KEY FINDINGS

Analysis of California Assembly Bill 546: Portable HEPA Purifiers and Filters

Summary to the 2025–2026 California State Legislature, April 13, 2025

Summary

The version of California Assembly Bill (AB) 546 analyzed by California Health Benefits Review Program (CHBRP) would require coverage of air filtration equipment without cost sharing, for enrollees diagnosed with asthma or chronic obstructive pulmonary disease (COPD), and enrollees who are pregnant.

In 2026, of the 22.2 million Californians enrolled in state-regulated health insurance, 13.6 million of them would have insurance subject to AB 546.

Benefit Coverage

At baseline, there is no coverage for any enrollees in Department of Managed Health Care (DMHC)-regulated plans and California Department of Insurance (CDI)-regulated policies for air filtration equipment. Postmandate, AB 546 would increase coverage for 100% of enrollees with asthma, COPD, or who are pregnant. AB 546 may exceed essential health benefits (EHBs).

Medical Effectiveness

CHBRP found *some evidence* that high-efficiency particulate air (HEPA) filtration is effective in the reduction of negative health outcomes in those with asthma who were exposed to cigarette smoke, but *conflicting evidence* for the general asthma population. CHBRP found *some evidence* for the effectiveness of HEPA filtration on health outcomes for people with COPD or who are pregnant. CHBRP found no studies on the effectiveness of household HVAC filters on health outcomes for the populations impacted by AB 546.

Cost and Health Impacts[1]

In 2026, AB 546 would result in 65,000 additional households using air filtration equipment, for an additional $13.6 million in annual expenditures (includes any likely cost offsets), resulting in improvements in health outcomes for enrollees with asthma, COPD, or who are pregnant.

Context

Air pollution refers to harmful gases, tiny particles, or biological substances in the air that can negatively impact human health.[2] Air pollution can come from outdoor sources, such as factories and wildfires, and indoor sources, such as cooking, smoking, and heating. Fine particulate matter, known as PM2.5, is a major type of air pollutant. PM2.5 includes any particles that measure 2.5 microns or smaller in diameter—about 30 times smaller than the width of a human hair. Because these particles are so small, they can penetrate deeply into the lungs, causing serious health problems.

Indoor air filtration equipment can be used to remove harmful particles from indoor air. AB 546 specifically addresses the following types of air filtration equipment:

1. **Portable air filtration devices and their associated HEPA filters.** High-efficiency particulate air (HEPA) filters capture at least 99.97% of particles 0.3 microns in diameter, including PM2.5. Portable devices typically clean the air in a single room and require regular filter replacements. Larger, more powerful devices can clean bigger spaces but tend to cost more.
2. **Household HVAC filters.** These filters are installed in heating, ventilation, and air conditioning (HVAC) systems. They use the Minimum Efficiency Reporting Value (MERV) rating to show their particle-capturing ability. AB 546 specifically covers HVAC filters rated MERV 13, which trap at least 85% of particles between 1 and 3 microns in size, roughly the size of PM2.5. MERV 13 filters do not capture very small particles as efficiently as true HEPA filters. True HEPA filters are rarely used in HVAC systems because they significantly restrict

[1] Similar cost and health impacts could be expected for the following year though possible changes in medical science and other aspects of health make stability of impacts less certain as time goes by.

[2] Refer to CHBRP's full report for full citations and references.

airflow, requiring special equipment. Like portable filters, HVAC system filters must also be replaced regularly.

Bill Summary

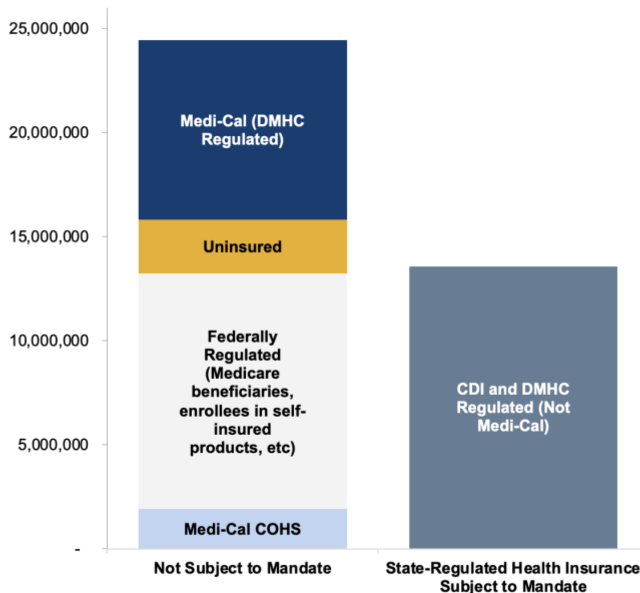
AB 546 would require coverage for air filtration equipment, without cost sharing, for enrollees diagnosed with asthma or COPD, and enrollees who are pregnant.

