2025 Cost Analysis Data Sources, Caveats, and Assumptions

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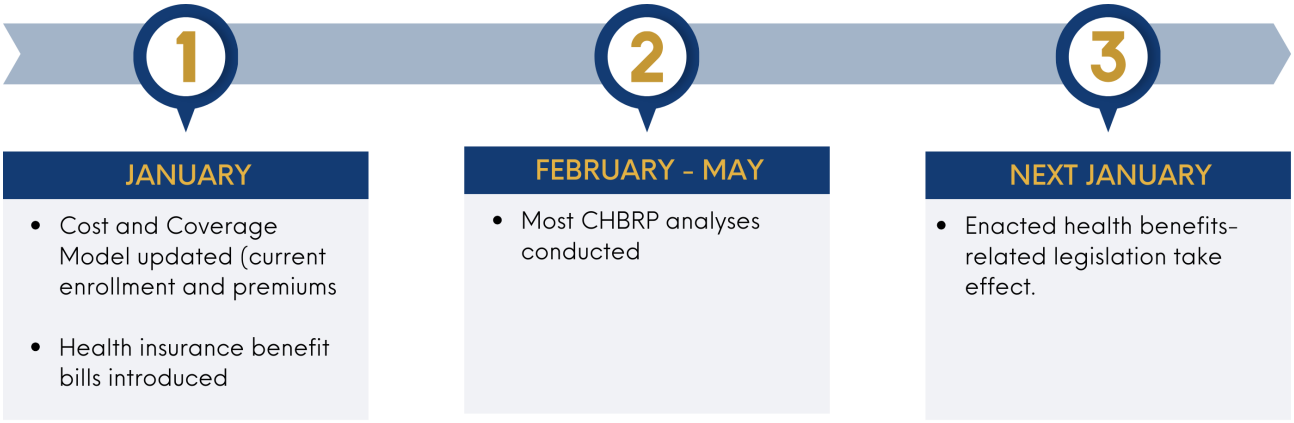
California Health Benefits Review Program (CHBRP)
University of California

The California Health Benefits Review Program (CHBRP) responds to requests from the California Legislature to analyze bills related to health insurance benefits.[1] Annually, CHBRP updates its Cost and Coverage Model to estimate baseline health insurance enrollment and to project marginal, incremental impacts on benefit coverage, utilization, and cost of proposed health insurance legislation. Documents available on CHBRP's website provide additional information on CHBRP's Cost and Coverage Model and on CHBRP's approach to analyzing cost impacts.[2]

This document describes the estimation methods, data sources, caveats, and assumptions applicable to CHBRP's cost impact analyses. It is a companion to CHBRP's annually updated resources[3] and to the bill analyses CHBRP will complete in the current year.[4] Discussion of analyses-specific data sources, caveats, and assumptions are included in each of CHBRP's bill analyses.

Below, Figure 1 describes the analytic timeline for bill introduction; preparation for and completion of most bill analyses; and the most common time a piece of analyzed legislation will go into effect, if the bill is enacted.

Figure 1. Analytic Timeline



Source: California Health Benefits Review Program, 2025.

[1] CHBRP's authorizing statute is available on the CHBRP website.
[2] See documents related to CHBRP's cost impact analysis for more information on the Cost and Coverage Model and other cost analyses.
[3] CHBRP publishes resources on California state-regulated health insurance each year.
[4] Completed CHBRP analyses are available on the CHBRP website.

Data Sources

CHBRP uses multiple key data sources, including simulations, survey data, and administrative data, for its Cost and Coverage Model. Data are obtained from both internal and external data sources; internal data are collected by CHBRP, while external data are produced by other entities and stakeholders. Each data source is described in more detail below and outlined in Table 1 for easy reference.

