TECHNICAL BRIEF

SB 1309

Lung Cancer

CHBRP

About the Technical Brief

This document provides details on the analytical foundation for CHBRP's analysis of SB 1309. While the main report synthesizes key findings for immediate policy consideration, this document is designed to support a deeper understanding of the background of the topic of the legislation and CHBRP's methodology and research in conducting its analysis. It contains the data sources, methods, assumptions, and other bill-specific considerations necessary for legislative staff, fiscal analysts, and other stakeholders to fully understand the scope and impact of the proposed measure.

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Acronyms and Terminology

Acronyms

ACA – Affordable Care Act

ACR – American College of Radiology

CA – California

CalPERS – California Public Employees' Retirement System

CDC – Centers for Disease Control and Prevention

CDI – California Department of Insurance

CHBRP – California Health Benefits Review Program

COHS – County Organized Health System

CT – computed tomography

DHCS – Department of Health Care Services

DMHC – Department of Managed Health Care

EHB – essential health benefits

LDCT – low-dose computed tomography

Lung-RADS – Lung CT Screening Reporting and Data System

PET/CT – positron emission tomography/computed tomography

SB – Senate Bill

USPSTF – U.S. Preventive Services Task Force

Terminology

CHBRP uses the following terminology for this analysis:

Coverage-related

Cost sharing: Payment for use of covered health insurance benefits is shared between the payer (e.g., health plan/insurer or employer) and the enrollee. Common cost-sharing mechanisms include copayments, coinsurance, and/or deductibles (but do not include premium expenses[1]).

High deductible health plans (HDHPs): HDHPs are a type of health plan with requirements set by federal regulation.[2] As the name implies, these plans include a deductible, but they are not allowed to have separate medical and pharmacy deductibles. For the 2026 plan year, the Internal Revenue Service (IRS) defines an HDHP as any plan with a deductible of at least $1,700 for an individual and $3,400 for a family.[3]

Health Savings Account–qualified HDHPs: To be eligible to establish a Health Savings Account (HSA) for taxable years beginning after December 31, 2003[4] (and so to be eligible to make tax-favored contributions to an HSA), a person must be enrolled in an HSA-qualified HDHP. In order for an HDHP to be HSA qualified, it must follow specified rules regarding cost sharing and deductibles, as set by the IRS.

Lung cancer–related and/or bill specific

Low-dose computed tomography (LDCT): LDCT is an imaging modality that uses reduced radiation to create detailed images of the lungs and is the recommended method for lung cancer screening among eligible high-risk populations.

[1] Premiums are paid by most enrollees, regardless of their use of any tests, treatments, or services. Some enrollees may not pay premiums for different reasons. For example, their employers cover the full premium, or they receive benefits through Medi-Cal.
[2] HealthCare.gov, Glossary: High Deductible Health Plan (HDHP). Accessed March 5, 2021.
[3] IRS Revenue Procedure 2025-19, 2025-18 IRB 1430.
[4] Section 1201 of the Medicare Prescription Drug, Improvement, and Modernization Act of 2003, Pub. L. No. 108-173, added section 223 to the Internal Revenue Code.

Positron emission tomography/computed tomography (PET/CT): PET/CT is an imaging modality that combines metabolic and anatomical imaging to evaluate suspicious findings and support cancer diagnosis and staging.

Lung CT Screening Reporting and Data System (Lung-RADS): Lung-RADS is a quality assurance tool created by the American College of Radiology (ACR) to standardize reporting and management of LDCT lung cancer screenings. It categorizes findings to reduce overdiagnosis and false positives, providing specific management recommendations based on nodule size and risk.

Initial (baseline) screening: Initial (baseline) screening refers to the first LDCT scan performed for lung cancer screening in an eligible, asymptomatic individual. The population of people receiving an initial baseline scan without cost sharing are usually those identified by the U.S. Preventive Services Task Force (USPSTF). This scan establishes a reference point for future comparisons.

Follow-up screening: Follow-up screening refers to subsequent LDCT scans performed after the baseline screening to monitor findings or continue routine annual screening in accordance with clinical guidelines (e.g., Lung-RADS).

Follow-up diagnostic services: Follow-up diagnostic services refer to additional clinical evaluations performed after an abnormal or indeterminate screening result to determine the presence or absence of lung cancer. These services may include diagnostic imaging (e.g., diagnostic CT, PET/CT) and invasive procedures (e.g., biopsy, surgery).

Tissue sampling: Tissue sampling procedures are used to collect cells or tissue from a suspected lung lesion to determine whether cancer is present.

Biopsy: A biopsy is a type of tissue sampling in which a sample of tissue is removed (e.g., via needle or bronchoscopy) for pathological examination to confirm or rule out lung cancer.

Upstaging: Upstaging refers to a change to a more advanced cancer stage based on additional diagnostic information, indicating greater disease extent than initially assessed.

Pulmonary nodule: A pulmonary nodule is a small round or irregular growth in the lung detected on imaging, which may be benign or malignant and may require follow-up evaluation.

Legislative Text Analyzed

CHBRP analyzed SB 1309 Health care coverage: lung cancer, as introduced/amended on February 21, 2026, per the request of the California Senate Committee on Health. The text analyzed is copied below.

SENATE BILL

NO. 1309

Introduced by Senator Rubio

February 20, 2026

An act to add Section 1367.58 to the Health and Safety Code, and to add Section 10123.78 to the Insurance Code, relating to health care coverage.

LEGISLATIVE COUNSEL'S DIGEST

SB 1309, as introduced, Rubio. Health care coverage: lung cancer.
Existing law, the Knox-Keene Health Care Service Plan Act of 1975, provides for the licensure and regulation of health care service plans by the Department of Managed Health Care, and makes a willful violation of the act a crime. Existing law provides for the regulation of health insurers by the Department of Insurance. Existing law requires a health care service plan contract or health insurance policy to provide coverage for all generally medically accepted cancer screening tests.
This bill would require a health care service plan contract or health insurance policy issued, amended, or renewed on or after January 1, 2027, that provides coverage for hospital, medical, or surgical expenses to provide coverage for followup screening or diagnostic services for lung cancer, as specified. The bill would prohibit a contract or policy from imposing a copayment, coinsurance, deductible, or any other form of cost sharing for this coverage. Because a willful violation of these provisions by a health care service plan would be a crime, the bill would impose a state-mandated local program.
The California Constitution requires the state to reimburse local agencies and school districts for certain costs mandated by the state. Statutory provisions establish procedures for making that reimbursement.
This bill would provide that no reimbursement is required by this act for a specified reason.

Digest Key

Vote: majority Appropriation: no Fiscal Committee: yes Local Program: yes

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Bill Text

THE PEOPLE OF THE STATE OF CALIFORNIA DO ENACT AS FOLLOWS:

SECTION 1.

Section 1367.58 is added to the Health and Safety Code, to read:

Appendix A. 1367.58.

(a) A health care service plan contract issued, amended, or renewed on or after January 1, 2027, that provides coverage for hospital, medical, or surgical expenses shall provide coverage for followup screening or diagnostic services for lung cancer recommended by a health care provider acting within the scope of their practice.

(b) Coverage required pursuant to this section shall not be subject to copayment, coinsurance, deductible, or any other form of cost sharing.
(c) For purposes of this section, “followup screening or diagnostic services for lung cancer” means a service provided after an initial abnormal or indeterminate test result, including a diagnostic computed tomography scan, positron emission tomography/computed tomography scan, tissue sampling, biopsy, bronchoscopy, pathology, and surgical consultation.

SEC. 2.

Section 10123.78 is added to the Insurance Code, to read:

Appendix B. 10123.78.

(a) A health insurance policy issued, amended, or renewed on or after January 1, 2027, that provides coverage for hospital, medical, or surgical expenses shall provide coverage for followup screening or diagnostic services for lung cancer recommended by a health care provider acting within the scope of their practice.
(b) Coverage required pursuant to this section shall not be subject to copayment, coinsurance, deductible, or any other form of cost sharing.
(c) For purposes of this section, “followup screening or diagnostic services for lung cancer” means a service provided after an initial abnormal or indeterminate test result, including a diagnostic computed tomography scan, positron emission tomography/computed tomography scan, tissue sampling, biopsy, bronchoscopy, pathology, and surgical consultation.

SEC. 3.

No reimbursement is required by this act pursuant to Section 6 of Article XIII B of the California Constitution because the only costs that may be incurred by a local agency or school district will be incurred because this act creates a new crime or infraction, eliminates a crime or infraction, or changes the penalty for a crime or infraction, within the meaning of Section 17556 of the Government Code, or changes the definition of a crime within the meaning of Section 6 of Article XIII B of the California Constitution.

Additional Policy Context

This brief provides additional material to support the findings and recommendations presented in CHBRP's Analysis of SB 1309, Health Care Coverage: Lung Cancer.[5] The following sections contain details on the California and federal landscape. While this information is essential to the completeness of the analysis, it has been placed in this separate brief to maintain the flow of the main report. Readers are encouraged to consult this material for deeper insights into technical details that informed the analysis and conclusions of the main report.

California Policy Landscape

Diagnostic and Treatment Services

Under the Knox-Keene Act, all Department of Managed Health Care (DMHC)-regulated health plans, except specialized health care service plans, must provide coverage of all medically necessary basic health care services, establishing a specified minimum set of benefits. Basic health care services are defined as

- Physician services, including consultation and referral;
- Hospital inpatient services and ambulatory care services;
- Diagnostic laboratory and diagnostic and therapeutic radiologic services;
- Home health services;
- Preventive health services;
- Emergency health care services, including ambulance and ambulance transport services and out-of-area coverage and ambulance transport services provided through the 911 emergency response system; and
- Hospice care.

Follow-up diagnostic services relevant to SB 1309, such as computed tomography (CT scans), biopsies, and surgical consultations related to lung cancer, would fall under these general categories of care.

While policies regulated by the California Department of Insurance (CDI) do not fall under the same statutory scope as those regulated by DMHC, CDI does require that health insurance policies provide minimum value, as defined by Insurance Code section 1112.9. Large-group plans regulated by CDI are required to cover medically necessary basic health care services, which are defined in statute and are the same as those listed above.[6]

Previous California Legislation

In 2023, SB 496 Biomarker testing was signed into law in California. The bill requires state-regulated health plans and policies to provide coverage for medically necessary biomarker testing, for the diagnosis treatment, appropriate management, or ongoing monitoring for cancer.[7] Biomarker testing is useful in identifying genetic abnormalities in patients with non–small cell lung cancer, and can help guide providers and patients to more effective treatment plans.

Other Relevant California Programs

The University of California (UC) Lung Cancer Consortium developed a screening tool and the Lung Cancer Screening and Prevention Task Force to increase lung cancer screenings for patients across California by 200%. The initiative is

[5] Available in Completed Analyses on www.chbrp.org.
[6] INS 10112.281
[7] HSC §1367.667 and INS §10123.209

underway across cancer centers associated with the UC sites (UC Davis, UC Irvine, UCLA, UC San Diego, and UC San Francisco).

