

Presentation #2.B

# AB 567 ACTUARIAL ANALYSIS

*Initial actuarial assumption data sources, variances, and methodologies*

*The information contained in this document is preliminary and intended for discussion with the AB 567 Actuarial Subcommittee only. The data sources, variances, and methodologies referenced in this document are subject to change.*

April 2023

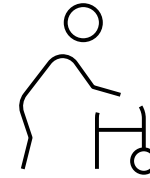
# **QUALIFICATIONS, ASSUMPTIONS AND LIMITING CONDITIONS**

Oliver Wyman was commissioned by the California Department of Insurance (CDI) to provide support associated with assessing the feasibility of developing and implementing a culturally competent statewide insurance program for long-term care services and supports. The primary audience for this report includes stakeholders from the California Department of Insurance, members of the Long-Term Care Insurance Task Force, and members of the general public within the state of California.

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# ASSUMPTION DEFINITIONS



## 1

### Actuarial assumption<sup>1</sup>

- An estimate of an uncertain variable used in a financial model, normally for the purposes of calculating premiums or benefits
- Actuarial assumptions often involve mathematical and statistical models designed to evaluate risk and probabilities for a particular event

## 2

### Mortality

- Probability that an individual will die
- Assumed to differ for individuals that are healthy (“active”) versus disabled<sup>2</sup> (“on claim”)

## 3

### Morbidity

- Comprised of three primary components:
- **Incidence:** probability that a healthy individual will become disabled<sup>2</sup>
  - **Recovery:** probability that a disabled<sup>2</sup> individual will become healthy
  - **Benefit utilization:** amount of Program benefits used by a disabled individual relative to maximum amount allowable

1. <https://www.investopedia.com/terms/a/actuarial-assumption.asp>

2. For the purpose of our assumptions, an individual is assumed to be disabled once they meet the Program’s benefit eligibility criteria, regardless of their vesting status; however, Program benefits are only paid to vested individuals. To be eligible for Program benefits, individuals must be certified by a licensed health care practitioner as (i) being unable to perform (without substantial assistance from another individual) at least 2 Activities of Daily Living (“ADLs”) for a period of at least 90 days due a loss of functional capacity or (ii) requiring substantial supervision to protect such individual from threats to health and safety due to severe cognitive impairment. The six standard ADLs include bathing, dressing, toileting, transferring, continence, and eating

# ACTUARIAL ASSUMPTIONS: DATA METHODOLOGY

## General considerations

- Assumption variance is based on data availability and was intentionally restricted in certain instances to reduce implied specificity
- Pre-COVID experience is used to develop assumptions; recent LTC experience is trending back to pre-COVID levels, so no COVID adjustments are applied<sup>1</sup>
- Where LTC insured data is used for assumption development, adjustments will be applied to calibrate assumptions for the California population that will be part of the Program

