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## Report to California Legislature

### **Title**

Analysis of California Assembly Bill 2668: Coverage for Cranial Protheses

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A REPORT TO THE 2023–2024 CALIFORNIA STATE LEGISLATURE

# **Analysis of California Assembly Bill 2668 Coverage for Cranial Prostheses**

APRIL 15, 2024



California Health Benefits Review Program (CHBRP)  
Office of Research, University of California, Berkeley

[www.chbrp.org](http://www.chbrp.org)

# Analysis of California Assembly Bill 2668

## Coverage for Cranial Prostheses

Summary to the 2023-2024 California State Legislature, April 15, 2024



### Summary

The version of California Assembly Bill (AB) 2668 analyzed by CHBRP would require state-regulated health plans and policies to provide coverage for cranial prostheses (hereafter referred to as medical wigs) for enrollees experiencing permanent or temporary hair loss due to a medical condition or treatment (medical hair loss). The bill requires that coverage would be limited to one medical wig per enrollee per year, up to \$750 per medical wig, and subject to the enrollee's cost-sharing requirements under their health insurance plan or policy.

In 2025, all of the 24,194,000 million Californians enrolled in state-regulated health insurance would have health insurance subject to AB 2668. This includes enrollees in commercial and California Public Employees' Retirement System (CalPERS) plans and policies, as well as Medi-Cal beneficiaries.

#### Benefit Coverage

Benefit coverage for medical wigs would increase from 29% at baseline to 100% postmandate. AB 2668 would likely exceed essential health benefits (EHBs).

#### Medical Effectiveness

CHBRP identified evidence that medical wigs improve quality of life for patients with medical hair loss, but the evidence is *limited*.

#### Cost and Health Impacts

In 2025, AB 2668 would increase total net annual expenditures by \$26,503,000 (0.02%) for enrollees with state-regulated health insurance due to an increase in total premium expenditures and enrollee expenses. AB 2668 would likely yield health and quality of life improvements, such as improved quality of life and mental health among the additional 20,500 enrollees who would use medical wigs.

### Context

Hair loss is often due to damages of the structures in the skin that form hair (i.e., hair follicles). There are several forms of medical hair loss, depending on both the extent of hair loss and etiology, including:

- **Alopecia areata:** an autoimmune disease of hair follicles that causes nonscarring patches of hair loss.
- **Scarring alopecia:** a type of hair loss characterized by the destruction of hair follicles resulting from infections, chemicals, burns, or autoimmune disorders. This form of hair loss is permanent.
- **Lupus-induced alopecia:** lupus is an autoimmune disease that attacks healthy tissue, including skin cells and hair follicles, meaning hair will no longer be held or grown. Hair loss can be a key feature of lupus. Lupus-induced alopecia can result in scarring alopecia as well as alopecia areata.
- **Alopecia medicamentosa:** caused by a reaction to various types of drugs, commonly a result of chemotherapy; also known as chemotherapy-induced alopecia.
- **Androgenetic alopecia:** a type of hair loss also known as male or female pattern hair loss that is driven by genetic factors and is characterized by progressive hair loss after puberty.

Patients experiencing hair loss may use medical wigs or hairpieces to help restore their physical appearance. Many different styles of medical wigs exist, and surveys report median costs of between \$450 and \$1,500, though some medical wigs cost upwards of \$5,000.

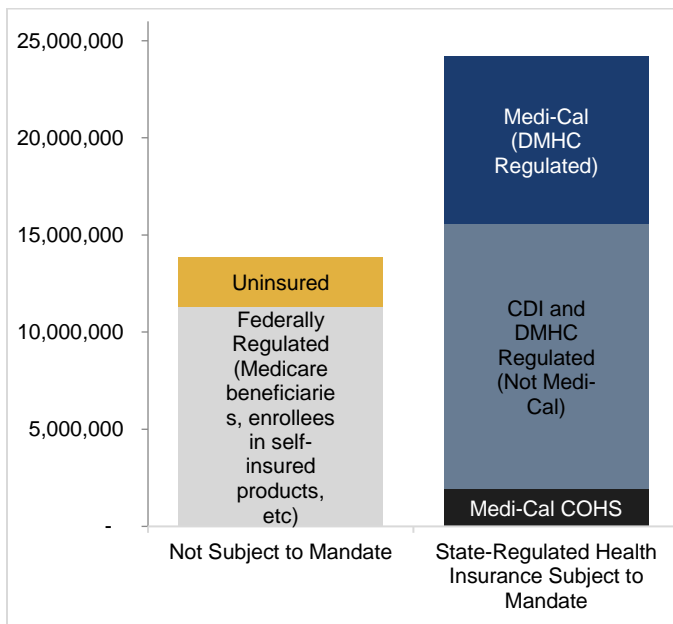
### Bill Summary

AB 2668 would require state-regulated health plans and policies to provide coverage for cranial prostheses — defined by the bill as wigs or hairpieces, and referred to in this analysis as medical wigs — for enrollees experiencing permanent or temporary hair loss due to a medical condition or treatment (referred to as medical hair loss). Coverage would require a licensed provider to prescribe a medical wig for an enrollee's "course of treatment for a diagnosed health condition, chronic

illness, or injury, including but not limited to alopecia areata, alopecia medicamentosa, scarring alopecia, and lupus.” The bill requires that coverage would be limited to one medical wig per enrollee per year, up to \$750 per medical wig, and subject to the enrollee’s cost-sharing requirements under their health insurance plan or policy.

Figure A notes how many Californians have health insurance that would be subject to AB 2668.

**Figure A. Health Insurance in CA and AB 2668**



**Source: California Health Benefits Review Program, 2024.**  
 Key: CDI = California Department of Insurance; COHS = county organized health system; DMHC = Department of Managed Health Care.

## Impacts

### Benefit Coverage

Based on responses to CHBRP’s bill-specific benefit coverage survey of California insurers, 29% of enrollees have coverage for medical wigs at baseline. Most enrollees have baseline benefit coverage with no limit on cost per medical wig, while a small portion of enrollees have coverage with a benefit cap of \$350 or \$1,000 per medical wig. Baseline benefit coverage is not limited to enrollees with certain conditions, diagnoses, or treatments.

All 24.2 million enrollees who have commercial or California Public Enrollees’ Retirement System (CalPERS) health insurance regulated by the Department of Managed Health Care (DMHC) and

California Department of Insurance (CDI), as well as Medi-Cal beneficiaries enrolled in DMHC-regulated Medi-Cal managed care plans or county organized health system (COHS) plans would have health insurance subject to AB 2668. Postmandate, all enrollees would have benefit coverage for medical wigs for \$750 per medical wig.

### Utilization

Approximately 15,100 enrollees obtain medical wigs at baseline and have baseline benefit coverage. Approximately 17,000 enrollees purchase medical wigs out of pocket at baseline due to lack of benefit coverage.

Postmandate, these enrollees would have their medical wig covered (up to \$750) by their insurance. Approximately 20,500 enrollees would newly utilize medical wigs due to increased benefit coverage postmandate.

### Expenditures

There are very limited numbers of claims for medical wigs within Milliman’s proprietary 2022 Consolidated Health Cost Guidelines™ Sources Database (CHSD), which indicates that a vast majority of baseline utilization is happening outside of insurance. There are external organizations that provide medical wigs to patients experiencing medical hair loss, often at no cost or at a discounted rate. Additionally, enrollees may be unaware of existing benefit coverage and therefore do not seek coverage for medical wigs they are purchasing out of pocket. **Therefore, this analysis likely overestimates the proportion of utilization that is covered by an enrollee’s health insurance at baseline. Should claims data accurately reflect baseline utilization, premium impacts due to AB 2668 would be approximately twice as high.**

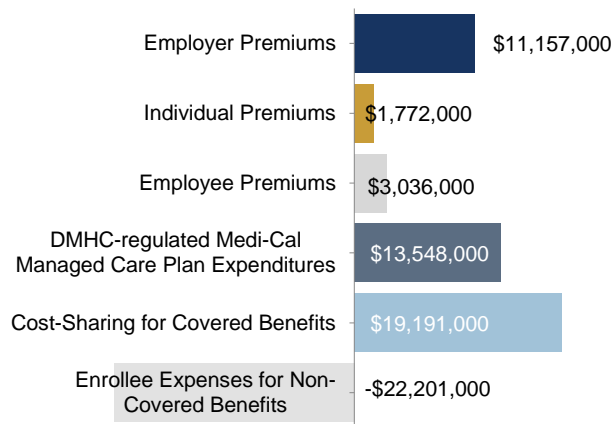
AB 2668 would result in an increase of total net annual expenditures of \$26,503,000 (0.02%) for enrollees with state-regulated health insurance. This would include an increase of \$29,513,000 in total premiums for newly covered benefits, as well as the increase of \$19,191,000 in enrollee expenses for covered benefits. Expenses for noncovered benefits would decrease by \$22,201,000.

Increases in commercial employer premiums would range between \$0.004 per member per month (PMPM) for CDI-regulated large-group policies to \$0.10 PMPM for DMHC-regulated large-group plans. Enrollee

premiums would increase between \$0.001 PMPM for CDI-regulated large-group policies and \$0.06 PMPM for DMHC-regulated individual plans.

For commercial and CalPERS enrollees, cost sharing would increase by \$19,191,000 million and include an enrollee’s cost share of the \$750 benefit amount, as well as additional expenses should an enrollee purchase a medical wig that is more expensive than \$750. On average, enrollee cost sharing would increase between \$0.006 PMPM for enrollees in CDI-regulated large-group policies and \$0.14 PMPM for enrollees in DMHC-regulated large-group plans. Expenses for noncovered benefits would decrease by \$0.007 PMPM for enrollees in CDI-regulated large-group policies and \$0.17 PMPM for enrollees in DMHC-regulated large-group plans.

**Figure B. Expenditure Impacts of AB 2668**



Source: California Health Benefits Review Program, 2024.  
Key: DMHC = Department of Managed Health Care.

## Medi-Cal

CHBRP assumes Medi-Cal beneficiaries with no baseline benefit coverage do not purchase medical wigs out of pocket at baseline. Therefore, utilization of medical wigs would increase from 6,400 beneficiaries obtaining medical wigs at baseline to 22,800 beneficiaries obtaining medical wigs postmandate. As a result, premiums for Medi-Cal (including COHS) would increase by \$13,548,000 (0.04%) or by \$0.11 PMPM. Covered services are not subject to cost sharing for beneficiaries in Medi-Cal and CHBRP assumes Medi-

Cal beneficiaries would not purchase medical wigs that are above the \$750 coverage amount.

## CalPERS

For enrollees associated with CalPERS in DMHC-regulated plans, premiums would increase by 0.01% (\$0.1042 per member per month, or \$928,000 total increase in premiums). PMPM employer premiums would increase by \$0.09 PMPM and enrollee premiums would increase by \$0.02 PMPM. Enrollee cost sharing for CalPERS enrollees would increase by \$0.12 PMPM and expenses for noncovered benefits would decrease by \$0.13 PMPM.

## Covered California – Individually Purchased

For enrollees in individual plans purchased through Covered California, premiums would increase by a total of \$1,412,000. For enrollees in individual plans purchased outside Covered California, premiums would increase by a total of \$360,000.

## 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 2668.

## Medical Effectiveness

CHBRP identified five studies that examined the impact of medical hair loss on quality of life. The findings from these studies consistently demonstrate a negative impact on quality of life for patients experiencing medical hair loss. The studies suggest that quality of life for these patients is most impaired from greater overall psychological distress and social anxiety. The majority of participants that were asked about concealment or wigs reported that they wore a wig to cope with the negative effects of their hair loss.

The identified studies that specifically examined the impact of medical wigs provided *limited evidence*<sup>1</sup> to suggest a positive improvement on quality of life. Using

<sup>1</sup> *Limited evidence* indicates that the studies have limited generalizability to the population of interest and/or the studies have a fatal flaw in research design or implementation.

a medical wig improves quality of life for some patients experiencing hair loss by reducing the impact that their condition has on their social well-being. However, many patients who use a wig and report benefits also report negative impacts or experiences with their wigs, often related to the quality or fit of the medical wig. This suggests that high-quality, well-fitting medical wigs would have the most positive impact on quality of life.

## Public Health

AB 2668 would likely yield health improvements, such as improved quality of life and mental health among the additional 20,500 enrollees who would use medical wigs. Among enrollees purchasing medical wigs out of pocket at baseline, CHBRP assumes enrollees would use the new benefit coverage to obtain a higher cost medical wig. Thus, AB 2668 would not be expected to reduce the financial burden associated with medical wig use. However, should enrollees use the new benefit coverage to reduce their out-of-pocket costs, these enrollees would see a reduction in financial burden associated with medical wig use.

There are disparities in the underlying conditions that cause medical hair loss. Black women, in particular, have higher rates of some of the underlying conditions that lead to medical hair loss. While AB 2668 would be expected to expand access to medical wigs, it is not clear if this expanded access would specifically address the needs of Black women, especially as it has been reported that Black women are less likely to find medical wigs with the appropriate hair texture and hair styles. Therefore, it is unknown to what extent AB 2668 would reduce disparities either in the short or long term.

## Long-Term Impacts

Utilization of medical wigs would likely be higher in the long term. For enrollees with alopecia medicamentosa, some enrollees will seek a new medical wig each year, while others will use one total. For enrollees with permanent or long-term hair loss due to alopecia areata or scarring alopecia, utilization of medical wigs may be greater than in the first year postmandate.

As a result of the increase in utilization in the long term, long-term cost impacts of AB 2668 would likely be higher than the first year postmandate. It is possible that unit cost of medical wigs would be impacted due to the increase in insurance coverage. Insurers may negotiate the unit cost of medical wigs, potentially driving down unit cost.

## Essential Health Benefits and the Affordable Care Act

AB 2668 would require coverage for a new state benefit mandate that appears to exceed the definition of EHBs in California. A state that requires qualified health plans (QHPs) to offer benefits in excess of the EHBs must make payments to defray the cost of those additionally mandated benefits, either by paying the purchaser directly or by paying the QHP.

The impacts of AB 2668 on cost to the state would vary by market segment (and by market segment enrollment). CHBRP estimates that the state would potentially be required to defray the following amounts due to AB 2668:

- \$0.13 PMPM for each QHP enrollee in a small-group DMHC-regulated plans;
- \$0.11 PMPM for each QHP enrollee in an individual DMHC-regulated plan; and
- \$0.11 PMPM for each QHP enrollee in a small-group CDI-regulated policy.

CHBRP estimates that this translates to a state responsibility of \$6,264,000 total, which includes:

- \$6,186,000 in payments to DMHC-regulated small-group and individual plans; and
- \$78,000 in payments to CDI-regulated small-group policies.

## About CHBRP

**The California Health Benefits Review Program (CHBRP) was established in 2002. 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.**

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. A certified, independent actuary 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.

More detailed information on CHBRP's analysis methodology, authorizing statute, as well as all CHBRP reports and other publications, are available at [www.chbrp.org](http://www.chbrp.org).

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# Policy Context

The California Assembly Committee on Health has requested that the California Health Benefits Review Program (CHBRP)<sup>2</sup> conduct an evidence-based assessment of the medical, financial, and public health impacts of AB 2668, coverage for cranial prostheses.