The term *air filtration equipment*, used by CHBRP, includes portable air filtration devices and their accompanying HEPA filters, and specialized air filters in home HVAC systems.

If enacted, AB 546 would apply to the health insurance of enrollees in commercial or California Public Employees' Retirement System (CalPERS) health insurance regulated by DMHC or CDI. All Medi-Cal Managed Care plans are exempt from the legislation.

Figure A notes how many Californians have health insurance that would be subject to AB 546.

Figure A. Health Insurance in CA and AB 546



Source: California Health Benefits Review Program, 2025.
Note: CHBRP generally assumes alignment of Medi-Cal Managed Care plan benefits, with limited exceptions.[3]
Key: CDI = California Department of Insurance; COHS = County Organized Health System; DHCS = Department of Health Care Services; DMHC = Department of Managed Health Care.

How does utilization impact premiums?

Health insurance, by design, distributes risk and expenditures across everyone enrolled in a plan or policy. It does so to help protect each enrollee from the full impact of health care costs that arise from that enrollee's use of prevention, diagnosis, and/or treatment of a covered medical condition, disease, or injury. Changes in utilization among any enrollees in a plan or policy can result in changes to premiums for all enrollees in that plan or policy.

Impacts

Benefit Coverage

At baseline, there was no coverage for any enrollees in DMHC-regulated plans and CDI-regulated policies for air filtration equipment. AB 546 would increase coverage for 100% of enrollees with asthma, COPD, or who are pregnant in DMHC-regulated plans and CDI-regulated policies, excluding Medi-Cal Managed Care plans.

Utilization and Unit Cost

CHBRP estimates there are 85,195 households containing enrollees with asthma or COPD, or who are pregnant that use air filtration equipment at baseline. CHBRP estimates the number would increase postmandate by 76.05%. More specifically, the number of households with pregnant enrollees that will obtain air filtration equipment will increase from 24,307 to 32,494, those with enrollees with asthma will increase from 57,476 to 111,480, and those with enrollees with COPD will increase from 3,412 to 6,015 households.

CHBRP estimates the additional benefit coverage for air filtration equipment will increase the average annual cost of air filtration equipment per year by 12.4% due to more frequent replacements of filters or devices.

Expenditures

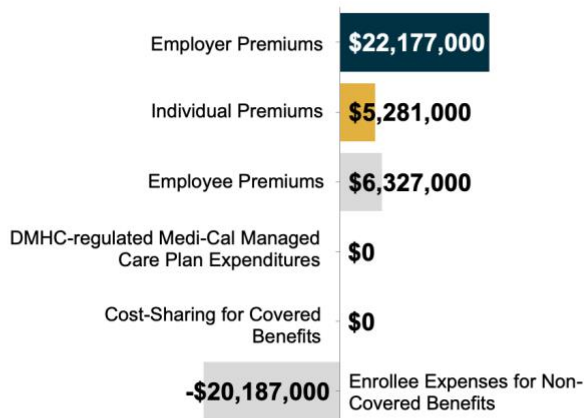
AB 546 would increase total net annual expenditures by approximately $13.6 million for enrollees with DMHC-regulated plans and CDI-regulated policies (Figure B). This is inclusive of an increase in premiums of $33,785,000; an approximate $20.2 million decrease in

[3] Although COHS plans are not subject to the Knox-Keene Act, DHCS generally updates Medi-Cal Managed Care plan contracts, All Plan Letters, and other appropriate authorities for alignment of managed care plan benefits, except in cases when the benefit is carved out of the Medi-Cal Managed Care plan contract or the law exempts specified Medi-Cal contracted providers.

enrollee expenses for noncovered benefits; and cost offsets due to a reduction in the number of medications used for enrollees with asthma, and a reduction in urgent care visits for enrollees with COPD.

Changes in premiums because of AB 546 would vary by market segment. The largest increases in premiums would occur in the DMHC-regulated large-group (0.0295%) and small-group market (0.0301%) and the CDI-regulated small-group (0.0309%) and individual market (0.0304%). The smallest change would be 0.0242% in the DMHC-regulated individual market. Because none of the insurance market segments had baseline coverage for air filtration equipment, the increases in premiums would be driven primarily by the underlying populations of asthma, COPD, and pregnant people in each market segment.

Figure B. Expenditure Impacts of AB 546



Source: California Health Benefits Review Program, 2025.
Key: DMHC = Department of Managed Health Care.

Medi-Cal

There would be no impact on Medi-Cal expenditures because the health insurance of all Medi-Cal beneficiaries is exempt from the bill.