## Potential differences between LTC insureds and Program participants

LTC insured data attributes	Description	Assumptions impacted [DRAFT]	Data sources [DRAFT]
<b>Inherent anti-selection</b>	<ul style="list-style-type: none"> <li>• Individuals who purchase private LTC insurance may have a higher expectation of needing care in the future (i.e., worse long-term health)</li> <li>• Program participation is mandatory (vs. voluntary), which may limit inherent anti-selection</li> </ul>	<ul style="list-style-type: none"> <li>• Claim incidence</li> <li>• Active mortality<sup>2</sup></li> <li>• On-claim mortality<sup>3</sup></li> </ul>	<ul style="list-style-type: none"> <li>• The following information will be used to calibrate LTC insured-based assumptions to Program participants:                             <ul style="list-style-type: none"> <li>– General population studies for:                                     <ul style="list-style-type: none"> <li>- Morbidity prevalence</li> <li>- Mortality by income level</li> </ul> </li> <li>– Group LTC insured experience</li> </ul> </li> </ul>
<b>Higher-income population</b>	<ul style="list-style-type: none"> <li>• Individuals who purchase private LTC insurance may be more affluent than the general population                             <ul style="list-style-type: none"> <li>– Affluency may be correlated with increased longevity and improved health</li> </ul> </li> <li>• Program participants will represent a wide range of wage/income levels</li> </ul>	<ul style="list-style-type: none"> <li>• Claim incidence</li> <li>• Active mortality<sup>2</sup></li> <li>• On-claim mortality<sup>3</sup></li> </ul>	
<b>Healthier (at policy inception)</b>	<ul style="list-style-type: none"> <li>• Most individuals with private LTC insurance were subject to underwriting                             <ul style="list-style-type: none"> <li>– Underwriting effects may wear off over time</li> </ul> </li> <li>• Program participants are not subject to underwriting, but vesting criteria requires individuals to be actively at work</li> </ul>	<ul style="list-style-type: none"> <li>• Claim incidence</li> <li>• Active mortality<sup>2</sup></li> <li>• On-claim mortality<sup>3</sup></li> </ul>	
<b>Primarily using formal services</b>	<ul style="list-style-type: none"> <li>• LTC insured data is materially comprised of formal care (vs. informal care)</li> <li>• Program benefits can be used for both formal and informal care (subject to training requirements)</li> </ul>	<ul style="list-style-type: none"> <li>• Claim incidence</li> <li>• Benefit utilization<sup>4</sup></li> </ul>	

1. Short-term effects of the pandemic are believed to be worn off or immaterial to Program projections; while there could be long-term COVID impacts, we still do not have enough data to support assumption adjustments

2. Active mortality impact inherently captured through assumption development methodology, which relies on California total population mortality

3. As a simplification, no adjustment applied to on-claim mortality (see page 8 for additional detail)

4. Utilization impact subject to Program informal caregiver reimbursement approach, which is yet to be determined

# ACTUARIAL ASSUMPTIONS: MORTALITY

Component	Variability [DRAFT]	Data sources [DRAFT]	Methodology [DRAFT]
<b>1 California total mortality</b>	<ul style="list-style-type: none"> <li>Sex (male, female)</li> <li>Age (from 0 to 120)</li> </ul>	<ul style="list-style-type: none"> <li>Centers for Disease Control and Prevention <a href="#">2018 California life tables</a></li> <li>California’s Department of Finance</li> </ul>	<ul style="list-style-type: none"> <li>To assess reasonableness, projected lives by calendar year will be compared to projections provided by California Department of Finance</li> </ul>
<b>2 On-claim mortality</b>	<ul style="list-style-type: none"> <li>Sex (male, female)</li> <li>Claim age (from 0 to 120)</li> <li>Claim duration (time since claim start)</li> <li>Care setting (home care, residential care facility (“RCF”), skilled nursing facility (“SNF”))</li> <li>Program design option<sup>1</sup></li> </ul>	<ul style="list-style-type: none"> <li>Oliver Wyman’s proprietary LTC intercompany experience data</li> <li>SOA intercompany experience data</li> </ul>	<ul style="list-style-type: none"> <li>Experience study of LTC on-claim deaths from 2010-2019 for policyholders with similar attributes to recommended Program designs (e.g., limited benefits)</li> <li>Benchmarked against SOA intercompany experience</li> </ul>
<b>3 Active mortality</b>	<ul style="list-style-type: none"> <li>Sex (male, female)</li> <li>Age (from 0 to 120)</li> <li>Program design option<sup>1</sup></li> </ul>	<ul style="list-style-type: none"> <li>Oliver Wyman’s proprietary LTC intercompany experience data</li> <li>Society of Actuaries (“SOA”) and LIMRA LTC Policy Termination Study, 2000-2016</li> <li>SOA 2012 Individual Annuity Mortality (“IAM”) table<sup>2</sup></li> </ul>	<ul style="list-style-type: none"> <li>Developed based on differential between California total mortality rates and Oliver Wyman’s assumption for on-claim mortality rates</li> <li>To assess reasonableness, active mortality rates will be benchmarked against SOA/LIMRA LTC Policy Termination Study data and SOA 2012 IAM table rates</li> </ul>
<b>4 Mortality improvement</b>	<ul style="list-style-type: none"> <li>Sex (male, female)</li> <li>Age (from 0 to 120)</li> <li>Calendar year</li> </ul>	<ul style="list-style-type: none"> <li><a href="#">SOA Mortality Improvement Scale MP-2021</a></li> </ul>	<ul style="list-style-type: none"> <li>Mortality improvement is assumed to apply throughout projection period</li> <li>Adjustment factors will be applied to reflect California population that will be part of the Program</li> </ul>