## Bill-Specific Analysis of AB 2668, Coverage for Cranial Prostheses

### Bill Language

AB 2668 would require state-regulated health plans and policies to provide coverage for cranial prostheses — defined by the bill as wigs or hairpieces, and referred to in this analysis as medical wigs — for enrollees experiencing permanent or temporary hair loss due to a medical condition or treatment (referred to as medical hair loss). Coverage would require a licensed provider to prescribe a medical wig for an enrollee’s “course of treatment for a diagnosed health condition, chronic illness, or injury, including but not limited to alopecia areata, alopecia medicamentosa, scarring alopecia, and lupus.” The bill requires that coverage would be limited to one medical wig per enrollee per year, up to \$750 per medical wig, and subject to the enrollee’s cost-sharing requirements under their health insurance plan or policy.

#### California Regulating Agencies

**DMHC:** California Department of Managed Health Care

**CDI:** California Department of Insurance

**DHCS:** Department of Health Care Services, which administers Medi-Cal

The full text of AB 2668 can be found in Appendix A.

### Relevant Populations

If enacted, AB 2668 would apply to the health insurance of approximately 24,194,000 enrollees (63.6% of all Californians). This represents enrollees who have commercial or California Public Employees’ Retirement System (CalPERS) health insurance regulated by DMHC and CDI, as well as Medi-Cal beneficiaries enrolled in DMHC-regulated Medi-Cal managed care plans or county organized health system (COHS) plans.

## Analytic Approach and Key Assumptions

As a clarification to the preceding Bill Language and Relevant Populations subsections, CHBRP has taken the following approach in analyzing AB 2668.

- As AB 2668 specifies that cranial prosthesis is defined as a wig or hairpiece, CHBRP has assumed that “hairpieces” refers to products that can be placed on the scalp, and that facial hairpieces such as eyebrows or eyelashes do not fall under this definition. CHBRP refers to cranial prostheses including wigs and hairpieces as medical wigs in this analysis.

Other key assumptions:

- Health plans and policies would be able to define their own network requirements or certification requirements regarding vendors supplying medical wigs.

<sup>2</sup> CHBRP’s authorizing statute is available at [www.chbrp.org/about/faqs](http://www.chbrp.org/about/faqs).

- Medical wigs could be covered under the durable medical equipment (DME), prosthetics, and orthotics benefit, or another benefit category as determined by the health plan or policy.
- Health plans and policies may establish utilization management mechanisms for coverage of medical wigs, such as prior authorization.

## Interaction With Existing State and Federal Requirements

Health benefit mandates may interact and align with the following state and federal mandates or provisions.

### California Policy Landscape

#### *California law and regulations*

In 2002, the California Legislature introduced AB 2624, which would have required health care service plans and disability insurers that provide medical and surgical benefits for the treatment of cancer by chemotherapy or radiation therapy to provide coverage for a scalp prosthesis, defined as a wig or hairpiece. Coverage would have been limited to up to \$400 per cancer episode. AB 2624 did not advance out of the Assembly.

As mentioned above, AB 2668 would allow health plans and policies to determine which benefit category to place medical wig coverage in, and requirements for vendors. While the State of California does not require prosthetics providers to have state licensure, DHCS requires a vendor enrolled as Medi-Cal prosthetics provider to have certain certifications in prosthetics.<sup>3</sup>

#### *Similar requirements in other states*

A number of states require coverage of medical wigs for enrollees in state-regulated individual and group health plans. Connecticut,<sup>4</sup> Maryland,<sup>5</sup> Massachusetts,<sup>6</sup> Oklahoma,<sup>7</sup> and Rhode Island<sup>8</sup> require coverage for medical wigs for enrollees experiencing hair loss due to cancer, leukemia, and/or chemotherapy and radiation therapy. Meanwhile, New Hampshire's requirements are similar to AB 2668 in that coverage for medical wigs is applicable to enrollees experiencing hair loss due to medical conditions including but not limited to chemotherapy-induced hair loss. New Hampshire<sup>9</sup> requires coverage for patients with hair loss resulting from cancer or leukemia treatment as well as for patients experiencing alopecia areata, alopecia totalis, or permanent loss of scalp hair due to injury. Minnesota<sup>10</sup> and Delaware<sup>11</sup> require coverage of medical wigs for patients with alopecia areata. Coverage in most of these states is generally subject to certain terms and conditions, such as one prosthesis per year per enrollee, often up to a certain dollar amount. Connecticut establishes a floor and requires that health plans and policies cover at least a yearly benefit of \$350 per medical wig. Massachusetts, New Hampshire, and Rhode Island require a maximum coverage amount of \$350 per year, while Maryland stipulates a limit of \$350 per benefit. Minnesota does not establish a benefit amount. Oklahoma limits coverage to \$150 per year. Delaware limits coverage to \$500 per year. Most states require either the treating physician or oncologist to prescribe or authorize the treatment.

<sup>3</sup> DHCS requires Medi-Cal prosthetics providers to have an American Board for Certification in Prosthetics or BOPC Certification in Prosthetics.

<sup>4</sup> CT. Gen Statute Ch. 700c § 38a-542

<sup>5</sup> MD, Stat. § 15-836

<sup>6</sup> Mass. Gen. Laws Ch. 175 § 47T

<sup>7</sup> Okla. Stat. tit. 36 § 6060.9

<sup>8</sup> RI Gen L § 27-20-54

<sup>9</sup> N.H. Rev. Stat. § 415:18-d. New Hampshire law specifically states that coverage for medical wigs is subject to the same limitations and guidelines as other prostheses, provided that coverage for alopecia medicamentosa does not exceed \$350 per year.

<sup>10</sup> Minn. Stat. § 62 A.28

<sup>11</sup> 18 DE Code §3571B

In recent years, at least two states have introduced legislation that would expand coverage for medical wigs for patients diagnosed with alopecia areata. In February 2024, a bill was introduced in New Jersey<sup>12</sup> that would require coverage for one medical wig per 36 months for enrollees experiencing hair loss due to a medical condition, if prescribed by a licensed dermatologist, oncologist, or attending physician. The bill specifies that coverage would not be limited to enrollees undergoing chemotherapy for cancer treatment, and that the benefit would be covered under the DME category. In 2023, the Massachusetts state legislature re-introduced a bill<sup>13</sup> to expand coverage to patients with alopecia areata, alopecia totalis, nonclassical 21-hydroxylase, or permanent loss of facial or scalp hair due to injury, provided that the alopecia is not due to age-related hair loss. The introduced bill also would include coverage for facial medical pigmentation — an artificial substitute for facial hair — including but not limited to eyebrows.

## Federal Policy Landscape

### Medicare

Currently, federal law does not require private or public health insurance to cover medical wigs. Medicare does not cover medical wigs through Part A or Part B, though certain Medicare Advantage plans (Part C) may choose to offer coverage. Over the years, bills have been introduced in the United States Congress that would require Medicare coverage of medical wigs when prescribed as part of rehabilitative treatment. For example, in 2023 bills<sup>14</sup> were introduced in the United States House and Senate that would require Medicare to cover medical wigs as a DME benefit, as prescribed by the treating physician for a course of treatment.

### Affordable Care Act

A number of Affordable Care Act (ACA) provisions have the potential to or do interact with state benefit mandates. Below is an analysis of how AB 2668 may interact with requirements of the ACA as presently exist in federal law, including the requirement for certain health insurance to cover essential health benefits (EHBs).<sup>15,16</sup>

### Essential health benefits

In California, nongrandfathered<sup>17</sup> individual and small-group health insurance<sup>17</sup> is generally required to cover EHBs.<sup>18</sup> In 2025, approximately 11.5% of all Californians will be enrolled in a plan or policy that must cover EHBs.<sup>19</sup>

States may require state-regulated health insurance to offer benefits that exceed EHBs.<sup>20,21,22</sup> 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. State benefit mandates specifying

<sup>12</sup> NJ S2643, 221<sup>st</sup> Legislature (2024-2026)

<sup>13</sup> Massachusetts S716 and H1066, 193<sup>rd</sup> General Court (2023-2024)

<sup>14</sup> H.R. 4034 and S1922, 118th Congress (2023-2024)

<sup>15</sup> The ACA requires nongrandfathered small-group and individual market health insurance — including but not limited to qualified health plans sold in Covered California — to cover 10 specified categories of EHBs. Policy and issue briefs on EHBs and other ACA impacts are available on the CHBRP website: [www.chbrp.org/other-publications/issue-briefs](http://www.chbrp.org/other-publications/issue-briefs).

<sup>16</sup> Although many provisions of the ACA have been codified in California law, the ACA was established by the federal government, and therefore, CHBRP generally discusses the ACA as a federal law.

<sup>17</sup> A grandfathered health plan is "a group health plan that was created — or an individual health insurance policy that was purchased — on or before March 23, 2010. Plans or policies may lose their 'grandfathered' status if they make certain significant changes that reduce benefits or increase costs to consumers." Available at: [www.healthcare.gov/glossary/grandfathered-health-plan](http://www.healthcare.gov/glossary/grandfathered-health-plan).

<sup>18</sup> For more detail, see CHBRP's issue brief *Essential Health Benefits: An Overview of Benefits, Benchmark Plan Options, and EHBs in California*, available at [www.chbrp.org/other-publications/issue-briefshttps://chbrp.org/other\\_publications/index.php](http://www.chbrp.org/other-publications/issue-briefshttps://chbrp.org/other_publications/index.php).

<sup>19</sup> See CHBRP's resource *Sources of Health Insurance in California*, available at [www.chbrp.org/other-publications/resources](http://www.chbrp.org/other-publications/resources).

<sup>20</sup> ACA Section 1311(d)(3).

<sup>21</sup> 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. Available at: [www.gpo.gov/fdsys/pkg/FR-2013-02-25/pdf/2013-04084.pdf](http://www.gpo.gov/fdsys/pkg/FR-2013-02-25/pdf/2013-04084.pdf).

<sup>22</sup> 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.

provider types, cost sharing, or other details of existing benefit coverage would not meet the definition of state benefit mandates that could exceed EHBs.<sup>23,24</sup>

**AB 2668 could be interpreted to exceed the EHBs for the following reasons:**

- AB 2668 would apply to small-group and individual market qualified health plans (QHPs) in Covered California.
- The state's benchmark plan (Kaiser Foundation Health Plan Small Group HMO 30) does not currently cover medical wigs. Thus, this benefit would not appear to be considered an EHB for the State of California.<sup>25</sup>
- The federal definition of a state benefit mandate that can exceed EHBs is "specific to the care, treatment, and services that a state requires issuers to offer to its enrollees." AB 2668 would appear to meet this federal definition.

As outlined above, AB 2668 would require coverage for a new state benefit mandate that appears to exceed the definition of EHBs in California. Additional information about the potential costs of exceeding EHBs is included in the *Benefit Coverage, Utilization, and Cost Impacts* section.

**Nondiscrimination policy**

The Health and Human Services Notice of Benefit and Payment Parameters for 2023<sup>26</sup> final rule included a refinement of the essential health benefit nondiscrimination policy stating that coverage limits for EHBs must be based on clinical evidence to be considered nondiscriminatory. Therefore, should a plan or policy limit coverage of medical wigs to certain conditions (e.g., hair loss as a result of treatment for cancer), coverage could be deemed discriminatory.

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<sup>23</sup> 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. Available at: [www.gpo.gov/fdsys/pkg/FR-2013-02-25/pdf/2013-04084.pdf](http://www.gpo.gov/fdsys/pkg/FR-2013-02-25/pdf/2013-04084.pdf).

<sup>24</sup> Both Massachusetts and Utah currently pay defrayment costs for exceeding EHBs. For more information about defrayal, refer to CHBRP's issue brief *Essential Health Benefits: Exceeding EHBs and they Defrayal Requirement*, available at: [www.chbrp.org/other-publications/issue-briefs](http://www.chbrp.org/other-publications/issue-briefs)

<sup>25</sup> The California Department of Managed Health Care (DMHC) communicated on March 13, 2024, that AB 2668 would likely exceed EHBs given that medical wigs are not currently specifically covered under the Benchmark plan or under basic health care services.

<sup>26</sup> <https://www.cms.gov/newsroom/fact-sheets/hhs-notice-benefit-and-payment-parameters-2023-final-rule-fact-sheet>

# Background on Medical Hair Loss

AB 2668 would require coverage for cranial prostheses — defined by the bill as wigs or hairpieces, and referred to in this analysis as medical wigs — for individuals experiencing hair loss due to a medical condition or treatment (referred to as medical hair loss). This background section provides information related to medical hair loss to provide context for the consideration of *Medical Effectiveness*, the *Benefit Coverage, Utilization, and Cost Impacts*, and the *Public Health Impacts* sections.

Medical hair loss is often due to damages of the structures in the skin that form hair (i.e., hair follicles) (NIAMS, 2021). Medical hair loss is diagnosed clinically, and different tools have been developed to quantify hair loss.<sup>27</sup> There are several forms of medical hair loss, depending on both the extent of hair loss and etiology (Cleveland Clinic, 2023; Desai and Miteva, 2021; NAAF, n.d.; NIAMS, 2021; NORD, 2022), including:

- **Alopecia areata:** an autoimmune disease of hair follicles that causes nonscarring patches of hair loss. Alopecia areata that results in small patches of hair loss (typically quarter-sized) is referred to as patchy alopecia areata. Alopecia areata that results in the complete or near-complete hair loss on the scalp is referred to as alopecia totalis and alopecia areata that results in complete or near-complete hair loss on the scalp, face, and rest of the body or total body hair is referred to as alopecia universalis.
- **Scarring alopecia:** a type of hair loss characterized by the destruction of hair follicles resulting from infections, chemicals, burns, or autoimmune disorders. This form of hair loss is permanent.

Whereas alopecia areata, alopecia totalis, alopecia universalis, and scarring alopecia are defined by the features of their hair loss, sometimes alopecia is defined by its cause, including:

- **Lupus-induced alopecia:** Lupus is an autoimmune disease that attacks healthy tissue, including skin cells. Lupus will attack the hair follicles, meaning hair will no longer be held or grown. Hair loss can be a key feature of lupus. Lupus-induced alopecia can result in scarring alopecia as well as alopecia areata. Because estimates of the prevalence of lupus-induced alopecia are not widely available (see Medical Hair Loss Prevalence in California), for the purposes of this analysis, CHBRP assumed that patients with lupus-induced alopecia are grouped into either alopecia areata or scarring alopecia estimates.
- **Alopecia medicamentosa:** a widespread hair loss across the scalp caused by a reaction to various types of drugs, commonly a result of chemotherapy; also known as chemotherapy-induced alopecia. Chemotherapy kills rapidly proliferating cells, which include both cancer cells and hair follicle cells. The risk and degree of hair loss depend on the medication, dose, frequency, duration, and route of administration. Hair loss usually begins within the first few weeks after the initial chemotherapy session as patchy, progressing to alopecia totalis in 2 to 3 months; this type of alopecia is typically nonscarring. Hair loss from chemotherapy drugs is typically reversible within 2 to 6 months after the discontinuation of chemotherapy (Freites-Martinez et al., 2019).
- **Androgenetic alopecia:** a type of hair loss also known as male or female pattern hair loss that is driven by genetic factors and is the most common type of hair loss (NYU Langone Health, 2024). Because this type of hair loss is characterized by progressive hair loss over time, sometimes beginning as early as after puberty, it can be considered a form of age-related hair loss. Hair loss typically occurs at 5% per year and can last between 15 and 20 years (Sinclair, 1988).

