	n/a	n/a	n/a
Wage Growth						
High wage growth	0.97%	0.30%	n/a	n/a	n/a	n/a
Low wage growth	0.43%	-0.24%	n/a	n/a	n/a	n/a
No grade-down of wage ratio	0.59%	-0.09%	n/a	n/a	n/a	n/a
Employment						
High employment	0.64%	-0.03%	n/a	n/a	n/a	n/a
Low employment	0.71%	0.04%	n/a	n/a	n/a	n/a
Investment rate						
Plus 100 basis points	0.57%	-0.10%	n/a	n/a	n/a	n/a
Minus 100 basis points	0.78%	0.11%	n/a	n/a	n/a	n/a
Incidence						
High incidence	0.72%	0.05%	n/a	n/a	n/a	n/a
Low incidence	0.62%	-0.06%	n/a	n/a	n/a	n/a
Utilization						
Immediate lifetime pool payout	0.77%	0.09%	n/a	n/a	n/a	n/a
Administrative expenses						
High administrative expenses	0.69%	0.01%	n/a	n/a	n/a	n/a
Low administrative expenses	0.66%	-0.01%	n/a	n/a	n/a	n/a
Combined sensitivities						
Combined positive scenario	0.42%	-0.26%	n/a	n/a	n/a	n/a
Combined adverse scenario	1.09%	0.42%	n/a	n/a	n/a	n/a

APPENDIX A

Current State of LTSS Financing in Massachusetts

APPENDIX A

Current Landscape of LTSS Financing in Massachusetts

OVERVIEW

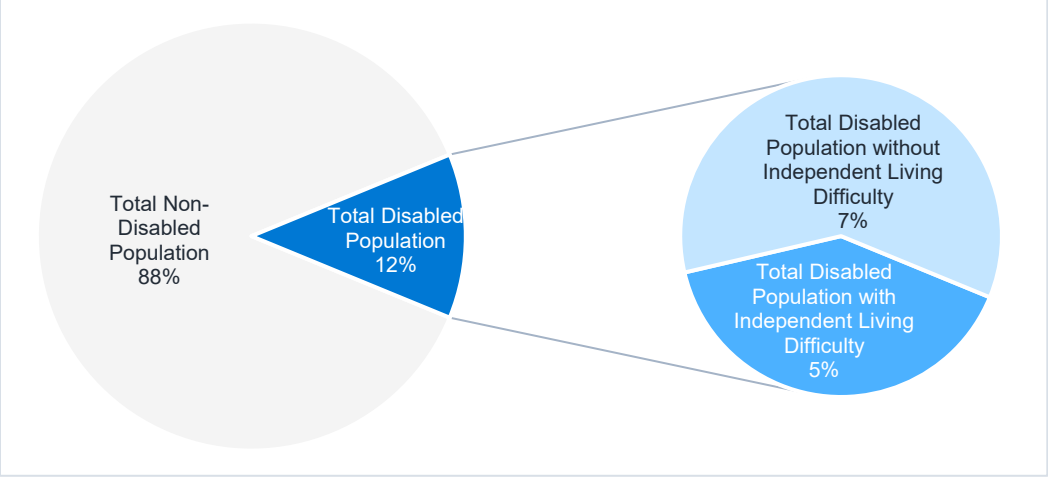
The Massachusetts Executive Office of Health and Human Services (EOHHS) is conducting a feasibility study regarding options to help Massachusettsans prepare to meet their long-term services and supports (LTSS) needs. Milliman was engaged by EOHHS as a contractor to perform this feasibility study. As part of this study, Milliman was tasked with providing a summary of the current state of LTSS financing in the Massachusetts.

DEMAND FOR LTSS

Many Americans turning age 65 today are projected to require LTSS during their remaining lifetime. Specifically, the Office of the Assistant Secretary for Planning and Evaluation (ASPE) and the Urban Institute estimate that 56%[1] of 65-year olds will need substantial assistance with two or more activities of daily living (ADL) or have severe cognitive impairment, consistent with the threshold set forth in the Health Insurance Portability and Accountability Act (HIPAA).[2] With a more expansive definition of LTSS need, the number of people with LTSS needs would be higher.

Analyzing public census data is one method to gauge the number of individuals in Massachusetts with potential LTSS needs. The American Community Survey (ACS)[3] shows that approximately 12% of Massachusetts' population had some form of disability in 2022. About 40% of the Massachusetts disabled population (5% of the total population) have independent living difficulty (Figure A-1). To the extent this population has independent living difficulties due to ADL limitations or cognitive impairment, we might expect many could be eligible for LTSS assistance under a HIPAA trigger.

FIGURE A-1: 2022 MASSACHUSETTS POPULATION BY DISABILITY STATUS



For a typical population, the need for LTSS increases sharply with age. As an example, in private LTC insurance data we observe that individuals in their 80s might be 10 to 30 times more likely to require care compared to individuals in their 50s. The sharp increase in LTSS needs as individuals age creates significant financial challenges as the U.S. aged population continues to grow. Over the next several decades, a larger percentage of the population will be at the

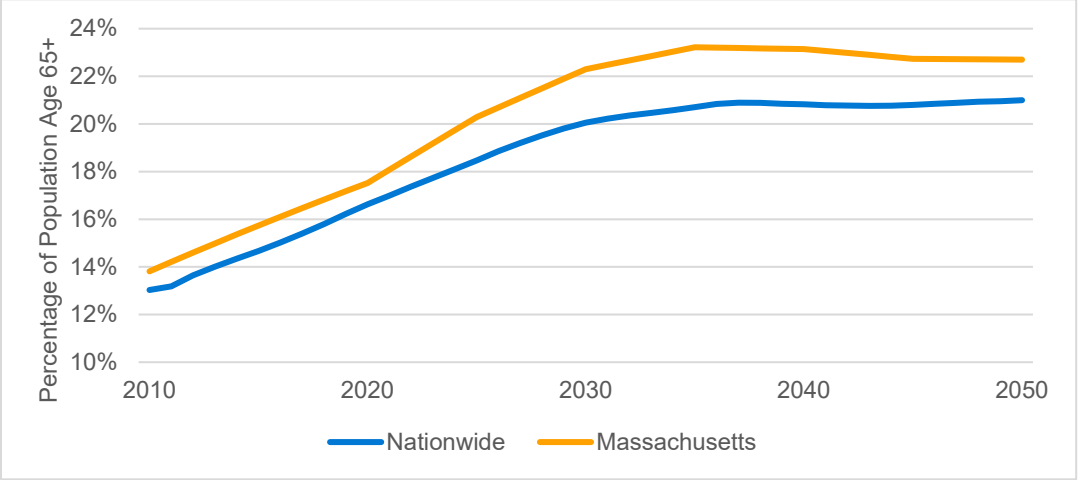
[1] R.W. Johnson & J. Dey. (2022). *Long-Term Care Services and Supports for Older Americans: Risks and Financing, 2022*. Washington, DC: U.S. Department of Health and Human Services, Office of the Assistant Secretary for Planning and Evaluation. Retrieved September 17, 2024 from https://aspe.hhs.gov/sites/default/files/documents/08b8b7825f7bc12d2c79261fd7641c88/ltss-risks-financing-2022.pdf.

[2] 26 U.S. Code § 7702B - Treatment of qualified long-term care insurance. (n.d.). Retrieved September 17, 2024, from https://www.law.cornell.edu/uscode/text/26/7702B.

[3] United States Census Bureau. American Community Survey. Retrieved September 23, 2024, from https://data.census.gov

ages when LTSS needs are greatest. The 2024 Old-Age, Survivors, and Disability Insurance (OASDI, i.e., Social Security) Trustees report projects that the percentage of the U.S. population over the age of 65 will exceed 20% by 2030.[4] Similarly, the University of Massachusetts Donahue Institute projects that the percentage of the Massachusettsans over age 65 will exceed 20% by 2025.[5] Both projections are illustrated in Figure A-2.