CalPERS

For enrollees associated with CalPERS in DMHC-regulated plans, CHBRP estimates premiums would increase by 0.0241%.

Covered California – Individually Purchased

Enrollees in Covered California DMHC-regulated small-group products would experience a 0.0299% increase in premiums, whereas those Covered California DMHC-regulated individual market products would see a 0.0242% premium increase. There were not sufficient data to project an increase in the CDI-regulated Covered California small-group or individual market.

Number of Uninsured in California

Because the change in average premiums does not exceed 1% for any market segment, CHBRP would expect no measurable change in the number of uninsured persons due to the enactment of AB 546.

Medical Effectiveness

CHBRP did not find any studies related to the impacts of household HVAC filters on health outcomes for individuals with COPD, asthma, or who are pregnant. Therefore, the medical effectiveness review focused on only HEPA air filtration equipment.

CHBRP assumed that HEPA filtration devices are effective in removing particulate matter from the air, trapping at least 99.97% of particles 0.3 microns in size. The medical effectiveness analysis summarizes studies that examined the impact of HEPA filtration for individuals with the specified conditions regardless of the cause of air impurities, although separate findings for wildfire smoke and tobacco smoke are reported. Additionally, all studies summarized involve the utilization of portable devices on indoor particulate levels (versus whole-house systems).

CHBRP found:

- *Some evidence*[4] that HEPA filtration is effective in the reduction of negative health outcomes in those with asthma who were exposed to cigarette smoke, but *conflicting evidence*[5] regarding the impact on negative health outcomes for those with asthma who were not exposed to cigarette smoke.

[4] *Some 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.

[5] Conflicting evidence indicates that a similar number of studies of equal quality suggest the treatment is effective as suggest the treatment is not effective.

- *Some evidence* for the effectiveness of HEPA filtration on health outcomes for those with COPD or who are pregnant.

With regard to the impact of HEPA filters on the reduction of negative health outcomes for those with asthma but who were not regular exposed to cigarette smoke, several studies reported significant for outcomes such as symptom control and medication utilization. However, other studies of similar size and quality reported non-significant findings for similar health outcomes leading CHBRP to conclude the evidence is *conflicting* for this population.

It is well established both that HEPA filtration is effective at cleaning indoor air, and that exposure to polluted air, especially that due to smoke, leads to adverse health outcomes. However, the current research is insufficient with regard to the direct impact of HEPA filtration on health outcomes for those exposed to polluted air.

Public Health

AB 546 is projected to lead to the following improvements in health outcomes:

- An improvement in respiratory health status for enrollees with asthma, especially the 3,800 living in homes where they are exposed to tobacco smoke, including a significant reduction in the use of steroids and inhalers.
- An improvement in respiratory health status and quality of life for 2,600 enrollees with COPD, including 484 fewer urgent care visits.
- An improvement in fetal growth and cognitive development for babies born in the 8,200 homes with pregnant enrollees.

In the first year postmandate, CHBRP estimates that people with asthma exposed to tobacco smoke in the home, enrollees with COPD, and pregnant enrollees would all have improvements in health outcomes related to health care use. This estimate is supported by some evidence that air filtration equipment is medically effective, would reduce some avoidable urgent care and prescription drug use for specific populations, and the estimated increase in nearly 65,000 homes that would use this equipment postmandate.

Long-Term Impacts

Future climate shifts are expected to increase the frequency and severity of wildfires in California. More frequent wildfires will result in increased air pollution and greater health risks. Given these projected increases in ambient air pollution, increased use of air filtration equipment could be more beneficial in the coming years.

Over time, provider and population awareness of the benefits of air filtration equipment is expected to improve and utilization of the equipment will increase. Due to likely increases in wildfire frequency and severity, more people may be likely to purchase air filtration equipment to address wildfire smoke concerns, especially for those with asthma and COPD. It is unclear how health plans and insurers would structure the benefit if AB 546 were enacted, which leads to some uncertainty about long-term use and costs.

Additional use and payment by health plans and insurers after Year 1 is highly likely, with premiums expected to increase concurrently with increased use of both purifiers and replacement filters. Though there are short-term cost offsets for specific subgroups of people with asthma and COPD, the reductions in medication use and urgent care visits do not fully offset the additional premium spending for the covered benefit.

It is possible that AB 546 could reduce premature death and reduce economic loss in California for specific populations, including children born to parents who use air filtration equipment, but the extent to which these could happen is unknown.

Essential Health Benefits and the Affordable Care Act

AB 546 would require coverage for a new state benefit mandate that may exceed the definition of EHBs in California by requiring benefit coverage beyond what is present in the California EHB benchmark plan or required as a basic health care service as defined under the Knox Keene Health Care Service Plan Act of 1975.