The UC Lung Cancer Consortium also is the organizing body behind the Healthy Lungs Initiative in California, which is a partnership between the University of California system and AstraZeneca to expand community education and outreach on lung cancer detection and screenings (University of California, 2025). These programs are not directly state-funded.

Federal Policy Landscape

Affordable Care Act and Essential Health Benefits

States may require state-regulated health insurance to offer benefits that exceed essential health benefits (EHBs).[8,9,10,11] Should California do so, the state could be required to defray the cost of additionally mandated benefits for enrollees in health plans or policies purchased through Covered California, the state's health insurance marketplace. However, state benefit mandates specifying provider types, cost sharing, or other details of existing benefit coverage would not meet the definition of state benefit mandates that could exceed EHBs.[12,13]

Since the services that are subject to SB 1309 are considered medically necessary basic health care services and are already covered, the proposed mandate would not exceed the current definition of EHBs in California.

Health Savings Account–qualified High Deductible Health Plans

Enrollees in Health Savings Account (has)-eligible high deductible health plans (HDHPs) that are subject to state regulation may still face cost sharing in the form of a deductible for follow-up services for lung cancer under SB 1309.[14] This is because under federal law, in order for an HDHP to be HSA qualified, it must follow specified rules regarding cost sharing and deductibles, as set by the IRS. Generally, an HDHP may not provide benefits for any year until the deductible for that year is satisfied, but federal law provides a safe harbor for the absence of a deductible applicable to preventive care.[15] The list of preventive services for which application of a deductible is not required includes treatments for chronic conditions; however, follow-up diagnostic services for lung cancer would not be considered preventive.[16]

For the 2026 plan year, the Internal Revenue Service (IRS) defines an HDHP as any plan with a deductible of at least $1,700 for an individual and $3,400 for a family.[17]

[8] ACA Section 1311(d)(3).
[9] State benefit mandates enacted on or before December 31, 2011, may be included in a state's EHBs, according to the U.S. Department of Health and Human Services (HHS). Patient Protection and Affordable Care Act; Standards Related to Essential Health Benefits, Actuarial Value, and Accreditation. Final Rule. Federal Register, Vol. 78, No. 37. February 25, 2013.
[10] However, as laid out in the Final Rule on EHBs U.S. Department of Health and Human Services (HHS) released in February 2013, state benefit mandates enacted on or before December 31, 2011, would be included in the state's EHBs, and there would be no requirement that the state defray the costs of those state-mandated benefits. For state benefit mandates enacted after December 31, 2011, that are identified as exceeding EHBs, the state would be required to defray the cost.
[11] In February 2026, HHS released a proposed rule that would alter what benefits would be determined to exceed EHBs. The conclusions in this analysis of SB 1309 are subject to change based on the final language of the regulations. U.S. Department of Health and Human Services (HHS). Patient Protection and Affordable Care Act, HHS Notice of Benefit and Payment Parameters for 2027; and Basic Health Program. Proposed Rule. Federal Register, Vol. 91, No. 28. February 11, 2026.
[12] Essential Health Benefits. Final Rule. A state's health insurance marketplace would be responsible for determining when a state benefit mandate exceeds EHBs, and qualified health plan issuers would be responsible for calculating the cost that must be defrayed. Patient Protection and Affordable Care Act; Standards Related to Essential Health Benefits, Actuarial Value, and Accreditation. Final Rule. Federal Register, Vol. 78, No. 37. February 25, 2013.
[13] As of 2024, Maine, Massachusetts, Minnesota, Montana, Utah, and Virginia mandate benefits that exceed EHBs (GAO, 2024). For more information about defrayal, refer to CHBRP's issue brief *Essential Health Benefits: Exceeding EHBs and the Defrayal Requirement*.
[14] To be eligible to establish a Health Savings Account (HSA) for taxable years beginning after December 31, 2003 (and so to be eligible to make tax-favored contributions to an HSA), a person must be enrolled in an HSA-qualified high deductible heath plan (HDHP). Section 1201 of the Medicare Prescription Drug, Improvement, and Modernization Act of 2003, Pub. L. No. 108-173, added section 223 to the Internal Revenue Code.
[15] For more information on screening services, see Notice 2004-23, 2004-15 I.R.B. 725. For additional guidance on preventive care, see Notice 2004-50, 2004-2 C.B. 196, Q&A 26 and 27; and Notice 2013-57, 2013-40 I.R.B. 293.
[16] For information on preventive care for chronic conditions, see Notice 2024-75 from the Internal Revenue Service.
[17] IRS Revenue Procedure 2025-19, 2025-18 IRB 1430.

Background on Lung Cancer Detection and Diagnosis

SB 1309 would require state-regulated health plans and policies to cover follow-up screening and diagnostic services for lung cancer without cost sharing. This bill applies to people who have received an abnormal or indeterminate test result, which can come from an intentional lung cancer screening, or from an incidental finding of a pulmonary nodule. This section presents contextual information about lung cancer, including information on how lung cancer progresses, clinical guidelines for follow-up screening and diagnostic services, the burden of the disease, disparities in access to and uptake of screening and diagnostic services, and the societal impact of the disease.

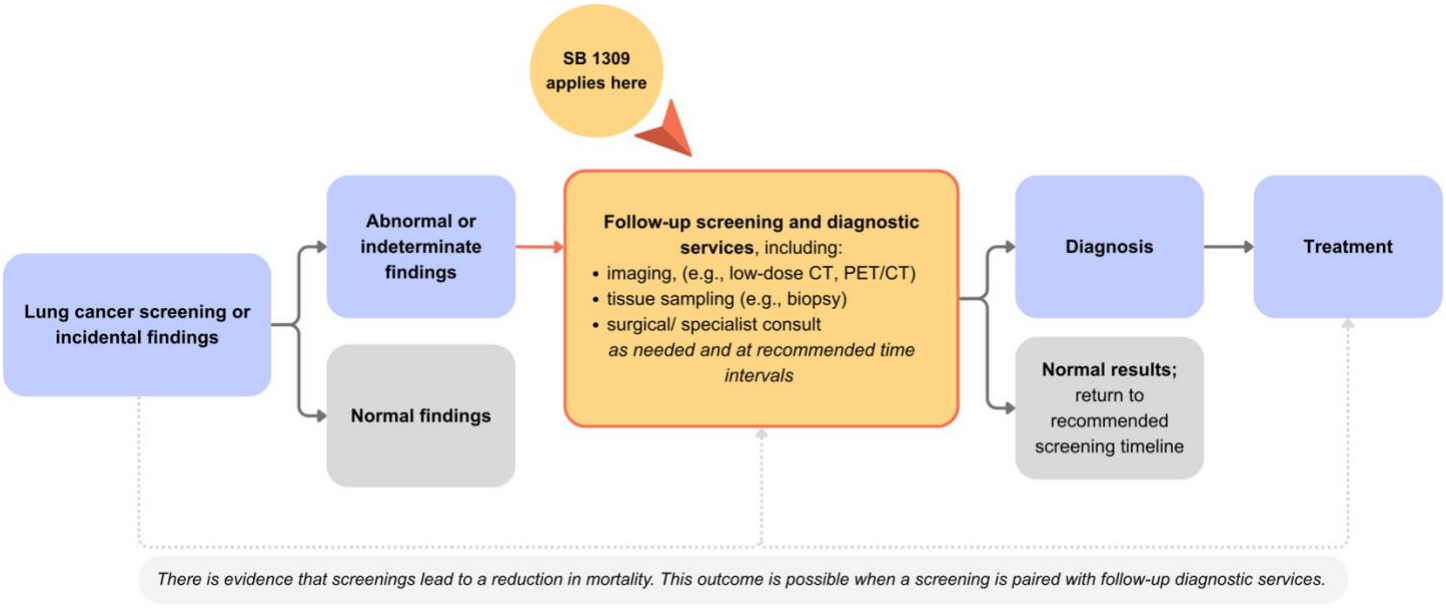
What Is Lung Cancer?

Lung cancer, also known as lung carcinoma, is a malignant lung tumor characterized by uncontrolled cell growth in tissues of the lung. It is broadly divided into small cell lung cancer (approx. 15% of cases) and non–small cell lung cancer (approx. 85% of cases) (Knight et al., 2017). If left untreated, this growth can spread beyond the lungs by process of metastasis into nearby tissue or other parts of the body.[18] Smoking causes about 80% to 90% of lung cancer deaths in the United States and increases the risk of cancer 30-fold (Forder et al., 2023). Prolonged exposure to other harmful substances such as radon gas and asbestos are also known to cause lung cancer. [19]

Lung Cancer Screening, Diagnosis, and Treatment

SB 1309 requires coverage of follow-up screening and diagnostic services for lung cancer without cost sharing, after an abnormal or indeterminate test result. As demonstrated in Figure 1, the bill would apply to the intermediary steps between the initial screening (or incidental finding) and a diagnosis or treatment. Services provided after a diagnosis is made are not required to be covered without cost sharing under SB 1309. Below, CHBRP describes the diagnostic pathway, the current screening guidelines, follow-up guidelines, and treatment pathways.

Figure 1. Screening to Treatment Pathway



Source: California Health Benefits Review Program, 2026.
Key: CT = computed tomography; PET/CT = positron emission tomography/computed tomography; SB = Senate Bill.

[18] Most cancers that start in the lung, known as primary lung cancers, are carcinomas that derive from epithelial cells.
[19] Former smokers, however, remain at high risk of lung cancer up to 25 years after quitting.

Lung Cancer Screening

Screening for lung cancer is often the first step in detecting and diagnosing lung cancer, since lung cancer is typically asymptomatic in early stages; without screening, more than 70% of cases are diagnosed late stage (stage III/ IV) when treatment is rarely curative (see more on staging in the *Lung cancer pathology and progression* section) (Dickson et al., 2022). While some pulmonary nodules are found incidentally when patients undergo other imaging for clinical evaluation unrelated to lung cancer, the primary mode of detecting lung cancer is through a low-dose computed tomography (LDCT).

In a seminal study, the National Lung Screening Trial (NLST) provided evidence that screenings with annual LDCT scans reduce lung cancer mortality by at least 20% in high-risk populations compared to chest radiographies (NLST et al., 2011). Following this study, the U.S. Preventive Services Task Force (USPSTF) issued a Grade B recommendation for annual LDCTs for patients with a history of smoking (for more details, see the *Policy Context* section in CHBRP's analysis of SB 1309). These screenings are known as initial — or baseline — screenings. Since the introduction of USPSTF recommendation on lung cancer screenings in 2013, evidence suggests a shift toward earlier-stage diagnosis and a decrease in advanced-stage disease (Khouzam et al., 2023). Data from 2018 showed advanced lung cancer cases dropped but early lung cancer diagnoses rose sharply (Jenkins et al., 2025). Lung cancer screening with annual LDCT scans for people at high risk can reduce the lung cancer death rate by up to 20% (NLST et al., 2011).