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<sup>27</sup> The most commonly used tool is the Severity Weighted Alopecia Tool (SALT), which quantifies hair loss from 0% (no hair loss) to 100% (complete hair loss) (Olsen, 2010; Renert-Yuval et al., 2017). Broadly, the patient's scalp is separated into four quadrants and hair loss is quantified in each quadrant with the following classifications <20% is considered mild disease, 21%-49% is considered moderate disease, 50%-94% is considered severe disease, and 95%-100% is considered very severe (Wyrwich et al., 2020).

## Medical Wigs

Patients going through medical hair loss may use medical wigs or hairpieces to help restore their physical appearance. Depending on the needs of the person and the type and degree of hair loss, many different styles of medical wigs exist (Draelos, 2011). The wigs or hairpieces may cover the whole scalp or only a portion, be made of synthetic or natural hair, and have many different methods of fixation (Banka et al., 2012; Draelos, 2011). All these features factor into the cost of the medical wigs, with some costing upwards of \$5,000 (Messenger et al., 2012). Maintenance of the medical wig is required for longevity. Medical wigs are maintained in the same manner as a head of hair, where they are cleaned with shampoo and warm water, conditioned, air-dried, and then brushed into the style or position (Draelos, 2011).

The two main choices in fiber type for a medical wig are natural hair and synthetic hair, with both options having their own distinct advantages and disadvantages (Banka et al., 2012; Draelos, 2011; Messenger et al., 2012; Saed et al., 2017).

- **Natural Hair:** hair obtained from human donors and sewn or tied into the base.
  - Advantages: Texture of hair can be matched to patient, natural appearance, easy to style, can be recolored and permed, not prone to heat damage, more realistic, longer lasting (1-4 years).
  - Disadvantages: More expensive, harder to maintain, needs to be styled, prone to environmental damage, heavier, hotter.
- **Synthetic Hair:** manufactured from polymers, extruded into human hair shape at a certain length, colored, and styled.
  - Advantages: Less expensive, easier to care for, less prone to environmental elements outside of heat, longer-lasting color.
  - Disadvantages: Doesn't last as long (3-12 months), less customizable, prone to heat damage, uncomfortable, unnatural feeling and look, pre-cut style, fixed color.

Beyond fiber type, there are other features of medical wigs (Banka et al., 2012; Saed et al., 2017). The extent of the hair loss typically determines the amount of coverage needed from a medical wig. For example, a medical wig may include extensions that add volume or length to hair, integration systems that add density to hair, hair pieces that cover localized areas of hair loss, and full systems that cover the entire scalp. Methods to attach a medical wig to the scalp often depend on the type of medical wig and its features. Features include tapes for hair systems to be conveniently attached and reattached, bond adhesives for attaching prosthesis for long periods of time, clips for a temporary hairpiece to be easily removed while undergoing treatment, and/or a silicone base allowing for a snug, vacuum-like adhesion to the scalp (Saed et al., 2017).

Duration of wig wearing varies across patients, typically according to preferences and the permanence of their alopecia. It is estimated that the mean period of medical wig use for patients with cancer is 12.5 months (Watanabe et al., 2019), given that chemotherapy-induced alopecia is generally temporary. Patients with other forms of chronic alopecia are likely to use medical wigs for the rest of their lives.

## Medical Hair Loss Prevalence in California

Nationwide, it is estimated that alopecia areata affects 0.1% to 0.2% of the population annually (Mostaghimi et al., 2023). Between 5% and 10% of alopecia areata cases are considered alopecia totalis or alopecia universalis (Benigno et al., 2020; Mostaghimi et al., 2023; Sy et al., 2023). Publicly available estimates of the prevalence of medical hair loss subtypes — notably, scarring alopecia and alopecia medicamentosa — are not available for California. However, CHBRP estimates an annual incidence in California of 0.12% for alopecia areata, 0.07% for alopecia medicamentosa, and 0.04% that are scarring alopecia based on available claims data (see the *Benefit Coverage, Utilization, and Cost Impacts* section).

## Disparities<sup>28</sup> in Medical Hair Loss

Disparities are noticeable and preventable or modifiable differences between groups of people. Health insurance benefit mandates or related legislation may impact disparities. Where intersections between health insurance benefit mandates and social determinants or systemic factors exist, CHBRP describes relevant literature. CHBRP found literature identifying some differences in the prevalence and incidence of alopecia by sex, age, and race/ethnicity. CHBRP did not identify literature regarding disparities in medical hair loss or medical wig use by income.

### Sex or Gender<sup>29</sup>

Nationwide estimates indicate alopecia areata is more common among females (Mostaghimi et al., 2023). Similar differences have been observed for alopecia totalis and alopecia universalis. Sex-based differences in reported prevalence and incidence could be partially explained by differences in health care-seeking behavior. In addition, females also have higher prevalence rates of lupus — more than seven times that of men in California (Chakravarty et al., 2007).

Rates of alopecia medicamentosa or chemotherapy-induced hair loss by sex are unavailable, but it is known that males have higher rates of cancer compared to females. For example, in California from 2016 to 2020, age-adjusted incidence rates of all cancers combined were 380 per 100,000 for men and 395 per 100,000 among women (NCI, 2024). Cancer treatment varies mostly according to cancer type and does not typically vary according to biological sex. However, evidence indicates that females are more sensitive to the side effects of cancer treatments, including chemotherapy (Unger et al., 2022). With that said, estimates of sex-specific effects of cancer treatments on hair loss are not available.

Incidence of lupus is 7 to 9 times higher in females than males, and some studies indicate that alopecia is more common among females with lupus than males (Boodhoo et al., 2016; CDC, 2022; Izmirly et al., 2021).

Broadly, females account for most new alopecia consultations (Marks et al., 2018), perhaps because they may also experience greater social and emotional damages associated with alopecia (Katoulis et al., 2015). Observed sex-based differences may thus be a combination of true underlying differences in the prevalence of alopecia as well as due to differences in factors that lead females versus males to seek care related to hair loss.

### Race or Ethnicity

Rates of the conditions that cause medical hair loss vary by race and ethnicity. For example, the prevalence and incidence of alopecia areata appears to be higher among some racial and ethnic groups as compared to non-Hispanic White populations. One study across the United States estimated that relative to White patients (1.0), standardized prevalence ratios for Asian, Black, and Hispanic/Latino patients were 2.47, 1.35, and 1.26, respectively (Sy et al., 2023). Cancer incidence rates also vary by race/ethnicity in California with non-Hispanic White individuals having the highest rates (439 per 100,000) followed by Black (408 per 100,000), American Indian/Alaska Native (394 per 100,000), Hispanic (329 per 100,000), and Asian/Pacific Islander (292 per 100,000). However, hair loss and subsequent use of medical wigs among those with cancer according to race/ethnicity is not known. In addition, Black women also have higher prevalence rates of lupus — more than two times that of White or Hispanic women in California (Chakravarty et al., 2007). This could also lead to higher rates of medical hair loss among this group. Similar to sex-based differences, it is plausible that observed differences in the prevalence of alopecia by racial and ethnic groups could be explained both by true differences in the prevalence of the condition as well as factors that drive health care-seeking behaviors.

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<sup>28</sup> Several competing definitions of “health disparities” exist. CHBRP relies on the following definition: Health disparity is defined as the differences, whether unjust or not, in health status or outcomes within a population (Wyatt et al., 2016).

<sup>29</sup> CHBRP uses the National Institutes of Health (NIH) distinction between “sex” and “gender”: “‘Sex’ refers to biological differences between females and males, including chromosomes, sex organs, and endogenous hormonal profiles. ‘Gender’ refers to socially constructed and enacted roles and behaviors which occur in a historical and cultural context and vary across societies and over time.” (NIH, 2019)



## Age

The prevalence of the underlying conditions leading to hair loss also vary by age. Specifically, the prevalence and incidence of alopecia areata is highest among those aged 18 to 44 years (Mostaghimi et al., 2023). Annual prevalence of alopecia areata among those under 18 years is between 0.120% and 0.135%, with those under 5 years having the lowest prevalence rates; among those aged 18 to 44 years it is 0.254% to 0.278%; and among those over 65 years it is 0.150% to 0.167% (Mostaghimi et al., 2023). Similar age-specific trends have been observed for alopecia totalis and alopecia universalis (Mostaghimi et al., 2023).

Cancers predominately occur among older populations. Among those under 50 years, the average age-adjusted incidence rate of all cancer was 93 per 100,000 people in California from 2016 to 2020; among those aged 50 years and older, the rate was 1,184 per 100,000 (NCI, 2024). Chemotherapy is a viable treatment option for a patient with cancer at any age; however, side effects and recovery times may be longer among older adults. How these age differences shape chemotherapy-induced hair loss and use of medical wigs, however, is unknown.

## Financial Burden Associated with Alopecia

The costs of wigs can be a large barrier to their purchase and use. More broadly, patients with alopecia may experience high financial burdens related to their disease that negatively impact their well-being, including but not limited to the costs of wigs. In a survey of 675 members of the National Alopecia Areata Foundation, 31.7% and 25.2% of respondents reported that their financial burden due to alopecia areata was moderately or seriously burdensome, respectively (Li et al., 2019). Median out-of-pocket expenditures among respondents was \$1,354 for disease-related expenses; headwear and cosmetic options including wigs, makeup, or scarves accounted for the largest single sector expense (Li et al., 2019). Respondents reported spending a median of \$450 (IQR, \$50-\$1,500) annually on this category (Li et al., 2019). A survey of 626 members of the National Alopecia Areata Foundation found that the average cost of wigs was \$1,530 (Ezemma et al., 2023).

To address the financial burden associated with medical wigs, several organizations may offer free or discounted medical wigs for patients with medical conditions, including nonprofit entities such as the American Cancer Society (City of Hope, 2021; NAAF, 2024). Several organizations also provide medical wigs to patients with alopecia areata and other medical hair loss, such as Children With Hair Loss, which provides medical wigs to children and young adults at no charge (Children With Hair Loss, 2024; NAAF, 2024). Access to medical wigs may vary on a variety of factors, including location, availability, access to vendors supplying free or discounted products, knowledge of such resources, and affordability of discounted prices. Organizations may also vary in whether they provide access to synthetic or human hair wigs.

Beyond wigs, individuals with alopecia can experience costs related to their disease, such as lost income from work absenteeism and transportation costs related to medical appointments (Mostaghimi et al., 2022; Muntyanu et al., 2023; Senna et al., 2021). Patients may also dedicate substantial time related to concealment of their hair loss (Mesinkovska et al., 2020). Additionally, there is some cross-sectional, survey-based evidence that indicates higher financial burdens among women than men (Zucchelli et al., 2023).

# Medical Effectiveness

As discussed in the *Policy Context* section, AB 2668 would require coverage of cranial prostheses — defined in the bill as wigs or hairpieces, and referred to in this analysis as medical wigs — for patients experiencing temporary or permanent hair loss due to a medical condition or treatment. Additional information on medical hair loss is included in the *Background* section. This review summarizes the literature from 2013 to present on the impacts of medical hair loss and use of medical wigs on quality of life.

## Research Approach and Methods

A total of three systematic reviews and five studies were included in the medical effectiveness review for this report. The other articles were eliminated because they did not focus on medical wig use, were narrative reviews and did not report findings from clinical research studies, or were of poor quality. 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 Appendix B.

Studies on treatments for medical hair loss, such as steroid treatments and scalp cooling, were omitted from the medical effectiveness review because they are not relevant to the proposed mandate.

The conclusions below are based on the best available evidence from peer-reviewed and grey literature.<sup>30</sup> 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. What are the impacts on quality of life for patients experiencing hair loss due to a medical condition or treatment?
2. For patients experiencing medical hair loss, are medical wigs effective at improving quality of life and well-being?

## Methodological Considerations

The scientific literature on the impact of medical wigs on quality of life is sparse. Most studies related to this topic focus primarily on the effects of medical hair loss on quality of life and mental health. Those studies are included in this review to provide context for the potential utility of medical wigs for patients experiencing hair loss. While several of these studies include medical wig use as a secondary outcome, it is not the primary outcome of interest and is often only representative of a subset of participants.

There are several limitations of this literature base that limit CHBRP's ability to draw conclusions from the available evidence. First, all identified studies are observational studies by design. Additionally, wide variation in methodology and measurement tools constrains comparisons of effects and findings across studies. Lastly, because many of these studies used self-report surveys, sampling bias may result in a participant population that does not accurately reflect the true patient population. Participants in the included studies were predominately female and White, limiting the generalizability of findings.

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<sup>30</sup> Grey literature consists of material that is not published commercially or indexed systematically in bibliographic databases. For more information on CHBRP's use of grey literature, visit [www.chbrp.org/about/analysis-methodology/medical-effectiveness-analysis](http://www.chbrp.org/about/analysis-methodology/medical-effectiveness-analysis).

## Outcomes Assessed

The primary outcomes of interest are health-related quality of life and well-being.

## Study Findings

This following section summarizes CHBRP's findings on the psychosocial impacts on patients experiencing hair loss due to a medical condition and the effectiveness of medical wigs on improving quality of life for these patients.

As discussed in the *Background* section, there are several forms of medical hair loss. The identified studies focused primarily on alopecia areata and chemotherapy-induced alopecia.

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

*Clear and convincing evidence* indicates that there are multiple studies of a treatment and that the large majority of studies are of high quality and consistently find that the treatment is either effective or not effective.

*Preponderance of evidence* indicates that the majority of the studies reviewed are consistent in their findings that treatment is either effective or not effective.

*Limited evidence* indicates that the studies have limited generalizability to the population of interest and/or the studies have a fatal flaw in research design or implementation.

*Inconclusive evidence* indicates that although some studies included in the medical effectiveness review find that a treatment is effective, a similar number of studies of equal quality suggest the treatment is not effective.

*Insufficient evidence* indicates that there is not enough evidence available to know whether or not a treatment is effective, either because there are too few studies of the treatment or because the available studies are not of high quality. It does not indicate that a treatment is not effective.

More information is available in Appendix B.

## Quality of Life Impacts for Patients Experiencing Medical Hair Loss

### *Alopecia areata*

A 2016 systematic review and meta-analysis on alopecia areata examined the impacts of the condition on health-related quality of life (HRQOL) (Rencz et al., 2016). The review included 21 studies, comprising 2,530 adult patients with alopecia areata. Of the studies that reported demographics (n=15), the majority of participants identified as female (60%), between aged 23 and 42 years, and reported disease durations ranging from 3 months to 6 years. There was significant variation in the HRQOL self-report measures used in the studies; the most common were the Dermatology Life Quality Index<sup>31</sup> (DLQI; n=8 studies) and the Short-Form (SF-36) Health Survey<sup>32</sup> (n=7 studies). An analysis of the studies with DLQI scores indicated a moderate negative impact on HRQOL in comparison to patients with other dermatology related conditions. For those studies that used the SF-36, a meta-analysis was performed comparing the scores from patients with alopecia areata to healthy controls, matched by age and gender. The analysis showed significantly worse overall HRQOL for patients with alopecia areata as compared to the healthy controls ( $p < .01$ ). The most negatively impacted areas of quality of life for these patients were on their emotional and mental health.