Internal data

- CHBRP's Annual Enrollment and Premium Survey collects data from the eight largest providers of commercial health insurance in California (Aetna, Elevance Health, Blue Shield of California, Cigna, Health Net, Kaiser Foundation Health Plan, Molina Healthcare, and United Healthcare) to obtain estimates of enrollment not associated with CalPERS or Medi-Cal by purchaser (i.e., large and small group and individual), state regulator (DMHC or CDI), grandfathered or nongrandfathered status. Information on premiums, the presence of a DMHC/CDI-regulated pharmacy benefit, and the presence of deductibles is also collected. Respondent data represent a supermajority of commercial enrollees with health insurance that can be subject to state-level benefit mandates- enrollees in DMHC-regulated plans and CDI-regulated policies. CHBRP separately collects information for DMHC-regulated plan enrollees associated with CalPERS and Medi-Cal.
- CalSIM and market trends are applied to project health insurance enrollment in DMHC-regulated plans and CDI-regulated policies.
- CHBRP's other surveys of the largest plans/insurers collect information on benefit coverage relevant to health insurance benefit bills CHBRP has been requested to analyze. In each report (usually in each report's Appendix C), CHBRP indicates the proportion of Californians enrolled in commercial DMHC-regulated plans or CDI-regulated policies represented by responses to CHBRP's bill-specific coverage surveys. The proportions are derived from data provided by DMHC and CDI.

External sources

- California Department of Health Care Services (DHCS) data are used to estimate enrollment in Medi-Cal Managed Care - beneficiaries enrolled in Two-Plan Model, Geographic Managed Care, Regional, Single Plan, or County Operated Health System (COHS) managed care plans.
- California Employer Health Benefits Survey data are used as comparators for a number of estimates including: enrollment in self-insured health plans; premiums for employment-based enrollment in DMHC-regulated plans (primarily health maintenance organizations [HMOs] and point of service [POS] plans); premiums for employment-based enrollment in CDI-regulated policies (primarily preferred provider organizations [PPOs]). Premiums for fee-for-service (FFS) policies are no longer available due to scarcity of these policies in California. This annual survey is released by the Kaiser Family Foundation.
- California Health Interview Survey (CHIS) data are used to estimate the number of Californians aged 65 and older and the number of Californians dually eligible for both Medi-Cal and Medicare coverage. CHIS data are also used to determine the number of Californians with incomes below 400% of the federal poverty level. CHIS is a continuous survey that provides detailed information on demographics, health insurance coverage, health status, and access to care.
- California Public Employees Retirement System (CalPERS) data are used to estimate premiums and enrollment in DMHC-regulated plans, which may be subject to state benefit mandates, as well as enrollment in CalPERS' self-insured plans, which are not. CalPERS does not currently offer enrollment in CDI-regulated policies. Data are provided for DMHC-regulated plans enrolling non-Medicare beneficiaries. In addition, CHBRP obtains information on current scope of benefits from evidence of coverage (EOC) documents publicly available.

- California Simulation of Insurance Markets (CalSIM) estimates are used to project health insurance status of Californians aged 64 and under. CalSIM is a microsimulation model that projects the effects of the Affordable Care Act on firms and individuals.
- Milliman Consolidated Health Cost Guidelines Sources Database (CHSD) is the primary source for medical and pharmacy claims-level data used to complete detailed analysis that requires utilization and/or average cost per unit for specific services. It is an internal Milliman database with data for about 30 million commercial covered lives, about 3 million Medicaid lives, and is nationally representative.
- Merative™ MarketScan® Research Databases, which reflect health care claims experience of employees and dependents covered by health benefit programs of large employers, are used to estimate utilization and unit cost. These claims data are collected from insurance companies, Blue Cross Blue Shield plans, and third-party administrators. These data represent the medical experience of insured employees and their dependents for active employees, early retirees, individuals with COBRA continuation coverage, and Medicare-eligible retirees with employer-provided Medicare Supplemental plans. No data on Medicaid enrollees or workers' compensation are included.
- Milliman Health Cost Guidelines (HCGs) are health care pricing tools used by many of the major health plans in the United States. Most of the data sources underlying the HCGs are claims databases from commercial health insurance plans. The data are supplied by health insurance companies, HMOs, self-funded employers, and private data vendors. The data are mostly from loosely managed health care plans, generally those characterized as PPO plans.