Screening uptake remains low. In California, only 16.8% of the eligible population reported getting screened for lung cancer in 2022 (ALA, 2025; Bandi et al., 2024).

Follow-Up Screenings and Diagnostic Services

Approximately 17% of initial lung cancer screenings result in an abnormal or indeterminate finding (Silvestri et al., 2026). When the test results are abnormal or indeterminate, patients are recommended to follow up with further screenings or care, depending on the severity of the abnormal findings.

The type and timing of follow-up are determined by the level of suspicion based on nodule characteristics (e.g., size, characteristics, growth, and location) and follow standardized clinical guidelines. Follow-up care is generally guided by the Lung CT Screening Reporting and Data System (Lung-RADS) after an initial lung cancer screening (see Table 1),or the Fleischner Society guidelines for nodules identified incidentally outside of screening (STS, 2026).[20] Additional clinical guidance, such as from the National Comprehensive Cancer Network (NCCN), is largely aligned with these frameworks (NCCN, 2026). [21]

As described in Table 1 below, patients typically undergo follow-up imaging to further evaluate the finding, including a follow-up screening LDCT, diagnostic CT, or, in some cases, PET/CT. Follow-up screenings via LDCT uses the same technology as an initial annual screening.

For findings considered suspicious, additional diagnostic evaluation may be indicated to confirm or rule out lung cancer. This may include tissue sampling (e.g., needle biopsy or bronchoscopy) and, in some cases, surgical consultation or surgical removal of detected tumors.

Patient adherence to guideline-concordant care

Adherence to recommended follow-up after lung cancer screening is variable and often suboptimal, indicating drop-off along the screening-to-diagnosis pathway (Lin et al., 2022). Importantly, studies show patients often delay recommended care, particularly when nodules are less suspicious compared to more suspicious (Ahmed et al., 2023; Rivera et al., 2023). Pooled estimates suggest follow-up rates of approximately 74% when broadly defined, but substantially lower

[20] The American College of Radiology developed the Lung CT Screening Reporting and Data System (Lung-RADS) to classify lung cancer screening CT results and standardize follow-up care and management of pulmonary nodules (ACR, 2022).
[21] Consistency between NCCN guidelines can be noted through comparison of the guidelines and was confirmed through internal conversation between CHBRP and content expert Jonathan Riess, MD, on March 19, 2026.

(about 42% to 63%) when adherence is measured against guideline-recommended timeframes (Rivera et al., 2023). One retrospective study on delays in recommended follow-up reported that 47% had delayed follow-up (see the *Medical Effectiveness* section for more details).

Meanwhile, another study found that guideline-concordant care was 59.7% overall, with lower adherence observed for lower category Lung-RADS scores (see Table 1), and increasing adherence with higher Lung-RADS categories, reflecting greater clinical urgency; follow-up rates were 49.2% for a score of 3, 68.6% for 4A, 74.1% for 4B, and 79.5% for 4X (Pinsky et al., 2026). Nearly one-third (32.3%) of participants who used care, did so at a less intensive level than recommended. Other studies have found similar results of varying adherence by Lung-RADS category score (Yang et al., 2025; Rivera et al., 2022). Some people may follow up with care but with delays; in one study examining adherence, when the follow-up time window was retrospectively increased, adherence went up (Rivera et al., 2022). Because recommended follow-up is necessary to complete the diagnostic process, these delays may impact diagnosis and potential necessary treatment.

Table 1. Lung-RADS Guidelines for Standardized Lung Cancer Screening CT Interpretation and Management

Lung-RADS Categories and Descriptions			Data on Screening Outcomes, by Lung-RADS	
Lung-RADS Category (a)	Nodule Findings (b)	Recommended Follow-Up (c)	Lung-RADS Category Among People Receiving Initial Screening	Lung-RADS Category Among People Diagnosed with Lung Cancer After Initial Screening
0	Incomplete — prior imaging needed or technically limited exam	Obtain prior LDCT or additional imaging	.1%	--
1	No nodules OR definitely benign nodules	Annual LDCT in 12 months	39.8%	1.3%
2	Benign/indolent nodules	Annual LDCT in 12 months	42.9%	2.3%
3	Probably benign	LDCT in 6 months	9.9%	6.6%
4A	Suspicious	LDCT in 3 months; consider PET/CT	4.6%	21.4%
4B	Very suspicious	Diagnostic chest CT ± contrast, PET/CT, and/or tissue sampling	2.1%	41.7%
4X	Category 4B nodules with additional high-risk features	Same as 4B; expedited diagnostic evaluation	.7%	26.7%

Source: ACR, 2022. Silvestri et al., 2023.
Notes: Management recommendations apply to screening populations (high-risk individuals undergoing LDCT).
(a) Assignment of Lung-RADS scores is based on nodule size, characteristics, and location (Lin et al., 2022).
(b) Nodule findings are based on the size (diameter, by mm) of the nodule and type (solid or nonsolid).
(c) PET/CT is generally considered when the solid component is ≥8 mm, due to resolution limits.
Key: LDCT = low-dose computed tomography; Lung-RADS = Lung CT Screening Reporting and Data System; PET/CT = positron emission tomography/computed tomography.

Lung Cancer Pathology and Progression

Treating lung cancer depends on the type and stage of disease. Non–small cell lung cancer, which accounts for approximately 83% of cases, is treated based on stage and other clinical factors. Small cell lung cancer, which accounts for approximately 13% of cases, is more aggressive and is typically treated with chemotherapy and radiation rather than surgery.

Lung cancer staging describes how far the cancer has spread and is a key factor in determining treatment and outcomes. Survival varies substantially by stage at diagnosis. In the United States, roughly one in four (27.9%) lung cancer diagnoses occur at an early (localized) stage (stage I), while approximately 41.7% are diagnosed at stage IV, when the cancer has already spread.

Lung Cancer Definitions

Primary lung cancer: Cancer that originates in the lung.
Metastatic lung cancer: Lung cancer that has spread from the lung to other parts of the body (e.g., brain, bones, liver).
Secondary (metastatic to lung) cancer: Cancer that originates in another organ (e.g., breast, prostate) and spreads to the lungs; typically treated based on the primary cancer type.

Early-stage lung cancer is often asymptomatic but more likely to be treated successfully, including through surgery to remove the tumor or targeted radiation. The 5-year survival rate for stage I non–small cell lung cancer is approximately 67% (ALA, 2025). As cancer progresses and spreads to lymph nodes or other parts of the body, treatment typically shifts to systemic therapies such as chemotherapy, immunotherapy, or targeted therapy. Advanced-stage disease is generally not treated with surgery and is associated with lower survival; the 5-year survival rate for stage IV non–small cell lung cancer is less than 10% (see Table 10).

Table 2. Stages of Lung Cancer

Stage	Description	Common Treatment	5-Year Survival Rate	Stage at Diagnosis Following an Initial Screening
Stage I	Small cancerous tumor confined to the lung	Surgery, radiation.	68–92%	27.9%
Stage II	Cancer has spread to nearby lymph nodes	Surgery + chemotherapy/ radiation.	53–60%	8.2%
Stage III	Cancer has spread to lymph nodes in the center of the chest	Chemotherapy and radiation.	26–36%	18.4%
Stage IV	Cancer has spread to the other lung or distant organs	Targeted therapy, immunotherapy, chemotherapy.	<10%	41.7%

Source: California Health Benefits Review Program, 2026, based on Detterbeck et al., 2017; Goldstraw et al., 2016; Vachani et al., 2022.
Note: 5-year survival rates reflect data for non–small cell lung cancer, and applies to the sage of the cancer when it is first diagnosed. Stages I, II, III, IV are divided into substages of IA, IB, IIA, IIB, IIIA, IIIB, IIIC, IVA, IVB based on tumor progression. The table reflects a summarized version of the stages with the ranges reflecting the substage progression. The ranges for 5-year survival rates also reflect cohorts in studies.

Lung Cancer Prevalence in California

Incidence and Mortality

California has one of the lowest lung cancer incidence rates in the United States, but the overall burden remains substantial due to the state's large population. The age-adjusted incidence rate is approximately 36.3 new cases per 100,000 people, significantly below the national rate of 52.5 (see Table 3). An estimated 16,803 new cases are diagnosed annually in California.

Lung cancer is the leading cause of cancer death in California, accounting for approximately 10,500 deaths annually. The age-adjusted mortality rate is 22.6 deaths per 100,000 people.

Disparities in Lung Cancer Incidence and Mortality

Incidence varies across populations in California. Black Californians have higher incidence rates (47.5 per 100,000) than White Californians (41.4), while Hispanic (22.4) and Asian (32.9) Californians have lower rates. Differences in incidence reflect variation in risk factors, environmental exposures, and access to preventive services. Geographic disparities are also observed, with higher incidence rates in some rural areas compared to urban areas (Oh et al., 2023; NCI and CDC, 2026).

Although mortality rates have declined over time, disparities in outcomes persist across populations. Black Californians experience higher mortality rates (30.7 per 100,000) than White Californians (26.4) despite similar smoking rates (NCI and CDC, 2026; Kitts, 2019). Hispanic (13.1) and Asian (19.8) populations have lower mortality rates than Black or White Californians. Differences in outcomes have been associated with variation in stage at diagnosis and access to treatment.

Table 3. Incidence and Mortality Rates for Lung Cancer by Race and Ethnicity, 2022

Demographic Characteristic	Incidence (new cases per 100,000 annually)	Mortality Rate (age-adjusted deaths per 100,000 annually)
US	52.5	31.5
California-specific data		
All (CA statewide)	36.3	22.6
Male	39.7	26.4
Female	33.7	19.6
White, non-Hispanic	41.4	26.4
Black, non-Hispanic	47.5	30.7
American Indian/ Native Alaskan	48.8	26.7
Asian, non-Hispanic	32.9	19.8
Hispanic	22.4	13.1

Source: NCI/CDC, 2026.

Geographic disparities also exist. Lung cancer mortality rates are generally higher in rural counties, and differences in death rates increased over time. In 2020, lung cancer contributed a large percentage to excess all-cancer mortality in rural counties. Between 1999 and 2020, urban counties had larger declines in lung cancer death rates compared to rural counties. Lung cancer contributed 44% to excess cancer mortality in rural counties (Kava et al., 2025), highlighting lung cancer as a primary driver of geographic health disparities.

Disparities in Access to and Utilization of Lung Cancer Screenings, Follow-Up Care, and Treatment

Health disparities within the lung cancer population begin with initial screening and continue through survival outcomes (Dwyer et al., 2024). Lung cancer screening remains underutilized in all eligible groups and can therefore be considered a broad cancer screening disparity when compared against other cancer screening modalities (Bilenduke et al., 2023).

In terms of follow-up care, lower adherence has been documented among Black patients and individuals who currently smoke, as well as among those undergoing baseline screening. Geographic disparities persist; while 98% of metropolitan residents have access to screening, only 41% of those in non-metropolitan areas do (Neroda et al., 2021).