<sup>31</sup> Finlay and Khan (1994)

<sup>32</sup> Ware and Sherbourne (1992)

Another systematic review on alopecia areata examined the psychosocial comorbidities and HRQOL impact on patients (Toussi et al., 2021). They identified 73 studies, comprising 414,319 adult and pediatric patients with alopecia areata and were primarily cohort and cross-sectional studies. The review suggested a higher incidence of mental health disorders, including anxiety, depression, attention deficit hyperactivity disorder, and certain other psychiatric disorders in patients with alopecia areata compared to healthy controls. Patients with alopecia areata were also found to have higher rates of psychiatric hospitalizations. Of the 73 studies included in the review, 17 studies included a measure on HRQOL. Again, there was significant variation in the self-report measures used across studies, with the most common being the DLQI, Skindex<sup>33</sup> (a quality-of-life measure for patients with skin conditions), and the SF-36. Overall, survey results on these measures indicate that nearly 80% of patients reported impaired HRQOL, particularly those patients with greater disease severity.

Mesinkovska et al. (2020) conducted a cross-sectional online survey study to provide a more comprehensive understanding of the impacts of living with moderate to severe alopecia areata. A total of 216 patients completed the survey with the majority respondents identifying as female (83%), aged 45 years or older (59%), and Caucasian (78%). Most respondents (85%) reported more than one comorbidity, the most common being anxiety and/or depression (47%). Nearly two-thirds of respondents (62%) agreed they had made different major life decisions (regarding relationships, education, or career) because of their alopecia areata. Coping with alopecia areata was reported as a daily challenge for 85% of respondents and included worries that others will not find them attractive (78%), feeling anxious in social situations (69%), being treated differently by others (58%), and worries about hair regrowth (56%). Patients reported the highest impact of alopecia areata on daily life was on self-esteem or confidence. Qualitatively, patients described feelings of insecurity and low self-esteem that were associated with impaired social relationships and impaired performance at work or school.

### ***Chemotherapy-induced alopecia***

A cross-sectional survey study by Choi et al. (2014) evaluated the impact of distress from chemotherapy-induced alopecia on body image, psychosocial well-being, and depression among breast cancer patients. The survey was completed by 168 breast cancer patients and 57.2% of participants reported severe alopecia as a result of chemotherapy treatment. The survey consisted of three different self-report measures to measure chemotherapy-induced alopecia distress, body image and psychosocial well-being, and depression. Most participants reported experiencing high levels of distress due to their hair loss (55.4%). This group of patients with high levels of distress were found to report greater body image dissatisfaction, lower social and emotional well-being, and experienced more depressive symptoms compared to the patients reporting low levels of distress.

A 2021 systematic review evaluated the impact and supportive care needs of patients affected by chemotherapy-induced alopecia (Paterson et al., 2021). The review of 27 studies was comprised of primarily cross-sectional survey studies and qualitative studies, and represented 3,394 individuals affected by chemotherapy-induced alopecia. The majority of the studies were on female breast cancer patient populations, with only five studies including males. Across studies, hair loss was ranked by participants as one of the most distressing side effects of chemotherapy and was associated with decreased psychological well-being and overall quality of life.

### ***Impact of medical wigs on quality of life for patients with medical hair loss***

The Rencz et al., 2016, systematic review summarized above analyzed the included studies for significant predictors of HRQOL. Of these significant predictors, wearing wigs or hairpieces was associated with significantly improved HRQOL. One of the included studies demonstrated that wigs significantly improve HRQOL through increased perceived competence, adaptability, and self-esteem (Inui et al., 2013). Another study included in the review found that concealment and restriction from activities were significantly lower among wig users than nonusers (Endo et al., 2012).

A mixed methods survey study by Montgomery et al. (2017) examined social anxiety and depression and associations with wig use in individuals with alopecia. A total of 338 participants completed the survey and were predominantly female

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<sup>33</sup> Chren et al., 1996

(97.3%), Caucasian (93.5%), between aged 35 and 54 years (49.4%), and had a diagnosis of alopecia areata (82.6%). The majority of participants reported wearing a wig all the time (55.9%), especially to socialize or for work or school and 66.3% of respondents reported that they would not feel confident leaving the house without a wig. From the qualitative responses to the survey, 46.6% of participants reported that wearing a wig had a positive impact on their everyday life by reducing the likelihood of perceived negative reactions and improving self-confidence. However, 49% of participants also reported problems with wigs that had a negative impact on everyday life. These problems included issues related to quality and fitting, wigs falling off or moving out of place, and wig related expenses.

The Paterson et al., 2021, systematic review, summarized previously, evaluated the impact and supportive care needs of patients affected by chemotherapy-induced alopecia. Of the 27 total studies in the review, nine included results related to wig use. Across these studies, most participants reported using wigs, hats, scarves, or other head wear as a coping strategy. These studies found wig use to support quality of life and social well-being for patients experiencing distress from chemotherapy-induced alopecia.

**Summary of findings regarding the impact of wigs on quality of life:** Findings from two systematic reviews and one observational survey study suggest that medical wigs improve quality of life for patients with medical hair loss, but the amount of evidence is *limited*.

**Figure 1. Effectiveness of Medical Wigs on Quality of Life for Patients with Medical Hair Loss**



## Summary of Findings

CHBRP identified three systematic reviews and two cross-sectional survey studies that examined the impact of medical hair loss on quality of life. The findings from these studies consistently demonstrate a negative impact on quality of life for patients experiencing medical hair loss. The studies suggest that quality of life for these patients is most impaired from greater overall psychological distress and social anxiety. The majority of participants that were asked about concealment or wigs reported that they wore a wig to cope with the negative effects of their hair loss.

The identified studies that specifically examined the impact of medical wigs provided *limited evidence* to suggest a positive improvement on quality of life. Using a medical wig improves quality of life for some patients experiencing hair loss by reducing the impact that their condition has on their social well-being. However, many patients who use a wig and report benefits also report negative impacts or experiences with their wigs, often related to the quality or fit of the medical wig. This suggests that high-quality, well-fitting medical wigs would have the most positive impact on quality of life.

# Benefit Coverage, Utilization, and Cost Impacts

As discussed in the *Policy Context* section, AB 2668 would require coverage of cranial prostheses — defined in the bill as wigs or hairpieces, and referred to in this analysis as medical wigs — for patients experiencing temporary or permanent hair loss due to a medical condition or treatment (referred to as medical hair loss). Enrollees in commercial and CalPERS health plans regulated by DMHC, commercial health policies regulated by CDI, as well as Medi-Cal beneficiaries in DMHC-regulated Medi-Cal managed care and COHS plans would have health insurance subject to AB 2668.

Approximately 74% of enrollees associated with CalPERS and 80% of Medi-Cal beneficiaries are enrolled in DMHC-regulated plans.<sup>34</sup>

This section reports the potential incremental impacts of AB 2668 on estimated baseline benefit coverage, utilization, and overall cost.

## Analytic Approach and Key Assumptions

CHBRP uses the following assumptions for the analysis of AB 2668. For further details on the underlying data sources and methods used in this analysis, please see Appendix C.

### General Assumptions

As discussed in the *Policy Context* section, CHBRP assumes that health plans and policies could require enrollees to use specific vendors, could require prior authorization, and could cover medical wigs under the benefit the plan or policy deems most appropriate, such as the durable medical equipment (DME) benefit. While these benefit design features could limit unit cost or utilization of medical wigs, CHBRP has not made specific assumptions to reflect these aspects of benefit design due to lack of data about the impacts. Requiring enrollees to obtain medical wigs through specific vendors has the potential of limiting enrollee choice of medical wigs to those of certain dollar amounts, depending on options provided by the vendor to enrollees.

CHBRP focuses this analysis on enrollees experiencing alopecia areata, alopecia medicamentosa, and scarring alopecia. As discussed in the *Background* section, CHBRP assumed that patients with lupus-induced alopecia are grouped into either alopecia areata or scarring alopecia estimates. Additionally, CHBRP assumed enrollees experiencing androgenetic alopecia would not experience hair loss to the extent that would lead them to seeking a medical wig based on the typical presentation of androgenetic alopecia.

For enrollees with baseline benefit coverage that does not include a dollar maximum or includes a dollar limit above \$750 per medical wig, CHBRP assumes health plans and policies would continue to offer benefit coverage of medical wigs at these levels.

According to DHCS,<sup>35</sup> medical wigs may be covered for Medi-Cal beneficiaries under age 21 through the Early and Periodic Screening, Detection, and Treatment (EPSDT) benefit when determined to be medically necessary, which could include cancer treatment. Additionally, for all other Medi-Cal members, if a Medi-Cal provider believes that medical wigs may be appropriate for a Medi-Cal member for a specific condition, which could include cancer treatment, then the provider may submit an authorization request to determine if medical necessity is established. However, based on responses from the Medi-Cal managed care plans, there is a discrepancy in whether managed care plans provide

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<sup>34</sup> For more detail, see CHBRP's resource *Sources of Health Insurance in California*, available at [www.chbrp.org/other-publications/resources](http://www.chbrp.org/other-publications/resources).

<sup>35</sup> CHBRP communication with DHCS on March 13, 2024.

coverage even for beneficiaries under aged 21. Therefore, CHBRP has reported baseline and postmandate impacts according to the responses CHBRP received from the bill-specific benefit coverage survey (see more information below).

There are a limited number of claims for medical wigs within Milliman's proprietary 2022 Consolidated Health Cost Guidelines™ Sources Database (CHSD), which indicates that a vast majority of baseline utilization is happening outside of insurance. As discussed in the *Background* section, there are external organizations that provide medical wigs to patients experiencing medical hair loss, often at no cost or at a discounted rate. Additionally, enrollees may be unaware of existing benefit coverage and therefore do not seek coverage for medical wigs they are purchasing out of pocket. It is also possible that medical wigs that are covered under the DME benefit are not being correctly recorded within claims data. **Therefore, this analysis likely overestimates the proportion of utilization that is covered by an enrollee's health insurance at baseline. Should claims data accurately reflect baseline utilization, premium impacts due to AB 2668 would be approximately twice as high** (i.e., should some or all 15,100 enrollees estimated to use medical wigs at baseline with insurance actually obtain medical wigs through an external organization and postmandate switch to using insurance to obtain the medical wig, premium impacts could be up to twice as high as estimated below).

## Utilization of Medical Wigs

Limited claims data are available regarding utilization and unit cost of medical wigs. Therefore, CHBRP used the following assumptions to estimate baseline and postmandate utilization:

- For enrollees *with* baseline benefit coverage, utilization would remain the same postmandate.
- For enrollees *with no* baseline benefit coverage who purchase medical wigs out of pocket at baseline, utilization would remain the same postmandate.
- For enrollees with *no* baseline benefit coverage and *no* baseline utilization, a portion of enrollees would newly utilize a medical wig postmandate.

To estimate utilization among enrollees with the different forms of medical hair loss, CHBRP used the following assumptions:

- For patients with **alopecia areata and scarring alopecia**, CHBRP relied on a 2022 survey of patients with alopecia areata, which found that 85.7% obtained a medical wig and 93.1% of respondents considered getting a medical wig (Ezemma et al., 2023). Of those who did not obtain a medical wig, the reason most commonly cited was cost. Applying this information, CHBRP assumed that 76% of enrollees with alopecia areata and scarring alopecia without insurance coverage obtain medical wigs at baseline and 93.1% of enrollees with alopecia areata and scarring alopecia would obtain a wig postmandate. Among enrollees with baseline benefit coverage, 93.1% of enrollees obtain a wig at baseline and postmandate.
- For enrollees experiencing **alopecia medicamentosa**, CHBRP used a study by van den Hurk et al. (2013) that examined wig use among patients with cancer. This study found that among patients experiencing hair loss, 77% purchased a wig and 97% purchased a head covering (including a medical wig). CHBRP assumed that at baseline 77% of enrollees experiencing alopecia medicamentosa use medical wigs. Postmandate, 97% of enrollees with alopecia medicamentosa would obtain medical wigs.
- Due to lack of data about utilization of medical wigs among persons with low-incomes, CHBRP made a simplifying assumption that Medi-Cal beneficiaries without baseline benefit coverage for medical wigs do not purchase medical wigs out of pocket due to the income limits for eligibility of Medi-Cal. It is likely that a portion of Medi-Cal beneficiaries do purchase medical wigs using their own funds or obtain medical wigs through external organizations. However, these data are not available, therefore CHBRP assumed no baseline utilization.

## Average Unit Cost of Medical Wigs

As discussed in the *Background* section, the cost of wigs varies substantially and can be between \$50 and \$5,000. However, due to a lack of claims data, CHBRP used the following approach to estimate unit cost of medical wigs:

- The Ezemma et al. (2023) survey found the average price of medical wigs for patients with alopecia areata was \$1,543, regardless of insurance coverage for medical wigs. CHBRP used this average cost as the average unit cost of the medical wigs obtained by patients with alopecia areata and scarring alopecia. The survey reported 23% of respondents had coverage for medical wigs and a \$685 coverage amount. Using this information, CHBRP determined the 2025 average cost of a medical wig for enrollees with no baseline coverage is \$1,530 (see Appendix C).
  - For enrollees *with* baseline benefit coverage, CHBRP assumed the average unit cost of a medical wig is \$2,210 (\$1,530 enrollee costs plus \$680 in insurer costs). CHBRP assumed there would be no change postmandate.
  - For enrollees with *no* baseline benefit coverage and who purchase medical wigs out of pocket, CHBRP assumed the baseline average unit cost of a medical wig is \$1,530. Postmandate, these enrollees would use the \$750 in benefit coverage, minus enrollee cost sharing, to purchase a more expensive medical wig.
  - For enrollees with no baseline benefit coverage and no baseline utilization, CHBRP assumed the reason for lack of utilization is due to cost of the medical wigs. Therefore, CHBRP assumed that postmandate, these enrollees would obtain a medical wig with the average unit cost of \$750, minus enrollee cost sharing.
- CHBRP assumed patients with alopecia medicamentosa would obtain a wig that equals the benefit coverage maximum of \$750 per medical wig. This likely represents an upper bound of estimates of AB 2668 for patients experiencing alopecia medicamentosa. There are several websites through which patients experiencing medical hair loss can purchase medical wigs, and there are a number of wigs available at lower price points. However, data are not available to estimate the actual spend on medical wigs for enrollees with alopecia medicamentosa. Additionally, as described in the *Background* section, there are several reasons why certain patients undergoing treatment for cancer do not wear medical wigs and therefore may be less likely to purchase a wig that is in excess of benefit coverage.

## Enrollee Cost Sharing Assumptions

Cost sharing for medical wigs would be dependent upon the enrollee's plan or policy benefit design. For example, an enrollee may have no cost-sharing requirement for the medical wig and would have the full \$750 covered by their insurer. Other enrollees may have cost-sharing requirements and would therefore be responsible for a portion of the \$750. For example, the insurer would cover \$670 and the enrollee would be responsible for \$80, equating to a total coverage amount of \$750. CHBRP assumed that cost sharing amounts would be based on the "allowed amount" (i.e., \$750) rather than the full price of the medical wig, should an enrollee purchase a medical wig that exceeds the benefit coverage limit. Enrollees would be able to purchase medical wigs with higher unit costs than the \$750 benefit limit; the remaining costs are called enrollee out-of-pocket expenses for covered benefits.