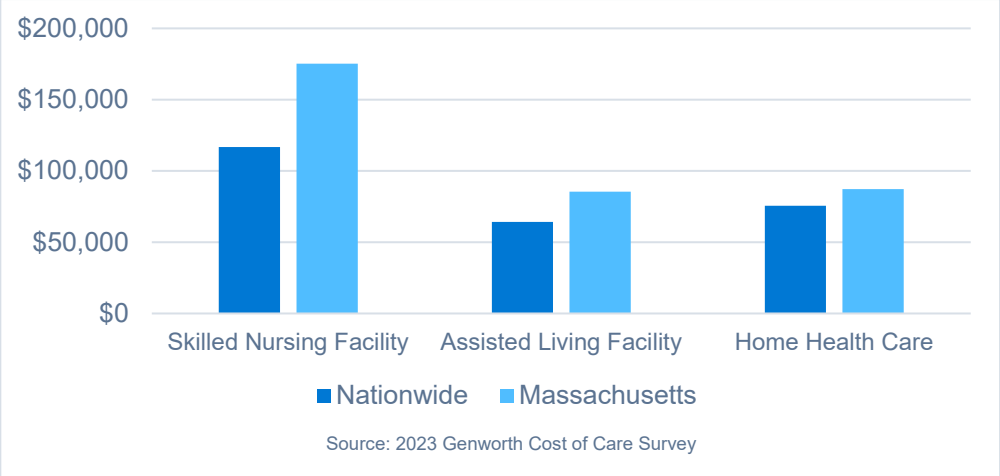
FIGURE A-2: PROJECTED PERCENTAGE OF POPULATION AGED 65+



COST OF LTSS

The average annual cost of LTSS can vary significantly by care setting and geographic setting. Figure A-3 shows the surveyed 2023 median daily cost of formal LTSS in three of the most common care settings nationally and in Massachusetts: skilled nursing facility (SNF), assisted living facility (ALF), and home health care (HHC). When diving deeper by geography in Massachusetts, the survey data shows that while some areas in Massachusetts have lower costs of care than the national average, most regions have average costs of care that exceed the national average.

FIGURE A-3: 2023 ESTIMATED ANNUAL MEDIAN COST OF LONG-TERM CARE



[4] The Board of Trustees of the Federal Old-Age and Survivors Insurance and Federal Disability Insurance Trust Funds (2024). The 2024 Annual Report of the Board of Trustees of the Federal OASDI Trust Funds. Retrieved June 12, 2024, from https://www.ssa.gov/OACT/TR/2024/

[5] University of Massachusetts Donahue Institute (2024). Demographics. Retrieved June 12, 2024, from https://donahue.umass.edu/business-groups/economic-public-policy-research/massachusetts-population-estimates-program/population-projections

While Figure A-3 focused on annual costs, most individuals require care for longer than one year, often driving total costs beyond the amounts shown in Figure A-3 over an individual's lifetime. Examining data for claims experience of the private insurance market,[6] Figure A-4 provides a sample distribution of the length of claim for individuals with a lifetime benefit period for someone who goes on claim at age 65. The distribution is estimated from data where need is defined as an individual qualifying for benefits under the HIPAA benefit trigger. Figure A-4 shows 46% of claims for females and 47% of claims for males lasting less than one year, while other claims span longer, especially for females where 23% of claims last six years or more.

Figure A-4
Massachusetts LTSS Feasibility Study
Sample LTC Claim Length of Stay by Year for an Individual Currently Age 65
Given Individual Requires Some LTC Needs

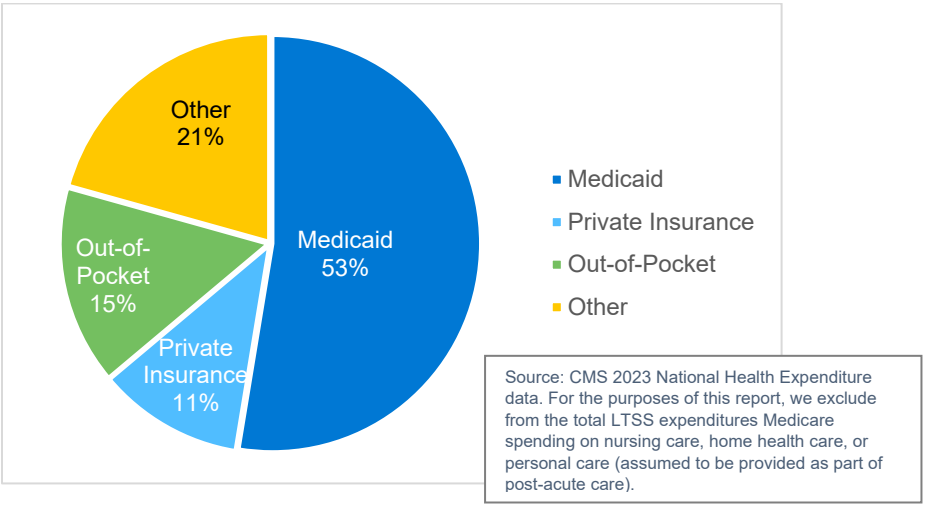
	< 1 Year	1-2 Years	2-3 Years	3-4 Years	4-5 Years	5-6 Years	> 6 Years
Female	46%	10%	7%	5%	5%	4%	23%
Male	47%	11%	8%	6%	5%	4%	18%

CURRENT LTSS PAYERS IN MASSACHUSETTS

In Massachusetts (and more generally, the United States), a number of payers contribute to the cost of LTSS, including Medicaid, the private insurance market, individual out-of-pocket spending, and other sources, such as other private or federal revenues, the Indian Health Service, workers' compensation, or general assistance.

Figure A-5 shows the percentage each payer contributes to total national spending on LTSS. The distribution of payers in Figure A-5 comes from the 2023 National Health Expenditure Accounts (NHEA) data produced by the Centers for Medicare and Medicaid Services (CMS).[7] Notably, Medicaid and individual out-of-pocket spending make up the majority of LTSS spending, accounting for nearly 70% of total LTSS expenditures. For the purposes of this report, we exclude from the total LTSS expenditures spending on nursing care, HHC, or personal care paid by Medicare because this spending is mostly for post-acute care.[7] Please note, NHEA data does not include private financing for home care and includes some post-acute care costs paid by Medicaid, which could result in overstated Medicaid costs and understated out-of-pocket costs. Research performed by the Urban Institute has indicated that out-of-pocket costs may exceed Medicaid costs for elderly LTSS spending.

FIGURE A-5: 2022 NATIONAL SPENDING FOR LTSS BY PAYER



[6] Tabulated from Milliman's 2020 Long-Term Care Guidelines, which are based on 900,000 claims and 63 million life years of exposure representing policies issued by 15 of the top 20 LTC insurers, measured by 2018 inforce policies.

[7] CMS. National Health Expenditure Data. Retrieved January 20, 2025, from https://www.cms.gov/Research-Statistics-Data-and-Systems/Statistics-Trends-and-Reports/NationalHealthExpendData/NationalHealthAccountsHistorical.

Medicaid

Medicaid LTSS benefits and programs

Medicaid is the primary payer of LTSS in the United States, covering approximately 53% of LTSS expenditures in 2023, as illustrated in Figure A-5. Medicaid is jointly funded by states and the federal government, but individuals may still incur out-of-pocket costs for these services. For Medicaid enrollees who meet medical necessity criteria, nursing facility services and home health state plan services are mandatory benefits.[8] States have the option to expand the availability of LTSS to include more home and community-based services (HCBS) through optional state-plan benefits or HCBS 1915 waivers.[9]

MassHealth, the Commonwealth of Massachusetts' Medicaid program, provides LTSS through a broad array of providers which include, but are not limited to, the following provider types:

- Community-Based LTSS: Personal Care Attendant Program, Home Health Agency, Adult Foster Care, Group Adult Foster Care, Adult Day Health, Continuous Skilled Nursing, Day Habilitation, Hospice Care, Durable Medical Equipment.
  - In SFY 2024, MassHealth spent approximately $2.4 billion on fee-for-service Community LTSS on approximately 83,000 average monthly utilizers.[10]
- Institutional LTSS: Nursing Homes, Chronic Disease Inpatient Rehabilitation, Chronic Disease Outpatient Rehabilitation.
  - In SFY 2024, MassHealth spent approximately $1.7 billion on fee-for-service Institutional LTSS on approximately 21,000 average monthly utilizers.