1. Anticipated differences in mortality by Program design option primarily driven by covered services, benefit level, and elimination period

2. The SOA 2012 IAM table represents total mortality but is commonly used in as a base table in development of active mortality assumptions for LTC business

# ACTUARIAL ASSUMPTIONS: MORBIDITY

Component	Variability [DRAFT]	Data sources [DRAFT]	Methodology [DRAFT]
<b>1 Claim incidence</b>	<ul style="list-style-type: none"> <li>Sex (male, female)</li> <li>Attained age (from 0 to 120)</li> <li>Care setting (home care, RCF, SNF)</li> <li>Program design option<sup>1</sup></li> </ul>	<ul style="list-style-type: none"> <li>Oliver Wyman’s proprietary LTC intercompany experience data</li> <li>SOA intercompany experience data</li> </ul>	<ul style="list-style-type: none"> <li>Experience study of LTC claims from 2010-2019 for policyholders with similar attributes to recommended Program designs (e.g., limited benefits)</li> <li>Adjustment factors capture anticipated differences between LTC insureds and general population</li> <li>Benchmarked against SOA intercompany experience</li> <li>No morbidity improvement is assumed</li> </ul>
<b>2 Claim recovery</b>	<ul style="list-style-type: none"> <li>Sex (male, female)</li> <li>Claim age (from 0 to 120)</li> <li>Claim duration (time since claim start)</li> <li>Care setting (home care, RCF, SNF)</li> <li>Program design option<sup>1</sup></li> </ul>	<ul style="list-style-type: none"> <li>Oliver Wyman’s proprietary LTC intercompany experience data</li> <li>SOA intercompany experience data</li> </ul>	<ul style="list-style-type: none"> <li>Experience study of LTC claim recoveries from 2010-2019 for policyholders with similar attributes to recommended Program designs (e.g., limited benefits)</li> <li>Benchmarked against SOA intercompany experience</li> </ul>
<b>3 Benefit utilization</b>	<ul style="list-style-type: none"> <li>Monthly maximum benefit amount<sup>2</sup></li> <li>Care setting (home care, RCF, SNF)</li> <li>Benefit type (cash, reimbursement)</li> <li>Calendar year</li> <li>Location (California, U.S., international)</li> <li>Program design option<sup>1</sup></li> </ul>	<ul style="list-style-type: none"> <li>Genworth Cost of Care survey (2012-2021)</li> <li>Historical consumer price indices<sup>3</sup></li> <li>OECD global public long-term care spending projection (2016)</li> <li>Oliver Wyman’s proprietary LTC intercompany experience data</li> </ul>	<ul style="list-style-type: none"> <li>Initial benefit utilization levels benchmarked against LTC industry experience</li> <li>Benefit utilization by calendar year projected based on relationship between assumed Program benefit inflation and anticipated cost of care inflation</li> <li>Separate assumptions developed for care received in California and outside California (U.S. or international)</li> </ul>

1. Anticipated differences in morbidity by Program design option primarily driven by covered services, benefit level, and elimination period

2. Preliminary assumption reflects status quo approach for maximum monthly benefit amount (see [presentation 19.B](#) from Task Force Meeting #19)