CHBRP assumed medical wigs bought by enrollees without coverage were paid in full by the enrollee out of pocket.

## Baseline and Postmandate Benefit Coverage

Table 1 provides estimates of how many Californians have health insurance that would be required to comply with AB 2668 postmandate. All 24.2 million enrollees who have commercial or California Public Employees' Retirement System (CalPERS) health insurance regulated by DMHC and CDI, as well as Medi-Cal beneficiaries enrolled in DMHC-regulated Medi-Cal managed care plans or county organized health system (COHS) plans would have health insurance subject to AB 2668. Based on responses to CHBRP's bill-specific benefit coverage survey of California insurers, 29% of enrollees have coverage for medical wigs at baseline. The terms of benefit coverage vary among those with existing coverage. Most enrollees have baseline benefit coverage with no limit on cost per medical wig, while a small portion of enrollees have coverage with a benefit cap of \$350 or \$1,000 per medical wig. Some enrollees are required to obtain medical wigs through specific vendors. Additionally, how the benefit is structured varies; most coverage of medical wigs is through the



DME benefit, although some enrollees have coverage under other benefit categories. Baseline benefit coverage is not limited to enrollees with certain conditions, diagnoses, or treatments.

Postmandate, all enrollees would have benefit coverage for medical wigs for \$750 per medical wig.

**Table 1. Impacts of AB 2668 on Benefit Coverage, 2025**

	Baseline (2025)	Postmandate Year 1 (2025)	Increase/Decrease	Percentage Change
Total enrollees with health insurance subject to state benefit mandates (a)	24,194,000	24,194,000	0	0.00%
Total enrollees with health insurance subject to AB 2668	24,194,000	24,194,000	0	0.00%
Percentage of enrollees with coverage for mandated benefit	29%	100%	71%	248.92%
Number of enrollees with fully compliant coverage for mandated benefit	6,934,000	24,194,000	17,260,000	248.92%

**Source: California Health Benefits Review Program, 2024.**

Note: (a) This represents enrollees who have commercial or California Public Employees’ Retirement System (CalPERS) health insurance regulated by California Department of Managed Health Care (DMHC) and California Department of Insurance (CDI), as well as Medi-Cal beneficiaries enrolled in DMHC-regulated Medi-Cal managed care plans or county organized health system (COHS).<sup>36</sup>

## Baseline and Postmandate Utilization and Unit Cost

Using relevant codes from the International Classification of Diseases, 10th Revision, Clinical Modification (ICD-10-CM), CHBRP used data from Milliman’s 2022 CHSD to develop estimates of enrollees experiencing medical hair loss. Additional details are included in Appendix C. CHBRP’s assumptions regarding utilization of medical wigs are described previously in this section.

Based on claims data, there are approximately 30,000 enrollees with alopecia areata, 16,000 enrollees with alopecia medicamentosa, and 10,000 enrollees with scarring alopecia (Table 2). There may be additional enrollees for whom a relevant diagnosis code was not entered and therefore are not present in this estimate. Anecdotally, CHBRP has heard from providers that medical hair loss due to cancer treatment is most commonly coded to obtain a medical wig, whether through insurance or an external organization. Therefore, it is possible that the relevant codes for hair loss are not entered for enrollees who are not seeking to obtain a medical wig.

Tables 2 provides an overall estimate of the impacts of AB 2668 on utilization of medical wigs. Approximately 15,100 enrollees obtain medical wigs at baseline and have baseline benefit coverage. Approximately 17,000 enrollees purchase medical wigs out of pocket at baseline due to lack of benefit coverage. Postmandate, these enrollees would have their medical wig covered (up to \$750) by their insurance. Approximately 20,500 enrollees would newly utilize medical wigs due to increased benefit coverage postmandate.

Table 3 provides detail on the costs for enrollees with medical hair loss who obtain medical wigs at baseline and postmandate; the impacts of AB 2668 are divided by commercial/CalPERS enrollees and Medi-Cal beneficiaries, as well as according to baseline benefit coverage and utilization. For enrollees with baseline spending for noncovered benefits, these costs would shift to out-of-pocket spending for covered benefits.

<sup>36</sup> For more detail, see CHBRP’s resource, *Sources of Health Insurance in California*, available at [www.chbrp.org/other-publications/resources](http://www.chbrp.org/other-publications/resources).

**Table 2. Overall Impacts of AB 2668 on Utilization, 2025**

	Baseline (2025)	Postmandate Year 1 (2025)	Increase/Decrease	Percentage Change
<b>Enrollees with alopecia</b>				
Number of enrollees with alopecia areata	30,000	30,000	0	0.0%
Number of enrollees with alopecia medicamentosa	16,000	16,000	0	0.0%
Number of enrollees with scarring alopecia	10,000	10,000	0	0.0%
<b>Total number of enrollees with alopecia</b>	<b>56,000</b>	<b>56,000</b>	<b>0</b>	<b>0.0%</b>
<b>Utilization</b>				
Enrollees with alopecia areata using medical wigs <b>with coverage</b>	8,000	27,900	19,900	248.8%
Enrollees with alopecia areata using medical wigs <b>without coverage</b>	9,100	0	(9,100)	-100.0%
Enrollees with alopecia medicamentosa using medical wigs <b>with coverage</b>	4,500	15,700	11,200	248.9%
Enrollees with alopecia medicamentosa using medical wigs <b>without coverage</b>	5,000	0	(5,000)	-100.0%
Enrollees with scarring alopecia using medical wigs <b>with coverage</b>	2,600	9,000	6,400	246.2%
Enrollees with scarring alopecia using medical wigs <b>without coverage</b>	2,900	0	(2,900)	-100.0%

Source: California Health Benefits Review Program, 2024.

**Table 3. Detailed Impacts of AB 2668 on Utilization and Unit Cost, 2025**

	Alopecia Areata and Scarring Alopecia				Alopecia Medicamentosa			
	Commercial Plans/ Policies		Medi-Cal Plans (Includes COHS)		Commercial Plans/ Policies		Medi-Cal Plans (Includes COHS)	
	Baseline (2025)	Postmandate Year 1 (2025)	Baseline (2025)	Postmandate Year 1 (2025)	Baseline (2025)	Postmandate Year 1 (2025)	Baseline (2025)	Postmandate Year 1 (2025)
<b>Medical wig users with coverage at baseline</b>	<b>6,100</b>	<b>6,100</b>	<b>4,500</b>	<b>4,500</b>	<b>2,600</b>	<b>2,600</b>	<b>1,900</b>	<b>1,900</b>
Average cost per medical wig	\$2,210	\$2,210	\$2,210	\$2,210	\$750	\$750	\$750	\$750
Average insurer payment per medical wig	\$1,810	\$1,810	\$2,210	\$2,210	\$620	\$620	\$750	\$750
Average patient cost per medical wig (a)	\$400	\$400	\$0	\$0	\$130	\$130	\$0	\$0
<b>Medical wig users without coverage at baseline</b>	<b>12,000</b>	<b>12,000</b>	<b>0</b>	<b>0</b>	<b>5,000</b>	<b>5,000</b>	<b>0</b>	<b>0</b>
Average cost per medical wig	\$1,530	\$2,200	\$0	\$750	\$750	\$750	\$0	\$750
Average insurer payment per medical wig	\$0	\$670	\$0	\$750	\$0	\$670	\$0	\$750
Average patient cost per medical wig (a)	\$1,530	\$1,530	\$0	\$0	\$750	\$80	\$0	\$0
<b>New medical wig users without coverage at baseline</b>	<b>0</b>	<b>2,800</b>	<b>0</b>	<b>11,500</b>	<b>0</b>	<b>1,300</b>	<b>0</b>	<b>4,900</b>
Average cost per medical wig	\$0	\$750	\$0	\$750	\$0	\$750	\$0	\$750
Average insurer payment per medical wig	\$0	\$670	\$0	\$750	\$0	\$670	\$0	\$750
Average patient cost per medical wig (a)	\$0	\$80	\$0	\$0	\$0	\$80	\$0	\$0

**Source: California Health Benefits Review Program, 2024.**

Note: Average insurer cost is less than \$750 for enrollees in commercial plans and policies because of plan design that includes enrollee cost sharing.

(a) The average patient cost is cost sharing and out-of-pocket expenses beyond the benefit limit, or enrollee expenses for noncovered benefits at baseline.

Key: COHS = county organized health system.

## Baseline and Postmandate Expenditures

Table 4 provides estimates of the impacts of AB 2668 on expenditures, which include premiums, enrollee cost sharing, and enrollee expenses for noncovered benefits. AB 2668 would increase total premiums paid by employers and enrollees for newly covered benefits. Enrollee expenses for covered benefits would increase as a result of the decrease in noncovered benefits. This would result in an increase of total net annual expenditures of \$26,503,000 (0.02%) for enrollees with state-regulated health insurance.

**Table 4. Impacts of AB 2668 on Expenditures, 2025**

	Baseline	Postmandate	Increase/ Decrease	Percentage Change
<b>Premiums</b>				
Employer-sponsored (a)	\$64,203,365,000	\$64,213,594,000	\$10,229,000	0.02%
CalPERS employer (b)	\$6,974,311,000	\$6,975,239,000	\$928,000	0.01%
Medi-Cal (includes) (c)	\$36,662,431,000	\$36,675,979,000	\$13,548,000	0.04%
<b>Enrollee premiums</b>				
Enrollees, individually purchased insurance	\$20,751,015,000	\$20,752,787,000	\$1,772,000	0.01%
Outside Covered California	\$5,089,510,000	\$5,089,870,000	\$360,000	0.01%
Through Covered California	\$15,661,505,000	\$15,662,917,000	\$1,412,000	0.01%
Enrollees, group insurance (d)	\$20,397,418,000	\$20,400,454,000	\$3,036,000	0.01%
<b>Enrollee out-of-pocket expenses</b>				
Cost sharing for covered benefits (deductibles, copays, etc.)	\$15,689,351,000	\$15,708,542,000	\$19,191,000	0.12%
Expenses for noncovered benefits (e)	\$22,201,000	\$0	-\$22,201,000	-100.00%
<b>Total expenditures</b>	<b>\$164,700,092,000</b>	<b>\$164,726,595,000</b>	<b>\$26,503,000</b>	<b>0.02%</b>

**Source: California Health Benefits Review Program, 2024.**

Notes: (a) In some cases, a union or other organization. Excludes CalPERS.

(b) Includes only CalPERS enrollees in DMHC-regulated plans. Approximately 51.6% are state retirees, state employees, or their dependents. About one in five (20.8%) of these enrollees has a pharmacy benefit not subject to DMHC. CHBRP has projected no impact for those enrollees. However, CalPERS could, postmandate, require equivalent coverage for all its members (which could increase the total impact on CalPERS).

(c) Includes Medi-Cal beneficiaries enrolled in DMHC-regulated plans and in COHS.

(d) Enrollee premium expenditures include contributions by enrollees to employer-sponsored health insurance, health insurance purchased through Covered California, and any contributions to enrollment through Medi-Cal to a DMHC-regulated plan.

(e) Includes only expenses paid directly by enrollees (or other sources) to providers for services related to the mandated benefit that are not covered by insurance at baseline. This only includes those expenses that will be newly covered postmandate. Other components of expenditures in this table include all health care services covered by insurance.

Key: CalPERS = California Public Employees' Retirement System; CDI = California Department of Insurance; COHS = county organized health system; DMHC = Department of Managed Health Care.

## Premiums

At the end of this section, Table 6 and Table 7 present baseline and postmandate expenditures by market segment for DMHC-regulated plans and CDI-regulated policies. The tables present per member per month (PMPM) premiums, enrollee expenses for both covered and noncovered benefits, and total expenditures (premiums as well as enrollee expenses).

Changes in premiums as a result of AB 2668 would vary by market segment. Note that such changes are related to the number of enrollees (see Table 4, Table 6, and Table 7) with health insurance that would be subject to AB 2668.

Total premiums paid by employers and enrollees would increase by \$29,513,000. Increases in employer premiums would range between \$0.004 PMPM for CDI-regulated large-group policies to \$0.10 PMPM for DMHC-regulated large-group plans. Enrollee premiums would increase between \$0.001 PMPM for CDI-regulated large-group policies and \$0.06 PMPM for DMHC-regulated individual plans.

For enrollees associated with CalPERS in DMHC-regulated plans, employer premiums would increase by \$0.09 PMPM and enrollee premiums would increase by \$0.02 PMPM.

For Medi-Cal beneficiaries enrolled in DMHC-regulated plans and COHS, premiums would increase by \$0.11 PMPM.

## Enrollee Expenses

AB 2668–related changes in cost sharing for covered benefits (deductibles, copays, etc.) and out-of-pocket expenses for noncovered benefits would vary by market segment. Note that such changes are related to the number of enrollees (see Table 1, Table 6, and Table 7) with health insurance that would be subject to AB 2668 expected to use medical wigs during the year after enactment.

At baseline, enrollee expenses for noncovered benefits are approximately \$22 million. Postmandate, these expenses would be partially paid for by an increase in premiums as well as by an increase in cost sharing for covered benefits. Cost sharing would increase by \$19 million and includes an enrollee’s cost share of the \$750 benefit amount, as well as additional expenses should an enrollee purchase a medical wig that is more expensive than \$750. On average, enrollee cost sharing would increase between \$0.006 PMPM for enrollees in CDI-regulated large-group policies and \$0.14 PMPM for enrollees in DMHC-regulated large-group plans. Expenses for noncovered benefits would decrease by \$0.007 PMPM for enrollees in CDI-regulated large-group policies and \$0.17 PMPM for enrollees in DMHC-regulated large-group plans. Enrollee cost sharing for CalPERS enrollees would increase by \$0.12 PMPM and expenses for noncovered benefits would decrease by \$0.13 PMPM.

## Postmandate Administrative Expenses and Other Expenses

CHBRP estimates that the increase in administrative costs of DMHC-regulated plans and CDI-regulated policies will remain proportional to the increase in premiums. CHBRP assumes that if health care costs increase as a result of increased utilization or changes in unit costs, there is a corresponding proportional increase in administrative costs. CHBRP assumes that the administrative cost portion of premiums is unchanged. All health plans and insurers include a component for administration and profit in their premiums.

## 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.

## Potential Cost of Exceeding Essential Health Benefits

As explained in the *Policy Context* section, medical wigs are not included in California’s EHB package. The state is required to defray the additional cost incurred by enrollees in QHPs for any state benefit mandate that exceeds the state’s definition of EHBs. Coverage for medical wigs for patients experiencing medical hair loss, as would be required if AB 2668 were enacted, could trigger this requirement and so require the state to defray related costs.

CHBRP has considered means of projecting the potential cost to the state of enacting a benefit mandate that would exceed EHBs. CHBRP presents in Table 5 one scenario regarding the cost to the state, should AB 2668 be judged to exceed EHBs. Impacts would vary by market segment (and by market segment enrollment) but would likely range between \$0.11 PMPM for CDI-regulated policies in the small-group market and \$0.13 PMPM for DMHC-regulated plans in the small-group market.