Additionally, members eligible for both Medicaid and Medicare benefits (dual-eligibles) may be eligible for integrated care programs offered by Massachusetts that include Medicaid-covered LTSS. The integrated care programs in Massachusetts are the Program of All-Inclusive Care for the Elderly (PACE), One Care, and Senior Care Options (SCO). In SFY 2024, MassHealth paid $3.3 billion in capitations for these three integrated care programs on approximately 127,000 average monthly members. While we are unable to directly assess what portion of the $3.3 billion in capitations was attributable specifically to LTSS spending, based on our experience with similar programs in other states, we estimate that a significant portion of the capitated expenditures would likely be attributable to LTSS costs or corresponding administrative expenses.

Eligibility for Medicaid LTSS

The populations that require LTSS – typically older adults and individuals with physical or intellectual/developmental disabilities – generally qualify for Medicaid either by receiving Supplemental Security Income (SSI) or through an aged, blind, or disabled (ABD) pathway. Individuals who are determined eligible for SSI are automatically approved for Medicaid and are eligible for LTSS if they meet the functional criteria. In addition, states have the option to extend Medicaid coverage to older adults and individuals with disabilities through other ABD pathways. Figure A-6 outlines the eligibility criteria for several of the ABD pathways and illustrates how Massachusetts covers the populations generally eligible for Medicaid using these pathways.[11]

[8] Medicaid. Retrieved January 27, 2025, from https://www.medicaid.gov/medicaid/benefits/mandatory-optional-medicaid-benefits/index.html

[9] CMS. Retrieved January 27, 2025, from https://www.cms.gov/training-education/partner-outreach-resources/american-indian-alaska-native/ltss-ta-center/information/state-medicaid-plans-and-waivers

[10] Estimates based on summarized LTSS and capitation data received from EOHHS on January 8, 2025.

[11] Musumeci, M., Watts, M. Ammulla, M., Burns, A. Medicaid Financial Eligibility in Pathways Based on Old Age or Disability in 2022: Findings from a 50-State Survey. Retrieved January 28, 2025 from https://www.kff.org/report-section/medicaid-financial-eligibility-in-pathways-based-on-old-age-or-disability-in-2022-findings-from-a-50-state-survey-issue-brief/.

FIGURE A-6: ABD ELIGIBILITY PATHWAYS, CRITERIA, AND MASSACHUSSETTS COVERAGE

ABD PATHWAY	CRITERIA	MASSACHUSSETTS
Poverty-Related	100% Federal Poverty Level (FPL).	Must be 65 or older, blind or disabled; have less than $2,000 in assets for an individual or $3,000 for a couple; have countable income less than 100% of FPL.
Katie Beckett	Children with disabilities under age 18 who live at home, meet the SSI definition of disability, require nursing facility care, and have child's income up to 300% federal benefit rate. Parents' income is disregarded.	Kaileigh Mulligan TEFRA waiver.
Buy-In	Working individuals with disabilities or working families who have children with a disability. Various income levels.	For Adults: working people with disabilities without an income or asset limit. For Children: Family Opportunity Act-like waiver without an enrollment cap or income limit.
Medically Needy	Individuals with high medical expenses, but too much income to otherwise qualify for Medicaid. Individuals eligible under this pathway do not have a maximum income limit but are required to share in the cost as described below.	Must be 65 or older, blind, or disabled; have less than $2,000 in assets for an individual or $3,000 for a couple.

In Massachusetts, an individual can become eligible for Medicaid through the Medically Needy pathway if they incur medical expenses (i.e., "spend down") to an amount that reduces their income to a specified medically needy income limit (MNIL). As of March 2024, the MNIL is $522 per month for an individual and $650 per month for a couple.[12] Once beneficiaries pay their share of cost, MassHealth covers the rest of their medical expenses for the month.

Private insurance market

Approximately 11% of national LTSS expenditures are financed through the private insurance market. Although long-term care is a risk with high frequency (as mentioned above, more than half of 65-year-olds will need formal long-term care in their lifetimes) and high severity (as seen in Figure A-3 above, median annual costs often exceed $100,000), the number of individuals with coverage remains low. In Massachusetts, 10% of the adult population age 60 and older owns a stand-alone private long-term care insurance policy as of 2023.[13]

One reason for the low prevalence of private long-term care insurance in the United States may be due to a lack of knowledge or understanding of the financial costs associated with LTSS. This can leave individuals unprepared to finance long-term care needs as they age. Additionally, the longer individuals wait to purchase a private long-term care policy, the higher the level of premium those individuals will need to pay to obtain coverage. In 2023, the average premium per new life rose to $3,342.[14] The cost of private insurance has also continued to increase over the past decade. Many private market insurance companies have filed for rate increases on groups or "classes" of policyholders because actual experience has been worse than anticipated compared with original pricing assumptions. The high price serves as a barrier for many individuals outside of the upper class wishing to obtain coverage, as illustrated in a 2016 study of private LTC insurance purchasers.[15] While approximately 36% of the general population 50 and older had incomes above $75,000, approximately 61% of LTC insurance purchasers surveyed had incomes above $75,000.

In addition to financial barriers, underwriting is used in the private market to align premiums with the underlying health risks of policyholders; therefore, individuals who apply for LTC policies are not guaranteed to be accepted for coverage.

[12] See: https://www.mass.gov/info-details/program-financial-guidelines-for-certain-masshealth-applicants-and-members#eligibility-figures-for-residents-of-a-long-term-care-facility

[13] Summarized from company-submitted financial annual statement: Long-Term Care Experience Reporting Form 5 (source: Aggregated data from SNL Financial: http://www.snl.com).

[14] Thau, C., Gaspar, N., & Giese, C. (July 14, 2024). 2024 Milliman Long Term Care Insurance Survey. Broker World. Retrieved September 24, 2024, from https://brokerworldmag.com/2024-milliman-long-term-care-insurance-survey/.

[15] LifePlans (January 2017). Who Buys Long-Term Care Insurance? Twenty-Five Years of Study of Buyers and Non-Buyers in 2015-2016. Retrieved September 24, 2024, from https://www.ahip.org/wp-content/uploads/2017/01/LifePlans_LTC_2016_1.5.17.pdf.

For those able to purchase LTC insurance, the majority of policies offer comprehensive benefits that reimburse costs of formal long-term care received in institutional or home care settings up to a benefit maximum. The private insurance market offers individuals a wide variety of benefit options including:

- Benefit period options (three years is the most common and coverage is typically structured as a "pool of money" derived from the benefit period duration times the daily benefit amount)
- Elimination period options (the period of time during which the policyholder has a qualifying degree of disability, but policy benefits are not paid—90 days is the most common)
- Inflation options (3% compound inflation is common, inflating both the "pool of money" and any daily or monthly benefit limits)
- Various levels of underwriting
- Premium discounts including marital, preferred, and worksite
- Coordination with governmental programs including Medicaid and Medicare

Individuals are typically eligible for benefits when they have severe cognitive impairment or require assistance with two of the six designated activities of daily living (ADLs)—bathing, dressing, eating, transferring, toileting, and continence—where the condition is expected to last at least 90 days. More information on the private LTC insurance market and typical attributes of private LTC insurance policies can be found in the Broker World 2024 Milliman Long Term Care Survey.[16]

While most long-term care insurance sales continue to decrease, "combination" policies (or policies that provide LTC insurance benefits combined with life insurance or annuity coverage) are growing in popularity. The Pension Protection Act of 2006 (PPA) opened the door for combination products featuring long-term care riders. The PPA clarified that charges for tax-qualified or non-qualified LTC riders on life policies are deemed distributions (retroactive to the enactment of HIPAA in 1996), but for tax-qualified riders those distributions beginning in 2010 will not be taxable, but rather will reduce the basis in the contract. The law also addresses non-qualified annuity contracts by stating LTC benefits paid are generally paid as tax-free LTC benefits. LTC payments from tax-qualified LTC riders on life insurance or annuity contracts are tax-free to the extent that they reimburse actual LTC expenses or are less than an annually adjusted per diem limit if paid on an indemnity basis. The market outlook for combination products is described as positive in a recent Contingencies article.[17]

Individual out-of-pocket spending

A significant portion of total LTSS costs is paid out-of-pocket by consumers.[18] Much of this cost comes from individuals whose income is too high to qualify for Medicaid, but who still cannot afford or qualify for private LTC insurance. Many of these individuals are not prepared to pay for the ultimate cost of long-term care and end up spending down their assets until they do qualify for Medicaid.