The disparities follow the continuum of care into treatment and surgery for lung cancer, with certain racial and ethnic groups faring worse in California than nationally (Table 12). American Indian/Alaska Native and Black populations are less likely to get surgery for lung cancer or to receive treatment compared to White and Asian populations. Latino populations are also less likely to receive treatment.

In terms of survival, one retrospective cohort study (Perez et al., 2025) evaluating the impact of time-to-treatment initiation on mortality reported that patients who waited more than 4 weeks from diagnosis to definitive surgical resection had significantly worse overall survival compared to those treated within 4 weeks, and that non-Hispanic Black patients experienced significantly longer wait times compared to non-Hispanic White patients. Patients at academic centers and high-volume facilities were more likely to receive guidance-concordant treatment compared to those at community cancer programs and minority-serving hospitals (Nykaza et al, 2025). These findings point to how disparities in mortality may be influenced through access to timely care and treatment for lung cancer.

Table 4. Diagnosis and Treatment Rates Among Californians with Lung Cancer

Race/Ethnicity	Early-Stage Diagnosis Among Lung Cancer Patients	Percent of Patients with Lung Cancer Receiving Surgical Treatment	Percent of Patients with Lung Cancer Not Receiving Any Treatment
American Indian/Alaska Native	21.2%	16.4%	30.9%
Asian	22.6%	23.3%	22.4%
Black	22.6%	17.3%	29.7%
Latino	21.7%	20.4%	30.6%
White	28.2%	22.5%	25.6%

Source: ALA, 2025.
Note: The population referenced are from the SEER dataset, as analyzed by the American Lung Association with percent of diagnosed population diagnosed at an early stage, percent of population receiving surgical treatment, and percent of population not receiving treatment.

Barriers to Accessing Screening and Follow-Up Services for Lung Cancer

Accessing lung cancer screenings and follow-up services is influenced by multiple systemic, clinical, and socioeconomic factors. While LDCT screenings are effective in reducing lung cancer mortality, screening rates are low. Despite improvements in prevention, screening, and therapy in recent decades, the benefits of these advances have been inequitably distributed (Gargapati et al., 2026).

Challenges to screening include access to care, awareness of the option for screening, stigma and implicit bias that are due to stigmatization of smoking, stigma of race, perception of lung cancer diagnosis as a “death sentence,” and underestimation of lung cancer risk.[22] In a study surveying patients eligible for screening, the most common barriers and concerns identified were absence of symptoms (38%), not wishing to know that they had cancer (30%), and finally not having awareness of the eligibility for CT screening (24%). Less common barriers to CT lung cancer screening were concerns relating to the test (17.3%), cost (17.0%), and fear of invasive procedures (11.0%) (Rehman et al., 2025).

Based on the literature, the barriers can be grouped into three main categories:

Systemic & Structural Obstacles: California’s low screening rate (16.8%) reflects a national struggle with fragmented data infrastructures (Rai et al., 2019). In other words, research indicates that care and informatics fragmentation, particularly in safety-net settings, are major, labor-intensive systemic challenges that hinder screening programs.

[22] Some patients perceive a lung cancer diagnosis as highly fatal, which may discourage them from seeking screening or early detection services (Chambers et al., 2012). Because of the strong link to smoking, patients often feel a sense of stigma or "blame" that prevents them from discussing symptoms with doctors.

Racial & Socioeconomic Inequities: Black patients are often diagnosed at younger ages and more advanced stages than White patients (Dwyer et al., 2024). Differences in eligibility criteria, including lower cumulative tobacco exposure and younger age at diagnosis among Black individuals, may also limit access to screening. Downstream, patients with lower socioeconomic status have significantly lower odds of receiving surgery or any treatment at all.

Psychological & Clinical Barriers: Perceptions of lung cancer as a fatal disease and stigma associated with smoking may discourage participation in screening and follow-up (Bilenduke et al., 2023). Evidence also indicates that certain groups, including current smokers and men, are less likely to complete recommended follow-up after an abnormal screening result (Pinsky et al., 2026). Across studies, adherence to recommended follow-up after abnormal screening findings is variable and often incomplete (Keerthy et al., 2022; Pinsky et al., 2026).

Societal Impacts

Lung cancer resulted in an estimated $13 billion in lost earnings in the United States in 2019 and $1.35 billion in patient out-of-pocket costs associated with lung cancer treatment and caregiving (Islami et al., 2022; Yabroff et al., 2021). Lung cancer represents a significant societal burden in California, affecting health outcomes, economic stability, and emotional well-being (Blandin et al., 2017).

Medical Effectiveness

The medical effectiveness review summarizes findings from evidence[23] on the effectiveness of the services that SB 1309 addresses. This bill would require a health care service plan contract or health insurance policy that provides coverage for hospital, medical, or surgical expenses to provide coverage for follow-up screening or diagnostic services for lung cancer, as recommended by a health care provider acting, within the scope of their practice.

As discussed in the *Background* section, coverage for follow up screening or diagnostic services for lung cancer means a service provided after an initial abnormal or indeterminate test result, including a diagnostic computed tomography scan, positron emission tomography/computed tomography scan, tissue sampling, biopsy, bronchoscopy, pathology, and surgical consultation.

Research Approach and Methods

A total of 21 studies were included in the medical effectiveness review for this report. The other articles were eliminated because they did not focus on follow-up screening or diagnostic services for lung cancer provided after an initial abnormal or indeterminate test result, were of poor quality,[24] or did not report findings from clinical research studies. A more thorough description of the methods used to conduct the medical effectiveness review and the process used to grade the evidence for each outcome measure is presented in CHBRP's Medical Effectiveness Analysis and Research Approach document.

The conclusions below are based on the best available evidence from peer-reviewed and grey literature.[25] Unpublished studies are not reviewed because the results of such studies, if they exist, cannot be obtained within the 60-day timeframe for CHBRP reports.

Key Questions

1. For persons with an initial abnormal/indeterminate test result from lung cancer screening, what is the effectiveness of follow up follow-up screening or diagnostic services for lung cancer on health outcomes, as well as the associated harms, compared to persons not using follow up follow-up screening or diagnostic services for lung cancer?
2. For persons with an initial abnormal/indeterminate test result from lung cancer screening, is there evidence that delays in treatment affect health outcomes?
3. What is the impact of cost sharing (including copayment, coinsurance, deductible) on access to follow-up screening/diagnostic services for lung cancer on health outcomes and utilization of other health services?

Methodological Considerations

CHBRP did not identify any randomized controlled trials (RCTs) that examine the impact of cost sharing for follow-up services after an abnormal/indeterminate finding because the barriers to conducting RCTs of lung cancer follow-up services are formidable, resulting in a research base that is not as rigorous and thereby limiting the certainty of conclusions drawn from the evidence. Therefore, most studies included in this report are retrospective cohort studies without comparison groups, making it harder to draw conclusions without a control group. Additionally, findings across

[23] Much of the discussion in this section is focused on reviews of available literature. However, as noted in the section on Implementing the Hierarchy of Evidence in the Medical Effectiveness Analysis and Research Approach document, in the absence of peer-reviewed literature on well-designed randomized controlled trials (RCTs) that is fully applicable to the analysis, CHBRP's hierarchy of evidence allows for the inclusion of other evidence.
[24] For a detailed explanation of how CHBRP defines high-quality research, see the "Selecting Studies for Inclusion in the Literature Review" section of CHBRP's Medical Effectiveness Analysis and Research Approach document.
[25] Grey literature consists of material that is not published commercially or indexed systematically in bibliographic databases. See CHBRP's website for more information.

these studies are difficult to compare and synthesize because of considerable difference in study designs, populations, tumor histology, and methods, including variation in the clinical definitions and recommendations of time to treatment.

Outcomes Assessed

The outcomes assessed in this report include clinical upstaging, recurrence rates, and mortality. In cancer, clinical upstaging is when the stage used to describe the extent of a patient's cancer changes from a lower stage (less extensive) to a higher stage (more extensive). Upstaging is based on the results of additional diagnostic tests, imaging, or surgical findings and is associated with worse health outcomes. It is important to know the stage of the disease to plan the best treatment.

Harms assessed include complications from invasive diagnostic procedure, cytology tests or biopsies, bronchoscopies, thoracic surgery, and other procedures.

Study Findings

This following section summarizes CHBRP's findings regarding the strength of evidence for the effectiveness of follow-up screening or diagnostic services for persons with an initial abnormal test result from lung cancer screening. The services can include but are not limited to repeat CT, PET/CT, bronchoscopy, transthoracic needle biopsy, pathology, or clinical evaluation.

Each section is accompanied by a corresponding figure. The title of the figure indicates the test, treatment, or service for which evidence is summarized. The statement in the box above the figure presents CHBRP's conclusion regarding the strength of evidence about the effect of a particular test, treatment, or service based on a specific relevant outcome and the number of studies on which CHBRP's conclusion is based. Definitions of CHBRP's grading scale terms are included in the box below.

The following terms are used to characterize the body of evidence regarding an outcome:

Very strong evidence (formerly called *clear and convincing evidence*) indicates that there are multiple studies of a treatment and the large majority of studies are of high quality and consistently find that the treatment is either effective or not effective. Conclusions are unlikely to be altered by additional evidence.

Strong evidence (formerly called *preponderance of evidence*) indicates that the majority of the studies reviewed are consistent in their findings that treatment is either effective or not effective. Conclusions could be altered with additional strong evidence.

Some evidence (formerly called *limited evidence*) indicates that a small number of studies have limited generalizability to the population of interest and/or the studies have a serious methodological concern in research design or implementation. Conclusions could be altered with additional evidence.

Conflicting evidence (formerly called *inconclusive evidence*) indicates that of the studies of equal quality, the number suggesting the treatment is effective is similar to the number of those suggesting the treatment is not effective.

Not enough research (formerly called *insufficient evidence*) indicates that (1) there are no studies of the treatment **or** (2) the available studies are not of high quality, meaning there is not enough evidence available to know whether or not a treatment is effective. *Not enough research* does not indicate that a treatment is not effective.

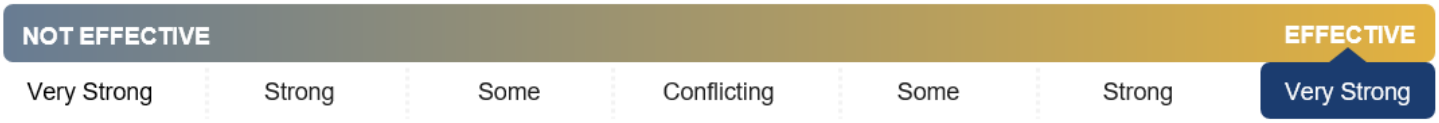
Effectiveness of Initial Screening for Lung Cancer

As stated in the *Background* section, the preventive services provision of the Affordable Care Act eliminates cost sharing for evidence-based preventive services, including screening for breast, cervical, colorectal, and lung cancer. While this screening is not the subject of SB 1309, it is the first step before services referenced in SB 1309 can be accessed without cost sharing. Additionally, the screening tool of the LDCT is the same as for follow-up screenings. As such, CHRBP reviews the evidence on the impact of initial lung cancer screenings on health outcomes.