**Table 5. Estimated State Responsibility for Portion of AB 2668 That Is in Excess of EHBs, California, 2025**

	DMHC-Regulated		CDI-Regulated		Total
	Small Group	Individual	Small Group	Individual	
<b>Enrollee counts</b>					
Total enrollees in plans/policies subject to state mandates	2,161,000	2,378,000	62,000	36,000	4,637,000
Number of enrollees in QHPs (a)	2,017,000	2,280,000	62,000	0	4,359,000
<b>Premium cost of mandated benefit</b>					
Estimated premium cost of mandated benefit (b)	\$0.13	\$0.11	\$0.11	\$0.00	\$0.12
<b>Estimated annual state responsibility for portion of mandate that is in excess of EHBs</b>					
Full estimated cost (e) = (a) x (b) x 12	\$3,063,000	\$3,123,000	\$78,000	\$0	\$6,264,000

Source: California Health Benefits Review Program, 2024.

Notes: (a) States are required to defray the costs of state-mandated benefits that are in excess of the EHBs for QHPs. QHPs are a subset of the plans offered in the individual and small-group markets.

(b) Estimated full cost of the mandated benefit without offsets for reduction in costs for related benefits that are EHBs.

Key: CDI = California Department of Insurance; DMHC = Department of Managed Health Care; EHB = essential health benefit; QHP = qualified health plan.

## Postmandate Changes in the Number of Uninsured Persons

Because the change in average premiums would not exceed 1% for any market segment (see Table 4, Table 6, and Table 7), CHBRP would expect no measurable change in the number of uninsured persons due to the enactment of AB 2668.

## 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 AB 2668.

## How Lack of Benefit Coverage Results in Cost Shifts to Other Payers

As discussed previously and in the *Policy Context* section, there are a number of organizations that provide medical wigs at free or reduced cost to patients experiencing medical hair loss. A combination of limited insurance coverage and lack of knowledge among eligible enrollees results in most baseline expenditures being paid for out of pocket by enrollees and external organizations. However, CHBRP is unable to determine the share of medical wigs that are being provided by external organizations at baseline. AB 2668 would result in a shift in expenditures from enrollee out-of-pocket expenses and external organizations to health insurers in California.

## Long-Term Utilization and Cost Impacts

### Utilization Impacts

Utilization of medical wigs would likely be higher in the long term.

For enrollees with alopecia medicamentosa, some enrollees will seek a new medical wig each year, while others will use one total. A 2019 study found that the mean period of wig use among patients with cancer was 12.5 months (Watanabe et al., 2019). Approximately half of the patients who used wigs bought one wig, 25% bought two wigs, and 14% bought three or more wigs. The overall population of patients experiencing hair loss due to cancer treatment or other drug-induced hair loss is likely to remain similar over time.

For enrollees with permanent or long-term hair loss due to alopecia areata or scarring alopecia, utilization of medical wigs may be greater than in the first year postmandate. The number of enrollees with these conditions at baseline will likely remain similar over time; however, this population will grow as new enrollees experience these medical conditions and associated hair loss.

## Cost Impacts

As a result of the increase in utilization in the long term, long-term cost impacts of AB 2668 would likely be higher than the first year postmandate. It is possible that unit cost of medical wigs would be impacted due to the increase in insurance coverage:

- Insurers may negotiate the unit cost of medical wigs, potentially driving down unit cost. One way that insurers may drive down unit cost is through requiring enrollees to obtain medical wigs through specified vendors. If these vendors provide a selection of medical wigs that are lower than the \$750 benefit limit, unit cost would be lower than the first year postmandate estimate provided above.
- Alternately, if no vendor requirements exist or the vendors offer medical wigs up to and above the benefit coverage limit, enrollees may choose wigs with prices close to the benefit coverage limit of \$750, which would contribute to long-term expenditures meeting the high-end estimates of the first year postmandate.

Over time, as inflation grows, \$750 per medical wig may no longer be adequate to purchase a product that meets the enrollee's satisfaction, thereby limiting the value of benefit coverage for enrollees seeking a medical wig for medical hair loss.

**Table 6. Baseline Per Member Per Month Premiums and Total Expenditures by Market Segment, California, 2025**

	DMHC-Regulated						CDI-Regulated			Total
	Commercial Plans (by Market) (a)			Publicly Funded Plans			Commercial Policies (by Market) (a)			
	Large Group	Small Group	Individual	CalPERS (b)	Medi-Cal (Includes COHS) (c) Under 65      65+		Large Group	Small Group	Individual	
<b>Enrollee counts</b>										
Total enrollees in plans/policies subject to state mandates (d)	7,864,000	2,161,000	2,378,000	894,000	9,508,000	998,000	293,000	62,000	36,000	24,194,000
Total enrollees in plans/policies subject to AB 2668	7,864,000	2,161,000	2,378,000	894,000	9,508,000	998,000	293,000	62,000	36,000	24,194,000
<b>Premiums</b>										
Average portion of premium paid by employer (e)	\$527.59	\$461.25	\$0.00	\$650.10	\$263.09	\$554.83	\$585.36	\$533.03	\$0.00	\$107,840,107,000
Average portion of premium paid by enrollee	\$138.26	\$193.80	\$716.04	\$133.99	\$0.00	\$0.00	\$215.50	\$174.12	\$736.61	\$41,148,433,000
<b>Total premium</b>	<b>\$665.85</b>	<b>\$655.05</b>	<b>\$716.04</b>	<b>\$784.09</b>	<b>\$263.09</b>	<b>\$554.83</b>	<b>\$800.87</b>	<b>\$707.15</b>	<b>\$736.61</b>	<b>\$148,988,540,000</b>
<b>Enrollee expenses</b>										
Cost sharing for covered benefits (deductibles, copays, etc.)	\$48.82	\$146.52	\$209.79	\$56.41	\$0.00	\$0.00	\$119.25	\$246.95	\$203.25	\$15,689,351,000
Expenses for noncovered benefits (f)	\$0.17	\$0.08	\$0.10	\$0.13	\$0.00	\$0.00	\$0.01	\$0.04	\$0.00	\$22,201,000
<b>Total expenditures</b>	<b>\$714.84</b>	<b>\$801.65</b>	<b>\$925.93</b>	<b>\$840.64</b>	<b>\$263.09</b>	<b>\$554.83</b>	<b>\$920.13</b>	<b>\$954.14</b>	<b>\$939.86</b>	<b>\$164,700,092,000</b>

Source: California Health Benefits Review Program, 2024.

Notes: (a) Includes enrollees with grandfathered and nongrandfathered health insurance acquired outside or through Covered California (the state’s health insurance marketplace).

(b) Includes only CalPERS enrollees in DMHC-regulated plans. Approximately 51.6% are state retirees, state employees, or their dependents.

(c) Includes only Medi-Cal beneficiaries enrolled in DMHC-regulated plans and in COHS plans. Includes those who are also Medicare beneficiaries.

(d) Enrollees in plans and policies regulated by DMHC or CDI. Includes those associated with Covered California, CalPERS, or Medi-Cal.<sup>37</sup>

(e) In some cases, a union or other organization, or Medi-Cal for its beneficiaries.

(f) Includes only those expenses that are paid directly by enrollees (or other sources) to providers for services related to the mandated benefit that are not covered by insurance at baseline. This only includes those expenses that will be newly covered, postmandate. Other components of expenditures in this table include all health care services covered by insurance.

Key: CalPERS = California Public Employees’ Retirement System; CDI = California Department of Insurance; COHS = county organized health system; DMHC = Department of Managed Health Care.

<sup>37</sup> For more detail, see CHBRP’s resource *Sources of Health Insurance in California*, available at [www.chbrp.org/other-publications/resources](http://www.chbrp.org/other-publications/resources).



**Table 7. Postmandate Change in Per Member Per Month Premiums and Total Expenditures by Market Segment, California, 2025**

	DMHC-Regulated						CDI-Regulated			Total
	Commercial Plans (by Market) (a)			Publicly Funded Plans			Commercial Policies (by Market) (a)			
	Large Group	Small Group	Individual	CalPERS (b)	Medi-Cal (Includes COHS) (c) Under 65      65+		Large Group	Small Group	Individual	
<b>Enrollee counts</b>										
Total enrollees in plans/policies subject to state mandates (d)	7,864,000	2,161,000	2,378,000	894,000	9,508,000	998,000	293,000	62,000	36,000	24,194,000
Total enrollees in plans/policies subject to AB 2668	7,864,000	2,161,000	2,378,000	894,000	9,508,000	998,000	293,000	62,000	36,000	24,194,000
<b>Premiums</b>										
Average portion of premium paid by employer (e)	\$0.0973	\$0.0393	\$0.0000	\$0.0864	\$0.1075	\$0.1075	\$0.0040	\$0.0191	\$0.0000	\$24,704,000
Average portion of premium paid by enrollee	\$0.0255	\$0.0165	\$0.0621	\$0.0178	\$0.0000	\$0.0000	\$0.0015	\$0.0062	\$0.0000	\$4,808,000
Total premium	\$0.1228	\$0.0558	\$0.0621	\$0.1042	\$0.1075	\$0.1075	\$0.0054	\$0.0253	\$0.0000	<b>\$29,513,000</b>
<b>Enrollee expenses</b>										
Cost sharing for covered benefits (deductibles, copays, etc.)	\$0.1417	\$0.0733	\$0.0922	\$0.1152	\$0.0000	\$0.0000	\$0.0063	\$0.0387	\$0.0000	\$19,190,000
Expenses for noncovered benefits (f)	-\$0.1659	-\$0.0822	-\$0.1020	-\$0.1348	\$0.0000	\$0.0000	-\$0.0073	-\$0.0431	\$0.0000	-\$22,201,000
Total expenditures	\$0.0986	\$0.0469	\$0.0523	\$0.0847	\$0.1075	\$0.1075	\$0.0044	\$0.0210	\$0.0000	<b>\$26,501,000</b>
<b>Percent change</b>										
Premiums	0.0184%	0.0085%	0.0087%	0.0133%	0.0408%	0.0194%	0.0007%	0.0036%	0.0000%	0.0198%
<b>Total expenditures</b>	0.0138%	0.0059%	0.0057%	0.0101%	0.0408%	0.0194%	0.0005%	0.0022%	0.0000%	0.0161%

Source: California Health Benefits Review Program, 2024.

Notes: (a) Includes enrollees with grandfathered and nongrandfathered health insurance acquired outside or through Covered California (the state’s health insurance marketplace).

(b) Includes only CalPERS enrollees in DMHC-regulated plans. Approximately 51.6% are state retirees, state employees, or their dependents.

(c) Includes only Medi-Cal beneficiaries enrolled in DMHC-regulated plans and COHS plans. Includes those who are also Medicare beneficiaries.

(d) Enrollees in plans and policies regulated by DMHC or CDI. Includes those associated with Covered California, CalPERS, or Medi-Cal.<sup>38</sup>

(e) In some cases, a union or other organization, or Medi-Cal for its beneficiaries.

<sup>38</sup> For more detail, see CHBRP’s resource, *Sources of Health Insurance in California*, available at [www.chbrp.org/other-publications/resources](http://www.chbrp.org/other-publications/resources).

(f) Includes only those expenses that are paid directly by enrollees (or other sources) to providers for services related to the mandated benefit that are not covered by insurance at baseline. This only includes those expenses that will be newly covered, postmandate. Other components of expenditures in this table include all health care services covered by insurance.  
Key: CalPERS = California Public Employees' Retirement System; CDI = California Department of Insurance; COHS = county organized health system; DMHC = Department of Managed Health Care.

# Public Health Impacts

As discussed in the *Policy Context* section AB 2668 would mandate coverage for cranial prostheses — defined in the bill as wigs or hairpieces, and referred to in this analysis as medical wigs — for patients experiencing temporary or permanent hair loss due to a medical condition or treatment (referred to as medical hair loss). The public health impact analysis includes estimated impacts in the short term (within 12 months of implementation) and in the long term (beyond the first 12 months postmandate).

## Estimated Public Health Outcomes

As discussed previously, medical hair loss can lead to a reduction in quality of life and personal well-being. Specifically, it has been documented that people with alopecia areata experience more emotional distress and mental health challenges such as anxiety, depression, self-esteem issues, and lack of confidence (Mesinkovska et al., 2020; Toussi et al., 2021). Similarly, patients undergoing chemotherapy have reported hair loss as one of the most distressing side effects of chemotherapy, impacting psychological well-being and overall quality of life (Choi et al., 2014; Paterson et al., 2021). There is some evidence to suggest that use of well-fitting, high-quality wigs can improve quality of life and social well-being for patients experiencing distress from alopecia areata or chemotherapy-induced alopecia (Paterson et al., 2021; Rencz et al., 2016).

As presented in the *Benefit Coverage, Utilization, and Cost Impacts* section, it is estimated that as a result of AB 2668, there would be an increase in utilization of medical wigs from 32,100 enrollees to 52,600 enrollees, which represents an increase in 20,500 enrollees newly using wigs. Among enrollees purchasing medical wigs out of pocket at baseline, CHBRP assumed enrollees would use the new benefit coverage to obtain a higher-cost medical wig. Thus, AB 2668 would not be expected to reduce the financial burden associated with medical wig use. However, should enrollees use the new benefit coverage to reduce their out-of-pocket costs, these enrollees would see a reduction in financial burden associated with medical wig use.

AB 2668 would likely yield some health and quality-of-life improvements, such as improved quality of life and mental health among some of the additional 20,500 enrollees who would use medical wigs.

## Impact on Disparities<sup>39</sup>

As described in the *Background* section, there are disparities in the underlying conditions that cause medical hair loss. It is therefore possible that there are disparities in need for medical wigs. Black women, in particular, have higher rates of some of the underlying conditions that lead to medical hair loss. While AB 2668 would be expected to expand access to medical wigs, it is not clear if this expanded access would specifically address the needs of Black women, especially as it has been reported that Black women are less likely to find medical wigs with the appropriate hair texture and hair styles (Martin, 2021). Therefore, it is unknown to what extent AB 2668 would reduce these disparities either in the short or long term.

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<sup>39</sup> For details about CHBRP's methodological approach to analyzing disparities, see the *Benefit Mandate Structure and Unequal Racial/Ethnic Health Impacts* document here <https://www.chbrp.org/about/analysis-methodology/public-health-impact-analysis>.

# Appendix A. Text of Bill Analyzed

On February 15, 2024 the California Assembly Committee on Health requested that CHBRP analyze AB 2668, as introduced on February 14, 2024.

CALIFORNIA LEGISLATURE— 2023–2024 REGULAR SESSION

**ASSEMBLY BILL**

**NO. 2668**

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**Introduced by Assembly Member Berman**

**February 14, 2024**

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An act to add Section 1367.651 to the Health and Safety Code, to add Section 10123.811 to the Insurance Code, and to add Section 14132.65 to the Welfare and Institutions Code, relating to health care coverage.

## LEGISLATIVE COUNSEL'S DIGEST

AB 2668, as introduced, Berman. Coverage for cranial prostheses.

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 also provides for the regulation of health insurers by the Department of Insurance. Existing law requires health care service plans and health insurers to provide coverage for prosthetic devices in connection with specified health conditions and procedures.