The individuals who exist in the insurance "gap" between Medicaid and private LTC insurance are often the focus of efforts to explore alternative financing solutions for LTC. After conversations with stakeholders in Massachusetts, it is clear this "middle-income" group is one of the main populations of focus as part of this feasibility study.

The cost allocated to individuals paying out-of-pocket does not include the cost to individuals who serve as informal caregivers to family and friends. Despite not being included in Figure A-4, the intergenerational cost to those providing informal care is often part of the conversation with regard to exploring alternative financing solutions.

Other sources

Other sources of funding for long-term services and supports include worksite healthcare, other private revenues, Indian Health Service, workers' compensation, general assistance, maternal and child health, vocational rehabilitation, other

[16] See https://brokerworldmag.com/2024-milliman-long-term-care-insurance-survey/.
[17] Friedrich, C. et al. Unlocking potential—new combination long-term care insurance solutions show promise. Contingencies. Retrieved September 24, 2024, from http://contingencies.org/unlocking-potential-new-combination-long-term-care-insurance-solutions-show-promise/.
[18] CMS, National Health Expenditure Data, op cit.

federal programs, Substance Abuse and Mental Health Services Administration (SAMHSA), other state and local programs, and school health.[19]

ADDITIONAL MASSACHUSETTS-SPECIFIC CONSIDERATIONS

There are Massachusetts-specific factors that should be considered in the context of developing LTSS financing solutions in the state. A few of these considerations are discussed below:

- **Paid family medical leave payroll deduction**

  The Task Order for this study prescribed that the public long-term care programs we model be funded through a payroll deduction.[20] For reference, we provide information about another Massachusetts program that is funded through a payroll tax – the state's Paid Family Medical Leave (PFML) Program. As of 2025, the PFML program charges a deduction of 0.88% on eligible wages, where the employee's maximum share is 0.46% and the remaining share (e.g., 0.42%) is covered by the employer.[21] Eligible wages are capped at the Social Security taxable minimum. The employer share is only mandated for employees with 25 or more covered individuals.

- **Home Care Program**

  Massachusetts' state-funded Home Care Program provides a variety of home care services, such as adult day health, chore services, home health services, respite care, transportation, and more.[22] Services are available to Massachusetts residents who are living at home and meet requirements related to age, residence, and ability to carry out daily tasks. While the program predominantly serves residents age 60+, some individuals under age 60 with early onset dementia are also eligible.

While there is no income-based eligibility requirement, cost sharing for the program is determined by income, per the following schedule:

Figure A-7
Massachusetts LTSS Feasibility Study
Home Care Program Cost Sharing[23]

Annual Gross Income	Co-Payment
< $15,460 for individuals < $20,820 for married couples	Voluntary $10 to $14 monthly
$15,461 to $34,733 for individuals	$10 to $141 per month
$20,821 to $49,145 for married couples	$14 to $199 per month
> $34,733 for individuals > $49,145 for married couples	50% to 100% of cost of services

** MassHealth Members whose income is below $33,948 (300% FBR) do not have a co-pay.*

Any new public program in Massachusetts, such as the public programs modeled in the body of our report, would need to consider coordination with and impact to the Home Care Program. At this stage, our actuarial modeling does not consider any potential impact from or on the Home Care Program.

[19] CMS, National Health Expenditure Data, op cit.
[20] MA Legislature (2024). Chapter 28 of the Acts of 2023. Retrieved on October 23, 2024 from https://malegislature.gov/Laws/SessionLaws/Acts/2023/Chapter28
[21] https://www.mass.gov/info-details/paid-family-and-medical-leave-employer-contribution-rates-and-calculator
[22] https://www.mass.gov/info-details/home-care-program
[23] https://www.mass.gov/info-details/cost-share-guidelines-for-home-care

APPENDIX B

Stakeholder Engagement

APPENDIX B

Stakeholder Engagement

OVERVIEW

The Massachusetts Executive Office of Health and Human Services (EOHHS) is conducting a feasibility study regarding options to help Massachusettsans prepare to meet their long-term services and supports (LTSS; may also be referred to as LTC, or long-term care) needs. Milliman was engaged by EOHHS as a contractor to perform this feasibility study, including conducting interviews with various stakeholders regarding LTSS financing in the context of three key areas:

- The state of current LTSS financing in the Commonwealth
- A potential LTSS public financing program in the Commonwealth
- Tax incentives or other alternatives to LTSS financing in the Commonwealth

This appendix provides a summary of stakeholder perspectives gathered and the methodology through which these insights were obtained.

Goals of stakeholder engagement

Engaging stakeholders is crucial to understand the landscape within Massachusetts, including the following:

- Current public and private payers of long-term care
- Long-term care provider activity
- Geographical considerations within the state
- Individuals' priorities and tradeoffs

Stakeholder engagement provides an opportunity for a broad spectrum of interested parties to make their voices heard regarding current challenges and potential financing solutions. In the context of this study, stakeholder discussions identified potential issues to address and policy objectives to consider as part of constructing benefit plan parameters for actuarial modeling.

Stakeholder identification

The stakeholders engaged for this study represent a wide variety of entities within Massachusetts, including government (legislative and executive), labor, business, consumers, providers, and care delivery. Stakeholders were identified by EOHHS and outreach to the stakeholders was performed by the Milliman team. Stakeholders included the following individuals and organizations who granted permission to be listed by name:

- American Association of Retired Persons (AARP Massachusetts)
- American Council of Life Insurers (ACLI)
- Associated Industries of Massachusetts (AIM)
- CareScout Insurance
- David Grabowski, Professor of Health Care Policy, Harvard Medical School
- Home Care Aide Council
- Jeff Reilly, LUTCF, an independent insurance agent
- LeadingAge Massachusetts
- Life Insurance Association of Massachusetts (LIAM)
- Mass Aging Access
- Massachusetts Business Roundtable (MBR)
- Massachusetts Division of Insurance

- Massachusetts Health Connector
- Massachusetts Senior Action Council
- Office of State Representative Thomas M. Stanley
- Office of State Senator Patricia D. Jehlen

Beyond those listed above, additional individuals and organizations participated in stakeholder sessions and discussions wished to not be listed by name. Please note, the perspectives and feedback shared by individual stakeholders do not represent an official view of the entities they represent. The perspectives and feedback are provided at a summarized level and should not be attributed to any specific stakeholder view.

Stakeholder identification process

We developed a discussion protocol with common elements surveyed across all stakeholder groups. The engagement process was divided into several rounds.

- Round 1: educational webinar
  - Stakeholders were invited to attend one of two large-group, seminar style presentations of one hour in length held virtually in August 2024. In this initial phase of stakeholder engagement, we introduced stakeholders to long-term care insurance programs, shared more details on the study steps, and provided information on how stakeholders could participate and have their voices heard.
- Round 2: small group / individual discussions on program goals and priorities
  - We held one-hour small group virtual discussions with stakeholders from August through December 2024. Some of these discussions included multiple individuals across different organizations, while other conversations contained multiple individuals all from one organization. The objective of these conversations was to identify individuals' goals and priorities for an LTSS financing solution, which informed the focus and parameters of the actuarial study.
  - Prior to the meetings, stakeholders were provided a pre-meeting survey and discussion guide. The pre-meeting survey asked participants to rank the principles for an LTSS financing solution in order of importance. The pre-meeting survey allowed us to start understanding stakeholders' priorities, and also required stakeholders to think concretely about LTSS financing solutions ahead of our discussions. The discussion guide contained background information related to the study and the current state of LTSS financing in Massachusetts. It also provided a list of all of the questions we hoped to cover in our stakeholder discussions.
  - During the one-hour small group discussions, we used the discussion guide to help facilitate the various topics and issues that would be discussed. While the protocol included some closed-category questions, it was largely exploratory and qualitative in nature, serving as a springboard for conversation and exploration on key topics. The team also encouraged stakeholders to raise issues that may not have been mentioned in the discussion guide.
  - We followed up these discussions with a post-meeting survey, where stakeholders were asked to review a grid of public program design parameters we intended to model and provide feedback. This gave stakeholders an additional opportunity to ensure their preferences were reflected in the actuarial modeling.
- Round 3: presentation of interim results
  - Stakeholders were invited to attend one of two large-group, seminar style presentations of one hour in length held virtually in November 2024. Milliman presented an update that included background on the study, a summary of stakeholder feedback received, and information on the public program modeling. The public program modeling information included a summary of the core program parameters, a list of the alternative designs being modeled, methodology and assumptions related to how a required payroll tax is calculated, and background on the Long-Term Care Actuarial Value (LTC AV) metric. Each session also included approximately 15 minutes of time allotted to answering questions or receiving feedback from stakeholders in attendance.