These guidelines are based on the 2021 recommendation from the USPSTF: annual screening for lung cancer with LDCT for adults aged 50 to 80 years who have a 20 pack-year smoking history and currently smoke or have quit within the past 15 years. The guidelines are based on evidence from one meta-analysis that evaluated LDCT for lung cancer screening (Jonas et al., 2021; 7 RCTs; N = 86,486.). The two largest RCTs — National Lung Screening Trial (NLST; N = 53,454) and Nederlands-Leuvens Longkanker Screenings Onderzoek (NELSON; N = 15,792) — demonstrated significant reductions in lung cancer–specific mortality and all-cause mortality. The NLST (three annual LDCT rounds vs. chest radiography in adults aged 55 to 74 with 7 years of follow-up and more than 140,000 person-years of follow-up in each group) reported that lung cancer mortality was lower with screening, and extended follow-up at 12.3 years showed a similar statistically significant reduction in all-cause mortality with LDCT screening compared with chest radiography. In the NELSON trial (four LDCT rounds at increasing intervals vs. no screening in adults aged 50 to 74), lung cancer mortality was also significantly reduced over 10 years, but there was no significant difference in all-cause mortality between patients screened using LDCT and patients not screened.

Summary of findings regarding effectiveness of initial lung cancer screening: There is *very strong evidence* that lung cancer screening is effective based on two large RCT studies that demonstrated significant reductions in lung cancer–specific mortality and all-cause mortality.

Figure 2. Level of Evidence of Effectiveness of Initial Lung Cancer Screening



Effectiveness of Follow-Up Services for Lung Cancer

CHBRP did not review the evidence on the effectiveness of follow-up services after abnormal/indeterminate finding for lung cancer. As discussed in the *Background*, diagnostic follow-up services have been well documented and include but are not limited to repeat CT, PET/CT, bronchoscopy, transthoracic needle biopsy, pathology, or clinical evaluation. Two complementary, evidence-based frameworks guide next steps after a nodule is found on CT, ACR Lung-RADS (v2022) standardizes management of findings from low-dose CT lung cancer screening, reducing false positives while preserving cancer detection, and Fleischner Society (2017) provides risk- and morphology-based follow-up for incidentally detected nodules on CT in adults (non-screening scans). Based on these guidelines, this analysis assumes that follow-up services after abnormal/indeterminate finding significantly improve health outcomes and reduce mortality.

What Is the Impact of Time-to-Treatment Initiation?

Delays in diagnosis and treatment can have significant negative consequences for patients with lung cancer, particularly in terms of tumor progression and recurrence rates.

Health outcomes

Clinical Upstaging

In cancer, clinical upstaging is when the stage used to describe the extent of a patient's cancer changes from a lower stage (less extensive) to a higher stage (more extensive). Upstaging is based on the results of additional diagnostic tests, imaging, or surgical findings. It is important to know the stage of the disease to plan the best treatment. Upstaging is associated with negative patient outcomes because upstaged tumors are more difficult to treat.

Across three retrospective studies, delays in diagnosis and treatment, particularly in small nodules, were correlated with upstaging. In a retrospective cohort study, Mullin et al., 2026 (390 patients with median follow-up 3.7 years) assessed the upstaging of screen-detected lung cancers during diagnostic evaluation and its impact on outcomes in patients with early-stage lung cancers identified via LDCT screening in a high-risk population. Tumor upstaging, defined as an increase in T-stage between referral and treatment, occurred in 43% of cases and was most common in smaller nodules (56%). Upstaging was significantly associated with longer referral-to-treatment times (median 84 days vs. 72 days, p=0.04), poorer overall survival (hazard ratio [HR] 1.68; 95% CI, 1.13–2.51; p=0.01) and lung cancer-specific survival (HR 1.91; 95% CI, 1.09–3.35; p=0.03).

In a single-center VA retrospective electronic medical record review, Pirzadeh et al., 2024 (203 with stage I–II non–small cell lung cancer), reported that overall, 9% were upstaged from radiographic stage I/II to pathological stage III/IV. Upstaged patients experienced longer diagnosis-to-treatment intervals (8.0 vs. 4.7 weeks, P<.001). In post hoc analysis, a stricter timeliness threshold suggested a benefit, as total time of less than or equal to 8 weeks was found to be associated with substantially lower upstaging (10% vs. 41%, P=.05).

A retrospective cohort study, Ahmed et al., 2023 (369 patients with 434 positive lung cancer screening examinations), assessed delays in recommended follow-up and their consequences, reporting that 47% had delayed follow-up. Among 54 adjudicated cases of non–small cell lung cancer diagnosed through screening;[26] delayed follow-up was significantly linked to clinical upstaging (79% of upstaged cases vs. 12% without upstaging (P<0.001); 86% of was more advanced overall (summary stage–upstaged cases) vs. 21% that was not more advanced (P=0.002). The extent of delay was also greater in those with any upstaging (median 131 days) than in those without upstaging (median 15 days; P=0.047).

Recurrence Rates

Two retrospective cohort studies reported that surgical delays for non–small cell lung cancer were significantly linked to worse outcomes, which often includes a significant increase in recurrence risk.

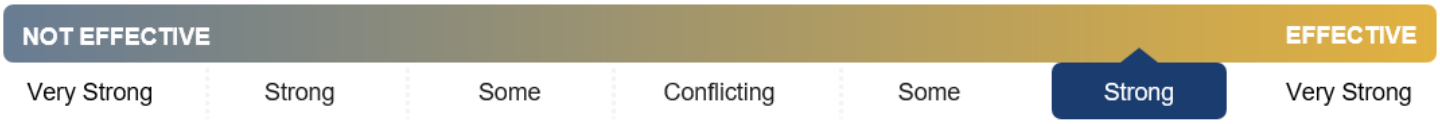
In a retrospective cohort study in California, Tupper et al. (2025; 2,567 early-stage non–small cell lung cancer patients; median time to surgery about 8 weeks) reported that the rate of 1-year recurrence was elevated for surgeries delayed for more than 8 weeks versus less than 8 weeks (adjusted hazard ration [aHR], 1.25; 95% CI, 0.98–1.60) and for more than 12 weeks versus less than 12 weeks (aHR,1.62; 95% CI, 1.12–2.36).

A retrospective cohort study of veterans with clinical stage I non–small cell lung cancer who underwent surgical resection, examined the association between cancer recurrence and surgical delay, defined as time from last preoperative CT scan to the operation and found that surgical delays were significantly linked to increase in recurrence (Heiden et al., 2021; 9,904 patients). This study reported that recurrence occurred in 4,158 patients (42.0%) over a median follow-up of 6.15 years. After controlling for tumor and treatment factors (including age, comorbidities, operation type, tumor size and grade, lymph node evaluation, and pathologic stage), the risk of recurrence rose significantly after approximately 12 weeks of surgical delay; beyond that threshold, each additional week of postponement was associated with a significant increase in recurrence (HR 1.004 per week; 95% CI, 1.001–1.006; P=0.002).

[26] For a screen-detected cancer, this meant a panel confirmed that the nodule found on the LDCT scan was actually malignant, rather than a false positive.

Summary of findings regarding impact of time-to-treatment initiation: There is *strong evidence* that delays in diagnosis and treatment are correlated with upstaging and increased recurrence rates based on five retrospective studies. Three retrospective studies reported that delays in diagnosis and treatment, particularly in small nodules, were correlated with upstaging, which is associated with worse patient outcomes. Two retrospective cohort studies reported that surgical delays non–small cell lung cancer were significantly linked to a significant increase in recurrence risk.

Figure 3. Findings Regarding Impact of Time-to-Treatment Initiation on Upstaging and Recurrence Rates



Mortality

One large meta-analysis (Ungvari et al., 2026), one cohort study (Pirzadeh et al., 2024), and one systematic review (Zhang et al., 2022) reported no significant difference in treatment delay on all-cause mortality.[27] In a meta-analysis to evaluate the association between treatment delays and all-cause mortality in lung cancer patients, Ungvari et al. (2026:15 studies, comprising 16 cohorts; 122,156 patients) reported no significant association between short-term treatment delays and all-cause mortality in lung cancer patients at any of the time points.[28] Pooled HRs were 1.00 (95% CI, 0.99-1.02) for a 4-week delay, 1.01 (95% CI, 0.99-1.03) for an 8-week delay, and 1.01 (95% CI, 0.98-1.05) for a 12-week delay.

In a single-center retrospective cohort study, Pirzadeh et al. (2024; 203 patients with stage I–II non–small cell lung cancer) reported that treatment received less than 14 weeks from abnormal imaging was not associated with improved all-cause mortality (Cox HR 0.87; 95% CI, 0.52–1.45) compared to treatment more than 14 weeks from abnormal finding. Both groups had a high mortality rate: 31% (61/199) died within 3 years and 64% (91/143) within 5 years of radiographic detection.

Another systematic review of scoping and systematics reviews (Zhang et al., 2022[29]) reported inconsistent findings across examined studies. While there was evidence of significant delays during diagnosis and treatment for lung cancer (longer than guideline recommendations), five studies reported no consistent association between the length of treatment intervals and patient survival. The authors concluded that more studies demonstrated either no association or a negative association, that longer waiting times were associated with better outcomes.

Other studies have reported mixed outcomes across patient subgroups. A retrospective cohort study of stage I non–small cell lung cancer patients using two large U.S. datasets, the NLST and National Cancer Database (NCDB) data cohorts, Mayne et al., 2022 (NLST n = 392; NCDB n = 275,198), reported that delaying surgery for clinical stage I non–small cell lung cancer was generally associated with higher mortality, and the risk rises the longer surgery is postponed. In propensity score–matched analyses comparing early surgery (within 30 days of diagnosis) to a 3- to 4-month delay, there was little to no survival reduction for the smallest adenocarcinomas and for all stage squamous cell carcinomas.[30] However, delaying surgery for larger stage I tumors was linked to worse outcomes with 5-year survival up to 12% lower with delay, and about 18% lower in later squamous cell carcinoma. Additional analysis showed a steady increase in mortality risk with each additional delay, reinforcing that even within substages, longer waits can be harmful.

[27] The total number of deaths from *any* cause, including cancer progression, treatment side effects, or unrelated comorbidities, within a specific population during a defined period.
[28] Hazard ratios (HRs) for 4-, 8-, and 12-week treatment delays were estimated using random-effects meta-analysis.
[29] Overlap with Ungvari et al., 2026: Myrdal et al., 2004; Diaconescu et al., 2011; Yun et al., 2012; Booth et al., 2013; Gonzalez-Barcala et al., 2013/2014; Kanarek et al., 2014; Gomez et al., 2015 (localized and regional cohorts from the same paper); Samson et al., 2015.
[30] Adenocarcinomas are often found in an outer area of the lung and develops in the cells of epithelial tissues, which line the cavities and surfaces of the body and form glands. Squamous cell carcinomas are usually found in the center of the lung next to an air tube (bronchus). Large cell carcinoma can occur in any part of the lung and tends to grow and spread faster than adenocarcinoma or squamous cell carcinoma.