3. Consumer price index (“CPIs”) sources include U.S. Bureau of Labor Statistics (CPI-U, CPI-U: Nursing homes and adult day services in U.S. city average, all urban consumers, and CPI-U: Care of invalids and elderly at home in U.S., city average, all urban consumers), Bureau of Economic Analysis (Personal Consumption Expenditures), and California’s Department of Industrial Relations ([California CPI](#))

# OTHER ASSUMPTIONS

Component	Variability [DRAFT]	Data sources [DRAFT]	Methodology [DRAFT]
<b>1 California emigration<sup>1</sup></b>	<ul style="list-style-type: none"> <li>Emigration location (U.S., international)</li> <li>Age (&lt;65, 65+)</li> </ul>	<ul style="list-style-type: none"> <li>California’s Department of Finance</li> <li>Internal Revenue Service (“IRS”) migration data</li> </ul>	<ul style="list-style-type: none"> <li>Emigration rates used to model the proportion of Program participants that leverage portability of Program benefits</li> </ul>
<b>2 Administrative expenses</b>	<ul style="list-style-type: none"> <li>None</li> </ul>	<ul style="list-style-type: none"> <li>Social Security</li> <li>Medicare</li> <li>Medicaid</li> <li>CalPERS Long Term Care Insurance Program<sup>2</sup></li> <li>Private LTC insurance<sup>2</sup></li> </ul>	<ul style="list-style-type: none"> <li>High-level expense assumptions based on administrative cost benchmarks</li> <li>Separate loads developed for Program income and benefit expenditures</li> </ul>
<b>3 Benefit inflation<sup>3</sup></b>	<ul style="list-style-type: none"> <li>None</li> </ul>	<ul style="list-style-type: none"> <li>U.S. Bureau of Labor Statistics (CPI-U)</li> <li>California’s Department of Industrial Relations (<a href="#">California CPI</a>)</li> </ul>	<ul style="list-style-type: none"> <li>Long-term inflation based on historical consumer price indices for California and U.S.</li> <li>Impact of using a flat inflation rate versus rate that varies by calendar year will be assessed</li> </ul>
<b>4 Program exemption for eligible private insurance</b>	<ul style="list-style-type: none"> <li>Age (TBD)</li> <li>Gender (TBD)</li> <li>Wage/income band</li> <li>Program design option</li> </ul>	<ul style="list-style-type: none"> <li>NAIC annual LTC sale report (2018-2021)</li> <li>LifePlans LTC Consumers Demographics survey (2016)</li> <li>California’s Department of Finance</li> <li>WA Cares Fund private insurance exemption statistics</li> </ul>	<ul style="list-style-type: none"> <li>High-level exemption rates developed based on historical private insurance sales in California<sup>4</sup></li> <li>Adjustment factors applied to capture anticipated anti-selection based on timing of exemption deadline</li> </ul>

1. California emigration assumption does not vary by wage/income band due to data limitations

2. Data sources used are publicly available

3. Task Force recommended that Program benefit increases be based on the Consumer Price Index, but specific index is yet to be determined

4. Considered historical LTC insurance sales in California for both stand-alone and combination LTC products; however, a definition of the insurance products that will be eligible for Program opt out (e.g., type of insurance, minimum benefits, etc.) is yet to be determined

# ASSUMPTION CONSIDERATIONS: SIMPLIFICATIONS

Where practicable, Oliver Wyman will perform internal analysis to understand potential impacts of certain assumption simplifications