- Round 4: presentation of final results
  - We anticipate presenting final results to stakeholders in early 2025. This presentation will likely take the form of a virtual, large-group, seminar-style presentation. The presentation will walk through the key findings from our final report, as well as provide stakeholders an opportunity to ask questions.

KEY FINDINGS

This section summarizes the stakeholder feedback received during the round 2 small group discussions conducted in August through December 2024.

Challenges regarding LTSS financing today

Before considering potential solutions related to LTSS financing in Massachusetts, it is important to first understand the current state of LTSS financing in Massachusetts. We asked stakeholders to identify challenges with how LTSS is currently financed in Massachusetts. Many of the stakeholders focused on two key challenges:

- Stakeholders raised the issue of a lack of education surrounding LTSS needs and costs, which can lead to individuals not being prepared financially for this future burden. Stakeholders expressed that many individuals residing in Massachusetts are unaware of the costs and cannot afford or are not adequately prepared when LTSS are needed. Many stakeholders brought up the importance of educating individuals on the potential cost of LTSS so that they can be better prepared for when they may have to pay these costs. Many stakeholders pointed to a public social insurance program as a potential opportunity to increase awareness about the need for and cost of LTSS.
- Stakeholders identified a potential coverage "gap" between low and high income individuals. Many described how today LTSS coverage and financing options varies by the economic status of the individual, where lower income individuals are eligible for LTSS coverage through Medicaid (MassHealth) and many higher income individuals are able to purchase private LTC insurance policies or self-fund their LTSS needs. Many stakeholders expressed concern over the coverage gap for middle-income individuals who may not be served by Medicaid, nor can afford private LTCI or to fully self-fund their LTSS needs. Stakeholders described how individuals may end up spending down their assets to qualify for Medicaid or look to family and friends for additional funding or care options to avoid being on Medicaid. Stakeholders indicated this creates financial strain on the individual, as well as their families, leading to a multigenerational problem.

Considerations for a public program

Most of our conversations with stakeholders focused on discussing a potential state-based public LTSS program, as this is the focus of our actuarial modeling. While certain aspects of a state-based public LTSS program to be modeled were prescribed as part of the task order for this project (e.g., the modeled program is to be funded through a payroll deduction), many of the program parameters were not prescribed. We used these discussions, as well as conversations with EOHHS, to inform other modeling assumptions and specifications.

<u>General Program Design</u>

Figure B-1 below provides an overview of the three general insurance program designs to be modeled, as prescribed in the actuarial feasibility study task order, along with example benefit parameters. All else equal, plans with a shorter elimination period and shorter benefit period typically aim to provide limited benefits to a larger pool of beneficiaries, while plans with a longer elimination period and longer benefit period typically aim to provide more robust benefits to a smaller pool of beneficiaries. We asked stakeholders about their preferences between the three benefit designs presented in Figure B-1.

Figure B-1
Overview of Benefit Designs Described in Task Order
Examples of Benefit Definitions by Design Type

Benefit Design	Description	Elimination Period (EP)	Benefit Period (BP)
Front End	Shorter EP and Shorter BP	30 to 90 days	1 to 3 years
Back End	Longer EP and Longer BP	1 to 3 years	3 to 5 years
Catastrophic	Longer EP and Unlimited BP	2 to 4 years	Unlimited

Most stakeholders stated that they preferred a front-end benefit. They believed a back-end or catastrophic benefit may not adequately support middle-income individuals as they could have to primarily rely on their own assets during the elimination period before qualifying for program benefits.

Additionally, many stakeholders said it was important for the political feasibility of a potential program for the benefit to be available to as many people as possible. Since beneficiaries may not survive long enough to satisfy the longer elimination period associated with back-end or catastrophic designs, many stakeholders preferred a front-end benefit design that would be available to more people closer to the onset of their LTSS needs.

Alternatively, several stakeholders did favor a back-end design for a state-based public solution. These stakeholders cited the private LTCI market as a potential source for front-end coverage and the federal government as a potential source for catastrophic coverage (either in the form of Medicaid or a public program ala the proposed WISH Act).

While some stakeholders commented that an ideal LTSS program would cover all LTSS costs for all individuals, most stakeholders generally understood that providing a fully comprehensive benefit would come at a significant cost.

Participation and Eligibility

Stakeholders were asked various questions around participation and eligibility for a potential LTSS program. Specifically, stakeholders were asked if the program should be voluntary or mandatory and if any groups should have the ability to opt out of the program. Other questions surrounded benefit eligibility for non-working populations in addition to potential vesting requirements for the program.

There was general consensus among stakeholders that a LTSS program should be largely mandatory with the potential for some voluntary features. Many stakeholders were familiar with the CLASS Act and the challenges of addressing adverse selection, and therefore, felt that a fully voluntary program would likely not be a viable option.

A few stakeholders did want to consider opt-out privileges for certain limited subgroups, such as individuals who already have LTC coverage (such as a private LTCI policy) or individuals residing outside Massachusetts who work in the state. There were some preliminary discussions around the operational aspects of these opt-outs; however, everyone recognized that technical discussions will be needed down the line if opt-outs are considered for the LTSS program. In general, there was not a consensus regarding whether opt-out options should be part of the LTSS program.

Throughout the discussions, several stakeholders believed the new LTSS program should provide a pathway to receive benefits to both the aged and working disabled populations, non-working spouses, and individuals already in or near retirement. The concept of a vesting requirement (i.e., a requirement that an individual works and pays into the payroll tax program for a certain amount of time before being able to access program benefits) was explored in discussions. Such a requirement made sense to stakeholders conceptually, but there was not a clear consensus about how to structure it.

Revenue Source

An important element in modeling a LTSS program is the funding source to pay for the LTSS benefits. Stakeholders were asked various questions surrounding the funding source and potential alternative funding sources. Other questions surrounding a payroll tax included whether certain individuals should be excluded from the tax or if there should be a wage cap to the tax.

As prescribed by the feasibility study task order, the public programs we modeled are assumed to be funded through a payroll tax. Stakeholders generally agreed that a payroll tax made the most sense to fund these benefits, and stakeholders did not generally show interest in funding through premium payments. Many stakeholders indicated that some sort of subsidy for low-income individuals could make sense. Some stakeholder discussions considered whether the payroll tax should be assessed only on employees or shared between employers and employees. When discussed, many stakeholders felt that assessing the employee only made the most sense.

A payroll tax could be applied in numerous ways; for example, the program could implement a flat percentage applied to all wages, a progressive structure with a percentage that increases depending on the individual's wage, or a flat percentage applied to all wages up to a certain threshold (e.g., the Social Security threshold), among other methods. For ease of comparison across alternative benefit designs, stakeholders agreed a flat payroll tax generally makes sense to calculate and present as part of this study (save for a couple one-off designs in which other methods could be tested). In practice, some stakeholders believed a progressive tax might be more appropriate for a state-based LTSS

program. Stakeholders agreed that more detailed discussions regarding the revenue source should continue to take place.

Covered Services

We asked stakeholders to describe the services that should be covered under a public LTSS program. Many expressed the importance of covering certain services not covered under other insurance programs (such as Medicare). Others strongly advocated for benefits such as support for unpaid family caregivers. Although there was no overwhelming consensus, stakeholders generally expressed interest in covering services consistent with the services covered in the private market. Alternatively, others expressed interest in a home care only benefit, recognizing that many individuals may prefer to age in place (i.e., staying at home) for as long as possible, and that this could reduce costs for the program by avoiding covering more expensive care provided in facilities.