Seven cohort studies reported that longer time from abnormal finding to diagnosis and treatment is associated with increased 5- and 10-year mortality and lower survival.

A retrospective cohort study Perez et al., 2025 (219,723 early-stage non–small cell lung cancer patients), using the NCDB data (years 2004–2018) to evaluate the impact of time to treatment on mortality reported that patients who waited more than 4 weeks from diagnosis to definitive surgical resection had significantly worse overall survival compared to those treated within 4 weeks (adjusted HR at week 4: 1.05, 95% CI: 1.01–1.08, P<0.001). Median survival for patients treated within 4 weeks was significantly better than for those treated later (8.09 months [95% CI: 8.02–8.16] versus 7.51 months [95% CI: 7.43–7.60]). This trend persisted when analyzed for stage I and II non–small cell lung cancer patients independently.

In a retrospective cohort study in California, Tupper et al. (2025; 2567 early-stage non–small cell lung cancer patients) reported that 5-year mortality was significantly elevated for surgeries (surgical resection for curative intent) performed more than 8 weeks versus those performed at less than 8 weeks after diagnosis (adjusted hazard ratio [aHR]: 1.19; 95% CI, 1.06-1.33) and was significantly elevated for surgeries performed more than 12 weeks versus less 2 weeks after diagnosis (aHR: 1.31; 95% CI, 1.10–1.55).

In a retrospective cohort of veterans, Sanchez et al. 2023 (3,862 patients), reported significant associations between time from diagnosis to curative treatment and overall mortality. Patients receiving treatment, surgery, or stereotactic body radiation therapy, less than or equal to 6 weeks versus more than 12 weeks (HR: 0.65; 95% CI, 0.58–0.75; p<0.001) and between 6 to 12 weeks versus more than 12 weeks (HR: 0.72; 95% CI, 0.65–0.81; p<0.001) had lower overall mortality. However, there was no significant mortality difference between receiving treatment less than or equal to 6 weeks versus between 6 to 12 weeks.

A cohort study (Cone et al., 2020; 130,597/2,241,706 patients with non–small cell lung cancer) that assessed treatment and outcome information from patients reported that, when examining stage I non–small cell lung cancer disease, longer time to treatment initiation was associated with significantly higher predicted all-cause mortality, versus the 8- to 60-day referent: 5-year mortality rose from 43.4% (8–60 days) to 47.4% (61–120 days), 49.6% (121–180 days), and 47.6% (181–365 days), with corresponding 10-year mortality rates of 68.3%, 72.6%, 74.8%, and 72.8%. For stage II disease, mortality was high across all time-to-treatment initiation categories, but no statistically significant differences were detected in time to treatment initiation and mortality.

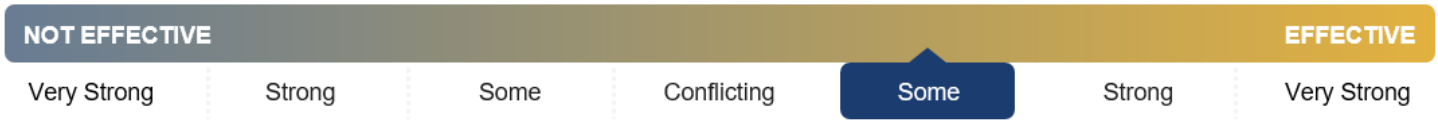
A retrospective study (Huang et al., 2020; 561 patients with clinical stage I lung adenocarcinoma) examined whether delays to surgery after tissue or imaging diagnosis affect overall survival. They measured time from tissue biopsy to surgery (histologic diagnosis-to-surgery; median 20 days, “late” >21 days) and from first CT scan to surgery (radiologic diagnosis-to-surgery; median 58 days, “late” >60 days). Waiting more than 21 days after a biopsy-confirmed diagnosis was linked to worse 5-year overall survival (75.9% vs. 85.5%; P=0.003), and in matched analyses was associated with about twice the risk of death (aHR: ~2.03). In contrast, waiting more than 60 days from the first scan did not change 5-year survival (83.7% vs. 83.3%; P=0.570).

One observational study (Khorana et al., 2019) of 363,863 patients from 2004 to 2013 with stage one or two non–small cell lung cancer stratified by year of diagnosis and adjusted for clinical and sociodemographic factors, reported that every additional week from diagnosis to the first cancer treatment (calculated using dates of initial cancer diagnosis and earliest cancer-directed treatment) was associated with a higher risk of death, an estimated 3.2% increase per week in stage I (HR 1.032; 95% CI, 1.031–1.034 per week) and 1.6 percent per week in stage two (HR 1.016; 95% CI, 1.014–1.018 per week). In a subgroup restricted to patients who underwent surgery as the first treatment, this association remained statistically significant (P value < 0.001) and was directionally stronger. Using a threshold of more than 6 weeks from diagnosis to first treatment, there were significantly worse recurrence outcomes. For stage I disease, 5-year overall survival was 56% when treatment began within 6 weeks compared with 43 percent when treatment began after more than six weeks (P value less than 0.001). Stage II disease also showed significantly worse survival with delays beyond 6 weeks (P value less than 0.001), although exact percentages were not provided in the text.

In a retrospective cohort study using the NCDB, Yang et al., 2018, examined 4,984 patients with clinical stage IA squamous cell lung cancer who underwent lobectomy (2006–2011) to quantify how surgical delay affects survival. The median time to surgery was 38 days, and overall, 5-year survival was 58.3%. After adjusting for age, comorbidities, tumor size, insurance, and care setting, having surgery 38 days or more after diagnosis was associated with worse survival compared with earlier surgery (HR: 1.13; 95% CI, 1.02–1.25; P=0.022). Further analysis showed that the risk of death rose steadily with longer delays, with statistically significant excess risk emerging at about 90 days or more after diagnosis. Sensitivity analyses using a 30-day cutoff and including same-day surgeries showed a similar pattern.

Summary of findings regarding time to treatment for lung cancer on mortality: There is *some evidence* that treatment timing affects lung cancer mortality. Several studies report no clear harm from short delays: a large meta-analysis (Ungvari et al., 2026) found no survival impact of 4-, 8-, or 12-week delays, a single-center cohort (Pirzadeh et al., 2024) saw no mortality difference with treatment within vs. beyond 14 weeks from abnormal imaging, and a review of reviews (Zhang et al., 2022) found inconsistent associations overall. In contrast, an additional retrospective cohort using two large U.S. datasets reported generally higher mortality with delayed surgery overall, with variation by tumor subgroup. Seven cohort studies reported that longer intervals from abnormal finding or diagnosis to treatment were associated with higher mortality or lower survival; these included national and state database analyses and institutional series examining delays from diagnosis or biopsy to surgery.

Figure 4. Level of Evidence of Impact of Time to Treatment for Lung Cancer on Mortality



Impact of Cost Sharing on Follow-Up Services for Lung Cancer

Although the benefits of early lung cancer screening are well documented, the downstream consequences of this screening can include costly invasive procedures. CHBRP did not find any studies that directly examine the impact of cost sharing for follow-up tests and screening that occur after an abnormal test result on health outcomes, processes of care, or utilization of health services.

Figure 5. Level of Evidence of Impact of Cost Sharing on Follow-Up Services for Lung Cancer

Impact of Cost Sharing on Follow-Up Services for Other Cancers

Studies have documented that in breast cancer, higher cost is associated with delay and reduction in use of follow-up services (Hughes et al., 2023; Wharam et al., 2018).

Two studies examining the impact of out-of-pocket costs and breast cancer diagnosis reported significantly delayed diagnosis and treatment. A 2018 study of 273,499 women (Wharam et al., 2018) reported that when patients switched to HDHPs, they experienced delays in diagnostic breast imaging (aHR 0.95), breast biopsy (aHR 0.92), early-stage breast cancer diagnosis (aHR 0.83), and chemotherapy initiation (aHR 0.79) compared to women in low-deductible plans. A follow-up 2019 study found these delays were particularly pronounced among low-income women: 1.6 months to first breast imaging, 2.7 months to first biopsy, 6.6 months to early-stage diagnosis, and 8.7 months to first chemotherapy

(Wharam et al., 2019). A cohort study reported that patients in plans with higher out-of-pocket costs underwent 16 to 24 fewer subsequent breast imaging procedures per 1,000 women after screening mammography, with breast MRI use decreasing most dramatically (Hughes et al., 2023; 230,845 women). Biopsy rates remained similar across plan types, suggesting patients may defer intermediate imaging but proceed with definitive diagnostic procedures.

Summary of findings regarding impact of cost sharing on follow-up services for other cancers: While two studies present evidence that increased out-of-pocket costs can significantly delay diagnosis and treatment for other cancers including breast cancer, these studies have limited generalizability to the lung cancer patient population due to differences in patient populations, disease biology, progression, and diagnostic and treatment pathways.

Figure 6. Level of Evidence of Impact of Cost Sharing on Follow-Up Services for Other Cancers

Harms of Follow-Up Screening or Diagnostic Services for Lung Cancer

In a matched cohort study to estimate complications associated with common invasive diagnostic procedures after an abnormal finding from LDCT for lung cancer, Huo et al., 2019, compared intervention patients who underwent one of the invasive diagnostic procedures documented in the NLST cohort to individual matched controls (174,702/169,808). Potential complications include major events such as acute respiratory failure, myocardial infarction, and empyema; intermediate events such as blood loss requiring transfusion, pneumothorax requiring tube placement, and pneumonia; and minor events such as allergic reaction, bronchospasm, and subcutaneous emphysema. The study cohort consisted of patients aged 55 to 77 years, who had undergone invasive diagnostic procedures but did not have a diagnosis code indicative of lung cancer 12 months before and after these procedures. Of the patients in the study cohort who were identified as having undergone an invasive diagnostic procedure, 44,319 (26.1%) had a cytology test or biopsy, 43,437 (25.6%) had a bronchoscopy, 9,161 (5.4%) underwent thoracic surgery, and 72,891 (42.9%) underwent other procedures. The study reported that younger patients had a significantly lower rate of complications than those in the Medicare group (22.2%; 95% CI, 21.7%–22.7% vs. 23.8%; 95% CI, 23.0%–24.6%). Compared with complication rates reported in the NLST (9.8% and 8.5%), complication rates found in this study were approximately two times higher for both the younger age group and the Medicare group. By procedure type, complication rates were higher in this study (18.7% after needle biopsy, 36.1% after bronchoscopy, and 51.7% after thoracic surgery) than those reported in the NLST. Thoracic surgery had the highest complication burden across severities (minor 46.5%, intermediate 41.3%, major 11.3%), followed by bronchoscopy (minor 24.0%, intermediate 32.1%, major 13.4%), with lower rates for cytology/needle biopsy (minor 13.6%, intermediate 13.9%, major 4.0%) and other procedures (minor 12.1%, intermediate 6.3%, major 2.8%).