Assumption	Simplifications [DRAFT]
<b>On-claim and active mortality</b>	<ul style="list-style-type: none"> <li>The total population mortality used to develop our active mortality assumption is California-specific, however, our on-claim mortality and mortality improvement assumptions are not California-specific               <ul style="list-style-type: none"> <li>– This inherently assumes that all California-based mortality differences are attributable to active lives</li> </ul> </li> <li>On-claim mortality rates are not adjusted to convert from an LTC insured population to the general California population<sup>1</sup></li> <li>Mortality is not assumed to vary for individuals that immigrate to, or emigrate from, California</li> </ul>
<b>Claim incidence</b>	<ul style="list-style-type: none"> <li>The impact of offering a shared benefit pool<sup>2</sup> on Designs 4 and 5 is approximated via a high-level adjustment to claim incidence in lieu of more advanced modeling techniques</li> </ul>
<b>Claim recovery</b>	<ul style="list-style-type: none"> <li>Claim recovery rates are not adjusted to convert from an LTC insured population to the general California population<sup>1</sup></li> </ul>
<b>Benefit utilization</b>	<ul style="list-style-type: none"> <li>Utilization is not assumed to vary for those with full Program benefits and those who qualify for reduced Program benefits (either from the intergenerational provision or because of partial vesting)</li> <li>Utilization is not assumed to vary for individual coverage vs. shared pool coverage<sup>2</sup> (Designs 4 and 5 only)</li> </ul>
<b>Administrative expenses</b>	<ul style="list-style-type: none"> <li>Given uncertainty around Program administration, expenses do not vary by Program design option or calendar year, however, simpler Program designs may be less costly to administer, and expenses may be higher in early years due to implementation costs</li> </ul>
<b>Benefit inflation</b>	<ul style="list-style-type: none"> <li>Program benefit inflation is assumed to apply annually on Designs 1 through 4 in lieu of more advanced modeling techniques               <ul style="list-style-type: none"> <li>– The Task Force recommended that Program benefit increases be assessed annually but not automatically applied except on Design 5</li> </ul> </li> </ul>
<b>Other</b>	<ul style="list-style-type: none"> <li>Certain Program design elements that impact various assumptions will not be explicitly modeled<sup>3</sup>, including PACE coverage, preventative benefits, reduced contributions for eligible private insurance, and voluntary benefit “top ups” for those unable to vest (Design 5 only)</li> </ul>

1. Because the Program and private LTC insurance use the same benefit eligibility criteria, we assume that once an individual satisfies this criteria, their on-claim experience will be similar regardless of whether they are part of the Program or a private LTC policyholder

2. Under Designs 4 and 5, vested individuals can only share Program benefits if their spouse or domestic partner is **not** otherwise eligible for the Program

3. Actuarial Report will cover these Program design elements from a qualitative (vs. quantitative) perspective



# ASSUMPTION CONSIDERATIONS: ALTERNATIVE SCENARIOS

Several alternative scenarios recommended by the Task Force will be quantified via adjustments to our baseline assumptions

Alternative scenario <sup>1</sup>	Assumptions impacted [DRAFT]
Earlier Program opt-out provision transition date	<ul style="list-style-type: none"> <li>• Program exemption for eligible private insurance</li> <li>• Claim incidence</li> </ul>
Range of benefit eligibility ages	<ul style="list-style-type: none"> <li>• Claim incidence</li> </ul>
International portability	<ul style="list-style-type: none"> <li>• Benefit utilization</li> </ul>
\$1,000 monthly benefit maximum for Design 1	<ul style="list-style-type: none"> <li>• Benefit utilization</li> </ul>
0-day and 30-day elimination periods for Design 2	<ul style="list-style-type: none"> <li>• On-claim mortality</li> <li>• Claim incidence</li> <li>• Claim recovery</li> </ul>
Home and community-based services only for Design 2	<ul style="list-style-type: none"> <li>• Active mortality</li> <li>• On-claim mortality</li> <li>• Claim incidence</li> <li>• Claim recovery</li> <li>• Benefit utilization</li> </ul>
Range of contribution caps	<ul style="list-style-type: none"> <li>• Program exemption for eligible private insurance</li> <li>• Claim incidence</li> </ul>
Alternative Program financing mechanisms for current retirees	<ul style="list-style-type: none"> <li>• On-claim mortality</li> <li>• Claim incidence</li> <li>• Claim recovery</li> </ul>

1. The Task Force requested that the Actuarial Report explore the financial impacts of the following alternative scenarios (i.e., financial sensitivities) to inform potential changes to the recommended Program designs



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