Table 1. Data Sources

Data Source	Data Items	Time Period
DHCS administrative data for the Medi-Cal program	Distribution of enrollees by managed care or FFS distribution by age: 0–17; 18–64; 65+ Medi-Cal Managed Care premiums	End of 2024
DMHC data "Enrollment Summary Report - 2024"	Distribution of DMHC-regulated plans by market segment*	2024
CDI Statistical Analysis Division data	Distribution of CDI-regulated policies by market segment	End of 2024
CHBRP Annual Enrollment and Premium Survey of California's largest (by enrollment) health care service plans and health insurers	Enrollment by: • Size of firm (2–100 as small group and 101+ as large group) • DMHC vs. CDI regulated • Grandfathered vs. nongrandfathered Premiums for individual policies by: • DMHC vs. CDI regulated • Covered California metal tier • Grandfathered vs. nongrandfathered Presence of deductibles Presence of a DMHC/CDI regulated pharmacy benefit	September 30, 2024
California Employer Health Benefits Survey (conducted by KFF and funded by CHCF)	Enrollment by firm size in self-insured plans	2022
CHIS	Uninsured, age: 65+ Medi-Cal (non-Medicare), age: 65+ Other public, age: 65+ Employer-sponsored insurance, age: 65+	End of 2024
CalPERS	CalPERS self-insured and DMHC-regulated plan and enrollment and premiums	End of 2024
CalSIM	Uninsured, age: 0–17; 18–64 Medi-Cal (non-Medicare) (a), age: 0–17; 18–64 Other public (b), age: 0–64 Individual market, age: 0–17; 18–64 Small group, age: 0–17; 18–64 Large group, age: 0–17; 18–64	Projections for 2026 and 2027
Milliman's 2024 HCGs	Medical trends influencing annual premium increases	2024

Source: **California Health Benefits Review Program, 2025.**
Notes: (*) CHBRP assumes DMHC-regulated PPO group enrollees and POS enrollees are in the large-group segment.
Key: CalSIM = California Simulation of Health Insurance Markets; CDI = California Department of Insurance; CHCF = California HealthCare Foundation; CHIS = California Health Interview Survey; CMS = Centers for Medicare & Medicaid Services; DHCS = Department of Health Care Services; DMHC = Department of Managed Health Care; FFS = fee-for-service; HCGs = Health Cost Guidelines; HMO = health maintenance organization; KFF = Kaiser Family Foundation; POS = point of service; PPO = preferred provider organization.

Projecting 2026

The general approach and annual efforts of CHBRP to update its Cost and Coverage Model uses data available at the end of the previous year to project the following year for analyses in the current year. It is important to emphasize that CHBRP's analyses of specific benefit bills typically addresses the incremental effects—specifically, how the bill would impact benefit coverage, utilization, costs, and public health, holding all other factors constant. CHBRP's estimates of these incremental effects are presented in the Benefit Coverage, Utilization, and Cost Impacts section of each bill analysis report.

Baseline enrollment

Establishing baseline enrollment (i.e., how many persons are associated with particular types of health insurance) is key to CHBRP's analyses. Only Californians enrolled in DMHC-regulated plans or CDI-regulated policies have health insurance that may be subject to a state-level benefit mandate.[5] Projecting baseline enrollment in various market segments regulated by DMHC or CDI (large group, small group, individual market, etc.) is important since proposed benefit bills may have varying effects in particular market segments. To establish baseline enrollment projections for its Cost and Coverage Model, CHBRP utilizes data from the California Health Interview Survey (CHIS) and the California Simulation of Insurance Markets (CalSIM). Adjustments are made accordingly based on the additional sources listed in Table 1.

Beginning in 2022, DHCS began implementing the California Advancing and Innovating Medi-Cal (CalAIM) initiative. Major changes include a shift of most beneficiaries from fee-for-service to DMHC-regulated Medi-Cal managed care plans. Of those who remain in fee-for-service, the benefits are not equivalent to full-scope Medi-Cal and, for CHBRP's purposes, beneficiaries are therefore classified as uninsured or with other insurance sources, if present.