Summary of findings regarding harms: There is *some evidence* that harms are associated with common invasive diagnostic procedures after an abnormal finding from LDCT screening for lung cancer based on one large, matched cohort study. The study reported that thoracic surgery had the highest complication burden, followed by bronchoscopy, with lower rates for cytology/needle biopsy and other procedures.

Summary of Findings

CHBRP found a substantial, high-quality body of evidence supporting the effectiveness of LDCT for lung cancer screening in high-risk individuals. Clinical management of follow-up diagnosis services after abnormal/indeterminate result on an LDCT for lung cancer is standardized using the Lung-RADS developed by the American College of Radiology (ACR, 2022) and Fleischner Criteria (MacMahon et al., 2017).

Delays in diagnosis and treatment can have significant negative consequences for patients with lung cancer, particularly in terms of tumor progression and recurrence rates. There is *strong evidence* that delays in diagnosis and treatment are correlated with clinical upstaging and increased recurrence rates based on five retrospective studies. Delays in diagnosis and treatment, particularly in small nodules, were correlated with upstaging as tumor upstaging can negatively impact patient outcomes. Surgical delays for non–small cell lung cancer were significantly linked to worse outcomes including a significant increase in recurrence risk.

There is *some evidence* that treatment delays negatively impact survival and mortality in lung cancer, but this varies depending on the duration of delay and stage or type of lung cancer. While some studies report no clear harm from short delays, others reported that longer intervals from abnormal finding or diagnosis to treatment were associated with higher mortality or lower survival. A multicancer cohort study showed higher mortality for stage I lung cancer with longer time to treatment, while stage II showed high mortality and no statistically significant differences after longer delays in treatment.

There is *some evidence*, based on one large study, that harms and complications from follow-up procedures are associated with common invasive diagnostic procedures after an abnormal finding from LDCT screening for lung cancer based on one large, matched cohort study. Potential complications include major events such as acute respiratory failure, myocardial infarction, and empyema; intermediate events such as blood loss requiring transfusion, pneumothorax requiring tube placement, and pneumonia; and minor events such as allergic reaction, bronchospasm, and subcutaneous emphysema.

CHBRP found no direct evidence examining the impact of cost sharing for these services. It should be noted that a grading of *not enough research* is given when there is an absence of robust, high-quality studies available in the literature. This does not mean there is no effect; it means that the effect is unknown. While not specific to lung cancer services, there are studies that show increased cost sharing for cancer generally contributes to lower utilization of services.

Cost Impact Analysis: Data Sources, Caveats, and Assumptions

Analytic Assumptions

In addition to the assumptions described in the *Analytic Approach and Assumptions* section of CHBRP's Analysis of California Senate Bill 1309, CHBRP made the following assumptions:

Additional Assumptions

- CHBRP assumed no change in the rate of initial lung cancer screening as a result of SB 1309. The bill affects follow-up services after an abnormal or indeterminate result and does not change the eligibility criteria or coverage requirements for initial LDCT screening.
- CHBRP assumed that provider supply and capacity would be sufficient to accommodate modest increases in utilization of follow-up services and did not model supply constraints.
- CHBRP assumed that follow-up pathways are not strictly linear or uniform. Depending on the initial finding, degree of suspicion, and provider assessment, some enrollees may proceed directly to biopsy, PET/CT, or specialist consultation rather than undergoing repeat imaging first.

Offset methodology and assumptions

- CHBRP modeled a small short-term offset associated with earlier-stage diagnosis among a very small subset of enrollees who newly complete recommended follow-up care because of the elimination of cost sharing. These offsets were modeled separately from the utilization assumption and were not assumed to change the underlying rates of initial screening or provider recommendation patterns.
- This offset assumption is informed by evidence that delays in follow-up, diagnosis, and treatment are associated with upstaging and worse outcomes. Ahmed et al. (2023) reported that 47% of positive screening examinations had delayed follow-up and that delayed follow-up was significantly associated with clinical upstaging in adjudicated screening-detected non–small cell lung cancer cases. Mullin et al. (2026) found that upstaging occurred in 43% of screen-detected early-stage lung cancers and was associated with longer referral-to-treatment times and poorer survival outcomes. Pirzadeh et al. (2024) found that patients with upstaging had longer diagnosis-to-treatment intervals and that treatment within 8 weeks was associated with substantially lower upstaging in post hoc analysis.
- To estimate the share of incremental follow-up users who would receive an earlier-stage diagnosis sufficient to affect treatment costs, CHBRP estimates a conservative scenario assumption of 0.25%. This assumption can be expressed as the product of three component assumptions:
  - 5% of incremental follow-up users would ultimately have lung cancer;
  - 25% of those cancers would be sufficiently timing-sensitive that earlier follow-up could affect stage at diagnosis; and
  - 20% of those timing-sensitive cases would otherwise have experienced enough delay to result in upstaging.
  - Multiplying these assumptions yields: 0.05 × 0.25 × 0.20 = 0.0025, or 0.25%.

  CHBRP uses this 0.25% value as a conservative stage-shift assumption rather than as a directly observed estimate from a single study. The assumption is informed by evidence that delays in follow-up, diagnosis, and treatment are associated with upstaging and worse outcomes (Ahmed et al., 2023; Mullin et al., 2026; Pirzadeh et al., 2024), while also reflecting content expert input that only a subset of cancers would be expected to be stage-sensitive over the relevant delay window.

- CHBRP further assumed that, for affected enrollees, earlier follow-up could result in cancer being identified at an earlier stage than it otherwise would have been. Accordingly, the offset calculation incorporates both one-stage and larger stage shifts, rather than assuming that all affected cases would be diagnosed exactly one stage earlier.
- To estimate the magnitude of the avoided treatment cost associated with earlier-stage diagnosis, CHBRP used first-year stage-specific lung cancer cost estimates from McGarvey et al., 2022. For lung cancer, the reported mean first-year costs were:
  - Stage I: $161,116
  - Stage II: $244,234
  - Stage III: $307,472
  - Stage IV: $418,591
- CHBRP then calculated the first-year avoided treatment cost for each stage shift as follows:
  - Stage IV to Stage III: $418,591 − $307,472 = $111,119
  - Stage IV to Stage II: $418,591 − $244,234 = $174,357
  - Stage IV to Stage I: $418,591 − $161,116 = $257,475
  - Stage III to Stage II: $307,472 − $244,234 = $63,238
  - Stage III to Stage I: $307,472 − $161,116 = $146,356
  - Stage II to Stage I: $244,234 − $161,116 = $83,118
- CHBRP next averaged these values within the stage being avoided:
  - Avoided Stage IV average = ($111,119 + $174,357 + $257,475) ÷ 3 = $180,984
  - Avoided Stage III average = ($63,238 + $146,356) ÷ 2 = $104,797
  - Avoided Stage II average = $83,118
- To estimate a commercial-market avoided treatment cost per shifted case, CHBRP weighted these stage-specific avoided-cost values using the stage distribution for commercially insured lung cancer cases reported in McGarvey et al. (2022), where commercial counts were:
  - Stage II: 148
  - Stage III: 202
  - Stage IV: 593
- The weighted average commercial avoided treatment cost was calculated as:
  - [(148 × $83,118) + (202 × $104,797) + (593 × $180,984)] ÷ (148 + 202 + 593)

    = ($12,301,464 + $21,168,994 + $107,323,512) ÷ 943

    = $140,793,970 ÷ 943

    = $149,304 per shifted case
  - CHBRP used this $149,304 figure as the average avoided first-year treatment cost per case shifted to an earlier stage in the commercial market.
- The offset calculation is a partial offset calculation. CHBRP did not model all potentially offsetting downstream effects, including the possibility that earlier diagnosis may increase spending in some cases through additional diagnostic workup, treatment initiation, surgery, or longer survival. CHBRP also did not model all clinical scenarios, such as slow-growing cancers, cases in which stage would not change despite earlier follow-up, or cases in which cancer would still be diagnosed at stage IV. As a result, the modeled offset should be interpreted as conservative.

Other Considerations for Policymakers

In addition to the impacts a bill may have on benefit coverage, utilization, and cost, related considerations for policymakers are discussed below.

Postmandate administrative and other expenses

CHBRP estimates that the increase in administrative costs of DMHC-regulated plans and CDI-regulated policies would remain proportional to the increase in premiums. CHBRP assumes that if health care costs increase as a result of increased utilization or changes in plan liability for covered services, there is a corresponding proportional increase in administrative costs. CHBRP assumes that the administrative cost portion of premiums is otherwise unchanged.

State health care spending target

In 2024, in an effort to slow health care spending growth and improve health care affordability for California families, California's Office of Health Care Affordability (OHCA) under the Department of Health Care Access and Information approved a statewide target for maximum annual growth in health care spending for certain health care entities. The targets apply to per capita spending for specific entities, including health plans and insurers, provider organizations with at least 25 physicians, and hospitals. The state is implementing this target with a phased-in approach, with a spending target of 3.5% for 2026, 3.2% for 2027 and 2028, and 3.0% for 2029 and beyond. Because health insurance benefit mandates may increase health care spending, including premiums and administrative costs, OHCA spending targets may be relevant considerations in benefit mandate policy decisions.

Postmandate changes in the number of uninsured persons

CHBRP assumes that if premiums increase by more than 1.7% in the small- or large-group market segments or 0.6% in the individual market, some enrollees will lapse their coverage. Because the projected premium changes associated with SB 1309 do not exceed these thresholds, CHBRP would expect no measurable change in the number of uninsured persons due to the enactment of SB 1309. This finding is consistent with the modest premium increases shown in the main analysis.

Changes in public program enrollment

CHBRP estimates that the mandate would produce no measurable impact on enrollment in publicly funded insurance programs due to the enactment of SB 1309. Although Medi-Cal beneficiaries are included in the broader state-regulated coverage landscape for completeness in the main analysis, no measurable enrollment changes are projected for publicly funded coverage.

How lack of benefit coverage results in cost shifts to other payers

In general, CHBRP assumes that enrollees who do not have fully compliant benefit coverage for follow-up lung cancer services either pay for services directly or forgo or delay care. To the extent that enrollees delay or do not complete recommended follow-up after an abnormal or indeterminate finding, costs may be shifted to other payers through later, more intensive treatment, uncompensated care, or care financed through public programs. CHBRP did not identify sufficient evidence to quantify these cost shifts directly for SB 1309, but delayed diagnosis and later-stage treatment may increase financial burden on other payers relative to timely follow-up care.

Determining Public Demand for the Proposed Mandate

CHBRP reviews public demand for benefits by comparing the benefits provided by self-insured health plans or policies, which are not regulated by the DMHC or CDI and therefore not subject to state-level mandates, with the benefits that are provided by plans or policies that would be subject to the mandate.

Among publicly funded self-insured health insurance policies, the preferred provider organization plans offered by CalPERS have the largest number of enrollees. The CalPERS PPOs currently provide benefit coverage for follow-up lung cancer services similar to what is available through group health insurance plans and policies that would be subject to SB 1309, although cost sharing may differ across services and products.