This bill would require a health care service plan contract or health insurance policy issued, amended, or renewed on or after January 1, 2025, to cover cranial prostheses, as defined, for individuals experiencing permanent or temporary medical hair loss. The bill would require a licensed provider to prescribe the cranial prosthesis for an individual's course of treatment for a diagnosed health condition, chronic illness, or injury, as specified. The bill would limit coverage to once every 12 months and \$750 for each instance of coverage. The bill would not apply these provisions to a specialized health care service plan or specialized health insurance policy. Because a violation of these requirements by a health care service plan would be a crime, the bill would impose a state-mandated local program.

Existing law also establishes the Medi-Cal program, which is administered by the State Department of Health Care Services and under which qualified low-income individuals receive health care services. The Medi-Cal program is, in part, governed and funded by federal Medicaid program provisions.

Commencing January 1, 2025, this bill would require coverage for cranial prostheses for individuals experiencing permanent or temporary medical hair loss. or treatment for those conditions as a Medi-Cal benefit, subject to the same requirements with respect to provider prescription, coverage frequency, and amount. The bill would not apply these provisions to a specialized health care service plan.

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 1367.651 is added to the Health and Safety Code, to read:

**1367.651.** (a) A health care service plan contract issued, amended, or renewed on and after January 1, 2025, shall cover cranial prostheses for individuals experiencing permanent or temporary medical hair loss, in accordance with subdivision (b).

(b) Coverage under this section shall meet all of the following requirements:

(1) A licensed provider prescribes the cranial prosthesis for an enrollee's or subscriber's course of treatment for the diagnosed health condition, chronic illness, or injury, including, but not limited to, alopecia areata, alopecia medicamentosa, scarring alopecia, and lupus. For purposes of this section, "cranial prosthesis" means a wig or hairpiece.

(2) The contract provides coverage for a cranial prosthesis to an individual enrollee or subscriber no more frequently than once every 12 months.

(3) The coverage is limited to seven hundred fifty dollars (\$750) for each instance of coverage, and shall be subject to any cost-sharing requirements that are otherwise applicable under the health care service plan contract.

(c) This section shall not apply to specialized health care service plans.

**SEC. 2.** Section 10123.811 is added to the Insurance Code, to read:

**10123.811.** (a) A health insurance policy issued, amended, or renewed on and after January 1, 2025, shall provide coverage for cranial prostheses for individuals experiencing permanent or temporary medical hair loss, in accordance with subdivision (b).

(b) Coverage under this section shall meet all of the following requirements:

(1) A licensed provider prescribes the cranial prosthesis for an insured's or policyholder's course of treatment for the diagnosed health condition, chronic illness, or injury including, but not limited to, alopecia areata, alopecia medicamentosa, scarring alopecia, and lupus. For purposes of this section, "cranial prosthesis" means a wig or hairpiece.

(2) The contract provides coverage for a cranial prosthesis to an individual insured or policyholder no more frequently than once every 12 months.

(3) The coverage is limited to seven hundred fifty dollars (\$750) for each instance of coverage, and shall be subject to any cost-sharing requirements that are otherwise applicable under the health insurance policy.

(c) This section shall not apply to specialized health insurance policies.

**SEC. 3.** Section 14132.65 is added to the Welfare and Institutions Code, to read:

**14132.65.** (a) Commencing January 1, 2025, cranial prostheses for individuals experiencing permanent or temporary medical hair loss are a covered benefit, in accordance with subdivision (b).

(b) Coverage under this section shall meet all of the following requirements:

(1) A licensed provider prescribes the cranial prosthesis for a beneficiary's course of treatment for a diagnosed health condition, chronic illness, or injury including, but not limited to, alopecia areata, alopecia medicamentosa, scarring alopecia, and lupus. For purposes of this section, "cranial prosthesis" means a wig or hairpiece.

(2) Coverage for a cranial prosthesis is provided to an individual beneficiary no more frequently than once every 12 months.

(3) Coverage is limited to seven hundred fifty dollars (\$750) for each instance of coverage.

(c) This section shall not apply to specialized health care service plans.

**SEC. 4.** 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.

## Appendix B. Literature Review Specifications

This appendix describes methods used in the literature review conducted for this report.

Studies on the impacts of medical hair loss and use of medical wigs on quality of life were identified through searches of PubMed, Embase, CINAHL, and PsycINFO. The search was limited to abstracts of studies published in English and studies published from 2013 to present. The literature on the impacts of medical wigs on quality of life did not include any randomized controlled trials. The majority of the papers returned were systematic reviews, cross-sectional survey studies, and case studies; and all were observational studies by design.

Reviewers screened the title and abstract of each citation retrieved by the literature search to determine eligibility for inclusion. The reviewers acquired the full text of articles that were deemed eligible for inclusion in the review and reapplied the initial eligibility criteria.

A total of three systematic reviews and five studies were included in the medical effectiveness review for AB 2668.

### Medical Effectiveness Evidence Grading System

In making a “call” for each outcome measure, the medical effectiveness lead and the content expert consider the number of studies as well the strength of the evidence. Further information about the criteria CHBRP uses to evaluate evidence of medical effectiveness can be found in CHBRP’s *Medical Effectiveness Analysis Research Approach*.<sup>40</sup> To grade the evidence for each outcome measured, the team uses a grading system that has the following categories:

- Research design;
- Statistical significance;
- Direction of effect;
- Size of effect; and
- Generalizability of findings.

The grading system also contains an overall conclusion that encompasses findings in these five domains. The conclusion is a statement that captures the strength and consistency of the evidence of an intervention’s effect on an outcome. The following terms are used to characterize the body of evidence regarding an outcome:

- *Clear and convincing evidence* indicates that there are multiple studies of a treatment and that the *large majority* of studies are of high quality and consistently find that the treatment is either effective or not effective.
- *Preponderance of evidence* indicates that there are multiple studies of a treatment and that the *large majority* of studies are of high quality and consistently find that the treatment is either effective or not effective.
- *Limited evidence* indicates that the studies had limited generalizability to the population of interest and/or the studies had a fatal flaw in research design or implementation.
- *Inconclusive evidence* indicates that although some studies included in the medical effectiveness review find that a treatment is effective, a similar number of studies of equal quality suggest the treatment is not effective.
- *Insufficient evidence* indicates that there is not enough evidence available to know whether or not a treatment is effective, either because there are too few studies of the treatment or because the available studies are not of high quality. It does not indicate that a treatment is not effective.

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<sup>40</sup> Available at: [www.chbrp.org/about/analysis-methodology/medical-effectiveness-analysis](http://www.chbrp.org/about/analysis-methodology/medical-effectiveness-analysis).

# Appendix C. Cost Impact Analysis: Data Sources, Caveats, and Assumptions

With the assistance of CHBRP's contracted actuarial firm, Milliman, 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.<sup>41</sup> 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.<sup>42</sup>

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

## Analysis-Specific Data Sources

Current coverage of medical wigs due to medical hair loss for commercial enrollees was determined by a survey of the largest (by enrollment) providers of health insurance in California. Responses to this survey represented 70% of commercial enrollees with health insurance and 44% of Medi-Cal enrollees in DMHC-regulated health plans that can be subject to state benefit mandates. Medi-Cal COHS plans were not surveyed.

In addition, CalPERS and DHCS were queried regarding related benefit coverage. DHCS indicated that while medical wigs were not a Medi-Cal covered benefit, medically necessary medical wigs for enrollees under 21 were covered through the early and periodic screening, diagnostic, and treatment (EPSDT) benefit. CHBRP assumed no usage of medical wigs through this benefit for enrollees under 21 at baseline.

## 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.

## Analysis-Specific Caveats and Assumptions

### Methodology and Assumptions for Baseline Benefit Coverage

- The population subject to the mandated offering includes individuals covered by DMHC-regulated commercial insurance plans, CDI-regulated policies, and CalPERS plans subject to the requirements of the Knox-Keene Health Care Service Plan Act. It also includes individuals enrolled in DMHC-regulated Medi-Cal plans and Medi-Cal COHS plans.
- CHBRP surveyed the carriers to determine the percentage of the population with coverage for medical wigs as a result of medical hair loss. Carriers either covered medical wigs for all types of medical hair loss for all lines of business or did not cover any medical wigs.
- Carriers with who reported benefit limitations for medical wigs are not fully compliant with AB 2668 and were considered to provide no coverage for medical wigs for the purposes of this analysis.

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<sup>41</sup> CHBRP's authorizing statute, available at [www.chbrp.org/about/faqs](http://www.chbrp.org/about/faqs), requires that CHBRP use a certified actuary or "other person with relevant knowledge and expertise" to determine financial impact.

<sup>42</sup> See method documents posted at [www.chbrp.org/about/analysis-methodology/cost-impact-analysis](http://www.chbrp.org/about/analysis-methodology/cost-impact-analysis); in particular, see *Cost Analyses: Data Sources, Caveats, and Assumptions*.



- Medi-Cal enrollees in COHS plans were assumed to have the same coverage of medical wigs as Medi-Cal enrollees in DMHC-regulated health plans.

## Methodology and Assumptions for Baseline Utilization

- Enrollees with medical hair loss were identified in Milliman's proprietary 2022 Consolidated Health Cost Guidelines™ Sources Database (CHSD). This database only captures services that are filed for reimbursement by insurance and may not fully capture conditions related to noncovered benefits. CHBRP assigned enrollees into three categories of medical hair loss using International Classification of Diseases (ICD) 10 diagnosis codes: alopecia areata, scarring alopecia, and alopecia medicamentosa. Enrollees were also split by coverage status and whether they purchased or received a medical wig at baseline.

### *Alopecia areata*

- For enrollees with coverage, CHBRP assumed 93% of enrollees with alopecia areata utilized medical wigs at baseline from a study of a survey of alopecia areata patients regarding medical wigs (Ezemma et al., 2023).
- For commercial enrollees without coverage, CHBRP assumed 76% of enrollees with alopecia areata utilized medical wigs at baseline calculated from a study of a survey of alopecia areata (Ezemma et al., 2023).
- For Medi-Cal enrollees without coverage, CHBRP assumed no enrollees with alopecia areata utilized medical wigs at baseline.
- Enrollees with alopecia areata were identified using the ICD 10 diagnosis codes: L630, L631, L632, L638, and L639.

### *Scarring alopecia*

- CHBRP assumed the same utilization rates for patients with scarring alopecia as patients with alopecia areata.
- Enrollees with scarring alopecia were identified using the ICD 10 diagnosis codes: L652, L660, L661, L662, L668, L669.

### *Alopecia medicamentosa*

- For enrollees with coverage, CHBRP assumed 97% of enrollees with alopecia medicamentosa utilized medical wigs at baseline from a study of wig use for patients with chemotherapy-induced alopecia (van den Hurk et al., 2013).
- For commercial enrollees without coverage, CHBRP assumed 77% of enrollees with alopecia medicamentosa utilized medical wigs at baseline from a study of wig use for patients with chemotherapy-induced alopecia (van den Hurk et al., 2013).
- For Medi-Cal enrollees without coverage, CHBRP assumed no enrollees with alopecia medicamentosa utilized medical wigs at baseline.
- Alopecia medicamentosa enrollees were identified using the ICD 10 diagnosis codes. Some hair loss diagnosis codes used for alopecia medicamentosa are also used for other conditions. CHBRP assumed based on consultation with a clinician that only a percentage of enrollees with those diagnosis codes have alopecia medicamentosa: 100% of L640, 20% of L650, 80% of L651, 20% of 658, and 10% of L659.

## Methodology and Assumptions for Baseline Cost

### *Alopecia areata*

- CHBRP assumed the average cost of a medical wig at baseline for enrollees with alopecia areata based on a 2023 study of a survey of alopecia areata patients regarding medical wigs. The survey reported 23% of respondents had coverage for medical wigs and a \$685 coverage amount. The survey reported an average medical wig cost of \$1,543 regardless of insurance coverage (van den Hurk et al., 2013).

- CHBRP estimated the 2025 cost of a medical wig for alopecia areata patients with coverage for medical wigs would be \$2,210.
- CHBRP estimated that the 2025 cost of a medical wig for alopecia areata patients with no baseline coverage for medical wigs would be \$1,530.
- The average costs per medical wig was trended from 2022 to 2025 using a 3% annual trend from the February 2024 unadjusted Consumer Price Index For All Urban Consumers (CPI-U) for medical care commodities.

### ***Scarring alopecia***

- CHBRP assumed the average cost of a medical wig at baseline for scarring alopecia patients with and without coverage for medical wigs was the same as alopecia areata patients.

### ***Alopecia medicamentosa***

- CHBRP assumed the average 2025 cost of a medical wig at baseline for enrollees with alopecia areata was \$750 for both enrollees with and without coverage for medical wigs. There are several websites through which patients experiencing medical hair loss can purchase medical wigs, and there are a number of wigs available at lower price points. However, data are not available to estimate the actual spend on medical wigs for enrollees with alopecia medicamentosa. Additionally, as described in the *Background* section, there are several reasons why certain patients undergoing treatment for cancer do not wear medical wigs and therefore may be less likely to purchase a wig that is in excess of benefit coverage.

## **Methodology and Assumptions for Baseline Cost Sharing**

- For enrollees with coverage for medical wigs, CHBRP assumed the cost sharing for medical wigs is the average actuarial value for the enrollee's line of business applied multiplicatively to the cost of the medical wig. Actual cost sharing will vary by plan design. Actuarial values take into consideration an enrollee's deductible and out-of-pocket maximum.
- CHBRP assumed medical wigs bought by enrollees without coverage were paid in full by the enrollee out of pocket.

## **Methodology and Assumptions for Postmandate Utilization**

### ***Alopecia areata and scarring alopecia***

- For enrollees with coverage at baseline, CHBRP assumed no change in utilization.
- For enrollees without coverage at baseline, CHBRP assumed those enrollees would purchase a medical wig at the same rate as enrollees with coverage at baseline.

### ***Alopecia medicamentosa***

- For enrollees who purchased a medical wig at baseline, CHBRP assumed no change in utilization.
- For enrollees without coverage at baseline, CHBRP assumed those would purchase a medical wig at the same rate as enrollees with coverage at baseline.

## **Methodology and Assumptions for Postmandate Cost**

### ***Alopecia areata and scarring alopecia***

- For enrollees with coverage for medical wigs at baseline, CHBRP assumed no change in the cost of medical wigs postmandate.
- For enrollees without coverage for medical wigs at baseline who purchased a medical wig, CHBRP assumed the cost of medical wigs postmandate would increase by the \$750 benefit maximum from AB 2668, less cost sharing.

- For enrollees without coverage for medical wigs at baseline who did not purchase a medical wig, CHBRP assumed those enrollees would purchase \$750 medical wigs postmandate.

### ***Alopecia medicamentosa***

- For enrollees with coverage for medical wigs at baseline, CHBRP assumed no change in the cost of medical wigs postmandate.
- For enrollees without coverage for medical wigs at baseline who purchased a medical wig, CHBRP assumed no change in the cost of medical wigs postmandate.
- For enrollees without coverage for medical wigs at baseline who did not purchase a medical wig, CHBRP assumed those enrollees would purchase a \$750 medical wig postmandate.