Under many private LTCI plans, costs for actual services incurred are usually reimbursed by the insurer up to a policy limit. However, another potential structure for disbursing benefits is to pay out a "cash" benefit (perhaps up to a daily or monthly limit) to individuals who trigger a qualified LTSS need but are not necessarily receiving covered services. On this topic, stakeholders expressed potential interest in at least a small cash benefit for limited services incurred toward the beginning of an individual's LTSS need, but generally favored a reimbursement style benefit overall (though, some did comment on the potential administrative burden of a reimbursement structure).

<u>Other Features</u>

- Variation of the Level of Benefits Offered
  - The potential to vary the total pool of money available to different populations was another topic that was raised during conversations with stakeholders. Some expressed interest in varying the benefit, either by severity of need or by income, but there was a broader consensus that a consistent benefit across all populations would be more feasible and more equitable.
- Portability
  - Portability refers to the ability of Massachusetts residents who pay the payroll tax the requisite number of years to remain covered if they move out of the state. A few stakeholders highlighted some of the operational challenges with including portability in a state program, such as how to track such individuals, or how to administer benefits to individuals living outside the state. Some stakeholders were interested in quantifying the financial impact of allowing a fully portable benefit while others mentioned the downside of administrative complexity could supersede the attractiveness of a such a program feature. Many stakeholders acknowledged that this is an interesting topic that should be considered further, but did not have an initial opinion on whether the benefit should be portable or how a portable benefit should be structured.
- Additional program features
  - Other benefit parameters were also raised with the objective of appealing to individuals in Massachusetts. Some of these parameters included:
    - A shared spousal benefit
    - A return of premium or death benefit if the LTSS benefit is not used
    - A coinsurance benefit design, such that the beneficiary shares in the risk
    - A limited front-end cash benefit in conjunction with a back-end or catastrophic reimbursement benefit design

Tax and other incentives

The actuarial feasibility study is also required to examine tax incentives and other incentives for the purchase of private LTC insurance. We solicited stakeholders' opinions on proposals from prior industry studies to incentivize individuals to financially prepare for a future LTSS (e.g., tax-deferred savings, catastrophic reinsurance, changing LTC legislation and regulation).

Many stakeholders brought up challenges associated with the private LTCI market when prompted to discuss tax incentives or other financing alternatives to a public program. Many stakeholders expressed concern over the difficulty individuals have when trying to understand LTCI policy features and the ability of insurers to deny coverage for certain

preexisting conditions. Many others also referenced a lack of understanding about the cost of LTSS as a reason why many individuals do not actively look into purchasing a private market policy.

Additionally, many stakeholders believed private market premiums were too expensive for many individuals (even with a tax incentive), especially for those who wait to purchase a policy until they are older, and many referenced premium rate increases, which have been a common occurrence for private market policies issued in the past. A public program paired with a robust private LTCI market was generally more appealing to many stakeholders as opposed to solely incentivizing private market purchasing. They cited a limited, mandatory public program paired with private LTCI as an option for additional coverage would better address the underserved gap of middle-income earners.

Other stakeholders mentioned the difficulty of selling private market LTCI policies and referenced combination products as an alternative to standalone LTC policies. Combination products, which often couple LTCI benefits with a life insurance benefit, were more appealing to stakeholders, as the "use it or lose it" aspect of standalone LTCI policies is negated when combining with some secondary benefit upon death or lapse.

Other incentives to encourage individuals and employers to prepare for future LTSS needs were also discussed. For example, an employer and / or individual mandate to purchase private LTCI was discussed (similar to the commercial health insurance mandate in Massachusetts). Although some stakeholders thought an employer mandate could be a source of encouraging individuals to plan for LTSS, most stakeholders believed such a mandate would receive significant pushback. Others also indicated employer contributions towards premium would be necessary for an employer mandate to be effective in getting individuals to purchase LTCI policies. Stakeholders also believed an individual mandate would be difficult to implement given the high premium associated with private LTCI policies, as well as the difficulty for individuals to conceptualize an insurance design for benefits that would not be paid out for years.

Stakeholders also discussed a few potential other incentives to encourage individuals to finance their future LTSS needs, such as the following:

- Setting up a funding vehicle similar to an IRA for the purpose of funding LTSS
- Generational rollover of unused benefits in the private market

Although many of these alternatives were discussed at a high level, some stakeholders mentioned that a public program would be preferable to any of these incentives. As noted above, others stressed the importance of a private-public partnership to address LTSS financing, including the consideration of the incentives discussed above.

CONCLUSION AND NEXT STEPS

Over the course of the interview process and subsequent follow-up discussions, we collected a significant amount of valuable feedback. We were pleased with the engagement from all the stakeholders who provided new and thoughtful insights into this complex issue. It is crucial to understand what issues are most important to the stakeholders in Massachusetts, as this will help inform the next steps after the feasibility study.

There are a variety of potential financing solutions related to LTSS. This was evident throughout the interviews as there was not a consensus around the desired structure of the potential new public LTSS program.

The stakeholder feedback was used to create a list of modeling alternatives for actuarial analysis. Many stakeholders expressed that the actuarial analysis would be most useful if it contained a wide variety of options and alternatives. In particular, the analysis should show sensitivity testing around the major parameters. Stakeholders also stated it would be helpful to see options across the spectrum, with both lean and rich parameters.

After the initial modeling of a potential public program was complete, our initial analysis was presented to stakeholders to get feedback on the potential structure, cost, and tradeoffs of the various benefit designs being tested. We used this information to help inform any additions or changes to our initial modeling approach that ultimately informed our final analysis.

After the publication of this report, we will present our key findings to stakeholders and answer any questions. Many stakeholders expressed a desire to continue working with the state on this issue beyond the completion of this actuarial study and recommended continued stakeholder engagement as the state explores LTSS financing solutions.

APPENDIX C

Financial Impact to Medicaid Program

APPENDIX C

Financial Impact to Medicaid Program

OVERVIEW

The Massachusetts Executive Office of Health and Human Services (EOHHS) is conducting a feasibility study regarding options to help Massachusettsans prepare to meet their long-term services and supports (LTSS; may also be referred to as LTC, or long-term care) needs. Milliman was engaged by EOHHS as a contractor to perform this feasibility study, including the required modeling and actuarial analysis. In accordance with the Task Order requirements, this appendix provides the results of our analysis on the potential financial impact of a LTSS program on the Medicaid program, MassHealth.

BACKGROUND

Medicaid is the primary payer of LTSS in the United States. As of 2023, approximately 53% of LTSS expenditures were paid for by Medicaid.[1] The Medicaid program in Massachusetts, MassHealth, covers LTSS services for more than 2 million eligible recipients as of June 2024. Between July 2023 and June 2024, MassHealth recipients incurred between $7 billion and $8 billion in LTSS expenditures, including both institutional care and home and community based services (HCBS).

Medicaid is generally the payer of last resort for healthcare services. This means that other payers (e.g., Medicare or private LTC insurance) must pay for medical and LTSS costs incurred prior to Medicaid. If Massachusetts creates a new LTSS program, the new program may be subject to the same rules (i.e., it may be required to provide LTSS coverage before Medicaid would pay, similar to other non-Medicaid payers). In other words, for an individual dually eligible for the new LTSS program and Medicaid, the Medicaid program would only step in if the new LTSS program's monthly benefit limit did not cover the total cost of the LTSS services incurred and if the individual was unable to cover the remaining cost out-of-pocket. If the new LTSS program were to cover some of these costs, then Medicaid expenditures may be reduced as a result.