To further investigate public demand, CHBRP used the bill-specific coverage survey to ask plans and insurers who act as third-party administrators for non-CalPERS self-insured group health insurance programs whether the relevant benefit coverage differed from what is offered in group-market plans or policies that would be subject to the mandate. The responses did not indicate substantive differences in the availability of covered follow-up lung cancer services, although the extent of enrollee cost sharing may vary.

Cost Impact Analysis: Data Sources, Methodology, Assumptions and Caveats

With the assistance of CHBRP's contracted actuarial firm, Milliman, Inc., the cost analysis presented in this report was prepared by the faculty and researchers connected to CHBRP's Task Force with expertise in health economics.[31] Information on the generally used data sources and estimation methods, as well as caveats and assumptions generally applicable to CHBRP's cost impacts analyses, are available on CHBRP's website.[32]

This section describes analysis-specific data sources, estimation methods, caveats, and assumptions used in preparing this cost impact analysis.

Analysis-Specific Data Sources

Baseline coverage of follow-up imaging, biopsy or tissue sampling, and specialist consultation services for commercial enrollees was determined by a survey of the largest (by enrollment) providers of health insurance in California. Responses to this survey represent approximately 58% of commercial enrollees with health insurance that can be subject to state benefit mandates. In addition, CalPERS was queried regarding related benefit coverage. As necessary, CHBRP extrapolated from responses of similarly situated plans/policies.

For this analysis, CHBRP relied on Current Procedural Terminology (CPT®) codes to identify services relevant to SB 1309. CPT copyright 2026 American Medical Association (AMA). All rights reserved. Fee schedules, relative value units, conversion factors, and/or related components are not assigned by the AMA, are not part of CPT, and the AMA is not recommending their use. The AMA does not directly or indirectly practice medicine or dispense medical services. The AMA assumes no liability for data contained or not contained herein. CPT is a registered trademark of the AMA.

Health cost guidelines

The health cost guidelines (HCGs) are a health care pricing tool used by actuaries in many of the major health plans in the United States. The guidelines provide a flexible but consistent basis for estimating health care costs for a wide variety of commercial health insurance plans. It is likely that these organizations use the HCGs, among other tools, to determine the initial premium impact of any new mandate. Thus, in addition to producing accurate estimates of the costs of a mandate, we believe the HCG-based values are also good estimates of the premium impact as estimated by the HMOs and insurance companies.

The highlights of the commercial HCGs include:

- Specific major medical, managed care, and prescription drug rating sections and guidance with step-by-step rating instructions.

[31] CHBRP's authorizing statute requires that CHBRP use a certified actuary or "other person with relevant knowledge and expertise" to determine financial impact.
[32] See CHBRP's Cost Impact Analysis landing page; in particular, see *Cost Impact Analyses: Data Sources, Caveats, and Assumptions*.

- Other helpful analysis resources, such as inpatient length of stay distribution tables, Medicare Severity-Adjusted Diagnosis Related Group (MS-DRG) models, and supplementary sections addressing EHBs and mandated benefits, experience rating, and individual and small-group rating considerations.
- Presentation of loosely and well-managed nationwide utilization and cost information by Milliman benefit-aligned service categories used throughout the Rating Structures – inpatient hospital services for both loosely and well-managed are also supported by DRG level utilization and cost benchmarks.
- Annual updates address emerging regulatory considerations such as health care reform and mental health parity requirements.
- Annually updated benefit descriptions used in the HCG service categories.
- Annually updated medical trend assumptions and considerations.
- Presentation of two sets of nationwide area factors to facilitate development of area-specific claim costs, including separate utilization and charge level factors by type of benefit, state and Metropolitan Statistical Area for first-dollar coverage, and composite factors by deductible amount.
- Claim Probability Distributions (CPDs) by type of coverage that contain distributions of claim severity patterns for unique combinations of benefits and member types (adult, child, composite member).
- The Prescription Drug Rating Model (RXRM), an automated rating tool that provides a detailed analysis of prescription drug costs and benefits.

Consolidated Health Cost Guidelines Sources Database

Milliman maintains benchmarking and analytic databases that include health care claims data for nearly 60 million commercial lives and over 3 million lives of Medicaid managed care data. This dataset is routinely used to evaluate program impacts on cost and other outcomes.

Detailed Cost Notes Regarding Analysis-Specific Caveats and Assumptions

The analytic approach and key assumptions are determined by the subject matter and language of the bill being analyzed. As a result, analytic approaches may differ between topically similar analyses, and therefore the approach and findings may not be directly comparable.

The population subject to SB 1309 includes DMHC-regulated commercial insurance plans, CDI-regulated policies, and CalPERS plans subject to the requirements of the Knox-Keene Health Care Service Plan Act that offer lung cancer–related follow-up screening after an initial lung cancer screening. Medi-Cal enrollees do not have cost sharing and have plans that are compliant with SB 1309.

Methodology and assumptions for baseline utilization

- CHBRP identified initial lung cancer screenings as claims with a 71271 CPT, R91.1 ICD 10 diagnosis code, or R91.8 ICD 10 diagnosis code and summarized all related screenings after those claims as follow up lung cancer screenings.
  - Biopsy/Surgery – CPT[1] codes 32408, 10004, 10005, 10007, 10008, 10009, 10010, 10011, 10012, 31622, 31623, 31624, 31625, 31627, 31628, 31629, 31632, 31633, 31652, 31653, 31654, 88305, 88307, 88104, 88108, 88112, 88173
  - Imaging – CPT[33] codes 71250, 71260, 71270, 78811–78816, 78815, 78816
- Consults – CPT1 codes 99202–99205, 99212–99215 in conjunction with ICD 10 diagnosis codes Z12.2, R91.1, or R91.8.

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- CHBRP calculated the follow-up lung cancer screenings 1,000 enrollees for biopsy/surgery, imaging, and consults using Milliman's proprietary 2024 Consolidated Health Cost Guidelines™ Sources Database (CHSD).
- The follow-up lung cancer screenings 1,000 enrollees was trended from 2024 to 2027 using a 0% utilization trend based on the 2025 Milliman Health Cost Guidelines.

Methodology and assumptions for baseline cost

- CHBRP calculated the average commercial cost of follow-up lung cancer screening using CHSD. The average commercial cost per case was trended from 2024 to 2027 using a 3.0% cost trend based on the 2025 Milliman Health Cost Guidelines.
- CHBRP calculated the average Medi-Cal cost of follow-up lung cancer screening using the 2026 Medi-Cal fee schedule weighted using utilization from CHSD.
- CHBRP aligned survey responses from carriers showing some coverage without cost sharing for biopsies, but not pathology, by adjusting the weight of the baseline biopsy cost. For a typical outpatient percutaneous lung biopsy, a reasonable base-case estimate is that pathology and histology, including pathology review, account for about 18% of total biopsy cost. This estimate uses the published median total cost of an outpatient percutaneous biopsy and 2026 Medicare physician fee schedule accounts (Chiu et al., 2021; CAP, 2026).

Methodology and assumptions for baseline cost sharing

- CHBRP calculated the average commercial cost sharing of follow-up lung cancer screening using CHSD. The average commercial cost sharing per case was trended from 2024 to 2027 using a 3.0% cost trend based on the 2025 Milliman Health Cost Guidelines.
- CHBRP assumed Medi-Cal enrollees have no cost sharing for follow-up lung cancer screening in 2027 at baseline.

Methodology and assumptions for postmandate utilization

- CHBRP assumed a 4% increase in follow-up lung cancer screening as a result of SB 1309.
- CHBRP assumed no increase in initial lung cancer screening as a result of SB 1309.

Methodology and assumptions for postmandate cost

- CHBRP assumed the average cost per service would not change as a result of SB 1309.

Methodology and assumptions for postmandate cost sharing

- CHBRP assumed the average cost sharing would be $0 for follow-up lung cancer screening as a result of SB 1309.

Determining Public Demand for the Proposed Mandate

CHBRP reviews public demand for benefits by comparing the benefits provided by self-insured health plans or policies (which are not regulated by the DMHC or CDI and therefore not subject to state-level mandates) with the benefits that are provided by plans or policies that would be subject to the mandate.

Among publicly funded self-insured health insurance policies, the preferred provider organization (PPO) plans offered by CalPERS have the largest number of enrollees. The CalPERS PPOs currently provide benefit coverage similar to what is available through group health insurance plans and policies that would be subject to the mandate.

To further investigate public demand, CHBRP used the bill-specific coverage survey to ask plans and insurers who act as third-party administrators for (non-CalPERS) self-insured group health insurance programs whether the relevant benefit

coverage differed from what is offered in group market plans or policies that would be subject to the mandate. The responses did not indicate substantive differences.

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CHBRP is an independent program administered and housed by the University of California, Berkeley, under the Office of the Vice Chancellor for Research. A group of faculty, researchers, and staff complete the analysis that informs CHBRP reports. The CHBRP **Faculty Task Force** comprises rotating senior faculty from University of California (UC) campuses. In addition to these representatives, there are other ongoing researchers and analysts who are **Task Force Contributors** to CHBRP from UC that conduct much of the analysis. The **CHBRP staff** works with Task Force members in preparing parts of the analysis, and manages external communications, including those with the California Legislature. As required by CHBRP's authorizing legislation, UC contracts with an independent actuarial firm, **Milliman, Inc.**, to assist in assessing the financial impact of each legislative proposal mandating or repealing a health insurance benefit. The **National Advisory Council** provides expert reviews of draft analyses and offers general guidance on the program to CHBRP staff and the Faculty Task Force. Information on CHBRP's analysis methodology, authorizing statute, as well as all CHBRP reports and other publications, are available at chbrp.org.

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CHBRP assumes full responsibility for the report and the accuracy of its contents. All CHBRP bill analyses and other publications are available at chbrp.org.

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Please direct any questions concerning this document to: California Health Benefits Review Program, MC 3116, Berkeley, CA 94720-3116; info@chbrp.org; or chbrp.org.

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The California Health Benefits Review Program (CHBRP) was established in 2002. CHBRP's mission is to inform and support policymaking in California through the creation of impartial, evidence-based resources. As per its authorizing statute, CHBRP provides the California Legislature with independent analysis of the medical, financial, and public health impacts of proposed health insurance benefit-related legislation. CHBRP is dedicated to providing academic rigor on a Legislature's timeline.

The state funds CHBRP through an annual assessment on health plans and insurers in California.

An analytic staff based at the University of California, Berkeley, supports a task force of faculty and research staff from multiple University of California campuses to complete each CHBRP analysis. A strict conflict-of-interest policy ensures that the analyses are undertaken without bias. An independent actuarial firm helps to estimate the financial impact. Content experts with comprehensive subject-matter expertise are consulted to provide essential background and input on the analytic approach for each report.

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This analysis is based on existing literature and public sources identified through systematic search methods. This evidence informs the California Legislature about potential impacts of proposed health benefit legislation and does not constitute a policy recommendation from CHBRP.

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