Baseline premium rate development

The key premium-related components of the baseline model for utilization and expenditures are estimates of per member per month (PMPM) values for each of the following:

- Insurance premiums PMPM
- Gross claims costs PMPM
- Member cost sharing PMPM
- Health care costs paid by the health plan or insurer

For each market segment, CHBRP first obtained an estimate of the insurance premium PMPM by taking reported premium from the aforementioned data sources and trending that value to 2026 and 2027. CHBRP uses trend rates published in the Milliman HCGs and historical rate increases adjusted for known factors that may influence trends to project premiums for each market segment.

The large-group market segments for each regulator (CDI and DMHC) are split into grandfathered and nongrandfathered status. For the small-group and individual markets, further splits are made to indicate association with Covered California, the state's health insurance marketplace. Doing so allows CHBRP to separately calculate the impact of the Affordable Care Act (ACA) and of state-specific mandates, both of which may apply differently among these subgroups.

The remaining three values were then estimated by the following formulas:

- Health care costs paid by the health plan = insurance premiums PMPM × (1 − profit/administration load)

[5] See CHBRP's resource, *Sources of Health Insurance in California*, for further discussion of how many enrollees have which kind of health insurance.

- Gross claims costs PMPM = health care costs paid by the health plan PMPM ÷ percentage paid by health plan
- Member cost sharing PMPM = gross claims costs PMPM × (1 − percentage paid by health plan)

In the above formulas, the quantity "profit/administration load" is the assumed percentage of a typical premium that is allocated to the health plan/insurer's administration and profit. These values vary by insurance category, and under the ACA, are limited by the minimum medical loss ratio requirement. CHBRP estimated these values based on actuarial expertise at Milliman, and their associated expertise in health care.

In the above formulas, the quantity "percentage paid by health plan" is the assumed percentage of gross health care costs that are paid by the health plan, as opposed to the amount paid by member cost sharing (deductibles, copays, etc.). In ACA terminology, this quantity is known as the plan's "actuarial value." These values vary by insurance category. For each insurance category, Milliman estimated the member cost sharing for the average or typical plan in that category.

Projecting 2nd Year Impacts (2027)

CHBRP's authorizing statute directs CHBRP to estimate impacts of mandates in the first and second year after a mandate's implementation. The above describes CHBRP's methods for establishing baseline enrollment and premiums for the first year postmandate. To establish baseline enrollment and premiums for the second year postmandate, CHBRP trends forward the data using trend rates published in the Milliman HCGs to estimate the health care costs for each market segment.

CHBRP anticipates that the impact of most benefit mandates is likely to be similar in both first and second years. To assess this impact, CHBRP will assess whether a given mandate is likely to have different utilization offsets in the second year by examining the available medical literature and consultation with a medical expert. If such offsets are likely, CHBRP will identify the amount of offset and calculate their likely impact on costs in the second year. CHBRP will present the second-year impact analyses in the appendix of the report. If there is no evidence indicating a different level of offsets in the second year, CHBRP will not conduct an analysis for impacts in the second year of implementation.

General Caveats and Assumptions

This subsection discusses the general caveats and assumptions relevant to all CHBRP analyses.

The projected costs are estimates of costs that would result if a certain set of assumptions were exactly realized. Actual costs will differ from these estimates for a wide variety of reasons, including:

- Prevalence of coverage for bill-relevant benefits before and after the mandate may be different from CHBRP assumptions.
- Utilization of bill-relevant benefits (and, therefore, the services covered by the benefit) before and after the mandate may be different from CHBRP assumptions.
- Random fluctuations in the utilization and cost of health care services may occur.

Additional assumptions that underlie the cost estimates presented in CHBRP reports are:

- Cost impacts are shown only for plans and policies subject to state-level health insurance benefit laws.
- Cost impact estimates presented are only for the first year after enactment of the health insurance benefit law. The estimates are calculated for the steady state and do not reflect "ramp-up," or the time it may take for enrollees to realize the existence of an added benefit and utilize it. When evidence and literature indicate impacts may be different the second year postmandate, CHBRP includes this information in the report.