Because Medicaid is jointly funded by states and the federal government, if total Medicaid expenditures are reduced as a result of a new public LTSS program, then both the state and federal responsibility for those expenditures would be reduced. For this analysis, we examined the percentage of total Medicaid LTSS expenditures (i.e., including both state and federal responsibility) that could potentially be reduced as a result of the introduction of a new LTSS program funded through a payroll tax. For this analysis, we assume a 50% split between the state and federal share of Medicaid expenditures, consistent with a 50% Federal Medical Assistance Percentage (FMAP) as reported for Massachusetts for FY 2026.[2]

Medicaid savings may be generated because some individuals who must spend down their assets in order to become Medicaid eligible) will have their enrollment into Medicaid (and / or their assets spend-down) deferred due to the availability of other coverage (such as the potential LTSS program analyzed in this feasibility study). While the Medicaid savings in Figure C-1 only consider savings to LTSS Medicaid expenditures, non-LTSS (i.e., acute) Medicaid expenditures may also be reduced due to deferred enrollment into Medicaid.

KEY RESULTS

We present estimated savings to MassHealth as a percentage of total Medicaid LTSS expenditures for each of the Core Plans, which are described in Section III of the main body of this report. Across all Core Plans, we estimate between 5% and 45% savings as a percentage of total Medicaid LTSS expenditures across the 75-year projection horizon (including both the state and federal share). Note, the program feasibility analysis presented in the main body

[1] CMS. National Health Expenditure Data. Retrieved January 20, 2025, from https://www.cms.gov/Research-Statistics-Data-and-Systems/Statistics-Trends-and-Reports/NationalHealthExpendData/NationalHealthAccountsHistorical.

[2] Kaiser Family Foundation. Federal Medical Assistance Percentage (FMAP) for Medicaid and Multiplier. Retrieved January 20, 2025, from https://www.kff.org/medicaid/state-indicator/federal-matching-rate-and-multiplier/?currentTimeframe=0&sortModel=%7B%22colId%22:%22Location%22,%22sort%22:%22asc%22%7D

of this report assumes the program is entirely funded by the payroll tax and does not assume any Medicaid savings are funneled back into the program as revenue. See Figure C-1 below for details.

Figure C-1
Massachusetts LTSS Feasibility Study
Potential Medicaid Savings for Core Plans

		Front-End	Back-End	Catastrophic
Total benefit[1]		$75,000	$150,000	Unlimited
Elimination period		30 days	2 years	3 years
Potential savings as a percentage of Total Medicaid LTSS expenditures	State share	1% to 10%	1% to 15%	10% to 25%
	Federal share	1% to 10%	1% to 15%	10% to 25%
	Total	5% to 20%	5% to 25%	20% to 45%

[1] *As of 2026 and indexed at 3.0% thereafter.*

The level of estimated savings will vary over the course of the projection horizon. Once individuals start becoming fully vested under the Core Plans in 2036, savings to MassHealth would start low and grow over time as more individuals become benefit eligible under the potential LTSS program.

Note, the Medicaid savings presented here are theoretical and may require additional operationalization in order to be realized. Current Medicaid enrollees will likely require assistance through new state programs in order to obtain their LTSS program benefit. If Medicaid enrollees do not obtain their LTSS program benefit, Medicaid expenditures are unlikely to be affected, and savings will not accrue. For people who enroll in Medicaid concurrent with their LTSS need, the Medicaid enrollment process will need to ensure that people have exhausted their LTSS program benefit.

METHODOLOGY AND ASSUMPTIONS

We did not perform detailed modeling of savings from the Core Plans as certain data elements were unavailable at the time of this report. To develop the values in Figure C-1, we performed a high-level review of MassHealth benefits and completed a detailed comparison of key Massachusetts Core Plan features to designs analyzed under other state feasibility studies we completed (with a focus on front-end plan types). Based on our review, we estimate the Front-End plan could produce savings of 5% to 20% of Medicaid LTSS expenditures. To generate potential savings ranges for the Back-End and Catastrophic plans, we assumed Medicaid savings would be roughly proportional to the ratios from the Front-End plan of expected benefits covered by the program (i.e., ratios from the Front-End plan of Long-Term Care Actuarial Value, described in Section V of the main body of this report).

We modeled the estimated split between the state and federal share of savings using an assumption of 50% (consistent with the Massachusetts FMAP) for illustration. The actual state share may be lower due to the presence of enhanced federal financial participation for the Medicaid expansion population.

CONSIDERATIONS

The estimates presented in Figure C-1 assume all individuals will utilize the potential LTSS program before utilizing Medicaid. To the extent Medicaid-eligible individuals are not required to use the new LTSS program first, the potential savings would be lower. Also, our estimates do not account for any increased use of services as a result of increased awareness of LTSS coverage that might occur with a potential LTSS program.

Additionally, capturing the federal portion of Medicaid savings will require coordination with the Centers for Medicare and Medicaid Services (CMS). The state would need to demonstrate the savings generated by the LTSS program to CMS, and likely also go through a Medicaid waiver approval process in order to recoup those savings.

Potential Medicaid savings will be highly dependent on final LTSS benefit program parameters and the operational processes employed to ensure state and federal Medicaid savings are realized. Once more information is available regarding these considerations, calculations will need to be refined to better reflect the actual characteristics of the LTSS program. The estimates in this Appendix were designed to provide initial, high-level background to help understand the potential magnitude of savings and how savings may vary across the Core Plans.

Through our stakeholder engagement process (described in Appendix B of this report), stakeholders acknowledged the potential benefit of Medicaid savings, but most did not identify these savings as a primary objective of a potential LTSS program. Nonetheless, if generating savings to MassHealth becomes an important goal of the potential program, precision in the estimates as presented above, as well as projected savings by year, will become more relevant.

APPENDIX D

Private Market Incentives

APPENDIX D

Private Market Incentives

OVERVIEW

The Massachusetts Executive Office of Health and Human Services (EOHHS) is conducting a feasibility study regarding options to help Massachusettsans prepare to meet their long-term services and supports (LTSS; may also be referred to as LTC, or long-term care) needs. Milliman was engaged by EOHHS as a contractor to perform this feasibility study, including qualitative analysis of tax alternatives and other incentives for the purchase of private long-term care insurance (LTCI). This appendix serves as a high-level review of private market incentives in response to the Task Order requirement, covering the following information.

- **Stakeholder feedback.** We summarize feedback from the stakeholder engagement process, including discussions on tax alternatives and incentives for private LTCI, challenges in the private LTCI market, and preferences for public programs or private-public partnerships to address LTSS financing.
- **Potential solutions.** We describe potential tax alternatives or other incentives for purchasing private LTCI, including solutions explored in industry studies, legislation proposed in Massachusetts, and other ideas.
- **Current challenges facing LTCI sales.** This section addresses the current challenges facing long-term care insurance (LTCI) sales (such as income, perceived need, risk aversion, and awareness), and discusses the potential impact of market incentives on increasing LTCI participation.
- **Holistic view of LTC financing.** We discuss the complexity of financing long-term services and supports (LTSS) and explore the need for a multifaceted approach that integrates private market solutions, state-based programs, and other initiatives to create a sustainable and comprehensive LTSS financing system for Massachusetts.

STAKEHOLDER FEEDBACK

During our stakeholder engagement process, we solicited opinions from stakeholders on potential tax alternatives or other incentives to encourage the selling and purchasing of private LTCI. Some stakeholders provided opinions on proposals like tax-deferred / tax-advantaged savings and catastrophic reinsurance, but many stakeholders focused on highlighting their perception of challenges in the private LTCI market, such as difficulty understanding policy features, insurers denying coverage for preexisting conditions (i.e., underwriting), and a lack of awareness about LTSS costs. They also noted, that private market premiums are often too expensive, especially for older individuals, and have been subject to frequent premium rate increases. Many stakeholders preferred a public program paired with a robust private LTCI market to better serve middle-income earners.

Some stakeholders also discussed the difficulty of selling private LTCI policies and suggested combination products, which combine LTCI benefits with life insurance, as a more appealing alternative. Other incentives, such as employer or individual mandates to purchase private LTCI, were considered, but most stakeholders believed these would face significant pushback. Additional incentives like setting up funding vehicles similar to IRAs or generational rollover of unused benefits were also discussed, but many stakeholders preferred a public program or a private-public partnership to address LTSS financing.

POTENTIAL INCENTIVES

Incentives aim to make LTC insurance more accessible, affordable, and appealing to consumers while also ensuring that the market remains stable and competitive. Below, we outline some potential incentive ideas put forth through formal studies, legislation, or other industry publications.