## **Methodology and Assumptions for Postmandate Cost Sharing**

### ***Alopecia areata and scarring alopecia***

- For enrollees with coverage for medical wigs at baseline, CHBRP assumed no change in the cost sharing of medical wigs postmandate.
- For enrollees without coverage for medical wigs at baseline who purchased a wig, CHBRP assumed those enrollees would pay the baseline out-of-pocket cost as cost sharing for medical wigs postmandate to utilize the new benefit and buy a more expensive medical wig.
- For enrollees without coverage for medical wigs at baseline who did not purchase a wig, CHBRP assumed the cost sharing for medical wigs is the average actuarial value for the enrollee's line of business applied multiplicatively to the cost of the medical wig postmandate.

### ***Alopecia medicamentosa***

- For enrollees with coverage for medical wigs at baseline, CHBRP assumed no change in the cost sharing of medical wigs postmandate.
- For enrollees without coverage for medical wigs at baseline who purchased a wig, CHBRP assumed the cost sharing for medical wigs is the average actuarial value for the enrollee's line of business applied multiplicatively to the cost of the medical wig postmandate.
- For enrollees without coverage for medical wigs at baseline who did not purchase a wig, CHBRP assumed the cost sharing for medical wigs is the average actuarial value for the enrollee's line of business applied multiplicatively to the cost of the medical wig postmandate.

## **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 indicated that there were no substantive differences.

# References

- Banka N, Bunagan MJK, Dubrule Y, Shapiro J. Use of wigs and hairpieces in dermatology. *Dermatologic Therapy*. 2012;25:260-266. <https://doi.org/10.1111/j.1529-8019.2012.01506.x>
- Benigno M, Anastassopoulos KP, Mostaghimi A, et al. A Large Cross-Sectional Survey Study of the Prevalence of Alopecia Areata in the United States. *Clinical, Cosmetic and Investigational Dermatology*. 2020;13:259-266. <https://doi.org/10.2147/CCID.S245649>
- Boodhoo KD, Liu S, Zuo X. Impact of sex disparities on the clinical manifestations in patients with systemic lupus erythematosus. *Medicine*. 2016;95(29). <https://doi.org/10.1097/md.0000000000004272>
- Centers for Disease Control and Prevention (CDC). *Systemic Lupus Erythematosus (SLE)*. 2022. Available at: <https://www.cdc.gov/lupus/facts/detailed.html>. Accessed February 29, 2024.
- Chakravarty EF, Bush TM, Manzi S, Clarke AE, Ward MM. Prevalence of adult systemic lupus erythematosus in California and Pennsylvania in 2000: estimates using hospitalization data. *Arthritis and Rheumatism*. 2007;56(6):2092. <https://doi.org/10.1002/art.22641>
- Children with Hair Loss. About Us. 2024. Available at: <https://childrenwithhairloss.org/>. Accessed March 5, 2024.
- Choi EK, Kim IR, Chang O, et al. Impact of chemotherapy-induced alopecia distress on body image, psychosocial well-being, and depression in breast cancer patients. *Psycho-Oncology*. 2014;23(10):1103-1110. <https://doi.org/10.1002/pon.3531>
- Chren M-M, Lasek RJ, Quinn LM, Mostow EN, Zyzanski SJ. Skindex, a quality-of-life measure for patients with skin disease: reliability, validity, and responsiveness. *Journal of Investigative Dermatology*. 1996;107(5):707-713. <https://doi.org/10.1111/1523-1747.ep12365600>
- City of Hope. *Local, National, and Internet Resources*. 2021. Available at: [https://www.cityofhope.org/sites/www/files/2022-06/local-national-and-internet-resources-booklet\\_0.pdf](https://www.cityofhope.org/sites/www/files/2022-06/local-national-and-internet-resources-booklet_0.pdf). Accessed March 1, 2024.
- Cleveland Clinic. *Scarring (Cicatricial) Alopecia: What It Looks Like & Treatment*. Cleveland Clinic. 2023. Available at: <https://my.clevelandclinic.org/health/diseases/24582-scarring-alopecia>. Accessed February 29, 2024.
- Desai K, Miteva M. Recent Insight on the Management of Lupus Erythematosus Alopecia. *Clinical, Cosmetic & Investigational Dermatology*. 2021;14:333–347. <https://doi.org/10.2147/CCID.S269288>
- Draelos ZD. Camouflage technique for alopecia areata: What is a patient to do? *Dermatologic Therapy*. 2011;24:305-310. <https://doi.org/10.1111/j.1529-8019.2011.01417.x>
- Endo Y, Miyachi Y, Arakawa A. Development of a disease-specific instrument to measure quality of life in patients with alopecia areata. *European Journal of Dermatology*. 2012;22(4):531-536. <https://doi.org/10.1684/ejd.2012.1752>
- Ezemma O, Devjani S, Lee A, Kelley KJ, Anderson L, Friedland N, Senna M. Patterns of insurance coverage for wigs in patients with alopecia areata: a cross-sectional survey. *International Journal of Women's Dermatology*. 2023;9(1), e075. <https://doi.org/10.1097/JW9.0000000000000075>
- Finlay AY, Khan G. Dermatology Life Quality Index (DLQI)—a simple practical measure for routine clinical use. *Clinical and Experimental Dermatology*. 1994;19(3):210-216. <https://doi.org/10.1111/j.1365-2230.1994.tb01167.x>
- Freites-Martinez A, Shapiro J, Goldfarb S, Nangia J, Jimenez JJ, Paus R, Lacouture ME. Hair disorders in patients with cancer. *Journal of the American Academy of Dermatology*. 2019;80(5):1179–1196. <https://doi.org/10.1016/j.jaad.2018.03.055>

- Inui S, Inoue T, Itami S. Psychosocial impact of wigs or hairpieces on perceived quality of life level in female patients with alopecia areata. *Journal of Dermatology*. 2013;40(3):225-226. <https://doi.org/10.1111/1346-8138.12040>
- Izmirly PM, Ferucci ED, Somers EC, et al. Incidence rates of systemic lupus erythematosus in the USA: estimates from a meta-analysis of the Centers for Disease Control and Prevention national lupus registries. *Lupus Science & Medicine*. 2021;8(1):e000614. <https://doi.org/10.1136/lupus-2021-000614>
- Katoulis AC, Christodoulou C, Liakou AI, et al. Quality of life and psychosocial impact of scarring and non-scarring alopecia in women. *Journal der Deutschen Dermatologischen Gesellschaft*. 2015;13(2):137-142. <https://doi.org/10.1111/ddg.12548>
- Li SJ, Mostaghimi A, Tkachenko E, Huang KP. (2019). Association of Out-of-Pocket Health Care Costs and Financial Burden for Patients With Alopecia Areata. *JAMA Dermatology*. 2019;155(4):493-494. <https://doi.org/10.1001/jamadermatol.2018.5218>
- Marks DH, Penzi LR, Ibler E. The Medical and Psychosocial Associations of Alopecia: Recognizing Hair Loss as More Than a Cosmetic Concern. *American Journal of Clinical Dermatology*. 2019;20(2):195-200. <https://doi.org/10.1007/s40257-018-0405-2>
- Martin V. For black women, a special chemo challenge: finding a wig that works. Living beyond breast cancer. 7/28/21. Available at: <https://www.lbbc.org/news/for-black-women-a-special-chemo-challenge-finding-a-wig-that-works>. Accessed April 9, 2024.
- Mesinkovska N, King B, Mirmirani P, Ko J, Cassella J. Burden of Illness in Alopecia Areata: A Cross-Sectional Online Survey Study. *Journal of Investigative Dermatology Symposium Proceedings*. 2020;20(1):S62-s68. <https://doi.org/10.1016/j.jisp.2020.05.007>
- Messenger AG, McKillop J, Farrant P, et al. British Association of Dermatologists' guidelines for the management of alopecia areata 2012. *British Journal of Dermatology*. 2012;166(5):916–926. <https://doi.org/10.1111/j.1365-2133.2012.10955.x>
- Montgomery K, White C, Thompson A. A mixed methods survey of social anxiety, anxiety, depression and wig use in alopecia. *BMJ Open*. 2017;7(4):e015468. <https://doi.org/10.1136/bmjopen-2016-015468>
- Mostaghimi A, Gao W, Ray M, et al. Trends in Prevalence and Incidence of Alopecia Areata, Alopecia Totalis, and Alopecia Universalis Among Adults and Children in a US Employer-Sponsored Insured Population. *JAMA Dermatology*. 2023;159(4):411–418. <https://doi.org/10.1001/jamadermatol.2023.0002>
- Mostaghimi A, Xenakis J, Meche A, Smith TW, Gruben D, Sikirica V. Economic Burden and Healthcare Resource Use of Alopecia Areata in an Insured Population in the USA. *Dermatologic Therapy (Heidelberg)*. 2022;12(4):1027-1040. <https://doi.org/10.1007/s13555-022-00710-4>
- Muntyanu A, Gabrielli S, Donovan J, et al. (2023). The burden of alopecia areata: A scoping review focusing on quality of life, mental health and work productivity. *Journal of the European Academy of Dermatology and Venereology*. 2023;37(8): 1490-1520. <https://doi.org/10.1111/jdv.18926>
- National Alopecia Areata Foundation (NAAF). *Alopecia Areata Types*. n.d. Available at: <https://www.naaf.org/alopecia-areata/types-of-alopecia-areata/>. Accessed February 29, 2024.
- National Alopecia Areata Foundation (NAAF). *Wig Resources*. 2024. Available at: <https://www.naaf.org/wig-resources/>. Accessed March 1, 2024.
- National Cancer Institute (NCI). *State Cancer Profiles: California*. n.d. Available at: <https://statecancerprofiles.cancer.gov/quick-profiles/index.php?statername=california>. Accessed on: April 15, 2024.
- National Institute of Arthritis and Musculoskeletal and Skin Diseases (NIAMS). Alopecia Areata - Hair loss Causes & Living With It. 2021. Available at: <https://www.niams.nih.gov/health-topics/alopecia-areata>. Accessed February 29, 2024.

- National Institutes of Health (NIH), Office of Research on Women's Health. Sex and Gender. 2019; Available at: <https://orwh.od.nih.gov/sex-gender>. Accessed August 30, 2019.
- National Organization for Rare Disorders (NORD). Alopecia Areata - Symptoms, Causes, Treatment. 2022. Available at: <https://rarediseases.org/rare-diseases/alopecia-areata/>. Accessed February 29, 2024.
- New York University (NYU) Langone Health. *Types of Hair Loss*. 2024. Available from: <https://nyulangone.org/conditions/hair-loss/types>. Accessed March 28, 2024.
- Olsen EA. Chemotherapy-Induced Alopecia: Overview and Methodology for Characterizing Hair Changes and Regrowth. In: Olver I, editors. *The MASCC Textbook of Cancer Supportive Care and Survivorship*. Springer; 2010. [https://doi.org/10.1007/978-1-4419-1225-1\\_36](https://doi.org/10.1007/978-1-4419-1225-1_36)
- Park J, Kim DW, Park SK, Yun SK, Kim HU. Role of Hair Protheses (Wigs) in Patients with Severe Alopecia Areata. *Annals Dermatology*. 2018;30(4):505–507. <https://doi.org/10.5021/ad.2018.30.4.505>
- Paterson C, Kozlovskaja M, Turner M, et al. Identifying the supportive care needs of men and women affected by chemotherapy-induced alopecia? A systematic review. *Journal of Cancer Survivorship*. 2021;15:14-28. <https://doi.org/10.1007/s11764-020-00907-6>
- Rencz F, Gulácsi L, Péntek M, Wikonkál N, Baji P, Brodszky V. Alopecia areata and health-related quality of life: a systematic review and meta-analysis. *British Journal of Dermatology*. 2016;175(3):561-571. <https://doi.org/10.1111/bjd.14497>
- Renert-Yuval Y, Guttman-Yassky E. The Changing Landscape of Alopecia Areata: The Therapeutic Paradigm. *Advances in Therapy*. 2017;34(7):1594-1609. <https://doi.org/10.1007/s12325-017-0542-7>
- Saed S, Ibrahim O, Bergfeld WF. Hair camouflage: A comprehensive review. *International Journal of Women's Dermatology*. 2017;3(1 Suppl):S75–S80. <https://doi.org/10.1016/j.ijwd.2017.02.016>
- Senna M, Ko J, Tosti A, et al. Alopecia Areata Treatment Patterns, Healthcare Resource Utilization, and Comorbidities in the US Population Using Insurance Claims. *Advances in Therapy*. 2021;38(9):4646-4658. <https://doi.org/10.1007/s12325-021-01845-0>
- Sinclair R. Male pattern androgenetic alopecia. *BMJ*. 1998;317(7162):865-9. <https://doi.org/10.1136/bmj.317.7162.865>
- Sy N, Mastacouris N, Strunk A, Garg A. Overall and Racial and Ethnic Subgroup Prevalences of Alopecia Areata, Alopecia Totalis, and Alopecia Universalis. *JAMA Dermatology*. 2023;159(4):419–423. <https://doi.org/10.1001/jamadermatol.2023.0016>
- Toussi A, Barton VR, Le ST, Agbai ON, Kiuru M. Psychosocial and psychiatric comorbidities and health-related quality of life in alopecia areata: A systematic review. *Journal of the American Academy of Dermatology*. 2021;85(1):162-175. <https://doi.org/10.1016/j.jaad.2020.06.047>
- Unger JM, Vaidya R, Albain KS, et al. Sex differences in risk of severe adverse events in patients receiving immunotherapy, targeted therapy, or chemotherapy in cancer clinical trials. *Journal of Clinical Oncology*. 2022;40(13):1474.
- van den Hurk CJG, van den Akker-van Marle ME, Breed WPM, et al. Impact of scalp cooling on chemotherapy-induced alopecia, wig use and hair growth of patients with cancer. *European Journal of Oncology Nursing*. 2013. <https://doi.org/10.1016/j.ejon.2013.02.004>
- Ware Jr JE, Sherbourne CD. The MOS 36-Item short-form health survey (SF-36): I. Conceptual framework and item selection. *Medical Care*. 1992;30(6):473-483.

- Watanabe T, Yagata H, Saito M, Okada H, Yajima T, Tamai N, et al. A multicenter survey of temporal changes in chemotherapy-induced hair loss in breast cancer patients. *PLoS One*. 2019;14(1):e0208118. <https://doi.org/10.1371/journal.pone.0208118>
- Wyatt R, Laderman M, Botwinick L, Mate K, Whittington J. Achieving Health Equity: A Guide for Health Care Organizations. IHI White Paper. Cambridge, MA: Institute for Healthcare Improvement; 2016.
- Wyrwich KW, Kitchen H, Knight S, et al. The Alopecia Areata Investigator Global Assessment Scale: A Measure for evaluating clinically meaningful success in clinical trials. *British Journal of Dermatology*. 2020;183(4):702-709. <https://doi.org/10.1111/bjd.18883>
- Zucchelli F, Harries M, Messenger A, Montgomery K. Establishing the financial burden of alopecia areata and its predictors. *Skin Health and Disease*. 2023;4(1):e301. <https://doi.org/10.1002/ski2.301>.

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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. CHBRP is grateful for the valuable assistance of its National Advisory Council. CHBRP assumes full responsibility for the report and the accuracy of its contents.

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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 [www.chbrp.org](http://www.chbrp.org).

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