- Employers and employees will share proportionately (on a percentage basis) in premium rate increases resulting from the mandate. In other words, the distribution of the premium paid by the subscriber (or employee) and the employer will be unaffected by the mandate.
- For state-sponsored programs for the uninsured, the state share will continue to be equal to the absolute dollar amount of funds dedicated to the program.
- When cost savings are estimated, they reflect savings realized for 1 year. Potential long-term cost savings or impacts are estimated if existing data and literature sources are available and provide adequate detail for estimating long-term impacts.[6]

There are other variables that may affect costs, but which CHBRP does not consider in the estimates presented CHBRP's reports. Such variables include, but are not limited to:

- Population shifts by type of health insurance: If a mandate increases health insurance costs, some employer groups and individuals may elect to drop their health insurance. Employers may also switch to self-funding to avoid having to comply with the mandate.
- Changes in benefits: To help offset the premium increase resulting from a mandate, deductibles or copayments may be increased. Such changes would have a direct impact on the distribution of costs between health plans/insurers and enrollees, and may also result in utilization reductions (i.e., high levels of cost sharing result in lower utilization of health care services). CHBRP does not include the effects of such potential benefit changes in its analysis.
- Adverse selection: Theoretically, persons or employer groups who had previously foregone health insurance may elect, postmandate, to enroll in a health plan or policy because they perceive that it is now to their economic benefit to do so.
- Medical management: Health plans/insurers may react to the mandate by tightening medical management of the mandated benefit. This would tend to dampen the CHBRP cost estimates. The dampening would be more pronounced on the plan/policy types that previously had the least effective medical management (i.e., PPO plans).
- Geographic and delivery systems variation: Variation exists in existing utilization and costs, and in the impact of the mandate, by geographic area and by delivery system models. Even within the health insurance plan/policy types CHBRP modeled (HMO, including HMO and POS plans, and non-HMO, including PPO and FFS policies), there are likely variations in utilization and costs. Utilization also differs within California due to differences in the health status of the local population, provider practice patterns, and the level of managed care available in each community. The average cost per service would also vary due to different underlying cost levels experienced by providers throughout California and the market dynamic in negotiations between providers and health plans/insurers. Both the baseline costs prior to the mandate and the estimated cost impact of the mandate could vary within the state due to geographic and delivery system differences. For purposes of this analysis, however, CHBRP has estimated the impact on a statewide level.
- Compliance with the mandate: For estimating the postmandate impacts, CHBRP typically assumes that DMHC-regulated health plans and CDI-regulated health policies subject to the mandate will comply with the benefit coverage requirements of the bill. Therefore, the typical postmandate coverage rates for persons enrolled in health insurance plans/policies subject to the mandate are assumed to be 100%.

[6] See CHBRP's methodology document, *Criteria and Guidelines for the Analysis of Long-Term Impacts on Healthcare Cost and Public Health*.

Acknowledgements

This document, as well as CHBRP's 2026 Cost and Coverage Model, and CHBRP's 2026 cost analyses were prepared by the members of CHBRP's cost team, which consists of CHBRP task force members and contributors; members of CHBRP's staff; and contracted actuarial firm, Milliman, Inc. [7]

Leads for completion of this document in 2025 were Casey Hammer, FSA, MAAA, and Norman Yu of Milliman, Inc, and An-Chi Tsou, PhD, of CHBRP's staff.

About the California Health Benefits Review Program

Drawing on the experience and assistance of multi-disciplinary faculty, researchers, and analysts based at the University of California, CHBRP provides the California Legislature with timely, independent, and rigorous evidence-based analyses of introduced health insurance benefits-related legislation. Most frequently, CHBRP analyzes proposed health insurance benefit mandates (e.g., mandates to cover a test, treatment, or service, such as continuous glucose monitors). For more about CHBRP's 60-day analysis process, see the resource Academic Rigor on a Legislature's Timeline.

To read any of the nearly 300 bill analyses CHBRP has completed, see the Completed Analysis page on CHBRP's website. In addition to analysis of introduced legislation, CHBRP produces other publications including several annually updated resources, as well as issue briefs and explainers.

[7] CHBRP's authorizing statute requires that CHBRP use a certified actuary or "other person with relevant knowledge and expertise" to determine financial impact.