Society of Actuaries study

Over the years, industry studies have examined ways to incentivize individuals to financially prepare for a future LTSS need. For example, a 2014 Society of Actuaries (SOA) think tank study[1] explored several avenues, including the following:

- **LTC savings program:** Mandatory savings account to save for LTC or LTC insurance (LTCI).
- **High-deductible health plan (HDHP):** Back-end LTC insurance plan that would provide catastrophic coverage after a waiting period of one to three years.
- **Short-term care:** Front-end LTC insurance plan that would provide limited coverage during the first one to two years of an LTC event.
- **Medicare LTC:** Federal LTC program that would borrow Medicare's structure, where Part A would provide basic benefits and Parts B to F would provide supplemental coverage for extra premium.
- **Mutual LTC:** Noncancelable LTC insurance plan where premiums are fixed and benefits are subject to available funds.
- **Tax-deferred savings:** Tax reform to allow tax-deferred personal savings accounts, similar to IRAs or 401(k)s, that could be used to purchase LTC insurance or pay for LTC expenses.
- **Government reinsurance programs:** Establish government-backed reinsurance to cover catastrophic LTC costs.
- **Medicaid tightening:** Restriction on Medicaid eligibility to make it harder for individuals with significant assets to gain coverage.
- **Medicaid modernization:** Enabling Medicaid to pay for care in a larger range of settings, including home and community-based settings.
- **Changing LTC legislation and regulations:** Changes to National Association of Insurance Commissioners (NAIC) Model Act to provide more flexibility for LTC benefits.
- **Improving the way LTCI is marketed and sold:** Increased education about the risks of LTC need.

More information on the ideas from the 2014 SOA think tank can be found at:
https://www.soa.org/resources/research-reports/2014/research-2014-ltp-ltc/.

Proposals and programs in Massachusetts

In recent years, several bills have been proposed to create tax credits for individuals purchasing LTCI. These legislative efforts aim to make LTCI more affordable and attractive to residents. One notable example is Massachusetts House Bill H.3020,[2] introduced in the 2021-2022 legislative session. This bill proposed a tax credit for premiums paid on LTCI policies. Although the bill did not pass, it highlighted ongoing interest and support for tax incentives as a means to encourage LTCI uptake.

Separately, Massachusetts offers a "protection of home" benefit that allows individuals who purchase qualifying LTCI policies to protect their primary residence from being counted as an asset when determining eligibility for Medicaid.[3] This benefit provides a significant incentive for individuals to invest in LTCI, as it helps safeguard their home from potential estate recovery efforts. During stakeholder discussions, several individuals praised this benefit but questioned the effectiveness of other incentives, noting that despite its significance, it has not substantially increased the purchase of private LTCI.

[1] Society of Actuaries (2014). Land This Plane: A Delphi Research Study of Long-Term Care Financing Solutions. Retrieved October 23, 2024 from https://www.soa.org/49386c/globalassets/assets/files/research/projects/research-2014-ltp-ltc-report.pdf

[2] Massachusetts Legislature (2021). An Act Relative to Long Term Care Insurance Tax Credit. Retrieved October 23, 2024 from https://malegislature.gov/Bills/192/H3020.

[3] Massachusetts Legislature (2025). Title XVII, Section 33 of the General Laws of Massachusetts. Retrieved October 23, 2024 from https://malegislature.gov/Laws/GeneralLaws/PartI/TitleXVII/Chapter118E/Section33.

CURRENT CHALLENGES FACING LTCI SALES

To be successful, any incentive aimed at increasing LTCI participation must address the challenges raised by stakeholders regarding the private LTCI market, which influence individuals' current purchasing decisions.

To gain a deeper understanding of what influences individuals' LTCI purchasing decision, we can refer to the survey conducted by AHIP titled "Who Buys Long-Term Care Insurance?"[4] The survey highlights several key factors that differentiate buyers from non-buyers:

- *Income and assets:* Individuals who purchase LTCI have higher incomes and assets than non-buyers and the general population. In 2023, the average premium per new life rose to $3,342.[5] This amount is cost-prohibitive for many consumers. Additionally, individuals who purchase LTCI tend to be more proactive in their financial planning than non-buyers.
- *Perceived need and risk aversion:* Non-buyers often do not recognize a high likelihood of needing long-term care services in the future, unlike buyers. Beyond that, buyers generally exhibit a higher level of risk aversion, leading them to seek out insurance to mitigate potential future costs.
- *Awareness and education:* Lack of awareness and insufficient knowledge about LTCI and its benefits significantly impact purchasing decisions, with non-buyers often being less informed about the risks of long-term care and the protection that LTCI offers.

These insights suggest that efforts to increase awareness, provide education on the risks of long-term care, and highlight the benefits of LTCI could potentially "move the needle" and encourage more individuals to purchase policies.

Understanding these barriers to LTCI purchases provides context to the penetration rate of LTCI, which remains relatively low relative to other insurance products. In Massachusetts, 10% of the adult population age 60 and older owns a stand-alone private long-term care insurance policy as of 2023.[6] This figure is slightly higher than the nationwide rate of 8%. Given this context, it is important to consider the relative impact of private market incentives on the overall landscape of long-term services and supports (LTSS) financing in the state. Even if an incentive were successful in increasing LTCI purchases, it might result in only a small impact on the general population. For instance, a 25% increase in LTCI sales (which would be a significant increase) might only raise the percentage of individuals insuring their LTC need from 10% to 12.5%.

A HOLISTIC VIEW OF LONG-TERM CARE FINANCING

The challenge of financing LTSS is a complex issue that cannot be effectively addressed by any single payer alone. The magnitude of the problem likely necessitates a multifaceted approach that leverages the strengths of the private market, state-based programs, and other initiatives. This section explores the potential for a holistic solution that integrates these various components to create a sustainable and comprehensive LTSS financing system for Massachusetts.

Potential inadequacy of single solutions

The high costs associated with LTSS, coupled with the aging population, demand a solution that draws on the collective resources and expertise of multiple sectors. Relying solely on the private market, for instance, would place an undue financial burden on individuals and could leave many without adequate coverage. Similarly, it is possible for a purely public program to face funding or political challenges and may not be able to provide the comprehensive benefits needed by all citizens. This can be illustrated further by Section V of the main body of this report on LTC Actuarial Value. This section demonstrates that a balance is required between the level of benefits covered by the program and the palatability of the payroll tax rate used to fund the program.

[4] AHIP (2017). Who Buys Long-Term Care Insurance? Retrieved October 23, 2024 from https://www.ahip.org/resources/who-buys-long-term-care-insurance

[5] Thau, C., Gaspar, N., & Giese, C. (July 14, 2024). 2024 Milliman Long Term Care Insurance Survey. Broker World. Retrieved September 24, 2024, from https://brokerworldmag.com/2024-milliman-long-term-care-insurance-survey/.

[6] Summarized from company-submitted financial annual statement: Long-Term Care Experience Reporting Form 5 (source: Aggregated data from SNL Financial: http://www.snl.com).

Coordinating public and private programs

When designing a public LTSS program, it is crucial to consider synergies with the private market. One example of such synergy is the benefit eligibility criteria, which determine when an individual becomes eligible for benefits. Aligning the benefit eligibility criteria of public and private plans can facilitate smoother transitions and reduce administrative complexity. The state of Washington provides a practical example with its WA Cares Fund. Washington has established a workgroup to develop private market plans that complement the WA Cares Fund, with a goal that individuals have access to both public and private options that work together seamlessly.

Another example of a coordinated public-private partnership solution is the Well-Being Insurance for Seniors to be at Home (WISH) Act have been proposed to address the LTC financing gap. The WISH Act aims to create a public-private partnership that provides catastrophic LTC coverage after a waiting period, during which individuals would rely on private insurance or personal savings.

Finally, if a public LTSS plan includes an option for individuals to opt out in favor of private market plans, it is essential to coordinate the administration and implementation of both sectors. This coordination is necessary to avoid adverse effects on the public program, the private market, and consumers. For instance, ensuring that private plans meet certain standards and provide comparable benefits can prevent a scenario where individuals opt out of the public program only to find themselves underinsured. Additionally, clear communication and collaboration between public and private entities can help streamline processes and reduce confusion for consumers.

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